

# Three-Phase Induction Motors

- H-compact
- H-compact PLUS

Catalog D 84.1 • 2011











## Motors

Answers for industry.

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# Motors

## Three-Phase Induction Motors

- H-compact
- H-compact PLUS

Catalog D 84.1 · 2011



The products and systems listed in this catalog are manufactured and marketed using a certified quality management system complying with DIN EN ISO 9001 (Certificate Registration No. 002241 QM UM). The certificate is recognized in all IQNet countries.

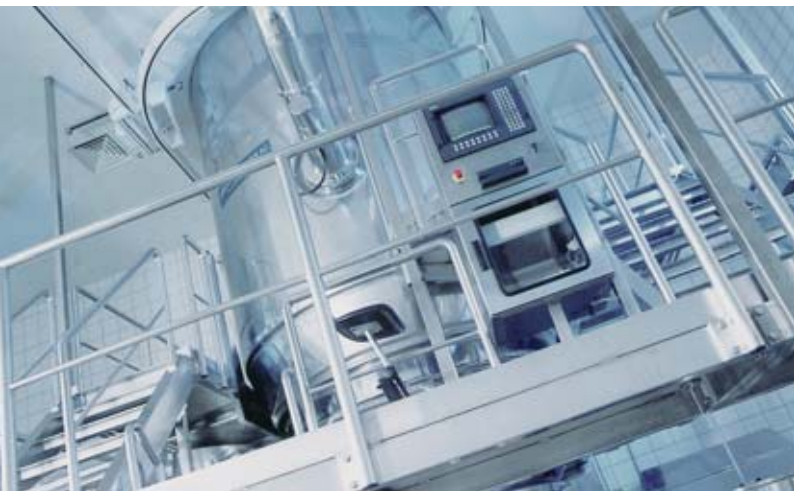
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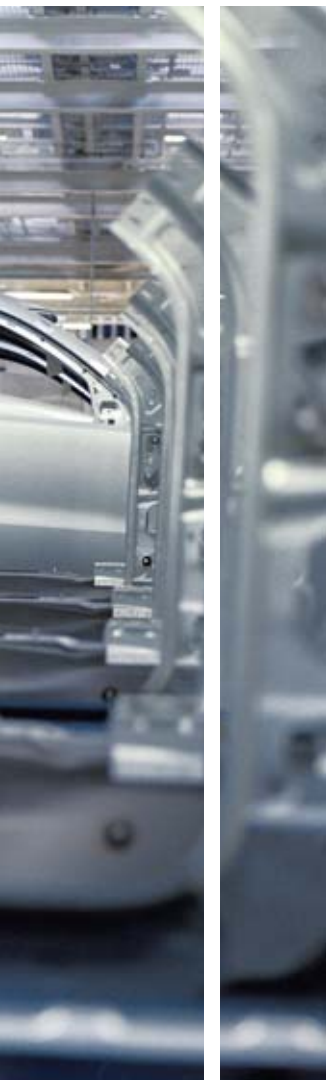
Catalog D 84.1 · 2009

Catalog News D 84.1 N · June 2011

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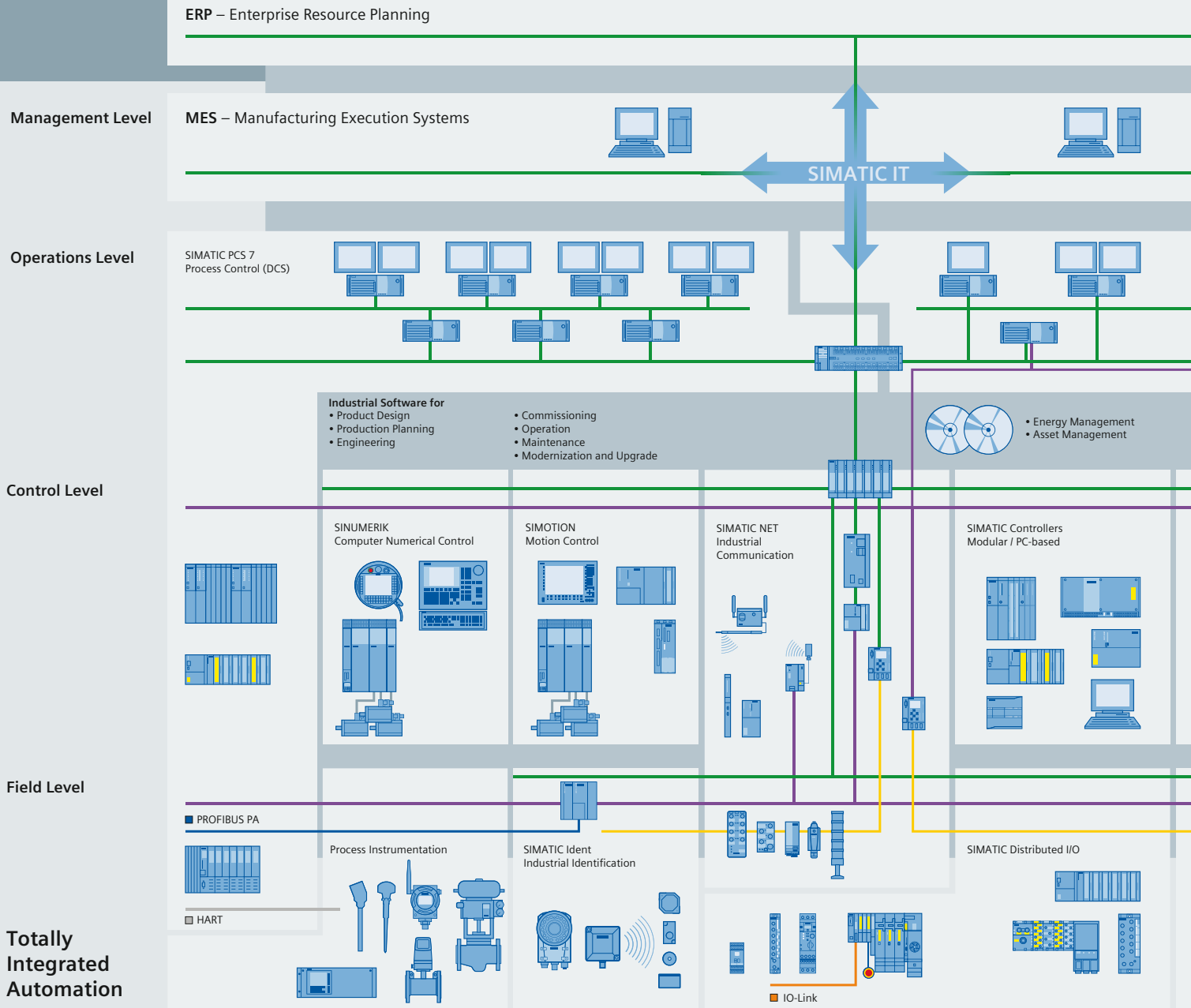
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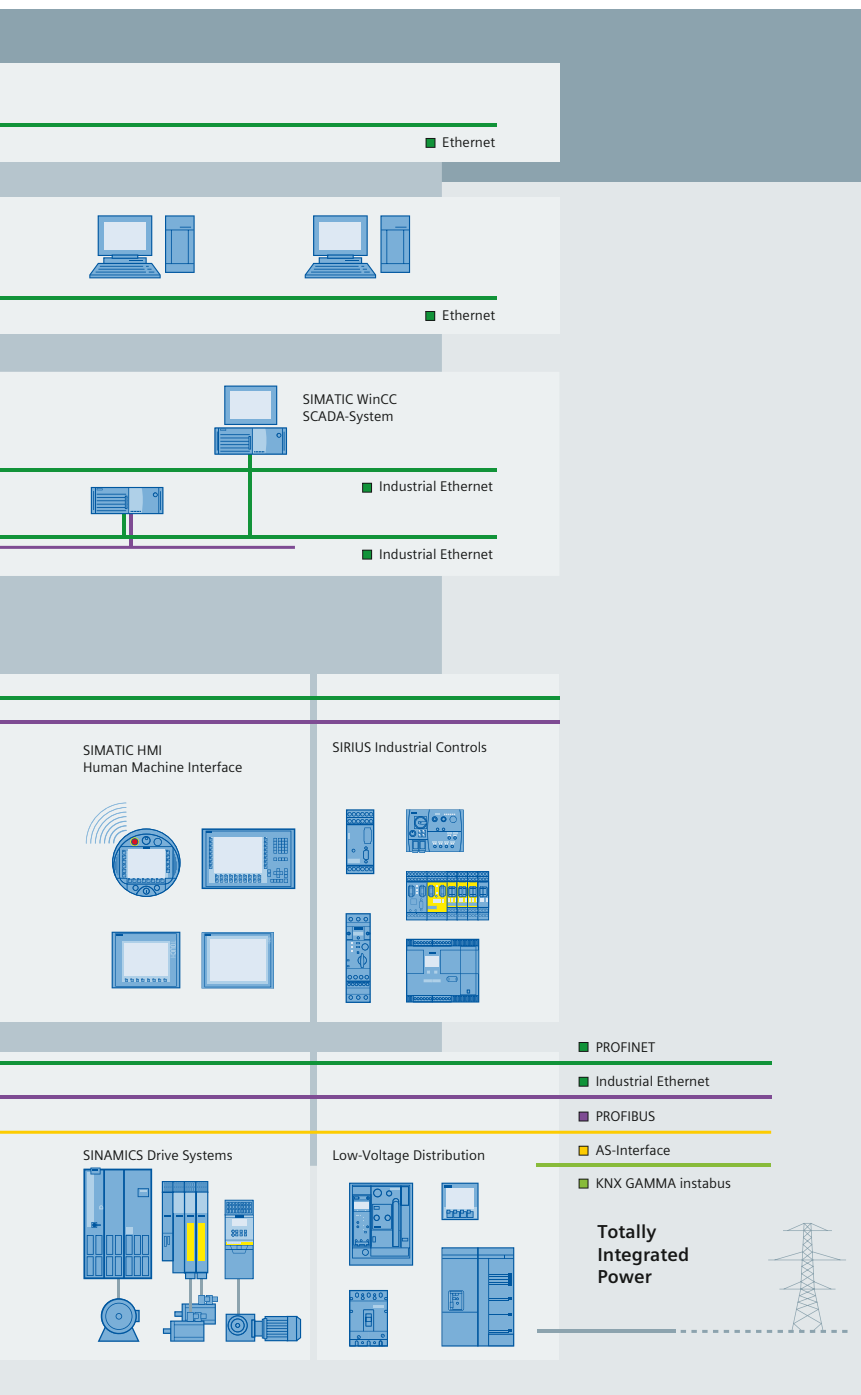
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# Introduction



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# Introduction

## Overview

1

### Overview

In addition to the general technical data, this catalog includes detailed descriptions of the standard versions and the options that can be supplied by specifying order codes. It should be noted that certain order codes and combinations of order codes are not possible for all motor types. Customized solutions can be offered on request.

#### **Order number code**

The Order No. comprises a combination of digits and letters.

For options, the Order No. is supplemented by an additional hyphen and the letter **Z**. In addition, the order codes for the corresponding options must be specified.

Example:

**1LA4 354-4AN60-Z H05 + K16 + L20**

#### Ordering data:

- Complete Order No. and order code(s).
- If a quotation is available, in addition to the Order No., the quotation number should also be specified.
- When ordering a complete motor as a spare part, please specify the factory serial No. of the previously supplied motor as well as the Order No.

**Overview**

The following overview explains the meaning of the individual positions of the Order No. The selection tables in Chapters 2 to 4 include the motors available as standard from this range.

Structure of the Order No.:		Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	Z		
1st to 4th positions: Motor design	<ul style="list-style-type: none"> <li>• Standard version               <ul style="list-style-type: none"> <li>- Self-ventilated</li> <li>- Force ventilated</li> <li>- Water-jacket-cooled</li> </ul> </li> <li>• Explosion-protected version               <ul style="list-style-type: none"> <li>- Ex e</li> <li>- Ex px</li> <li>- Ex nA</li> </ul> </li> </ul>		1	L	A	4													
			1	P	Q	4													
			1	L	H	4													
5th to 6th positions: Shaft height	<ul style="list-style-type: none"> <li>• 315 mm</li> <li>• 355 mm</li> <li>• 400 mm</li> <li>• 450 mm</li> <li>• 500 mm</li> <li>• 560 mm</li> <li>• 630 mm</li> </ul>					3	1												
						3	5												
						4	0												
						4	5												
						5	0												
						5	6												
						6	3												
7th position: Laminated core length	<ul style="list-style-type: none"> <li>• Short</li> <li>• Medium</li> <li>• Long</li> <li>• Extra long</li> </ul>								0										
										2									
											4								
												6							
8th position: Pole number	<ul style="list-style-type: none"> <li>• 2-pole</li> <li>• 4-pole</li> <li>• 6-pole</li> <li>• 8-pole</li> <li>• 10-pole</li> <li>• 12-pole</li> </ul>										2								
												4							
													6						
														8					
															3				
																5			
9th position: Rotor version	<ul style="list-style-type: none"> <li>• Standard aluminum rotor</li> <li>• Special aluminum rotor</li> <li>• Standard copper rotor</li> <li>• Special copper rotor</li> <li>• Special version (CuSi,...)</li> </ul>											A							
													B						
														C					
															D				
															E				
10th position: Character for operation with:	<ul style="list-style-type: none"> <li>• Line supply, low voltage</li> <li>• Line supply, high voltage</li> <li>• LV drive converter</li> <li>• MV drive converter</li> <li>• Converters, others (e.g. Perfect Harmony)</li> </ul>												A						
															N				
																M			
																V			
																W			
11th position: voltage code	<b>Line supply, high voltage:</b>	<b>MV drive converter:</b>	<b>LV drive converter:</b>																
	3.3 kV, 50 Hz	2.3 kV, 50 Hz	690 V, 50 Hz															0	
	6.6 kV, 60 Hz	2.3 kV, 60 Hz	–															1	
	–	3.3 kV, 50 Hz	–															2	
	3.0 kV, 50 Hz	3.3 kV, 60 Hz	–															3	
	4.0 kV, 60 Hz	4.16 kV, 50 Hz	–															4	
	5.0 kV, 50 Hz	4.16 kV, 60 Hz	–															5	
	6.0 kV, 50 Hz	6.0 kV, 50 Hz	–															6	
	6.6 kV, 50 Hz	6.6 kV, 50 Hz	–															7	
	10 kV, 50 Hz	–	–															8	
Other voltage/frequency (additional text data)																	9		
12th position: Type of construction	<ul style="list-style-type: none"> <li>• IM B3</li> <li>• IM V1 with canopy</li> <li>• IM V1 without canopy</li> <li>• IM B35</li> </ul>																	0	
																			4
																			8
																			6
Options: Additional order codes required.																			

# Introduction

## H-compact

### Performance features

1

#### Overview

##### Performance features of the H-compact series

The H-compact series of motors is characterized by:

- Extremely compact design
- Longest lifetime and highest reliability
- Globally proven Siemens MICALASTIC insulation system

- Proven over many years of use in the widest range of sectors
- Wide range of options, that allow the motor to be optimally adapted to customer requirements
- Various cooling concepts for every environment

##### Overview table of the H-compact motor series

Series	Version	Voltages	Powers	Degree of protection	Cooling method	Type of protection	Type of construction
1LA4	IEC	690 V	1150 ... 1650 kW <sup>1)</sup>	IP55	IC411	–	IM B3, IM B35, IM V1
		2.3 ... 11 kV	200 ... 3000 kW <sup>2)</sup>				
1LA4 Standardline	3.0; 3.3; 6.0; 6.6 kV	200 ... 800 kW <sup>3)</sup>	–			IM B3	
1MS4	2.3 ... 11 kV	200 ... 3000 kW <sup>2)</sup>	Ex nA			IM B3, IM B35, IM V1	
1MG4	2.3 ... 11 kV	200 ... 3000 kW <sup>2)</sup>	Ex px				
1MA4	3.4 ... 6.6 kV	170 ... 630 kW <sup>3)</sup>	Ex e				
1PQ4		690 V	1150 ... 1700 kW <sup>1)</sup>		IC416	–	
		2.3 ... 6.6 kV	1180 ... 2950 kW <sup>4)</sup>				
1LH4		690 V	1380 ... 1750 kW <sup>1)</sup>		IC71W	–	
		2.3 ... 6.6 kV	1224 ... 1488 kW <sup>3)</sup>				

#### Cooling method

IC411	Rib-cooled, self-ventilated
IC416	Rib-cooled, force-ventilated
IC71W	Water-jacket-cooled

#### Type of protection

Ex nA	Non-sparking motor, Zone 2
Ex pe	Pressurized motor enclosure, increased safety of the terminal box, Zone 1
Ex e	Increased safety of the motor, Zone 1

#### Degree of protection

IP55	Enclosed, protected against dust and jet-water
------	--

#### Type of construction

IM B3	Horizontal, with feet, without flange
IM B35	Horizontal, with feet, with flange
IM V1	Vertical, without feet, with flange

#### 1LA4 Standardline version

The 1LA4 Standardline motors are self-ventilated, enclosed rib-cooled motors belonging to the H-compact series with a restricted range of options. Due to the fact that there are a restricted number of selectable options, they have significantly shorter delivery times as a result of the simplified order administration and the standardized production process. The compact and rugged design guarantees a high degree of reliability and availability for small frame sizes.

With Standardline, a defined range of motors (pole number, power rating) are available for line operation. See Catalog D 86.1.

<sup>1)</sup> Only for converter operation. Values apply for 50 Hz, 4-pole version, insulation system, thermal class 155 (F), utilized to 155 (F).

<sup>2)</sup> Values apply for 2.3 to 6.6 kV, 50 Hz, 4-pole version, insulation system, thermal class 155 (F), utilized to 130 (B).

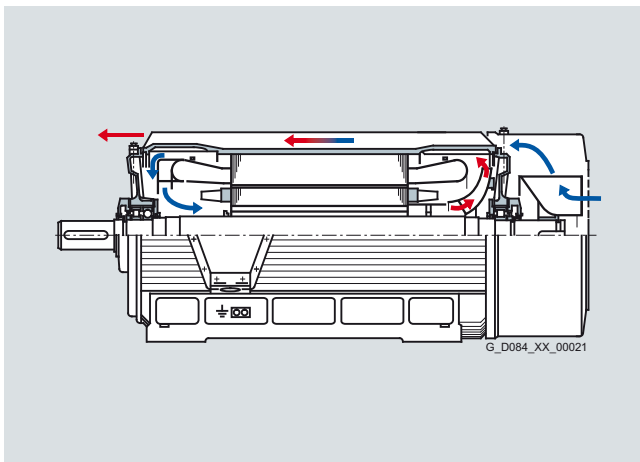
<sup>3)</sup> Values apply for 50 Hz, 4-pole version, insulation system, thermal class 155 (F), utilized to 130 (B).

<sup>4)</sup> Values apply for 6 to 6.6 kV, 50 Hz, 4-pole version, insulation system, thermal class 155 (F), utilized to 155 (F).

**Mode of operation****Self-ventilated, IC411 cooling type, 1LA4, 1MA4, 1MS4, 1MG4 series**

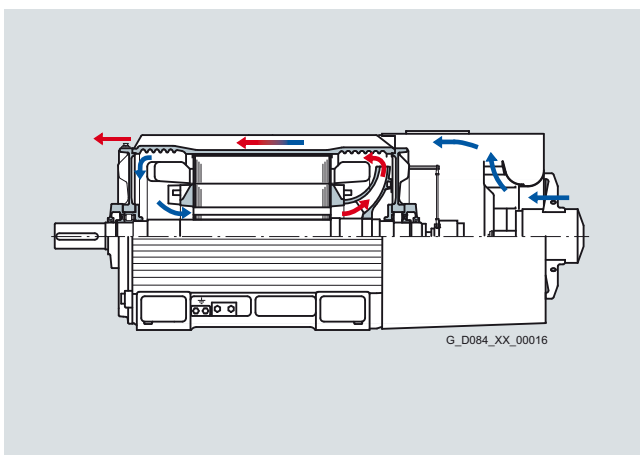
Self-ventilated, rib-cooled motors have a technically sophisticated cooling concept that corresponds to cooling type IC411 according to DIN EN 60034-6/VDE 0530-6 (IEC 60034-6) with an additional, inner cooling air circuit with fan. As can be seen in the diagram, a fan is located at the non-drive end, which draws in the air from outside and blows it axially over the outer cooling ribs of the frame. Heat is exchanged with the inner cooling circuit at this location, which guarantees a uniform temperature distribution in the active motor and bearing areas.

The fan impellers for the inner and outer cooling air flow are mounted on the motor shaft and play a role in achieving the significantly reduced noise level thanks to their optimized aerodynamic design.

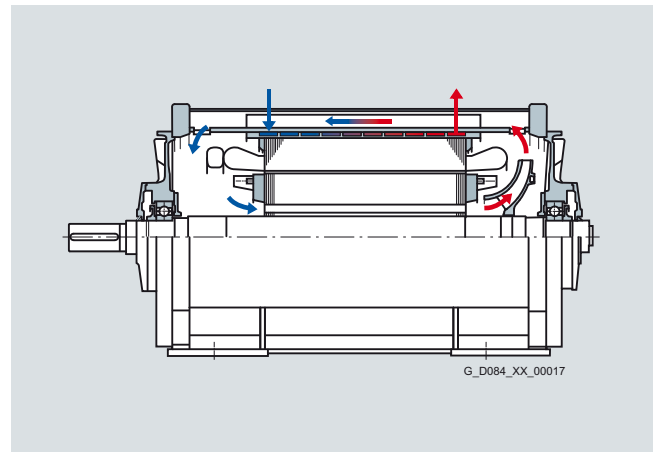
**Force-ventilated, IC416 cooling type, 1PQ4 series**

For the force-ventilated motors, a fan unit is located at the non-drive end, which draws in the air from outside and blows it axially over the outer cooling ribs of the frame. Heat is exchanged with the inner cooling circuit at this location, which guarantees a uniform temperature distribution in the active motor and bearing areas.

The fan impeller for the inner cooling circuit is mounted on the motor shaft and is bidirectional. Further, the outer cooling air flow is generated from a separately-driven fan that guarantees a constant cooling power in every operating state. This means that the motor can always be operated over its complete speed control range and in both directions of rotation.

**Water-jacket-cooled, IC71W cooling type, 1LH4 series**

The water-jacket-cooled motors have a double wall frame jacket with a spiral cooling water duct and, in addition, an inner cooling air circuit. The cooling water inlet is at the drive end, the outlet is at the non-drive end. Intensive heat exchange takes place through the cooling water. The inner air cooling circuit guarantees a uniform temperature distribution in the active motor and bearing areas.



# Introduction

## H-compact PLUS

### Order number code

1

#### Overview

The following overview explains the meaning of the individual positions of the Order No. The selection tables in Parts 2 to 4 include the motors available as standard from this range.

Structure of the Order No.:	Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	Z
1st to 4th position: Motor version	<b>Standard version</b>															
	<b>Degree of protection/cooling</b>															
	<b>IEC</b>															
	<b>NEMA</b>															
	Open-circuit ventilated	1	R	A	4											
	Air/air cooling	1	R	Q	4											
	Air/water cooling	1	R	N	4											
	Open-circuit ventilated	1	R	A	6											
	Open-circuit ventilated	1	R	P	6											
	Air/air cooling	1	R	Q	6											
	Air/water cooling	1	R	N	6											
	<b>Ex e version</b>															
	Air/air cooling	1	S	J	4											
	Air/water cooling	1	S	N	4											
	Air/air cooling	1	S	J	6											
	Air/water cooling	1	S	N	6											
	<b>Ex nA version</b>															
	Air/air cooling	1	S	G	4											
	Air/water cooling	1	S	L	4											
	Air/air cooling	1	S	G	6											
	Air/water cooling	1	S	L	6											
	<b>Ex px version</b>															
	Air/air cooling	1	S	B	4											
	Air/water cooling	1	S	Q	4											
	Air/air cooling	1	S	B	6											
	Air/water cooling	1	S	Q	6											
5th to 6th position: Shaft height	• 450 mm					4	5									
	• 500 mm					5	0									
	• 560 mm					5	6									
	• 630 mm					6	3									
	• 710 mm					7	1									
7th position: Laminated core length	The laminated core length is coded in digits 0 to 9 (without fixed assignment)															

## Order number code

1

**Overview (continued)**

Structure of the Order No.:	Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	Z		
8th position: Pole number	<ul style="list-style-type: none"> <li>• 2-pole</li> <li>• 4-pole</li> <li>• 6-pole</li> <li>• 8-pole</li> <li>• 10-pole</li> <li>• 12-pole</li> <li>• 14-pole</li> <li>• 16-pole</li> </ul>										2							
												4						
													6					
													8					
													3					
													5					
													7					
													9					
9th position: Cooling method for:	<b>IEC version:</b>	<b>Cooling method:</b>																
	<ul style="list-style-type: none"> <li>• With shaft-mounted fan (basic version) or shaft-mounted fan for the inner and separately-driven fan for the outer cooling circuit</li> </ul>	<ul style="list-style-type: none"> <li>IC01/IC81W</li> <li>IC616</li> </ul>										H						
	<ul style="list-style-type: none"> <li>• With shaft-mounted fan for the inner and outer cooling circuits</li> </ul>	<ul style="list-style-type: none"> <li>IC611</li> </ul>										H						
	<ul style="list-style-type: none"> <li>• With separately-driven fan for the inner or for the inner and outer cooling circuits</li> </ul>	<ul style="list-style-type: none"> <li>IC86W/IC666</li> </ul>										J						
	<b>NEMA version (only available for 1R.6 motors)</b>	<b>Cooling method:</b>																
	<ul style="list-style-type: none"> <li>• With separately-driven fan for the inner and outer cooling circuits</li> </ul>	<ul style="list-style-type: none"> <li>TEAAC</li> </ul>										F						
	<ul style="list-style-type: none"> <li>• With shaft-mounted fan</li> </ul>	<ul style="list-style-type: none"> <li>WP11 or TEWAC</li> </ul>										A						
	<ul style="list-style-type: none"> <li>• With shaft-mounted fan for the inner and separately-drive fan for the outer cooling circuit</li> </ul>	<ul style="list-style-type: none"> <li>TEAAC</li> </ul>										B						
<ul style="list-style-type: none"> <li>• With shaft-mounted fan for the inner and outer cooling circuits</li> </ul>	<ul style="list-style-type: none"> <li>TEAAC</li> </ul>										B							
<ul style="list-style-type: none"> <li>• With shaft-mounted fan for the inner and outer cooling circuits</li> </ul>	<ul style="list-style-type: none"> <li>TEAAC</li> </ul>										C							
10th position: Rotor version or drive converter type	<b>Line operation</b>	<b>Letter</b>	<b>Converter operation</b>			<b>Letter</b>												
	1R.4: Standard rotor with E-Cu	<b>E</b>	1R.4: MV drive converter			<b>V</b>												
	1R.4: Standard rotor with Si-Cu	<b>S</b>	1R.4: LV drive converter			<b>M</b>												
	1R.6: Standard rotor with E-Cu	<b>JKL</b> (power-dependent)	1R.6: LV drive converter; copper rotor			<b>PQR</b> (power-dependent)												
	1R.6: Standard rotor with Si-Cu	<b>MN</b> (power-dependent)	1R.6: MV drive converter; copper rotor			<b>STU</b> (power-dependent)												
	1R.4 and 1R.6: Special rotor with E-Cu	<b>X</b>																
	1R.4 and 1R.6: Special rotor with Si-Cu	<b>Y</b>																
11th position: Voltage code	<b>1R.4: Line operation:</b>	<b>1R.4: Operation with MV drive converter:</b>	<b>1R.4: Operation with LV drive converter</b>	<b>1R.6: Line and converter operation (high voltage)</b>	<b>1R.6: Line and converter operation (low voltage)</b>													
	3.3 kV, 50 Hz	2.3 kV, 50 Hz	690 V, 50 Hz, on request	3.3 kV, 50 Hz	690 V	0												
	6.6 kV, 60 Hz	2.3 kV, 60 Hz	-	6.6 kV, 60 Hz	-	1												
	-	3.3 kV, 50 Hz	-	13.2 kV, 60 Hz	-	2												
	3.0 kV, 50 Hz	3.3 kV, 60 Hz	-	4.16 kV, 60 Hz	-	3												
	4.0 kV, 60 Hz	4.16 kV, 50 Hz	-	4.0 kV, 60 Hz	-	4												
	5.0 kV, 50 Hz	4.16 kV, 60 Hz	-	2.3 kV, 60 Hz	-	5												
	6.0 kV, 50 Hz	6.0 kV, 50 Hz	-	6.0 kV, 50 Hz	-	6												
	6.6 kV, 50 Hz	6.6 kV, 50 Hz	-	6.6 kV, 50 Hz	-	7												
	10 kV, 50 Hz	-	-	10 kV, 50 Hz	-	8												
	Other voltage/frequency (additional text data)						9											
	12th position: Type of construction	<ul style="list-style-type: none"> <li>• IM B3</li> </ul>															0	
<ul style="list-style-type: none"> <li>• IM V1 with canopy (for shaft height 630 mm, only in type of construction IM V10)</li> </ul>															4			
<ul style="list-style-type: none"> <li>• IM V1 without canopy (for shaft height 630 mm, only in type of construction IM V10)</li> </ul>															8			
Options: Additional order code required. Refer to section Options and tests in Chapter 2, Chapter 3 and Chapter 4.																		

# Introduction

## H-compact PLUS

### Performance features

1

#### Overview

##### Performance features of the H compact PLUS series

The motors from the H-compact PLUS series have a modular design (basic enclosure and cover).

This means that the following cooling methods can be implemented:

- Air/water cooling
- Air/air cooling
- Open-circuit cooling

The new 1R.6/1S.6 series are the second generation of the H-compact PLUS motors. They offer higher power ratings (for two-pole motors), permit a higher external moment of inertia, sport an innovative design as well as an extended range of options.

##### Overview table of the H-compact PLUS motor series

Series	Version	Voltages	Powers	Degree of protection	Cooling method	Type of protection	Type of construction
1RA4	IEC	690 V	On request	IP23	IC01	–	IM B3 IM V1 (not for shaft height 630 mm; this shaft height only in type of construction IM V10)
		2.3 ... 13.8 kV	1.32 ... 7.1 MW <sup>1)</sup>				
1RN4	IEC	690 V	On request	IP55	IC81W	–	
		2.3 ... 13.8 kV	1.32 ... 7.1 MW <sup>1)</sup>				
1RQ4	IEC	690 V	On request	IP55	IC611/IC616	–	
		2.3 ... 13.8 kV	1.12 ... 5.8 MW <sup>1)</sup>				
1SG4	IEC	690 V	On request	IP55	IC611/IC616	Ex nA	
		2.3 ... 13.8 kV	1.12 ... 5.8 MW <sup>1)</sup>				
1SL4	IEC	690 V	On request	IP55	IC81W	Ex nA	
		2.3 ... 13.8 kV	1.32 ... 7.1 MW <sup>1)</sup>				
1SB4	IEC	690 V	On request	IP55	IC611/IC616	Ex px	
		2.3 ... 13.8 kV	1.12 ... 5.8 MW <sup>1)</sup>				
1SQ4	IEC	690 V	On request	IP55	IC81W	Ex px	
		2.3 ... 13.8 kV	1.32 ... 7.1 MW <sup>1)</sup>				
1SJ4	IEC	On request	On request	IP55	IC611/IC616	Ex e	
1SN4	IEC	On request	On request	IP55	IC81W	Ex e	
1RA6	IEC	3.3 ... 11 kV	1.37 ... 1.86 MW <sup>1)</sup>	IP23	IC01	–	IM B3 IM V1
1RP6	IEC	3.3 ... 13.8 kV	7.6 ... 11.7 MW <sup>1)</sup>	IP24W	IC01	–	
	NEMA		11000 ... 18000 hp <sup>2)</sup>	WPII	open	–	
1RN6	IEC	3.3 ... 13.8 kV	7.6 ... 11.7 MW <sup>1)</sup>	IP55	IC81W	–	
	NEMA		11000 ... 18000 hp <sup>2)</sup>	TEWAC	air/water	–	
1RQ6	IEC	3.3 ... 13.8 kV	6.1 ... 8.7 MW <sup>1)</sup>	IP55	IC611/IC616	–	
	NEMA		10000 ... 13000 hp <sup>2)</sup>	TEAAC	air/air	–	
1SG6	IEC	3.3 ... 13.8 kV	6.1 ... 8.7 MW <sup>1)</sup>	IP55	IC611/IC616	Ex nA	
	NEMA (NEC)		10000 ... 13000 hp <sup>2)</sup>	TEAAC	air/air	Class 1, Div 2	
1SL6	IEC	3.3 ... 13.8 kV	7.6 ... 11.7 MW <sup>1)</sup>	IP55	IC81W	Ex n	
	NEMA (NEC)		11000 ... 18000 hp <sup>2)</sup>	TEWAC	air/water	Class 1, Div 2	
1SB6	IEC	3.3 ... 13.8 kV	6.1 ... 8.7 MW <sup>1)</sup>	IP55	IC611/IC616	Ex px	
1SQ6	IEC	3.3 ... 13.8 kV	7.6 ... 11.7 MW <sup>1)</sup>	IP55	IC81W	Ex px	
1SJ6	IEC	On request	On request	IP55	IC611/IC616	Ex e	
1SN6	IEC	On request	On request	IP55	IC81W	Ex e	

<sup>1)</sup> Values apply for 6 kV, 50 Hz, 4-pole version, insulation system, thermal class 155 (F), utilized to 130 (B).

<sup>2)</sup> Values apply for 6.6 kV, 60 Hz, 4-pole version, insulation system, thermal class 155 (F), utilized to 130 (B).

**Overview** (continued)

<b>Cooling method</b>	
IC01	Air-cooled, self-ventilated
IC81W	Air/water cooler, inner cooling circuit self-ventilated
IC86W	Air/water cooler, inner cooling circuit force-ventilated
IC611	Air/air cooler, inner cooling circuit self-ventilated, outer cooling circuit
IC616	Air/air cooler, inner cooling circuit self-ventilated, outer cooling circuit
IC666	Air/air cooler, inner cooling circuit force-ventilated, outer cooling circuit force-ventilated
TEWAC	Closed motor with air/water cooler
TEAAC	Closed motor with air/air cooler
<b>Type of protection</b>	
Ex nA	Non-sparking motor, Zone 2
Ex px	Pressurized motor enclosure, increased safety of the terminal box, Zone 1
Class1, Div 2	Non-sparking motor

<b>Degree of protection</b>	
IP23	Protected against the ingress of solid foreign bodies with a diameter greater than 12 mm and water spray
IP24W	Protected against the ingress of solid foreign bodies with a diameter greater than 12 mm and splashwater. Weather-protected version.
IP55	Protected against dust and jet-water
WP11	Weather-protected motor with air intake baffles
TEWAC	Closed motor with air/water cooler
TEAAC	Closed motor with air/air cooler
<b>Type of construction</b>	
IM B3	Horizontal, with feet, without flange
IM V1	Vertical, without feet, with flanged bearing shield
IM V10	Vertical, without feet, with flange at the enclosure

# Introduction

## H-compact PLUS

### Cooling concepts

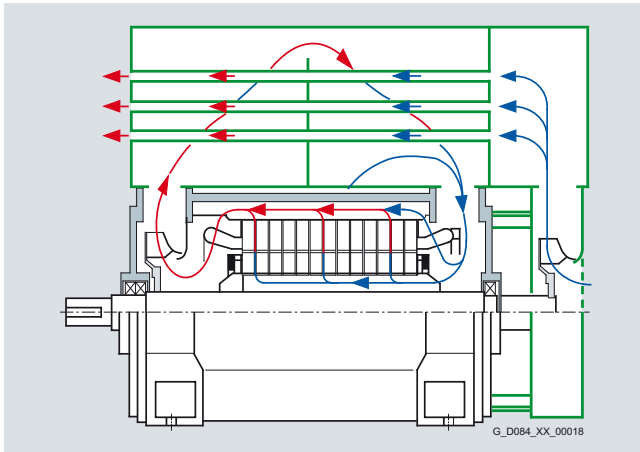
1

#### Mode of operation

The following diagrams show the general mode of operation of the cooling. They do not include any design details.

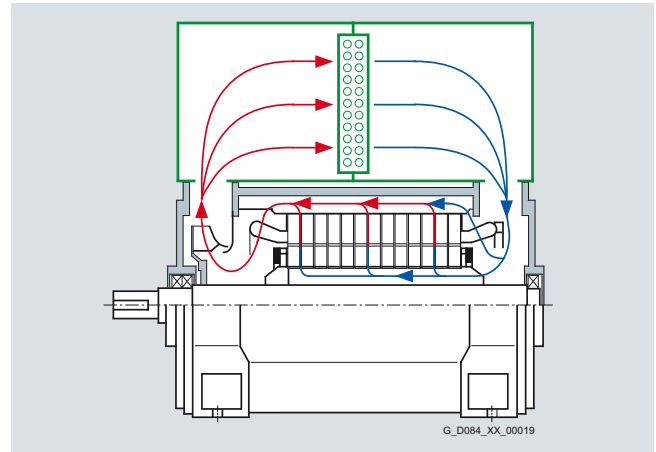
#### **Air/air heat exchanger (IC611)**

1RQ. series with one-sided ventilation (Z ventilation)

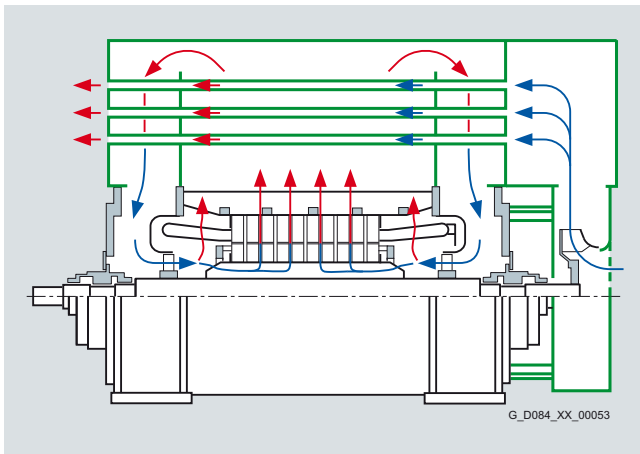


#### **Air/air heat exchanger (IC81W)**

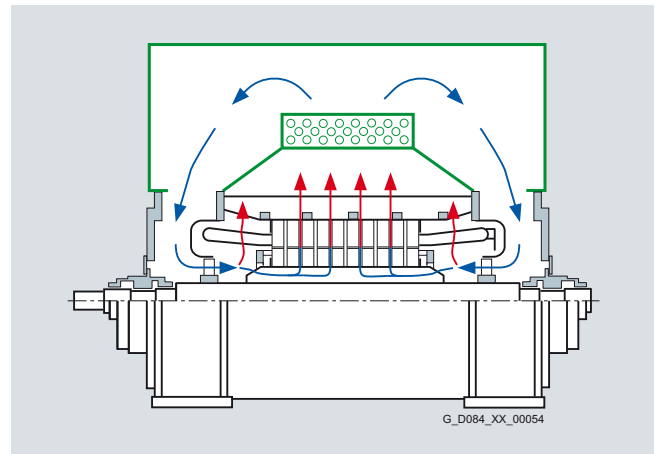
1RN. series with one-sided ventilation (Z ventilation)

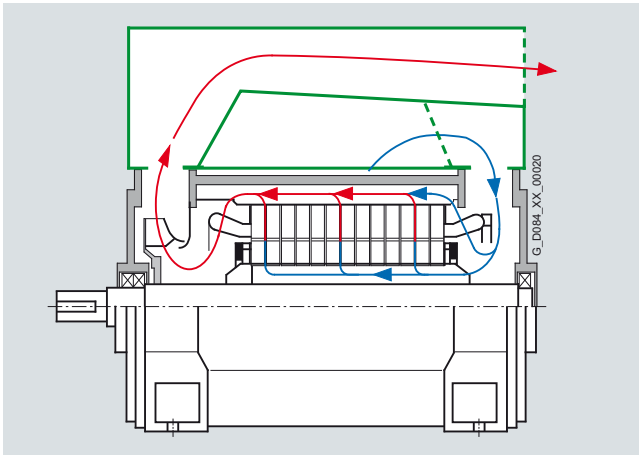
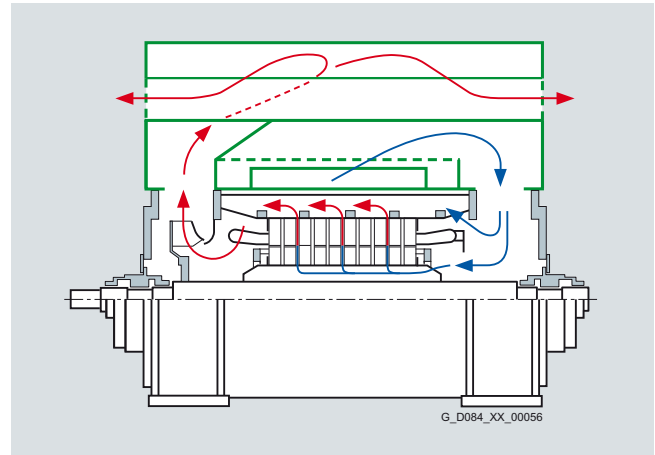
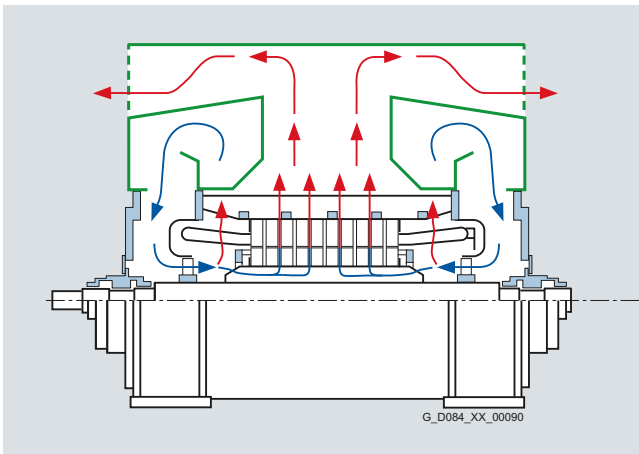
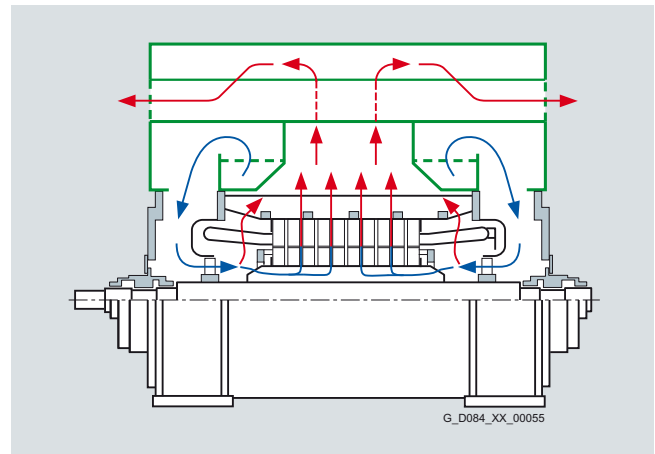


1RQ. series with two-sided ventilation (X ventilation)



1RN. series with two-sided ventilation (X ventilation)



**Mode of operation** (continued)**Open-circuit ventilation (IC01)**1RA. series with one-sided ventilation (Z ventilation)1RP. series with one-sided ventilation (Z ventilation)1RA. series with two-sided ventilation (X ventilation)1RP. series with two-sided ventilation (X ventilation)

# Introduction

## Vario and Vario PLUS

### Vario and Vario PLUS motor series

1

#### Overview



Motor of the Vario series

#### **Vario**

For applications with rib or water-jacket cooled motors and an extended range of options or special requirements on project management, the Vario series of motors is available on request.

They have the following performance features:

- High degree of variability as a result of the welded steel enclosure (dimensions can be adapted, instrumentation, bearing concepts)
- Flexible production processes and customized documentation
- High-pole machines up to 16-pole, higher pole numbers are available on request
- Anti-corrosion protection using special paint finishes according to the manufacturers standard or customer specifications
- Water-jacket cooling IC71W in the extended power range with up to 60 % higher power density; compact and quiet, admirably suited for converter operation with constant load torque and wide field-weakening range
- Optimized starting and operating parameters, coordinated and harmonized to meet customer applications
- Complies with almost all application requirements and specifications
- High degree of sector-specific adaptation options
- For safe area applications and types of protection Ex n, Ex p and Ex d in rib and water-jacket cooled versions
- Low-voltage and high-voltage versions up to 11 kV



Vario PLUS motor in a water-cooled version (cooling type IC81W)

#### **Vario PLUS**

For applications with modular-cooled motors and an extended range of options or special requirements on project management, the Vario PLUS series of motors is available on request.

They have the following performance features:

- High degree of variability as a result of the platform-based enclosure (dimensions can be adapted, mounted components)
- Customized machines, also for special installation locations and applications
- Flexible production processes and customized documentation
- High-pole machines up to 16-pole, higher pole numbers are available on request
- Anti-corrosion protection using special paint finishes according to the manufacturers standard or customer specifications
- Widest range of connection systems fulfill special requirements (e.g. requirements relating to short-circuit strength, cable cross-sections, phase-segregated version)
- Optimized starting and operating parameters, coordinated and harmonized to meet customer applications
- Complies with almost all application requirements and specifications
- High degree of sector-specific adaptation options
- For safe area applications and types of protection Ex n and Ex p in special versions
- Low-voltage and high-voltage versions up to 11 kV

**Overview****Motor protection**

A series of standard and optional monitoring and protective devices are available for motor protection.

Protective device	Description
Stator winding monitoring	6 PT100 resistance thermometers for temperature monitoring as standard.
Roller bearing monitoring	Measuring nipple for shock pulse measurement as standard. Optional PT100 resistance thermometer for temperature monitoring.
Sleeve bearing monitoring	Optional PT100 resistance thermometer for temperature monitoring. Optional for circulating oil cooling: Throttle valves, manometer and flowmeter in the oil intake line. Optional holes in the oil discharge line to mount a thermometer or a sight glass to monitor the oil flow.
Shaft vibration monitoring	Optional for motors with sleeve bearings.
Air temperature monitoring in the cooling circuit	Optional using a thermometer in the cooler assembly on the air intake and air discharge side for H-compact PLUS motors.
Leakage water monitoring	Optional using sensors in the cooler housing for water-cooled H-compact PLUS motors
Starting and speed monitoring	Optional rotary pulse encoder for motors for converter operation.
Anti-condensation heating	Standard for H-compact PLUS motors. Optional for H-compact motors.

**Electrical design**

High voltage motors have the Siemens MICALASTIC insulation system according to thermal class 155 (F).

The rotor windings of H-compact motors are manufactured out of die cast aluminum or copper:

Shaft height mm	Rotor design with number of poles					
	2	4	6	8	10	12
315	Al	Al	Al	–	–	–
355	Al	Al	Al	Al	–	–
400	Al	Al	Al	Al	–	–
450	Cu	Al/Cu	Al	Al	Al	Cu
500	Cu	Al	Cu	Cu	Cu	Cu
560	Cu	Cu	Cu	Cu	Cu	Cu
630	Cu	Cu	Cu	Cu	Cu	Cu

H-compact PLUS motors always have copper rotors.

**Motor connection and terminal boxes for high voltage motors**

The motor terminal boxes are generously dimensioned. This design allows plastic cables, which are generally used worldwide, to be simply and quickly connected up as well as to accommodate all of the generally used cable entry fittings.

Arrangement of the motor terminal box (standard version):

When viewing the drive side, the motor terminal box is mounted at the righthand side of the stator frame with cable entry from the bottom. When requested, it can be mounted on the lefthand side. However, it must be specified when ordering. When requested, the terminal box can be mounted, rotated through 90° or through 180° if the spatial situation at the machine permits this (except for terminal boxes with cast cable entry glands).

Terminal arrangement according to DIN 42962.

Degree of protection of the motor terminal box: IP55, IP56, IP66 – depending on the terminal box type (refer to the table).

The motor terminal boxes comprise a lower section or housing, bolted to the stator frame, and a removable cover. The 1XA8711, 1XB8911 and 1XB8751 terminal boxes that are normally used have bushings manufactured out of casting resin. All of the other terminal boxes have cast-resin post insulators with bolted bus-bars (exception: cable connector connection).

All motor terminal boxes are short-circuit proof. If a short-circuit occurs in the motor, all of the forces generated by the short-circuit current are reliably handled by the components in the terminal box (e.g. cast-resin post insulators).

Further, all motor terminal boxes are short-circuit proof. If arcs occur in the motor terminal box, the pressure generated is immediately dissipated using a pressure relief mechanism.

Short-circuit strength and short-circuit proof of the motor terminal boxes used as standard:

- 400 MVA at 6 kV; 0.2 s
- 700 MVA at 10 kV; 0.2 s

These values correspond to a rated peak withstand current of approx. 100 kA.

Motor connecting cable and cable entry fittings are not supplied with the motor.

# Introduction

## General technical versions

### Motor terminal boxes

1

#### Overview

##### Overview of the generally used motor terminal boxes

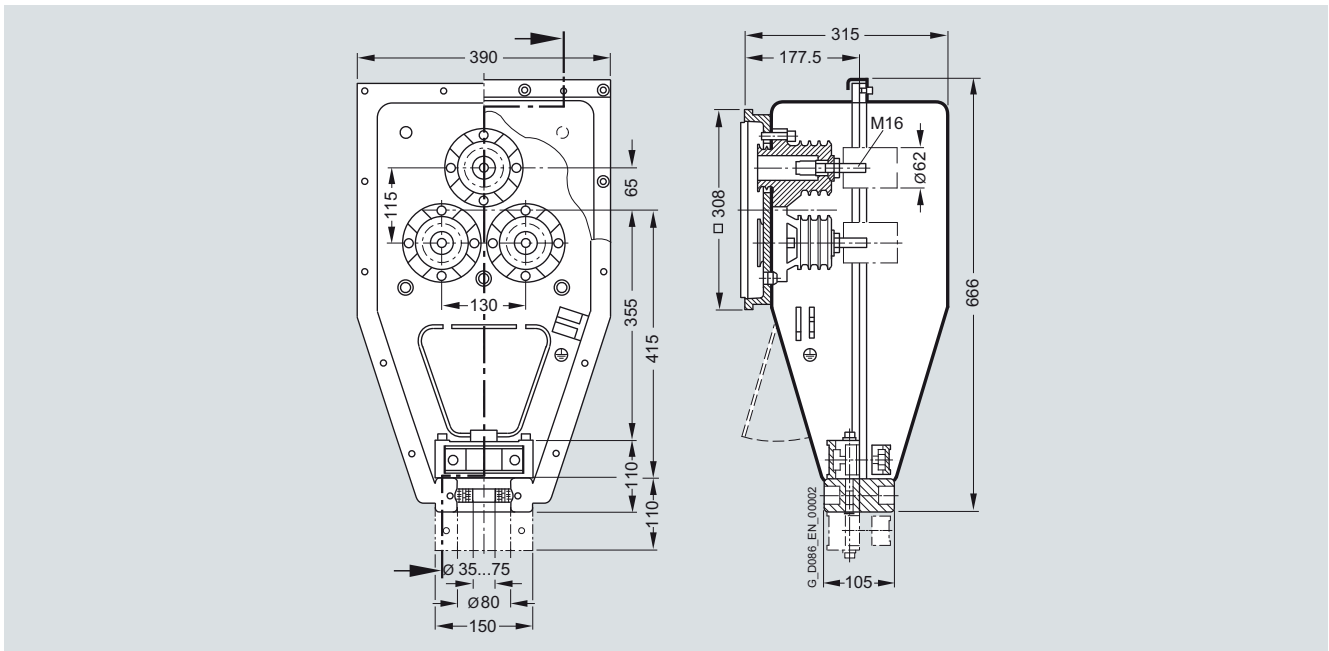
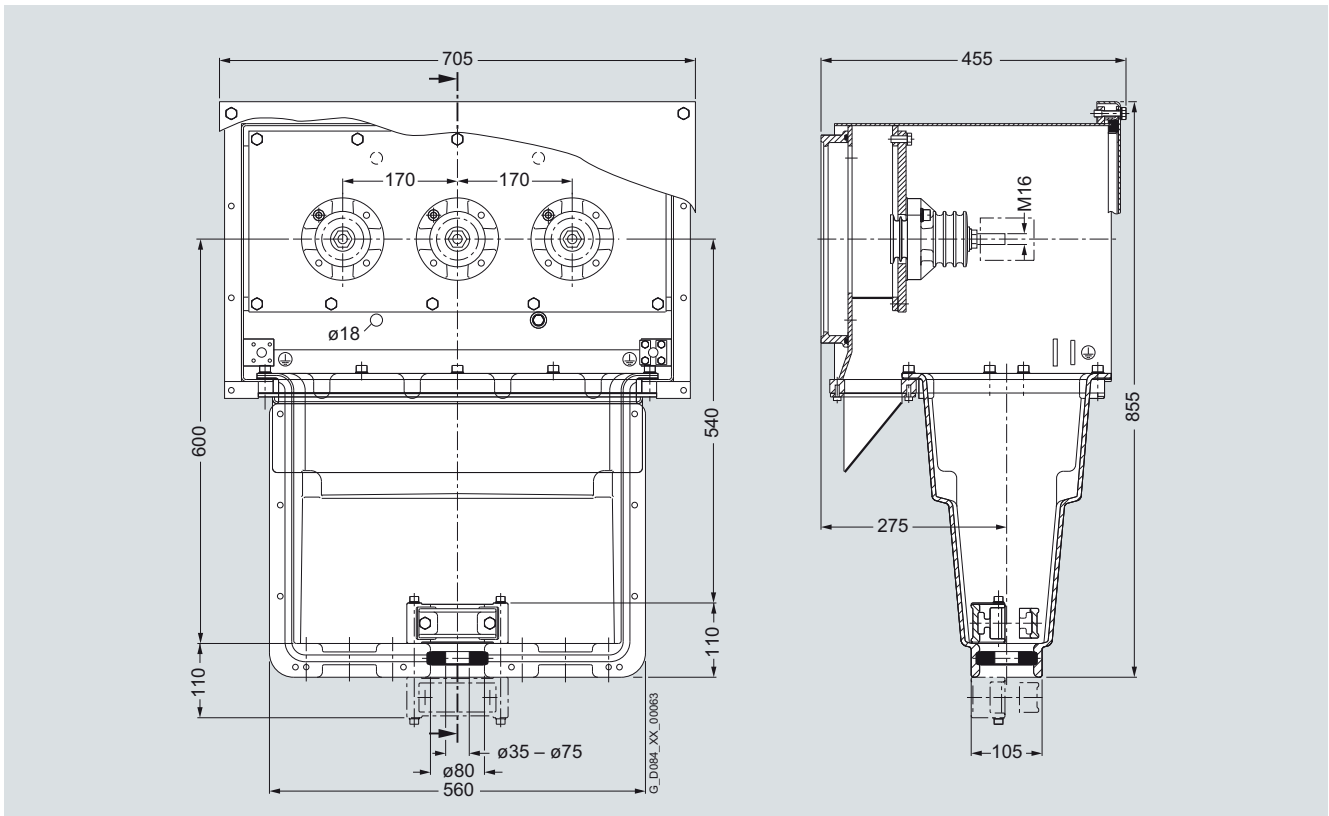
Terminal box	Rated voltage kV	Current A	Cable entries Number	Cable entry diameter, max. mm
<b>1XB1 631</b>	1	1230	4	75
<b>1XA8 711</b>	6.6	315	1	75
<b>1XB8 751</b>	6.6	630 (for parallel connection)	2	75
<b>1XB8 911</b>	11	315	1	75
<b>1XD1 543-3AA</b>	11	1200	–	–
<b>1XD1 643-3AA</b>	13.2	800	–	–

Cable connector connection on request.

##### Connection options

Terminal box	Terminal element	Number of cables	Cable cross-section (Cu or Al), max. that can be introduced mm <sup>2</sup>	Weight kg	Degree of protection to DIN EN 60529
<b>1XB1 631</b>	Cable lug	4 cables, 3-conductor	240	83	IP55
<b>1XA8 711</b>	Connecting terminal on M16 studs Connection with cable lug and two hexagon nuts	1 cable, 3-conductor	1 x 3 x 240	42	IP66
<b>1XB8 751</b>	Connecting terminal on M16 studs Connection with cable lug and two hexagon nuts	2 cables, 3-conductor	2 x 3 x 240	131	IP56
<b>1XB8 911</b>	Connecting terminal on M16 studs Connection with cable lug and two hexagon nuts	1 cable, 3-conductor	1 x 3 x 240	93	IP56
<b>1XD1 543-3AA</b>	Cable lug on busbar	6 cables, 1-conductor	300	230	IP55
<b>1XD1 643-3AA</b>	Cable lug on busbar	4 cables, 1-conductor	300	500	IP55

## Dimension drawings

**Terminal box type 1XA8 711 (up to 6.6 kV, 3 terminals)****Terminal box type 1XB8 911 (up to 11 kV)**

# Introduction

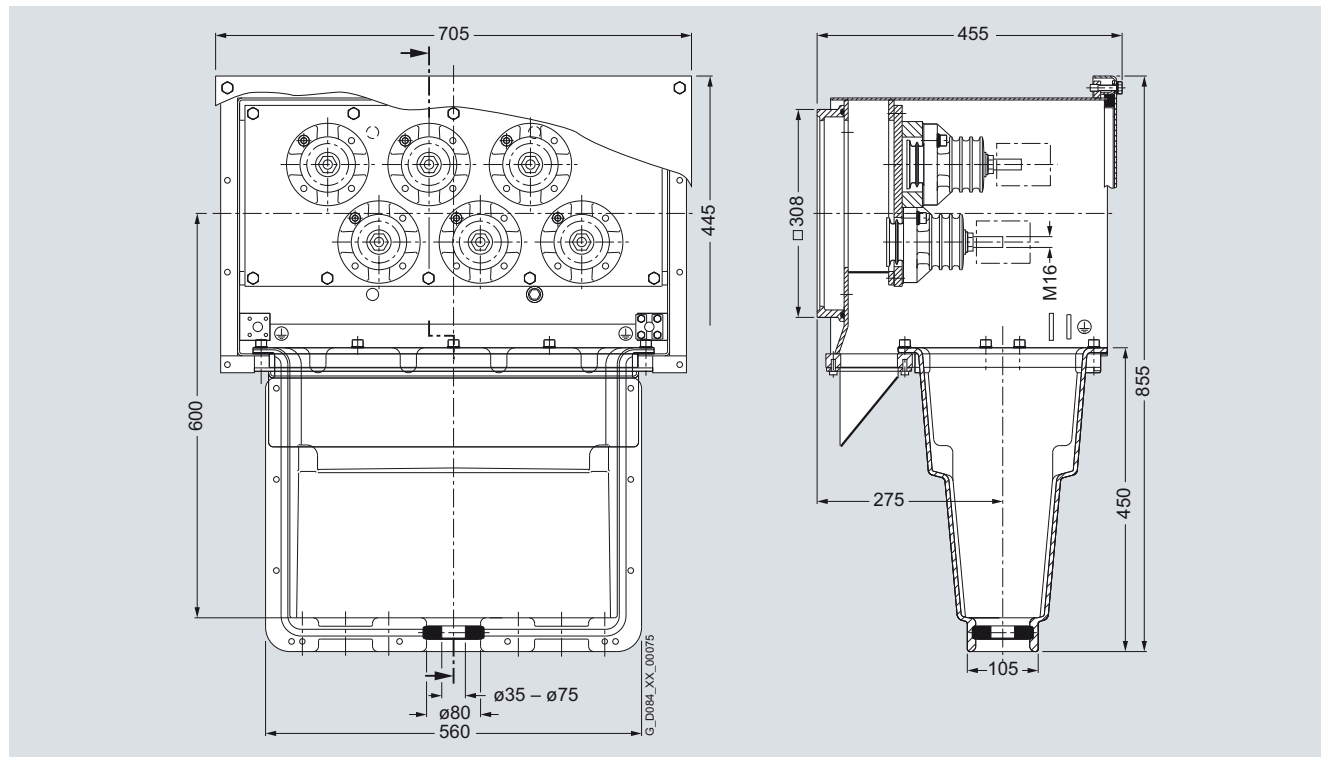
## General technical versions

### Motor terminal boxes

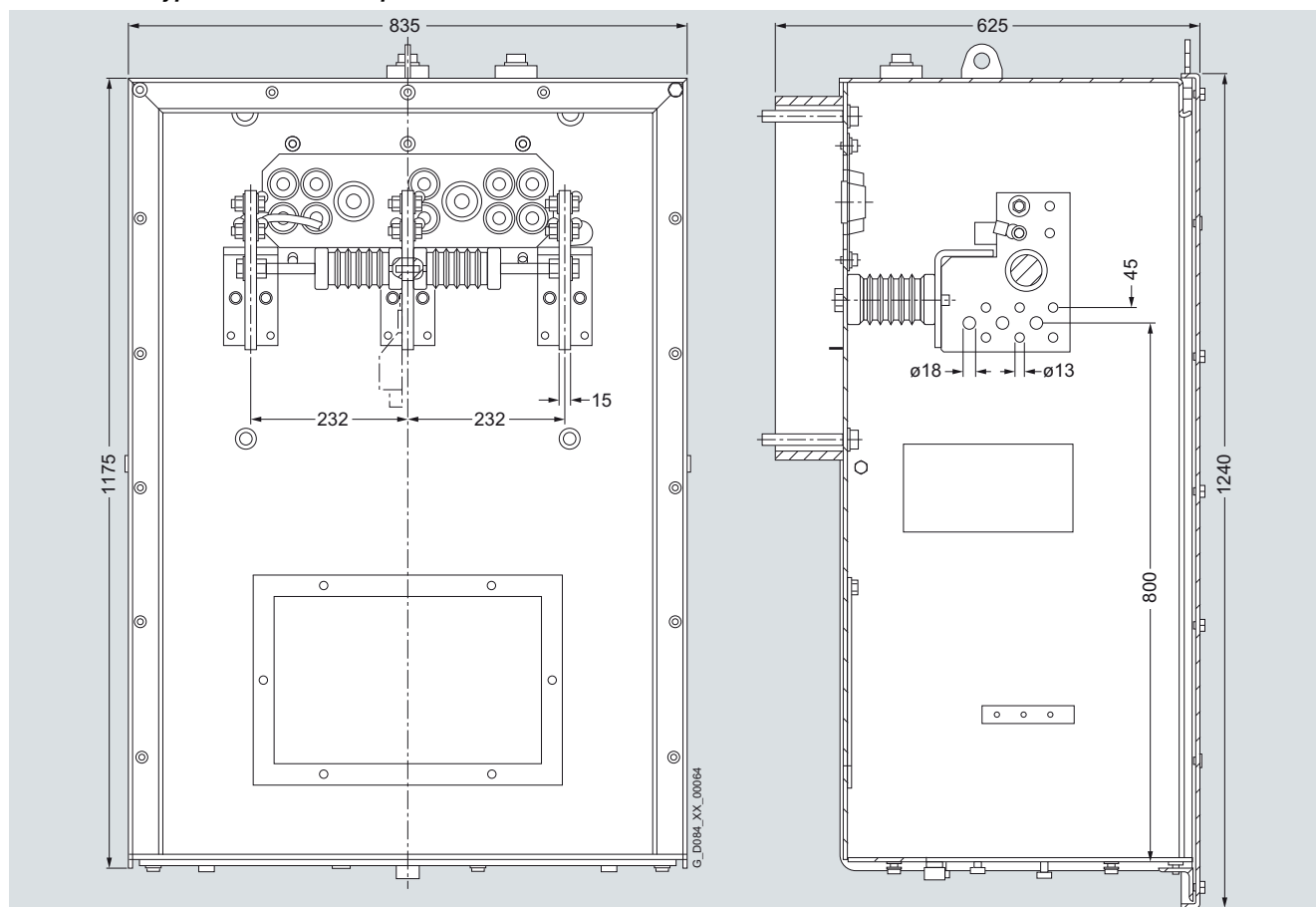
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#### Dimension drawings (continued)

#### Terminal box type 1XB8 751 (up to 6.6 kV, 6 terminals)

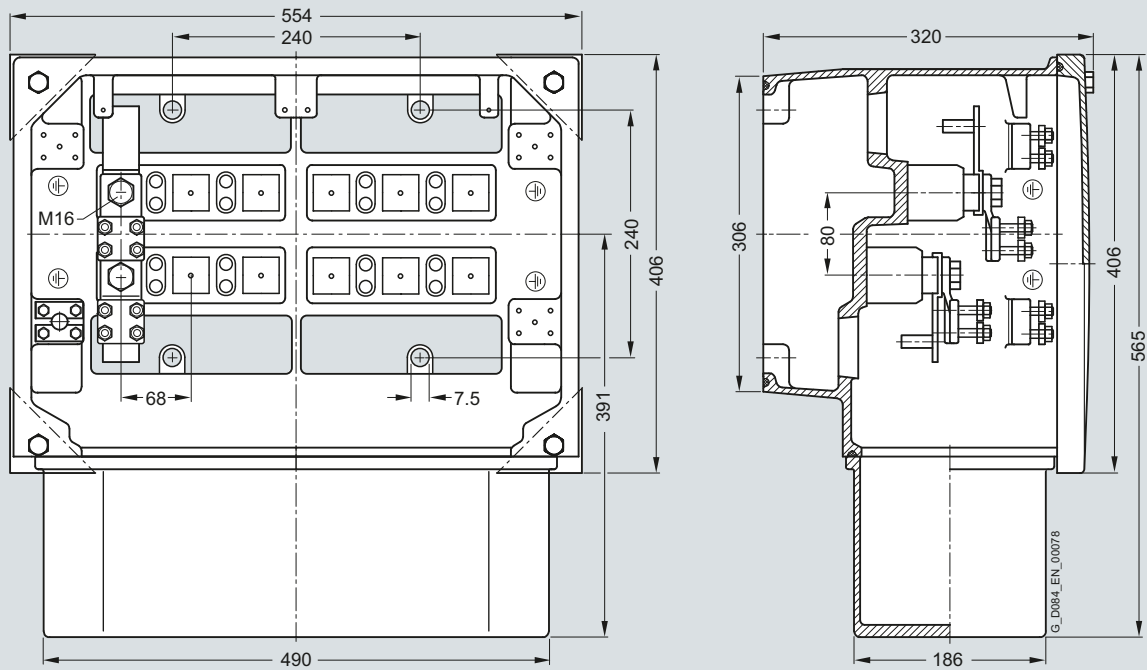


#### Terminal box type 1XD1 543-3AA up to 11 kV IEC and 6.6 kV NEMA



#### Dimension drawings (continued)

#### Terminal box type 1XB1 631 (up to 1 kV, 12 terminals)



# Introduction

## General technical versions

### Motor terminal boxes

1

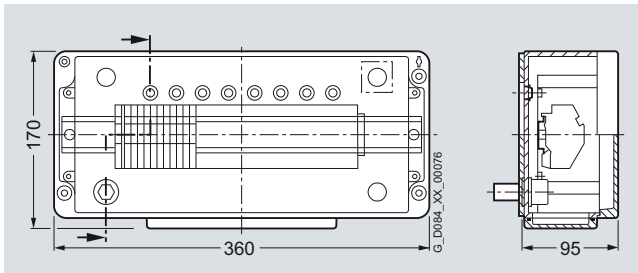
#### Dimension drawings (continued)

##### **Neutral point terminal box**

The motor terminal box is also used to form the neutral point of winding ends.

##### **Auxiliary terminal box to connect monitoring elements, anti-condensation heating**

The standard version 1XB9 014 comprises an aluminum enclosure. Max. cable cross-section that can be connected, 4 mm<sup>2</sup>.



Terminal boxes manufactured out of cast iron (1XB9 016) and stainless steel (1XB9 015) can be optionally ordered.

**Overview****Bearing version**

Motors for connection to the line supply have roller bearings or sleeve bearings as standard according to the following overview.

The bearing concepts for motors for converter operation depend on the speed control range.

**Overview, bearing versions**

Motor type	Bearing version						IM V1 <sup>2)</sup>
	IM B3, IM B35 <sup>1)</sup>		Number of poles 4		Number of poles ≥ 6		
	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	
1LA4/1M.4 31.	Roller bearings (sleeve bearings optional)	Roller bearings (sleeve bearings optional)	Roller bearings (sleeve bearings optional)	Roller bearings (sleeve bearings optional)	Roller bearings (sleeve bearings not available)	Roller bearings (sleeve bearings not available)	Roller bearings (sleeve bearings not available)
1LA4/1M.4 35.							
1LA4/1M.4 40.	Sleeve bearing	Sleeve bearing			Roller bearings (sleeve bearings optional)	Roller bearings (sleeve bearings optional)	
1LA4/1M.4 45.							
1LA4/1M.4 50.							
1LA4/1M.4 56.							
1LA4 63.	Not available	Not available		Sleeve bearing			
1R.6/1S.6 45.	Roller bearings (sleeve bearings optional)	Sleeve bearing	Roller bearings (sleeve bearings optional)	Roller bearings (sleeve bearings optional)	Roller bearings (sleeve bearings optional)	Roller bearings (sleeve bearings optional)	Roller bearings (sleeve bearings not available)
1R.4/1S.4 50.							
1R.4/1S.4 56.	Sleeve bearing			Sleeve bearing			
1R.4/1S.4 63.							
1R.6/1S.6 71.							

**Assignment, type of construction and roller bearing type**

Motor series	Type of construction	Shaft height mm	Drive end	Non-drive end
1LA4/1M.4	IM B3	315 ... 450	Deep-groove ball bearings (locating bearing)	Deep-groove ball bearings (floating bearing)
		500 ... 560 (converter version)	Deep-groove ball bearings (locating bearing)	Deep-groove ball bearings (floating bearing)
		500 ... 560 (line version)	Twin bearings: Deep-groove ball bearing and cylindrical-roller bearing (locating bearing)	Cylindrical-roller bearings (floating bearing)
		630	Twin bearings: Deep-groove ball bearing and cylindrical-roller bearing (locating bearing)	Cylindrical-roller bearings (floating bearing)
	IM V1	315 ... 560	Double bearings: Deep-groove ball bearings and angular-contact ball bearings (thrust bearing)	Deep-groove ball bearings (floating bearing)
		630	Deep-groove ball bearings (floating bearing)	Pair of angular-contact ball bearings (thrust bearing)
1R./1S.	IM B3	450	Deep-groove ball bearings (locating bearing)	Deep-groove ball bearings (floating bearing)
		500 ... 710	Double bearings: Deep-groove ball bearings and cylindrical-roller bearings (locating bearing)	Cylindrical-roller bearings (floating bearing)
	IM V1	450	Deep-groove ball bearings (floating bearing)	Double-row ball bearings: Deep-groove ball bearings and angular-contact ball bearings (thrust bearing)
		500 ... 560	Deep-groove ball bearings (floating bearing)	Angular-contact ball bearings (thrust bearing)
		710	Deep-groove ball bearings (floating bearing)	Pair of angular-contact ball bearings (thrust bearing)
	IM V10	630	Deep-groove ball bearings (floating bearing)	Pair of angular-contact ball bearings (thrust bearing)

For motors with sleeve bearings, lateral flange or (for shaft heights 450 and 710 mm), center flange sleeve bearings are used. Generally, these motors are equipped with two floating bearings. This means that the rotor must be axially guided by the

bearings of the driven machine through a coupling with limited axial play. An appropriate sleeve bearing can be installed at the drive end if the motor rotor is to be axially guided.

<sup>1)</sup> IM B35 only for motor types 1L. and 1M.; not available with sleeve bearings.

<sup>2)</sup> Motor type 1R.4 / 1S.4 63. only in type of construction IM V10.

# Introduction

## General technical versions

### Mechanical design

1

#### Overview (continued)

##### Vibration response

Horizontal motors up to 3600 rpm fulfill, as standard, vibration severity level A according to IEC 60034-14. Vibration severity level B is optionally possible. Values for vertical motors on request.

##### Balancing quality

The motor rotors are balanced dynamically with half feather key (but without mounted coupling halves). The balancing quality according to ISO 1940 is, up to and including 1500 rpm, G 1.5 and beyond this, G1.

##### Direction of rotation, fan

The direction of rotation must be specified in every order.

2-pole H-compact motors have an external unidirectional fan. For higher-pole motors, for shaft heights 315 to 450 mm, external bidirectional fans are used and for shaft heights 500 to 630 mm, unidirectional external fans.

H-compact PLUS motors have unidirectional inner and outer fans.

##### Paint finish

Unless otherwise specified in the order, the motors are supplied in the standard paint finish color RAL 7030 (stone gray). Other colors are available on request at an additional cost. Motors can be optionally supplied with a special paint finish.

The standard paint finish is classified in the "Moderate" climate group according to IEC 721-2-1. It is suitable for:

- Installed indoors or outdoors under a roof, where the motors are not exposed to any direct effects of the weather.
- Temperatures, continuously up to +100 °C, briefly up to +120 °C
- Relative air humidity up to 85 % at +25 °C continuously; briefly up to +100 % at +30 °C

The **special paint finish** is classified in the "Worldwide" climate group acc. to IEC 721-2-1. It is suitable for:

- Installed outdoors, where motors are directly exposed to the effects of the weather, e.g. direct solar radiation
- Additional temperature and humidity ranges
- Temperatures, continuously up to +120 °C, briefly up to +140 °C

Typical installation locations are industrial environments and coastal areas.

##### Standards and regulations

The motors comply with the appropriate standards and regulations, especially those listed in the table below.

Title	IEC	DIN/EN/ISO
General specifications for rotating electrical machinery	IEC 60034-1	DIN EN 60034-1
Degrees of protection for rotating electrical machinery (IP code)	IEC 60034-5	DIN EN 60034-5
Cooling methods for rotating electrical machinery (IC code)	IEC 60034-6	DIN EN 60034-6
Types of construction, mounting types and terminal box positions for rotating electrical machinery (IM code)	IEC 60034-7	DIN EN 60034-7
Terminal designations and direction of rotation for rotating electrical machinery	IEC 60034-8	DIN EN 60034-8
Mechanical vibration of rotating electrical machinery	IEC 60034-14	DIN EN 60034-14
Rated impulse voltages for rotating electrical machinery	IEC 60034-15	DIN EN 60034-15
Electrical insulation – thermal classification	IEC 60085	DIN EN 60085
Mechanical vibration – requirements on the balancing quality of rotors	–	DIN ISO 1940-1
Determining the losses and efficiency from tests	IEC 60034-2-1	DIN EN 60034-2-1

## Motors for line operation



<b>2/2</b>	<b>Overview</b>	<b>2/122</b>	<b>Water-cooled motors</b>
<b>2/3</b>	<b>Air-cooled motors</b>	<b>2/122</b>	<b>H-compact PLUS 1RN4 and 1RN6</b>
2/3	<u>H-compact 1LA4</u>		Selection and ordering data
2/5	Selection and ordering data	2/124	3.3 to 6.6 kV, 50 Hz
2/8	2 to 6.6 kV, 50 Hz	2/128	9 to 11 kV, 50 Hz
2/10	9 to 11 kV, 50 Hz	2/132	4 to 6.6 kV, 60 Hz
	2 to 6.6 kV, 60 Hz	2/136	12.5 to 13.8 kV, 60 Hz
	Dimension drawings	2/137	4 to 6.6 kV, 60 Hz NEMA version
2/13	IM B3 type of construction, roller bearings	2/138	12.5 to 13.8 kV, 60 Hz NEMA version
2/19	IM B3 type of construction, sleeve bearings		Dimension drawings
2/24	IM V1 type of construction, roller bearings	2/139	IM B3 type of construction, roller bearings (1RN4, 1RN6)
2/30	<u>H-compact PLUS 1RQ4 and 1RQ6</u>	2/145	IM B3 type of construction, sleeve bearings (1RN4, 1RN6)
	Selection and ordering data	2/152	IM V1 type of construction, roller bearings (1RN4, 1RN6)
2/32	3.3 to 6.6 kV, 50 Hz	2/159	IM B3 type of construction, roller bearings (1RN6)
2/36	9 to 11 kV, 50 Hz	2/162	IM B3 type of construction, sleeve bearings (1RN6)
2/40	4 to 6.6 kV, 60 Hz	2/165	IM V1 type of construction, roller bearings (1RN6)
2/44	12.5 to 13.8 kV, 60 Hz		
2/45	4 to 6.6 kV, 60 Hz NEMA version	<b>2/167</b>	<b>Options and tests</b>
2/46	12.5 to 13.8 kV, 60 Hz NEMA version	2/167	<u>Description of options</u>
	Dimension drawings		
2/47	IM B3 type of construction, roller bearings (1RQ4, 1RQ6)		
2/53	IM B3 type of construction, sleeve bearings (1RQ4, 1RQ6)		
2/61	IM V1 type of construction, roller bearings (1RQ4, 1RQ6)		
2/69	IM B3 type of construction, roller bearings (1RQ6)		
2/71	IM B3 type of construction, sleeve bearings (1RQ6)		
2/74	IM V1 type of construction, roller bearings (1RQ6)		
2/76	<u>H-compact PLUS 1RA4, 1RA6 and 1RP6</u>		
	Selection and ordering data		
2/78	3.3 to 6.6 kV, 50 Hz		
2/82	9 to 11 kV, 50 Hz		
2/86	4 to 6.6 kV, 60 Hz		
2/90	12.5 to 13.8 kV, 60 Hz		
2/91	4 to 6.6 kV, 60 Hz NEMA version		
2/92	12.5 to 13.8 kV, 60 Hz NEMA version		
	Dimension drawings		
2/93	IM B3 type of construction, roller bearings (1RA4, 1RA6)		
2/99	IM B3 type of construction, sleeve bearings (1RA4, 1RA6)		
2/107	IM V1 type of construction, roller bearings (1RA4, 1RA6)		
2/114	IM B3 type of construction, roller bearings (1RP6)		
2/117	IM B3 type of construction, sleeve bearings (1RP6)		
2/120	IM V1 type of construction, roller bearings (1RP6)		

# Motors for line operation

## Overview

### Overview

#### Normal conditions

Selection and ordering data included in this chapter are valid for standard operating and installation conditions:

- Installation altitude of the motor  $\leq 1000$  m above sea level
- Ambient temperature (= coolant temperature for air-cooled motors) = 40 °C
- Coolant temperature for water-cooled motors = 25 °C
- Thermal class 155 (F) utilized to 130 (B)
- Continuous duty S1
- Permissible tolerances in compliance with IEC/EN 60034-1:
  - Rated voltage  $V_{\text{rated}} \pm 5\%$
  - Rated frequency  $f_{\text{rated}} \pm 2\%$

The H-compact and H-compact PLUS motor series are designed to be directly switched-on when certain starting conditions are maintained.

Motor starting does not have to be separately checked if the following criteria are maintained:

- The voltage when starting does not drop below  $0.9 \times V_{\text{rated}}$ .
- The load torque increases approximately with the square of the speed ( $T \sim n^2$ ).
- The maximum load torque does not exceed the corresponding value in the following table:

Shaft height	315		350		400		450		500		560		630		710	
Number of poles	2	4...	2	4...	2	4...	2	4...	2	4...	2	4...	2	4...	2	4...
<b>H-compact</b>																
max. load torque = $T_{\text{rated}} \times$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	-	-
<b>H-compact PLUS</b>																
max. load torque = $T_{\text{rated}} \times$	-	-	-	-	-	-	0.75	0.9	0.7	0.9	0.6	0.9	0.6	0.9	0.5	0.9

With the value specified in the selection and ordering data for the maximum permissible external moment of inertia, starting is possible three times from cold or two times from warm, assuming that the motor coasts down naturally between starts.

Motor starting must be separately checked if these conditions are not maintained. In this case, please contact your Siemens sales person.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Overview



#### Technical data

##### Overview of technical data

H-compact 1LA4	
Rated voltage	2.0 ... 11 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Cooling method	IC411
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	315 ... 630 mm
Bearings	Roller bearings, sleeve bearings
Cage material	Die-cast aluminum or copper (dependent on the shaft height and number of poles)
Standards	IEC, EN

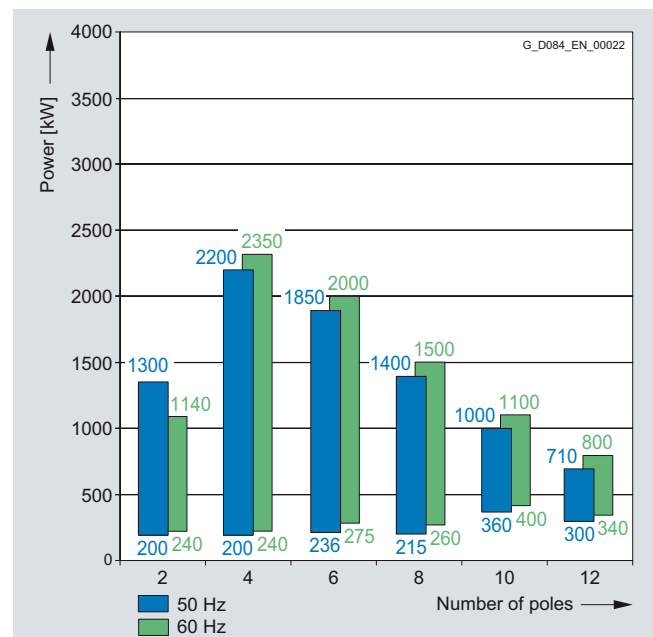
##### Power range for IEC motors for line operation

##### 1LA4, 1MS4 (Ex nA), 1MG4 (Ex px) series

Insulation system, thermal class 155 (F), utilized to 130 (B).

Ambient temperature up to 40 °C, installation altitude up to 1000 m.

2.0 to 3.3 kV; 50 and 60 Hz



# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

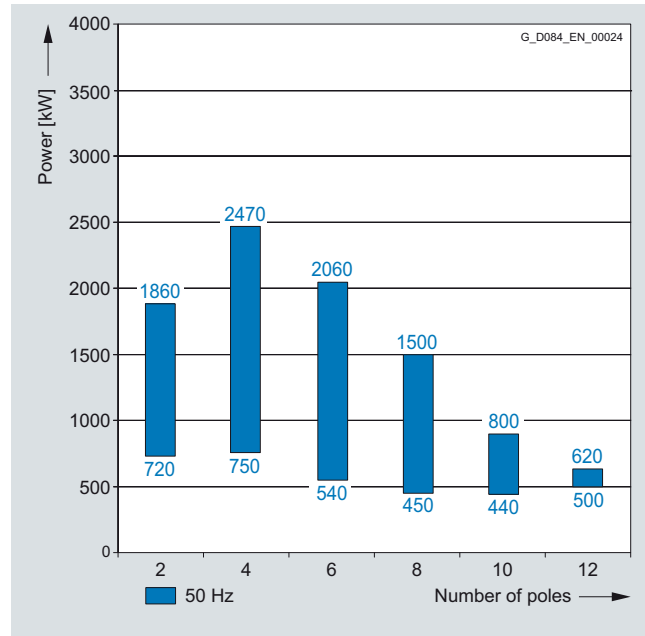
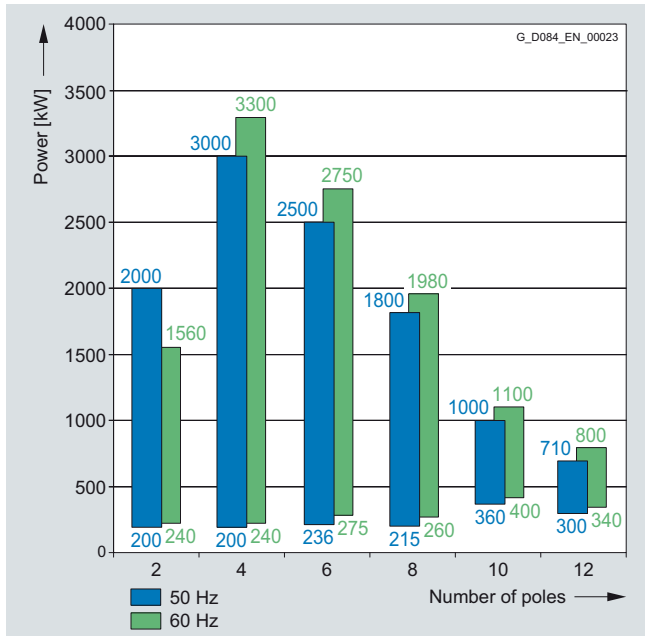
**Technical data** (continued)

**Power range for IEC motors for line operation**  
(continued)

3.4 to 6.6 kV; 50 and 60 Hz

9 to 11 kV; 50 Hz

2



# Motors for line operation

## Air-cooled motors

H-compact 1LA4

### Selection and ordering data

The 1LA4 data also apply to explosion-protected 1MG4 (Ex px) and 1MS4 (Ex nA) motors.

Rated power IEC kW	High voltage motor H-compact Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked- rotor torque $T_{LR}/T_{rated}$ [-]	Locked- rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					Exter- nal, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>2.0 ... 6.6 kV, 50 Hz</b>														
2-pole														
200	1LA4 310-2AN	2970	23.5	94.7	94.9	0.87	0.86	643	2.30	0.90	5.0	2.2	28	
236	1LA4 312-2AN	2967	27.5	94.5	94.8	0.87	0.85	760	2.30	0.90	5.0	2.2	26	
300	1LA4 314-2AN	2972	34.5	95.2	95.4	0.88	0.86	964	2.40	1.05	5.2	2.7	30	
355	1LA4 316-2AN	2974	40.5	95.7	95.8	0.88	0.87	1140	2.50	1.10	5.3	3.1	35	
400	1LA4 350-2AN	2978	45.5	95.6	95.8	0.88	0.86	1283	2.30	1.05	5.2	4.3	38	
450	1LA4 352-2AN	2978	51.0	95.9	96.0	0.88	0.87	1443	2.50	1.20	5.5	4.8	43	
500	1LA4 354-2AN	2980	57.0	96.1	96.3	0.88	0.87	1602	2.50	1.20	5.5	5.2	46	
560	1LA4 400-2AN	2984	64.0	96.0	96.0	0.88	0.86	1792	2.50	0.85	5.4	7.8	26	
650	1LA4 402-2AN	2985	74.0	96.3	96.3	0.88	0.87	2079	2.60	0.90	5.6	8.7	27	
750	1LA4 404-2AN	2985	84.0	96.5	96.5	0.89	0.88	2399	2.60	0.95	5.6	9.9	30	
820	1LA4 450-2CN	2983	92.0	96.2	96.2	0.89	0.87	2625	2.40	0.80	5.5	17.0	68	
940	1LA4 452-2CN	2984	106	96.5	96.4	0.89	0.87	3008	2.50	0.80	5.8	19.0	76	
1030	1LA4 454-2CN	2984	114	96.6	96.6	0.90	0.89	3296	2.40	0.75	5.7	21.0	79	
1200	1LA4 500-2CN	2985	132	96.7	96.6	0.90	0.89	3839	2.30	0.65	5.3	29.0	93	
1300	1LA4 502-2CN	2986	144	96.8	96.7	0.90	0.89	4157	2.30	0.65	5.3	32.0	98	
1420 <sup>2)</sup>	1LA4 504-2CN	2986	154	96.9	96.9	0.91	0.90	4541	2.40	0.70	5.5	35.0	125	
1680 <sup>2)</sup>	1LA4 560-2CN	2990	184	96.9	96.7	0.91	0.90	5365	2.50	0.45	5.4	53.0	104	
1900 <sup>2)</sup>	1LA4 562-2CN	2991	205	97.0	96.9	0.91	0.90	6066	2.60	0.50	5.7	58.0	131	
2000 <sup>2)</sup>	1LA4 564-2CN	2990	220	97.2	97.1	0.91	0.90	6387	2.50	0.45	5	64.0	136	
4-pole														
200	1LA4 310-4AN	1480	25.5	93.8	94.0	0.81	0.77	1290	2.30	1.15	5.2	2.8	159	
250	1LA4 312-4AN	1480	30.5	94.5	94.8	0.84	0.81	1613	2.30	1.15	5.3	3.5	201	
300	1LA4 314-4AN	1480	36.0	94.7	95.0	0.85	0.82	1936	2.40	1.25	5.5	4.0	222	
365	1LA4 316-4AN	1481	43.5	95.2	95.5	0.85	0.82	2353	2.40	1.25	5.5	4.8	297	
400	1LA4 350-4AN	1485	48.0	95.2	95.4	0.84	0.81	2572	2.50	1.25	5.5	6.0	224	
470	1LA4 352-4AN	1484	56.0	95.4	95.6	0.85	0.82	3024	2.35	1.20	5.3	6.9	247	
560	1LA4 354-4AN	1485	65.0	95.7	95.9	0.86	0.84	3601	2.40	1.30	5.5	8.1	296	
600	1LA4 400-4AN	1489	71.0	95.4	95.4	0.85	0.81	3848	2.60	1.25	5.70	11.6	288	
680	1LA4 402-4AN	1489	80.0	95.7	95.6	0.85	0.82	4361	2.60	1.25	5.70	12.9	330	
750	1LA4 404-4AN	1489	88.0	95.8	95.7	0.86	0.83	4810	2.65	1.30	5.80	14.5	381	
900	1LA4 450-4AN	1489	108	96.0	96.0	0.84	0.82	5772	2.25	0.95	5.20	22.0	438	
950	1LA4 452-4AN	1489	112	96.0	96.1	0.85	0.83	6093	2.25	0.95	5.20	24.0	556	

#### Voltage code:

3 kV, 50 Hz  
3.3 kV, 50 Hz  
5 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

3  
0  
5  
6  
7  
9

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

#### Type of construction:

IM B3  
IM V1 (with canopy)  
IM V1 (without canopy)

0  
4  
8

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> Not available for  $\leq 3.3$  kV.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor H-compact Order No.	Speed rpm	Rated current $I_{rated}$ at 6 kV A	Efficiency		Power factor		Torque Nm	Break- down torque $T_B/$ $T_{rated}$ [-]	Locked- rotor torque $T_{LR}/$ $T_{rated}$ [-]	Locked- rotor current $I_{LR}/$ $I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>2.0 ... 6.6 kV, 50 Hz</b>													
4-pole (continued)													
1050	<b>1LA4 454-4AN</b>	1489	124	96.2	96.3	0.85	0.83	6734	2.30	0.95	5.25	27.0	653
1200	<b>1LA4 500-4AN</b>	1492	140	96.5	96.3	0.85	0.83	7680	2.4	0.90	5.5	33.0	447
1300	<b>1LA4 502-4AN</b>	1492	150	96.6	96.4	0.86	0.84	8320	2.4	0.90	5.5	37.0	538
1450	<b>1LA4 504-4AN</b>	1492	166	96.7	96.7	0.87	0.86	9280	2.4	0.90	5.5	42.0	628
1700	<b>1LA4 560-4CN</b>	1494	196	96.7	96.6	0.86	0.83	10866	2.5	0.60	5.5	79.0	551
1900	<b>1LA4 562-4CN</b>	1494	215	96.9	96.8	0.88	0.85	12144	2.5	0.60	5.5	92.0	698
2200	<b>1LA4 564-4CN</b>	1494	250	97.2	97.1	0.88	0.86	14061	2.5	0.60	5.5	104.0	761
2400 <sup>2)</sup>	<b>1LA4 632-4CN</b>	1494	265	97.3	97.2	0.89	0.87	15341	2.3	0.55	5.5	157.0	845
2700 <sup>2)</sup>	<b>1LA4 634-4CN</b>	1495	300	97.4	97.3	0.89	0.87	17184	2.3	0.55	5.5	171.0	940
3000 <sup>2)</sup>	<b>1LA4 636-4CN</b>	1495	335	97.5	97.4	0.89	0.87	19164	2.3	0.55	5.5	186.2	1020
6-pole													
236	<b>1LA4 314-6AN</b>	986	29.5	94.1	94.5	0.82	0.78	2286	2.50	1.25	5.3	5.3	375
270	<b>1LA4 316-6AN</b>	985	33.5	94.3	94.8	0.82	0.80	2617	2.40	1.25	5.5	6.4	431
315	<b>1LA4 350-6AN</b>	989	39.0	94.8	95.1	0.82	0.79	3041	2.30	1.10	5.3	10.8	541
365	<b>1LA4 352-6AN</b>	989	44.5	95.1	95.4	0.83	0.80	3524	2.20	1.10	5.3	12.7	667
425	<b>1LA4 354-6AN</b>	990	52.0	95.3	95.5	0.82	0.79	4099	2.40	1.25	5.5	15.0	841
490	<b>1LA4 400-6AN</b>	991	59.0	95.4	95.6	0.84	0.81	4722	2.30	1.05	5.5	21.2	740
570	<b>1LA4 402-6AN</b>	992	68.0	95.7	95.9	0.84	0.81	5487	2.30	1.10	5.5	24.2	1193
630	<b>1LA4 404-6AN</b>	991	77.0	95.8	95.9	0.82	0.80	6071	2.40	1.20	5.5	27.3	1233
700	<b>1LA4 450-6AN</b>	992	84.0	95.8	95.9	0.84	0.81	6738	2.30	1.10	5.4	33.0	1417
750	<b>1LA4 452-6AN</b>	993	90.0	96.4	96.4	0.84	0.81	7212	2.30	1.10	5.4	37.0	1813
800	<b>1LA4 454-6AN</b>	993	94.0	96.0	96.1	0.85	0.82	7693	2.30	1.10	5.4	41.0	1789
1040	<b>1LA4 500-6CN</b>	994	120	96.5	96.6	0.87	0.85	9992	2.10	0.75	5.30	82.0	1668
1160	<b>1LA4 502-6CN</b>	994	132	96.6	96.7	0.88	0.86	11145	2.10	0.75	5.30	92.0	1858
1270	<b>1LA4 504-6CN</b>	994	144	96.8	96.9	0.88	0.86	12202	2.15	0.75	5.40	102.0	2048
1470	<b>1LA4 560-6CN</b>	995	168	96.9	96.9	0.87	0.85	14109	2.25	0.65	5.25	138.0	2105
1720	<b>1LA4 562-6CN</b>	995	196	97.0	97.1	0.87	0.85	16509	2.25	0.65	5.30	158.0	2470
1900	<b>1LA4 564-6CN</b>	995	215	97.1	97.2	0.88	0.86	18236	2.30	0.65	5.35	183.0	2890
2050 <sup>2)</sup>	<b>1LA4 632-6CN</b>	995	230	97.0	96.8	0.89	0.87	19676	2.3	0.50	5.5	269.1	2230
2300 <sup>2)</sup>	<b>1LA4 634-6CN</b>	995	255	97.1	97.0	0.90	0.88	22075	2.3	0.50	5.5	297.4	2450
2500 <sup>2)</sup>	<b>1LA4 636-6CN</b>	995	275	97.2	97.1	0.90	0.88	23995	2.3	0.50	5.5	323.0	2680
8-pole													
215	<b>1LA4 350-8AN</b>	738	27.0	93.8	94.2	0.81	0.78	2782	2.30	1.00	5.1	10.6	826
250	<b>1LA4 352-8AN</b>	739	31.5	94.0	94.4	0.81	0.78	3230	2.40	1.00	5.3	12.5	986
300	<b>1LA4 354-8AN</b>	739	38.0	94.2	94.7	0.81	0.78	3876	2.40	1.10	5.3	14.8	1107
370	<b>1LA4 400-8AN</b>	741	45.5	95.0	95.3	0.82	0.79	4768	2.40	1.05	5.1	21.3	1110

#### Voltage code:

3 kV, 50 Hz  
3.3 kV, 50 Hz  
5 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

3  
0  
5  
6  
7  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)  
IM V1 (without canopy)

0  
4  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> Not available for  $\leq 3.3$  kV.

## Selection and ordering data (continued)

Rated power IEC kW	High voltage motor H-compact Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked-rotor torque $T_{LR}/T_{rated}$	Locked-rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>2.0 ... 6.6 kV, 50 Hz</b>														
8-pole (continued)														
420	1LA4 402-8AN	741	52.0	95.2	95.5	0.82	0.79	5412	2.40	1.10	5.4	24.4	1402	
465	1LA4 404-8AN	741	57.0	95.2	95.5	0.82	0.79	5992	2.40	1.00	5.4	27.4	1589	
530	1LA4 450-8AN	742	67.0	95.4	95.6	0.80	0.77	6821	2.50	1.00	5.4	34.0	2016	
600	1LA4 452-8AN	742	75.0	95.6	95.7	0.81	0.76	7722	2.50	1.00	5.4	37.0	2563	
670	1LA4 454-8AN	742	83.0	95.7	95.9	0.81	0.78	8622	2.50	1.00	5.4	42.0	2778	
800	1LA4 500-8CN	746	98	96.1	96.1	0.82	0.78	10241	2.15	0.75	5.10	82.0	2820	
850	1LA4 502-8CN	746	106	96.1	96.1	0.81	0.78	10881	2.20	0.80	5.25	92.0	2470	
980	1LA4 504-8CN	746	122	96.2	96.2	0.81	0.78	12546	2.20	0.75	5.20	102.0	3582	
1100	1LA4 560-8CN	746	132	96.4	96.4	0.83	0.80	14082	2.30	0.70	5.10	138.0	3672	
1260	1LA4 562-8CN	746	152	96.6	96.6	0.83	0.81	16130	2.30	0.70	5.05	158.0	4692	
1430	1LA4 564-8CN	746	172	96.7	96.7	0.83	0.80	18306	2.35	0.70	5.20	183.0	4582	
1630 <sup>2)</sup>	1LA4 634-8CN	746	192	96.7	96.5	0.84	0.81	20867	2.4	0.50	5.5	294.0	4100	
1800 <sup>2)</sup>	1LA4 636-8CN	746	210	96.8	96.6	0.84	0.81	23043	2.4	0.50	5.5	320.1	4440	
10-pole														
360	1LA4 450-3AN	591	48.5	94.3	94.6	0.76	0.71	5817	2.30	1.00	4.5	34.0	3266	
400	1LA4 452-3AN	591	54.0	94.6	94.9	0.76	0.71	6463	2.30	1.00	4.5	37.0	4063	
450	1LA4 454-3AN	592	60.0	94.8	95.0	0.76	0.71	7259	2.30	1.00	4.5	42.0	4458	
530	1LA4 500-3CN	593	68.0	95.2	95.4	0.79	0.75	8535	2.30	0.95	4.8	82.0	5280	
590	1LA4 502-3CN	593	75.0	95.4	95.6	0.79	0.74	9501	2.30	0.95	4.8	92.0	6200	
650	1LA4 504-3CN	593	83.0	95.5	95.6	0.79	0.74	10467	2.30	0.95	4.8	102.0	6770	
770	1LA4 560-3CN	595	98.0	95.8	95.9	0.79	0.75	12358	2.20	0.75	5.0	138.0	3902	
850	1LA4 562-3CN	596	108	95.9	96.0	0.79	0.75	13619	2.20	0.75	5.0	158.0	4102	
1000	1LA4 564-3CN	595	126	96.1	96.2	0.80	0.75	16049	2.20	0.75	5.0	183.0	5717	
12-pole														
300	1LA4 450-5CN	492	43.0	93.6	93.7	0.72	0.66	5823	2.10	0.75	4.2	34.0	3166	
325	1LA4 452-5CN	492	47.0	93.7	93.7	0.71	0.64	6308	2.10	0.75	4.2	37.0	3063	
350	1LA4 454-5CN	493	45.0	93.8	93.8	0.72	0.65	6779	2.10	0.75	4.2	42.0	3158	
420	1LA4 500-5CN	494	59.0	94.6	94.6	0.72	0.67	8119	2.00	0.65	4.2	82.0	4500	
460	1LA4 502-5CN	494	64.0	94.7	94.7	0.73	0.68	8892	2.00	0.65	4.2	92.0	5360	
500	1LA4 504-5CN	494	71.0	94.7	94.7	0.72	0.67	9665	2.00	0.65	4.2	102.0	4640	
580	1LA4 560-5CN	495	81.0	95.1	95.0	0.72	0.65	11189	2.00	0.65	4.4	138.0	7284	
640	1LA4 562-5CN	495	90.0	95.3	95.1	0.72	0.65	12346	2.00	0.65	4.4	158.0	8862	
710	1LA4 564-5CN	495	99.0	95.4	95.2	0.72	0.65	13697	2.00	0.65	4.4	183.0	10478	

## Voltage code:

3 kV, 50 Hz  
3.3 kV, 50 Hz  
5 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

3  
0  
5  
6  
7  
9

## Type of construction:

IM B3  
IM V1 (with canopy)  
IM V1 (without canopy)

0  
4  
8

## Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on Page 2/2.

<sup>2)</sup> Not available for  $\leq 3.3$  kV.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Selection and ordering data

Rated power IEC kW	High voltage motor H-compact Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked- rotor torque $T_{LR}/T_{rated}$	Locked- rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$	Motor kgm <sup>2</sup>					External, max. 1) kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
2-pole														
720	<b>1LA4 450-2CN</b>	2983	48.5	95.9	95.9	0.89	0.88	2305	2.30	0.70	5.5	17.0	73	
820	<b>1LA4 452-2CN</b>	2984	55.0	96.2	96.1	0.90	0.88	2624	2.40	0.75	5.7	19.0	81	
900	<b>1LA4 454-2CN</b>	2984	60.0	96.3	96.3	0.90	0.89	2880	2.40	0.75	5.8	21.0	94	
1120	<b>1LA4 500-2CN</b>	2986	75.0	96.4	96.4	0.90	0.89	3582	2.50	0.70	5.6	29.0	102	
1170	<b>1LA4 502-2CN</b>	2987	78.0	96.5	96.5	0.90	0.89	3740	2.50	0.70	5.9	32.0	123	
1290	<b>1LA4 504-2CN</b>	2988	85.0	96.7	96.6	0.91	0.90	4123	2.60	0.75	6.0	35.0	147	
1550	<b>1LA4 560-2CN</b>	2991	102	96.7	96.6	0.91	0.90	4948	2.50	0.50	5.5	53.0	118	
1700	<b>1LA4 562-2CN</b>	2991	112	96.9	96.8	0.91	0.90	5427	2.50	0.50	5.5	58.0	138	
1860	<b>1LA4 564-2CN</b>	2991	122	97.0	96.9	0.91	0.90	5938	2.50	0.50	5.5	64.0	147	
4-pole														
800	<b>1LA4 450-4AN</b>	1489	57	95.6	95.6	0.85	0.83	5131	2.25	0.95	5.15	22.0	528	
850	<b>1LA4 452-4AN</b>	1489	60	95.8	95.8	0.86	0.85	5452	2.25	0.95	5.15	24.0	626	
900	<b>1LA4 454-4AN</b>	1489	63	95.9	96.0	0.86	0.84	5772	2.25	0.95	5.20	27.0	803	
1060	<b>1LA4 500-4AN</b>	1492	74	96.2	96.1	0.86	0.84	6784	2.4	0.90	5.5	33.0	477	
1180	<b>1LA4 502-4AN</b>	1492	82	96.3	96.4	0.86	0.85	7552	2.4	0.90	5.5	37.0	568	
1320	<b>1LA4 504-4AN</b>	1492	91	96.5	96.5	0.87	0.86	8448	2.4	0.90	5.5	42.0	703	
1500	<b>1LA4 560-4CN</b>	1494	104	96.6	96.4	0.86	0.83	9587	2.6	0.60	5.5	79.0	600	
1700	<b>1LA4 562-4CN</b>	1494	116	96.8	96.7	0.88	0.85	10866	2.5	0.60	5.4	92.0	713	
2000	<b>1LA4 564-4CN</b>	1494	136	97.0	96.9	0.88	0.85	12783	2.6	0.60	5.5	104.0	841	
2210	<b>1LA4 634-4CN</b>	1495	148	97.2	97.0	0.89	0.87	14117	2.3	0.5	5.5	171.0	1030	
2470	<b>1LA4 636-4CN</b>	1495	164	97.3	97.2	0.89	0.87	15778	2.3	0.5	5.5	186.2	1120	
6-pole														
540	<b>1LA4 450-6AN</b>	993	38.5	95.3	95.4	0.85	0.82	5193	2.30	1.10	5.4	33.0	947	
590	<b>1LA4 452-6AN</b>	993	42.0	95.4	95.5	0.85	0.82	5674	2.40	1.20	5.5	37.0	843	
630	<b>1LA4 454-6AN</b>	993	45.0	95.5	95.6	0.85	0.83	6058	2.40	1.20	5.5	41.0	1039	
950	<b>1LA4 500-6CN</b>	995	66	96.3	96.5	0.86	0.85	9118	2.10	0.65	5.10	82.0	1018	
1050	<b>1LA4 502-6CN</b>	995	72	96.4	96.7	0.87	0.85	10078	2.10	0.65	5.15	92.0	1158	
1170	<b>1LA4 504-6CN</b>	995	80	96.6	96.8	0.87	0.85	11230	2.20	0.75	5.25	102.0	1298	
1250	<b>1LA4 560-6CN</b>	996	86.0	96.7	96.8	0.87	0.85	11984	2.45	0.65	5.6	138.0	1680	
1450	<b>1LA4 562-6CN</b>	996	99.0	96.8	96.9	0.87	0.85	13902	2.45	0.65	5.6	158.0	2025	
1650	<b>1LA4 564-6CN</b>	996	112	96.9	97.0	0.87	0.85	15819	2.45	0.65	5.6	183.0	2035	
1860	<b>1LA4 634-6CN</b>	995	124	96.5	96.4	0.90	0.88	17852	2.3	0.5	5.5	297.4	1800	
2060	<b>1LA4 636-6CN</b>	995	136	96.7	96.6	0.90	0.88	19772	2.3	0.5	5.5	323.0	2090	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)  
IM V1 (without canopy)

0  
4  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor H-compact Order No.	Speed rpm	Rated current			Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked- rotor torque $T_{LR}/T_{rated}$	Locked- rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>						
<b>9 ... 11 kV, 50 Hz</b>															
8-pole															
450	<b>1LA4 450-8AN</b>	743	34.0	94.8	95.0	0.80	0.76	5783	2.60	1.00	5.5	34.0	1286		
480	<b>1LA4 452-8AN</b>	743	36.0	95.0	95.2	0.81	0.77	6169	2.60	1.00	5.5	37.0	1383		
560	<b>1LA4 454-8AN</b>	743	42.0	95.3	95.4	0.81	0.77	7197	2.60	1.00	5.5	42.0	1788		
700	<b>1LA4 500-8CN</b>	746	52.0	95.8	95.8	0.81	0.77	8960	2.20	0.75	5.5	82.0	1740		
750	<b>1LA4 502-8CN</b>	746	55.0	95.9	95.9	0.82	0.78	9600	2.20	0.75	5.5	92.0	2020		
800	<b>1LA4 504-8CN</b>	746	59.0	96.0	96.0	0.82	0.78	10240	2.20	0.75	5.5	102.0	2240		
950	<b>1LA4 560-8CN</b>	746	70.0	96.2	96.1	0.81	0.77	12160	2.40	0.65	5.3	138.0	2562		
1050	<b>1LA4 562-8CN</b>	746	77.0	96.2	96.2	0.82	0.78	13440	2.40	0.65	5.3	158.0	2282		
1250	<b>1LA4 564-8CN</b>	746	92.0	96.5	96.3	0.81	0.77	16000	2.50	0.70	5.5	183.0	3217		
1350	<b>1LA4 634-8CN</b>	746	96	96.2	96.0	0.84	0.81	17282	2.4	0.50	5.5	294.0	O. R. <sup>2)</sup>		
1500	<b>1LA4 636-8CN</b>	746	106	96.3	96.1	0.84	0.81	19202	2.4	0.50	5.5	320.1	O. R. <sup>2)</sup>		
10-pole															
440	<b>1LA4 500-3CN</b>	593	33.5	94.7	95.0	0.80	0.76	7085	2.20	0.85	4.7	82.0	3080		
500	<b>1LA4 502-3CN</b>	593	38.0	95.0	95.2	0.80	0.75	8051	2.20	0.90	4.7	92.0	3770		
530	<b>1LA4 504-3CN</b>	593	40.0	95.1	95.3	0.80	0.75	8535	2.20	0.90	4.7	102.0	4070		
630	<b>1LA4 560-3CN</b>	595	47.5	95.4	95.6	0.80	0.75	10111	2.20	0.75	5.0	138.0	2382		
690	<b>1LA4 562-3CN</b>	596	52.0	95.4	95.6	0.80	0.75	11055	2.20	0.80	5.1	158.0	2317		
800	<b>1LA4 564-3CN</b>	596	61.0	95.6	95.7	0.79	0.75	12817	2.25	0.80	5.2	183.0	2807		
12-pole															
500	<b>1LA4 560-5CN</b>	496	43.0	94.8	94.6	0.71	0.65	9626	2.00	0.65	4.4	138.0	4655		
560	<b>1LA4 562-5CN</b>	496	48.0	95.0	94.8	0.71	0.64	10781	2.00	0.65	4.4	158.0	5533		
620	<b>1LA4 564-5CN</b>	496	52.0	95.1	94.9	0.72	0.65	11936	2.00	0.65	4.4	183.0	5774		

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)  
IM V1 (without canopy)

0  
4  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> On request.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Selection and ordering data

The 1LA4 data also apply to explosion-protected 1MG4 (Ex px) and 1MS4 (Ex nA) motors.

Rated power IEC	High voltage motor H-compact	Speed	Rated current	Efficiency			Power factor		Torque	Break- down torque	Locked- rotor torque	Locked- rotor current	Moment of inertia	
				$I_{\text{rated}}$ at 4.16 kV	4/4 load	3/4 load	4/4 load	3/4 load					$T_{\text{B}}/$ $T_{\text{rated}}$	$T_{\text{LR}}/$ $T_{\text{rated}}$
kW	Order No.	rpm	A	%	%	cos φ	cos φ	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>2.0 ... 6.6 kV, 60 Hz</b>														
<b>2-pole</b>														
240	<b>1LA4 310-2AN</b>	3572	40.5	94.7	94.7	0.87	0.86	642	2.3	0.95	5.0	2.2	18	
285	<b>1LA4 312-2AN</b>	3569	48.0	94.7	94.7	0.87	0.85	763	2.2	0.85	5.0	2.2	16	
350	<b>1LA4 314-2AN</b>	3572	59.0	95.2	95.2	0.87	0.86	936	2.4	1.00	5.3	2.7	18	
410	<b>1LA4 316-2AN</b>	3574	68.0	95.6	95.6	0.88	0.87	1095	2.5	1.10	5.4	3.1	26	
460	<b>1LA4 350-2AN</b>	3578	76.0	95.6	95.6	0.88	0.86	1228	2.5	1.05	5.4	4.3	25	
510	<b>1LA4 352-2AN</b>	3580	84.0	95.9	95.8	0.88	0.87	1360	2.6	1.20	5.6	4.8	29	
560	<b>1LA4 354-2AN</b>	3579	91.0	96.0	96.0	0.89	0.88	1494	2.5	1.25	5.6	5.2	31	
630	<b>1LA4 400-2AN</b>	3583	104	95.9	95.6	0.88	0.87	1679	2.3	0.80	5.3	7.8	14	
730	<b>1LA4 402-2AN</b>	3585	120	96.1	95.9	0.88	0.87	1944	2.5	0.85	5.5	8.7	16	
830	<b>1LA4 404-2AN</b>	3585	134	96.3	96.1	0.89	0.88	2211	2.6	0.90	5.5	9.9	19	
920	<b>1LA4 450-2CN</b>	3583	150	96.1	95.8	0.89	0.88	2452	2.40	0.70	5.5	17.0	43	
1000	<b>1LA4 452-2CN</b>	3584	160	96.2	95.8	0.90	0.88	2664	2.45	0.70	5.7	19.0	46	
1140	<b>1LA4 454-2CN</b>	3585	182	96.6	96.4	0.90	0.88	3037	2.55	0.75	5.9	21.0	54	
1330 <sup>2)</sup>	<b>1LA4 500-2CN</b>	3586	215	96.3	95.9	0.90	0.89	3542	2.4	0.65	5.5	29.0	52	
1380 <sup>2)</sup>	<b>1LA4 502-2CN</b>	3586	220	96.3	96.0	0.91	0.90	3675	2.4	0.65	5.5	32.0	58	
1560 <sup>2)</sup>	<b>1LA4 504-2CN</b>	3586	245	96.7	96.3	0.91	0.90	4154	2.5	0.70	5.6	35.0	72	
<b>4-pole</b>														
240	<b>1LA4 310-4AN</b>	1780	44.5	93.8	93.7	0.80	0.76	1288	2.40	1.15	5.3	2.8	104	
300	<b>1LA4 312-4AN</b>	1780	52.0	94.6	94.6	0.84	0.81	1609	2.30	1.20	5.2	3.5	133	
360	<b>1LA4 314-4AN</b>	1780	62.0	94.9	95.0	0.85	0.82	1931	2.30	1.25	5.3	4.0	145	
440	<b>1LA4 316-4AN</b>	1780	75.0	95.3	95.4	0.85	0.82	2360	2.40	1.30	5.5	4.8	200	
470	<b>1LA4 350-4AN</b>	1783	81.0	95.2	95.2	0.85	0.83	2517	2.30	1.15	5.2	6.0	144	
550	<b>1LA4 352-4AN</b>	1783	93.0	95.5	95.5	0.86	0.84	2946	2.20	1.15	5.2	6.9	159	
640	<b>1LA4 354-4AN</b>	1784	106	95.6	95.6	0.87	0.85	3426	2.30	1.20	5.5	8.1	195	
680	<b>1LA4 400-4AN</b>	1788	116	95.1	94.8	0.86	0.83	3632	2.55	1.20	5.80	11.6	174	
750	<b>1LA4 402-4AN</b>	1788	126	95.4	95.2	0.87	0.84	4006	2.55	1.25	5.80	12.9	206	
830	<b>1LA4 404-4AN</b>	1789	138	96.6	95.3	0.87	0.85	4431	2.55	1.20	5.90	14.5	243	
1000	<b>1LA4 450-4AN</b>	1789	172	95.6	95.1	0.84	0.82	5338	2.40	0.95	5.25	22.0	298	

#### Voltage code:

4 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
1  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)  
IM V1 (without canopy)

0  
4  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> Not available for ≤ 3.3 kV.

# Motors for line operation

## Air-cooled motors

H-compact 1LA4

## Selection and ordering data (continued)

Rated power kW	High voltage motor H-compact Order No.	Speed rpm	Rated current A	Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked-rotor torque $T_{LR}/T_{rated}$	Locked-rotor current $I_{LR}/I_{rated}$	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>2.0 ... 6.6 kV, 60 Hz</b>													
4-pole (continued)													
1050	1LA4 452-4AN	1789	178	95.7	95.4	0.86	0.84	5605	2.30	0.95	5.20	24.0	366
1150	1LA4 454-4AN	1789	194	95.9	95.6	0.86	0.84	6139	2.30	0.95	5.25	27.0	443
1350	1LA4 500-4AN	1792	230	96.1	95.8	0.85	0.83	7194	2.40	0.90	5.5	33.0	277
1450	1LA4 502-4AN	1792	245	96.2	95.9	0.86	0.84	7727	2.40	0.90	5.5	37.0	348
1600	1LA4 504-4AN	1792	260	96.3	96.2	0.88	0.86	8526	2.40	0.90	5.5	42.0	413
1870	1LA4 560-4CN	1794	315	96.4	96.0	0.86	0.84	9954	2.50	0.55	5.5	79.0	356
2090	1LA4 562-4CN	1794	345	96.6	96.3	0.87	0.84	11125	2.60	0.60	5.6	92.0	458
2350	1LA4 564-4CN	1794	385	96.8	96.6	0.88	0.85	12508	2.60	0.60	5.6	104.0	540
2640 <sup>2)</sup>	1LA4 632-4CN	1793	425	96.9	96.7	0.89	0.87	14068	2.3	0.55	5.5	157.0	O. R. <sup>3)</sup>
2970 <sup>2)</sup>	1LA4 634-4CN	1794	475	97.1	96.9	0.89	0.87	15758	2.3	0.55	5.5	171.0	O. R. <sup>3)</sup>
3300 <sup>2)</sup>	1LA4 636-4CN	1794	530	97.3	97.1	0.89	0.87	17573	2.3	0.55	5.5	186.2	O. R. <sup>3)</sup>
6-pole													
275	1LA4 314-6AN	1184	49.0	94.3	94.5	0.83	0.80	2218	2.40	1.20	5.2	5.3	247
325	1LA4 316-6AN	1185	58.0	94.7	95.0	0.82	0.80	2619	2.40	1.20	5.5	6.4	360
380	1LA4 350-6AN	1190	68.0	95.1	95.1	0.82	0.79	3049	2.40	1.15	5.3	10.8	498
430	1LA4 352-6AN	1190	75.0	95.3	95.4	0.83	0.80	3450	2.20	1.10	5.5	12.7	615
510	1LA4 354-6AN	1189	90.0	95.5	95.6	0.82	0.80	4096	2.30	1.15	5.5	15.0	689
560	1LA4 400-6AN	1192	98.0	95.6	95.5	0.83	0.80	4486	2.50	1.10	5.5	21.2	740
670	1LA4 402-6AN	1192	116	95.8	95.8	0.83	0.81	5367	2.40	1.10	5.5	24.2	780
690	1LA4 404-6AN	1191	120	95.8	95.8	0.83	0.82	5532	2.30	1.10	5.5	27.3	925
800	1LA4 450-6AN	1192	138	95.8	95.7	0.84	0.81	6409	2.30	1.10	5.4	33.0	947
850	1LA4 452-6AN	1192	144	95.9	95.9	0.85	0.83	6809	2.30	1.10	5.4	37.0	1083
900	1LA4 454-6AN	1192	154	96.0	96.0	0.85	0.83	7210	2.30	1.10	5.4	41.0	1489
1160	1LA4 500-6CN	1195	192	96.5	96.6	0.87	0.86	9270	2.10	0.75	5.30	82.0	1168
1290	1LA4 502-6CN	1195	210	96.7	96.7	0.88	0.86	10309	2.15	0.75	5.35	92.0	1308
1380	1LA4 504-6CN	1195	225	96.8	96.8	0.88	0.86	11028	2.15	0.75	5.40	102.0	1598
1570	1LA4 560-6CN	1195	260	96.7	96.7	0.87	0.86	12547	2.20	0.60	5.15	138.0	1425
1870	1LA4 562-6CN	1195	310	97.0	96.9	0.87	0.85	14944	2.25	0.65	5.30	158.0	1640
2050	1LA4 564-6CN	1195	335	97.1	97.1	0.88	0.86	16383	2.25	0.60	5.25	183.0	1980
2255 <sup>2)</sup>	1LA4 632-6CN	1194	360	96.8	96.6	0.89	0.87	18043	2.3	0.50	5.5	269.1	O. R. <sup>3)</sup>
2530 <sup>2)</sup>	1LA4 634-6CN	1194	400	96.9	96.7	0.90	0.88	20243	2.3	0.50	5.5	297.4	O. R. <sup>3)</sup>
2750 <sup>2)</sup>	1LA4 636-6CN	1194	435	97.0	96.9	0.90	0.88	22003	2.3	0.50	5.5	323.0	O. R. <sup>3)</sup>

## Voltage code:

4 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
1  
9

## Type of construction:

IM B3  
IM V1 (with canopy)  
IM V1 (without canopy)

0  
4  
8

## Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on Page 2/2.

<sup>2)</sup> Not available for  $\leq 3.3$  kV.

<sup>3)</sup> On request.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor H-compact Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked- rotor torque $T_{LR}/T_{rated}$	Locked- rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 4.16 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>2.0 ... 6.6 kV, 60 Hz</b>														
<b>8-pole</b>														
260	1LA4 350-8AN	889	47.5	94.2	94.4	0.81	0.78	2793	2.30	0.95	5.1	10.6	683	
300	1LA4 352-8AN	889	54.0	94.5	94.6	0.81	0.78	3222	2.40	1.00	5.2	12.5	824	
360	1LA4 354-8AN	890	65.0	94.7	94.9	0.81	0.78	3863	2.50	1.05	5.4	14.8	879	
445	1LA4 400-8AN	892	80.0	95.3	95.3	0.81	0.79	4764	2.40	1.05	5.3	21.3	1044	
490	1LA4 402-8AN	891	86.0	95.3	95.3	0.83	0.80	5251	2.30	1.00	5.2	24.4	1069	
540	1LA4 404-8AN	892	96.0	95.6	95.6	0.82	0.80	5781	2.40	1.05	5.4	27.4	1446	
600	1LA4 450-8AN	891	108	95.4	95.5	0.81	0.78	6430	2.50	1.00	5.4	34.0	1466	
670	1LA4 452-8AN	892	120	95.6	95.7	0.81	0.76	7172	2.60	1.00	5.5	37.0	1843	
770	1LA4 454-8AN	892	138	95.8	95.9	0.81	0.78	8243	2.60	1.00	5.5	42.0	1958	
900	1LA4 500-8CN	896	160	96.1	95.9	0.81	0.77	9593	2.35	0.75	5.25	82.0	2290	
950	1LA4 502-8CN	896	170	96.1	96.0	0.81	0.78	10126	2.20	0.70	5.25	92.0	2050	
1040	1LA4 504-8CN	896	182	96.2	96.2	0.82	0.81	11085	2.10	0.70	5.10	102.0	2290	
1250	1LA4 560-8CN	896	220	96.4	96.2	0.82	0.78	13323	2.50	0.70	5.30	138.0	2487	
1400	1LA4 562-8CN	896	240	96.6	96.5	0.83	0.81	14922	2.30	0.65	5.10	158.0	3012	
1530	1LA4 564-8CN	896	265	96.7	96.5	0.83	0.79	16307	2.55	0.70	5.40	183.0	3687	
1793 <sup>2)</sup>	1LA4 634-8CN	895	305	96.5	96.1	0.84	0.81	19135	2.4	0.50	5.5	294.0	O. R. <sup>3)</sup>	
1980 <sup>2)</sup>	1LA4 636-8CN	895	340	96.7	96.2	0.84	0.81	21130	2.4	0.50	5.5	320.1	O. R. <sup>3)</sup>	
<b>10-pole</b>														
400	1LA4 450-3AN	711	77.0	94.5	94.7	0.76	0.73	5372	2.20	1.00	4.8	34.0	2416	
450	1LA4 452-3AN	711	87.0	94.7	94.8	0.76	0.72	6044	2.30	1.00	4.8	37.0	2513	
500	1LA4 454-3AN	711	96.0	94.8	95.0	0.76	0.73	6715	2.30	1.00	4.8	42.0	2488	
610	1LA4 500-3CN	713	112	95.4	95.5	0.79	0.75	8170	2.20	0.90	4.8	82.0	3700	
670	1LA4 502-3CN	713	124	95.4	95.6	0.79	0.75	8973	2.20	0.90	4.8	92.0	4170	
710	1LA4 504-3CN	714	132	95.6	95.5	0.78	0.74	9496	2.40	0.95	5.1	102.0	4840	
870	1LA4 560-3CN	715	160	95.9	95.9	0.79	0.74	11619	2.30	0.75	5.1	138.0	2862	
950	1LA4 562-3CN	716	176	96.0	95.9	0.78	0.73	12670	2.50	0.80	5.5	158.0	3377	
1100	1LA4 564-3CN	716	200	96.1	96.1	0.79	0.75	14670	2.30	0.75	5.3	183.0	3517	
<b>12-pole</b>														
340	1LA4 450-5CN	593	71.0	94.0	93.8	0.71	0.64	5475	2.00	0.70	4.3	34.0	2286	
375	1LA4 452-5CN	592	78.0	94.2	94.1	0.71	0.66	6049	2.00	0.70	4.3	37.0	2723	
410	1LA4 454-5CN	592	84.0	94.2	94.1	0.72	0.66	6613	2.00	0.70	4.3	42.0	2428	
460	1LA4 500-5CN	595	95.0	94.6	94.4	0.71	0.65	7382	2.00	0.65	4.2	82.0	3200	
500	1LA4 502-5CN	594	102	94.8	94.7	0.72	0.67	8038	2.00	0.65	4.2	92.0	3880	
540	1LA4 504-5CN	594	110	94.9	94.8	0.72	0.67	8681	2.00	0.65	4.2	102.0	3850	
650	1LA4 560-5CN	595	134	95.2	94.9	0.71	0.64	10432	2.00	0.65	4.4	138.0	5636	
710	1LA4 562-5CN	596	144	95.3	95.0	0.72	0.65	11375	2.00	0.65	4.4	158.0	6123	
800	1LA4 564-5CN	596	164	95.4	95.1	0.71	0.65	12817	2.00	0.65	4.4	183.0	7377	

#### Voltage code:

4 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
1  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)  
IM V1 (without canopy)

0  
4  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

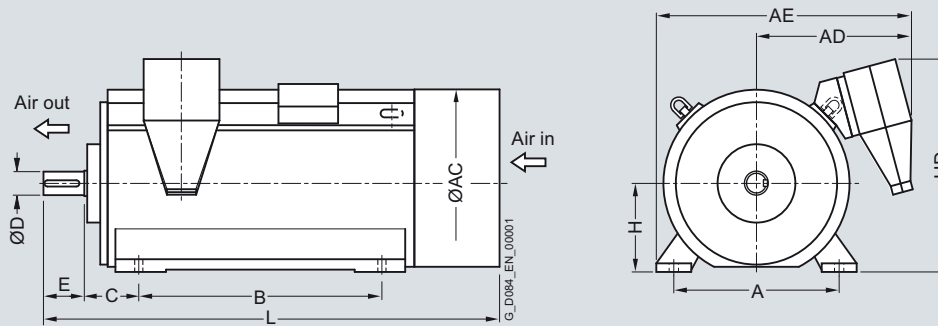
Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup> Not available for  $\leq 3.3$  kV.

<sup>3)</sup> On request.

## Dimension drawings



Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>2)</sup> mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings<sup>3)</sup></b>												
<b>2-pole</b>												
1LA4 310-2AN.0	1550	610	700	710	1075	710	200	70	105	315	860	1590
1LA4 312-2AN.0	1550	610	700	710	1075	710	200	70	105	315	860	1590
1LA4 314-2AN.0	1850	610	700	710	1075	900	200	70	105	315	860	1790
1LA4 316-2AN.0	2000	610	700	710	1075	900	200	70	105	315	860	1790
1LA4 350-2AN.0	2300	686	780	740	1155	1000	224	75	105	355	930	1930
1LA4 352-2AN.0	2400	686	780	740	1155	1000	224	75	105	355	930	1930
1LA4 354-2AN.0	2550	686	780	740	1155	1000	224	75	105	355	930	1930
1LA4 400-2AN.0	3150	750	870	775	1225	1120	254	85	130	400	1010	2095
1LA4 402-2AN.0	3300	750	870	775	1225	1120	254	85	130	400	1010	2095
1LA4 404-2AN.0	3550	750	870	775	1225	1120	254	85	130	400	1010	2095
1LA4 450-2CN.0 <sup>4)</sup>	4600	850	960	825	1340	1250	280	95	130	450	1100	2320
1LA4 452-2CN.0 <sup>4)</sup>	4900	850	960	825	1340	1250	280	95	130	450	1100	2320
1LA4 454-2CN.0 <sup>4)</sup>	5200	850	960	825	1340	1250	280	95	130	450	1100	2320
<b>4-pole</b>												
1LA4 310-4AN.0	1500	610	700	710	1075	710	200	90	130	315	860	1610
1LA4 312-4AN.0	1650	610	700	710	1075	710	200	90	130	315	860	1610
1LA4 314-4AN.0	1900	610	700	710	1075	900	200	90	130	315	860	1810
1LA4 316-4AN.0	2050	610	700	710	1075	900	200	90	130	315	860	1810
1LA4 350-4AN.0	2350	686	780	740	1155	1000	224	100	165	355	930	1985
1LA4 352-4AN.0	2550	686	780	740	1155	1000	224	100	165	355	930	1985
1LA4 354-4AN.0	2750	686	780	740	1155	1000	224	100	165	355	930	1985
1LA4 400-4AN.0	3400	750	870	775	1225	1120	254	120	165	400	1010	2125
1LA4 402-4AN.0	3600	750	870	775	1225	1120	254	120	165	400	1010	2125
1LA4 404-4AN.0	3800	750	870	775	1225	1120	254	120	165	400	1010	2125
1LA4 450-4AN.0	4700	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 452-4AN.0	5000	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 454-4AN.0	5300	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 500-4AN.0	5900	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 502-4AN.0	6300	950	1070	875	1440	1320	315	140	200	500	1200	2525

<sup>1)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 140 mm (for H = 500), by + 145 mm (for H = 560) or by + 155 mm (for H = 630).

<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 70 mm.

<sup>3)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

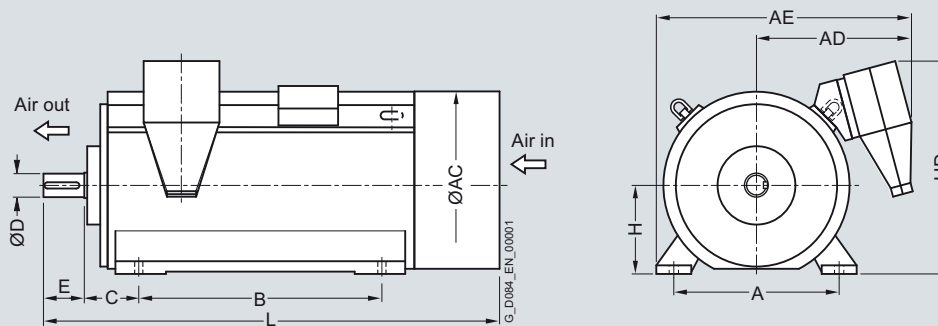
<sup>4)</sup> Roller bearings only for 50 Hz operation.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		A	AC	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD <sup>2)</sup>	L
Up to 6.6 kV, IM B3 type of construction, roller bearings <sup>3)</sup>												
4-pole												
1LA4 504-4AN.0	6800	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 560-4CN.0	8200	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 562-4CN.0	8900	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 564-4CN.0	9700	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 632-4CN.0 <sup>4)</sup>	12200	1120	1350	945	1560	1600	335	170	240	630	1410	3015
1LA4 634-4CN.0 <sup>4)</sup>	12800	1120	1350	945	1560	1600	335	170	240	630	1410	3015
1LA4 636-4CN.0 <sup>4)</sup>	13600	1120	1350	945	1560	1600	335	170	240	630	1410	3015
6-pole												
1LA4 314-6AN.0	1950	610	700	710	1075	900	200	90	130	315	860	1810
1LA4 316-6AN.0	2150	610	700	710	1075	900	200	90	130	315	860	1810
1LA4 350-6AN.0	2400	686	780	740	1155	1000	224	100	165	355	930	1985
1LA4 352-6AN.0	2600	686	780	740	1155	1000	224	100	165	355	930	1985
1LA4 354-6AN.0	2850	686	780	740	1155	1000	224	100	165	355	930	1985
1LA4 400-6AN.0	3500	750	870	775	1225	1120	254	120	165	400	1010	2125
1LA4 402-6AN.0	3750	750	870	775	1225	1120	254	120	165	400	1010	2125
1LA4 404-6AN.0	4000	750	870	775	1225	1120	254	120	165	400	1010	2125
1LA4 450-6AN.0	4600	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 452-6AN.0	4900	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 454-6AN.0	5200	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 500-6CN.0	6400	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 502-6CN.0	6800	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 504-6CN.0	7300	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 560-6CN.0	8500	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 562-6CN.0	9300	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 564-6CN.0	10100	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 632-6CN.0	12700	1120	1350	945	1560	1600	335	180	240	630	1410	3015
1LA4 634-6CN.0	13400	1120	1350	945	1560	1600	335	180	240	630	1410	3015
1LA4 636-6CN.0	14100	1120	1350	945	1560	1600	335	180	240	630	1410	3015

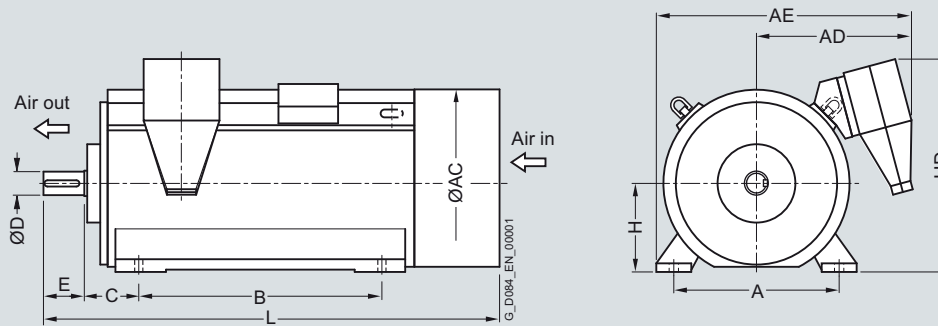
<sup>1)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 140 mm (for H = 500), by + 145 mm (for H = 560) or by + 155 mm (for H = 630).

<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 70 mm.

<sup>3)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

<sup>4)</sup> Roller bearings only for 50 Hz operation.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>2)</sup> mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings<sup>3)</sup></b>												
<b>8-pole</b>												
1LA4 350-8AN.0	2400	686	780	740	1155	1000	224	100	165	355	930	1985
1LA4 352-8AN.0	2600	686	780	740	1155	1000	224	100	165	355	930	1985
1LA4 354-8AN.0	2800	686	780	740	1155	1000	224	100	165	355	930	1985
1LA4 400-8AN.0	3450	750	870	775	1225	1120	254	120	165	400	1010	2125
1LA4 402-8AN.0	3700	750	870	775	1225	1120	254	120	165	400	1010	2125
1LA4 404-8AN.0	3950	750	870	775	1225	1120	254	120	165	400	1010	2125
1LA4 450-8AN.0	4600	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 452-8AN.0	4900	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 454-8AN.0	5200	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 500-8CN.0	6400	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 502-8CN.0	6700	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 504-8CN.0	7200	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 560-8CN.0	8500	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 562-8CN.0	9200	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 564-8CN.0	10000	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 634-8CN.0	13300	1120	1350	945	1560	1600	335	180	240	630	1410	3015
1LA4 636-8CN.0	14000	1120	1350	945	1560	1600	335	180	240	630	1410	3015
<b>10-pole</b>												
1LA4 450-3AN.0	4600	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 452-3AN.0	4900	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 454-3AN.0	5200	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 500-3CN.0	6400	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 502-3CN.0	6700	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 504-3CN.0	7200	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 560-3CN.0	8500	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 562-3CN.0	9200	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 564-3CN.0	10000	1060	1210	925	1560	1400	335	160	240	560	1310	2775

<sup>1)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 140 mm (for H = 500), by + 145 mm (for H = 560) or by + 155 mm (for H = 630).

<sup>3)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

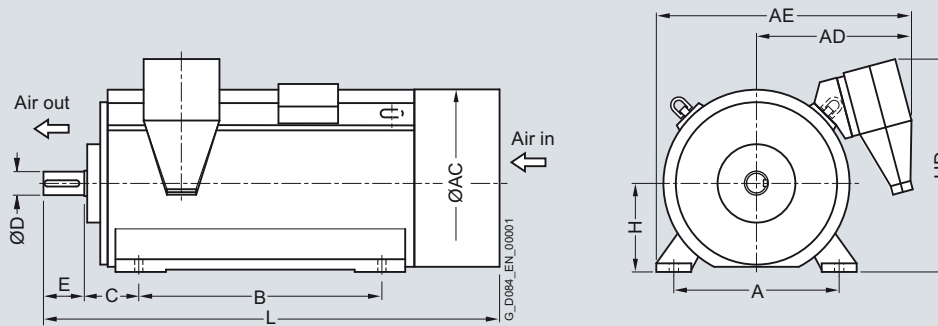
<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 70 mm.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		A	AC	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD <sup>2)</sup>	L
Up to 6.6 kV, IM B3 type of construction, roller bearings <sup>3)</sup>												
12-pole												
1LA4 450-5CN.0	4600	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 452-5CN.0	4900	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 454-5CN.0	5200	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4 500-5CN.0	6400	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 502-5CN.0	6700	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 504-5CN.0	7200	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4 560-5CN.0	8500	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 562-5CN.0	9200	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4 564-5CN.0	10000	1060	1210	925	1560	1400	335	160	240	560	1310	2775

#### Note:

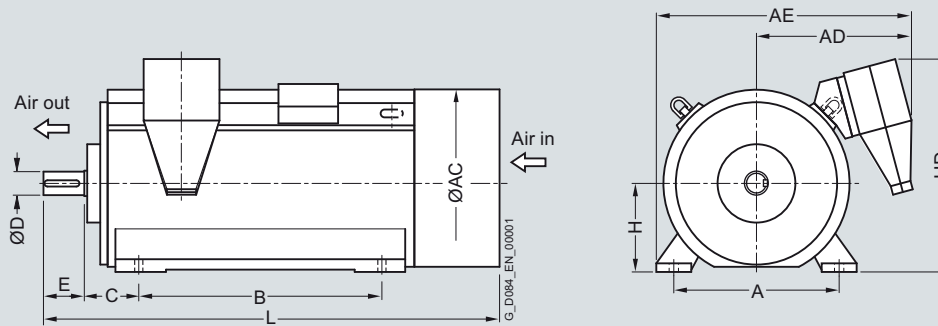
Higher pole numbers are available on request.

<sup>1)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 140 mm (for H = 500), by + 145 mm (for H = 560) or by + 155 mm (for H = 630).

<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 70 mm.

<sup>3)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

## Dimension drawings



Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings<sup>1)</sup></b>												
<b>2-pole</b>												
1LA4 450-2CN.0 <sup>2)</sup>	4600	850	960	970	1485	1250	280	95	130	450	1170	2320
1LA4 452-2CN.0 <sup>2)</sup>	4900	850	960	970	1485	1250	280	95	130	450	1170	2320
1LA4 454-2CN.0 <sup>2)</sup>	5200	850	960	970	1485	1250	280	95	130	450	1170	2320
<b>4-pole</b>												
1LA4 450-4AN.0	4600	850	960	970	1485	1250	280	130	200	450	1170	2390
1LA4 452-4AN.0	4900	850	960	970	1485	1250	280	130	200	450	1170	2390
1LA4 454-4AN.0	5200	850	960	970	1485	1250	280	130	200	450	1170	2390
1LA4 500-4AN.0	5900	950	1070	1015	1580	1320	315	140	200	500	1270	2525
1LA4 502-4AN.0	6200	950	1070	1015	1580	1320	315	140	200	500	1270	2525
1LA4 504-4AN.0	6700	950	1070	1015	1580	1320	315	140	200	500	1270	2525
1LA4 560-4CN.0	8100	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 562-4CN.0	8800	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 564-4CN.0	9600	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 634-4CN.0 <sup>2)</sup>	12800	1120	1350	1100	1675	1600	335	170	240	630	1480	3015
1LA4 636-4CN.0 <sup>2)</sup>	13600	1120	1350	1100	1675	1600	335	170	240	630	1480	3015
<b>6-pole</b>												
1LA4 450-6AN.0	4600	850	960	970	1485	1250	280	130	200	450	1170	2390
1LA4 452-6AN.0	4800	850	960	970	1485	1250	280	130	200	450	1170	2390
1LA4 454-6AN.0	5200	850	960	970	1485	1250	280	130	200	450	1170	2390
1LA4 500-6CN.0	6300	950	1070	1015	1580	1320	315	140	200	500	1270	2525
1LA4 502-6CN.0	6800	950	1070	1015	1580	1320	315	140	200	500	1270	2525
1LA4 504-6CN.0	7200	950	1070	1015	1580	1320	315	140	200	500	1270	2525
1LA4 560-6CN.0	8500	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 562-6CN.0	9100	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 564-6CN.0	10000	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 634-6CN.0	13400	1120	1350	1100	1675	1600	335	180	240	630	1480	3015
1LA4 636-6CN.0	14100	1120	1350	1100	1675	1600	335	180	240	630	1480	3015

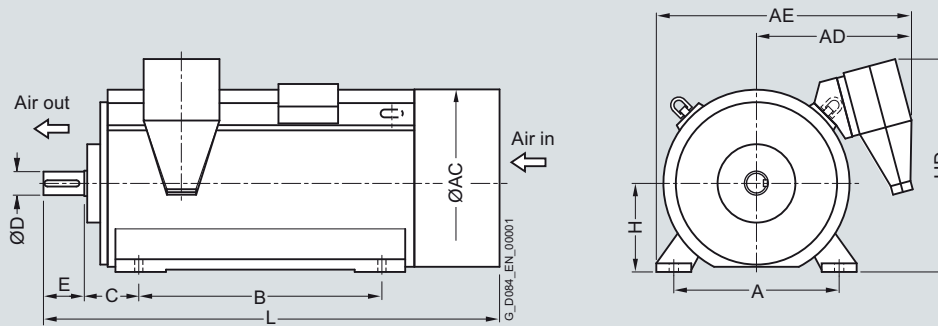
<sup>1)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.<sup>2)</sup> Roller bearings only for 50 Hz operation.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Dimension drawings (continued)



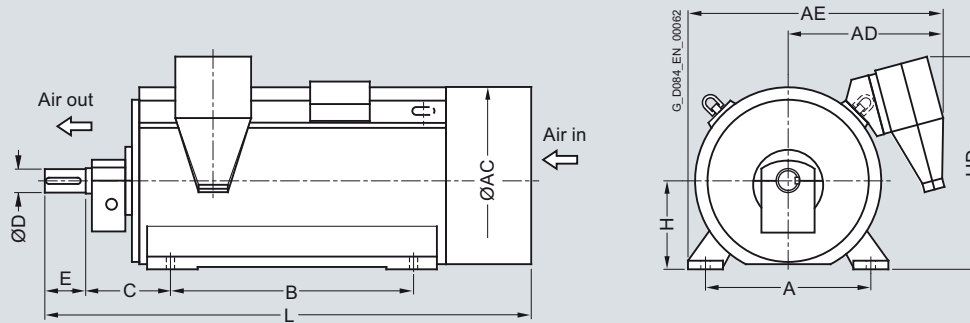
Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings<sup>1)</sup></b>												
<b>8-pole</b>												
1LA4 450-8AN.0	4600	850	960	970	1485	1250	280	130	200	450	1170	2390
1LA4 452-8AN.0	4800	850	960	970	1485	1250	280	130	200	450	1170	2390
1LA4 454-8AN.0	5200	850	960	970	1485	1250	280	130	200	450	1170	2390
1LA4 500-8CN.0	6300	950	1070	1015	1580	1320	315	140	200	500	1270	2525
1LA4 502-8CN.0	6700	950	1070	1015	1580	1320	315	140	200	500	1270	2525
1LA4 504-8CN.0	7100	950	1070	1015	1580	1320	315	140	200	500	1270	2525
1LA4 560-8CN.0	8400	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 562-8CN.0	9100	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 564-8CN.0	10000	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 634-8CN.0	13300	1120	1350	1100	1675	1600	335	180	240	630	1480	3015
1LA4 636-8CN.0	14000	1120	1350	1100	1675	1600	335	180	240	630	1480	3015
<b>10-pole</b>												
1LA4 500-3CN.0	6300	950	1070	1015	1580	1320	315	140	200	500	1270	2525
1LA4 502-3CN.0	6700	950	1070	1015	1580	1320	315	140	200	500	1270	2525
1LA4 504-3CN.0	7100	950	1070	1015	1580	1320	315	140	200	500	1270	2525
1LA4 560-3CN.0	8400	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 562-3CN.0	9100	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 564-3CN.0	10000	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
<b>12-pole</b>												
1LA4 560-5CN.0	8400	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 562-5CN.0	9100	1060	1210	1070	1705	1400	335	160	240	560	1380	2775
1LA4 564-5CN.0	10000	1060	1210	1070	1705	1400	335	160	240	560	1380	2775

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

## Dimension drawings



Motor type	Weight kg	Dimensions										
		A	AC	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD <sup>2)</sup>	L
Up to 6.6 kV, IM B3 type of construction, sleeve bearings <sup>3)</sup>												
2-pole												
1LA4 310-2AN.0-Z K96	1650	610	700	710	1075	710	375	70	105	315	860	1980
1LA4 312-2AN.0-Z K96	1650	610	700	710	1075	710	375	70	105	315	860	1980
1LA4 314-2AN.0-Z K96	1950	610	700	710	1075	900	375	70	105	315	860	2180
1LA4 316-2AN.0-Z K96	2100	610	700	710	1075	900	375	70	105	315	860	2180
1LA4 350-2AN.0-Z K96	2400	686	780	740	1155	1000	400	75	105	355	930	2340
1LA4 352-2AN.0-Z K96	2500	686	780	740	1155	1000	400	75	105	355	930	2340
1LA4 354-2AN.0-Z K96	2600	686	780	740	1155	1000	400	75	105	355	930	2340
1LA4 400-2AN.0-Z K96	3200	750	870	775	1225	1120	425	85	130	400	1010	2510
1LA4 402-2AN.0-Z K96	3350	750	870	775	1225	1120	425	85	130	400	1010	2510
1LA4 404-2AN.0-Z K96	3600	750	870	775	1225	1120	425	85	130	400	1010	2510
1LA4 450-2CN.0-Z K96 <sup>4)</sup>	4700	850	960	825	1340	1250	475	95	130	450	1100	2515
1LA4 452-2CN.0-Z K96 <sup>4)</sup>	5000	850	960	825	1340	1250	475	95	130	450	1100	2515
1LA4 454-2CN.0-Z K96 <sup>4)</sup>	5200	850	960	825	1340	1250	475	95	130	450	1100	2515
1LA4 500-2CN.0	6100	950	1070	875	1440	1320	500	110	165	500	1200	2675
1LA4 502-2CN.0	6300	950	1070	875	1440	1320	500	110	165	500	1200	2675
1LA4 504-2CN.0	6700	950	1070	875	1440	1320	500	110	165	500	1200	2675
1LA4 560-2CN.0	8200	1060	1210	925	1560	1400	500	120	165	560	1310	2865
1LA4 562-2CN.0	8600	1060	1210	925	1560	1400	500	120	165	560	1310	2865
1LA4 564-2CN.0	9100	1060	1210	925	1560	1400	500	120	165	560	1310	2865
4-pole												
1LA4 310-4AN.0-Z K96	1600	610	700	710	1075	710	375	90	130	315	860	2010
1LA4 312-4AN.0-Z K96	1750	610	700	710	1075	710	375	90	130	315	860	2010
1LA4 314-4AN.0-Z K96	2000	610	700	710	1075	900	375	90	130	315	860	2210
1LA4 316-4AN.0-Z K96	2150	610	700	710	1075	900	375	90	130	315	860	2210
1LA4 350-4AN.0-Z K96	2450	686	780	740	1155	1000	400	100	165	355	930	2400
1LA4 352-4AN.0-Z K96	2600	686	780	740	1155	1000	400	100	165	355	930	2400
1LA4 354-4AN.0-Z K96	2850	686	780	740	1155	1000	400	100	165	355	930	2400
1LA4 400-4AN.0-Z K96	3450	750	870	775	1225	1120	450	120	165	400	1010	2570
1LA4 402-4AN.0-Z K96	3650	750	870	775	1225	1120	450	120	165	400	1010	2570

<sup>1)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 140 mm (for H = 500), by + 145 mm (for H = 560) or by + 155 mm (for H = 630).

<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 70 mm.

<sup>3)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

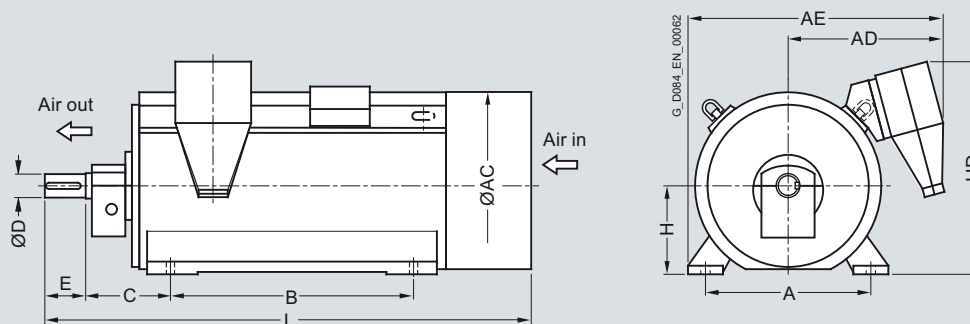
<sup>4)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>2)</sup> mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings<sup>3)</sup></b>												
<b>4-pole</b>												
1LA4 404-4AN.0-Z K96	3850	750	870	775	1225	1120	450	120	165	400	1010	2570
1LA4 450-4AN.0-Z K96	4800	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 452-4AN.0-Z K96	5100	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 454-4AN.0-Z K96	5400	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 500-4AN.0-Z K96	6100	950	1070	875	1440	1320	500	140	200	500	1200	2870
1LA4 502-4AN.0-Z K96	6500	950	1070	875	1440	1320	500	140	200	500	1200	2870
1LA4 504-4AN.0-Z K96	7000	950	1070	875	1440	1320	500	140	200	500	1200	2870
1LA4 560-4CN.0-Z K96	8500	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 562-4CN.0-Z K96	9200	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 564-4CN.0-Z K96	10000	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 632-4CN.0-Z K96 <sup>4)</sup>	12500	1120	1350	945	1560	1600	560	170	240	630	1410	3450
1LA4 634-4CN.0-Z K96 <sup>4)</sup>	13100	1120	1350	945	1560	1600	560	170	240	630	1410	3450
1LA4 636-4CN.0-Z K96 <sup>4)</sup>	13900	1120	1350	945	1560	1600	560	170	240	630	1410	3450
<b>6-pole</b>												
1LA4 450-6AN.0-Z K96	4800	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 452-6AN.0-Z K96	5000	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 454-6AN.0-Z K96	5300	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 500-6CN.0-Z K96	6600	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4 502-6CN.0-Z K96	7000	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4 504-6CN.0-Z K96	7500	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4 560-6CN.0-Z K96	8800	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 562-6CN.0-Z K96	9500	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 564-6CN.0-Z K96	10400	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 632-6CN.0-Z K96	13000	1120	1350	945	1560	1600	560	180	240	630	1410	3450
1LA4 634-6CN.0-Z K96	13700	1120	1350	945	1560	1600	560	180	240	630	1410	3450
1LA4 636-6CN.0-Z K96	14500	1120	1350	945	1560	1600	560	180	240	630	1410	3450

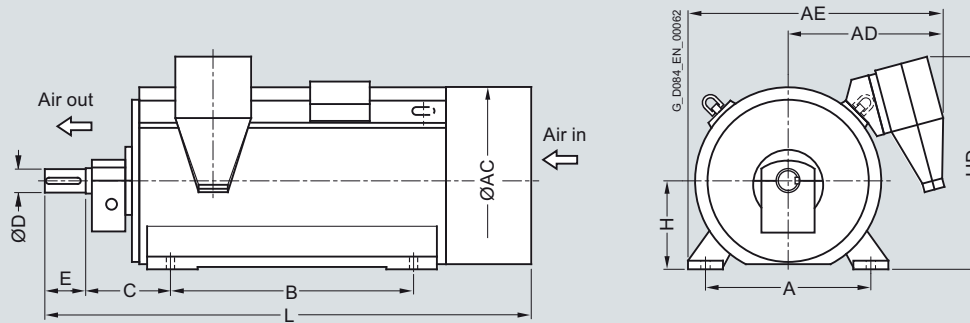
<sup>1)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 140 mm (for H = 500), by + 145 mm (for H = 560) or by + 155 mm (for H = 630).

<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 70 mm.

<sup>3)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

<sup>4)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>2)</sup> mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings<sup>3)</sup></b>												
<b>8-pole</b>												
1LA4 450-8AN.0-Z K96	4700	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 452-8AN.0-Z K96	5000	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 454-8AN.0-Z K96	5300	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 500-8CN.0-Z K96	6600	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4 502-8CN.0-Z K96	6900	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4 504-8CN.0-Z K96	7400	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4 560-8CN.0-Z K96	8800	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 562-8CN.0-Z K96	9500	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 564-8CN.0-Z K96	10300	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 634-8CN.0-Z K96	13600	1120	1350	945	1560	1600	560	180	240	630	1410	3450
1LA4 636-8CN.0-Z K96	14400	1120	1350	945	1560	1600	560	180	240	630	1410	3450
<b>10-pole</b>												
1LA4 450-3AN.0-Z K96	4700	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 452-3AN.0-Z K96	5000	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 454-3AN.0-Z K96	5300	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 500-3CN.0-Z K96	6600	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4 502-3CN.0-Z K96	6900	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4 504-3CN.0-Z K96	7400	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4 560-3CN.0-Z K96	8800	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 562-3CN.0-Z K96	9500	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 564-3CN.0-Z K96	10300	1060	1210	925	1560	1400	560	160	240	560	1310	3170
<b>12-pole</b>												
1LA4 450-5CN.0-Z K96	4700	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 452-5CN.0-Z K96	5000	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 454-5CN.0-Z K96	5300	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4 500-5CN.0-Z K96	6600	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4 502-5CN.0-Z K96	6900	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4 504-5CN.0-Z K96	7400	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4 560-5CN.0-Z K96	8800	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 562-5CN.0-Z K96	9500	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4 564-5CN.0-Z K96	10300	1060	1210	925	1560	1400	560	160	240	560	1310	3170

**Note:**

Higher pole numbers are available on request.

<sup>1)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 140 mm (for H = 500), by + 145 mm (for H = 560) or by + 155 mm (for H = 630).

<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 70 mm.

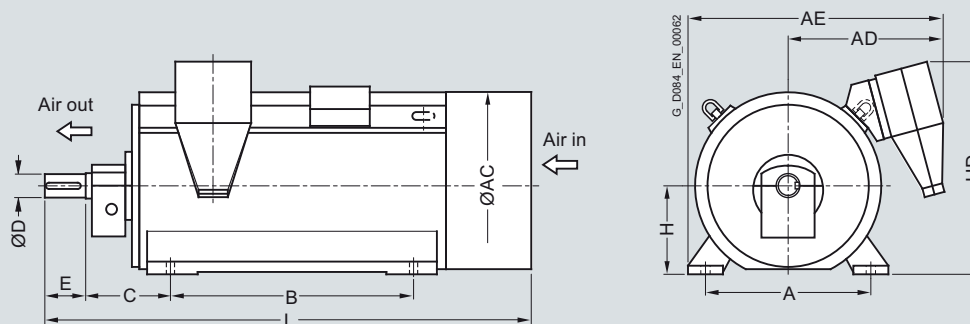
<sup>3)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Dimension drawings

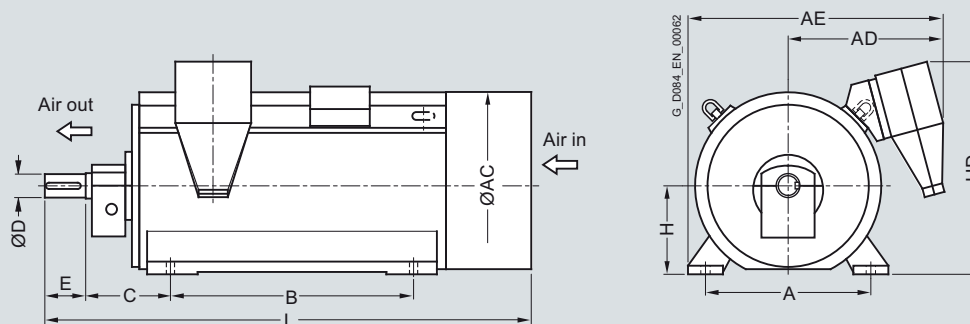


Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings<sup>1)</sup></b>												
<b>2-pole</b>												
1LA4 450-2CN.0-Z K96 <sup>2)</sup>	4600	850	960	970	1485	1250	475	95	130	450	1170	2515
1LA4 452-2CN.0-Z K96 <sup>2)</sup>	4900	850	960	970	1485	1250	475	95	130	450	1170	2515
1LA4 454-2CN.0-Z K96 <sup>2)</sup>	5200	850	960	970	1485	1250	475	95	130	450	1170	2515
1LA4 500-2CN.0	6000	950	1070	1015	1580	1320	500	110	165	500	1270	2675
1LA4 502-2CN.0	6300	950	1070	1015	1580	1320	500	110	165	500	1270	2675
1LA4 504-2CN.0	6700	950	1070	1015	1580	1320	500	110	165	500	1270	2675
1LA4 560-2CN.0	8100	1060	1210	1070	1705	1400	500	120	165	560	1380	2865
1LA4 562-2CN.0	8600	1060	1210	1070	1705	1400	500	120	165	560	1380	2865
1LA4 564-2CN.0	9100	1060	1210	1070	1705	1400	500	120	165	560	1380	2865
<b>4-pole</b>												
1LA4 450-4AN.0-Z K96	4700	850	960	970	1485	1250	475	130	200	450	1170	2745
1LA4 452-4AN.0-Z K96	5000	850	960	970	1485	1250	475	130	200	450	1170	2745
1LA4 454-4AN.0-Z K96	5300	850	960	970	1485	1250	475	130	200	450	1170	2745
1LA4 500-4AN.0-Z K96	6100	950	1070	1015	1580	1320	500	140	200	500	1270	2870
1LA4 502-4AN.0-Z K96	6400	950	1070	1015	1580	1320	500	140	200	500	1270	2870
1LA4 504-4AN.0-Z K96	6900	950	1070	1015	1580	1320	500	140	200	500	1270	2870
1LA4 560-4CN.0-Z K96	8400	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 562-4CN.0-Z K96	9100	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 564-4CN.0-Z K96	9800	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 634-4CN.0-Z K96 <sup>2)</sup>	13100	1120	1350	945	1560	1600	560	170	240	630	1410	3450
1LA4 636-4CN.0-Z K96 <sup>2)</sup>	13900	1120	1350	945	1560	1600	560	170	240	630	1410	3450
<b>6-pole</b>												
1LA4 450-6AN.0-Z K96	4700	850	960	970	1485	1250	475	130	200	450	1170	2745
1LA4 452-6AN.0-Z K96	5000	850	960	970	1485	1250	475	130	200	450	1170	2745
1LA4 454-6AN.0-Z K96	5300	850	960	970	1485	1250	475	130	200	450	1170	2745
1LA4 500-6CN.0-Z K96	6500	950	1070	1015	1580	1320	530	140	200	500	1270	2900
1LA4 502-6CN.0-Z K96	7000	950	1070	1015	1580	1320	530	140	200	500	1270	2900
1LA4 504-6CN.0-Z K96	7400	950	1070	1015	1580	1320	530	140	200	500	1270	2900
1LA4 560-6CN.0-Z K96	8800	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 562-6CN.0-Z K96	9400	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 564-6CN.0-Z K96	10300	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 634-6CN.0-Z K96	13700	1120	1350	945	1560	1600	560	180	240	630	1410	3450
1LA4 636-6CN.0-Z K96	14500	1120	1350	945	1560	1600	560	180	240	630	1410	3450

<sup>1)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings<sup>1)</sup></b>												
<b>8-pole</b>												
1LA4 450-8AN.0-Z K96	4700	850	960	970	1485	1250	475	130	200	450	1170	2745
1LA4 452-8AN.0-Z K96	4900	850	960	970	1485	1250	475	130	200	450	1170	2745
1LA4 454-8AN.0-Z K96	5300	850	960	970	1485	1250	475	130	200	450	1170	2745
1LA4 500-8CN.0-Z K96	6500	950	1070	1015	1580	1320	530	140	200	500	1270	2900
1LA4 502-8CN.0-Z K96	6900	950	1070	1015	1580	1320	530	140	200	500	1270	2900
1LA4 504-8CN.0-Z K96	7400	950	1070	1015	1580	1320	530	140	200	500	1270	2900
1LA4 560-8CN.0-Z K96	8700	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 562-8CN.0-Z K96	9300	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 564-8CN.0-Z K96	10300	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 634-8CN.0-Z K96	13600	1120	1350	945	1560	1600	560	180	240	630	1410	3450
1LA4 636-8CN.0-Z K96	14400	1120	1350	945	1560	1600	560	180	240	630	1410	3450
<b>10-pole</b>												
1LA4 500-3CN.0-Z K96	6500	950	1070	1015	1580	1320	530	140	200	500	1270	2900
1LA4 502-3CN.0-Z K96	6900	950	1070	1015	1580	1320	530	140	200	500	1270	2900
1LA4 504-3CN.0-Z K96	7400	950	1070	1015	1580	1320	530	140	200	500	1270	2900
1LA4 560-3CN.0-Z K96	8700	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 562-3CN.0-Z K96	9300	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 564-3CN.0-Z K96	10300	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
<b>12-pole</b>												
1LA4 560-5CN.0-Z K96	8700	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 562-5CN.0-Z K96	9300	1060	1210	1070	1705	1400	560	160	240	560	1380	3170
1LA4 564-5CN.0-Z K96	10300	1060	1210	1070	1705	1400	560	160	240	560	1380	3170

Note:

Higher pole numbers are available on request.

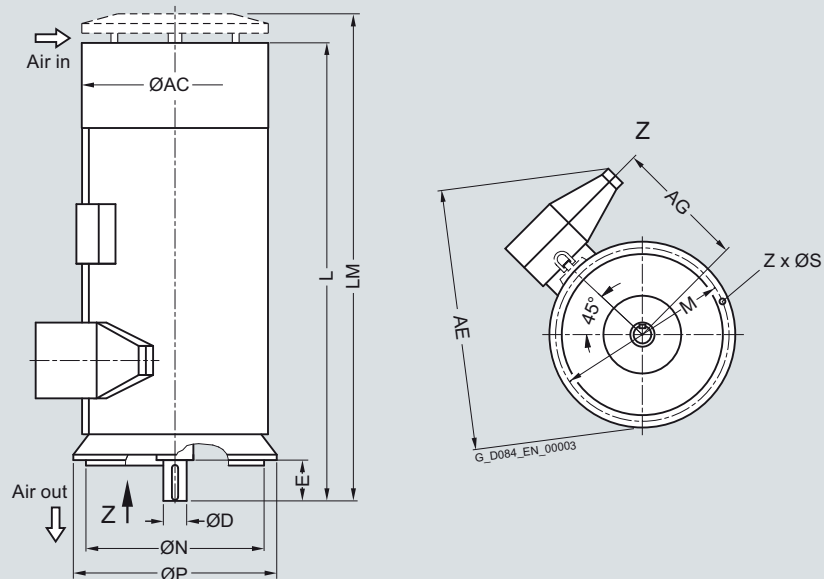
1) The dimensions also apply for the 1MA4 and 1MS4 series.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Dimension drawings



Motor type	Weight kg	Dimensions											
		AC mm	AG <sup>1)</sup> mm	AE <sup>2)</sup> mm	D mm	E mm	L mm	LM mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings<sup>3)</sup></b>													
<b>2-pole</b>													
1LA4 310-2AN..	1600	700	620	1225	70	105	1590	1720	800	680	740	22	8
1LA4 312-2AN..	1600	700	620	1225	70	105	1590	1720	800	680	740	22	8
1LA4 314-2AN..	1850	700	620	1225	70	105	1790	1920	800	680	740	22	8
1LA4 316-2AN..	2000	700	620	1225	70	105	1790	1920	800	680	740	22	8
1LA4 350-2AN.. <sup>4)</sup>	2350	780	660	1310	75	105	1930	2070	900	780	840	22	8
1LA4 352-2AN.. <sup>4)</sup>	2450	780	660	1310	75	105	1930	2070	900	780	840	22	8
1LA4 354-2AN.. <sup>4)</sup>	2550	780	660	1310	75	105	1930	2070	900	780	840	22	8
1LA4 400-2AN.. <sup>4)</sup>	3100	870	710	1400	85	130	2095	2245	1000	880	940	22	8
1LA4 402-2AN.. <sup>4)</sup>	3300	870	710	1400	85	130	2095	2245	1000	880	940	22	8
1LA4 404-2AN.. <sup>4)</sup>	3550	870	710	1400	85	130	2095	2245	1000	880	940	22	8
<b>4-pole</b>													
1LA4 310-4AN..	1500	700	620	1225	90	130	1610	1740	800	680	740	22	8
1LA4 312-4AN..	1650	700	620	1225	90	130	1610	1740	800	680	740	22	8
1LA4 314-4AN..	1900	700	620	1225	90	130	1810	1940	800	680	740	22	8
1LA4 316-4AN..	2050	700	620	1225	90	130	1810	1940	800	680	740	22	8
1LA4 350-4AN..	2400	780	660	1310	100	165	1985	2125	900	780	840	22	8
1LA4 352-4AN..	2600	780	660	1310	100	165	1985	2125	900	780	840	22	8
1LA4 354-4AN..	2800	780	660	1310	100	165	1985	2125	900	780	840	22	8
1LA4 400-4AN..	3400	870	710	1400	120	165	2125	2275	1000	880	940	22	8
1LA4 402-4AN..	3600	870	710	1400	120	165	2125	2275	1000	880	940	22	8
1LA4 404-4AN..	3800	870	710	1400	120	165	2125	2275	1000	880	940	22	8
1LA4 450-4AN..	4700	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8

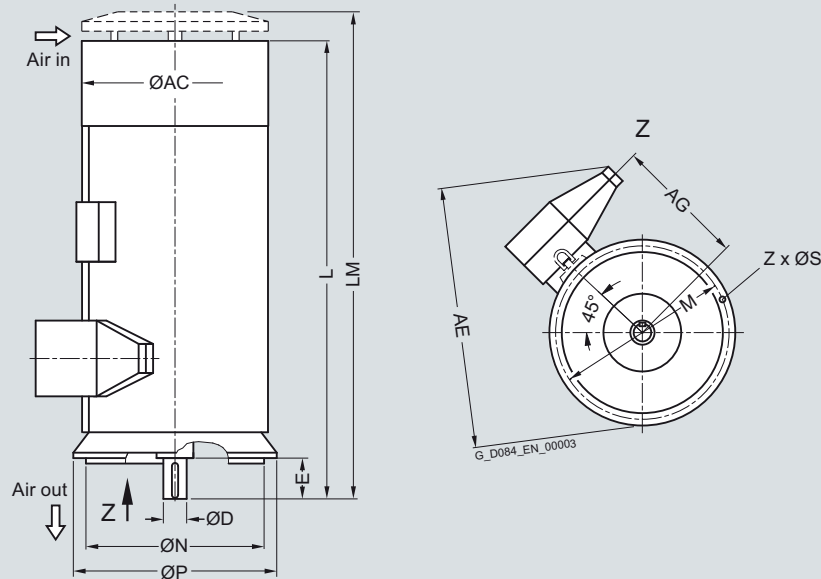
<sup>1)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 45 mm.

<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 185 mm (for AC = 1070), by + 180 mm (for AC = 1210) or by + 130 mm (for AC = 1350).

<sup>3)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

<sup>4)</sup> Only in the 50 Hz version.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions											
		AC	AG <sup>1)</sup>	AE <sup>2)</sup>	D	E	L	LM	P	N	M	S	Z
Up to 6.6 kV, IM V1 type of construction, roller bearings <sup>3)</sup>													
4-pole													
1LA4 452-4AN..	5000	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 454-4AN..	5200	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 500-4AN..	5900	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 502-4AN..	6300	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 504-4AN..	6800	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 560-4CN..	8300	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4 562-4CN..	9000	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4 564-4CN..	9700	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
6-pole													
1LA4 314-6AN..	1950	700	620	1225	90	130	1810	1940	800	680	740	22	8
1LA4 316-6AN..	2150	700	620	1225	90	130	1810	1940	800	680	740	22	8
1LA4 350-6AN..	2450	780	660	1310	100	165	1985	2125	900	780	840	22	8
1LA4 352-6AN..	2650	780	660	1310	100	165	1985	2125	900	780	840	22	8
1LA4 354-6AN..	2900	780	660	1310	100	165	1985	2125	900	780	840	22	8
1LA4 400-6AN..	3500	870	710	1400	120	165	2125	2275	1000	880	940	22	8
1LA4 402-6AN..	3750	870	710	1400	120	165	2125	2275	1000	880	940	22	8
1LA4 404-6AN..	4000	870	710	1400	120	165	2125	2275	1000	880	940	22	8
1LA4 450-6AN..	4600	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 452-6AN..	4900	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 454-6AN..	5200	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 500-6CN..	6400	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 502-6CN..	6800	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 504-6CN..	7300	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 560-6CN..	8500	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4 562-6CN..	9300	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16

<sup>1)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 45 mm.

<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 185 mm (for AC = 1070), by + 180 mm (for AC = 1210) or by + 130 mm (for AC = 1350).

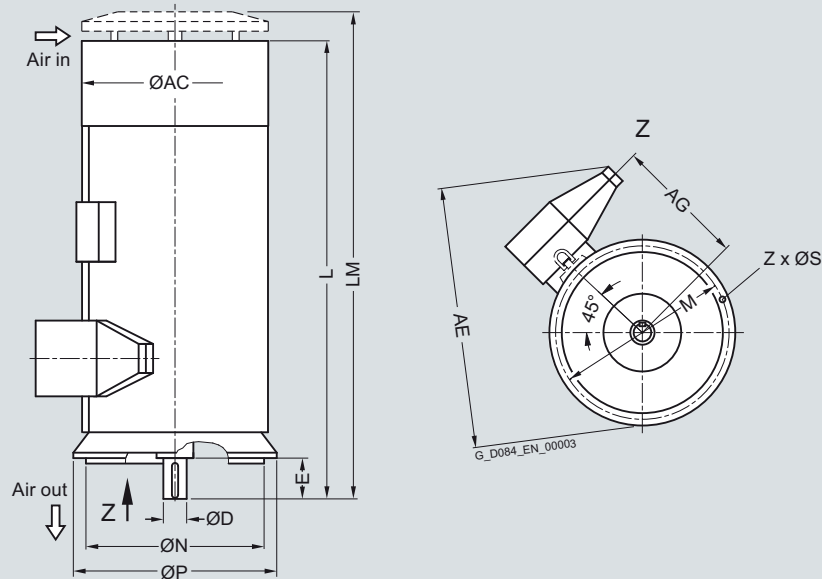
<sup>3)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions											
		AC mm	AG <sup>1)</sup> mm	AE <sup>2)</sup> mm	D mm	E mm	L mm	LM mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings<sup>3)</sup></b>													
<b>6-pole</b>													
1LA4 564-6CN..	10100	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4 632-6CN..	12700	1350	O. R. <sup>4)</sup>	1820	180	240	3115	3305	1400	1250	1320	26	16
1LA4 634-6CN..	13400	1350	O. R. <sup>4)</sup>	1820	180	240	3115	3305	1400	1250	1320	26	16
1LA4 636-6CN..	14100	1350	O. R. <sup>4)</sup>	1820	180	240	3115	3305	1400	1250	1320	26	16
<b>8-pole</b>													
1LA4 350-8AN..	2450	780	660	1310	100	165	1985	2125	900	780	840	22	8
1LA4 352-8AN..	2650	780	660	1310	100	165	1985	2125	900	780	840	22	8
1LA4 354-8AN..	2850	780	660	1310	100	165	1985	2125	900	780	840	22	8
1LA4 400-8AN..	3450	870	710	1400	120	165	2125	2275	1000	880	940	22	8
1LA4 402-8AN..	3700	870	710	1400	120	165	2125	2275	1000	880	940	22	8
1LA4 404-8AN..	3950	870	710	1400	120	165	2125	2275	1000	880	940	22	8
1LA4 450-8AN..	4600	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 452-8AN..	4900	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 454-8AN..	5200	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 500-8CN..	6400	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 502-8CN..	6800	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 504-8CN..	7200	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 560-8CN..	8500	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4 562-8CN..	9200	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4 564-8CN..	10000	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4 632-8CN..	12500	1350	O. R. <sup>4)</sup>	1820	180	240	3115	3305	1400	1250	1320	26	16
1LA4 634-8CN..	13300	1350	O. R. <sup>4)</sup>	1820	180	240	3115	3305	1400	1250	1320	26	16
1LA4 636-8CN..	14000	1350	O. R. <sup>4)</sup>	1820	180	240	3115	3305	1400	1250	1320	26	16

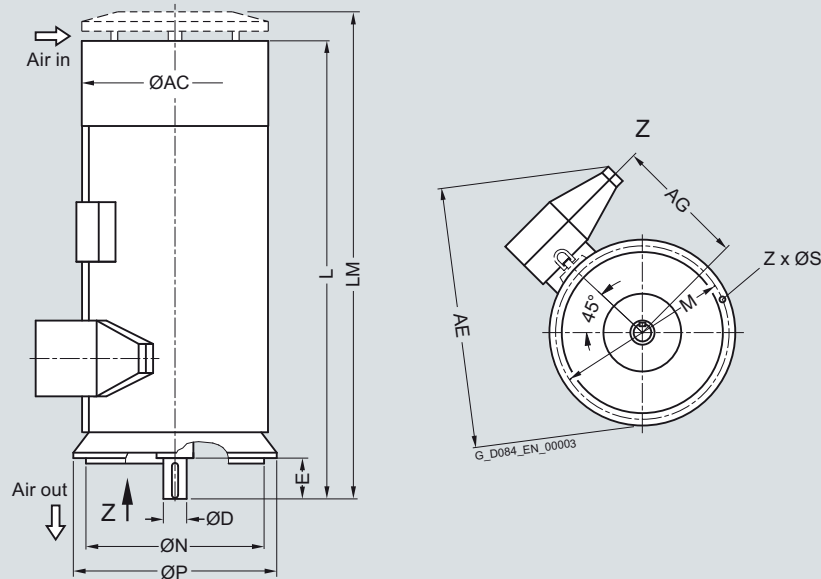
<sup>1)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 45 mm.

<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 185 mm (for AC = 1070), by + 180 mm (for AC = 1210) or by + 130 mm (for AC = 1350).

<sup>3)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

<sup>4)</sup> On request.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions											
		AC	AG <sup>1)</sup>	AE <sup>2)</sup>	D	E	L	LM	P	N	M	S	Z
Up to 6.6 kV, IM V1 type of construction, roller bearings <sup>3)</sup>													
10-pole													
1LA4 450-3AN..	4600	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 452-3AN..	4900	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 454-3AN..	5200	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 500-3CN..	6400	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 502-3CN..	6800	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 504-3CN..	7200	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 560-3CN..	8500	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4 562-3CN..	9200	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4 564-3CN..	10000	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
12-pole													
1LA4 450-5CN..	4600	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 452-5CN..	4900	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 454-5CN..	5200	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4 500-5CN..	6400	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 502-5CN..	6800	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 504-5CN..	7200	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4 560-5CN..	8500	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4 562-5CN..	9200	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4 564-5CN..	10000	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16

## Note:

Higher pole numbers are available on request.

<sup>1)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 45 mm.

<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by + 185 mm (for AC = 1070), by + 180 mm (for AC = 1210) or by + 130 mm (for AC = 1350).

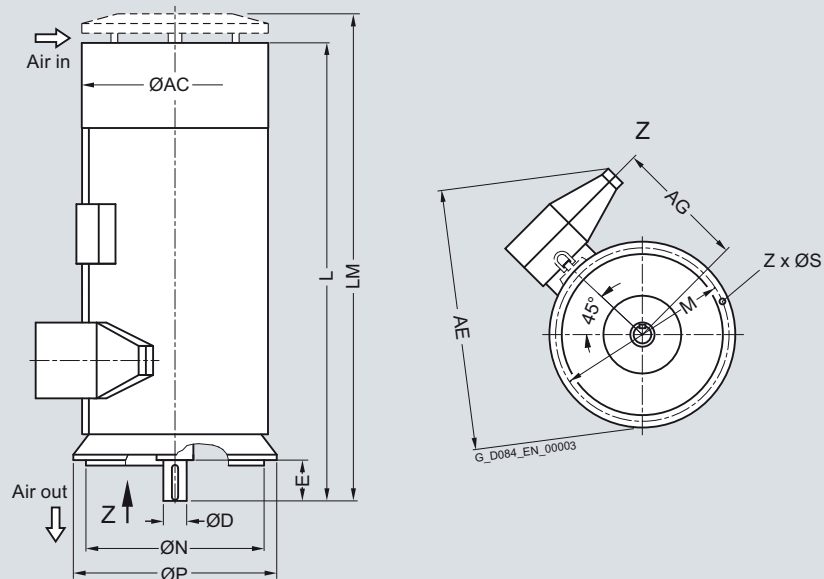
<sup>3)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

# Motors for line operation

## Air-cooled motors

### H-compact 1LA4

#### Dimension drawings

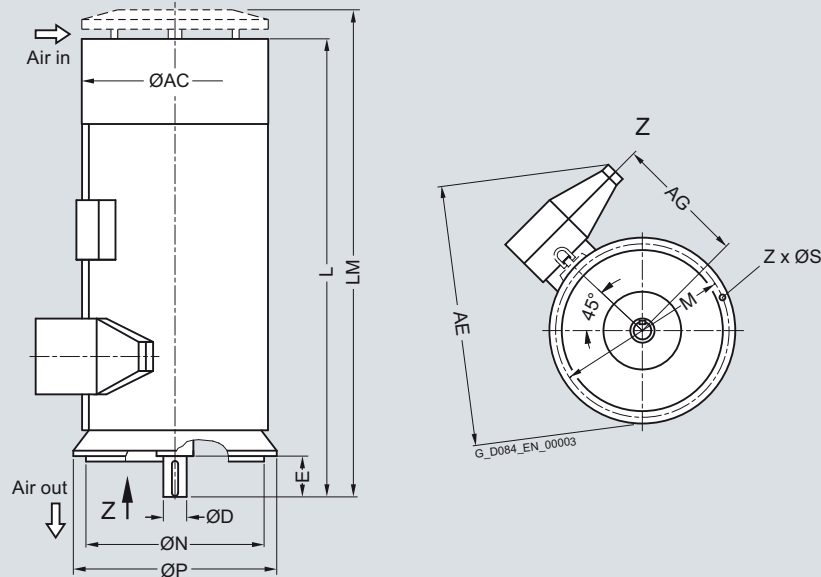


Motor type	Weight kg	Dimensions											
		AC mm	AG mm	AE mm	D mm	E mm	L mm	LM mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings<sup>1)</sup></b>													
<b>4-pole</b>													
1LA4 450-4AN..	4600	960	865	1740	130	200	2390	2550	1150	1000	1080	26	8
1LA4 452-4AN..	4900	960	865	1740	130	200	2390	2550	1150	1000	1080	26	8
1LA4 454-4AN..	5200	960	865	1740	130	200	2390	2550	1150	1000	1080	26	8
1LA4 500-4AN..	5900	1070	940	1845	140	200	2525	2695	1250	1120	1180	26	16
1LA4 502-4AN..	6300	1070	940	1845	140	200	2525	2695	1250	1120	1180	26	16
1LA4 504-4AN..	6700	1070	940	1845	140	200	2525	2695	1250	1120	1180	26	16
1LA4 560-4CN..	8100	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
1LA4 562-4CN..	8900	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
1LA4 564-4CN..	9600	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
<b>6-pole</b>													
1LA4 450-6AN..	4600	960	865	1740	130	200	2390	2550	1150	1000	1080	26	8
1LA4 452-6AN..	4800	960	865	1740	130	200	2390	2550	1150	1000	1080	26	8
1LA4 454-6AN..	5100	960	865	1740	130	200	2390	2550	1150	1000	1080	26	8
1LA4 500-6CN..	6400	1070	940	1845	140	200	2525	2695	1250	1120	1180	26	16
1LA4 502-6CN..	6800	1070	940	1845	140	200	2525	2695	1250	1120	1180	26	16
1LA4 504-6CN..	7200	1070	940	1845	140	200	2525	2695	1250	1120	1180	26	16
1LA4 560-6CN..	8500	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
1LA4 562-6CN..	9200	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
1LA4 564-6CN..	10000	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
1LA4 634-6CN..	13400	1350	O. R. <sup>2)</sup>	1820	180	240	3115	3305	1400	1250	1320	26	16
1LA4 636-6CN..	14100	1350	O. R. <sup>2)</sup>	1820	180	240	3115	3305	1400	1250	1320	26	16
<b>8-pole</b>													
1LA4 450-8AN..	4600	960	865	1740	130	200	2390	2550	1150	1000	1080	26	8
1LA4 452-8AN..	4800	960	865	1740	130	200	2390	2550	1150	1000	1080	26	8
1LA4 454-8AN..	5100	960	865	1740	130	200	2390	2550	1150	1000	1080	26	8
1LA4 500-8CN..	6300	1070	940	1845	140	200	2525	2695	1250	1120	1180	26	16

<sup>1)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.

<sup>2)</sup> On request.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions											
		AC mm	AG mm	AE mm	D mm	E mm	L mm	LM mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings<sup>1)</sup></b>													
<b>8-pole</b>													
1LA4 502-8CN..	6800	1070	940	1845	140	200	2525	2695	1250	1120	1180	26	16
1LA4 504-8CN..	7200	1070	940	1845	140	200	2525	2695	1250	1120	1180	26	16
1LA4 560-8CN..	8400	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
1LA4 562-8CN..	9100	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
1LA4 564-8CN..	10000	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
1LA4 634-8CN..	13300	1350	O. R. <sup>2)</sup>	1820	180	240	3115	3305	1400	1250	1320	26	16
1LA4 636-8CN..	14000	1350	O. R. <sup>2)</sup>	1820	180	240	3115	3305	1400	1250	1320	26	16
<b>10-pole</b>													
1LA4 500-3CN..	6300	1070	940	1845	140	200	2525	2695	1250	1120	1180	26	16
1LA4 502-3CN..	6800	1070	940	1845	140	200	2525	2695	1250	1120	1180	26	16
1LA4 504-3CN..	7200	1070	940	1845	140	200	2525	2695	1250	1120	1180	26	16
1LA4 560-3CN..	8400	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
1LA4 562-3CN..	9100	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
1LA4 564-3CN..	10000	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
<b>12-pole</b>													
1LA4 560-5CN..	8400	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
1LA4 562-5CN..	9100	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16
1LA4 564-5CN..	10000	1210	1010	1980	160	240	2775	2955	1400	1250	1320	26	16

Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions also apply for the 1MA4 and 1MS4 series.<sup>2)</sup> On request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Overview



#### Technical data

##### Overview of technical data

##### H-compact PLUS 1RQ4/1RQ6

Rated voltage	3.3 ... 13.8 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Cooling method	IC611/IC616
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	450 ... 710 mm
Bearings	Roller bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN, NEMA
Frame design for shaft heights 450 ... 560 mm	Frame: Cast iron Design: Steel
Frame design for shaft heights 630 ... 710 mm	Frame: Steel Design: Steel

#### Technical data (continued)

##### Power ranges for IEC motors for line operation

1RQ4, 1SG4 (Ex nA), 1SB4 (Ex px) series

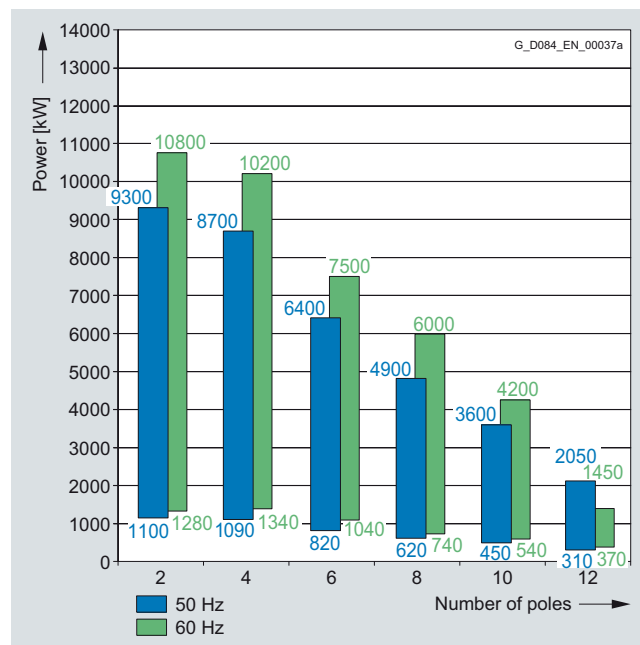
1RQ6, 1SG6 (Ex nA), 1SB6 (Ex px) series

Insulation system, thermal class 155 (F), utilized to 130 (B).

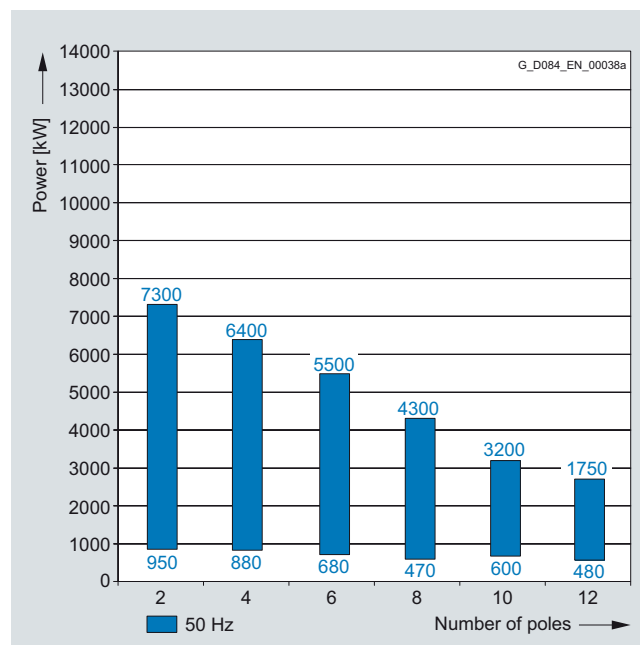
Ambient temperature up to 40 °C, installation altitude up to 1000 m.

3.3 to 6.6 kV; 50 Hz

4.0 to 6.6 kV; 60 Hz



9 to 11 kV; 50 Hz



# Motors for line operation

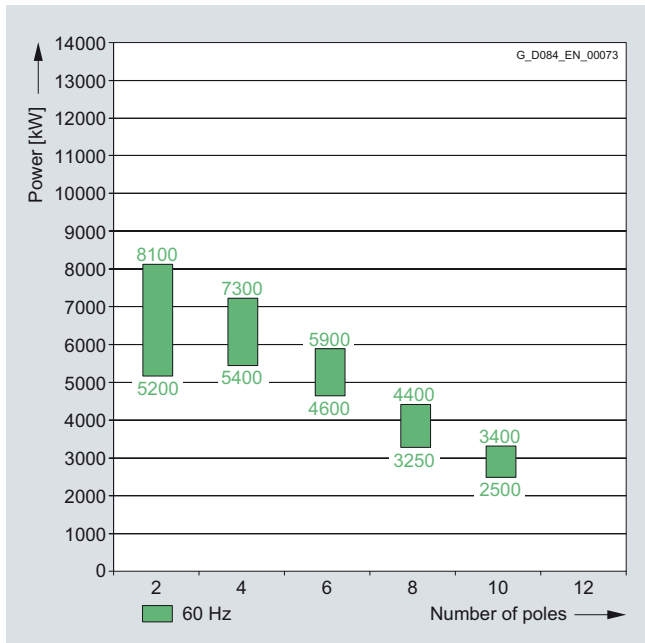
## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

**Technical data** (continued)

**Power ranges for IEC motors for line operation**  
(continued)

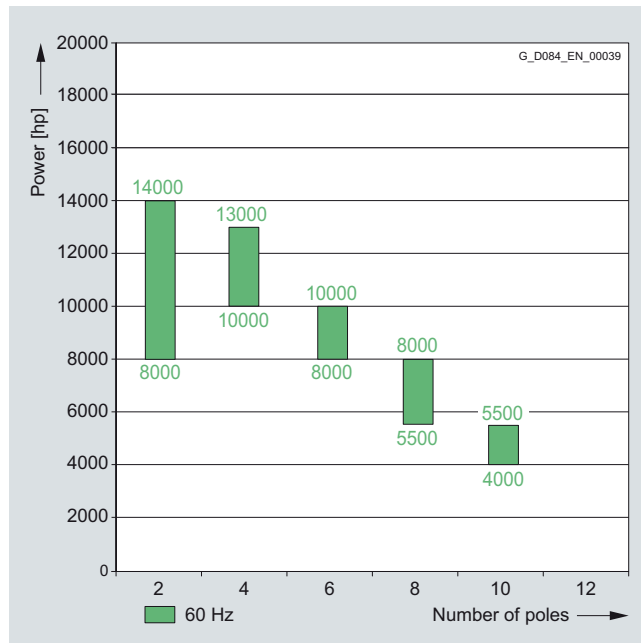
12.5 to 13.8 kV; 60 Hz



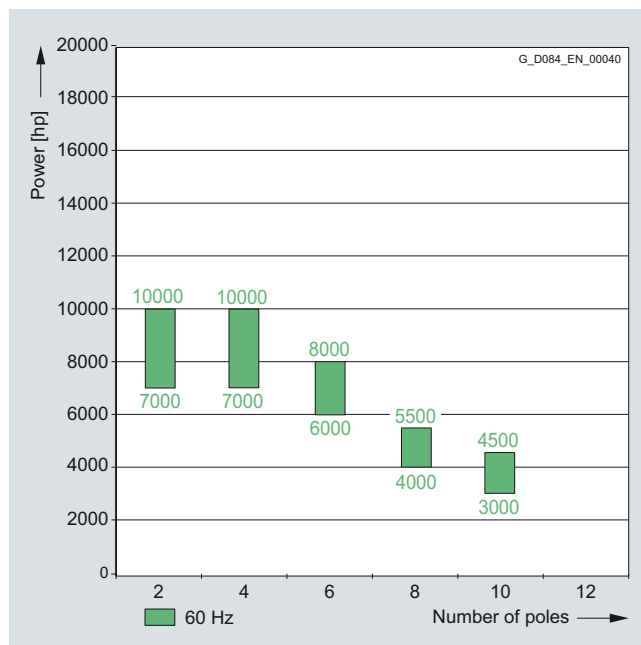
**Power ranges for NEMA motors for line operation**

Insulation system, thermal class 155 (F), utilized to 130 (B).

4 to 6.6 kV; 60 Hz



12.5 to 13.8 kV; 60 Hz



2

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB4/1SB6 (Ex px) and 1SG4/1SG6 (Ex nA).

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current A	Efficiency		Power factor		Torque Nm	Break- down torque $T_B/T_{rated}$ [-]	Locked- rotor torque $T_{LR}/T_{rated}$ [-]	Locked- rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>3.3 ... 6.6 kV, 50 Hz</b>													
2-pole													
1100	<b>1RQ6 450-2JJ</b>	2978	124	95.6	95.6	0.90	0.89	3529	2.4	0.65	5.5	13	74
1220	<b>1RQ6 452-2JJ</b>	2980	136	95.9	95.9	0.90	0.89	3912	2.4	0.60	5.5	14	76
1350	<b>1RQ6 454-2JJ</b>	2982	150	96.0	96.1	0.90	0.89	4325	2.5	0.55	5.5	15	78
1490	<b>1RQ6 456-2JJ</b>	2982	164	96.2	96.3	0.91	0.91	4774	2.4	0.50	5.5	17	81
1680	<b>1RQ6 457-2JJ</b>	2981	182	96.3	96.5	0.92	0.92	5384	2.4	0.55	5.5	19	84
1830	<b>1RQ6 458-2JJ</b>	2982	196	96.5	96.6	0.93	0.93	5864	2.4	0.50	5.5	21	87
1950	<b>1RQ4 502-2JE</b>	2979	220	96.1	95.9	0.88	0.87	6251	2.5	0.68	5.5	23	49
2200	<b>1RQ4 504-2JE</b>	2981	250	96.3	96.2	0.88	0.87	7048	2.6	0.68	5.5	26	56
2500	<b>1RQ4 506-2JE</b>	2981	285	96.5	96.4	0.88	0.87	8009	2.6	0.68	5.5	28	67
2750	<b>1RQ4 560-2JE</b>	2981	310	96.1	96.0	0.89	0.87	8810	2.1	0.50	4.7	33	58
3000	<b>1RQ4 562-2JE</b>	2982	335	96.3	96.2	0.89	0.88	9608	2.3	0.55	5.2	35	70
3550	<b>1RQ4 564-2JE</b>	2983	395	96.7	96.5	0.90	0.89	11365	2.4	0.55	5.3	40	85
4000	<b>1RQ4 566-2JE</b>	2985	445	96.9	96.7	0.89	0.87	12797	2.5	0.55	5.5	44	104
4000	<b>1RQ4 630-2JE</b>	2984	450	96.6	96.5	0.89	0.89	12802	2.40	0.35	4.6	80	150
4500	<b>1RQ4 632-2JE</b>	2986	495	96.9	96.8	0.90	0.88	14392	2.70	0.42	5.4	85	200
5300	<b>1RQ4 634-2JE</b>	2986	580	97.3	97.2	0.90	0.89	16951	2.70	0.44	5.4	95	280
6000	<b>1RQ4 636-2JE</b>	2987	660	97.5	97.4	0.90	0.89	19183	2.70	0.45	5.5	105	320
4-pole													
1090	<b>1RQ6 450-4JJ</b>	1487	124	95.5	95.6	0.88	0.85	7002	2.3	0.70	5.5	20	315
1200	<b>1RQ6 452-4JJ</b>	1488	138	95.6	95.7	0.88	0.85	7704	2.3	0.70	5.5	21	350
1290	<b>1RQ6 454-4JJ</b>	1487	146	95.7	95.9	0.89	0.88	8286	2.2	0.70	5.5	25	390
1420	<b>1RQ6 456-4JJ</b>	1487	158	96.0	96.2	0.90	0.90	9123	2.3	0.70	5.5	28	435
1750	<b>1RQ4 500-4JE</b>	1487	198	96.0	96.1	0.89	0.88	11239	2.3	0.75	5.4	42	320
1920	<b>1RQ4 502-4JE</b>	1487	215	96.2	96.2	0.89	0.88	12331	2.3	0.78	5.5	45	360
2200	<b>1RQ4 504-4JE</b>	1488	245	96.4	96.5	0.89	0.88	14120	2.3	0.78	5.5	51	420
2450	<b>1RQ4 506-4JE</b>	1488	275	96.6	96.7	0.89	0.88	15724	2.3	0.75	5.5	56	480
2950	<b>1RQ4 560-4JE</b>	1489	325	96.5	96.7	0.90	0.89	18920	2.3	0.68	5.4	77	350
3250	<b>1RQ4 562-4JE</b>	1489	360	96.8	97.9	0.90	0.89	20845	2.3	0.68	5.4	86	410
3700	<b>1RQ4 564-4JE</b>	1490	410	97.0	97.0	0.89	0.88	23715	2.3	0.68	5.5	97	480
4000	<b>1RQ4 566-4JE</b>	1491	445	97.1	97.2	0.89	0.88	25620	2.3	0.68	5.5	106	540
4400	<b>1RQ4 630-4JE</b>	1490	490	96.8	96.9	0.89	0.89	28201	2.30	0.62	5.2	150	920
4900	<b>1RQ4 632-4JE</b>	1491	550	97.0	97.1	0.89	0.88	31385	2.45	0.65	5.5	170	1150
5300	<b>1RQ4 634-4JE</b>	1492	590	97.3	97.2	0.89	0.88	33924	2.40	0.62	5.5	185	1350
5800	<b>1RQ4 636-4JE</b>	1492	650	97.3	97.3	0.88	0.87	37125	2.40	0.61	5.5	200	1200

#### Voltage code:

3.3 kV, 50 Hz  
5 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

0  
5  
6  
7  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current $I_{rated}$ at 6 kV A	Efficiency			Power factor		Torque Nm	Break- down torque $T_B/$ $T_{rated}$ [-]	Locked- rotor torque $T_{LR}/$ $T_{rated}$ [-]	Locked- rotor current $I_{LR}/$ $I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>3.3 ... 6.6 kV, 50 Hz</b>														
6-pole														
820	1RQ6 450-6JJ	989	96	95.4	95.9	0.86	0.85	7923	2.1	0.95	5.5	26	780	
910	1RQ6 452-6JJ	990	106	95.6	96.0	0.86	0.84	8782	2.2	1.00	5.5	29	880	
1020	1RQ6 454-6JJ	991	120	95.7	96.0	0.86	0.84	9839	2.2	0.90	5.5	32	990	
1130	1RQ6 456-6JJ	992	134	96.0	96.3	0.85	0.81	10882	2.3	0.85	5.5	37	1160	
1400	1RQ4 500-6JE	990	162	95.7	95.8	0.87	0.86	13505	2.2	0.85	5.4	62	1050	
1600	1RQ4 502-6JE	990	184	95.9	96.0	0.87	0.86	15434	2.2	0.85	5.4	70	1150	
1780	1RQ4 504-6JE	990	205	96.0	96.1	0.87	0.86	17171	2.2	0.85	5.5	77	1350	
1950	1RQ4 506-6JE	991	225	96.2	96.2	0.87	0.86	18792	2.2	0.85	5.5	85	1600	
2250	1RQ4 560-6JE	992	260	96.3	96.5	0.87	0.85	21661	2.1	0.72	5.1	108	1300	
2550	1RQ4 562-6JE	993	295	96.5	96.6	0.86	0.84	24524	2.2	0.75	5.4	123	1600	
2800	1RQ4 564-6JE	993	320	96.6	96.7	0.87	0.85	26928	2.2	0.75	5.4	137	1800	
3000	1RQ4 566-6JE	993	345	96.7	96.8	0.87	0.85	28852	2.2	0.75	5.4	149	2000	
3550	1RQ4 630-6JE	993	410	96.8	96.7	0.86	0.85	34141	2.15	0.63	5.0	188	2400	
3850	1RQ4 632-6JE	993	440	96.9	96.8	0.87	0.85	37027	2.20	0.66	5.2	207	2800	
4100	1RQ4 634-6JE	994	475	96.9	96.9	0.86	0.84	39391	2.30	0.68	5.5	228	2500	
4400	1RQ4 636-6JE	994	510	97.1	97.1	0.86	0.84	42274	2.40	0.68	5.5	251	3200	
8-pole														
620	1RQ6 450-8JJ	743	77	94.9	95.2	0.82	0.78	7968	2.3	0.80	5.5	32	960	
675	1RQ6 452-8JJ	744	83	95.1	95.3	0.82	0.77	8669	2.3	0.80	5.5	36	1060	
750	1RQ6 454-8JJ	742	92	95.2	95.5	0.82	0.78	9657	2.2	0.80	5.5	41	1160	
810	1RQ6 456-8JJ	744	100	95.3	95.5	0.82	0.78	10397	2.5	0.85	5.5	46	1300	
1040	1RQ4 500-8JE	743	126	95.3	95.4	0.83	0.80	13367	2.3	0.90	5.5	74	1600	
1160	1RQ4 502-8JE	743	140	95.5	95.6	0.83	0.80	14910	2.3	0.90	5.5	84	1900	
1280	1RQ4 504-8JE	743	154	95.8	95.8	0.84	0.81	16452	2.3	0.90	5.5	92	1900	
1400	1RQ4 506-8JE	743	166	95.8	95.9	0.85	0.82	17995	2.2	0.90	5.5	103	2200	
1650	1RQ4 560-8JE	744	198	95.9	96.0	0.84	0.81	21179	2.1	0.78	5.3	128	2500	
1850	1RQ4 562-8JE	744	220	96.1	96.2	0.85	0.82	23747	2.1	0.78	5.4	146	3000	
2000	1RQ4 564-8JE	744	235	96.3	96.3	0.85	0.82	25672	2.1	0.80	5.5	163	3500	
2200	1RQ4 566-8JE	745	260	96.4	96.4	0.85	0.82	28201	2.2	0.80	5.5	178	3700	
2650	1RQ4 630-8JE	744	315	96.4	96.4	0.84	0.81	34015	2.40	0.75	5.1	246	3300	
2850	1RQ4 632-8JE	745	340	96.5	96.5	0.83	0.79	36534	2.50	0.81	5.5	272	3600	
3000	1RQ4 634-8JE	745	355	96.5	96.6	0.84	0.81	38456	2.50	0.81	5.5	300	3800	
3200	1RQ4 636-8JE	745	375	96.7	96.6	0.85	0.82	41020	2.50	0.80	5.5	331	4200	

#### Voltage code:

3.3 kV, 50 Hz  
5 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

0  
5  
6  
7  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked- rotor torque $T_{LR}/T_{rated}$	Locked- rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>3.3 ... 6.6 kV, 50 Hz</b>														
10-pole														
450	<b>1RQ6 450-3JJ</b>	592	59	93.7	93.6	0.78	0.72	7259	2.3	1.00	5.4	39	1250	
500	<b>1RQ6 452-3JJ</b>	592	66	93.9	93.8	0.78	0.72	8066	2.4	1.00	5.5	43	1500	
560	<b>1RQ6 454-3JJ</b>	592	74	94.1	94.0	0.77	0.71	9034	2.4	1.00	5.5	48	1650	
610	<b>1RQ6 456-3JJ</b>	593	82	94.2	94.0	0.76	0.69	9824	2.5	1.00	5.5	54	1950	
740	<b>1RQ4 500-3JE</b>	593	94	94.6	94.6	0.80	0.76	11917	2.2	0.83	5.2	74	1600	
820	<b>1RQ4 502-3JE</b>	593	104	94.8	94.8	0.80	0.76	13206	2.3	0.85	5.4	84	1950	
900	<b>1RQ4 504-3JE</b>	593	114	94.9	94.9	0.80	0.76	14494	2.3	0.90	5.4	92	2500	
1020	<b>1RQ4 506-3JE</b>	593	128	95.1	95.1	0.80	0.74	16427	2.3	0.90	5.5	103	3100	
1220	<b>1RQ4 560-3JE</b>	594	156	95.2	95.1	0.79	0.74	19614	2.3	0.85	5.2	128	3000	
1400	<b>1RQ4 562-3JE</b>	594	176	95.5	95.4	0.80	0.75	22508	2.3	0.85	5.4	146	4600	
1550	<b>1RQ4 564-3JE</b>	594	194	95.6	95.6	0.80	0.75	24920	2.4	0.85	5.5	163	5100	
1660	<b>1RQ4 566-3JE</b>	595	215	95.7	95.7	0.78	0.72	26644	2.4	0.85	5.5	178	5700	
2000	<b>1RQ4 630-3JE</b>	593	240	96.0	96.2	0.84	0.81	32209	2.10	0.74	4.8	246	5000	
2200	<b>1RQ4 632-3JE</b>	594	260	96.1	96.3	0.84	0.81	35370	2.20	0.76	4.9	272	5700	
2400	<b>1RQ4 634-3JE</b>	594	285	96.3	96.5	0.84	0.81	38586	2.20	0.77	4.9	300	6600	
2600	<b>1RQ4 636-3JE</b>	594	315	96.4	96.6	0.83	0.79	41801	2.50	0.88	5.5	331	7300	
12-pole														
310	<b>1RQ6 450-5JJ</b>	493	46	92.7	92.5	0.71	0.64	6005	2.0	0.72	4.6	39	1250	
350	<b>1RQ6 452-5JJ</b>	493	52	93.1	92.7	0.70	0.62	6780	2.2	0.78	4.9	43	1600	
400	<b>1RQ6 454-5JJ</b>	493	58	93.4	93.2	0.71	0.66	7748	2.0	0.72	4.6	48	1800	
450	<b>1RQ6 456-5JJ</b>	493	64	93.6	93.4	0.72	0.66	8717	2.1	0.75	4.8	54	1950	
540	<b>1RQ4 500-5JE</b>	492	76	94.0	93.9	0.73	0.67	10482	2.1	0.70	4.6	74	2200	
610	<b>1RQ4 502-5JE</b>	493	85	94.3	94.2	0.73	0.67	11816	2.2	0.75	4.8	84	3000	
670	<b>1RQ4 504-5JE</b>	493	95	94.4	94.3	0.72	0.65	12979	2.3	0.78	5.0	91	3700	
740	<b>1RQ4 506-5JE</b>	493	104	94.6	94.4	0.72	0.65	14335	2.3	0.78	5.2	102	4400	
920	<b>1RQ4 560-5JE</b>	494	128	94.7	94.8	0.73	0.67	17785	2.0	0.67	4.5	128	4100	
1020	<b>1RQ4 562-5JE</b>	495	144	94.9	94.9	0.72	0.65	19679	2.1	0.72	4.6	146	4700	
1120	<b>1RQ4 564-5JE</b>	495	158	95.0	95.0	0.72	0.65	21608	2.2	0.72	4.8	163	5300	
1220	<b>1RQ4 566-5JE</b>	495	172	95.2	95.1	0.72	0.65	23537	2.3	0.75	4.8	178	5900	
1600	<b>1RQ4 630-5JE</b>	494	205	95.5	95.8	0.78	0.72	30931	2.25	0.83	5.0	246	5700	
1800	<b>1RQ4 632-5JE</b>	494	230	95.8	96.0	0.78	0.73	34798	2.30	0.85	5.1	272	7500	
1950	<b>1RQ4 634-5JE</b>	494	250	96.0	96.1	0.78	0.73	37697	2.30	0.87	5.2	300	8800	
2050	<b>1RQ4 636-5JE</b>	495	265	96.2	96.3	0.78	0.72	39551	2.45	0.92	5.4	331	10500	

#### Voltage code:

3.3 kV, 50 Hz  
5 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

0  
5  
6  
7  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB4/1SB6 (Ex px) and 1SG4/1SG6 (Ex nA).

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>3.3 ... 6.6 kV, 50 Hz</b>														
2-pole														
5400 <sup>2)</sup>	1RQ6 710-2HJ■0	2991	600	96.9	96.7	0.89	0.88	17245	2.4	0.51	5.5	134	166	
7000 <sup>2)</sup>	1RQ6 712-2HJ■0	2990	770	97.1	97.0	0.90	0.90	22362	2.2	0.49	5.2	148	172	
8100 <sup>2)</sup>	1RQ6 714-2HJ■0	2991	880	97.3	97.1	0.91	0.90	25871	2.4	0.55	5.5	163	182	
9300 <sup>2)</sup>	1RQ6 716-2HJ■0	2990	1000	97.4	97.3	0.92	0.91	29710	2.3	0.54	5.5	180	200	
4-pole														
6100 <sup>2)</sup>	1RQ6 710-4JJ■0	1493	660	97.3	97.4	0.91	0.90	39025	2.2	0.58	5.5	278	772	
7000 <sup>2)</sup>	1RQ6 712-4JJ■0	1493	760	97.4	97.5	0.91	0.90	44773	2.2	0.58	5.5	305	815	
7400 <sup>2)</sup>	1RQ6 714-4JJ■0	1493	790	97.4	97.5	0.92	0.92	47357	2.1	0.60	5.5	341	989	
8700 <sup>2)</sup>	1RQ6 716-4JJ■0	1493	930	97.6	97.6	0.92	0.91	55655	2.2	0.61	5.5	374	1066	
6-pole														
4900	1RQ6 710-6JJ■■	994	560	97.0	97.3	0.86	0.85	47091	2.1	0.68	5.2	338	2362	
5300	1RQ6 712-6JJ■■	994	600	97.2	97.4	0.87	0.86	50929	2.1	0.75	5.5	375	2725	
5800	1RQ6 714-6JJ■■	994	650	97.3	97.4	0.88	0.86	55713	2.2	0.80	5.5	427	3373	
6400	1RQ6 716-6JJ■■	995	730	97.4	97.5	0.87	0.86	61459	2.3	0.83	5.5	476	3924	
8-pole														
3650	1RQ6 710-8JJ■■	745	425	96.8	97.1	0.85	0.83	46798	1.9	0.77	5.2	426	5374	
4000	1RQ6 712-8JJ■■	745	465	96.9	97.2	0.85	0.84	51282	1.9	0.78	5.2	476	6124	
4400	1RQ6 714-8JJ■■	746	510	97.0	97.2	0.85	0.83	56368	2.1	0.89	5.5	542	7308	
4900	1RQ6 716-8JJ■■	746	570	97.1	97.3	0.85	0.83	62760	2.2	0.93	5.5	608	8492	
10-pole														
2750	1RQ6 710-3JJ■■	596	340	96.3	96.9	0.81	0.78	44099	2.1	0.72	5.1	426	8974	
3000	1RQ6 712-3JJ■■	596	370	96.6	97.0	0.81	0.77	48083	2.2	0.76	5.4	476	10324	
3300	1RQ6 714-3JJ■■	596	405	96.8	97.0	0.81	0.77	52867	2.3	0.82	5.5	542	12458	
3600	1RQ6 716-3JJ■■	596	440	96.8	97.0	0.81	0.77	57653	2.4	0.85	5.5	609	14691	

#### Voltage code:

3.3 kV, 50 Hz	0
6 kV, 50 Hz	6
6.6 kV, 50 Hz	7
Other voltage	9

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup>  $V_{rated} < 6$  kV on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked-rotor torque $T_{LR}/T_{rated}$	Locked-rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$	Motor kgm <sup>2</sup>					External, max. 1) kgm <sup>2</sup>	
<b>9.0 ... 11 kV, 50 Hz</b>														
2-pole														
950	<b>1RQ6 450-2JJ</b>	2979	65	95.2	95.3	0.89	0.89	3048	2.2	0.55	5.5	13	32.5	
1050	<b>1RQ6 452-2JJ</b>	2981	71	95.5	95.6	0.90	0.90	3365	2.4	0.55	5.5	14	34	
1150	<b>1RQ6 454-2JJ</b>	2981	76	95.6	95.7	0.91	0.91	3686	2.3	0.50	5.5	15	35.5	
1250	<b>1RQ6 456-2JJ</b>	2982	82	95.9	96.0	0.92	0.92	4006	2.4	0.50	5.5	17	38	
1400	<b>1RQ6 457-2JJ</b>	2982	92	96.0	96.2	0.92	0.93	4486	2.4	0.50	5.5	19	40.5	
1540	<b>1RQ6 458-2JJ</b>	2982	99	96.1	96.3	0.93	0.93	4934	2.4	0.50	5.5	21	42.5	
1800	<b>1RQ4 504-2JE</b>	2981	122	95.9	95.7	0.89	0.88	5767	2.4	0.62	5.5	26	55	
2050	<b>1RQ4 506-2JE</b>	2982	138	96.2	96.0	0.89	0.88	6565	2.4	0.62	5.5	28	66	
2350	<b>1RQ4 560-2JE</b>	2983	158	95.9	95.6	0.89	0.87	7523	2.2	0.45	4.9	33	62	
2600	<b>1RQ4 562-2JE</b>	2984	176	96.0	95.8	0.89	0.87	8321	2.3	0.50	5.2	35	69	
3100	<b>1RQ4 564-2JE</b>	2985	205	96.5	96.2	0.90	0.88	9918	2.5	0.55	5.5	40	90	
3400	<b>1RQ4 566-2JE</b>	2985	225	96.7	96.4	0.90	0.89	10878	2.5	0.55	5.5	44	115	
3600	<b>1RQ4 630-2JE</b>	2986	240	96.5	96.2	0.89	0.88	11514	2.60	0.39	5.1	61	100	
4100	<b>1RQ4 632-2JE</b>	2987	270	96.8	96.7	0.90	0.89	13108	2.70	0.42	5.5	68	140	
4600	<b>1RQ4 634-2JE</b>	2987	305	97.1	96.9	0.90	0.89	14707	2.70	0.42	5.5	77	160	
5200	<b>1RQ4 636-2JE</b>	2987	340	97.3	97.1	0.91	0.90	16625	2.60	0.43	5.5	87	200	
4-pole														
880	<b>1RQ6 450-4JJ</b>	1485	59	94.9	95.2	0.90	0.90	5662	2.1	0.70	5.5	20	154	
940	<b>1RQ6 452-4JJ</b>	1486	63	95.2	95.5	0.90	0.90	6043	2.2	0.70	5.5	22	194	
1080	<b>1RQ6 454-4JJ</b>	1487	73	95.4	95.7	0.90	0.90	6939	2.2	0.70	5.5	25	250	
1160	<b>1RQ6 456-4JJ</b>	1486	77	95.6	95.9	0.91	0.91	7455	2.2	0.70	5.5	28	310	
1450	<b>1RQ4 500-4JE</b>	1488	99	95.7	95.7	0.88	0.87	9306	2.3	0.70	5.5	42	240	
1600	<b>1RQ4 502-4JE</b>	1489	110	95.9	95.8	0.88	0.86	10262	2.3	0.70	5.5	45	250	
1800	<b>1RQ4 504-4JE</b>	1489	122	96,	96.0	0.88	0.87	11545	2.3	0.70	5.5	51	290	
2000	<b>1RQ4 506-4JE</b>	1490	136	96.3	96.2	0.88	0.86	12819	2.3	0.70	5.5	56	340	
2500	<b>1RQ4 560-4JE</b>	1490	166	96.2	96.4	0.90	0.89	16023	2.3	0.65	5.5	77	330	
2750	<b>1RQ4 562-4JE</b>	1491	184	96.5	96.6	0.89	0.87	17614	2.3	0.65	5.5	86	380	
3100	<b>1RQ4 564-4JE</b>	1491	205	96.7	96.7	0.90	0.89	19856	2.2	0.65	5.5	97	450	
3350	<b>1RQ4 566-4JE</b>	1491	225	96.8	96.8	0.89	0.89	21457	2.2	0.65	5.5	106	530	
3800	<b>1RQ4 630-4JE</b>	1491	255	96.7	96.6	0.89	0.88	24339	2.40	0.62	5.4	139	600	
4250	<b>1RQ4 632-4JE</b>	1491	280	96.8	96.9	0.90	0.90	27222	2.40	0.64	5.5	154	720	
4700	<b>1RQ4 634-4JE</b>	1492	310	97.0	97.0	0.90	0.89	30084	2.40	0.63	5.5	174	850	
5100	<b>1RQ4 636-4JE</b>	1492	340	97.2	97.1	0.89	0.88	32644	2.45	0.60	5.5	186	850	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data (continued)

Rated power  IEC  kW	High voltage motor H-compact PLUS  Order No.	Speed  rpm	Rated current		Efficiency		Power factor		Torque  Nm	Break-down torque  $T_B/T_{rated}$ [-]	Locked-rotor torque  $T_{LR}/T_{rated}$ [-]	Locked-rotor current  $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9.0 ... 11 kV, 50 Hz</b>														
6-pole														
680	1RQ6 450-6JJ	991	48.5	94.8	95.2	0.85	0.82	6558	2.2	0.85	5.5	26	380	
760	1RQ6 452-6JJ	991	54	95.1	95.5	0.86	0.84	7332	2.2	0.90	5.5	29	435	
820	1RQ6 454-6JJ	991	57	95.2	95.7	0.87	0.85	7909	2.2	0.85	5.5	32	490	
960	1RQ6 456-6JJ	992	67	95.5	95.8	0.86	0.83	9246	2.2	0.80	5.5	37	570	
1120	1RQ4 500-6JE	991	78	95.1	95.2	0.87	0.85	10793	2.2	0.80	5.5	62	500	
1280	1RQ4 502-6JE	992	89	95.5	95.6	0.87	0.85	12323	2.2	0.80	5.5	70	600	
1400	1RQ4 504-6JE	992	98	95.7	95.7	0.86	0.84	13478	2.2	0.75	5.5	77	650	
1550	1RQ4 506-6JE	992	108	95.8	95.8	0.86	0.84	14922	2.3	0.75	5.5	85	720	
1950	1RQ4 560-6JE	993	136	96.1	96.1	0.86	0.84	18754	2.2	0.75	5.5	108	900	
2150	1RQ4 562-6JE	994	150	96.3	96.2	0.86	0.83	20656	2.2	0.70	5.5	123	950	
2400	1RQ4 564-6JE	994	170	96.4	96.4	0.85	0.82	23058	2.3	0.70	5.5	137	1100	
2600	1RQ4 566-6JE	994	182	96.5	96.5	0.85	0.82	24980	2.3	0.70	5.5	149	1350	
3100	1RQ4 630-6JE	994	215	96.6	96.5	0.86	0.84	29784	2.30	0.66	5.4	188	1400	
3400	1RQ4 632-6JE	994	235	96.7	96.7	0.87	0.85	32666	2.30	0.68	5.5	207	1700	
3700	1RQ4 634-6JE	994	255	96.8	96.8	0.86	0.85	35548	2.30	0.67	5.5	228	2000	
4000	1RQ4 636-6JE	994	275	97.0	96.9	0.86	0.84	38431	2.40	0.67	5.5	251	2400	
8-pole														
470	1RQ6 450-8JJ	743	34.5	94.0	94.5	0.84	0.81	6045	2.2	0.75	5.5	32	250	
495	1RQ6 452-8JJ	743	35.5	94.2	94.8	0.85	0.82	6365	2.3	0.75	5.5	36	320	
520	1RQ6 454-8JJ	743	37	94.1	94.7	0.86	0.83	6688	2.2	0.75	5.5	41	390	
540	1RQ6 456-8JJ	745	40.5	94.3	94.6	0.82	0.77	6923	2.4	0.70	5.5	45	495	
830	1RQ4 500-8JE	744	62	94.7	94.8	0.82	0.78	10654	2.2	0.75	5.5	74	580	
930	1RQ4 502-8JE	744	67	95.1	95.1	0.84	0.81	11938	2.2	0.80	5.5	84	750	
1020	1RQ4 504-8JE	744	74	95.2	95.2	0.84	0.81	13093	2.2	0.80	5.5	92	850	
1120	1RQ4 506-8JE	744	81	95.3	95.5	0.84	0.82	14376	2.2	0.80	5.5	103	1000	
1380	1RQ4 560-8JE	745	99	95.6	95.6	0.84	0.81	17690	2.2	0.75	5.4	128	1150	
1550	1RQ4 562-8JE	745	112	95.9	95.8	0.83	0.80	19869	2.2	0.75	5.5	146	1550	
1700	1RQ4 564-8JE	745	124	95.9	95.9	0.83	0.80	21792	2.2	0.72	5.5	163	1450	
1900	1RQ4 566-8JE	746	138	96.1	96.0	0.83	0.80	24323	2.2	0.72	5.5	178	1600	
2300	1RQ4 630-8JE	744	164	96.1	96.1	0.84	0.81	29523	2.40	0.76	5.3	246	2000	
2500	1RQ4 632-8JE	745	180	96.2	96.2	0.83	0.79	32047	2.60	0.81	5.5	272	2100	
2700	1RQ4 634-8JE	745	194	96.3	96.3	0.83	0.79	34611	2.60	0.80	5.5	300	2400	
2900	1RQ4 636-8JE	745	205	96.5	96.5	0.84	0.80	37174	2.60	0.80	5.5	331	2900	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked-rotor torque $T_{LR}/T_{rated}$	Locked-rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9.0 ... 11 kV, 50 Hz</b>														
10-pole														
600	<b>1RQ4 500-3JE</b>	595	48	93.8	93.6	0.77	0.71	9630	2.4	0.85	5.5	74	900	
680	<b>1RQ4 502-3JE</b>	594	51	94.2	94.2	0.81	0.76	10933	2.3	0.90	5.5	84	1150	
750	<b>1RQ4 504-3JE</b>	594	57	94.3	94.3	0.81	0.76	12058	2.3	0.90	5.5	92	1300	
820	<b>1RQ4 506-3JE</b>	594	61	94.5	94.5	0.82	0.77	13184	2.3	0.90	5.5	103	1600	
1050	<b>1RQ4 560-3JE</b>	594	81	94.7	94.7	0.79	0.73	16881	2.4	0.85	5.5	128	1850	
1180	<b>1RQ4 562-3JE</b>	594	90	95.0	95.0	0.80	0.75	18971	2.3	0.85	5.5	146	2300	
1300	<b>1RQ4 564-3JE</b>	595	100	95.2	95.1	0.79	0.74	20866	2.4	0.82	5.5	163	2600	
1400	<b>1RQ4 566-3JE</b>	595	112	95.3	95.0	0.76	0.69	22471	2.6	0.82	5.5	178	2750	
1800	<b>1RQ4 630-3JE</b>	594	132	95.8	95.9	0.82	0.78	28939	2.40	0.85	5.4	246	2600	
1950	<b>1RQ4 632-3JE</b>	595	146	96.0	96.0	0.80	0.74	31298	2.60	0.88	5.5	272	3100	
2100	<b>1RQ4 634-3JE</b>	595	156	96.1	96.1	0.81	0.76	33706	2.60	0.89	5.5	300	3200	
2250	<b>1RQ4 636-3JE</b>	595	166	96.2	96.1	0.81	0.76	36113	2.60	0.85	5.5	331	3500	
12-pole														
480	<b>1RQ4 502-5JE</b>	494	42	93.4	93.4	0.70	0.62	9279	2.4	0.85	5.4	84	1500	
530	<b>1RQ4 504-5JE</b>	494	46	93.5	93.5	0.70	0.62	10246	2.4	0.85	5.4	91	1650	
580	<b>1RQ4 506-5JE</b>	494	50	93.7	93.9	0.72	0.64	11213	2.5	0.85	5.4	102	1800	
720	<b>1RQ4 560-5JE</b>	495	60	94.0	94.4	0.74	0.67	13891	2.1	0.70	4.8	128	1950	
840	<b>1RQ4 562-5JE</b>	495	71	94.4	94.7	0.72	0.65	16206	2.3	0.78	5.0	146	2500	
920	<b>1RQ4 564-5JE</b>	495	77	94.6	94.9	0.73	0.66	17749	2.3	0.75	5.0	163	2950	
1000	<b>1RQ4 566-5JE</b>	495	83	94.8	95.1	0.73	0.67	19293	2.3	0.75	5.0	178	3400	
1400	<b>1RQ4 630-5JE</b>	495	110	95.2	95.7	0.77	0.71	27010	2.50	0.91	5.4	246	3100	
1500	<b>1RQ4 632-5JE</b>	495	116	95.3	95.9	0.79	0.73	28939	2.35	0.86	5.3	272	3300	
1630	<b>1RQ4 634-5JE</b>	495	124	95.5	96.1	0.79	0.75	31447	2.30	0.84	5.2	300	4100	
1750	<b>1RQ4 636-5JE</b>	496	138	95.7	96.0	0.76	0.69	33695	2.70	1.00	5.5	331	4300	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data

Rated power kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked- rotor torque $T_{LR}/T_{rated}$	Locked- rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9.0 ... 11 kV, 50 Hz</b>														
2-pole														
5100	<b>1RQ6 710-2HJ</b> ■ 0	2991	340	96.8	96.6	0.89	0.87	16284	2.5	0.53	5.5	134	176	
6000	<b>1RQ6 712-2HJ</b> ■ 0	2991	395	96.9	96.7	0.91	0.90	19164	2.3	0.51	5.5	148	202	
6600	<b>1RQ6 714-2HJ</b> ■ 0	2991	425	96.9	96.8	0.92	0.91	21081	2.3	0.53	5.5	163	217	
7300	<b>1RQ6 716-2HJ</b> ■ 0	2990	470	97.0	96.8	0.92	0.92	23317	2.4	0.55	5.5	180	250	
4-pole														
5100	<b>1RQ6 710-4JJ</b> ■ 0	1494	335	97.1	97.1	0.91	0.90	32613	2.3	0.57	5.5	278	822	
5500	<b>1RQ6 712-4JJ</b> ■ 0	1493	355	97.1	97.2	0.92	0.91	35180	2.2	0.58	5.5	305	945	
6100	<b>1RQ6 714-4JJ</b> ■ 0	1493	395	97.1	97.3	0.92	0.91	39020	2.2	0.60	5.5	341	1109	
6400	<b>1RQ6 716-4JJ</b> ■ 0	1494	415	97.2	97.3	0.92	0.91	40924	2.3	0.60	5.5	374	1326	
6-pole														
4200	<b>1RQ6 710-6JJ</b> ■ ■	994	290	96.9	97.1	0.87	0.85	40353	2.1	0.69	5.4	338	2212	
4600	<b>1RQ6 712-6JJ</b> ■ ■	994	315	97.0	97.2	0.87	0.86	44186	2.2	0.73	5.5	375	2525	
5000	<b>1RQ6 714-6JJ</b> ■ ■	995	340	97.1	97.3	0.88	0.86	48018	2.3	0.79	5.5	427	3073	
5500	<b>1RQ6 716-6JJ</b> ■ ■	995	375	97.2	97.3	0.87	0.86	52802	2.3	0.79	5.5	476	3474	
8-pole														
3150	<b>1RQ6 710-8JJ</b> ■ ■ ■	745	220	96.6	96.9	0.85	0.84	40379	2.0	0.76	5.3	426	5924	
3450	<b>1RQ6 712-8JJ</b> ■ ■ ■	745	240	96.7	97.0	0.86	0.84	44216	2.0	0.80	5.4	476	6774	
3850	<b>1RQ6 714-8JJ</b> ■ ■ ■	746	270	96.8	97.1	0.85	0.83	49317	2.1	0.86	5.5	542	7958	
4300	<b>1RQ6 716-8JJ</b> ■ ■ ■	746	300	96.9	97.2	0.85	0.83	55059	2.2	0.89	5.5	608	9292	
10-pole														
2300	<b>1RQ6 710-3JJ</b> ■ ■ ■ ■	596	172	96.3	96.6	0.80	0.76	36841	2.4	0.82	5.5	426	8174	
2550	<b>1RQ6 712-3JJ</b> ■ ■ ■ ■	596	188	96.4	96.7	0.81	0.77	40851	2.3	0.79	5.5	476	9424	
2900	<b>1RQ6 714-3JJ</b> ■ ■ ■ ■	596	215	96.6	96.9	0.81	0.77	46442	2.4	0.83	5.5	542	13308	
3200	<b>1RQ6 716-3JJ</b> ■ ■ ■ ■	597	235	96.7	96.9	0.81	0.77	51238	2.5	0.86	5.5	609	14591	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB4/1SB6 (Ex px) and 1SG4/1SG6 (Ex nA).

Rated power  IEC  kW	High voltage motor H-compact PLUS  Order No.	Speed  rpm	Rated current  $I_{rated}$ at 6.6 kV  A	Efficiency		Power factor		Torque  Nm	Break- down torque  $T_B/T_{rated}$  [-]	Locked- rotor torque  $T_{LR}/T_{rated}$  [-]	Locked- rotor current  $I_{LR}/I_{rated}$  [-]	Moment of inertia	
				4/4 load  %	3/4 load  %	4/4 load  $\cos \varphi$	3/4 load  $\cos \varphi$					Motor	External, max. <sup>1)</sup>
<b>4.0 ... 6.6 kV, 60 Hz</b>													
<b>2-pole</b>													
1280	<b>1RQ6 450-2JJ</b>	3575	130	95.3	95.2	0.90	0.90	3420	2.0	0.50	5.3	13	44
1420	<b>1RQ6 452-2JJ</b>	3577	142	95.6	95.6	0.91	0.91	3795	2.2	0.55	5.5	14	46
1580	<b>1RQ6 454-2JJ</b>	3579	158	95.9	95.8	0.91	0.91	4218	2.3	0.55	5.5	15	48
1740	<b>1RQ6 456-2JJ</b>	3582	174	96.1	96.0	0.91	0.91	4641	2.4	0.50	5.5	17	51
1950	<b>1RQ6 457-2JJ</b>	3582	192	96.2	96.1	0.92	0.92	5201	2.4	0.45	5.5	18	54
2090	<b>1RQ6 458-2JJ</b>	3579	205	96.2	96.1	0.93	0.94	5580	2.4	0.55	5.5	21	57
2300	<b>1RQ4 502-2JE</b>	3579	235	96.0	95.6	0.89	0.87	6137	2.50	0.65	5.5	23	23
2650	<b>1RQ4 504-2JE</b>	3581	275	96.2	95.9	0.88	0.86	7067	2.60	0.65	5.5	26	27
3000	<b>1RQ4 506-2JE</b>	3581	305	96.6	96.2	0.89	0.87	8001	2.50	0.65	5.5	28	32
3300	<b>1RQ4 560-2JE</b>	3581	340	96.0	95.5	0.88	0.86	8801	2.20	0.45	4.8	33	28
3500	<b>1RQ4 562-2JE</b>	3582	360	96.2	95.7	0.89	0.88	9331	2.30	0.50	5.3	35	34
4000	<b>1RQ4 564-2JE</b>	3584	405	96.4	96.1	0.90	0.89	10658	2.50	0.55	5.5	40	46
4400 <sup>2)</sup>	<b>1RQ4 566-2JE</b>	3585	445	96.6	96.3	0.90	0.89	11721	2.50	0.50	5.5	44	54
4300	<b>1RQ4 630-2JE</b>	3584	435	96.1	95.8	0.90	0.89	11458	2.30	0.33	4.7	61	80
4900	<b>1RQ4 632-2JE</b>	3585	495	96.5	96.2	0.90	0.89	13053	2.50	0.37	5.1	68	110
5600	<b>1RQ4 634-2JE</b>	3586	560	96.9	96.6	0.90	0.90	14914	2.60	0.38	5.3	77	160
6300	<b>1RQ4 636-2JE</b>	3587	620	97.1	96.8	0.91	0.90	16773	2.60	0.40	5.5	87	190
<b>4-pole</b>													
1340	<b>1RQ6 450-4JJ</b>	1786	138	95.5	95.5	0.89	0.87	7168	2.2	0.70	5.5	20	200
1410	<b>1RQ6 452-4JJ</b>	1788	146	95.5	95.4	0.88	0.86	7535	2.3	0.65	5.5	22	240
1590	<b>1RQ6 454-4JJ</b>	1787	162	95.8	95.9	0.90	0.89	8502	2.2	0.65	5.5	25	295
1740	<b>1RQ6 456-4JJ</b>	1787	176	96.0	96.1	0.90	0.90	9304	2.2	0.65	5.5	28	355
2100	<b>1RQ4 500-4JE</b>	1787	215	96.1	95.9	0.89	0.88	11223	2.30	0.75	5.5	42	200
2300	<b>1RQ4 502-4JE</b>	1787	235	96.2	96.1	0.89	0.88	12292	2.30	0.75	5.5	45	220
2600	<b>1RQ4 504-4JE</b>	1787	265	96.4	96.3	0.89	0.88	13895	2.20	0.70	5.5	51	250
2900	<b>1RQ4 506-4JE</b>	1788	295	96.6	96.5	0.89	0.88	15489	2.20	0.70	5.5	56	290
3350	<b>1RQ4 560-4JE</b>	1789	335	96.6	96.5	0.90	0.89	17883	2.30	0.65	5.5	77	200
3700	<b>1RQ4 562-4JE</b>	1790	370	96.8	96.7	0.90	0.89	19740	2.30	0.65	5.5	86	240
4250	<b>1RQ4 564-4JE</b>	1790	425	96.9	96.9	0.90	0.89	22675	2.30	0.65	5.5	97	280
4500	<b>1RQ4 566-4JE</b>	1790	450	97.0	97.0	0.90	0.89	24008	2.20	0.62	5.5	106	310
5000	<b>1RQ4 630-4JE</b>	1791	500	96.8	96.6	0.90	0.89	26661	2.40	0.60	5.3	139	650
5500	<b>1RQ4 632-4JE</b>	1791	551	96.9	96.8	0.90	0.90	29327	2.40	0.62	5.3	154	750
6100	<b>1RQ4 634-4JE</b>	1791	610	97.1	96.9	0.90	0.90	32527	2.40	0.65	5.5	174	800
6700	<b>1RQ4 636-4JE</b>	1791	670	97.2	97.1	0.90	0.90	35726	2.40	0.65	5.5	186	820

#### Voltage code:

4 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
1  
9

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup>  $V_{rated} < 6.6$  kV on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current $I_{rated}$ at 6.6 kV A	Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>4.0 ... 6.6 kV, 60 Hz</b>													
6-pole													
1040	<b>1RQ6 450-6JJ</b>	1189	110	95.5	95.8	0.86	0.84	8360	2.1	0.80	5.5	26	530
1130	<b>1RQ6 452-6JJ</b>	1191	122	95.7	95.9	0.85	0.83	9070	2.1	0.80	5.5	29	600
1270	<b>1RQ6 454-6JJ</b>	1190	134	95.9	96.1	0.86	0.84	10197	2.1	0.80	5.5	32	660
1360	<b>1RQ6 456-6JJ</b>	1191	144	96.0	96.1	0.86	0.84	10911	2.2	0.85	5.5	37	770
1700	<b>1RQ4 500-6JE</b>	1190	176	95.8	95.7	0.88	0.86	13643	2.20	0.80	5.5	62	650
1920	<b>1RQ4 502-6JE</b>	1191	200	96.1	95.9	0.87	0.85	15395	2.30	0.85	5.5	70	750
2100	<b>1RQ4 504-6JE</b>	1190	215	96.2	96.0	0.88	0.86	16853	2.20	0.80	5.4	77	850
2300	<b>1RQ4 506-6JE</b>	1191	235	96.3	96.2	0.88	0.86	18442	2.20	0.80	5.5	85	1000
2700	<b>1RQ4 560-6JE</b>	1192	280	96.3	96.3	0.87	0.85	21632	2.00	0.65	5.0	108	800
3050	<b>1RQ4 562-6JE</b>	1193	320	96.5	96.4	0.86	0.83	24415	2.20	0.70	5.5	123	950
3350	<b>1RQ4 564-6JE</b>	1193	350	96.7	96.5	0.87	0.84	26817	2.20	0.75	5.5	137	1100
3600	<b>1RQ4 566-6JE</b>	1194	380	96.8	96.6	0.86	0.83	28794	2.20	0.70	5.5	149	1250
4250	<b>1RQ4 630-6JE</b>	1193	445	96.8	96.7	0.86	0.84	34021	2.30	0.62	5.2	188	1850
4550	<b>1RQ4 632-6JE</b>	1193	480	96.8	96.8	0.86	0.85	36423	2.20	0.62	5.2	207	1700
4900	<b>1RQ4 634-6JE</b>	1194	510	97.0	96.9	0.87	0.85	39192	2.30	0.66	5.4	228	2300
5200	<b>1RQ4 636-6JE</b>	1194	540	97.2	97.0	0.87	0.85	41591	2.40	0.67	5.5	251	2600
8-pole													
740	<b>1RQ6 450-8JJ</b>	892	81	95.1	95.4	0.84	0.82	7928	1.9	0.65	5.5	32	660
820	<b>1RQ6 452-8JJ</b>	892	90	95.3	95.5	0.84	0.82	8781	2.0	0.65	5.5	36	770
910	<b>1RQ6 454-8JJ</b>	893	100	95.1	95.5	0.84	0.81	9736	2.2	0.70	5.5	41	890
1000	<b>1RQ6 456-8JJ</b>	894	108	95.6	95.7	0.84	0.80	10690	2.3	0.75	5.5	47	1080
1250	<b>1RQ4 500-8JE</b>	892	136	95.6	95.5	0.84	0.82	13383	2.10	0.80	5.4	74	1000
1400	<b>1RQ4 502-8JE</b>	893	154	95.8	95.6	0.83	0.80	14972	2.30	0.82	5.5	84	1200
1550	<b>1RQ4 504-8JE</b>	893	170	95.9	95.8	0.83	0.80	16576	2.30	0.85	5.5	92	1350
1700	<b>1RQ4 506-8JE</b>	893	184	96.0	95.9	0.84	0.81	18180	2.30	0.85	5.5	103	1600
2000	<b>1RQ4 560-8JE</b>	894	215	96.1	95.9	0.84	0.81	21365	2.10	0.75	5.3	128	1750
2200	<b>1RQ4 562-8JE</b>	895	240	96.2	96.1	0.84	0.81	23475	2.20	0.75	5.5	146	2100
2400	<b>1RQ4 564-8JE</b>	894	255	96.3	96.3	0.85	0.82	25638	2.10	0.75	5.5	163	2500
2650	<b>1RQ4 566-8JE</b>	895	285	96.4	96.4	0.84	0.82	28277	2.20	0.75	5.5	178	2800

#### Voltage code:

4 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
1  
9

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data (continued)

Rated power IEC	High voltage motor H-compact PLUS	Speed	Rated current		Efficiency		Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
			$I_{\text{rated}}$ at 6.6 kV	4/4 load	3/4 load	4/4 load	3/4 load	$T_{\text{B}}/T_{\text{rated}}$					$T_{\text{LR}}/T_{\text{rated}}$	$I_{\text{LR}}/I_{\text{rated}}$
kW	Order No.	rpm	A	%	%	cos φ	cos φ	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>4.0 ... 6.6 kV, 60 Hz</b>														
<b>10-pole</b>														
540	<b>1RQ6 450-3JJ</b>	711	63	93.9	93.8	0.80	0.75	7253	2.20	0.88	5.3	39	700	
600	<b>1RQ6 452-3JJ</b>	712	71	94.2	94.1	0.79	0.73	8048	2.30	0.90	5.5	43	900	
670	<b>1RQ6 454-3JJ</b>	712	80	94.3	94.2	0.78	0.73	8987	2.40	1.00	5.5	48	950	
730	<b>1RQ6 456-3JJ</b>	713	88	94.5	94.3	0.77	0.72	9778	2.40	0.90	5.5	54	1100	
900	<b>1RQ4 500-3JE</b>	713	104	94.9	94.7	0.80	0.76	12055	2.10	0.78	5.2	74	1400	
1000	<b>1RQ4 502-3JE</b>	713	114	95.1	94.9	0.80	0.75	13394	2.20	0.82	5.3	84	1700	
1100	<b>1RQ4 504-3JE</b>	713	126	95.1	94.9	0.80	0.76	14734	2.20	0.82	5.3	92	1700	
1250	<b>1RQ4 506-3JE</b>	713	144	95.4	95.1	0.80	0.75	16743	2.30	0.88	5.5	103	2250	
1460	<b>1RQ4 560-3JE</b>	714	172	95.4	95.2	0.78	0.72	19528	2.40	0.85	5.4	128	2400	
1680	<b>1RQ4 562-3JE</b>	714	196	95.7	95.5	0.78	0.72	22471	2.40	0.85	5.5	146	2800	
1820	<b>1RQ4 564-3JE</b>	714	210	95.7	95.6	0.80	0.76	24343	2.30	0.80	5.4	163	3200	
1930	<b>1RQ4 566-3JE</b>	715	225	95.9	95.6	0.79	0.73	25778	2.40	0.80	5.5	178	3600	
<b>12-pole</b>														
370	<b>1RQ6 450-5JJ</b>	592	48	93.1	92.9	0.72	0.66	5969	2.00	0.68	4.6	39	700	
425	<b>1RQ6 452-5JJ</b>	593	57	93.5	93.0	0.70	0.63	6844	2.20	0.72	4.8	43	1000	
480	<b>1RQ6 454-5JJ</b>	593	63	94.0	93.7	0.71	0.65	7730	2.10	0.72	4.8	48	1300	
540	<b>1RQ6 456-5JJ</b>	593	69	94.1	93.9	0.73	0.68	8696	2.00	0.68	4.7	54	1500	
650	<b>1RQ4 500-5JE</b>	593	84	94.3	94.1	0.72	0.66	10468	2.20	0.70	4.8	74	1600	
730	<b>1RQ4 502-5JE</b>	593	91	94.5	94.3	0.74	0.70	11756	2.10	0.65	4.7	84	1800	
820	<b>1RQ4 504-5JE</b>	593	104	94.7	94.4	0.73	0.68	13206	2.20	0.70	4.8	91	2100	
900	<b>1RQ4 506-5JE</b>	593	116	94.8	94.5	0.72	0.66	14494	2.30	0.75	5.2	102	2400	
1100	<b>1RQ4 560-5JE</b>	594	138	95.0	94.9	0.73	0.67	17685	2.00	0.62	4.5	128	2400	
1220	<b>1RQ4 562-5JE</b>	594	152	95.2	95.1	0.74	0.68	19614	2.10	0.65	4.5	146	3000	
1320	<b>1RQ4 564-5JE</b>	595	166	95.3	95.1	0.73	0.67	21187	2.20	0.68	4.6	163	3300	
1450	<b>1RQ4 566-5JE</b>	595	180	95.4	95.3	0.74	0.68	23273	2.20	0.68	4.6	178	3800	

#### Voltage code:

4 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
1  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SB4/1SB6 (Ex px) and 1SG4/1SG6 (Ex nA).

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current A	Efficiency		Power factor		Torque Nm	Break- down torque $T_B/T_{rated}$	Locked- rotor torque $T_{LR}/T_{rated}$	Locked- rotor current $I_{LR}/I_{rated}$	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>4.0 ... 6.6 kV, 60 Hz</b>													
2-pole													
6100 <sup>2)</sup>	<b>1RQ6 710-2HJ</b> ■0	3591	610	96.6	96.2	0.90	0.88	16226	2.4	0.48	5.5	134	61
7700 <sup>2)</sup>	<b>1RQ6 712-2HJ</b> ■0	3590	760	96.9	96.6	0.91	0.90	20485	2.3	0.48	5.5	148	62
9500 <sup>2)</sup>	<b>1RQ6 714-2HJ</b> ■0	3590	940	97.2	96.9	0.91	0.91	25277	2.2	0.46	5.3	163	57
10800 <sup>2)</sup>	<b>1RQ6 716-2HJ</b> ■0	3590	1060	97.3	97.0	0.92	0.91	28734	2.4	0.52	5.5	180	60
4-pole													
6900 <sup>2)</sup>	<b>1RQ6 710-4JJ</b> ■0	1794	690	97.1	97.0	0.90	0.88	36736	2.5	0.57	5.5	278	372
8400 <sup>2)</sup>	<b>1RQ6 712-4JJ</b> ■0	1793	830	97.4	97.3	0.91	0.90	44743	2.3	0.60	5.5	305	395
9200 <sup>2)</sup>	<b>1RQ6 714-4JJ</b> ■0	1793	900	97.4	97.3	0.92	0.91	49006	2.3	0.61	5.5	341	469
10200 <sup>2)</sup>	<b>1RQ6 716-4JJ</b> ■0	1793	990	97.5	97.4	0.92	0.91	54328	2.3	0.62	5.5	374	526
6-pole													
5700	<b>1RQ6 710-6JJ</b> ■■	1194	590	97.1	97.1	0.87	0.85	45593	2.2	0.71	5.5	338	1024
6400	<b>1RQ6 712-6JJ</b> ■■	1194	660	97.2	97.2	0.87	0.85	51190	2.2	0.69	5.5	375	1190
6800	<b>1RQ6 714-6JJ</b> ■■	1195	710	97.3	97.3	0.86	0.84	54356	2.3	0.72	5.5	427	1496
7500	<b>1RQ6 716-6JJ</b> ■■	1195	770	97.3	97.3	0.87	0.85	59959	2.3	0.75	5.5	476	1848
8-pole													
4400	<b>1RQ6 710-8JJ</b> ■■	895	475	96.9	97.1	0.84	0.82	46939	2.1	0.82	5.5	426	3174
4900	<b>1RQ6 712-8JJ</b> ■■	895	520	96.9	97.1	0.85	0.83	52270	2.1	0.84	5.5	476	3624
5400	<b>1RQ6 714-8JJ</b> ■■	896	580	97.1	97.2	0.84	0.82	57577	2.2	0.85	5.5	542	4358
6000	<b>1RQ6 716-8JJ</b> ■■	896	650	97.2	97.2	0.83	0.80	63953	2.2	0.82	5.5	608	5192
10-pole													
3000	<b>1RQ6 710-3JJ</b> ■■	716	340	96.6	96.8	0.80	0.75	40008	2.4	0.77	5.5	426	5774
3350	<b>1RQ6 712-3JJ</b> ■■	716	375	96.8	96.9	0.81	0.77	44683	2.3	0.74	5.5	476	6424
3750	<b>1RQ6 714-3JJ</b> ■■	716	425	96.9	97.0	0.80	0.76	49999	2.4	0.80	5.5	542	7758
4200	<b>1RQ6 716-3JJ</b> ■■	717	475	96.9	97.0	0.80	0.76	55987	2.4	0.79	5.5	609	9041

#### Voltage code:

4 kV, 60 Hz  
4.16 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
3  
1  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup>  $V_{rated} < 6$  kV on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current A	Efficiency		Power factor		Torque Nm	Break- down torque $T_B/T_{rated}$	Locked- rotor torque $T_{LR}/T_{rated}$	Locked- rotor current $I_{LR}/I_{rated}$	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>12.5 ... 13.8 kV, 60 Hz</b>													
2-pole													
5200	<b>1RQ6 710-2HJ</b> ■0	3591	260	96.2	95.7	0.91	0.89	13830	2.5	0.49	5.5	134	76
6400	<b>1RQ6 712-2HJ</b> ■0	3591	320	96.4	96.1	0.91	0.90	17024	2.4	0.48	5.5	148	87
7100	<b>1RQ6 714-2HJ</b> ■0	3591	350	96.4	96.1	0.92	0.92	18888	2.3	0.48	5.5	163	92
8100	<b>1RQ6 716-2HJ</b> ■0	3590	395	96.7	96.3	0.93	0.93	21552	2.3	0.50	5.5	180	105
4-pole													
5400	<b>1RQ6 710-4JJ</b> ■0	1794	270	96.6	96.5	0.91	0.90	28752	2.4	0.57	5.5	278	452
6200	<b>1RQ6 712-4JJ</b> ■0	1794	310	96.8	96.7	0.91	0.90	33007	2.4	0.57	5.5	305	515
6600	<b>1RQ6 714-4JJ</b> ■0	1794	325	96.8	96.7	0.92	0.91	35144	2.4	0.60	5.5	341	619
7300	<b>1RQ6 716-4JJ</b> ■0	1794	360	96.9	96.8	0.92	0.91	38870	2.4	0.60	5.5	374	706
6-pole													
4600	<b>1RQ6 710-6JJ</b> ■■	1195	240	96.7	96.7	0.86	0.83	36768	2.4	0.70	5.5	338	1602
5000	<b>1RQ6 712-6JJ</b> ■■	1195	260	96.9	96.8	0.87	0.85	39972	2.3	0.71	5.5	375	1825
5400	<b>1RQ6 714-6JJ</b> ■■	1195	285	96.9	96.9	0.86	0.84	43153	2.4	0.69	5.5	427	2273
5900	<b>1RQ6 716-6JJ</b> ■■	1195	305	97.0	96.9	0.87	0.84	47144	2.4	0.69	5.5	476	2674
8-pole													
3250	<b>1RQ6 710-8JJ</b> ■■	896	174	96.4	96.5	0.85	0.82	34652	2.3	0.82	5.5	426	3574
3600	<b>1RQ6 712-8JJ</b> ■■	896	192	96.5	96.6	0.85	0.83	38384	2.3	0.83	5.5	476	4124
3950	<b>1RQ6 714-8JJ</b> ■■	896	210	96.6	96.7	0.86	0.84	42116	2.2	0.83	5.5	542	5008
4400	<b>1RQ6 716-8JJ</b> ■■	896	235	96.6	96.8	0.85	0.82	46894	2.3	0.79	5.5	608	5392
10-pole													
2500	<b>1RQ6 710-3JJ</b> ■■	717	142	96.2	96.3	0.80	0.76	33330	2.4	0.76	5.5	426	4374
2750	<b>1RQ6 712-3JJ</b> ■■	716	154	96.3	96.5	0.81	0.78	36668	2.3	0.73	5.5	476	5174
3100	<b>1RQ6 714-3JJ</b> ■■	717	176	96.5	96.5	0.80	0.75	41311	2.5	0.75	5.5	542	5658
3400	<b>1RQ6 716-3JJ</b> ■■	717	192	96.6	96.6	0.80	0.76	45308	2.5	0.74	5.5	609	6791

#### Voltage code:

13.2 kV, 60 Hz  
Other voltage

2  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data

##### NEMA version

Rated power  NEMA  hp	High voltage motor H-compact PLUS  Order No.	Speed  rpm	Rated current		Efficiency		Power factor		Torque  Nm	Break-down torque  $T_B/T_{rated}$ [-]	Locked-rotor torque  $T_{LR}/T_{rated}$ [-]	Locked-rotor current  $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4.0 ... 6.6 kV, 60 Hz</b>														
<b>2-pole</b>														
8000	<b>1RQ6 710-2BM</b> ■ ■ 0	3588	603	96.1	95.7	0.90	0.88	15881	2.5	0.60	5.7	134	41	
9000	<b>1RQ6 712-2BM</b> ■ ■ 0	3587	664	96.1	95.8	0.92	0.91	17868	2.4	0.60	5.6	148	43	
10000	<b>1RQ6 712-2BN</b> ■ ■ 0	3588	742	96.3	96.0	0.91	0.90	19852	2.6	0.62	6.1	148	44	
11000	<b>1RQ6 714-2BM</b> ■ ■ 0	3587	807	96.4	96.0	0.92	0.91	21841	2.5	0.60	5.8	163	46	
12000	<b>1RQ6 714-2BN</b> ■ ■ 0	3587	883	96.5	96.2	0.92	0.91	23827	2.4	0.60	5.7	163	47	
13000	<b>1RQ6 716-2BM</b> ■ ■ 0	3587	948	96.5	96.3	0.92	0.92	25815	2.4	0.60	5.8	180	48	
14000	<b>1RQ6 716-2BN</b> ■ ■ 0	3587	1021	96.6	96.4	0.92	0.92	27801	2.5	0.65	6.0	180	49	
<b>4-pole</b>														
10000	<b>1RQ6 710-4CJ</b> ■ ■ 0	1794	745	97.0	96.9	0.90	0.88	39707	2.4	0.60	6.3	278	555	
11000	<b>1RQ6 712-4CJ</b> ■ ■ 0	1793	805	97.1	97.0	0.91	0.90	43690	2.4	0.61	6.2	305	661	
12000	<b>1RQ6 714-4CJ</b> ■ ■ 0	1793	873	97.1	97.0	0.92	0.91	47659	2.4	0.63	6.3	341	679	
13000	<b>1RQ6 716-4CJ</b> ■ ■ 0	1794	948	97.2	97.1	0.91	0.91	51626	2.3	0.60	6.1	374	695	
<b>6-pole</b>														
8000	<b>1RQ6 710-6CJ</b> ■ ■ ■	1194	626	96.9	96.9	0.86	0.83	47715	2.2	0.71	5.7	338	1847	
9000	<b>1RQ6 714-6CJ</b> ■ ■ ■	1195	703	97.0	97.0	0.86	0.83	53642	2.3	0.73	6.0	427	1954	
10000	<b>1RQ6 716-6CJ</b> ■ ■ ■	1195	770	97.1	97.1	0.87	0.85	59613	2.3	0.76	6.0	476	2043	
<b>8-pole</b>														
5500	<b>1RQ6 710-8CJ</b> ■ ■ ■	896	440	96.7	96.8	0.84	0.81	43733	2.3	0.86	6.0	426	3235	
6000	<b>1RQ6 712-8CJ</b> ■ ■ ■	896	481	96.7	96.8	0.84	0.81	47703	2.2	0.83	6.0	476	3437	
7000	<b>1RQ6 714-8CJ</b> ■ ■ ■	896	561	96.9	96.9	0.84	0.81	55649	2.2	0.83	6.0	542	3817	
8000	<b>1RQ6 716-8CJ</b> ■ ■ ■	896	645	96.9	97.0	0.83	0.80	63590	2.2	0.80	6.0	608	4154	
<b>10-pole</b>														
4000	<b>1RQ6 710-3CJ</b> ■ ■ ■	716	339	96.5	96.5	0.80	0.75	39780	2.4	0.77	5.8	426	4563	
4500	<b>1RQ6 712-3CJ</b> ■ ■ ■	716	375	96.6	96.7	0.81	0.77	44763	2.3	0.73	5.6	476	5006	
5000	<b>1RQ6 714-3CJ</b> ■ ■ ■	716	418	96.7	96.7	0.80	0.76	49717	2.4	0.80	6.0	542	5428	
5500	<b>1RQ6 716-3CJ</b> ■ ■ ■	717	464	96.7	96.7	0.80	0.75	54660	2.5	0.79	6.0	609	5833	

##### Voltage code:

4 kV, 60 Hz  
4.16 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
3  
1  
9

##### Note:

Higher pole numbers are available on request.

##### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data

##### NEMA version

Rated power  NEMA  hp	High voltage motor H-compact PLUS  Order No.	Speed  rpm	Rated current  A	Efficiency		Power factor		Torque  Nm	Break-down torque  $T_B/T_{rated}$ [-]	Locked-rotor torque  $T_{LR}/T_{rated}$ [-]	Locked-rotor current  $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load	3/4 load	4/4 load	3/4 load					Motor	External, max. <sup>1)</sup>
<b>12.5 ... 13.8 kV, 60 Hz</b>													
2-pole													
7000	<b>1RQ6 710-2BM</b> ■ 0	3589	263	95.7	95.2	0.91	0.89	13894	2.5	0.60	5.7	134	40
8000	<b>1RQ6 712-2BM</b> ■ 0	3589	298	95.8	95.3	0.91	0.90	15879	2.6	0.60	6.0	148	41
9000	<b>1RQ6 714-2BM</b> ■ 0	3588	332	95.9	95.4	0.92	0.91	17865	2.5	0.60	5.8	163	43
10000	<b>1RQ6 716-2BM</b> ■ 0	3588	365	95.9	95.6	0.93	0.93	19854	2.5	0.60	5.9	180	44
4-pole													
7000	<b>1RQ6 710-4CJ</b> ■ 0	1794	258	96.4	96.2	0.91	0.90	27791	2.4	0.60	6.3	278	520
8000	<b>1RQ6 714-4CJ</b> ■ 0	1794	291	96.5	96.4	0.92	0.92	31772	2.3	0.60	6.1	341	541
9000	<b>1RQ6 714-4CK</b> ■ 0	1794	328	96.6	96.5	0.92	0.91	35738	2.4	0.60	6.2	341	552
10000	<b>1RQ6 716-4CJ</b> ■ 0	1794	364	96.7	96.6	0.92	0.91	39707	2.4	0.60	6.3	374	555
6-pole													
6000	<b>1RQ6 710-6CJ</b> ■ ■	1195	237	96.5	96.4	0.85	0.83	35757	2.4	0.69	6.0	338	1571
7000	<b>1RQ6 714-6CJ</b> ■ ■	1195	274	96.7	96.6	0.86	0.83	41709	2.4	0.67	6.0	427	1720
8000	<b>1RQ6 716-6CJ</b> ■ ■	1195	310	96.7	96.7	0.87	0.84	47674	2.4	0.68	6.0	476	1846
8-pole													
4000	<b>1RQ6 710-8CJ</b> ■ ■ ■	896	160	96.2	96.2	0.85	0.82	31800	2.3	0.79	6.0	426	2560
4500	<b>1RQ6 712-8CJ</b> ■ ■ ■	896	179	96.3	96.3	0.85	0.83	35780	2.2	0.79	5.9	476	2796
5000	<b>1RQ6 714-8CJ</b> ■ ■ ■	896	197	96.4	96.5	0.86	0.84	39760	2.2	0.79	5.9	542	3024
5500	<b>1RQ6 716-8CJ</b> ■ ■ ■	896	216	96.4	96.5	0.86	0.84	43719	2.2	0.81	6.0	608	3235
10-pole													
3000	<b>1RQ6 710-3CJ</b> ■ ■ ■ ■	716	125	96.0	96.1	0.81	0.78	29829	2.3	0.70	5.7	426	3619
3500	<b>1RQ6 712-3CJ</b> ■ ■ ■ ■	717	147	96.2	96.2	0.81	0.77	34792	2.5	0.77	6.0	476	4104
4000	<b>1RQ6 714-3CJ</b> ■ ■ ■ ■	717	167	96.2	96.2	0.81	0.77	39763	2.4	0.76	6.0	542	4563
4500	<b>1RQ6 716-3CJ</b> ■ ■ ■ ■	717	190	96.4	96.4	0.80	0.76	44718	2.5	0.74	6.0	609	5006

#### Voltage code:

13.2 kV, 60 Hz  
Other voltage

2  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

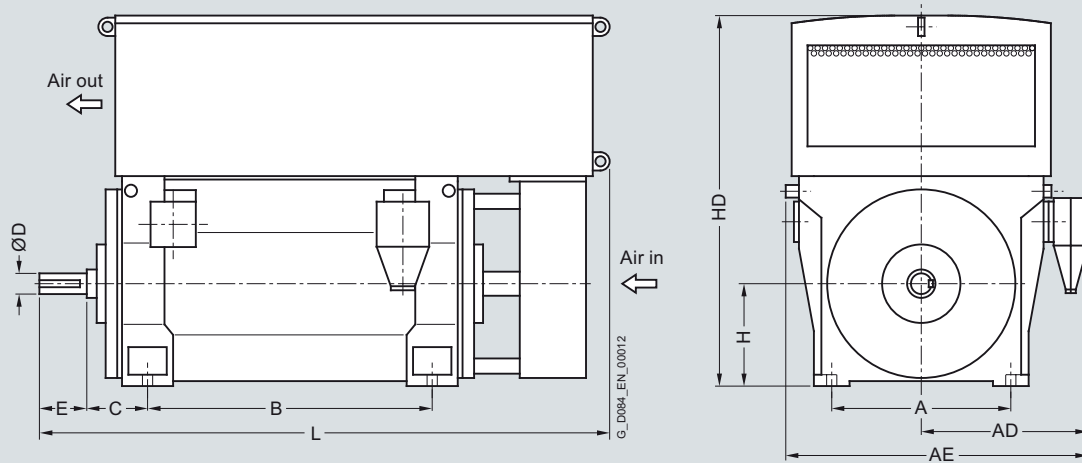
0  
4

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD	L
Up to 6.6 kV, IM B3 type of construction, roller bearings – series 1RQ4 <sup>2)</sup> , 1RQ6											
2-pole											
1RQ6 450-2JJ.0	4203	850	930	1620	1180	250	95	130	450	1842	2425
1RQ6 452-2JJ.0	4408	850	930	1620	1180	250	95	130	450	1842	2425
1RQ6 454-2JJ.0	4783	850	930	1620	1400	250	95	130	450	1842	2635
1RQ6 456-2JJ.0	5049	850	930	1620	1400	250	95	130	450	1842	2635
4-pole											
1RQ6 450-4JJ.0	4518	850	930	1620	1180	250	130	200	450	1842	2455
1RQ6 452-4JJ.0	4750	850	930	1620	1180	250	130	200	450	1842	2455
1RQ6 454-4JJ.0	5165	850	930	1620	1400	250	130	200	450	1842	2665
1RQ6 456-4JJ.0	5443	850	930	1620	1400	250	130	200	450	1842	2665
1RQ4 502-4JE.0	6100	950	1000	1760	1320	280	140	200	500	2000	2660
1RQ4 504-4JE.0	6800	950	1000	1760	1500	280	150	200	500	2000	2870
1RQ4 506-4JE.0	7150	950	1000	1760	1500	280	150	200	500	2000	2870
1RQ4 560-4JE.0	8000	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4 562-4JE.0	8450	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4 564-4JE.0	9350	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 566-4JE.0	9800	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 630-4JE.0 <sup>3)</sup>	11100	1320	1330	2210	1600	335	190	280	630	2340	3140
1RQ4 632-4JE.0 <sup>3)</sup>	11800	1320	1330	2210	1600	335	190	280	630	2340	3140
1RQ4 634-4JE.0 <sup>3)</sup>	12900	1320	1330	2210	1800	335	200	280	630	2340	3380
1RQ4 636-4JE.0 <sup>3)</sup>	13450	1320	1330	2210	1800	335	200	280	630	2340	3380
6-pole											
1RQ6 450-6JJ.0	4605	850	930	1620	1180	280	140	200	450	1842	2455
1RQ6 452-6JJ.0	4890	850	930	1620	1180	280	140	200	450	1842	2455
1RQ6 454-6JJ.0	5276	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6 456-6JJ.0	5618	850	930	1620	1400	280	140	200	450	1842	2665
1RQ4 500-6JE.0	6000	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ4 502-6JE.0	6400	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ4 504-6JE.0	6950	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ4 506-6JE.0	7350	950	1000	1760	1500	280	160	240	500	2000	2910

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

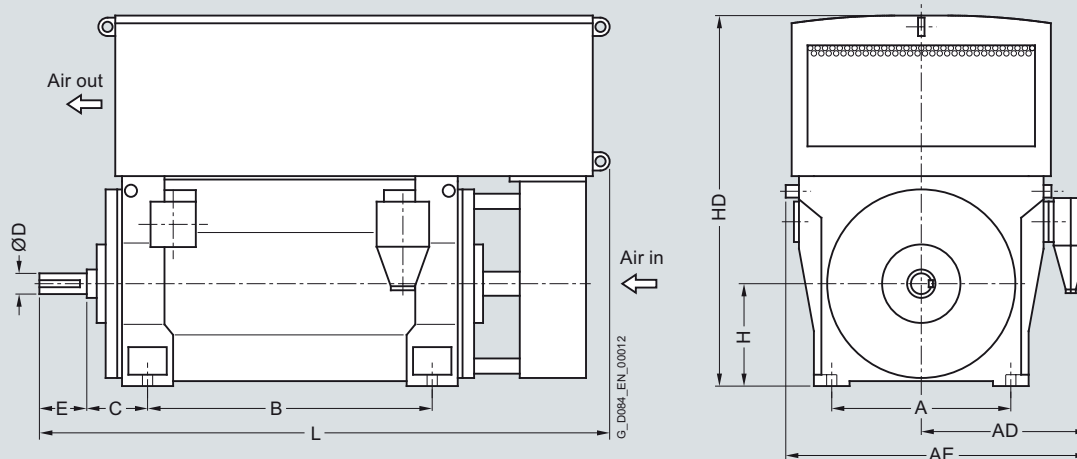
<sup>3)</sup> Roller bearings only for 50 Hz operation.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings (continued)



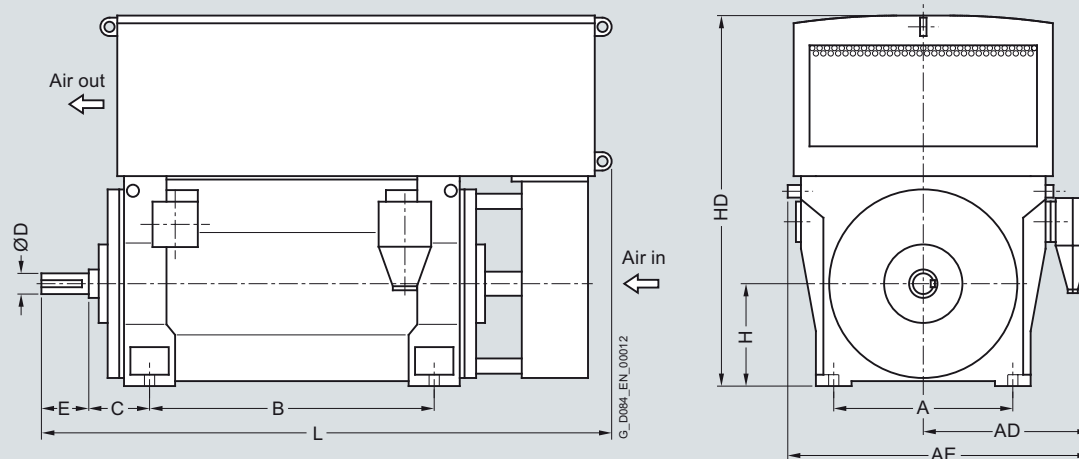
Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings – series 1RQ4<sup>2)</sup>, 1RQ6</b>											
<b>6-pole</b>											
1RQ4 560-6JE.0	8100	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ4 562-6JE.0	8650	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ4 564-6JE.0	9600	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 566-6JE.0	10050	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 630-6JE.0	11400	1320	1330	2210	1600	335	200	280	630	2340	3140
1RQ4 632-6JE.0	12000	1320	1330	2210	1600	335	200	280	630	2340	3140
1RQ4 634-6JE.0	12900	1320	1330	2210	1800	335	200	280	630	2340	3380
1RQ4 636-6JE.0	13750	1320	1330	2210	1800	335	200	280	630	2340	3380
<b>8-pole</b>											
1RQ6 450-8JJ.0	4620	850	930	1620	1180	280	140	200	450	1842	2455
1RQ6 452-8JJ.0	4920	850	930	1620	1180	280	140	200	450	1842	2455
1RQ6 454-8JJ.0	5310	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6 456-8JJ.0	5658	850	930	1620	1400	280	140	200	450	1842	2665
1RQ4 500-8JE.0	6050	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ4 502-8JE.0	6400	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ4 504-8JE.0	6950	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ4 506-8JE.0	7350	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ4 560-8JE.0	8100	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ4 562-8JE.0	8650	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ4 564-8JE.0	9500	1060	1070	1900	1600	315	180	240	560	2260	3180
1RQ4 566-8JE.0	9950	1060	1070	1900	1600	315	180	240	560	2260	3180
1RQ4 630-8JE.0 <sup>3)</sup>	11200	1320	1180	2060	1600	335	200	280	630	2340	3140
1RQ4 632-8JE.0 <sup>3)</sup>	11950	1320	1330	2210	1600	335	200	280	630	2340	3140
1RQ4 634-8JE.0 <sup>3)</sup>	12900	1320	1330	2210	1800	335	200	280	630	2340	3380
1RQ4 636-8JE.0 <sup>3)</sup>	13650	1320	1330	2210	1800	335	200	280	630	2340	3380
<b>10-pole</b>											
1RQ6 450-3JJ.0	4620	850	930	1620	1180	280	140	200	450	1842	2455
1RQ6 452-3JJ.0	4920	850	930	1620	1180	280	140	200	450	1842	2455
1RQ6 454-3JJ.0	5310	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6 456-3JJ.0	5658	850	930	1620	1400	280	140	200	450	1842	2665

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

<sup>3)</sup> Roller bearings only for 50 Hz operation.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings – series 1RQ4<sup>2)</sup>, 1RQ6</b>											
<b>10-pole</b>											
1RQ4 500-3JE.0	6000	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ4 502-3JE.0	6300	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ4 504-3JE.0	6900	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ4 506-3JE.0	7300	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ4 560-3JE.0	8000	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ4 562-3JE.0	8600	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ4 564-3JE.0	9450	1060	1070	1900	1600	315	180	240	560	2260	3180
1RQ4 566-3JE.0	9900	1060	1070	1900	1600	315	180	240	560	2260	3180
1RQ4 630-3JE.0 <sup>3)</sup>	11200	1320	1180	2060	1600	335	200	280	630	2340	3140
1RQ4 632-3JE.0 <sup>3)</sup>	11800	1320	1180	2060	1600	335	200	280	630	2340	3140
1RQ4 634-3JE.0 <sup>3)</sup>	12900	1320	1180	2060	1800	335	200	280	630	2340	3380
1RQ4 636-3JE.0 <sup>3)</sup>	13550	1320	1180	2060	1800	335	200	280	630	2340	3380
<b>12-pole</b>											
1RQ6 450-5JJ.0	4620	850	930	1620	1180	280	140	200	450	1842	2455
1RQ6 452-5JJ.0	4920	850	930	1620	1180	280	140	200	450	1842	2455
1RQ6 454-5JJ.0	5310	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6 456-5JJ.0	5658	850	930	1620	1400	280	140	200	450	1842	2665
1RQ4 500-5JE.0	6000	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ4 502-5JE.0	6300	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ4 504-5JE.0	6900	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ4 506-5JE.0	7300	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ4 560-5JE.0	8050	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ4 562-5JE.0	8600	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ4 564-5JE.0	9400	1060	1070	1900	1600	315	180	240	560	2260	3180
1RQ4 566-5JE.0	9900	1060	1070	1900	1600	315	180	240	560	2260	3180
1RQ4 630-5JE.0 <sup>3)</sup>	11100	1320	1180	2060	1600	335	200	280	630	2340	3140
1RQ4 632-5JE.0 <sup>3)</sup>	11750	1320	1180	2060	1600	335	200	280	630	2340	3140
1RQ4 634-5JE.0 <sup>3)</sup>	12800	1320	1180	2060	1800	335	200	280	630	2340	3380
1RQ4 636-5JE.0 <sup>3)</sup>	13500	1320	1180	2060	1800	335	200	280	630	2340	3380

Note: Higher pole numbers are available on request.

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

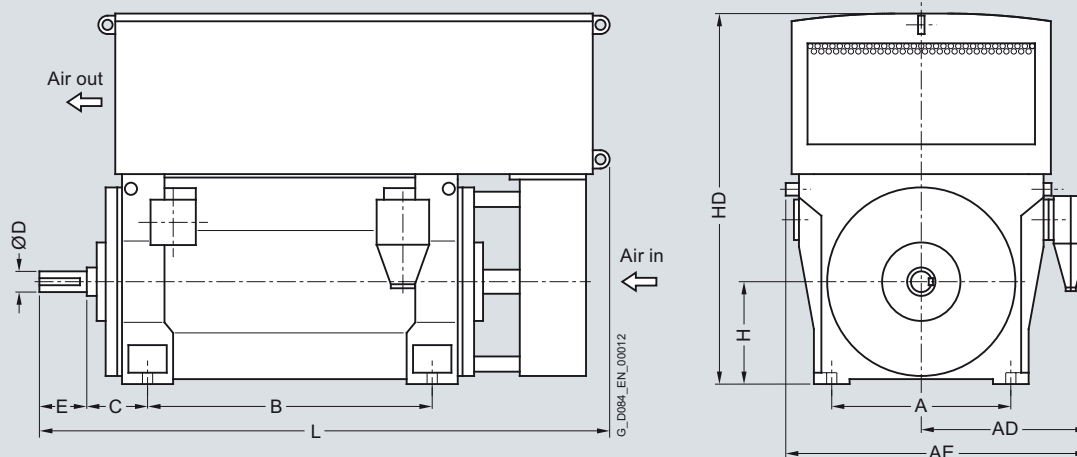
<sup>3)</sup> Roller bearings only for 50 Hz operation.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings

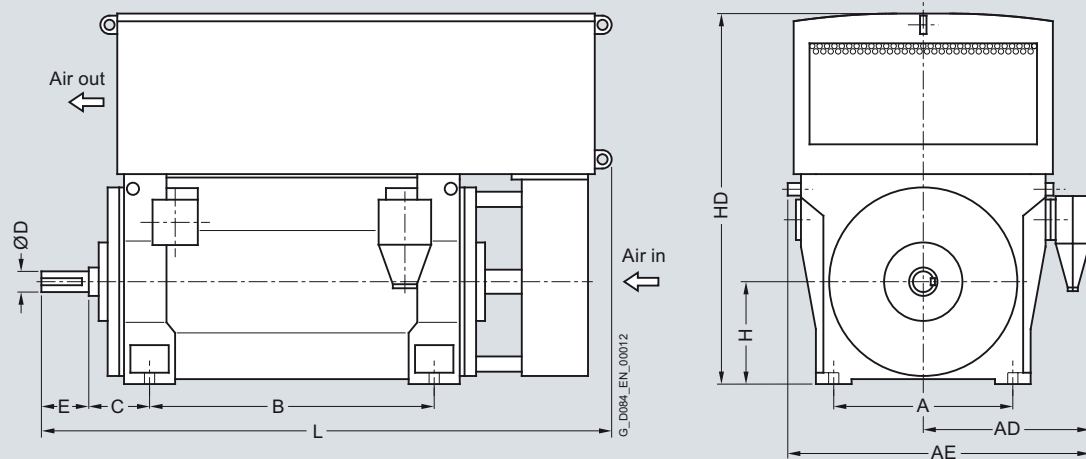


Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings – series 1RQ4<sup>1)</sup>, 1RQ6</b>											
<b>2-pole</b>											
1RQ6 450-2JJ.0	4203	850	1070	1840	1180	250	95	130	450	1842	2425
1RQ6 452-2JJ.0	4408	850	1070	1840	1180	250	95	130	450	1842	2425
1RQ6 454-2JJ.0	4783	850	1070	1840	1400	250	95	130	450	1842	2635
1RQ6 456-2JJ.0	5049	850	1070	1840	1400	250	95	130	450	1842	2635
<b>4-pole</b>											
1RQ6 450-4JJ.0	4518	850	1070	1840	1180	250	130	200	450	1842	2455
1RQ6 452-4JJ.0	4750	850	1070	1840	1180	250	130	200	450	1842	2455
1RQ6 454-4JJ.0	5165	850	1070	1840	1400	250	130	200	450	1842	2665
1RQ6 456-4JJ.0	5443	850	1070	1840	1400	250	130	200	450	1842	2665
1RQ4 504-4JE.0	6750	950	1220	1980	1500	280	150	200	500	2000	2870
1RQ4 506-4JE.0	7100	950	1220	1980	1500	280	150	200	500	2000	2870
1RQ4 560-4JE.0	7850	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4 562-4JE.0	8300	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4 564-4JE.0	9200	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 566-4JE.0	9650	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 630-4JE.0 <sup>2)</sup>	11100	1320	1320	2200	1600	335	190	280	630	2340	3140
1RQ4 632-4JE.0 <sup>2)</sup>	11800	1320	1320	2200	1600	335	190	280	630	2340	3140
1RQ4 634-4JE.0 <sup>2)</sup>	12900	1320	1320	2200	1800	335	200	280	630	2340	3380
1RQ4 636-4JE.0 <sup>2)</sup>	13450	1320	1330	2210	1800	335	200	280	630	2340	3380
<b>6-pole</b>											
1RQ6 450-6JJ.0	4605	850	1070	1840	1180	280	140	200	450	1842	2455
1RQ6 452-6JJ.0	4890	850	1070	1840	1180	280	140	200	450	1842	2455
1RQ6 454-6JJ.0	5276	850	1070	1840	1400	280	140	200	450	1842	2665
1RQ6 456-6JJ.0	5618	850	1070	1840	1400	280	140	200	450	1842	2665
1RQ4 500-6JE.0	6000	950	1220	1980	1320	280	150	200	500	2000	2660
1RQ4 502-6JE.0	6400	950	1220	1980	1320	280	150	200	500	2000	2660
1RQ4 504-6JE.0	6950	950	1220	1980	1500	280	160	240	500	2000	2910
1RQ4 506-6JE.0	7350	950	1220	1980	1500	280	160	240	500	2000	2910

<sup>1)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

<sup>2)</sup> Roller bearings only for 50 Hz operation.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings – series 1RQ4<sup>1)</sup>, 1RQ6</b>											
<b>6-pole</b>											
1RQ4 560-6JE.0	8050	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4 562-6JE.0	8600	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4 564-6JE.0	9400	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 566-6JE.0	9900	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 630-6JE.0	11400	1320	1320	2200	1600	335	200	280	630	2340	3140
1RQ4 632-6JE.0	12000	1320	1320	2200	1600	335	200	280	630	2340	3140
1RQ4 634-6JE.0	12900	1320	1320	2200	1800	335	200	280	630	2340	3380
1RQ4 636-6JE.0	13750	1320	1320	2200	1800	335	200	280	630	2340	3380
<b>8-pole</b>											
1RQ6 450-8JJ.0	4620	850	1070	1840	1180	280	140	200	450	1842	2455
1RQ6 452-8JJ.0	4920	850	1070	1840	1180	280	140	200	450	1842	2455
1RQ6 454-8JJ.0	5310	850	1070	1840	1400	280	140	200	450	1842	2665
1RQ6 -456-8JJ.0	5658	850	1070	1840	1400	280	140	200	450	1842	2665
1RQ4 500-8JE.0	6050	950	1220	1980	1320	280	150	200	500	2000	2660
1RQ4 502-8JE.0	6400	950	1220	1980	1320	280	150	200	500	2000	2660
1RQ4 504-8JE.0	6950	950	1220	1980	1500	280	160	240	500	2000	2910
1RQ4 506-8JE.0	7300	950	1220	1980	1500	280	160	240	500	2000	2910
1RQ4 560-8JE.0	8050	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4 562-8JE.0	8600	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4 564-8JE.0	9450	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 566-8JE.0	9850	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 630-8JE.0	11200	1320	1320	2200	1600	335	200	280	630	2340	3140
1RQ4 632-8JE.0	11950	1320	1320	2200	1600	335	200	280	630	2340	3140
1RQ4 634-8JE.0	12900	1320	1320	2200	1800	335	200	280	630	2340	3380
1RQ4 636-8JE.0	13650	1320	1320	2200	1800	335	200	280	630	2340	3380

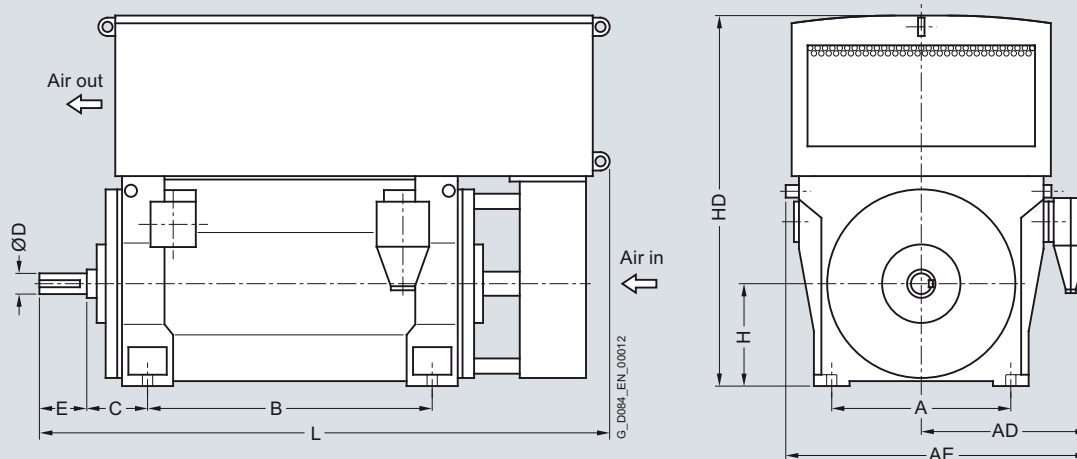
1) The dimensions are also valid for the 1SJ4 and 1SG4 series.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings (continued)



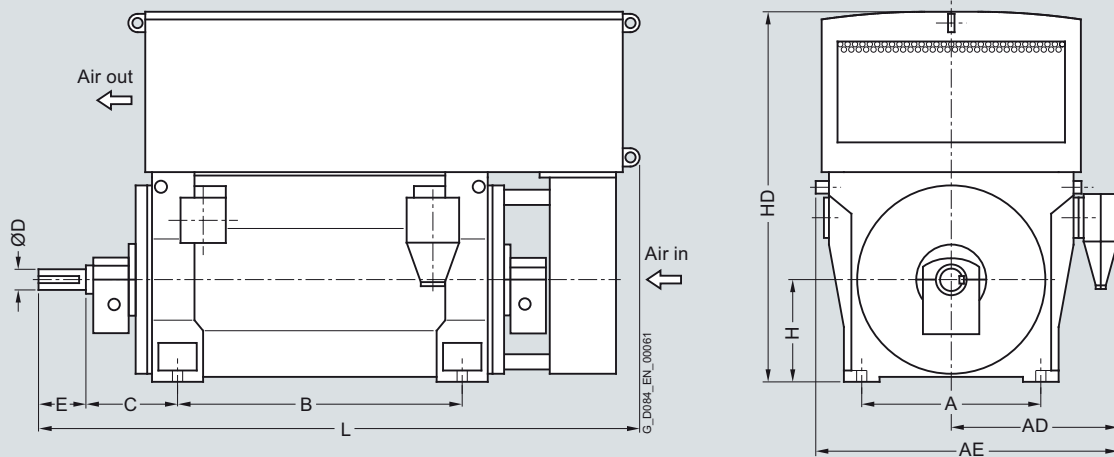
Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings – 1RQ4 series<sup>1)</sup></b>											
<b>10-pole</b>											
1RQ4 500-3JE.0	6000	950	1220	1980	1320	280	150	200	500	2000	2660
1RQ4 502-3JE.0	6300	950	1220	1980	1320	280	150	200	500	2000	2660
1RQ4 504-3JE.0	6850	950	1220	1980	1500	280	160	240	500	2000	2910
1RQ4 506-3JE.0	7250	950	1220	1980	1500	280	160	240	500	2000	2910
1RQ4 560-3JE.0	8200	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4 562-3JE.0	8900	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4 564-3JE.0	9700	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 566-3JE.0	10100	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 630-3JE.0	11200	1320	1320	2200	1600	335	200	280	630	2340	3140
1RQ4 632-3JE.0	11800	1320	1320	2200	1600	335	200	280	630	2340	3140
1RQ4 634-3JE.0	12900	1320	1320	2200	1800	335	200	280	630	2340	3380
1RQ4 636-3JE.0	13550	1320	1320	2200	1800	335	200	280	630	2340	3380
<b>12-pole</b>											
1RQ4 502-5JE.0	6350	950	1220	1980	1320	280	150	200	500	2000	2660
1RQ4 504-5JE.0	6850	950	1220	1980	1500	280	160	240	500	2000	2910
1RQ4 506-5JE.0	7250	950	1220	1980	1500	280	160	240	500	2000	2910
1RQ4 560-5JE.0	8000	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4 562-5JE.0	8550	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4 564-5JE.0	9400	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 566-5JE.0	9850	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4 630-5JE.0	11100	1320	1320	2200	1600	335	200	280	630	2340	3140
1RQ4 632-5JE.0	11750	1320	1320	2200	1600	335	200	280	630	2340	3140
1RQ4 634-5JE.0	12800	1320	1320	2200	1800	335	200	280	630	2340	3380
1RQ4 636-5JE.0	13500	1320	1320	2200	1800	335	200	280	630	2340	3380

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – series 1RQ4<sup>2)</sup>, 1RQ6</b>											
<b>2-pole</b>											
1RQ6 450-2JJ.0	4250	850	930	1620	1180	425	95	130	450	1842	2575
1RQ6 452-2JJ.0	4455	850	930	1620	1180	425	95	130	450	1842	2575
1RQ6 454-2JJ.0	4830	850	930	1620	1400	425	95	130	450	1842	2790
1RQ6 456-2JJ.0	5097	850	930	1620	1400	425	95	130	450	1842	2790
1RQ6 457-2JJ.0	5541	850	930	1620	1600	425	95	130	450	1852	3000
1RQ6 458-2JJ.0	5872	850	930	1620	1600	425	95	130	450	1852	3000
1RQ4 502-2JE.0	5800	950	1000	1760	1320	475	110	165	500	2000	3220
1RQ4 504-2JE.0	6300	950	1000	1760	1500	475	120	165	500	2000	3430
1RQ4 506-2JE.0	6600	950	1000	1760	1500	475	120	165	500	2000	3430
1RQ4 560-2JE.0	7550	1060	1070	2040	1400	500	130	200	560	2260	3560
1RQ4 562-2JE.0	7800	1060	1070	2040	1400	500	130	200	560	2260	3560
1RQ4 564-2JE.0	8650	1060	1070	2040	1600	500	140	200	560	2260	3790
1RQ4 566-2JE.0	9150	1060	1070	2040	1600	500	140	200	560	2260	3790
1RQ4 630-2JE.0	10900	1320	1330	2210	1600	560	140	200	630	2340	3840
1RQ4 632-2JE.0	11550	1320	1330	2210	1600	560	140	200	630	2340	3840
1RQ4 634-2JE.0	12750	1320	1330	2210	1800	560	150	200	630	2340	4080
1RQ4 636-2JE.0	13600	1320	1330	2210	1800	560	150	200	630	2340	4080
<b>4-pole</b>											
1RQ6 450-4JJ.0-Z K96	4604	850	930	1620	1180	500	130	200	450	1842	2705
1RQ6 452-4JJ.0-Z K96	4836	850	930	1620	1180	500	130	200	450	1842	2705
1RQ6 454-4JJ.0-Z K96	5251	850	930	1620	1400	500	130	200	450	1842	2915
1RQ6 456-4JJ.0-Z K96	5529	850	930	1620	1400	500	130	200	450	1842	2915
1RQ4 500-4JE.0-Z K96	6000	950	1000	1760	1320	500	140	200	500	2000	2880
1RQ4 502-4JE.0-Z K96	6250	950	1000	1760	1320	500	140	200	500	2000	2880
1RQ4 504-4JE.0-Z K96	6950	950	1000	1760	1500	500	150	200	500	2000	3090
1RQ4 506-4JE.0-Z K96	7300	950	1000	1760	1500	500	150	200	500	2000	3090

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

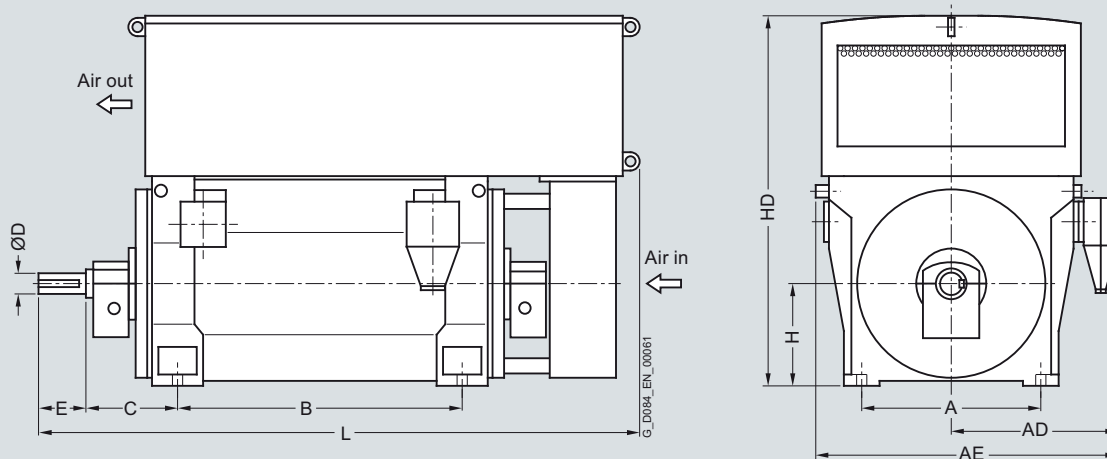
<sup>2)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings (continued)



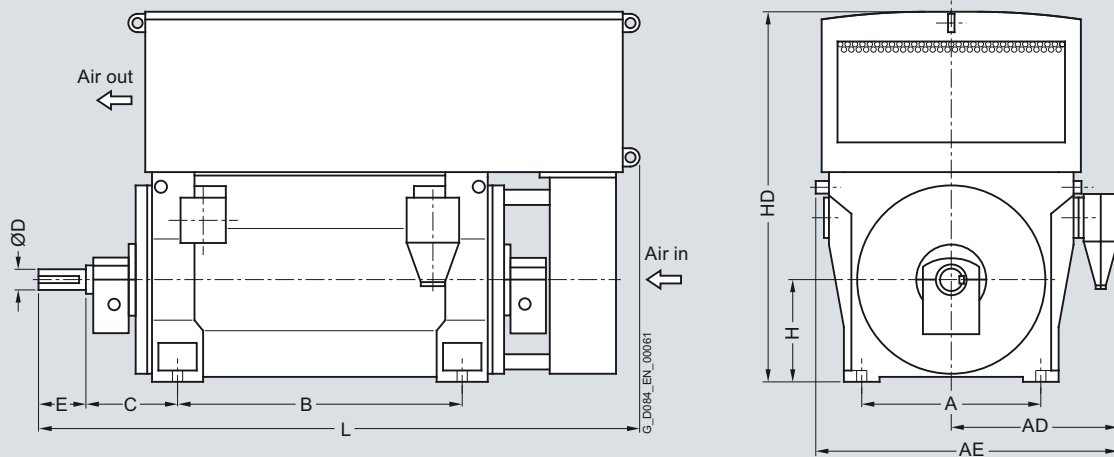
Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – series 1RQ4<sup>2)</sup>, 1RQ6</b>											
<b>4-pole</b>											
1RQ4 560-4JE.0-Z K96	8150	1060	1070	2040	1400	530	170	240	560	2260	3170
1RQ4 562-4JE.0-Z K96	8600	1060	1070	2040	1400	530	170	240	560	2260	3170
1RQ4 564-4JE.0-Z K96	9500	1060	1070	2040	1600	530	180	240	560	2260	3400
1RQ4 566-4JE.0-Z K96	9950	1060	1070	2040	1600	530	180	240	560	2260	3400
1RQ4 630-4JE.0-Z K96 <sup>3)</sup>	11350	1320	1330	2210	1600	600	190	280	630	2340	3400
1RQ4 632-4JE.0-Z K96 <sup>3)</sup>	12050	1320	1330	2210	1600	600	190	280	630	2340	3400
1RQ4 634-4JE.0-Z K96 <sup>3)</sup>	13150	1320	1330	2210	1800	600	200	280	630	2340	3640
1RQ4 636-4JE.0-Z K96 <sup>3)</sup>	13700	1320	1330	2210	1800	600	200	280	630	2340	3640
<b>6-pole</b>											
1RQ6 450-6JJ.0-Z K96	4760	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6 452-6JJ.0-Z K96	5045	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6 454-6JJ.0-Z K96	5429	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6 456-6JJ.0-Z K96	5772	850	930	1620	1400	500	140	200	450	1842	2915
1RQ4 500-6JE.0-Z K96	6200	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ4 502-6JE.0-Z K96	6500	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ4 504-6JE.0-Z K96	7150	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ4 506-6JE.0-Z K96	7550	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ4 560-6JE.0-Z K96	8250	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ4 562-6JE.0-Z K96	8800	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ4 564-6JE.0-Z K96	9750	1060	1070	2040	1600	530	180	240	560	2260	3400
1RQ4 566-6JE.0-Z K96	10200	1060	1070	2040	1600	530	180	240	560	2260	3400
1RQ4 630-6JE.0-Z K96	11650	1320	1330	2210	1600	600	200	280	630	2340	3400
1RQ4 632-6JE.0-Z K96	12250	1320	1330	2210	1600	600	200	280	630	2340	3400
1RQ4 634-6JE.0-Z K96	13150	1320	1330	2210	1800	600	200	280	630	2340	3640
1RQ4 636-6JE.0-Z K96	14000	1320	1330	2210	1800	600	200	280	630	2340	3640

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1S4 and 1S6 series.

<sup>3)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – series 1RQ4<sup>2)</sup>, 1RQ6</b>											
<b>8-pole</b>											
1RQ6 450-8JJ.0-Z K96	4776	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6 452-8JJ.0-Z K96	5075	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6 454-8JJ.0-Z K96	5464	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6 456-8JJ.0-Z K96	5811	850	930	1620	1400	500	140	200	450	1842	2915
1RQ4 500-8JE.0-Z K96	6200	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ4 502-8JE.0-Z K96	6550	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ4 504-8JE.0-Z K96	7050	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ4 506-8JE.0-Z K96	7450	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ4 560-8JE.0-Z K96	8250	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ4 562-8JE.0-Z K96	8800	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ4 564-8JE.0-Z K96	9650	1060	1070	1900	1600	530	180	240	560	2260	3400
1RQ4 566-8JE.0-Z K96	10100	1060	1070	1900	1600	530	180	240	560	2260	3400
1RQ4 630-8JE.0-Z K96 <sup>3)</sup>	11450	1320	1180	2060	1600	600	200	280	630	2340	3400
1RQ4 632-8JE.0-Z K96 <sup>3)</sup>	12200	1320	1330	2210	1600	600	200	280	630	2340	3400
1RQ4 634-8JE.0-Z K96 <sup>3)</sup>	13150	1320	1330	2210	1800	600	200	280	630	2340	3640
1RQ4 636-8JE.0-Z K96 <sup>3)</sup>	13900	1320	1330	2210	1800	600	200	280	630	2340	3640
<b>10-pole</b>											
1RQ6 450-3JJ.0-Z K96	4776	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6 452-3JJ.0-Z K96	5075	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6 454-3JJ.0-Z K96	5464	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6456-3JJ.0-Z K96	5811	850	930	1620	1400	500	140	200	450	1842	2915
1RQ4 500-3JE.0-Z K96	6100	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ4 502-3JE.0-Z K96	6500	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ4 504-3JE.0-Z K96	7050	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ4 506-3JE.0-Z K96	7400	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ4 560-3JE.0-Z K96	8150	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ4 562-3JE.0-Z K96	8750	1060	1070	1900	1400	530	170	240	560	2260	3170

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1S4 and 1S4 series.

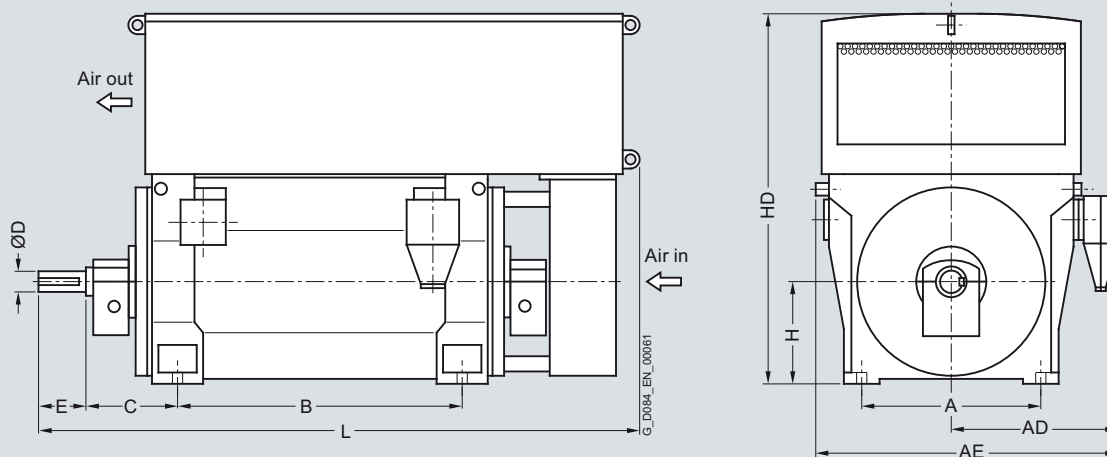
<sup>3)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – series 1RQ4<sup>2)</sup>, 1RQ6</b>											
<b>10-pole</b>											
1RQ4 564-3JE.0-Z K96	9600	1060	1070	1900	1600	530	180	240	560	2260	3400
1RQ4 566-3JE.0-Z K96	10050	1060	1070	1900	1600	530	180	240	560	2260	3400
1RQ4 630-3JE.0-Z K96 <sup>3)</sup>	11450	1320	1180	2060	1600	600	200	280	630	2340	3400
1RQ4 632-3JE.0-Z K96 <sup>3)</sup>	12050	1320	1180	2060	1600	600	200	280	630	2340	3400
1RQ4 634-3JE.0-Z K96 <sup>3)</sup>	13150	1320	1180	2060	1800	600	200	280	630	2340	3640
1RQ4 636-3JE.0-Z K96 <sup>3)</sup>	13800	1320	1180	2060	1800	600	200	280	630	2340	3640
<b>12-pole</b>											
1RQ6 450-5JJ.0-Z K96	4776	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6 452-5JJ.0-Z K96	5075	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6 454-5JJ.0-Z K96	5464	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6 456-5JJ.0-Z K96	5811	850	930	1620	1400	500	140	200	450	1842	2915
1RQ4 500-5JE.0-Z K96	6100	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ4 502-5JE.0-Z K96	6500	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ4 504-5JE.0-Z K96	7050	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ4 506-5JE.0-Z K96	7450	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ4 560-5JE.0-Z K96	8200	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ4 562-5JE.0-Z K96	8750	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ4 564-5JE.0-Z K96	9550	1060	1070	1900	1600	530	180	240	560	2260	3400
1RQ4 566-5JE.0-Z K96	10050	1060	1070	1900	1600	530	180	240	560	2260	3400
1RQ4 630-5JE.0-Z K96 <sup>3)</sup>	11350	1320	1180	2060	1600	600	200	280	630	2340	3400
1RQ4 632-5JE.0-Z K96 <sup>3)</sup>	12000	1320	1180	2060	1600	600	200	280	630	2340	3400
1RQ4 634-5JE.0-Z K96 <sup>3)</sup>	13050	1320	1180	2060	1800	600	200	280	630	2340	3640
1RQ4 636-5JE.0-Z K96 <sup>3)</sup>	13750	1320	1180	2060	1800	600	200	280	630	2340	3640

#### Note:

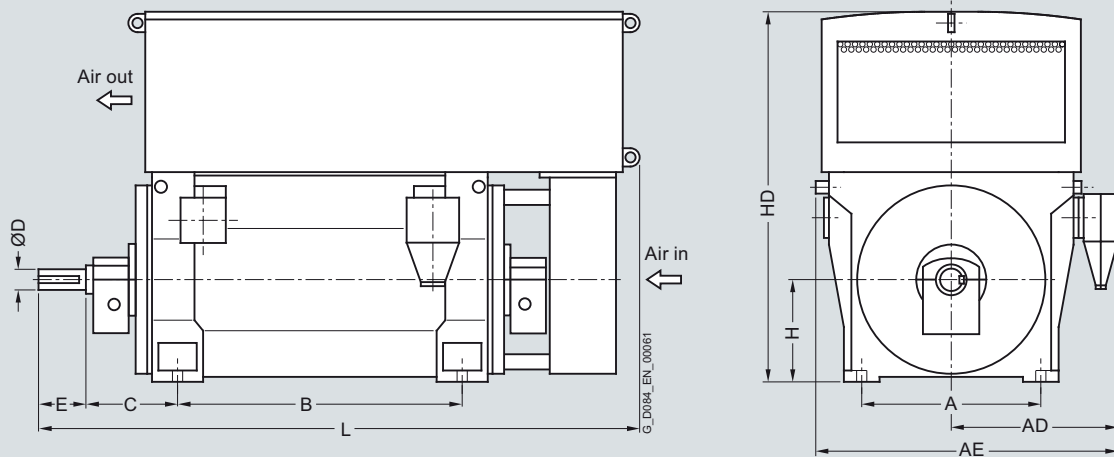
Higher pole numbers are available on request.

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

<sup>3)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – series 1RQ4<sup>1)</sup>, 1RQ6</b>											
<b>2-pole</b>											
1RQ6 450-2JJ.0	4250	850	1070	1840	1180	425	95	130	450	1842	2575
1RQ6 452-2JJ.0	4455	850	1070	1840	1180	425	95	130	450	1842	2575
1RQ6 454-2JJ.0	4830	850	1070	1840	1400	425	95	130	450	1842	2790
1RQ6 456-2JJ.0	5097	850	1070	1840	1400	425	95	130	450	1842	2790
1RQ6 457-2JJ.0	5541	850	1070	1840	1600	425	95	130	450	1852	3000
1RQ6 458-2JJ.0	5872	850	1070	1840	1600	425	95	130	450	1852	3000
1RQ4 504-2JE.0	6300	950	1140	1900	1500	475	120	165	500	2000	3430
1RQ4 506-2JE.0	6600	950	1140	1900	1500	475	120	165	500	2000	3430
1RQ4 560-2JE.0	7450	1060	1210	2040	1400	500	130	200	560	2260	3480
1RQ4 562-2JE.0	7650	1060	1210	2040	1400	500	130	200	560	2260	3480
1RQ4 564-2JE.0	8550	1060	1210	2040	1600	500	140	200	560	2260	3710
1RQ4 566-2JE.0	9000	1060	1210	2040	1600	500	140	200	560	2260	3710
1RQ4 630-2JE.0	10800	1320	1320	2200	1600	560	140	200	630	2340	3840
1RQ4 632-2JE.0	11450	1320	1320	2200	1600	560	140	200	630	2340	3840
1RQ4 634-2JE.0	12600	1320	1320	2200	1800	560	150	200	630	2340	4080
1RQ4 636-2JE.0	13400	1320	1330	2210	1800	560	150	200	630	2340	4080
<b>4-pole</b>											
1RQ6 450-4JJ.0-Z K96	4604	850	1070	1840	1180	500	130	200	450	1842	2705
1RQ6 452-4JJ.0-Z K96	4836	850	1070	1840	1180	500	130	200	450	1842	2705
1RQ6 454-4JJ.0-Z K96	5251	850	1070	1840	1400	500	130	200	450	1842	2915
1RQ6 456-4JJ.0-Z K96	5529	850	1070	1840	1400	500	130	200	450	1842	2915
1RQ4 500-4JE.0-Z K96	6050	950	1140	1980	1320	500	140	200	500	2000	2880
1RQ4 502-4JE.0-Z K96	6250	950	1140	1980	1320	500	140	200	500	2000	2880
1RQ4 504-4JE.0-Z K96	6900	950	1140	1980	1500	500	150	200	500	2000	3090
1RQ4 506-4JE.0-Z K96	7300	950	1140	1980	1500	500	150	200	500	2000	3090
1RQ4 560-4JE.0-Z K96	8000	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ4 562-4JE.0-Z K96	8450	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ4 564-4JE.0-Z K96	9350	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4 566-4JE.0-Z K96	9800	1060	1210	2040	1600	530	180	240	560	2260	3400

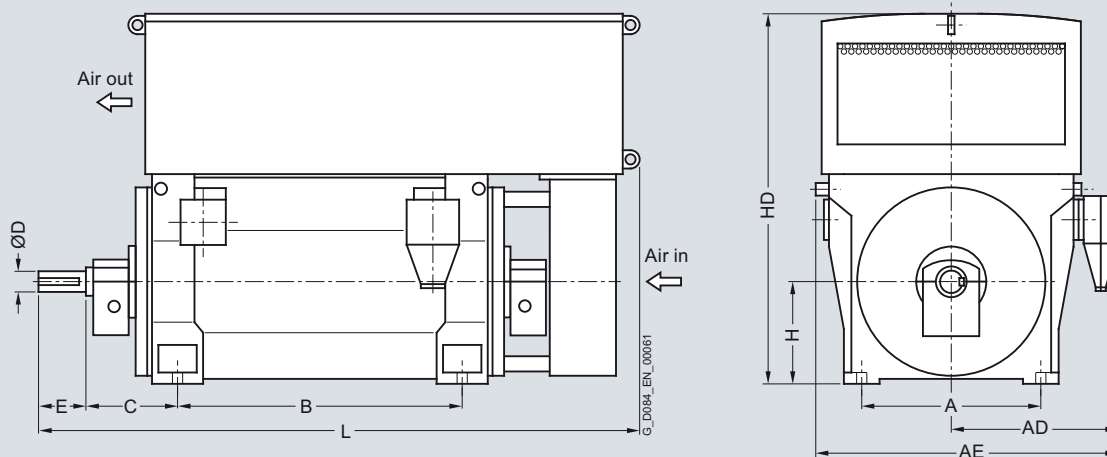
<sup>1)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

# Motors for line operation

## Air-cooled motors

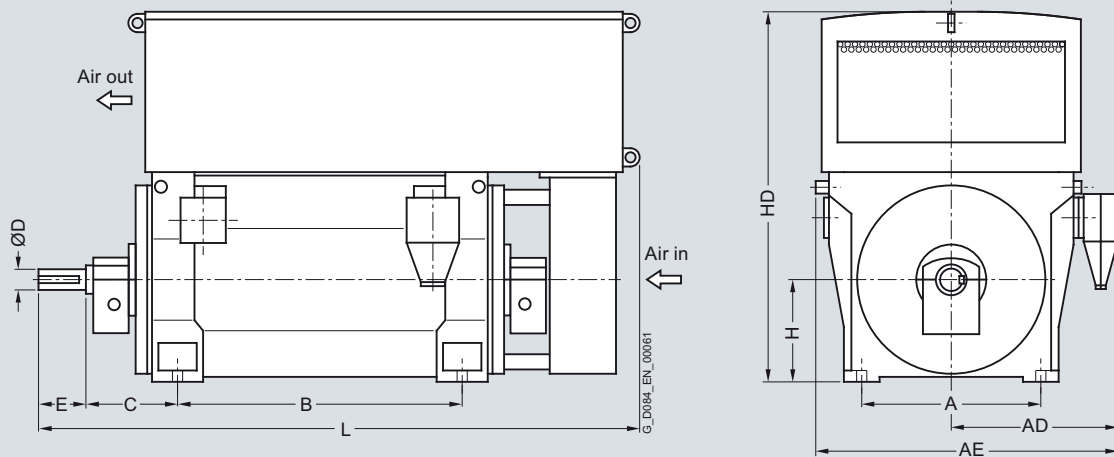
### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – series 1RQ4<sup>1)</sup>, 1RQ6</b>											
<b>4-pole</b>											
1RQ4 630-4JE.0-Z K96 <sup>2)</sup>	11250	1320	1320	2200	1600	600	190	280	630	2340	3400
1RQ4 632-4JE.0-Z K96 <sup>2)</sup>	11950	1320	1320	2200	1600	600	190	280	630	2340	3400
1RQ4 634-4JE.0-Z K96 <sup>2)</sup>	13000	1320	1320	2200	1800	600	200	280	630	2340	3640
1RQ4 636-4JE.0-Z K96 <sup>2)</sup>	13600	1320	1330	2210	1800	600	200	280	630	2340	3640
<b>6-pole</b>											
1RQ6 450-6JJ.0-Z K96	4760	850	1070	1840	1180	500	140	200	450	1842	2705
1RQ6 452-6JJ.0-Z K96	5045	850	1070	1840	1180	500	140	200	450	1842	2705
1RQ6 454-6JJ.0-Z K96	5429	850	1070	1840	1400	500	140	200	450	1842	2915
1RQ6 456-6JJ.0-Z K96	5772	850	1070	1840	1400	500	140	200	450	1842	2915
1RQ4 500-6JE.0-Z K96	6200	950	1140	1980	1320	500	150	200	500	2000	2880
1RQ4 502-6JE.0-Z K96	6550	950	1140	1980	1320	500	150	200	500	2000	2880
1RQ4 504-6JE.0-Z K96	7100	950	1140	1980	1500	500	160	240	500	2000	3130
1RQ4 506-6JE.0-Z K96	7500	950	1140	1980	1500	500	160	240	500	2000	3130
1RQ4 560-6JE.0-Z K96	8200	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ4 562-6JE.0-Z K96	8750	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ4 564-6JE.0-Z K96	9550	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4 566-6JE.0-Z K96	10050	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4 630-6JE.0-Z K96	11450	1320	1320	2200	1600	600	200	280	630	2340	3400
1RQ4 632-6JE.0-Z K96	12100	1320	1320	2200	1600	600	200	280	630	2340	3400
1RQ4 634-6JE.0-Z K96	13150	1320	1320	2200	1800	600	200	280	630	2340	3640
1RQ4 636-6JE.0-Z K96	13850	1320	1320	2200	1800	600	200	280	630	2340	3640
<b>8-pole</b>											
1RQ6 450-8JJ.0-Z K96	4776	850	1070	1840	1180	500	140	200	450	1842	2705
1RQ6 452-8JJ.0-Z K96	5075	850	1070	1840	1180	500	140	200	450	1842	2705
1RQ6 454-8JJ.0-Z K96	5464	850	1070	1840	1400	500	140	200	450	1842	2915
1RQ6 456-8JJ.0-Z K96	5811	850	1070	1840	1400	500	140	200	450	1842	2915
1RQ4 500-8JE.0-Z K96	6150	950	1140	1980	1320	500	150	200	500	2000	2880
1RQ4 502-8JE.0-Z K96	6500	950	1140	1980	1320	500	150	200	500	2000	2880
1RQ4 504-8JE.0-Z K96	7050	950	1140	1980	1500	500	160	240	500	2000	3130
1RQ4 506-8JE.0-Z K96	7450	950	1140	1980	1500	500	160	240	500	2000	3130
1RQ4 560-8JE.0-Z K96	8200	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ4 562-8JE.0-Z K96	8750	1060	1210	2040	1400	530	170	240	560	2260	3170

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RQ4 series<sup>1)</sup></b>											
<b>8-pole</b>											
1RQ4 564-8JE.0-Z K96	9550	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4 566-8JE.0-Z K96	10000	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4 630-8JE.0-Z K96	11450	1320	1320	2200	1600	600	200	280	630	2340	3400
1RQ4 632-8JE.0-Z K96	12000	1320	1320	2200	1600	600	200	280	630	2340	3400
1RQ4 634-8JE.0-Z K96	13050	1320	1320	2200	1800	600	200	280	630	2340	3640
1RQ4 636-8JE.0-Z K96	13800	1320	1320	2200	1800	600	200	280	630	2340	3640
<b>10-pole</b>											
1RQ4 500-3JE.0-Z K96	6100	950	1140	1980	1320	500	150	200	500	2000	2880
1RQ4 502-3JE.0-Z K96	6450	950	1140	1980	1320	500	150	200	500	2000	2880
1RQ4 504-3JE.0-Z K96	7050	950	1140	1980	1500	500	160	240	500	2000	3130
1RQ4 506-3JE.0-Z K96	7400	950	1140	1980	1500	500	160	240	500	2000	3130
1RQ4 560-3JE.0-Z K96	8400	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ4 562-3JE.0-Z K96	9400	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ4 564-3JE.0-Z K96	9900	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4 566-3JE.0-Z K96	13000	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4 630-3JE.0-Z K96	11400	1320	1320	2200	1600	600	200	280	630	2340	3400
1RQ4 632-3JE.0-Z K96	12000	1320	1320	2200	1600	600	200	280	630	2340	3400
1RQ4 634-3JE.0-Z K96	13000	1320	1320	2200	1800	600	200	280	630	2340	3640
1RQ4 636-3JE.0-Z K96	13750	1320	1320	2200	1800	600	200	280	630	2340	3640

<sup>1)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

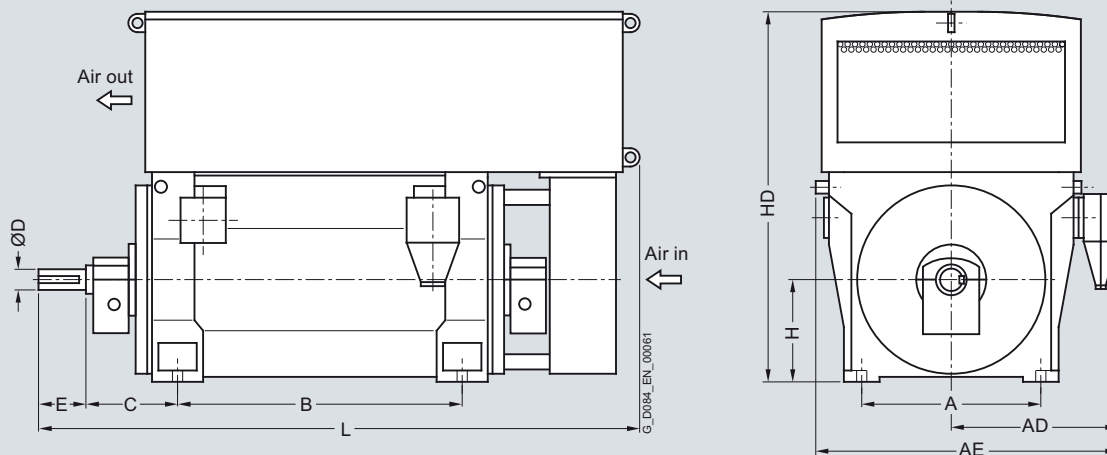
<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings (continued)



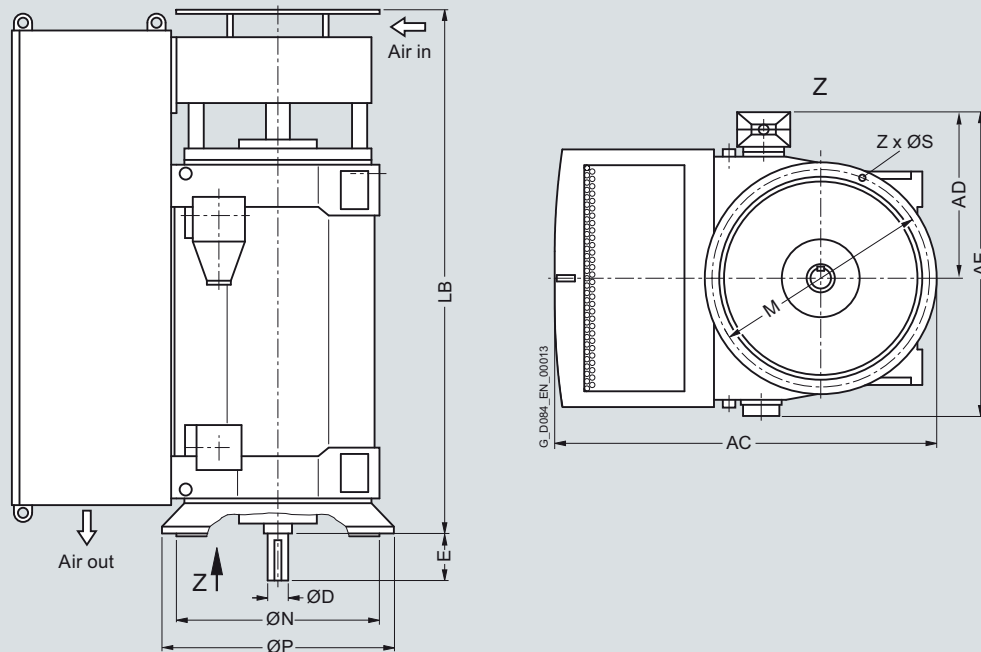
Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RQ4 series<sup>1)</sup></b>											
12-pole											
1RQ4 502-5JE.0-Z K96	6500	950	1140	1980	1320	500	150	200	500	2000	2880
1RQ4 504-5JE.0-Z K96	7050	950	1140	1980	1500	500	160	240	500	2000	3130
1RQ4 506-5JE.0-Z K96	7400	950	1140	1980	1500	500	160	240	500	2000	3130
1RQ4 560-5JE.0-Z K96	8150	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ4 562-5JE.0-Z K96	8700	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ4 564-5JE.0-Z K96	9550	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4 566-5JE.0-Z K96	10000	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4 630-5JE.0-Z K96	11350	1320	1320	2200	1600	600	200	280	630	2340	3400
1RQ4 632-5JE.0-Z K96	11900	1320	1320	2200	1600	600	200	280	630	2340	3400
1RQ4 634-5JE.0-Z K96	12950	1320	1320	2200	1800	600	200	280	630	2340	3640
1RQ4 636-5JE.0-Z K96	13650	1320	1320	2200	1800	600	200	280	630	2340	3640

Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

## Dimension drawings



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – series 1RQ4<sup>2)</sup>, 1RQ6</b>												
4-pole												
1RQ6 450-4JJ.4	4731	1967	930	1620	130	200	2730	1150	1000	1080	26	8
1RQ6 452-4JJ.4	4963	1967	930	1620	130	200	2730	1150	1000	1080	26	8
1RQ6 454-4JJ.4	5378	1967	930	1620	130	200	2940	1150	1000	1080	26	8
1RQ6 456-4JJ.4	5656	1967	930	1620	130	200	2940	1150	1000	1080	26	8
1RQ4 502-4JE.4	6250	2130	1000	1810	140	200	2560	1250	1120	1180	26	8
1RQ4 504-4JE.4	6950	2130	1000	1810	150	200	2770	1250	1120	1180	26	8
1RQ4 506-4JE.4	7300	2130	1000	1810	150	200	2770	1250	1120	1180	26	8
1RQ4 560-4JE.4	8200	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ4 562-4JE.4	8600	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ4 564-4JE.4 <sup>3)</sup>	9500	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 566-4JE.4 <sup>3)</sup>	9950	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 630-4JE.4 <sup>3)</sup>	12750	2840	1330	2300	200	280	3170	2000	1800	1900	33	8
1RQ4 632-4JE.4 <sup>3)</sup>	13450	2840	1330	2300	200	280	3170	2000	1800	1900	33	8
1RQ4 634-4JE.4 <sup>3)</sup>	14550	2840	1330	2300	200	280	3410	2000	1800	1900	33	8
1RQ4 636-4JE.4 <sup>3)</sup>	15100	2840	1330	2300	200	280	3410	2000	1800	1900	33	8

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

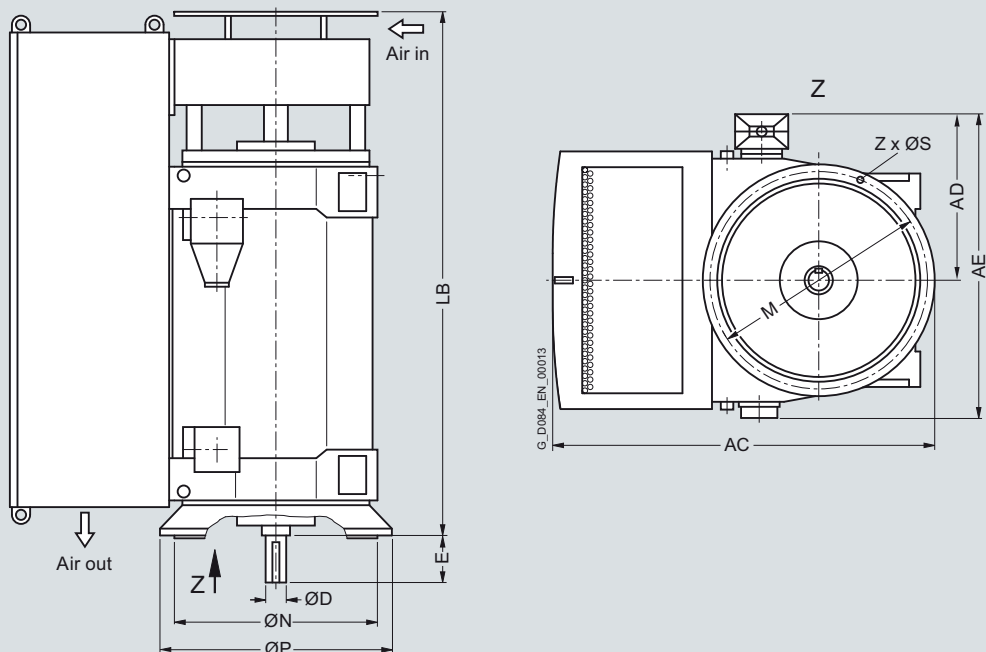
<sup>3)</sup> Vertical type of construction, only in the 50 Hz version.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings (continued)

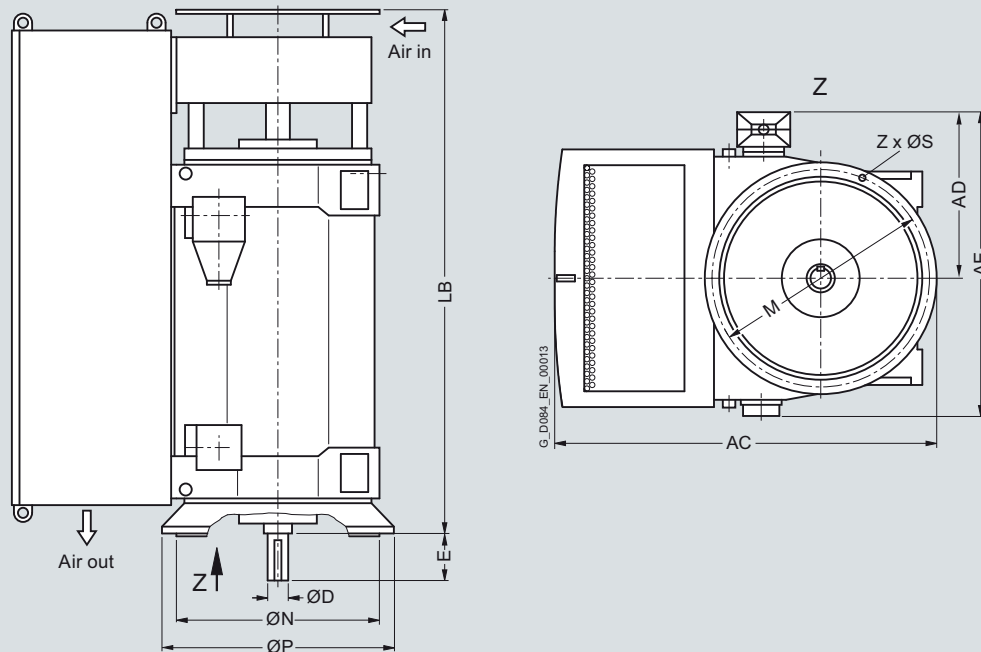


Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – series 1RQ4<sup>2)</sup>, 1RQ6</b>												
<b>6-pole</b>												
1RQ6 450-6JJ.4	4818	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6 452-6JJ.4	5103	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6 454-6JJ.4	5489	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6 456-6JJ.4	5831	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ4 500-6JE.4	6200	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ4 502-6JE.4	6550	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ4 504-6JE.4	7100	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ4 506-6JE.4	7500	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ4 560-6JE.4	8300	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ4 562-6JE.4	8800	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ4 564-6JE.4	9750	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 566-6JE.4	10200	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 630-6JE.4	13050	2840	1330	2300	200	280	3170	2000	1800	1900	33	8
1RQ4 632-6JE.4	13650	2840	1330	2300	200	280	3170	2000	1800	1900	33	8
1RQ4 634-6JE.4	14550	2840	1330	2300	200	280	3410	2000	1800	1900	33	8
1RQ4 636-6JE.4	15400	2840	1330	2300	200	280	3410	2000	1800	1900	33	8
<b>8-pole</b>												
1RQ6 450-8JJ.4	4833	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6 452-8JJ.4	5133	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6 454-8JJ.4	5523	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6 456-8JJ.4	5871	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ4 500-8JE.4	6200	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ4 502-8JE.4	6600	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ4 504-8JE.4	7100	2130	1000	1810	160	240	2770	1250	1120	1180	26	8

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – series 1RQ4<sup>2)</sup>, 1RQ6</b>												
<b>8-pole</b>												
1RQ4 506-8JE.4	7500	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ4 560-8JE.4	8250	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ4 562-8JE.4	8800	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ4 564-8JE.4	9650	2400	1070	1960	180	240	3030	1400	1250	1320	26	8
1RQ4 566-8JE.4	10100	2400	1070	1960	180	240	3030	1400	1250	1320	26	8
1RQ4 630-8JE.4 <sup>3)</sup>	12850	2840	1180	2150	200	280	3170	2000	1800	1900	33	8
1RQ4 632-8JE.4 <sup>3)</sup>	13600	2840	1330	2300	200	280	3170	2000	1800	1900	33	8
1RQ4 634-8JE.4 <sup>3)</sup>	14550	2840	1330	2300	200	280	3410	2000	1800	1900	33	8
1RQ4 636-8JE.4 <sup>3)</sup>	15300	2840	1330	2300	200	280	3410	2000	1800	1900	33	8
<b>10-pole</b>												
1RQ6 450-3JJ.4	4833	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6 452-3JJ.4	5133	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6 454-3JJ.4	5523	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6 456-3JJ.4	5871	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ4 500-3JE.4	6150	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ4 502-3JE.4	6450	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ4 504-3JE.4	7050	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ4 506-3JE.4	7450	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ4 560-3JE.4	8200	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ4 562-3JE.4	8750	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ4 564-3JE.4	9600	2400	1070	1960	180	240	3030	1400	1250	1320	26	8
1RQ4 566-3JE.4	10050	2400	1070	1960	180	240	3030	1400	1250	1320	26	8

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

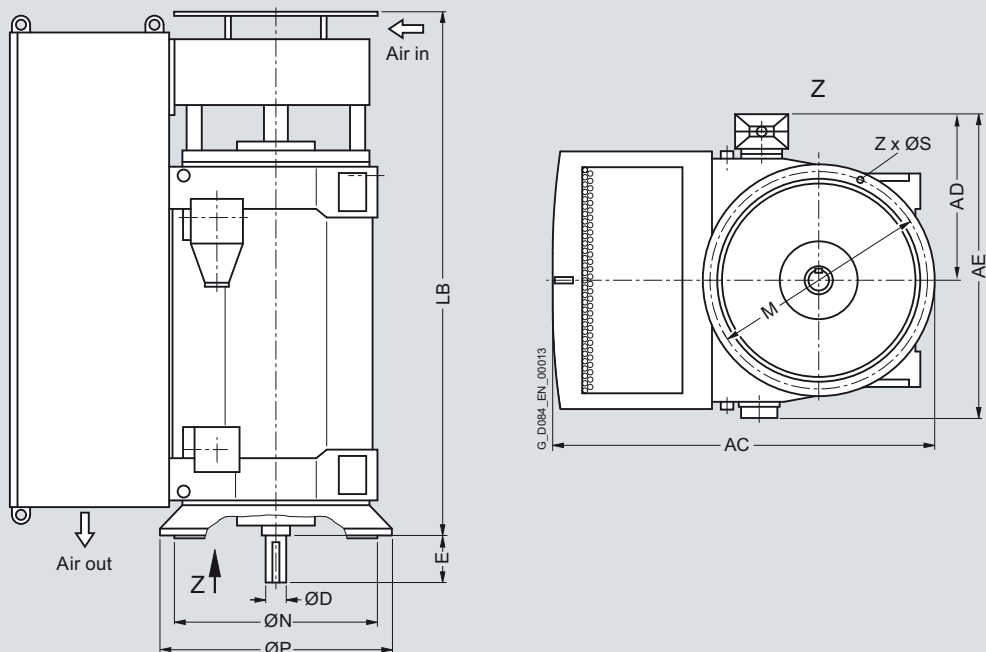
<sup>3)</sup> Vertical type of construction, only in the 50 Hz version.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – series 1RQ4<sup>2)</sup>, 1RQ6</b>												
<b>10-pole</b>												
1RQ4 630-3JE.4 <sup>3)</sup>	12850	2840	1180	2150	200	280	3170	2000	1800	1900	33	8
1RQ4 632-3JE.4 <sup>3)</sup>	13450	2840	1180	2150	200	280	3170	2000	1800	1900	33	8
1RQ4 634-3JE.4 <sup>3)</sup>	14550	2840	1180	2150	200	280	3410	2000	1800	1900	33	8
1RQ4 636-3JE.4 <sup>3)</sup>	15200	2840	1180	2150	200	280	3410	2000	1800	1900	33	8
<b>12-pole</b>												
1RQ6 450-5JJ.4	4833	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6 452-5JJ.4	5133	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6 454-5JJ.4	5523	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6 456-5JJ.4	5871	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ4 500-5JE.4	6150	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ4 502-5JE.4	6500	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ4 504-5JE.4	7050	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ4 506-5JE.4	7500	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ4 560-5JE.4	8200	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ4 562-5JE.4	8750	2400	1070	1960	170	240	2800	1400	1250	1320	26	8
1RQ4 564-5JE.4	9550	2400	1070	1960	180	240	3030	1400	1250	1320	26	8
1RQ4 566-5JE.4	10050	2400	1070	1960	180	240	3030	1400	1250	1320	26	8
1RQ4 630-5JE.4 <sup>3)</sup>	12750	2840	1180	2150	200	280	3170	2000	1800	1900	33	8
1RQ4 632-5JE.4 <sup>3)</sup>	13400	2840	1180	2150	200	280	3170	2000	1800	1900	33	8
1RQ4 634-5JE.4 <sup>3)</sup>	14450	2840	1180	2150	200	280	3410	2000	1800	1900	33	8
1RQ4 636-5JE.4 <sup>3)</sup>	15150	2840	1180	2150	200	280	3410	2000	1800	1900	33	8

#### Note:

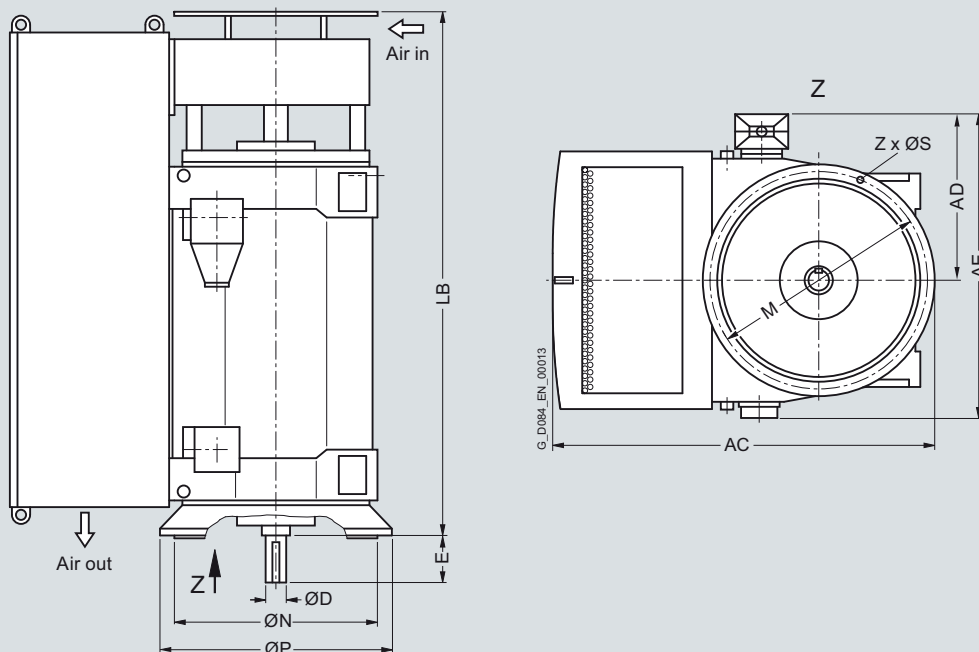
Higher pole numbers are available on request.

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

<sup>3)</sup> Vertical type of construction, only in the 50 Hz version.

## Dimension drawings



Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings – series 1RQ4<sup>1)</sup>, 1RQ6</b>												
<b>4-pole</b>												
1RQ6 450-4JJ.4	4731	1967	1070	1840	130	200	2730	1150	1000	1080	26	8
1RQ6 452-4JJ.4	4963	1967	1070	1840	130	200	2730	1150	1000	1080	26	8
1RQ6 454-4JJ.4	5378	1967	1070	1840	130	200	2940	1150	1000	1080	26	8
1RQ6 456-4JJ.4	5656	1967	1070	1840	130	200	2940	1150	1000	1080	26	8
1RQ4 504-4JE.4	6950	2130	1140	1950	150	200	2770	1250	1120	1180	26	8
1RQ4 506-4JE.4	7300	2130	1140	1950	150	200	2770	1250	1120	1180	26	8
1RQ4 560-4JE.4	8050	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ4 562-4JE.4	8500	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ4 564-4JE.4	9400	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 566-4JE.4	9800	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 630-4JE.4	12750	2840	1320	2290	200	280	3170	2000	1800	1900	33	8
1RQ4 632-4JE.4	13450	2840	1320	2290	200	280	3170	2000	1800	1900	33	8
1RQ4 634-4JE.4	14550	2840	1320	2290	200	280	3410	2000	1800	1900	33	8
1RQ4 636-4JE.4	15100	2840	1330	2300	200	280	3410	2000	1800	1900	33	8
<b>6-pole</b>												
1RQ6 450-6JJ.4	4818	1967	1070	1840	140	200	2730	1150	1000	1080	26	8
1RQ6 452-6JJ.4	5103	1967	1070	1840	140	200	2730	1150	1000	1080	26	8
1RQ6 454-6JJ.4	5489	1967	1070	1840	140	200	2940	1150	1000	1080	26	8
1RQ6 456-6JJ.4	5831	1967	1070	1840	140	200	2940	1150	1000	1080	26	8
1RQ4 500-6JE.4	6150	2130	1140	1950	150	200	2560	1250	1120	1180	26	8

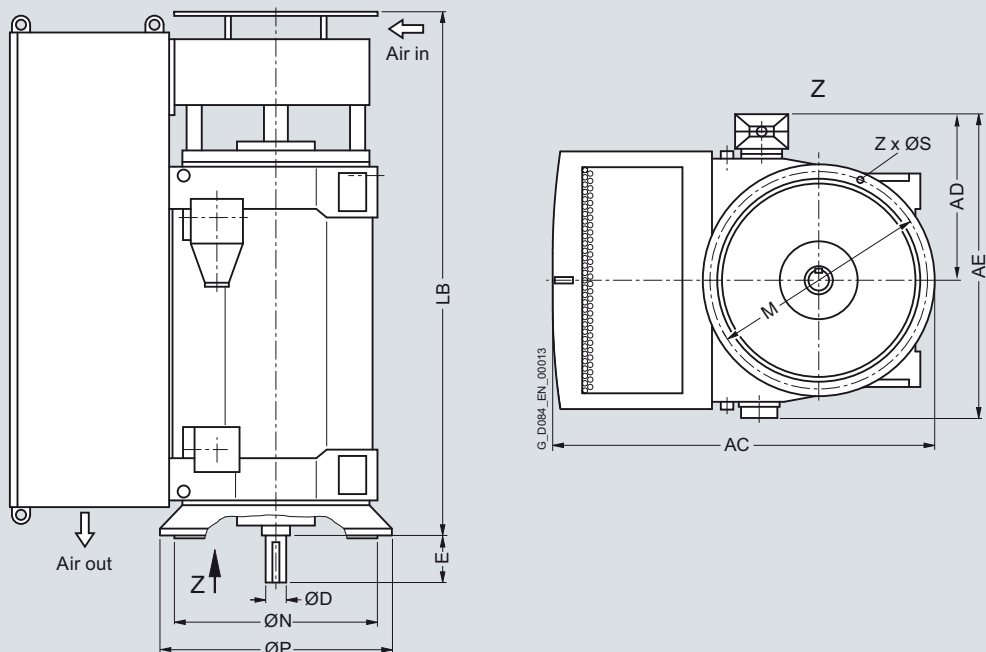
1) The dimensions are also valid for the 1SJ4 and 1SG4 series.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

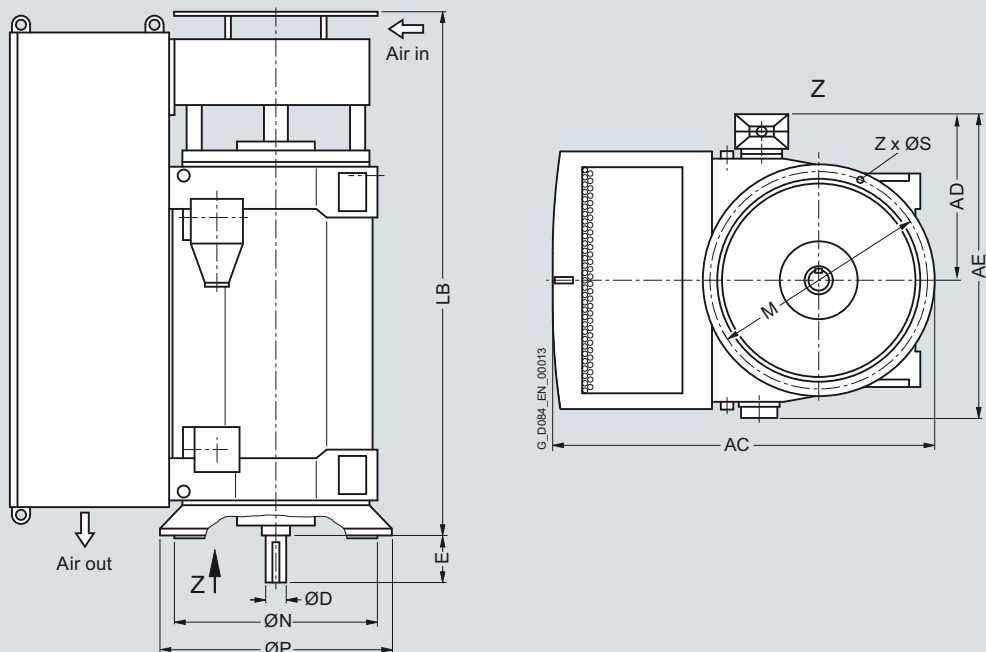
#### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings – series 1RQ4<sup>1)</sup>, 1RQ6</b>												
<b>6-pole</b>												
1RQ4 502-6JE.4	6550	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ4 504-6JE.4	710055	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ4 506-6JE.4	7500	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ4 560-6JE.4	8250	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ4 562-6JE.4	8750	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ4 564-6JE.4	9600	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 566-6JE.4	10050	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 630-6JE.4	13050	2840	1320	2290	200	280	3170	2000	1800	1900	33	8
1RQ4 632-6JE.4	13650	2840	1320	2290	200	280	3170	2000	1800	1900	33	8
1RQ4 634-6JE.4	14550	2840	1320	2290	200	280	3410	2000	1800	1900	33	8
1RQ4 636-6JE.4	15400	2840	1320	2290	200	280	3410	2000	1800	1900	33	8
<b>8-pole</b>												
1RQ6 450-8JJ.4	4833	1967	1070	1840	140	200	2730	1150	1000	1080	26	8
1RQ6 452-8JJ.4	5133	1967	1070	1840	140	200	2730	1150	1000	1080	26	8
1RQ6 454-8JJ.4	5523	1967	1070	1840	140	200	2940	1150	1000	1080	26	8
1RQ6 456-8JJ.4	5871	1967	1070	1840	140	200	2940	1150	1000	1080	26	8
1RQ4 500-8JE.4	6200	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ4 502-8JE.4	6550	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ4 504-8JE.4	7100	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ4 506-8JE.4	7500	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ4 560-8JE.4	8200	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ4 562-8JE.4	8750	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ4 564-8JE.4	9600	2400	1210	2100	180	240	3030	1400	1250	1320	26	8

<sup>1)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

## Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings – 1RQ4 series<sup>1)</sup></b>												
<b>8-pole</b>												
1RQ4 566-8JE.4	10000	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 630-8JE.4	12850	2840	1320	2290	200	280	3170	2000	1800	1900	33	8
1RQ4 632-8JE.4	13600	2840	1320	2290	200	280	3170	2000	1800	1900	33	8
1RQ4 634-8JE.4	14550	2840	1320	2290	200	280	3410	2000	1800	1900	33	8
1RQ4 636-8JE.4	15300	2840	1320	2290	200	280	3410	2000	1800	1900	33	8
<b>10-pole</b>												
1RQ4 500-3JE.4	6150	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ4 502-3JE.4	6450	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ4 504-3JE.4	7000	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ4 506-3JE.4	7450	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ4 560-3JE.4	8700	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ4 562-3JE.4	9350	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ4 564-3JE.4	10150	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 566-3JE.4	10600	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 630-3JE.4	12850	2840	1320	2290	200	280	3170	2000	1800	1900	33	8
1RQ4 632-3JE.4	13450	2840	1320	2290	200	280	3170	2000	1800	1900	33	8
1RQ4 634-3JE.4	14550	2840	1320	2290	200	280	3410	2000	1800	1900	33	8
1RQ4 636-3JE.4	15200	2840	1320	2290	200	280	3410	2000	1800	1900	33	8

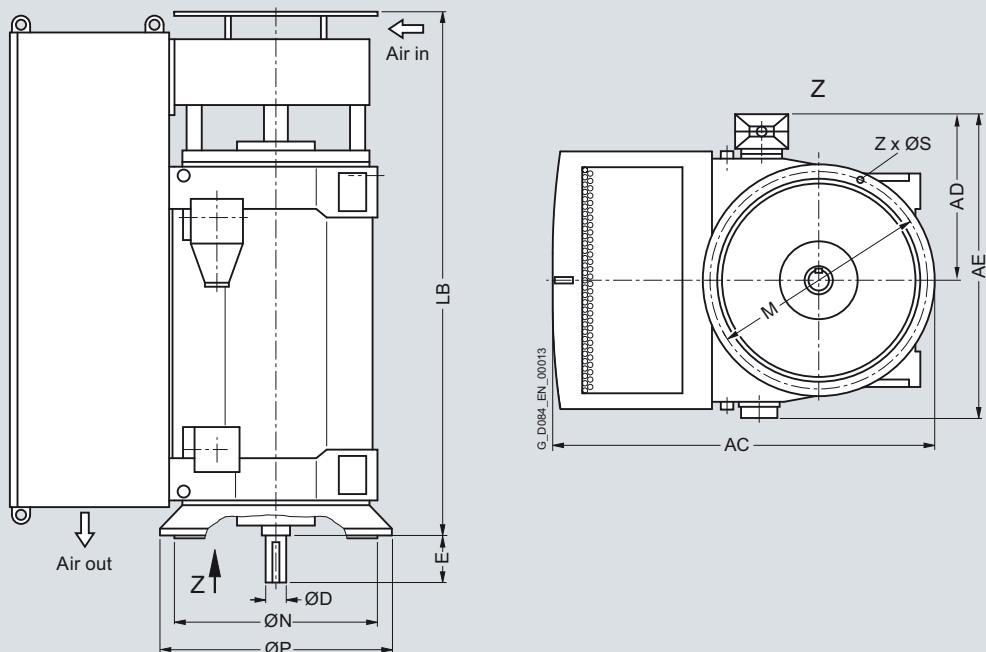
<sup>1)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings (continued)



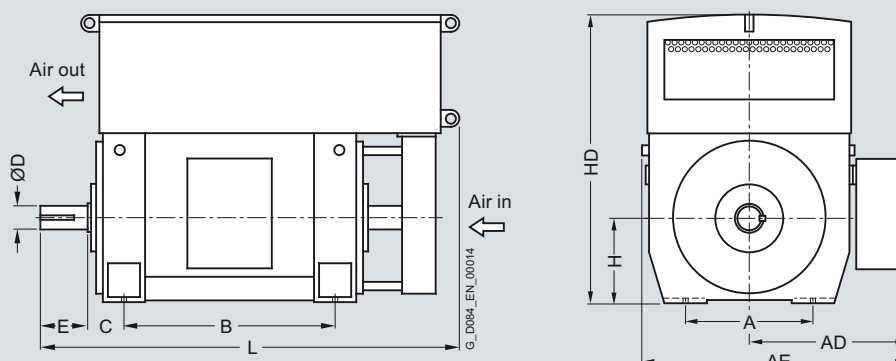
Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings – 1RQ4 series<sup>1)</sup></b>												
<b>12-pole</b>												
1RQ4 502-5JE.4	6500	2130	1140	1950	150	200	2560	1250	1120	1180	26	8
1RQ4 504-5JE.4	7000	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ4 506-5JE.4	7450	2130	1140	1950	160	240	2770	1250	1120	1180	26	8
1RQ4 560-5JE.4	8200	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ4 562-5JE.4	8700	2400	1210	2100	170	240	2800	1400	1250	1320	26	8
1RQ4 564-5JE.4	9550	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 566-5JE.4	10000	2400	1210	2100	180	240	3030	1400	1250	1320	26	8
1RQ4 630-5JE.4	12750	2840	1320	2290	200	280	3170	2000	1800	1900	33	8
1RQ4 632-5JE.4	13400	2840	1320	2290	200	280	3170	2000	1800	1900	33	8
1RQ4 634-5JE.4	14450	2840	1320	2290	200	280	3410	2000	1800	1900	33	8
1RQ4 636-5JE.4	15150	2840	1320	2290	200	280	3410	2000	1800	1900	33	8

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SJ4 and 1SG4 series.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings – 1RQ6 series<sup>1)</sup></b>											
<b>4-pole</b>											
1RQ6 710-4JJ.0 <sup>2)</sup>	21100	1500	1500	2530	2000	355	220	280	710	2820	4720
1RQ6 712-4JJ.0 <sup>2)</sup>	21900	1500	1500	2530	2000	355	220	280	710	2820	4720
1RQ6 714-4JJ.0 <sup>2)</sup>	23400	1500	1500	2530	2240	355	220	280	710	2820	4960
1RQ6 716-4JJ.0 <sup>2)</sup>	24400	1500	1500	2530	2240	355	220	280	710	2820	4960
<b>6-pole</b>											
1RQ6 710-6JJ.0	20400	1500	1500	2530	2000	355	240	330	710	2810	3890
1RQ6 712-6JJ.0	21100	1500	1500	2530	2000	355	240	330	710	2810	3890
1RQ6 714-6JJ.0	22800	1500	1500	2530	2240	355	240	330	710	2810	4130
1RQ6 716-6JJ.0	24000	1500	1500	2530	2240	355	240	330	710	2810	4130
<b>8-pole</b>											
1RQ6 710-8JJ.0	20200	1500	1500	2530	2000	355	240	330	710	2810	3890
1RQ6 712-8JJ.0	21000	1500	1500	2530	2000	355	240	330	710	2810	3890
1RQ6 714-8JJ.0	22600	1500	1500	2530	2240	355	240	330	710	2810	4130
1RQ6 716-8JJ.0	23700	1500	1500	2530	2240	355	240	330	710	2810	4130
<b>10-pole</b>											
1RQ6 710-3JJ.0	20000	1500	1500	2530	2000	355	240	330	710	2810	3890
1RQ6 712-3JJ.0	20900	1500	1500	2530	2000	355	240	330	710	2810	3890
1RQ6 714-3JJ.0	22500	1500	1500	2530	2240	355	240	330	710	2810	4130
1RQ6 716-3JJ.0	23600	1500	1500	2530	2240	355	240	330	710	2810	4130

Note:

Higher pole numbers are available on request.

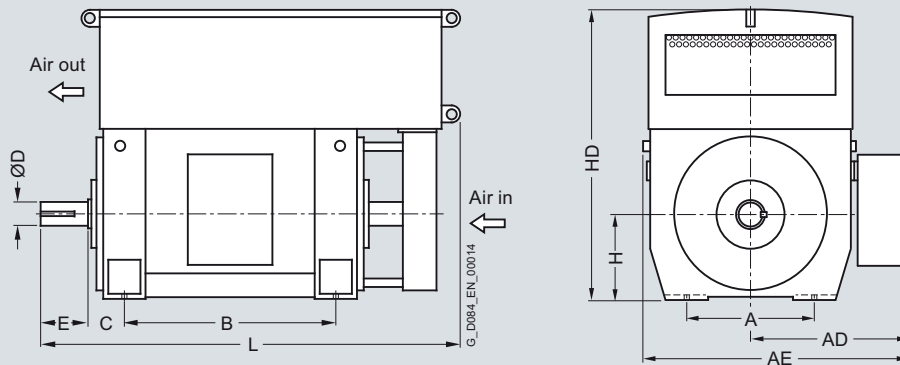
<sup>1)</sup> The dimensions are also valid for the 1SJ6 and 1SG6 series.<sup>2)</sup> Roller bearings only for 50 Hz operation.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings – 1RQ6 series<sup>1)</sup></b>											
<b>4-pole</b>											
1RQ6 710-4JJ.0 <sup>2)</sup>	20800	1500	1500	2530	2000	355	220	280	710	2820	4720
1RQ6 712-4JJ.0 <sup>2)</sup>	21600	1500	1500	2530	2000	355	220	280	710	2820	4720
1RQ6 714-4JJ.0 <sup>2)</sup>	23100	1500	1500	2530	2240	355	220	280	710	2820	4960
1RQ6 716-4JJ.0 <sup>2)</sup>	24000	1500	1500	2530	2240	355	220	280	710	2820	4960
<b>6-pole</b>											
1RQ6 710-6JJ.0	20200	1500	1500	2530	2000	355	240	330	710	2810	3890
1RQ6 712-6JJ.0	21000	1500	1500	2530	2000	355	240	330	710	2810	3890
1RQ6 714-6JJ.0	22600	1500	1500	2530	2240	355	240	330	710	2810	4130
1RQ6 716-6JJ.0	23700	1500	1500	2530	2240	355	240	330	710	2810	4130
<b>8-pole</b>											
1RQ6 710-8JJ.0	20100	1500	1500	2530	2000	355	240	330	710	2810	3890
1RQ6 712-8JJ.0	20800	1500	1500	2530	2000	355	240	330	710	2810	3890
1RQ6 714-8JJ.0	22400	1500	1500	2530	2240	355	240	330	710	2810	4130
1RQ6 716-8JJ.0	23600	1500	1500	2530	2240	355	240	330	710	2810	4130
<b>10-pole</b>											
1RQ6 710-3JJ.0	19900	1500	1500	2530	2000	355	240	330	710	2810	3890
1RQ6 712-3JJ.0	20700	1500	1500	2530	2000	355	240	330	710	2810	3890
1RQ6 714-3JJ.0	22400	1500	1500	2530	2240	355	240	330	710	2810	4130
1RQ6 716-3JJ.0	23500	1500	1500	2530	2240	355	240	330	710	2810	4130

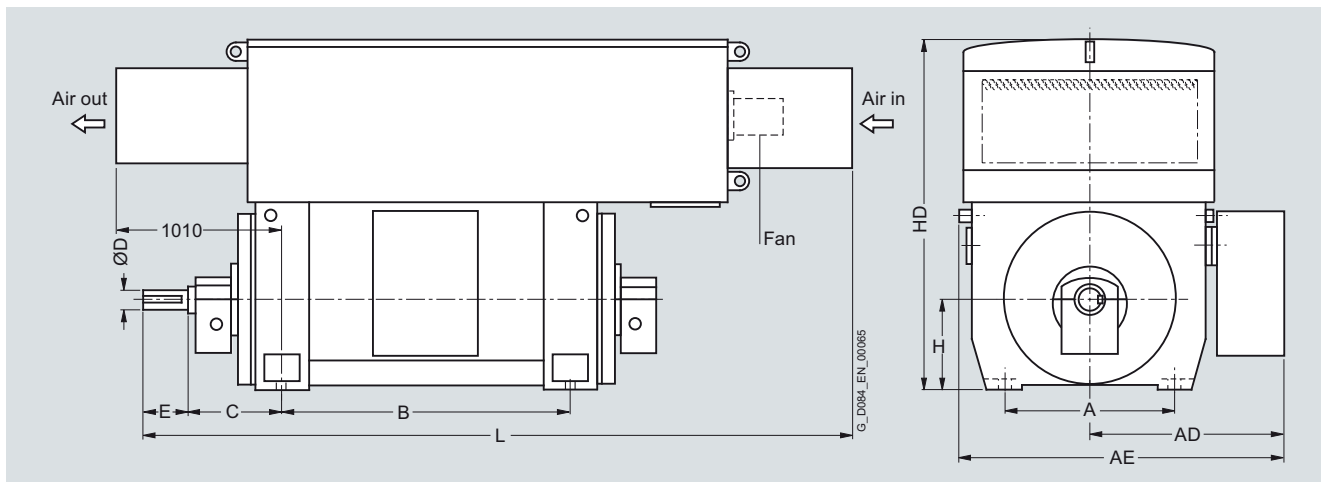
#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SJ6 and 1SG6 series.

<sup>2)</sup> Roller bearings only for 50 Hz operation.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ6 series<sup>1)</sup></b>											
2-pole											
1RQ6 710-2HJ.0	19300	1500	1500	2530	2000	600	180	240	710	2820	4940
1RQ6 712-2HJ.0	20100	1500	1500	2530	2000	600	180	240	710	2820	4940
1RQ6 714-2HJ.0	21400	1500	1500	2530	2240	600	180	240	710	2820	5180
1RQ6 716-2HJ.0	22400	1500	1500	2530	2240	600	180	240	710	2820	5180

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RQ6 series<sup>1)</sup></b>											
2-pole											
1RQ6 710-2HJ.0	19100	1500	1500	2530	2000	600	180	240	710	2820	4940
1RQ6 712-2HJ.0	19900	1500	1500	2530	2000	600	180	240	710	2820	4940
1RQ6 714-2HJ.0	21200	1500	1500	2530	2240	600	180	240	710	2820	5180
1RQ6 716-2HJ.0	22200	1500	1500	2530	2240	600	180	240	710	2820	5180

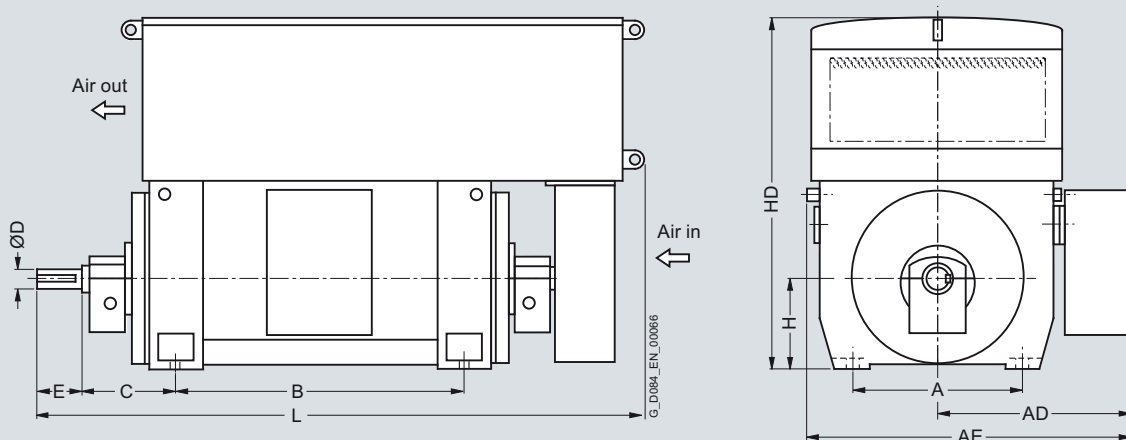
<sup>1)</sup> The dimensions are also valid for the 1SJ6 and 1SG6 series.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RQ6 series<sup>1)</sup></b>											
<b>4-pole</b>											
1RQ6 710-4JJ.0-Z K96 <sup>2)</sup>	21100	1500	1500	2530	2000	530	220	280	710	2820	4890
1RQ6 712-4JJ.0-Z K96 <sup>2)</sup>	21900	1500	1500	2530	2000	530	220	280	710	2820	4890
1RQ6 714-4JJ.0-Z K96 <sup>2)</sup>	23400	1500	1500	2530	2240	530	220	280	710	2820	5130
1RQ6 716-4JJ.0-Z K96 <sup>2)</sup>	24400	1500	1500	2530	2240	530	220	280	710	2820	5130
<b>6-pole</b>											
1RQ6 710-6JJ.0-Z K96	21300	1500	1500	2530	2000	670	240	330	710	2810	4200
1RQ6 712-6JJ.0-Z K96	22000	1500	1500	2530	2000	670	240	330	710	2810	4200
1RQ6 714-6JJ.0-Z K96	23700	1500	1500	2530	2240	670	240	330	710	2810	4440
1RQ6 716-6JJ.0-Z K96	24900	1500	1500	2530	2240	670	240	330	710	2810	4440
<b>8-pole</b>											
1RQ6 710-8JJ.0-Z K96	21100	1500	1500	2530	2000	670	240	330	710	2810	4200
1RQ6 712-8JJ.0-Z K96	21900	1500	1500	2530	2000	670	240	330	710	2810	4200
1RQ6 714-8JJ.0-Z K96	23500	1500	1500	2530	2240	670	240	330	710	2810	4440
1RQ6 716-8JJ.0-Z K96	24600	1500	1500	2530	2240	670	240	330	710	2810	4440
<b>10-pole</b>											
1RQ6 710-3JJ.0-Z K96	20900	1500	1500	2530	2000	670	240	330	710	2810	4200
1RQ6 712-3JJ.0-Z K96	21800	1500	1500	2530	2000	670	240	330	710	2810	4200
1RQ6 714-3JJ.0-Z K96	23400	1500	1500	2530	2240	670	240	330	710	2810	4440
1RQ6 716-3JJ.0-Z K96	24500	1500	1500	2530	2240	670	240	330	710	2810	4440

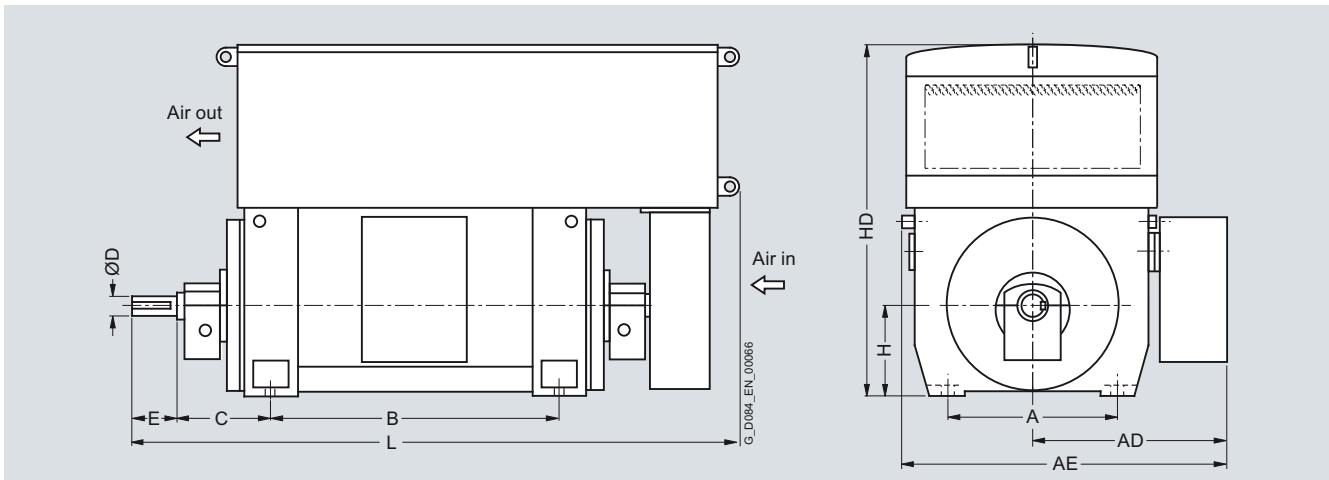
#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SJ6 and 1SG6 series.

<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RQ6 series<sup>1)</sup></b>											
<b>4-pole</b>											
1RQ6 710-4JJ.0-Z K96 <sup>2)</sup>	20800	1500	1500	2530	2000	530	220	280	710	2820	4890
1RQ6 712-4JJ.0-Z K96 <sup>2)</sup>	21600	1500	1500	2530	2000	530	220	280	710	2820	4890
1RQ6 714-4JJ.0-Z K96 <sup>2)</sup>	23100	1500	1500	2530	2240	530	220	280	710	2820	5130
1RQ6 716-4JJ.0-Z K96 <sup>2)</sup>	24000	1500	1500	2530	2240	530	220	280	710	2820	5130
<b>6-pole</b>											
1RQ6 710-6JJ.0-Z K96	21100	1500	1500	2530	2000	670	240	330	710	2810	4200
1RQ6 712-6JJ.0-Z K96	21900	1500	1500	2530	2000	670	240	330	710	2810	4200
1RQ6 714-6JJ.0-Z K96	23500	1500	1500	2530	2240	670	240	330	710	2810	4440
1RQ6 716-6JJ.0-Z K96	24600	1500	1500	2530	2240	670	240	330	710	2810	4440
<b>8-pole</b>											
1RQ6 710-8JJ.0-Z K96	21000	1500	1500	2530	2000	670	240	330	710	2810	4200
1RQ6 712-8JJ.0-Z K96	21700	1500	1500	2530	2000	670	240	330	710	2810	4200
1RQ6 714-8JJ.0-Z K96	23300	1500	1500	2530	2240	670	240	330	710	2810	4440
1RQ6 716-8JJ.0-Z K96	24500	1500	1500	2530	2240	670	240	330	710	2810	4440
<b>10-pole</b>											
1RQ6 710-3JJ.0-Z K96	20800	1500	1500	2530	2000	670	240	330	710	2810	4200
1RQ6 712-3JJ.0-Z K96	21600	1500	1500	2530	2000	670	240	330	710	2810	4200
1RQ6 714-3JJ.0-Z K96	23300	1500	1500	2530	2240	670	240	330	710	2810	4440
1RQ6 716-3JJ.0-Z K96	24400	1500	1500	2530	2240	670	240	330	710	2810	4440

Note:

Higher pole numbers are available on request.

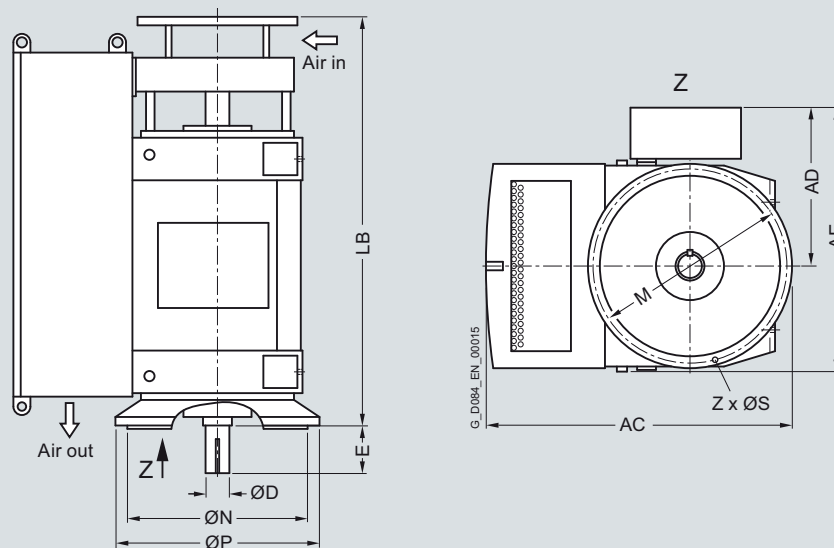
<sup>1)</sup> The dimensions are also valid for the 1SJ6 and 1SG6 series.<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RQ4 and 1RQ6

#### Dimension drawings



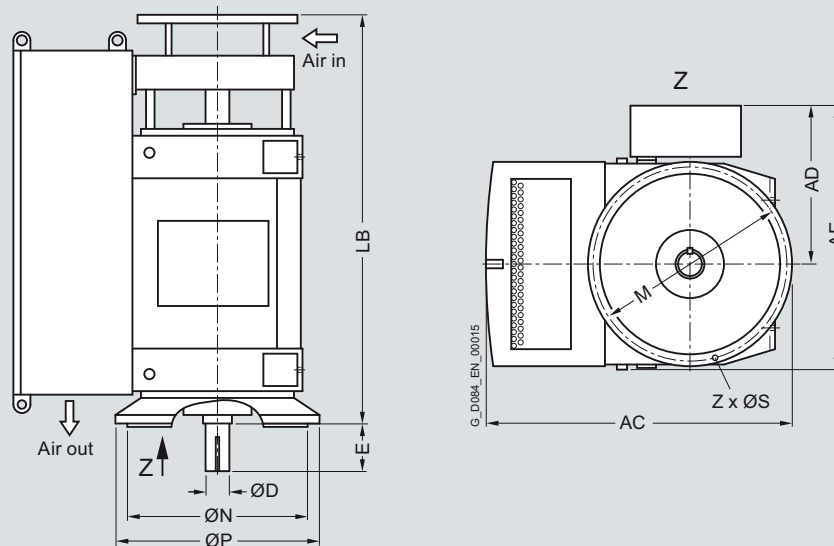
Motor type	Weight kg	Dimensions										
		AC	AD	AE	D	E	LB	P	N	M	S	Z
Up to 6.6 kV, IM V1 type of construction, roller bearings – 1RQ6 series <sup>1)</sup>												
6-pole												
1RQ6 710-6JJ.4	22500	3100	1500	2530	240	330	3920	2000	1800	1900	33	24
1RQ6 712-6JJ.4	23200	3100	1500	2530	240	330	3920	2000	1800	1900	33	24
1RQ6 714-6JJ.4	24900	3100	1500	2530	240	330	4160	2000	1800	1900	33	24
1RQ6 716-6JJ.4	26100	3100	1500	2530	240	330	4160	2000	1800	1900	33	24
8-pole												
1RQ6 710-8JJ.4	22300	3100	1500	2530	240	330	3920	2000	1800	1900	33	24
1RQ6 712-8JJ.4	23100	3100	1500	2530	240	330	3920	2000	1800	1900	33	24
1RQ6 714-8JJ.4	24700	3100	1500	2530	240	330	4160	2000	1800	1900	33	24
1RQ6 716-8JJ.4	25800	3100	1500	2530	240	330	4160	2000	1800	1900	33	24
10-pole												
1RQ6 710-3JJ.4	22100	3100	1500	2530	240	330	3920	2000	1800	1900	33	24
1RQ6 712-3JJ.4	23000	3100	1500	2530	240	330	3920	2000	1800	1900	33	24
1RQ6 714-3JJ.4	24600	3100	1500	2530	240	330	4160	2000	1800	1900	33	24
1RQ6 716-3JJ.4	25700	3100	1500	2530	240	330	4160	2000	1800	1900	33	24

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SJ6 and 1SG6 series.

## Dimension drawings



Motor type	Weight kg	Dimensions										
		AC	AD	AE	D	E	LB	P	N	M	S	Z
9 ... 11 kV, IM V1 type of construction, roller bearings – 1RQ6 series <sup>1)</sup>												
6-pole												
1RQ6 710-6JJ.4	22300	3100	1500	2530	240	330	3920	2000	1800	1900	33	24
1RQ6 712-6JJ.4	23100	3100	1500	2530	240	330	3920	2000	1800	1900	33	24
1RQ6 714-6JJ.4	24700	3100	1500	2530	240	330	4160	2000	1800	1900	33	24
1RQ6 716-6JJ.4	25800	3100	1500	2530	240	330	4160	2000	1800	1900	33	24
8-pole												
1RQ6 710-8JJ.4	22200	3100	1500	2530	240	330	3920	2000	1800	1900	33	24
1RQ6 712-8JJ.4	23000	3100	1500	2530	240	330	3920	2000	1800	1900	33	24
1RQ6 714-8JJ.4	24500	3100	1500	2530	240	330	4160	2000	1800	1900	33	24
1RQ6 716-8JJ.4	25700	3100	1500	2530	240	330	4160	2000	1800	1900	33	24
10-pole												
1RQ6 710-3JJ.4	22000	3100	1500	2530	240	330	3920	2000	1800	1900	33	24
1RQ6 712-3JJ.4	22800	3100	1500	2530	240	330	3920	2000	1800	1900	33	24
1RQ6 714-3JJ.4	24500	3100	1500	2530	240	330	4160	2000	1800	1900	33	24
1RQ6 716-3JJ.4	25600	3100	1500	2530	240	330	4160	2000	1800	1900	33	24

Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SJ6 and 1SG6 series.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Overview



#### Technical data

##### Overview of technical data

H-compact PLUS 1RA4/1RA6/1RP6	
Rated voltage	3.3 ... 13.8 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP23/IP24W
Cooling method	IC 01
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	450 ... 710 mm
Bearings	Roller bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN, NEMA
Frame design for shaft heights 450 ... 560 mm	Frame: Cast iron Design: Steel
Frame design for shaft heights 630 ... 710 mm	Frame: Steel Design: Steel

#### Technical data (continued)

##### Power ranges for IEC motors for line operation

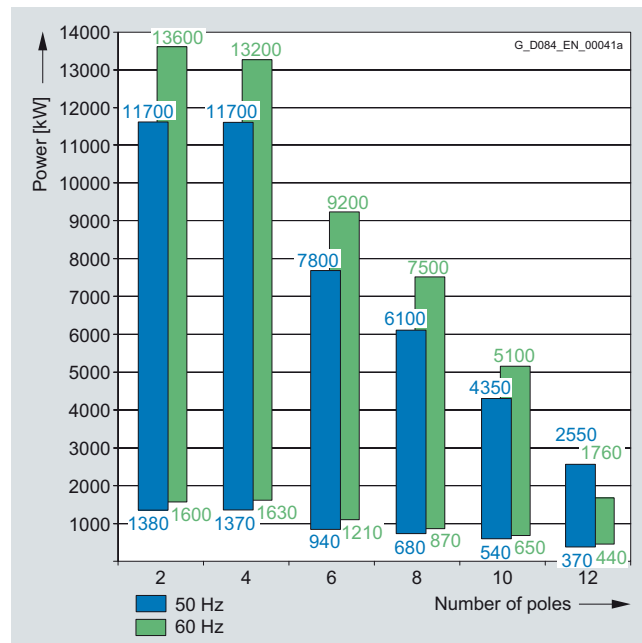
##### 1RA4, 1RA6, 1RP6 series

Insulation system, thermal class 155 (F), utilized to 130 (B).

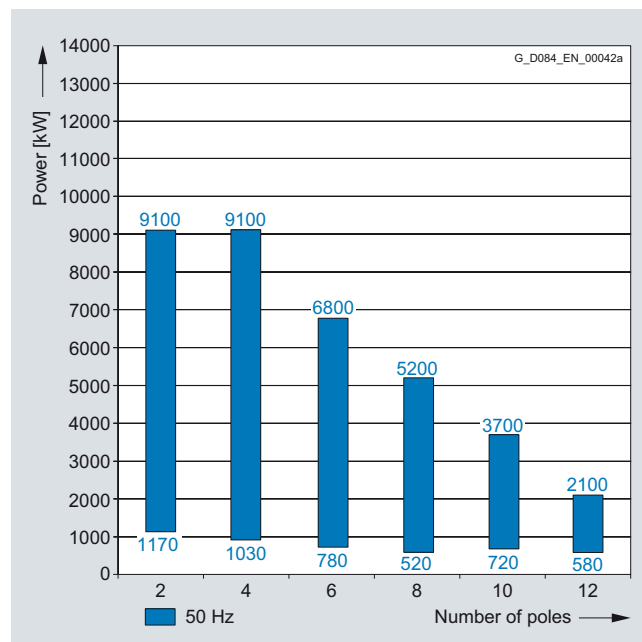
Ambient temperature up to 40 °C, installation altitude up to 1000 m.

3.3 to 6.6 kV; 50 Hz

4.0 to 6.6 kV; 60 Hz



9 to 11 kV; 50 Hz



# Motors for line operation

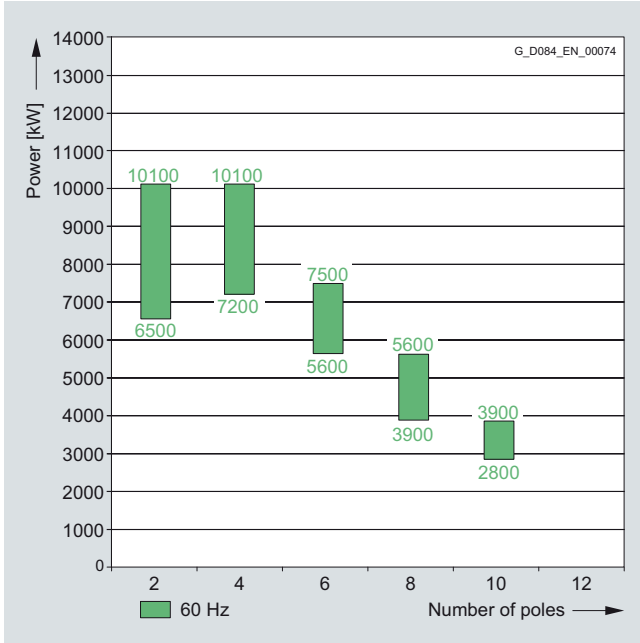
## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

**Technical data** (continued)

**Power ranges for IEC motors for line operation**  
(continued)

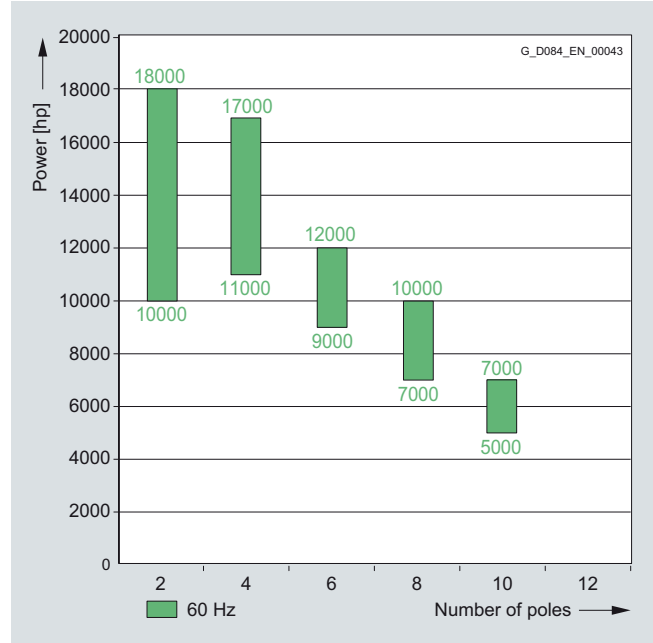
12.5 to 13.8 kV; 60 Hz



**Power ranges for NEMA motors for line operation**

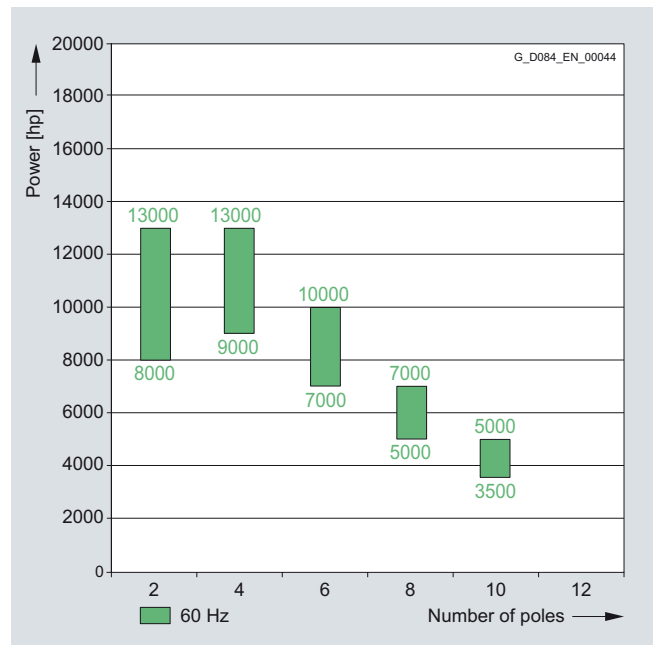
Insulation system, thermal class 155 (F), utilized to 130 (B)

4 to 6.6 kV; 60 Hz



2

12.5 to 13.8 kV; 60 Hz



# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked-rotor torque $T_{LR}/T_{rated}$	Locked-rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>3.3 ... 6.6 kV, 50 Hz</b>														
<b>2-pole</b>														
1380	<b>1RA6 450-2HJ</b>	2972	156	95.9	96.3	0.89	0.90	4436	1.9	0.50	4.8	13	64	
1570	<b>1RA6 452-2HJ</b>	2973	174	96.1	96.6	0.90	0.91	5043	2.0	0.55	5.2	14	70	
1750	<b>1RA6 454-2HJ</b>	2977	192	96.3	96.7	0.91	0.91	5618	2.3	0.60	5.5	16	74	
1950	<b>1RA6 456-2HJ</b>	2980	215	96.5	96.9	0.91	0.91	6252	2.4	0.60	5.5	17	81	
2250	<b>1RA6 457-2HJ</b>	2979	245	96.7	97.0	0.92	0.92	7217	2.4	0.55	5.5	19	88	
2520	<b>1RA6 458-2HJ</b>	2979	270	96.8	97.1	0.93	0.93	8082	2.4	0.60	5.5	21	95	
2750	<b>1RA4 504-2HE</b>	2977	310	96.6	96.8	0.89	0.87	8822	2.4	0.68	5.4	24	60	
3100	<b>1RA4 506-2HE</b>	2978	345	96.9	97.0	0.89	0.88	9941	2.4	0.68	5.5	26	69	
3350	<b>1RA4 560-2HE</b>	2978	375	96.6	96.7	0.89	0.88	10743	2.0	0.45	4.3	32	55	
3700	<b>1RA4 562-2HE</b>	2980	415	96.8	96.9	0.89	0.88	11857	2.1	0.50	4.7	35	64	
4350	<b>1RA4 564-2HE</b>	2982	480	97.0	97.2	0.90	0.88	13931	2.3	0.55	5.2	40	82	
4900	<b>1RA4 566-2HE</b>	2984	540	97.2	97.3	0.90	0.88	15682	2.5	0.60	5.5	44	102	
4900	<b>1RA4 630-2HE</b>	2982	550	96.9	97.1	0.88	0.88	15692	2.10	0.31	4.0	60	110	
5700	<b>1RA4 632-2HE</b>	2983	630	97.3	97.3	0.89	0.89	18248	2.20	0.34	4.3	67	150	
6500	<b>1RA4 634-2HE</b>	2985	710	97.5	97.6	0.90	0.89	20796	2.50	0.41	5.0	77	190	
7500	<b>1RA4 636-2HE</b>	2986	820	97.7	97.8	0.90	0.89	23987	2.60	0.46	5.4	86	240	
<b>4-pole</b>														
1370	<b>1RA6 450-4HJ</b>	1483	154	95.6	96.1	0.89	0.88	8822	2.0	0.70	5.5	20	340	
1500	<b>1RA6 452-4HJ</b>	1485	170	95.8	96.2	0.89	0.88	9650	2.6	0.70	5.5	22	385	
1640	<b>1RA6 454-4HJ</b>	1486	184	96.0	96.3	0.89	0.88	10544	2.2	0.70	5.5	25	440	
1860	<b>1RA6 456-4HJ</b>	1487	210	96.2	96.5	0.89	0.87	11948	2.3	0.70	5.5	28	500	
2100	<b>1RA4 500-4HE</b>	1485	235	96.2	96.4	0.89	0.88	13505	2.1	0.72	5.2	39	310	
2300	<b>1RA4 502-4HE</b>	1486	260	96.4	96.6	0.89	0.88	14781	2.1	0.75	5.3	42	340	
2650	<b>1RA4 504-4HE</b>	1487	295	96.6	96.8	0.89	0.88	17019	2.2	0.80	5.5	48	410	
3000	<b>1RA4 506-4HE</b>	1487	335	96.8	97.0	0.89	0.88	19267	2.2	0.80	5.5	53	460	
3600	<b>1RA4 560-4HE</b>	1487	400	96.7	96.9	0.90	0.89	23120	2.0	0.65	4.9	76	340	
4000	<b>1RA4 562-4HE</b>	1488	440	96.9	97.2	0.90	0.89	25672	2.2	0.70	5.3	84	400	
4500	<b>1RA4 564-4HE</b>	1489	495	97.1	97.3	0.90	0.89	28862	2.2	0.70	5.3	96	470	
4900	<b>1RA4 566-4HE</b>	1489	540	97.2	97.4	0.90	0.89	31427	2.2	0.70	5.3	105	530	
5300	<b>1RA4 630-4HE</b>	1489	590	97.1	97.3	0.89	0.89	33993	2.00	0.54	4.6	134	780	
6000	<b>1RA4 632-4HE</b>	1490	670	97.3	97.4	0.89	0.89	38456	2.15	0.60	4.9	150	1050	
6600	<b>1RA4 634-4HE</b>	1490	720	97.4	97.6	0.90	0.90	42302	2.20	0.63	5.1	168	1200	
7100	<b>1RA4 636-4HE</b>	1491	780	97.6	97.6	0.90	0.89	45476	2.40	0.70	5.5	197	1100	

#### Voltage code:

3.3 kV, 50 Hz  
5 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

0  
5  
6  
7  
9

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current $I_{rated}$ at 6 kV A	Efficiency		Power factor		Torque Nm	Break- down torque $T_B/T_{rated}$ [-]	Locked- rotor torque $T_{LR}/T_{rated}$ [-]	Locked- rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>3.3 ... 6.6 kV, 50 Hz</b>													
<b>6-pole</b>													
940	<b>1RA6 450-6HJ</b>	989	110	95.3	95.9	0.86	0.85	9088	2.1	0.90	5.5	26	660
1040	<b>1RA6 452-6HJ</b>	990	122	95.6	96.1	0.86	0.84	10044	2.1	0.90	5.5	29	770
1180	<b>1RA6 454-6HJ</b>	990	136	95.7	96.3	0.87	0.85	11394	2.2	0.95	5.5	33	870
1330	<b>1RA6 456-6HJ</b>	990	156	96.0	96.5	0.86	0.84	12832	2.2	0.90	5.5	37	1040
1700	<b>1RA4 500-6HE</b>	989	196	95.8	96.4	0.87	0.85	16416	2.0	0.75	5.0	57	900
1920	<b>1RA4 502-6HE</b>	989	220	96.0	96.5	0.87	0.86	18540	2.0	0.80	5.1	65	950
2150	<b>1RA4 504-6HE</b>	990	245	96.2	96.6	0.87	0.85	20740	2.0	0.80	5.2	72	1200
2350	<b>1RA4 506-6HE</b>	990	270	96.3	96.7	0.87	0.85	22669	2.0	0.80	5.2	81	1400
2750	<b>1RA4 560-6HE</b>	991	315	96.3	96.8	0.87	0.85	26501	1.9	0.72	4.9	105	1250
3100	<b>1RA4 562-6HE</b>	992	355	96.6	97.0	0.87	0.85	29844	2.0	0.75	5.1	120	1500
3450	<b>1RA4 564-6HE</b>	992	395	96.8	97.1	0.87	0.86	33213	2.0	0.75	5.1	135	1700
3750	<b>1RA4 566-6HE</b>	992	430	96.9	97.2	0.87	0.85	36101	2.0	0.75	5.1	147	1900
4200	<b>1RA4 630-6HE</b>	992	490	96.8	97.2	0.85	0.84	40433	2.00	0.57	4.5	183	2000
4700	<b>1RA4 632-6HE</b>	993	540	97.0	97.3	0.86	0.85	45201	2.10	0.62	4.8	202	2100
5100	<b>1RA4 634-6HE</b>	993	590	97.2	97.4	0.86	0.84	49048	2.25	0.69	5.2	223	2800
5600	<b>1RA4 636-6HE</b>	994	640	97.3	97.4	0.86	0.84	53803	2.30	0.70	5.3	246	3300
<b>8-pole</b>													
680	<b>1RA6 450-8HJ</b>	742	82	94.7	95.3	0.84	0.82	8758	2.1	0.70	5.5	32	730
750	<b>1RA6 452-8HJ</b>	742	91	94.9	95.5	0.84	0.81	9657	2.1	0.70	5.5	36	890
880	<b>1RA6 454-8HJ</b>	743	108	95.1	95.6	0.83	0.80	11314	2.1	0.75	5.5	41	1040
970	<b>1RA6 456-8HJ</b>	743	116	95.3	95.7	0.84	0.81	12475	2.2	0.80	5.5	47	1300
1250	<b>1RA4 500-8HE</b>	741	150	95.4	95.7	0.84	0.82	16110	1.9	0.75	4.9	70	1350
1400	<b>1RA4 502-8HE</b>	742	166	95.6	95.8	0.85	0.83	18019	2.0	0.80	5.1	80	1650
1550	<b>1RA4 504-8HE</b>	742	184	95.7	95.9	0.85	0.83	19949	2.0	0.80	5.1	88	1750
1700	<b>1RA4 506-8HE</b>	742	200	95.8	96.0	0.85	0.83	21880	2.1	0.85	5.3	99	1800
1950	<b>1RA4 560-8HE</b>	744	235	96.0	96.3	0.84	0.82	25030	2.0	0.72	4.9	123	2300
2200	<b>1RA4 562-8HE</b>	744	260	96.2	96.3	0.84	0.82	28239	2.0	0.72	5.0	141	2400
2400	<b>1RA4 564-8HE</b>	744	285	96.3	96.5	0.84	0.82	30806	2.0	0.75	5.1	158	2800
2600	<b>1RA4 566-8HE</b>	744	305	96.3	96.6	0.85	0.84	33374	1.95	0.75	5.0	173	3500
3200	<b>1RA4 630-8HE</b>	743	375	96.5	96.7	0.85	0.83	41131	1.90	0.60	4.3	239	3100
3500	<b>1RA4 632-8HE</b>	743	410	96.7	96.8	0.85	0.82	44987	2.10	0.67	4.6	265	3400
3750	<b>1RA4 634-8HE</b>	743	440	96.7	96.9	0.85	0.84	48200	2.00	0.65	4.6	293	3600
4100	<b>1RA4 636-8HE</b>	744	485	96.9	96.9	0.84	0.81	52628	2.30	0.76	5.3	324	3800

#### Voltage code:

3.3 kV, 50 Hz  
5 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

0  
5  
6  
7  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked-rotor torque $T_{LR}/T_{rated}$	Locked-rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>3.3 ... 6.6 kV, 50 Hz</b>														
<b>10-pole</b>														
540	<b>1RA6 450-3HJ</b>	590	70	93.4	93.7	0.80	0.76	8741	2.0	0.80	4.6	37	1150	
600	<b>1RA6 452-3HJ</b>	590	76	93.7	93.9	0.81	0.76	9712	2.0	0.80	4.7	41	1350	
670	<b>1RA6 454-3HJ</b>	591	86	93.9	94.1	0.80	0.75	10827	2.1	0.82	4.9	46	1450	
760	<b>1RA6 456-3HJ</b>	591	97	94.1	94.2	0.80	0.75	12281	2.2	0.90	5.2	52	1800	
900	<b>1RA4 500-3HE</b>	591	112	94.4	94.7	0.82	0.80	14543	1.9	0.68	4.3	70	1400	
1000	<b>1RA4 502-3HE</b>	592	122	95.7	94.9	0.83	0.80	16132	1.9	0.70	4.5	80	1700	
1100	<b>1RA4 504-3HE</b>	592	134	94.8	95.0	0.83	0.80	17745	1.9	0.72	4.6	88	2200	
1250	<b>1RA4 506-3HE</b>	592	152	95.0	95.1	0.83	0.80	20165	1.9	0.75	4.7	99	2600	
1480	<b>1RA4 560-3HE</b>	593	184	95.1	95.4	0.81	0.77	23835	2.0	0.70	4.5	123	2700	
1700	<b>1RA4 562-3HE</b>	593	210	95.4	95.7	0.82	0.78	27378	2.0	0.70	4.5	141	4100	
1880	<b>1RA4 564-3HE</b>	593	230	95.6	95.7	0.82	0.78	30277	2.0	0.72	4.7	158	4400	
2050	<b>1RA4 566-3HE</b>	593	255	95.7	95.8	0.81	0.76	33014	2.1	0.78	5.0	173	5200	
2400	<b>1RA4 630-3HE</b>	592	285	95.8	96.4	0.84	0.83	38716	1.80	0.62	4.0	239	4700	
2650	<b>1RA4 632-3HE</b>	592	315	96.0	96.5	0.84	0.83	42749	1.80	0.65	4.2	265	5300	
2900	<b>1RA4 634-3HE</b>	593	345	96.2	96.6	0.84	0.82	46703	2.00	0.70	4.5	293	6300	
3150	<b>1RA4 636-3HE</b>	593	375	96.4	96.7	0.84	0.82	50729	2.00	0.73	4.6	324	7500	
<b>12-pole</b>														
370	<b>1RA6 450-5HJ</b>	491	53	92.4	92.7	0.73	0.68	7197	1.8	0.60	4.0	37	1100	
425	<b>1RA6 452-5HJ</b>	492	60	92.8	93.0	0.73	0.67	8249	1.8	0.63	4.2	41	1400	
475	<b>1RA6 454-5HJ</b>	491	66	93.1	93.3	0.74	0.69	9239	1.8	0.60	4.0	46	1600	
540	<b>1RA6 456-5HJ</b>	492	77	93.5	93.5	0.72	0.65	10482	2.0	0.68	4.4	52	2000	
680	<b>1RA4 500-5HE</b>	491	94	93.9	94.0	0.74	0.69	13226	1.9	0.62	4.1	70	2350	
760	<b>1RA4 502-5HE</b>	491	102	94.1	94.2	0.76	0.71	14782	1.8	0.60	4.0	79	2600	
840	<b>1RA4 504-5HE</b>	491	112	94.3	94.4	0.76	0.71	16338	1.9	0.62	4.1	87	3100	
930	<b>1RA4 506-5HE</b>	492	128	94.5	94.6	0.74	0.69	18052	1.9	0.62	4.3	98	3700	
1100	<b>1RA4 560-5HE</b>	493	150	94.5	94.8	0.75	0.71	21308	1.8	0.57	3.9	123	3600	
1230	<b>1RA4 562-5HE</b>	493	168	94.9	95.0	0.74	0.68	23827	1.8	0.60	4.0	141	4100	
1350	<b>1RA4 564-5HE</b>	494	184	95.0	95.1	0.74	0.68	26098	2.0	0.63	4.3	158	4700	
1470	<b>1RA4 566-5HE</b>	494	198	95.1	95.2	0.75	0.69	28418	2.0	0.65	4.3	173	5200	
1900	<b>1RA4 630-5HE</b>	493	245	95.4	95.8	0.79	0.76	36805	1.90	0.70	4.3	239	5500	
2150	<b>1RA4 632-5HE</b>	493	270	95.6	96.0	0.80	0.76	41648	1.90	0.71	4.3	265	7000	
2350	<b>1RA4 634-5HE</b>	493	295	95.8	96.3	0.80	0.77	45522	1.90	0.72	4.4	293	8300	
2550	<b>1RA4 636-5HE</b>	493	320	95.9	96.4	0.80	0.77	49397	2.00	0.74	4.5	324	9800	

#### Voltage code:

3.3 kV, 50 Hz  
5 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

0  
5  
6  
7  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data

Rated power IEC	High voltage motor H-compact PLUS	Speed	Rated current		Efficiency		Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
			$I_{rated}$ at 6 kV	4/4 load	3/4 load	4/4 load	3/4 load	$T_B/T_{rated}$					$T_{LR}/T_{rated}$	$I_{LR}/I_{rated}$
kW	Order No.	rpm	A	%	%	cos φ	cos φ	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>3.3 ... 6.6 kV, 50 Hz</b>														
<b>2-pole</b>														
6700 <sup>2)</sup>	<b>1RP6 710-2HJ</b> ■ 0	2989	740	97.0	96.8	0.90	0.90	21414	2.0	0.43	4.6	132	108	
8700 <sup>2)</sup>	<b>1RP6 712-2HJ</b> ■ 0	2987	960	97.2	97.1	0.90	0.91	27818	1.8	0.42	4.3	147	158	
10100 <sup>2)</sup>	<b>1RP6 714-2HJ</b> ■ 0	2988	1100	97.4	97.2	0.91	0.91	32286	2.0	0.46	4.7	162	158	
11700 <sup>2)</sup>	<b>1RP6 716-2HJ</b> ■ 0	2988	1260	97.5	97.3	0.91	0.91	37396	2.0	0.49	4.9	179	171	
<b>4-pole</b>														
7600 <sup>2)</sup>	<b>1RP6 710-4HJ</b> ■ 0	1493	840	97.7	97.9	0.89	0.87	48609	2.3	0.60	5.5	273	627	
8900 <sup>2)</sup>	<b>1RP6 712-4HJ</b> ■ 0	1493	970	97.8	98.0	0.90	0.89	56954	2.1	0.59	5.5	300	700	
10100 <sup>2)</sup>	<b>1RP6 714-4HJ</b> ■ 0	1493	1100	97.8	98.0	0.91	0.90	64636	2.1	0.62	5.5	337	803	
11700 <sup>2)</sup>	<b>1RP6 716-4HJ</b> ■ 0	1492	1260	97.9	98.0	0.91	0.91	74886	2.1	0.63	5.5	369	881	
<b>6-pole</b>														
5700	<b>1RP6 710-6HJ</b> ■ ■	994	660	97.3	97.6	0.86	0.84	54792	2.0	0.68	5.1	330	1720	
6400	<b>1RP6 712-6HJ</b> ■ ■	994	730	97.4	97.6	0.87	0.85	61526	2.0	0.72	5.2	367	1933	
7100	<b>1RP6 714-6HJ</b> ■ ■	994	810	97.5	97.7	0.87	0.85	68225	2.1	0.79	5.5	419	2361	
7800	<b>1RP6 716-6HJ</b> ■ ■	994	880	97.5	97.7	0.87	0.85	74930	2.2	0.82	5.5	468	3032	
<b>8-pole</b>														
4550	<b>1RP6 710-8HJ</b> ■ ■	745	540	96.9	97.3	0.84	0.82	58354	1.9	0.76	5.0	415	4735	
5000	<b>1RP6 712-8HJ</b> ■ ■	745	590	97.1	97.4	0.84	0.82	64111	1.9	0.79	5.2	465	5335	
5500	<b>1RP6 714-8HJ</b> ■ ■	745	640	97.1	97.4	0.85	0.83	70512	1.9	0.80	5.2	531	6469	
6100	<b>1RP6 716-8HJ</b> ■ ■	745	710	97.3	97.5	0.85	0.83	78174	2.0	0.85	5.5	597	7503	
<b>10-pole</b>														
3050	<b>1RP6 710-3HJ</b> ■ ■	596	380	96.4	96.9	0.80	0.77	48916	2.1	0.72	5.0	415	8485	
3450	<b>1RP6 712-3HJ</b> ■ ■	596	430	96.7	97.0	0.80	0.77	55318	2.1	0.73	5.1	465	10335	
3850	<b>1RP6 714-3HJ</b> ■ ■	596	480	96.8	97.1	0.80	0.77	61707	2.2	0.78	5.4	531	11469	
4350	<b>1RP6 716-3HJ</b> ■ ■	596	530	96.6	97.2	0.81	0.77	69716	2.2	0.80	5.5	598	13202	

#### Voltage code:

3.3 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

0  
6  
7  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup>  $V_{rated} < 6$  kV on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data

Rated power  IEC  kW	High voltage motor H-compact PLUS  Order No.	Speed  rpm	Rated current		Efficiency		Power factor		Torque  Nm	Break-down torque  $T_B/T_{rated}$ [-]	Locked-rotor torque  $T_{LR}/T_{rated}$ [-]	Locked-rotor current  $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
<b>2-pole</b>														
1170	<b>1RA6 450-2HJ</b> ■ 0	2976	79	95.6	96.1	0.90	0.90	3755	2.1	0.55	5.5	13	31	
1330	<b>1RA6 452-2HJ</b> ■ 0	2978	88	95.9	96.3	0.91	0.91	4268	2.3	0.60	5.5	14	33.5	
1450	<b>1RA6 454-2HJ</b> ■ 0	2980	96	96.1	96.4	0.91	0.91	4649	2.3	0.55	5.5	15	36	
1630	<b>1RA6 456-2HJ</b> ■ 0	2981	106	96.3	96.7	0.92	0.92	5224	2.4	0.55	5.5	17	39.5	
1870	<b>1RA6 457-2HJ</b> ■ 0	2980	122	96.4	96.8	0.92	0.93	5997	2.3	0.55	5.5	19	42.5	
2080	<b>1RA6 458-2HJ</b> ■ 0	2981	134	96.5	96.9	0.93	0.93	6668	2.4	0.55	5.5	21	46	
2200	<b>1RA4 504-2HE</b> ■ 0	2980	146	96.4	96.5	0.90	0.89	7050	2.50	0.68	5.5	24	48	
2500	<b>1RA4 506-2HE</b> ■ 0	2980	166	96.6	96.7	0.90	0.88	8012	2.40	0.68	5.5	26	54	
2850	<b>1RA4 560-2HE</b> ■ 0	2982	194	96.4	96.4	0.88	0.86	9127	2.10	0.50	4.9	32	56	
3150	<b>1RA4 562-2HE</b> ■ 0	2983	210	96.7	96.6	0.89	0.87	10085	2.30	0.50	5.1	35	59	
3700	<b>1RA4 564-2HE</b> ■ 0	2984	245	96.9	96.9	0.90	0.88	11841	2.50	0.57	5.5	40	83	
4100	<b>1RA4 566-2HE</b> ■ 0	2984	270	97.0	97.1	0.90	0.89	13122	2.50	0.60	5.5	44	93	
4300	<b>1RA4 630-2HE</b> ■ 0	2984	290	96.8	96.9	0.89	0.88	13762	2.30	0.34	4.5	60	75	
5000	<b>1RA4 632-2HE</b> ■ 0	2985	330	97.3	97.3	0.9	0.89	15997	2.50	0.39	4.9	67	100	
5700	<b>1RA4 634-2HE</b> ■ 0	2986	375	97.4	97.4	0.90	0.89	18230	2.60	0.42	5.2	77	110	
6700	<b>1RA4 636-2HE</b> ■ 0	2987	440	97.6	97.7	0.90	0.89	21421	2.60	0.45	5.5	86	160	
<b>4-pole</b>														
1030	<b>1RA6 450-4HJ</b> ■ ■	1485	69	95.2	95.7	0.90	0.89	6627	2.1	0.75	5.5	20	170	
1190	<b>1RA6 452-4HJ</b> ■ ■	1484	80	95.4	95.9	0.90	0.90	7658	2.1	0.70	5.5	22	194	
1340	<b>1RA6 454-4HJ</b> ■ ■	1486	90	95.6	96.1	0.90	0.90	8619	2.1	0.70	5.5	25	225	
1520	<b>1RA6 456-4HJ</b> ■ ■	1487	102	95.9	96.2	0.90	0.89	9764	2.2	0.70	5.5	28	260	
1750	<b>1RA4 500-4HE</b> ■ ■	1488	118	96.0	96.2	0.89	0.88	11232	2.30	0.75	5.5	39	220	
1920	<b>1RA4 502-4HE</b> ■ ■	1488	130	96.2	96.3	0.89	0.87	12323	2.20	0.75	5.5	42	230	
2150	<b>1RA4 504-4HE</b> ■ ■	1488	144	96.4	96.5	0.89	0.88	13799	2.20	0.75	5.5	48	270	
2450	<b>1RA4 506-4HE</b> ■ ■	1488	164	96.6	96.8	0.89	0.88	15724	2.20	0.75	5.5	53	320	
3000	<b>1RA4 560-4HE</b> ■ ■	1489	200	96.4	96.7	0.90	0.89	19241	2.10	0.65	5.2	76	280	
3400	<b>1RA4 562-4HE</b> ■ ■	1489	225	96.7	96.9	0.90	0.89	21807	2.10	0.65	5.2	84	370	
3800	<b>1RA4 564-4HE</b> ■ ■	1489	250	96.8	97.0	0.90	0.90	24372	2.10	0.65	5.2	96	410	
4150	<b>1RA4 566-4HE</b> ■ ■	1489	275	96.9	97.2	0.90	0.90	26617	2.10	0.65	5.3	105	490	
4500	<b>1RA4 630-4HE</b> ■ ■	1490	300	96.9	97.1	0.89	0.89	28842	2.10	0.57	4.9	134	550	
5000	<b>1RA4 632-4HE</b> ■ ■	1490	330	97.1	97.2	0.90	0.90	32047	2.15	0.59	5.0	150	650	
5600	<b>1RA4 634-4HE</b> ■ ■	1490	370	97.3	97.4	0.90	0.90	35893	2.20	0.63	5.3	168	750	
6200	<b>1RA4 636-4HE</b> ■ ■	1491	410	97.4	97.5	0.90	0.90	39712	2.40	0.68	5.5	197	780	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data (continued)

Rated power IEC	High voltage motor H-compact PLUS	Speed	Rated current		Efficiency		Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
			$I_{rated}$ at 10 kV	4/4 load	3/4 load	4/4 load	3/4 load	$T_B/T_{rated}$					$T_{LR}/T_{rated}$	$I_{LR}/I_{rated}$
kW	Order No.	rpm	A	%	%	cos φ	cos φ	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
<b>6-pole</b>														
780	<b>1RA6 450-6HJ</b>	990	55	95.0	95.5	0.86	0.83	7528	2.1	0.90	5.5	26	340	
850	<b>1RA6 452-6HJ</b>	990	59	95.1	95.7	0.87	0.85	8205	2.2	0.95	5.5	29	400	
930	<b>1RA6 454-6HJ</b>	990	65	95.3	95.9	0.87	0.86	8977	2.1	0.95	5.5	32	460	
1080	<b>1RA6 456-6HJ</b>	992	75	95.6	96.1	0.87	0.85	10403	2.2	0.83	5.5	37	560	
1350	<b>1RA4 500-6HE</b>	991	94	95.4	95.7	0.87	0.85	13010	2.20	0.80	5.4	57	430	
1520	<b>1RA4 502-6HE</b>	991	106	95.6	95.9	0.87	0.86	14648	2.10	0.80	5.2	65	540	
1700	<b>1RA4 504-6HE</b>	991	118	95.8	96.0	0.87	0.85	16382	2.10	0.80	5.4	72	590	
1900	<b>1RA4 506-6HE</b>	991	132	96.0	96.1	0.87	0.85	18310	2.20	0.80	5.5	81	710	
2400	<b>1RA4 560-6HE</b>	992	168	96.3	96.5	0.86	0.85	23105	2.10	0.75	5.3	105	950	
2650	<b>1RA4 562-6HE</b>	992	182	96.3	96.6	0.87	0.86	25512	2.10	0.75	5.2	120	980	
2950	<b>1RA4 564-6HE</b>	993	205	96.5	96.7	0.87	0.85	28371	2.20	0.75	5.5	135	1250	
3200	<b>1RA4 566-6HE</b>	993	220	96.7	96.8	0.87	0.85	30775	2.10	0.75	5.4	147	1300	
3600	<b>1RA4 630-6HE</b>	993	250	96.7	96.9	0.86	0.84	34622	2.20	0.63	5.0	183	1200	
4000	<b>1RA4 632-6HE</b>	993	275	96.8	97.0	0.87	0.85	38469	2.10	0.64	5.0	202	1500	
4400	<b>1RA4 634-6HE</b>	993	300	97.0	97.1	0.87	0.86	42316	2.20	0.66	5.2	223	1750	
4800	<b>1RA4 636-6HE</b>	994	330	97.1	97.2	0.87	0.86	46117	2.30	0.71	5.5	246	2000	
<b>8-pole</b>														
520	<b>1RA6 450-8HJ</b>	742	37.5	94.0	94.6	0.85	0.82	6688	2.1	0.75	5.5	32	215	
560	<b>1RA6 452-8HJ</b>	742	40.5	94.1	94.9	0.85	0.84	7206	2.1	0.65	5.5	36	290	
580	<b>1RA6 454-8HJ</b>	742	41.5	94.1	94.9	0.86	0.83	7463	2.2	0.75	5.5	41	365	
750	<b>1RA6 456-8HJ</b>	743	55	94.7	95.1	0.83	0.79	9649	2.3	0.80	5.5	47	485	
1000	<b>1RA4 500-8HE</b>	743	72	94.9	95.1	0.84	0.81	12853	2.10	0.85	5.4	70	600	
1160	<b>1RA4 502-8HE</b>	744	85	95.3	95.3	0.83	0.80	14890	2.20	0.85	5.5	80	750	
1280	<b>1RA4 504-8HE</b>	744	93	95.4	95.5	0.83	0.80	16430	2.20	0.80	5.5	88	800	
1400	<b>1RA4 506-8HE</b>	744	102	95.5	95.6	0.83	0.80	17970	2.10	0.80	5.5	99	870	
1650	<b>1RA4 560-8HE</b>	744	118	95.8	96.0	0.84	0.81	21179	2.10	0.75	5.3	123	1350	
1900	<b>1RA4 562-8HE</b>	744	134	96.0	96.1	0.85	0.82	24388	2.00	0.75	5.3	141	1400	
2050	<b>1RA4 564-8HE</b>	745	144	96.2	96.2	0.85	0.82	26279	2.20	0.80	5.5	158	1800	
2250	<b>1RA4 566-8HE</b>	745	158	96.2	96.2	0.85	0.82	28842	2.10	0.80	5.5	173	1700	
2600	<b>1RA4 630-8HE</b>	744	186	96.3	96.4	0.84	0.81	33374	2.40	0.75	5.2	239	1800	
2900	<b>1RA4 632-8HE</b>	744	205	96.4	96.5	0.84	0.81	37224	2.30	0.75	5.2	265	2000	
3200	<b>1RA4 634-8HE</b>	744	225	96.6	96.7	0.85	0.82	41075	2.30	0.74	5.1	293	2200	
3500	<b>1RA4 636-8HE</b>	744	245	96.7	96.8	0.86	0.83	44926	2.30	0.75	5.2	324	2600	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data (continued)

Rated power  IEC  kW	High voltage motor H-compact PLUS  Order No.	Speed  rpm	Rated current		Efficiency		Power factor		Torque  Nm	Break-down torque  $T_B/T_{rated}$ [-]	Locked-rotor torque  $T_{LR}/T_{rated}$ [-]	Locked-rotor current  $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
10-pole														
720	<b>1RA4 500-3HE</b>	593	55	93.8	93.9	0.80	0.76	11595	2.20	0.82	5.2	70	900	
830	<b>1RA4 502-3HE</b>	594	64	94.2	94.2	0.79	0.74	13344	2.20	0.82	5.3	80	1100	
920	<b>1RA4 504-3HE</b>	594	71	94.3	94.3	0.79	0.74	14791	2.20	0.82	5.3	88	1200	
1020	<b>1RA4 506-3HE</b>	594	79	94.5	94.5	0.79	0.75	16399	2.20	0.80	5.3	99	1400	
1250	<b>1RA4 560-3HE</b>	593	94	94.8	94.9	0.81	0.77	20131	2.10	0.72	4.7	123	1650	
1420	<b>1RA4 562-3HE</b>	593	106	94.9	95.2	0.82	0.78	22868	2.00	0.70	4.7	141	2050	
1570	<b>1RA4 564-3HE</b>	593	116	95.1	95.4	0.82	0.78	25284	2.00	0.72	5.0	158	2500	
1700	<b>1RA4 566-3HE</b>	595	128	95.3	95.4	0.80	0.75	27286	2.40	0.85	5.5	173	2700	
2100	<b>1RA4 630-3HE</b>	593	152	95.8	96.1	0.83	0.80	33820	2.10	0.73	4.7	239	2500	
2350	<b>1RA4 632-3HE</b>	594	172	96.0	96.2	0.82	0.78	37782	2.30	0.82	5.1	265	2900	
2550	<b>1RA4 634-3HE</b>	594	184	96.0	96.3	0.83	0.79	40997	2.30	0.80	5.1	293	3000	
2750	<b>1RA4 636-3HE</b>	594	196	96.2	96.5	0.84	0.80	44213	2.30	0.83	5.2	324	3500	
12-pole														
580	<b>1RA4 502-5HE</b>	493	48	93.3	93.3	0.74	0.68	11235	2.00	0.70	4.7	79	1350	
640	<b>1RA4 504-5HE</b>	493	53	93.5	93.6	0.74	0.68	12398	2.00	0.70	4.8	87	1500	
700	<b>1RA4 506-5HE</b>	493	58	93.6	93.7	0.75	0.69	13560	2.10	0.70	4.8	98	1600	
850	<b>1RA4 560-5HE</b>	494	69	93.8	94.1	0.76	0.71	16432	1.85	0.60	4.2	123	1750	
1000	<b>1RA4 562-5HE</b>	494	82	94.4	94.6	0.75	0.69	19332	1.95	0.65	4.5	141	2200	
1100	<b>1RA4 564-5HE</b>	494	88	94.5	94.7	0.76	0.71	21265	1.95	0.63	4.4	158	2500	
1200	<b>1RA4 566-5HE</b>	494	96	94.8	94.8	0.76	0.71	23198	1.95	0.63	4.4	173	2900	
1650	<b>1RA4 630-5HE</b>	494	126	95.1	95.5	0.79	0.74	31898	2.10	0.75	4.6	239	3000	
1800	<b>1RA4 632-5HE</b>	494	142	95.4	95.7	0.77	0.71	34798	2.40	0.88	5.2	265	3500	
1950	<b>1RA4 634-5HE</b>	494	152	95.5	95.7	0.78	0.73	37697	2.30	0.85	5.1	293	3400	
2100	<b>1RA4 636-5HE</b>	495	162	95.7	95.9	0.78	0.73	40515	2.35	0.88	5.3	324	4000	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data

Rated power IEC	High voltage motor H-compact PLUS	Speed	Rated current		Efficiency		Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
			$I_{rated}$ at 10 kV	4/4 load	3/4 load	4/4 load	3/4 load	$T_B/T_{rated}$					$T_{LR}/T_{rated}$	$I_{LR}/I_{rated}$
kW	Order No.	rpm	A	%	%	cos φ	cos φ	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
<b>2-pole</b>														
6400	<b>1RP6 710-2HJ</b> ■ 0	2989	425	96.9	96.8	0.90	0.89	20451	2.1	0.45	4.8	132	138	
7500	<b>1RP6 712-2HJ</b> ■ 0	2990	495	97.0	96.9	0.90	0.89	23961	2.2	0.48	5.1	147	163	
8200	<b>1RP6 714-2HJ</b> ■ 0	2990	540	97.2	97.0	0.91	0.91	26197	2.2	0.51	5.3	162	188	
9100	<b>1RP6 716-2HJ</b> ■ 0	2990	590	97.2	97.1	0.92	0.92	29072	2.3	0.53	5.4	179	221	
<b>4-pole</b>														
6700	<b>1RP6 710-4HJ</b> ■ 0	1493	440	97.5	97.7	0.90	0.88	42853	2.3	0.61	5.5	273	697	
7500	<b>1RP6 712-4HJ</b> ■ 0	1493	485	97.6	97.8	0.91	0.90	47979	2.2	0.59	5.5	300	800	
8200	<b>1RP6 714-4HJ</b> ■ 0	1493	530	97.7	97.8	0.91	0.90	52456	2.2	0.61	5.5	337	933	
9100	<b>1RP6 716-4HJ</b> ■ 0	1493	590	97.7	97.8	0.91	0.90	58205	2.2	0.62	5.5	369	1031	
<b>6-pole</b>														
5000	<b>1RP6 710-6HJ</b> ■ ■	994	345	97.2	97.4	0.86	0.85	48051	2.1	0.69	5.3	330	2520	
5500	<b>1RP6 712-6HJ</b> ■ ■	994	375	97.3	97.5	0.87	0.85	52847	2.1	0.74	5.5	367	2133	
6100	<b>1RP6 714-6HJ</b> ■ ■	994	415	97.4	97.6	0.87	0.85	58591	2.2	0.78	5.5	419	2561	
6800	<b>1RP6 716-6HJ</b> ■ ■	995	465	97.4	97.6	0.87	0.86	65303	2.3	0.82	5.5	468	2982	
<b>8-pole</b>														
3850	<b>1RP6 710-8HJ</b> ■ ■	745	270	96.7	97.2	0.85	0.83	49372	1.9	0.71	4.9	415	5185	
4200	<b>1RP6 712-8HJ</b> ■ ■	745	295	96.8	97.2	0.85	0.83	53835	2.0	0.78	5.3	465	5935	
4650	<b>1RP6 714-8HJ</b> ■ ■	746	325	97.0	97.3	0.85	0.82	59562	2.2	0.93	5.5	531	7019	
5200	<b>1RP6 716-8HJ</b> ■ ■	746	365	97.1	97.3	0.85	0.82	66595	2.2	0.93	5.5	597	8203	
<b>10-pole</b>														
2800	<b>1RP6 710-3HJ</b> ■ ■	596	210	96.4	96.8	0.80	0.77	44889	2.1	0.72	5.2	415	8485	
3100	<b>1RP6 712-3HJ</b> ■ ■	596	230	96.6	96.9	0.81	0.78	49700	2.1	0.71	5.1	465	10335	
3400	<b>1RP6 714-3HJ</b> ■ ■	596	250	96.7	97.0	0.81	0.77	54475	2.3	0.78	5.5	531	11369	
3700	<b>1RP6 716-3HJ</b> ■ ■	596	275	96.7	97.0	0.81	0.77	59266	2.3	0.82	5.5	598	12702	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked-rotor torque $T_{LR}/T_{rated}$	Locked-rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
<b>2-pole</b>														
1600	<b>1RA6 450-2HJ</b> ■ 0	3572	162	96.0	96.2	0.90	0.90	4279	2.0	0.55	5.1	13	34.5	
1850	<b>1RA6 452-2HJ</b> ■ 0	3573	184	96.2	96.5	0.91	0.91	4946	2.1	0.55	5.4	14	40	
2060	<b>1RA6 454-2HJ</b> ■ 0	3577	205	96.4	96.6	0.91	0.91	5504	2.2	0.55	5.5	16	45	
2300	<b>1RA6 456-2HJ</b> ■ 0	3580	230	96.6	96.8	0.91	0.91	6137	2.4	0.55	5.5	17	52	
2690	<b>1RA6 457-2HJ</b> ■ 0	3580	265	96.8	96.9	0.92	0.92	7180	2.3	0.50	5.5	19	59	
3030	<b>1RA6 458-2HJ</b> ■ 0	3580	295	97.0	97.1	0.92	0.93	8086	2.4	0.55	5.5	21	67	
3250	<b>1RA4 504-2HE</b> ■ 0	3578	330	96.8	96.8	0.89	0.88	8675	2.3	0.60	5.3	24	27	
3700	<b>1RA4 506-2HE</b> ■ 0	3578	370	97.0	96.9	0.90	0.88	9876	2.4	0.62	5.5	26	34	
4000	<b>1RA4 560-2HE</b> ■ 0	3579	410	96.6	96.5	0.88	0.86	10673	2.0	0.43	4.5	32	26	
4300	<b>1RA4 562-2HE</b> ■ 0	3581	435	96.8	96.7	0.89	0.87	11467	2.2	0.50	5.2	35	34	
4950	<b>1RA4 564-2HE</b> ■ 0	3583	495	97.0	96.9	0.90	0.88	13194	2.5	0.55	5.5	40	47	
5300 <sup>2)</sup>	<b>1RA4 566-2HE</b> ■ 0	3584	530	97.2	97.1	0.90	0.89	14122	2.5	0.55	5.5	44	57	
5700	<b>1RA4 630-2HE</b> ■ 0	3583	580	97.0	96.9	0.88	0.87	15193	2.10	0.30	4.2	60	95	
6500	<b>1RA4 632-2HE</b> ■ 0	3584	660	97.2	97.2	0.89	0.89	17320	2.30	0.34	4.6	67	140	
7500	<b>1RA4 634-2HE</b> ■ 0	3585	750	97.5	97.5	0.90	0.89	19979	2.60	0.41	5.3	77	150	
8200	<b>1RA4 636-2HE</b> ■ 0	3585	820	97.6	97.6	0.90	0.90	21844	2.60	0.42	5.4	86	110	
<b>4-pole</b>														
1630	<b>1RA6 450-4HJ</b> ■ ■	1783	168	95.8	96.1	0.89	0.88	8733	2.1	0.70	5.5	20	178	
1750	<b>1RA6 452-4HJ</b> ■ ■	1785	180	95.9	96.1	0.89	0.88	9362	2.2	0.70	5.5	22	225	
2070	<b>1RA6 454-4HJ</b> ■ ■	1785	210	96.1	96.3	0.90	0.89	11078	2.2	0.70	5.5	25	285	
2310	<b>1RA6 456-4HJ</b> ■ ■	1787	235	96.3	96.4	0.89	0.88	12350	2.2	0.70	5.5	28	355	
2500	<b>1RA4 500-4HE</b> ■ ■	1785	255	96.5	96.6	0.89	0.88	13375	2.1	0.70	5.2	39	180	
2750	<b>1RA4 502-4HE</b> ■ ■	1786	280	96.6	96.7	0.89	0.88	14705	2.2	0.72	5.4	42	200	
3200	<b>1RA4 504-4HE</b> ■ ■	1786	325	96.9	96.9	0.89	0.88	17111	2.2	0.72	5.4	48	240	
3600	<b>1RA4 506-4HE</b> ■ ■	1787	365	97.0	97.0	0.89	0.88	19239	2.2	0.75	5.5	53	280	
4300	<b>1RA4 560-4HE</b> ■ ■	1787	430	96.9	97.1	0.90	0.89	22980	2.0	0.55	4.9	76	180	
4800	<b>1RA4 562-4HE</b> ■ ■	1788	480	97.0	97.2	0.90	0.89	25638	2.1	0.63	5.3	84	220	
5400	<b>1RA4 564-4HE</b> ■ 0	1789	540	97.3	97.3	0.90	0.89	28826	2.1	0.63	5.3	96	270	
5600	<b>1RA4 566-4HE</b> ■ 0	1790	560	97.3	97.3	0.90	0.89	29877	2.3	0.65	5.5	105	310	
6500	<b>1RA4 630-4HE</b> ■ 0	1789	660	97.2	97.3	0.88	0.88	34698	2.10	0.52	4.8	134	600	
7300	<b>1RA4 632-4HE</b> ■ 0	1789	740	97.3	97.5	0.89	0.89	38969	2.10	0.54	4.8	150	650	
8000	<b>1RA4 634-4HE</b> ■ 0	1790	810	97.5	97.6	0.89	0.89	42682	2.20	0.59	5.2	168	680	
8600	<b>1RA4 636-4HE</b> ■ 0	1791	870	97.7	97.7	0.89	0.88	45857	2.40	0.61	5.5	197	800	

#### Voltage code:

4 kV, 60 Hz	4
6.6 kV, 60 Hz	1
Other voltage	9

#### Type of construction:

IM B3	0
IM V1 (without canopy)	8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup>  $V_{rated} < 6.6$  kV on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data (continued)

Rated power kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked- rotor torque $T_{LR}/T_{rated}$	Locked- rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. 1) kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
6-pole														
1210	1RA6 450-6HJ	1188	128	95.7	96.2	0.86	0.85	9734	1.9	0.80	5.5	26	550	
1350	1RA6 452-6HJ	1188	144	95.9	96.3	0.86	0.85	10858	2.0	0.75	5.5	29	610	
1480	1RA6 454-6HJ	1189	156	96.0	96.5	0.86	0.85	11894	2.0	0.85	5.5	33	660	
1620	1RA6 456-6HJ	1190	170	96.3	96.6	0.87	0.85	13006	2.2	0.95	5.5	38	730	
2050	1RA4 500-6HE	1189	215	96.1	96.1	0.87	0.85	16466	2.0	0.72	5.1	57	600	
2300	1RA4 502-6HE	1189	240	96.3	96.4	0.87	0.86	18474	2.0	0.70	5.0	65	650	
2600	1RA4 504-6HE	1189	270	96.4	96.6	0.87	0.86	20883	2.0	0.72	5.1	72	800	
2850	1RA4 506-6HE	1190	295	96.5	96.6	0.87	0.85	22872	2.0	0.75	5.3	81	950	
3300	1RA4 560-6HE	1191	345	96.6	96.6	0.87	0.86	26461	2.0	0.65	4.9	105	750	
3750	1RA4 562-6HE	1192	390	96.8	96.9	0.87	0.85	30044	2.0	0.70	5.1	120	900	
4150	1RA4 564-6HE	1192	430	96.9	97.0	0.87	0.86	33249	2.0	0.75	5.3	135	1050	
4500	1RA4 566-6HE	1192	465	97.0	97.1	0.87	0.86	36053	2.0	0.70	5.2	147	1200	
5100	1RA4 630-6HE	1192	530	97.1	97.2	0.86	0.85	40860	1.90	0.51	4.3	183	1700	
5700	1RA4 632-6HE	1193	600	97.2	97.2	0.85	0.84	45629	2.00	0.56	4.7	202	2100	
6200	1RA4 634-6HE	1193	650	97.3	97.3	0.86	0.85	49631	2.10	0.61	4.9	223	2000	
6700	1RA4 636-6HE	1193	700	97.4	97.4	0.86	0.84	53634	2.30	0.64	5.2	246	2600	
8-pole														
870	1RA6 450-8HJ	890	95	95.1	95.6	0.84	0.82	9333	1.8	0.60	5.3	32	475	
960	1RA6 452-8HJ	892	106	95.2	95.6	0.84	0.81	10285	1.9	0.65	5.4	36	570	
1050	1RA6 454-8HJ	892	114	95.3	95.7	0.84	0.82	11254	2.0	0.65	5.5	41	670	
1180	1RA6 456-8HJ	892	128	95.6	95.9	0.85	0.83	12637	1.9	0.65	5.5	47	820	
1500	1RA4 500-8HE	892	164	95.7	95.7	0.84	0.81	16059	2.0	0.75	5.2	70	750	
1700	1RA4 502-8HE	892	182	95.9	95.9	0.85	0.83	18201	2.0	0.75	5.2	80	1050	
1860	1RA4 504-8HE	892	200	96.0	96.0	0.85	0.83	19914	2.0	0.78	5.1	88	1200	
2050	1RA4 506-8HE	893	220	96.2	96.1	0.84	0.81	21923	2.1	0.82	5.5	99	1300	
2350	1RA4 560-8HE	893	255	96.2	96.3	0.84	0.81	25132	1.9	0.65	4.9	123	1600	
2700	1RA4 562-8HE	894	290	96.4	96.4	0.84	0.82	28842	2.0	0.70	5.1	141	1650	
2900	1RA4 564-8HE	894	315	96.4	96.6	0.84	0.82	30979	2.0	0.70	5.0	158	2300	
3100	1RA4 566-8HE	894	330	96.6	96.7	0.85	0.84	33115	2.0	0.70	5.0	173	2500	

#### Voltage code:

4 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
1  
9

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data (continued)

Rated power IEC	High voltage motor H-compact PLUS	Speed	Rated current	Efficiency			Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
				$I_{\text{rated}}$ at 6.6 kV	4/4 load	3/4 load	4/4 load	3/4 load					$T_{\text{B}}/T_{\text{rated}}$	$T_{\text{LR}}/T_{\text{rated}}$
kW	Order No.	rpm	A	%	%	cos $\phi$	cos $\phi$	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
10-pole														
650	<b>1RA6 450-3HJ</b>	710	74	93.7	94.0	0.82	0.78	8743	1.9	0.72	4.5	37	650	
720	<b>1RA6 452-3HJ</b>	710	83	94.1	94.3	0.81	0.77	9685	2.0	0.75	4.7	41	850	
800	<b>1RA6 454-3HJ</b>	711	92	94.3	94.4	0.81	0.76	10745	2.1	0.80	4.9	46	900	
910	<b>1RA6 456-3HJ</b>	711	104	94.5	94.6	0.81	0.77	12223	2.1	0.80	5.0	52	1100	
1080	<b>1RA4 500-3HE</b>	711	122	94.8	95.0	0.82	0.80	14506	1.8	0.65	4.4	70	1200	
1200	<b>1RA4 502-3HE</b>	712	134	95.2	95.2	0.82	0.80	16096	1.9	0.68	4.7	80	1500	
1320	<b>1RA4 504-3HE</b>	712	146	95.1	95.2	0.83	0.80	17705	1.9	0.70	4.7	88	1450	
1500	<b>1RA4 506-3HE</b>	712	166	95.4	95.5	0.83	0.79	20119	2.0	0.72	4.9	99	1900	
1780	<b>1RA4 560-3HE</b>	713	205	95.5	95.6	0.80	0.76	23842	2.0	0.70	4.6	123	2100	
2040	<b>1RA4 562-3HE</b>	713	235	95.8	95.8	0.80	0.76	27324	2.0	0.70	4.8	141	2600	
2200	<b>1RA4 564-3HE</b>	713	245	95.9	95.8	0.82	0.79	29467	2.0	0.68	4.6	158	2800	
2400	<b>1RA4 566-3HE</b>	713	270	96.0	96.0	0.81	0.77	32146	2.1	0.75	5.0	173	3300	
12-pole														
440	<b>1RA6 450-5HJ</b>	591	56	92.9	93.1	0.74	0.71	7110	1.8	0.56	4.0	37	630	
510	<b>1RA6 452-5HJ</b>	591	65	93.3	93.3	0.73	0.68	8241	1.8	0.60	4.2	41	850	
570	<b>1RA6 454-5HJ</b>	592	73	93.9	93.9	0.73	0.68	9195	1.8	0.60	4.2	46	1150	
650	<b>1RA6 456-5HJ</b>	592	82	94.0	93.9	0.74	0.68	10486	1.9	0.60	4.3	52	1300	
820	<b>1RA4 500-5HE</b>	592	102	94.4	94.3	0.74	0.68	13228	2.0	0.62	4.5	70	1650	
920	<b>1RA4 502-5HE</b>	592	114	94.6	94.6	0.75	0.70	14841	1.9	0.62	4.4	79	2000	
1020	<b>1RA4 504-5HE</b>	592	128	94.8	94.7	0.74	0.68	16454	2.0	0.65	4.7	87	2400	
1120	<b>1RA4 506-5HE</b>	592	136	94.8	94.8	0.76	0.71	18068	1.9	0.60	4.4	98	2200	
1300	<b>1RA4 560-5HE</b>	593	160	95.0	95.1	0.75	0.70	20936	1.8	0.53	3.9	123	2050	
1470	<b>1RA4 562-5HE</b>	593	182	95.2	95.3	0.74	0.69	23674	1.8	0.55	4.0	141	2500	
1620	<b>1RA4 564-5HE</b>	594	205	95.4	95.4	0.73	0.67	26045	2.0	0.63	4.3	158	3500	
1760	<b>1RA4 566-5HE</b>	594	220	95.5	95.5	0.73	0.68	28296	2.0	0.63	4.4	173	3900	

#### Voltage code:

4 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
1  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data

Rated power IEC	High voltage motor H-compact PLUS	Speed	Rated current		Efficiency		Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
			$I_{rated}$ at 6.6 kV	4/4 load	3/4 load	4/4 load	3/4 load	$T_B/T_{rated}$					$T_{LR}/T_{rated}$	$I_{LR}/I_{rated}$
kW	Order No.	rpm	A	%	%	cos φ	cos φ	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
<b>2-pole</b>														
7600 <sup>2)</sup>	<b>1RP6 710-2HJ</b>	3589	760	96.8	96.6	0.90	0.90	20229	2.0	0.40	4.6	132	48	
9700 <sup>2)</sup>	<b>1RP6 712-2HJ</b>	3589	970	97.1	96.9	0.90	0.89	25813	2.2	0.47	5.2	147	43	
11900 <sup>2)</sup>	<b>1RP6 714-2HJ</b>	3589	1180	97.3	97.1	0.91	0.91	31672	2.2	0.49	5.2	162	38	
13600 <sup>2)</sup>	<b>1RP6 716-2HJ</b>	3590	1340	97.4	97.2	0.91	0.91	36190	2.3	0.52	5.5	179	41	
<b>4-pole</b>														
8700 <sup>2)</sup>	<b>1RP6 710-4HJ</b>	1793	860	97.8	97.8	0.90	0.88	46340	2.3	0.59	5.5	273	297	
10400 <sup>2)</sup>	<b>1RP6 712-4HJ</b>	1793	1040	97.9	97.9	0.90	0.89	55399	2.3	0.60	5.5	300	310	
11900 <sup>2)</sup>	<b>1RP6 714-4HJ</b>	1793	1160	97.9	98.0	0.91	0.90	63396	2.2	0.61	5.5	337	353	
13200 <sup>2)</sup>	<b>1RP6 716-4HJ</b>	1793	1300	98.0	98.0	0.91	0.89	70311	2.3	0.62	5.5	369	406	
<b>6-pole</b>														
6900	<b>1RP6 710-6HJ</b>	1194	720	97.4	97.6	0.86	0.84	55212	2.1	0.69	5.4	330	970	
7600	<b>1RP6 712-6HJ</b>	1194	790	97.5	97.6	0.86	0.84	60797	2.1	0.70	5.5	367	1083	
8400	<b>1RP6 714-6HJ</b>	1194	860	97.7	97.7	0.87	0.85	67196	2.1	0.73	5.5	419	1311	
9200	<b>1RP6 716-6HJ</b>	1194	940	97.7	97.7	0.88	0.87	73603	2.1	0.74	5.5	468	1572	
<b>8-pole</b>														
5400	<b>1RP6 710-8HJ</b>	895	590	97.2	97.4	0.83	0.81	57627	2.0	0.76	5.3	415	2835	
6100	<b>1RP6 712-8HJ</b>	895	660	97.2	97.4	0.83	0.81	65089	2.0	0.78	5.4	465	3185	
6800	<b>1RP6 714-8HJ</b>	895	730	97.3	97.5	0.84	0.81	72542	2.1	0.82	5.5	531	3769	
7500	<b>1RP6 716-8HJ</b>	896	810	97.4	97.5	0.83	0.80	79967	2.2	0.88	5.5	597	4453	
<b>10-pole</b>														
3700	<b>1RP6 710-3HJ</b>	716	425	96.8	97.0	0.79	0.75	49369	2.2	0.73	5.4	415	5185	
4050	<b>1RP6 712-3HJ</b>	716	455	96.9	97.1	0.80	0.76	54035	2.2	0.73	5.4	465	5935	
4500	<b>1RP6 714-3HJ</b>	716	510	96.9	97.1	0.80	0.77	60031	2.2	0.74	5.5	531	7119	
5100	<b>1RP6 716-3HJ</b>	716	570	97.1	97.2	0.80	0.77	68021	2.3	0.79	5.5	598	8202	

#### Voltage code:

4 kV, 60 Hz  
4.16 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
3  
1  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup>  $V_{rated} < 6$  kV on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data

Rated power IEC	High voltage motor H-compact PLUS	Speed	Rated current		Efficiency		Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
			$I_{rated}$ at 13.2 kV	4/4 load	3/4 load	4/4 load	3/4 load	$T_B/T_{rated}$					$T_{LR}/T_{rated}$	$I_{LR}/I_{rated}$
kW	Order No.	rpm	A	%	%	cos $\phi$	cos $\phi$	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>12.5 ... 13.8 kV, 60 Hz</b>														
2-pole														
6500	<b>1RP6 710-2HJ</b>	3590	330	96.4	96.1	0.90	0.89	17293	2.3	0.44	5.2	132	58	
8000	<b>1RP6 712-2HJ</b>	3591	405	96.8	96.4	0.89	0.88	21278	2.5	0.50	5.5	147	53	
8800	<b>1RP6 714-2HJ</b>	3591	435	96.8	96.4	0.91	0.89	23406	2.5	0.53	5.5	162	78	
10100	<b>1RP6 716-2HJ</b>	3591	495	96.9	96.6	0.92	0.91	26867	2.4	0.53	5.5	179	111	
4-pole														
7200	<b>1RP6 710-4HJ</b>	1794	365	97.4	97.5	0.89	0.88	38335	2.4	0.58	5.5	273	367	
8000	<b>1RP6 712-4HJ</b>	1794	395	97.5	97.6	0.91	0.90	42606	2.3	0.59	5.5	300	427	
8800	<b>1RP6 714-4HJ</b>	1793	435	97.6	97.6	0.91	0.91	46869	2.3	0.59	5.5	337	503	
10100	<b>1RP6 716-4HJ</b>	1793	490	97.6	97.7	0.92	0.91	53794	2.3	0.61	5.5	369	546	
6-pole														
5600	<b>1RP6 710-6HJ</b>	1195	295	97.2	97.3	0.85	0.83	44775	2.3	0.70	5.5	330	1105	
6200	<b>1RP6 712-6HJ</b>	1195	325	97.3	97.4	0.86	0.83	49566	2.3	0.73	5.5	367	1253	
6800	<b>1RP6 714-6HJ</b>	1195	355	97.3	97.4	0.86	0.84	54357	2.3	0.72	5.5	419	1535	
7500	<b>1RP6 716-6HJ</b>	1195	390	97.4	97.5	0.86	0.84	59945	2.3	0.72	5.5	468	1782	
8-pole														
3900	<b>1RP6 710-8HJ</b>	896	210	96.6	96.8	0.84	0.80	41582	2.2	0.79	5.5	415	3485	
4400	<b>1RP6 712-8HJ</b>	896	235	96.7	97.0	0.84	0.81	46912	2.2	0.81	5.5	465	3935	
5000	<b>1RP6 714-8HJ</b>	896	270	96.9	97.0	0.83	0.80	53295	2.2	0.78	5.5	531	4669	
5600	<b>1RP6 716-8HJ</b>	896	305	97.0	97.0	0.83	0.79	59674	2.3	0.76	5.5	597	5303	
10-pole														
2800	<b>1RP6 710-3HJ</b>	716	160	96.2	96.5	0.80	0.75	37334	2.4	0.76	5.5	415	3985	
3200	<b>1RP6 712-3HJ</b>	716	182	96.5	96.6	0.80	0.75	42664	2.4	0.78	5.5	465	4785	
3550	<b>1RP6 714-3HJ</b>	716	198	96.6	96.8	0.81	0.78	47340	2.3	0.74	5.5	531	5569	
3900	<b>1RP6 716-3HJ</b>	716	215	96.7	96.9	0.82	0.79	52006	2.3	0.75	5.5	598	6552	

#### Voltage code:

13.2 kV, 60 Hz  
Other voltage

2  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data

##### NEMA version

Rated power  NEMA  hp	High voltage motor H-compact PLUS  Order No.	Speed  rpm	Rated current  A	Efficiency		Power factor		Torque  Nm	Break-down torque  $T_B/T_{rated}$ [-]	Locked-rotor torque  $T_{LR}/T_{rated}$ [-]	Locked-rotor current  $I_{LR}/I_{rated}$ [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>4 ... 6.6 kV, 60 Hz</b>													
2-pole													
10000 <sup>2)</sup>	<b>1RP6 710-2BM 0</b>	3586	747	96.4	96.2	0.90	0.89	19861	2.2	0.60	5.2	132	56
11000 <sup>2)</sup>	<b>1RP6 712-2BM 0</b>	3588	828	96.5	96.2	0.89	0.88	21837	2.5	0.60	5.8	147	55
12000 <sup>2)</sup>	<b>1RP6 712-2BN 0</b>	3587	898	96.6	96.4	0.90	0.89	23827	2.3	0.60	5.4	147	54
13000 <sup>2)</sup>	<b>1RP6 714-2BM 0</b>	3587	956	96.6	96.4	0.92	0.91	25814	2.5	0.64	6.0	162	54
14000 <sup>2)</sup>	<b>1RP6 714-2BN 0</b>	3587	1036	96.7	96.5	0.91	0.90	27801	2.4	0.60	5.7	162	53
16000 <sup>2)</sup>	<b>1RP6 716-2BM 0</b>	3586	1166	96.8	96.7	0.92	0.92	31777	2.4	0.62	5.8	179	51
17000 <sup>2)</sup>	<b>1RP6 716-2BN 0</b>	3587	1251	96.9	96.8	0.91	0.90	33759	2.4	0.60	5.8	179	49
4-pole													
11000 <sup>2)</sup>	<b>1RP6 710-4BJ 0</b>	1793	815	97.4	97.6	0.90	0.89	43695	2.3	0.60	5.9	273	603
12000 <sup>2)</sup>	<b>1RP6 712-4BJ 0</b>	1793	880	97.5	97.6	0.91	0.90	47668	2.2	0.60	5.9	300	637
13000 <sup>2)</sup>	<b>1RP6 712-4BK 0</b>	1793	962	97.5	97.6	0.90	0.89	51635	2.3	0.60	5.9	300	620
14000 <sup>2)</sup>	<b>1RP6 714-4BJ 0</b>	1793	1021	97.4	97.6	0.91	0.91	55625	2.2	0.60	5.8	337	651
15000 <sup>2)</sup>	<b>1RP6 714-4BK 0</b>	1793	1104	97.5	97.7	0.91	0.89	59583	2.3	0.60	6.0	337	665
16000 <sup>2)</sup>	<b>1RP6 716-4BJ 0</b>	1793	1161	97.5	97.7	0.92	0.91	63575	2.2	0.61	5.8	369	678
17000 <sup>2)</sup>	<b>1RP6 716-4BK 0</b>	1792	1238	97.5	97.7	0.92	0.91	67557	2.1	0.60	5.6	369	691
18000 <sup>2)</sup>	<b>1RP6 716-4BL 0</b>	1793	1324	97.6	97.7	0.91	0.90	71504	2.2	0.61	5.9	369	702
6-pole													
9000	<b>1RP6 710-6BJ 0</b>	1194	702	97.1	97.3	0.86	0.84	53690	2.1	0.71	5.5	330	1954
10000	<b>1RP6 712-6BJ 0</b>	1194	781	97.2	97.4	0.86	0.83	59647	2.2	0.71	5.6	367	2043
11000	<b>1RP6 714-6BJ 0</b>	1194	846	97.3	97.4	0.87	0.85	65612	2.2	0.75	5.7	419	2113
12000	<b>1RP6 716-6BJ 0</b>	1194	915	97.2	97.3	0.88	0.86	71577	2.2	0.77	5.7	468	2168
8-pole													
7000	<b>1RP6 710-8BJ 0</b>	895	566	96.9	97.1	0.83	0.80	55695	2.1	0.79	5.5	415	3817
8000	<b>1RP6 712-8BJ 0</b>	895	646	97.0	97.1	0.83	0.81	63651	2.0	0.80	5.5	465	4154
9000	<b>1RP6 714-8BJ 0</b>	895	721	97.1	97.2	0.84	0.81	71587	2.1	0.83	5.7	531	4458
10000	<b>1RP6 716-8BJ 0</b>	896	810	97.1	97.2	0.83	0.80	79506	2.2	0.87	6.0	597	4732
10-pole													
5000	<b>1RP6 710-3BJ 0</b>	716	427	96.6	96.7	0.79	0.75	49758	2.2	0.73	5.3	415	5006
5500	<b>1RP6 712-3BJ 0</b>	716	464	96.7	96.9	0.80	0.76	54720	2.2	0.72	5.3	465	5428
6000	<b>1RP6 714-3BJ 0</b>	716	502	96.8	96.9	0.80	0.77	59682	2.2	0.74	5.5	531	6221
7000	<b>1RP6 716-3BJ 0</b>	716	584	96.9	97.0	0.80	0.77	69631	2.2	0.77	5.6	598	6955

#### Voltage code:

4 kV, 60 Hz  
4.16 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
3  
1  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup>  $V_{rated} < 6$  kV on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Selection and ordering data

##### NEMA version

Rated power	High voltage motor H-compact PLUS	Speed	Rated current	Efficiency		Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
NEMA				$I_{\text{rated}}$ at 13.2 kV	4/4 load	3/4 load	4/4 load					3/4 load	$T_{\text{B}}/T_{\text{rated}}$
hp	Order No.	rpm	A	%	%	cos $\phi$	cos $\phi$	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>
<b>12.5 ... 13.8 kV, 60 Hz</b>													
2-pole													
8000	<b>1RP6 710-2BM 0</b>	3588	301	96.0	95.6	0.90	0.89	15881	2.5	0.60	5.6	132	52
9000	<b>1RP6 712-2BM 0</b>	3588	334	96.0	95.6	0.91	0.90	17864	2.6	0.60	6.0	147	51
10000	<b>1RP6 712-2BN 0</b>	3588	375	96.2	95.9	0.90	0.89	19849	2.6	0.60	6.0	147	49
11000	<b>1RP6 714-2BM 0</b>	3588	407	96.2	95.9	0.91	0.90	21837	2.5	0.60	6.0	162	48
12000	<b>1RP6 716-2BM 0</b>	3587	437	96.3	96.0	0.93	0.92	23827	2.4	0.60	5.8	179	47
13000	<b>1RP6 716-2BN 0</b>	3588	478	96.4	96.2	0.92	0.91	25806	2.5	0.60	6.0	179	45
4-pole													
9000	<b>1RP6 710-4BJ 0</b>	1794	337	97.1	97.2	0.89	0.88	35727	2.4	0.60	6.2	273	553
10000	<b>1RP6 712-4BJ 0</b>	1794	368	97.1	97.3	0.91	0.90	39708	2.3	0.60	6.2	300	555
11000	<b>1RP6 714-4BJ 0</b>	1794	403	97.2	97.3	0.91	0.90	43682	2.3	0.60	6.2	337	603
12000	<b>1RP6 716-4BJ 0</b>	1793	436	97.2	97.3	0.92	0.92	47662	2.3	0.63	6.2	369	620
13000	<b>1RP6 716-4BK 0</b>	1794	475	97.2	97.4	0.91	0.91	51625	2.3	0.60	6.1	369	637
6-pole													
7000	<b>1RP6 710-6BJ 0</b>	1195	278	96.9	97.0	0.85	0.82	41723	2.4	0.72	6.0	330	1722
8000	<b>1RP6 712-6BJ 0</b>	1195	315	97.0	97.1	0.85	0.82	47688	2.4	0.73	6.0	367	1849
9000	<b>1RP6 714-6BJ 0</b>	1195	350	97.0	97.1	0.86	0.84	53642	2.3	0.73	6.0	419	1954
10000	<b>1RP6 716-6BJ 0</b>	1195	388	97.1	97.2	0.86	0.84	59600	2.3	0.72	6.0	468	2042
8-pole													
5000	<b>1RP6 710-8BJ 0</b>	896	201	96.5	96.6	0.84	0.81	39760	2.2	0.79	5.9	415	3024
5500	<b>1RP6 712-8BJ 0</b>	896	220	96.6	96.7	0.84	0.81	43721	2.2	0.80	6.0	465	3235
6000	<b>1RP6 714-8BJ 0</b>	896	239	96.6	96.7	0.84	0.82	47691	2.3	0.80	6.0	531	3438
7000	<b>1RP6 716-8BJ 0</b>	896	279	96.7	96.8	0.85	0.82	55642	2.2	0.79	6.0	597	3817
10-pole													
3500	<b>1RP6 710-3BJ 0</b>	717	151	96.2	96.2	0.79	0.74	34788	2.5	0.78	6.0	415	4104
4000	<b>1RP6 712-3BJ 0</b>	717	172	96.3	96.3	0.79	0.74	39757	2.5	0.78	6.0	465	4564
4500	<b>1RP6 714-3BJ 0</b>	717	188	96.4	96.5	0.81	0.77	44739	2.4	0.79	6.0	531	5006
5000	<b>1RP6 716-3BJ 0</b>	717	207	96.5	96.6	0.82	0.78	49713	2.4	0.78	6.0	598	5428

#### Voltage code:

13.2 kV, 60 Hz  
Other voltage

2  
9

#### Note:

Higher pole numbers are available on request.

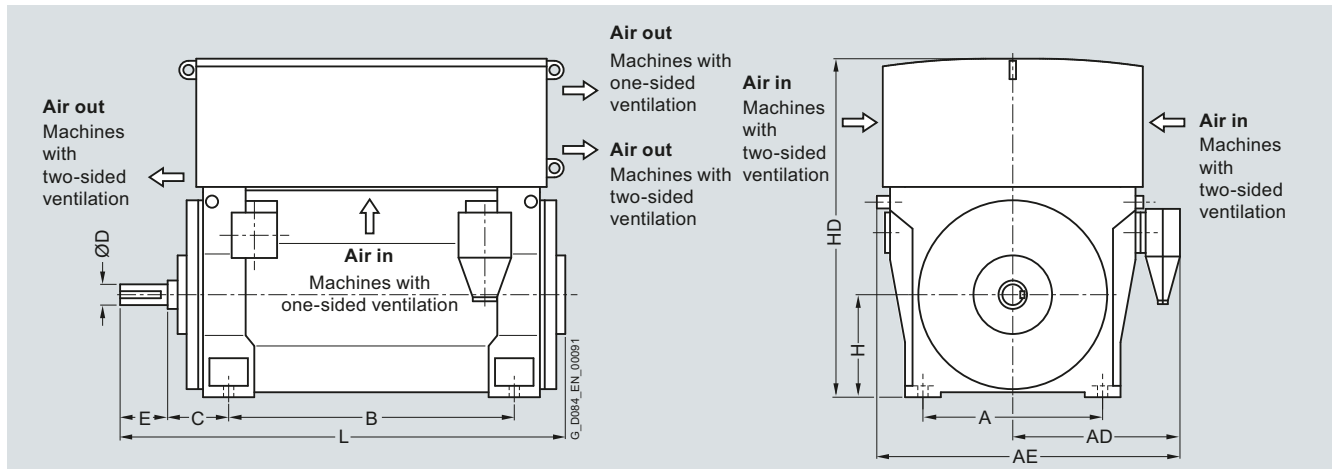
#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Dimension drawings



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>3)</sup> mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings – 1RA4, 1RA6 series</b>											
<b>2-pole</b>											
1RA6 450-2HJ.0	3669	850	930	1620	1180	250	95	130	450	1628	1843
1RA6 452-2HJ.0	3872	850	930	1620	1180	250	95	130	450	1628	1843
1RA6 454-2HJ.0	4273	850	930	1620	1400	250	95	130	450	1628	2053
1RA6 456-2HJ.0	4538	850	930	1620	1400	250	95	130	450	1628	2053
<b>4-pole</b>											
1RA6 450-4HJ.0	4013	850	930	1620	1180	250	130	200	450	1408	1896
1RA6 452-4HJ.0	4246	850	930	1620	1180	250	130	200	450	1408	1896
1RA6 454-4HJ.0	4624	850	930	1620	1400	250	130	200	450	1408	2106
1RA6 456-4HJ.0	4902	850	930	1620	1400	250	130	200	450	1408	2106
1RA4 500-4HE.0	5150	950	1000	1760	1320	280	150	200	500	1520	2230
1RA4 502-4HE.0	5350	950	1000	1760	1320	280	150	200	500	1520	2230
1RA4 504-4HE.0	6000	950	1000	1760	1500	280	160	240	500	1520	2480
1RA4 506-4HE.0	6400	950	1000	1980	1500	280	160	240	500	1520	2480
1RA4 560-4HE.0	7100	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 562-4HE.0	7550	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 564-4HE.0	8400	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 566-4HE.0	8900	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 630-4HE.0 <sup>2)</sup>	9950	1320	1330	2210	1600	335	200	280	630	2400	2500
1RA4 632-4HE.0 <sup>2)</sup>	10650	1320	1330	2210	1600	335	200	280	630	2400	2500
1RA4 634-4HE.0 <sup>2)</sup>	11700	1320	1330	2210	1800	335	220	280	630	2400	2740
1RA4 636-4HE.0 <sup>2)</sup>	12250	1320	1330	2210	1800	335	220	280	630	2400	2740
<b>6-pole</b>											
1RA6 450-6HJ.0	4114	850	930	1620	1180	280	140	200	450	1408	1896
1RA6 452-6HJ.0	4398	850	930	1620	1180	280	140	200	450	1408	1896
1RA6 454-6HJ.0	4748	850	930	1620	1400	280	140	200	450	1408	2136
1RA6 456-6HJ.0	5090	850	930	1620	1400	280	140	200	450	1408	2136
1RA4 500-6HE.0	5250	950	1000	1760	1320	280	160	240	500	1520	2270
1RA4 502-6HE.0	5650	950	1000	1760	1320	280	160	240	500	1520	2270
1RA4 504-6HE.0	6200	950	1000	1760	1500	280	170	240	500	1520	2480
1RA4 506-6HE.0	6550	950	1000	1760	1500	280	170	240	500	1520	2480

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> Roller bearings only for 50 Hz operation.

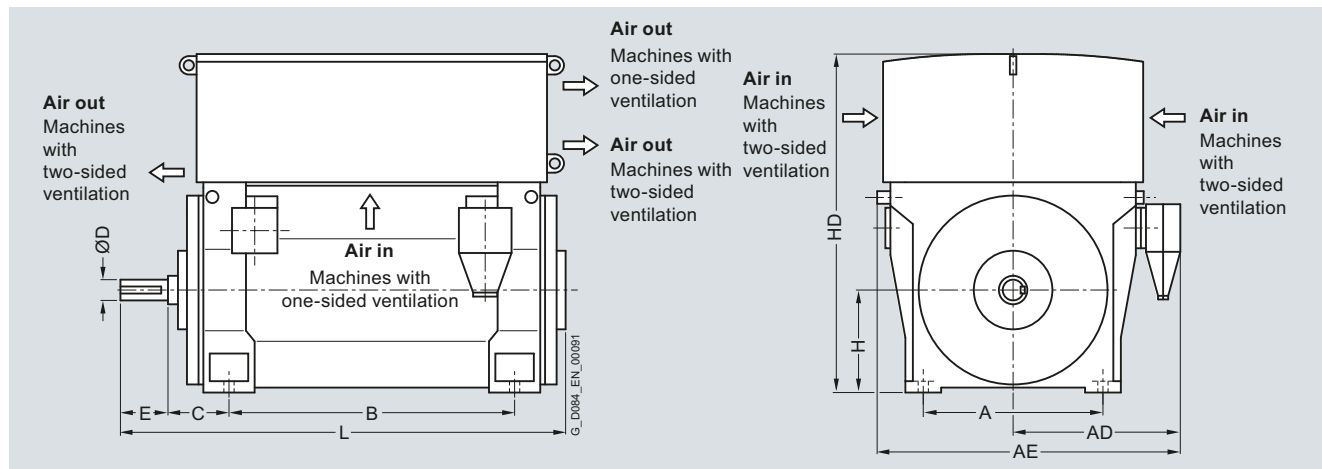
<sup>3)</sup> Dimension HD for 1RP6 on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

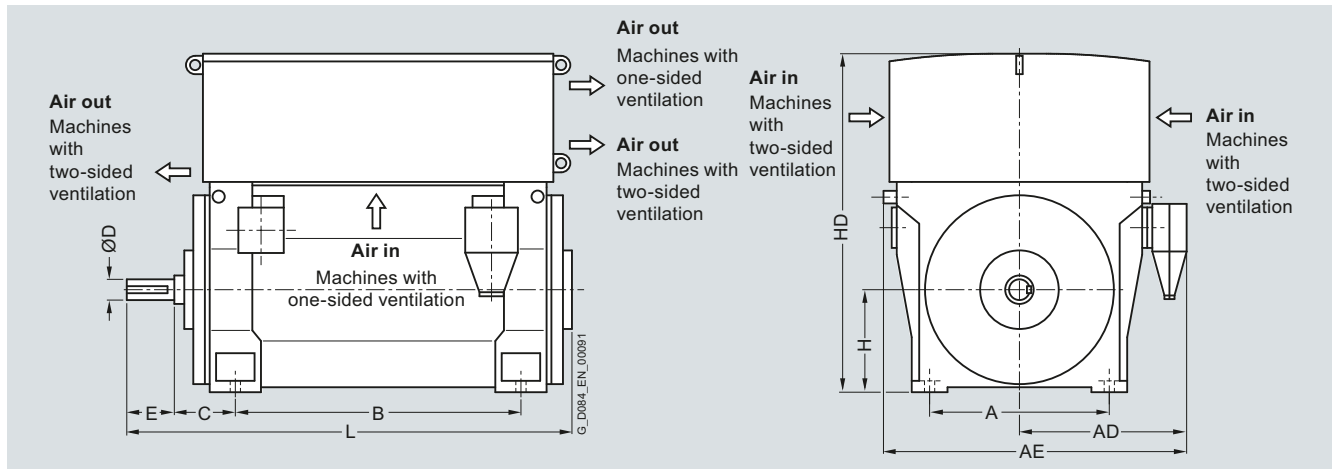
Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>3)</sup> mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings – 1RA4, 1RA6 series</b>											
<b>6-pole</b>											
1RA4 560-6HE.0	7200	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 562-6HE.0	7850	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 564-6HE.0	8650	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 566-6HE.0	9100	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 630-6HE.0	10250	1320	1330	2210	1600	335	220	280	630	2400	2500
1RA4 632-6HE.0	10800	1320	1330	2210	1600	335	220	280	630	2400	2500
1RA4 634-6HE.0	11800	1320	1330	2210	1800	335	220	280	630	2400	2740
1RA4 636-6HE.0	12550	1320	1330	2210	1800	335	220	280	630	2400	2740
<b>8-pole</b>											
1RA6 450-8HJ.0	4129	850	930	1620	1180	280	140	200	450	1408	1896
1RA6 452-8HJ.0	4428	850	930	1620	1180	280	140	200	450	1408	1896
1RA6 454-8HJ.0	4782	850	930	1620	1400	280	140	200	450	1408	2136
1RA6 456-8HJ.0	5130	850	930	1620	1400	280	140	200	450	1408	2136
1RA4 500-8HE.0	5300	950	1000	1760	1320	280	160	240	500	1520	2270
1RA4 502-8HE.0	5700	950	1000	1760	1320	280	160	240	500	1520	2270
1RA4 504-8HE.0	6200	950	1000	1760	1500	280	170	240	500	1520	2480
1RA4 506-8HE.0	6550	950	1000	1760	1500	280	170	240	500	1520	2480
1RA4 560-8HE.0	7200	1060	1070	1900	1400	315	180	240	560	1750	2300
1RA4 562-8HE.0	7700	1060	1070	1900	1400	315	180	240	560	1750	2300
1RA4 564-8HE.0	8550	1060	1070	1900	1600	315	190	280	560	1750	2570
1RA4 566-8HE.0	9000	1060	1070	1900	1600	315	190	280	560	1750	2570
1RA4 630-8HE.0 <sup>2)</sup>	10150	1320	1330	2210	1600	335	220	280	630	2400	2500
1RA4 632-8HE.0 <sup>2)</sup>	10800	1320	1330	2210	1600	335	220	280	630	2400	2500
1RA4 634-8HE.0 <sup>2)</sup>	11700	1320	1330	2210	1800	335	220	280	630	2400	2740
1RA4 636-8HE.0 <sup>2)</sup>	12450	1320	1330	2210	1800	335	220	280	630	2400	2740
<b>10-pole</b>											
1RA6 450-3HJ.0	4129	850	930	1620	1180	280	140	200	450	1408	1896
1RA6 452-3HJ.0	4428	850	930	1620	1180	280	140	200	450	1408	1896
1RA6 454-3HJ.0	4782	850	930	1620	1400	280	140	200	450	1408	2136
1RA6 456-3HJ.0	5130	850	930	1620	1400	280	140	200	450	1408	2136

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> Roller bearings only for 50 Hz operation.

<sup>3)</sup> Dimension HD for 1RP6 on request.

## Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>3)</sup> mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings – 1RA4, 1RA6 series</b>											
<b>10-pole</b>											
1RA4 500-3HE.0	5250	950	1000	1760	1320	280	160	240	500	1520	2270
1RA4 502-3HE.0	5600	950	1000	1760	1320	280	160	240	500	1520	2270
1RA4 504-3HE.0	6150	950	1000	1760	1500	280	170	240	500	1520	2480
1RA4 506-3HE.0	6550	950	1000	1760	1500	280	170	240	500	1520	2480
1RA4 560-3HE.0	7100	1060	1070	1900	1400	315	180	240	560	1750	2300
1RA4 562-3HE.0	7700	1060	1070	1900	1400	315	180	240	560	1750	2300
1RA4 564-3HE.0	8500	1060	1070	1900	1600	315	190	280	560	1750	2570
1RA4 566-3HE.0	8950	1060	1070	1900	1600	315	190	280	560	1750	2570
1RA4 630-3HE.0 <sup>2)</sup>	10050	1320	1180	2060	1600	335	220	280	630	2400	2500
1RA4 632-3HE.0 <sup>2)</sup>	10750	1320	1330	2210	1600	335	220	280	630	2400	2500
1RA4 634-3HE.0 <sup>2)</sup>	11750	1320	1330	2210	1800	335	220	280	630	2400	2740
1RA4 636-3HE.0 <sup>2)</sup>	12450	1320	1330	2210	1800	335	220	280	630	2400	2740
<b>12-pole</b>											
1RA6 450-5HJ.0	4129	850	930	1620	1180	280	140	200	450	1408	1896
1RA6 452-5HJ.0	4428	850	930	1620	1180	280	140	200	450	1408	1896
1RA6 454-5HJ.0	4782	850	930	1620	1400	280	140	200	450	1408	2136
1RA6 456-5HJ.0	5130	850	930	1620	1400	280	140	200	450	1408	2136
1RA4 500-5HE.0	5250	950	1000	1760	1320	280	160	240	500	1520	2270
1RA4 502-5HE.0	5650	950	1000	1760	1320	280	160	240	500	1520	2270
1RA4 504-5HE.0	6100	950	1000	1760	1500	280	170	240	500	1520	2480
1RA4 506-5HE.0	6550	950	1000	1760	1500	280	170	240	500	1520	2480
1RA4 560-5HE.0	7150	1060	1070	1900	1400	315	180	240	560	1750	2300
1RA4 562-5HE.0	7700	1060	1070	1900	1400	315	180	240	560	1750	2300
1RA4 564-5HE.0	8500	1060	1070	1900	1600	315	190	280	560	1750	2570
1RA4 566-5HE.0	8950	1060	1070	1900	1600	315	190	280	560	1750	2570
1RA4 630-5HE.0 <sup>2)</sup>	9950	1320	1180	2060	1600	335	220	280	630	2400	2500
1RA4 632-5HE.0 <sup>2)</sup>	10600	1320	1180	2060	1600	335	220	280	630	2400	2500
1RA4 634-5HE.0 <sup>2)</sup>	11600	1320	1180	2060	1800	335	220	280	630	2400	2740
1RA4 636-5HE.0 <sup>2)</sup>	12400	1320	1330	2210	1800	335	220	280	630	2400	2740

Note: Higher pole numbers are available on request.

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> Roller bearings only for 50 Hz operation.

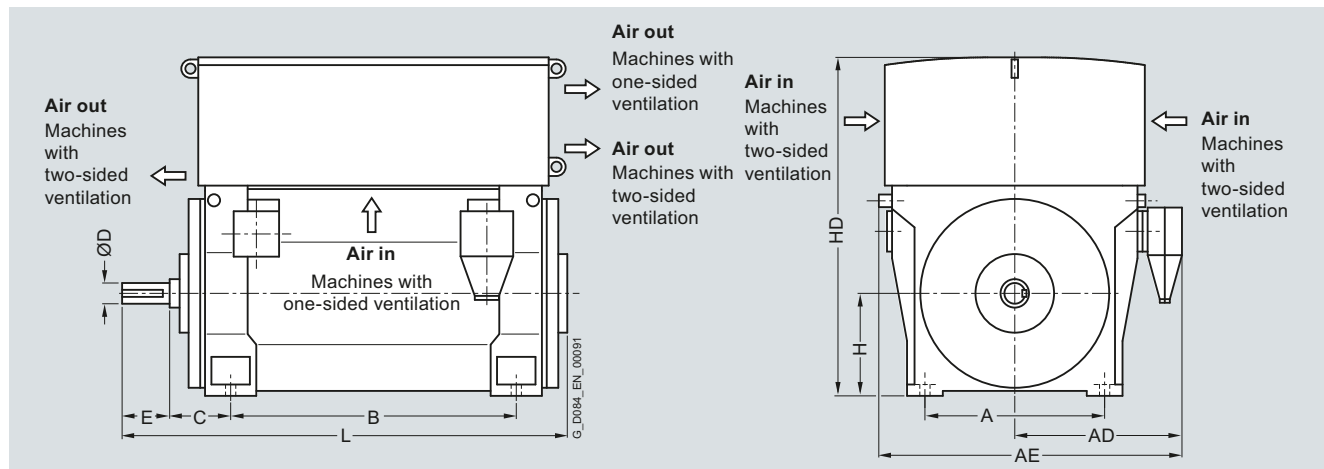
<sup>3)</sup> Dimension HD for 1RP6 on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings



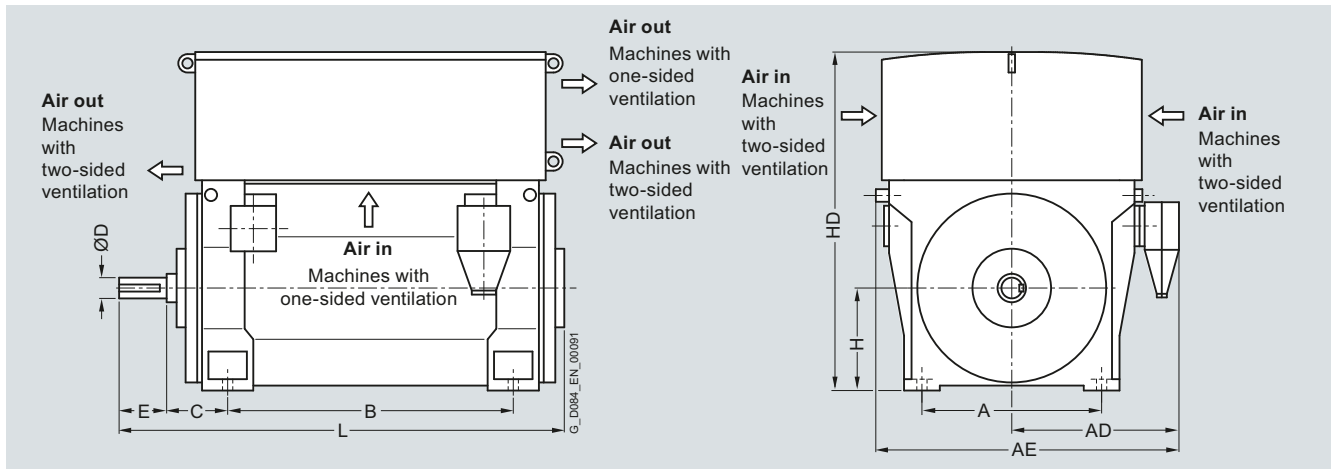
Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD <sup>2)</sup> mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings – 1RA4, 1RA6 series</b>											
<b>2-pole</b>											
1RA6 450-2HJ.0	3669	850	1070	1840	1180	250	95	130	450	1628	1875
1RA6 452-2HJ.0	3872	850	1070	1840	1180	250	95	130	450	1628	1875
1RA6 454-2HJ.0	4273	850	1070	1840	1400	250	95	130	450	1628	2085
1RA6 456-2HJ.0	4538	850	1070	1840	1400	250	95	130	450	1628	2085
<b>4-pole</b>											
1RA6 450-4HJ.0	4013	850	1070	1840	1180	250	130	200	450	1408	1896
1RA6 452-4HJ.0	4246	850	1070	1840	1180	250	130	200	450	1408	1896
1RA6 454-4HJ.0	4624	850	1070	1840	1400	250	130	200	450	1408	2106
1RA6 456-4HJ.0	4902	850	1070	1840	1400	250	130	200	450	1408	2106
1RA4 500-4HE.0	5150	950	1220	1980	1320	280	150	200	500	1520	2230
1RA4 502-4HE.0	5350	950	1220	1980	1320	280	150	200	500	1520	2230
1RA4 504-4HE.0	6000	950	1220	1980	1500	280	160	240	500	1520	2480
1RA4 506-4HE.0	6300	950	1220	1980	1500	280	160	240	500	1520	2480
1RA4 560-4HE.0	6950	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 562-4HE.0	7450	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 564-4HE.0	8300	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 566-4HE.0	8750	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 630-4HE.0 <sup>1)</sup>	9850	1320	1320	2200	1600	335	200	280	630	2400	2500
1RA4 632-4HE.0 <sup>1)</sup>	10500	1320	1330	2210	1600	335	200	280	630	2400	2500
1RA4 634-4HE.0 <sup>1)</sup>	11550	1320	1330	2210	1800	335	220	280	630	2400	2740
1RA4 636-4HE.0 <sup>1)</sup>	12150	1320	1330	2210	1800	335	220	280	630	2400	2740

<sup>1)</sup> Roller bearings only for 50 Hz operation.

<sup>2)</sup> Dimension HD for 1RP6 on request.

**Dimension drawings (continued)**



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD <sup>1)</sup> mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings – 1RA4, 1RA6 series</b>											
<b>6-pole</b>											
1RA6 450-6HJ.0	4114	850	1070	1840	1180	280	140	200	450	1408	1896
1RA6 452-6HJ.0	4398	850	1070	1840	1180	280	140	200	450	1408	1896
1RA6 454-6HJ.0	4748	850	1070	1840	1400	280	140	200	450	1408	2136
1RA6 456-6HJ.0	5090	850	1070	1840	1400	280	140	200	450	1408	2136
1RA4 500-6HE.0	5250	950	1220	1980	1320	280	160	240	500	1520	2270
1RA4 502-6HE.0	5650	950	1220	1980	1320	280	160	240	500	1520	2270
1RA4 504-6HE.0	6150	950	1220	1980	1500	280	170	240	500	1520	2480
1RA4 506-6HE.0	6550	950	1220	1980	1500	280	170	240	500	1520	2480
1RA4 560-6HE.0	7200	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 562-6HE.0	7700	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 564-6HE.0	8500	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 566-6HE.0	8950	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 630-6HE.0	10200	1320	1320	2200	1600	335	220	280	630	2400	2500
1RA4 632-6HE.0	10750	1320	1320	2200	1600	335	220	280	630	2400	2500
1RA4 634-6HE.0	11800	1320	1320	2200	1800	335	220	280	630	2400	2740
1RA4 636-6HE.0	12550	1320	1330	2210	1800	335	220	280	630	2400	2740
<b>8-pole</b>											
1RA6 450-8HJ.0	4129	850	1070	1840	1180	280	140	200	450	1408	1896
1RA6 452-8HJ.0	4428	850	1070	1840	1180	280	140	200	450	1408	1896
1RA6 454-8HJ.0	4782	850	1070	1840	1400	280	140	200	450	1408	2136
1RA6 456-8HJ.0	5130	850	1070	1840	1400	280	140	200	450	1408	2136
1RA4 500-8HE.0	5300	950	1220	1980	1320	280	160	240	500	1520	2270
1RA4 502-8HE.0	5650	950	1220	1980	1320	280	160	240	500	1520	2270
1RA4 504-8HE.0	6150	950	1220	1980	1500	280	170	240	500	1520	2480
1RA4 506-8HE.0	6550	950	1220	1980	1500	280	170	240	500	1520	2480
1RA4 560-8HE.0	7150	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 562-8HE.0	7700	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 564-8HE.0	8550	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 566-8HE.0	8950	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 630-8HE.0	10050	1320	1320	2200	1600	335	220	280	630	2400	2500
1RA4 632-8HE.0	10600	1320	1320	2200	1600	335	220	280	630	2400	2500
1RA4 634-8HE.0	11600	1320	1320	2200	1800	335	220	280	630	2400	2740
1RA4 636-8HE.0	12350	1320	1320	2200	1800	335	220	280	630	2400	2740

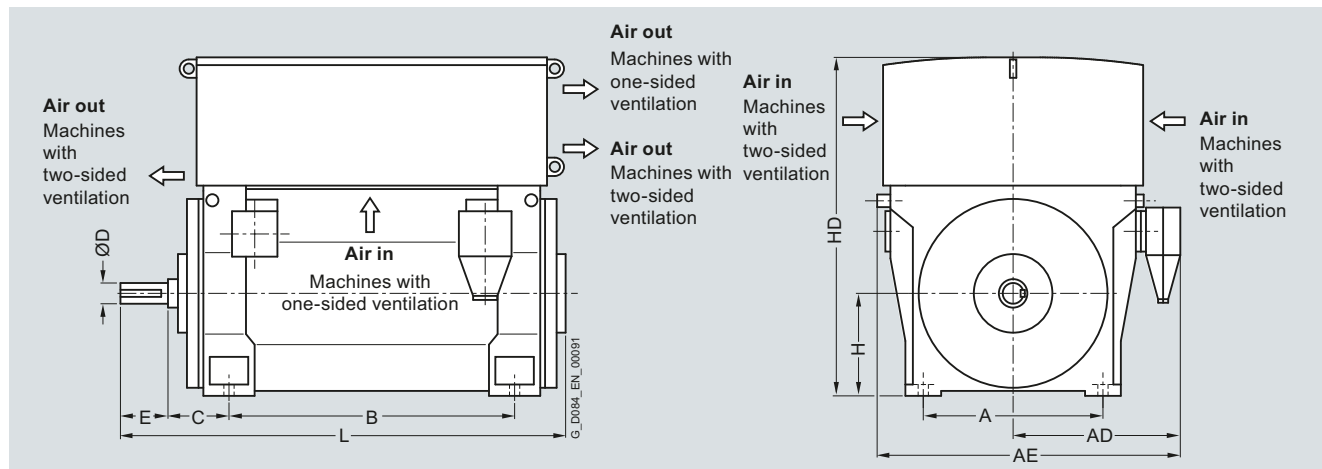
<sup>1)</sup> Dimension HD for 1RP6 on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

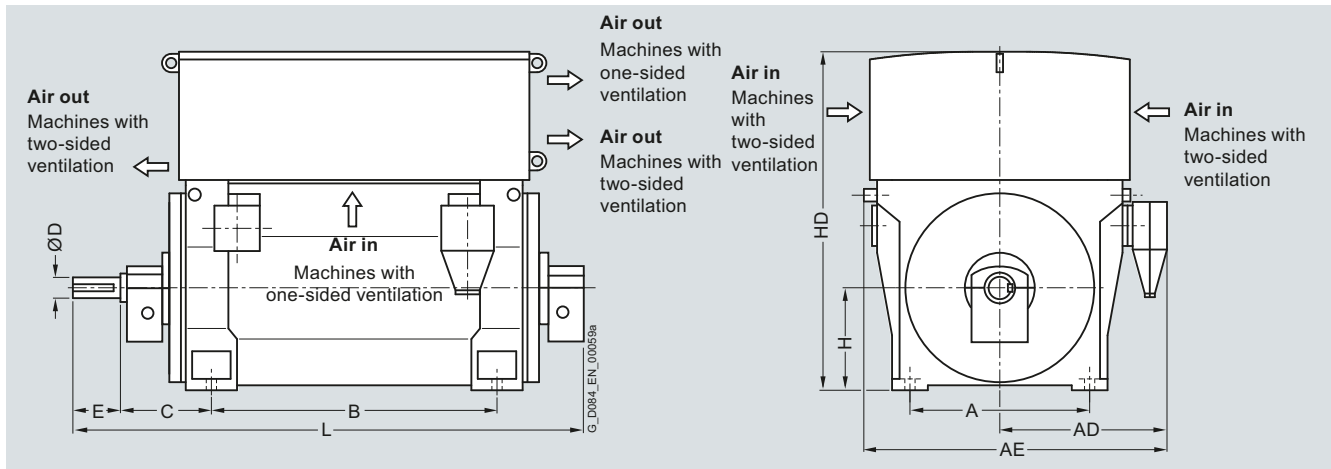
Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD <sup>1)</sup> mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings – 1RA4 series</b>											
<b>10-pole</b>											
1RA4 500-3HE.0	5250	950	1220	1980	1320	280	160	240	500	1520	2270
1RA4 502-3HE.0	5600	950	1220	1980	1320	280	160	240	500	1520	2270
1RA4 504-3HE.0	6150	950	1220	1980	1500	280	170	240	500	1520	2480
1RA4 506-3HE.0	6500	950	1220	1980	1500	280	170	240	500	1520	2480
1RA4 560-3HE.0	7350	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 562-3HE.0	7950	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 564-3HE.0	8750	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 566-3HE.0	9200	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 630-3HE.0	10000	1320	1320	2200	1600	335	220	280	630	2400	2500
1RA4 632-3HE.0	10600	1320	1320	2200	1600	335	220	280	630	2400	2500
1RA4 634-3HE.0	11550	1320	1320	2200	1800	335	220	280	630	2400	2740
1RA4 636-3HE.0	12300	1320	1320	2200	1800	335	220	280	630	2400	2740
<b>12-pole</b>											
1RA4 502-5HE.0	5650	950	1220	1980	1320	280	160	240	500	1520	2270
1RA4 504-5HE.0	6100	950	1220	1980	1500	280	170	240	500	1520	2480
1RA4 506-5HE.0	6500	950	1220	1980	1500	280	170	240	500	1520	2480
1RA4 560-5HE.0	7100	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 562-5HE.0	7650	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4 564-5HE.0	8450	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 566-5HE.0	8900	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4 630-5HE.0	10050	1320	1320	2200	1600	335	220	280	630	2400	2500
1RA4 632-5HE.0	10650	1320	1320	2200	1600	335	220	280	630	2400	2500
1RA4 634-5HE.0	11650	1320	1320	2200	1800	335	220	280	630	2400	2740
1RA4 636-5HE.0	12400	1320	1320	2200	1800	335	220	280	630	2400	2740

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> Dimension HD for 1RP6 on request.

## Dimension drawings



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>2)</sup> mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RA4, 1RA6 series</b>											
<b>2-pole</b>											
1RA6 450-2HJ.0	3731	850	930	1620	1180	425	95	130	450	1628	2218
1RA6 452-2HJ.0	3937	850	930	1620	1180	425	95	130	450	1628	2218
1RA6 454-2HJ.0	4275	850	930	1620	1400	425	95	130	450	1628	2428
1RA6 456-2HJ.0	4540	850	930	1620	1400	425	95	130	450	1628	2428
1RA6 457-2HJ.0	5006	850	930	1620	1600	425	95	130	450	1628	2638
1RA6 458-2HJ.0	5259	850	930	1620	1600	425	95	130	450	1628	2638
1RA4 504-2HE.0	5450	950	1000	1760	1500	475	120	165	500	1520	2730
1RA4 506-2HE.0	5900	950	1000	1980	1500	475	120	165	500	1520	2730
1RA4 560-2HE.0	6550	1060	1210	2040	1400	500	140	200	560	1750	2560
1RA4 562-2HE.0	6850	1060	1210	2040	1400	500	140	200	560	1750	2560
1RA4 564-2HE.0	7700	1060	1210	2040	1600	530	150	200	560	1750	2820
1RA4 566-2HE.0	8150	1060	1210	2040	1600	530	150	200	560	1750	2820
1RA4 630-2HE.0	9700	1320	1330	2210	1600	560	150	200	630	2400	2820
1RA4 632-2HE.0	10350	1320	1330	2210	1600	560	150	200	630	2400	2820
1RA4 634-2HE.0	11450	1320	1330	2210	1800	560	160	240	630	2400	3100
1RA4 636-2HE.0	12250	1320	1330	2210	1800	560	160	240	630	2400	3100
<b>4-pole</b>											
1RA6 450-4HJ.0-Z K96	4077	850	930	1620	1180	500	130	200	450	1408	2438
1RA6 452-4HJ.0-Z K96	4331	850	930	1620	1180	500	130	200	450	1408	2438
1RA6 454-4HJ.0-Z K96	4710	850	930	1620	1400	500	130	200	450	1408	2648
1RA6 456-4HJ.0-Z K96	4988	850	930	1620	1400	500	130	200	450	1408	2648
1RA4 500-4HE.0-Z K96	5300	950	1000	1760	1320	500	150	200	500	1520	2580
1RA4 502-4HE.0-Z K96	5500	950	1000	1760	1320	500	150	200	500	1520	2580
1RA4 504-4HE.0-Z K96	6200	950	1000	1760	1500	500	160	240	500	1520	2830
1RA4 506-4HE.0-Z K96	6600	950	1000	1980	1500	500	160	240	500	1520	2830
1RA4 560-4HE.0-Z K96	7250	1060	1210	2040	1400	530	180	240	560	1750	2630
1RA4 562-4HE.0-Z K96	7700	1060	1210	2040	1400	530	180	240	560	1750	2630
1RA4 564-4HE.0-Z K96	8600	1060	1210	2040	1600	530	190	280	560	1750	2940

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

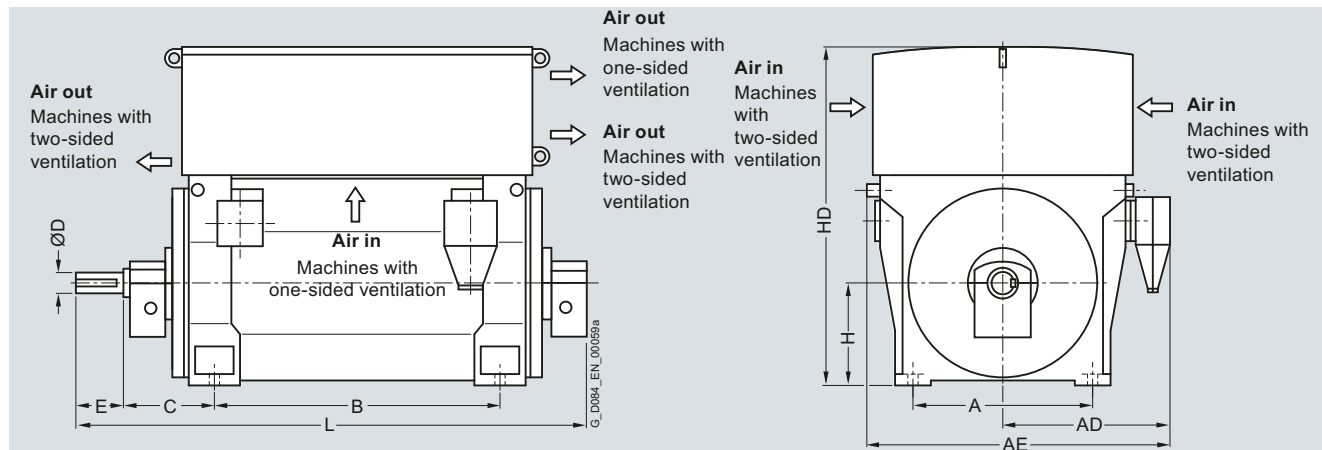
<sup>2)</sup> Dimension HD for 1RP6 on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

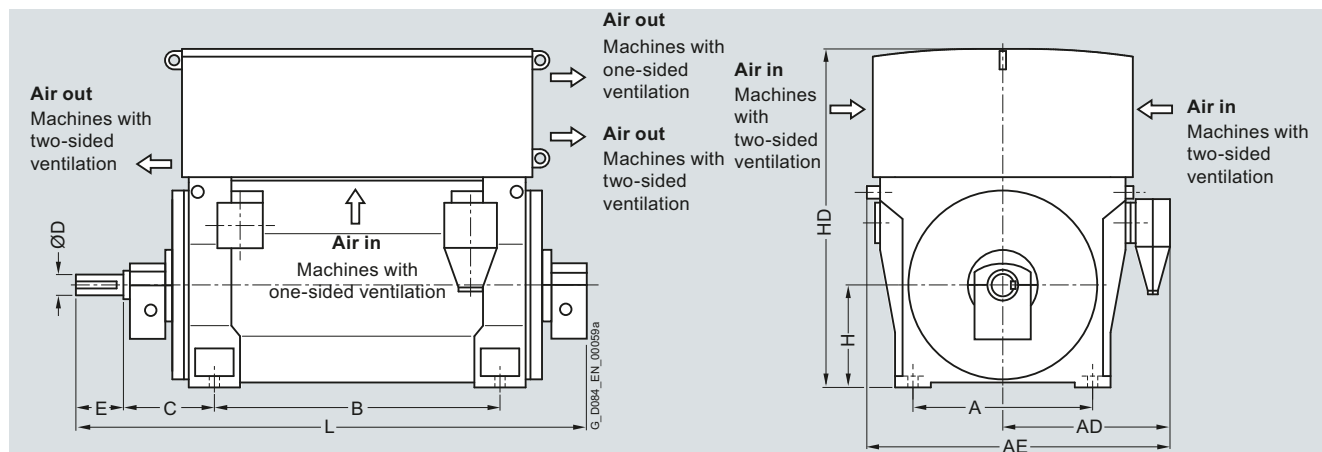
Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>3)</sup> mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RA4, 1RA6 series</b>											
<b>4-pole</b>											
1RA4 566-4HE.0-Z K96	9100	1060	1210	2040	1600	530	190	280	560	1750	2940
1RA4 630-4HE.0-Z K96 <sup>2)</sup>	10250	1320	1330	2210	1600	600	200	280	630	2400	2970
1RA4 632-4HE.0-Z K96 <sup>2)</sup>	10950	1320	1330	2210	1600	600	200	280	630	2400	2970
1RA4 634-4HE.0-Z K96 <sup>2)</sup>	11950	1320	1330	2210	1800	600	220	280	630	2400	3210
1RA4 636-4HE.0-Z K96 <sup>2)</sup>	12500	1320	1330	2210	1800	600	220	280	630	2400	3210
<b>6-pole</b>											
1RA6 450-6HJ.0-Z K96	4199	850	930	1620	1180	500	140	200	450	1408	2438
1RA6 452-6HJ.0-Z K96	4484	850	930	1620	1180	500	140	200	450	1408	2438
1RA6 454-6HJ.0-Z K96	4827	850	930	1620	1400	500	140	200	450	1408	2648
1RA6 456-6HJ.0-Z K96	5169	850	930	1620	1400	500	140	200	450	1408	2648
1RA4 500-6HE.0-Z K96	5450	950	1000	1760	1320	500	160	240	500	1520	2620
1RA4 502-6HE.0-Z K96	5800	950	1000	1760	1320	500	160	240	500	1520	2620
1RA4 504-6HE.0-Z K96	6350	950	1000	1760	1500	500	170	240	500	1520	2830
1RA4 506-6HE.0-Z K96	6750	950	1000	1760	1500	500	170	240	500	1520	2830
1RA4 560-6HE.0-Z K96	7450	1060	1210	2040	1400	530	180	240	560	1750	2670
1RA4 562-6HE.0-Z K96	8050	1060	1210	2040	1400	530	180	240	560	1750	2670
1RA4 564-6HE.0-Z K96	8850	1060	1210	2040	1600	530	190	280	560	1750	2940
1RA4 566-6HE.0-Z K96	9300	1060	1210	2040	1600	530	190	280	560	1750	2940
1RA4 630-6HE.0-Z K96	10500	1320	1330	2210	1600	600	220	280	630	2400	2970
1RA4 632-6HE.0-Z K96	11050	1320	1330	2210	1600	600	220	280	630	2400	2970
1RA4 634-6HE.0-Z K96	12100	1320	1330	2210	1800	600	220	280	630	2400	3210
1RA4 636-6HE.0-Z K96	12850	1320	1330	2210	1800	600	220	280	630	2400	3210
<b>8-pole</b>											
1RA6 450-8HJ.0-Z K96	4215	850	930	1620	1180	500	140	200	450	1408	2438
1RA6 452-8HJ.0-Z K96	4514	850	930	1620	1180	500	140	200	450	1408	2438
1RA6 454-8HJ.0-Z K96	4861	850	930	1620	1400	500	140	200	450	1408	2648
1RA6 456-8HJ.0-Z K96	5208	850	930	1620	1400	500	140	200	450	1408	2648
1RA4 500-8HE.0-Z K96	5500	950	1000	1760	1320	500	160	240	500	1520	2620
1RA4 502-8HE.0-Z K96	5850	950	1000	1760	1320	500	160	240	500	1520	2620

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

<sup>3)</sup> Dimension HD for 1RP6 on request.

## Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD <sup>3)</sup>	L
Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RA4, 1RA6 series											
8-pole											
1RA4 504-8HE.0-Z K96	6350	950	1000	1760	1500	500	170	240	500	1520	2830
1RA4 506-8HE.0-Z K96	6700	950	1000	1760	1500	500	170	240	500	1520	2830
1RA4 560-8HE.0-Z K96	7400	1060	1070	1900	1400	530	180	240	560	1750	2670
1RA4 562-8HE.0-Z K96	7950	1060	1070	1900	1400	530	180	240	560	1750	2670
1RA4 564-8HE.0-Z K96	8750	1060	1070	1900	1600	530	190	280	560	1750	2940
1RA4 566-8HE.0-Z K96	9250	1060	1070	1900	1600	530	190	280	560	1750	2940
1RA4 630-8HE.0-Z K96 <sup>2)</sup>	10400	1320	1330	2210	1600	600	220	280	630	2400	2970
1RA4 632-8HE.0-Z K96 <sup>2)</sup>	11050	1320	1330	2210	1600	600	220	280	630	2400	2970
1RA4 634-8HE.0-Z K96 <sup>2)</sup>	12000	1320	1330	2210	1800	600	220	280	630	2400	3210
1RA4 636-8HE.0-Z K96 <sup>2)</sup>	12700	1320	1330	2210	1800	600	220	280	630	2400	3210
10-pole											
1RA6 450-3HJ.0-Z K96	4215	850	930	1620	1180	500	140	200	450	1408	2438
1RA6 452-3HJ.0-Z K96	4514	850	930	1620	1180	500	140	200	450	1408	2438
1RA6 454-3HJ.0-Z K96	4861	850	930	1620	1400	500	140	200	450	1408	2648
1RA6 456-3HJ.0-Z K96	5208	850	930	1620	1400	500	140	200	450	1408	2648
1RA4 500-3HE.0-Z K96	5400	950	1000	1760	1320	500	160	240	500	1520	2620
1RA4 502-3HE.0-Z K96	5800	950	1000	1760	1320	500	160	240	500	1520	2620
1RA4 504-3HE.0-Z K96	6350	950	1000	1760	1500	500	170	240	500	1520	2830
1RA4 506-3HE.0-Z K96	6700	950	1000	1760	1500	500	170	240	500	1520	2830
1RA4 560-3HE.0-Z K96	7350	1060	1070	1900	1400	530	180	240	560	1750	2670
1RA4 562-3HE.0-Z K96	7900	1060	1070	1900	1400	530	180	240	560	1750	2670
1RA4 564-3HE.0-Z K96	8700	1060	1070	1900	1600	530	190	280	560	1750	2940
1RA4 566-3HE.0-Z K96	9200	1060	1070	1900	1600	530	190	280	560	1750	2940
1RA4 630-3HE.0-Z K96 <sup>2)</sup>	10350	1320	1330	2210	1600	600	220	280	630	2400	2970
1RA4 632-3HE.0-Z K96 <sup>2)</sup>	11000	1320	1330	2210	1600	600	220	280	630	2400	2970
1RA4 634-3HE.0-Z K96 <sup>2)</sup>	12050	1320	1330	2210	1800	600	220	280	630	2400	3210
1RA4 636-3HE.0-Z K96 <sup>2)</sup>	12750	1320	1330	2210	1800	600	220	280	630	2400	3210

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

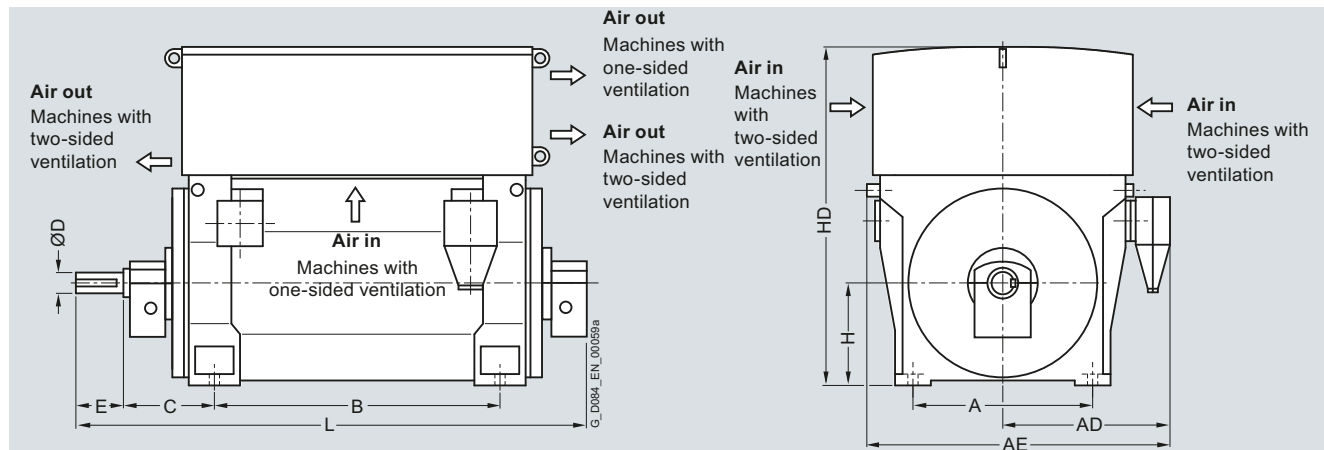
<sup>3)</sup> Dimension HD for 1RP6 on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD <sup>3)</sup>	L
Up to 6.6 kV, IM B3 type of construction, sleeve bearings – 1RA4, 1RA6 series											
12-pole											
1RA6 450-5HJ.0-Z K96	4215	850	930	1620	1180	500	140	200	450	1408	2438
1RA6 452-5HJ.0-Z K96	4514	850	930	1620	1180	500	140	200	450	1408	2438
1RA6 454-5HJ.0-Z K96	4861	850	930	1620	1400	500	140	200	450	1408	2648
1RA6 456-5HJ.0-Z K96	5208	850	930	1620	1400	500	140	200	450	1408	2648
1RA4 500-5HE.0-Z K96	5450	950	1000	1760	1320	500	160	240	500	1520	2620
1RA4 502-5HE.0-Z K96	5800	950	1000	1760	1320	500	160	240	500	1520	2620
1RA4 504-5HE.0-Z K96	6250	950	1000	1760	1500	500	170	240	500	1520	2830
1RA4 506-5HE.0-Z K96	6700	950	1000	1760	1500	500	170	240	500	1520	2830
1RA4 560-5HE.0-Z K96	7350	1060	1070	1900	1400	530	180	240	560	1750	2670
1RA4 562-5HE.0-Z K96	7950	1060	1070	1900	1400	530	180	240	560	1750	2670
1RA4 564-5HE.0-Z K96	8700	1060	1070	1900	1600	530	190	280	560	1750	2940
1RA4 566-5HE.0-Z K96	9150	1060	1070	1900	1600	530	190	280	560	1750	2940
1RA4 630-5HE.0-Z K96 <sup>2)</sup>	10250	1320	1330	2210	1600	600	220	280	630	2400	2970
1RA4 632-5HE.0-Z K96 <sup>2)</sup>	10850	1320	1330	2210	1600	600	220	280	630	2400	2970
1RA4 634-5HE.0-Z K96 <sup>2)</sup>	11850	1320	1330	2210	1800	600	220	280	630	2400	3210
1RA4 636-5HE.0-Z K96 <sup>2)</sup>	12700	1320	1330	2210	1800	600	220	280	630	2400	3210

#### Note:

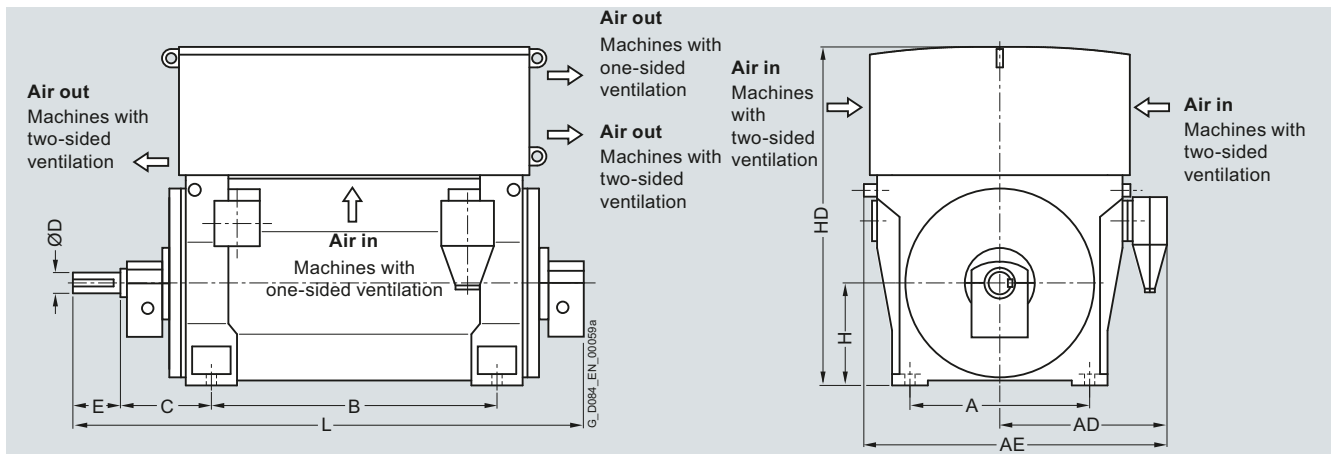
Higher pole numbers are available on request.

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

<sup>3)</sup> Dimension HD for 1RP6 on request.

## Dimension drawings



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD <sup>1)</sup> mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RA4, 1RA6 series</b>											
<b>2-pole</b>											
1RA6 450-2HJ.0	3731	850	1070	1840	1180	425	95	130	450	1628	2218
1RA6 452-2HJ.0	3937	850	1070	1840	1180	425	95	130	450	1628	2218
1RA6 454-2HJ.0	4275	850	1070	1840	1400	425	95	130	450	1628	2428
1RA6 456-2HJ.0	4540	850	1070	1840	1400	425	95	130	450	1628	2428
1RA6 457-2HJ.0	5006	850	1070	1840	1600	425	95	130	450	1628	2638
1RA6 458-2HJ.0	5259	850	1070	1840	1600	425	95	130	450	1628	2638
1RA4 504-2HE.0	5450	950	1150	1900	1500	475	120	165	500	1520	2570
1RA4 506-2HE.0	5800	950	1150	1900	1500	475	120	165	500	1520	2570
1RA4 560-2HE.0	6450	1060	1220	2040	1400	500	140	200	560	1670	2570
1RA4 562-2HE.0	6700	1060	1220	2040	1400	500	140	200	560	1670	2570
1RA4 564-2HE.0	7550	1060	1220	2040	1600	530	150	200	560	1670	2830
1RA4 566-2HE.0	8000	1060	1220	2040	1600	530	150	200	560	1670	2830
1RA4 630-2HE.0	9600	1320	1330	2200	1600	560	150	200	630	2400	2820
1RA4 632-2HE.0	10250	1320	1330	2210	1600	560	150	200	630	2400	2820
1RA4 634-2HE.0	11300	1320	1330	2210	1800	560	160	240	630	2400	3100
1RA4 636-2HE.0	12150	1320	1330	2210	1800	560	160	240	630	2400	3100
<b>4-pole</b>											
1RA6 450-4HJ.0-Z K96	4077	850	1070	1840	1180	500	130	200	450	1408	2438
1RA6 452-4HJ.0-Z K96	4331	850	1070	1840	1180	500	130	200	450	1408	2438
1RA6 454-4HJ.0-Z K96	4710	850	1070	1840	1400	500	130	200	450	1408	2645
1RA6 456-4HJ.0-Z K96	4988	850	1070	1840	1400	500	130	200	450	1408	2645
1RA4 500-4HE.0-Z K96	5350	950	1150	1980	1320	500	150	200	500	1520	2430
1RA4 502-4HE.0-Z K96	5500	950	1150	1980	1320	500	150	200	500	1520	2430
1RA4 504-4HE.0-Z K96	6150	950	1150	1980	1500	500	160	240	500	1520	2680
1RA4 506-4HE.0-Z K96	6500	950	1150	1980	1500	500	160	240	500	1520	2680
1RA4 560-4HE.0-Z K96	7100	1060	1220	2040	1400	530	180	240	560	1750	2650
1RA4 562-4HE.0-Z K96	7600	1060	1220	2040	1400	530	180	240	560	1750	2650
1RA4 564-4HE.0-Z K96	8500	1060	1220	2040	1600	530	190	280	560	1750	2960
1RA4 566-4HE.0-Z K96	8950	1060	1220	2040	1600	530	190	280	560	1750	2960

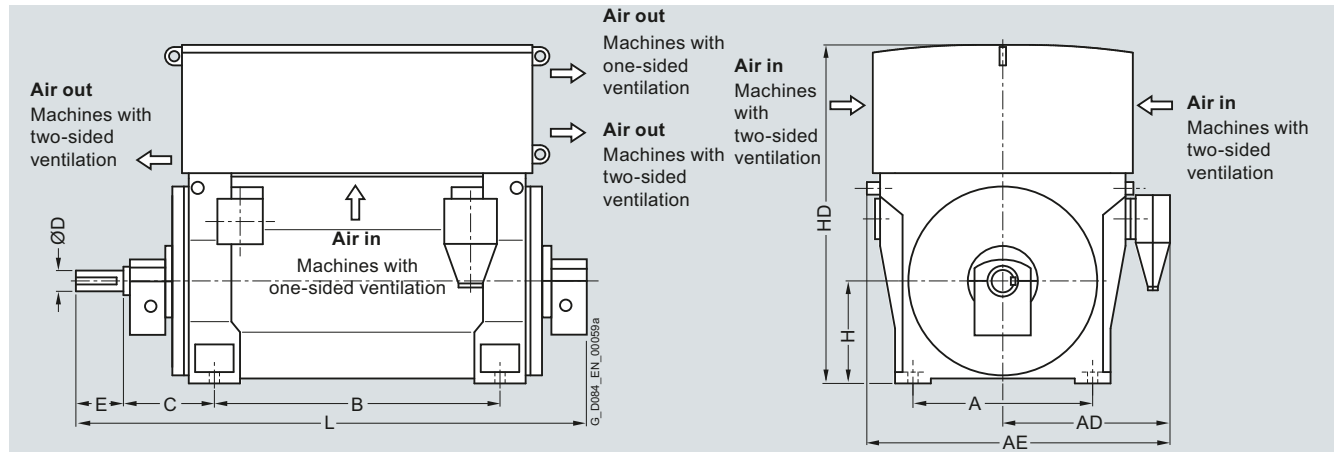
<sup>1)</sup> Dimension HD for 1RP6 on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings (continued)



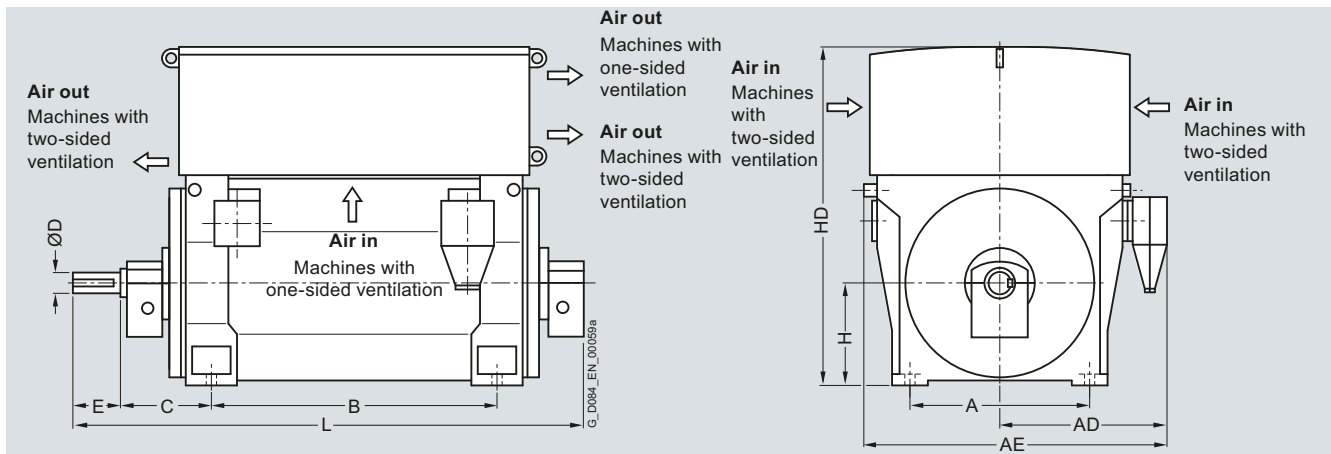
Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A	AD	AE	B	C	D	E	H	HD <sup>2)</sup>	L
9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RA4, 1RA6 series											
4-pole											
1RA4 630-4HE.0-Z K96 <sup>1)</sup>	10150	1320	1320	2200	1600	600	200	280	630	2400	2970
1RA4 632-4HE.0-Z K96 <sup>1)</sup>	10800	1320	1330	2210	1600	600	200	280	630	2400	2970
1RA4 634-4HE.0-Z K96 <sup>1)</sup>	11800	1320	1330	2210	1800	600	220	280	630	2400	3210
1RA4 636-4HE.0-Z K96 <sup>1)</sup>	12400	1320	1330	2210	1800	600	220	280	630	2400	3210
6-pole											
1RA6 450-6HJ.0-Z K96	4199	850	1070	1840	1180	500	140	200	450	1408	2438
1RA6 452-6HJ.0-Z K96	4484	850	1070	1840	1180	500	140	200	450	1408	2438
1RA6 454-6HJ.0-Z K96	4827	850	1070	1840	1400	500	140	200	450	1408	2648
1RA6 456-6HJ.0-Z K96	5169	850	1070	1840	1400	500	140	200	450	1408	2648
1RA4 500-6HE.0-Z K96	5450	950	1150	1980	1320	500	160	240	500	1520	2430
1RA4 502-6HE.0-Z K96	5800	950	1150	1980	1320	500	160	240	500	1520	2430
1RA4 504-6HE.0-Z K96	6300	950	1150	1980	1500	500	170	240	500	1520	2680
1RA4 506-6HE.0-Z K96	6700	950	1150	1980	1500	500	170	240	500	1520	2680
1RA4 560-6HE.0-Z K96	7400	1060	1220	2040	1400	530	180	240	560	1750	2670
1RA4 562-6HE.0-Z K96	7900	1060	1220	2040	1400	530	180	240	560	1750	2670
1RA4 564-6HE.0-Z K96	8700	1060	1220	2040	1600	530	190	280	560	1750	2960
1RA4 566-6HE.0-Z K96	9150	1060	1220	2040	1600	530	190	280	560	1750	2960
1RA4 630-6HE.0-Z K96	10500	1320	1320	2200	1600	600	220	280	630	2400	2970
1RA4 632-6HE.0-Z K96	11050	1320	1320	2200	1600	600	220	280	630	2400	2970
1RA4 634-6HE.0-Z K96	12100	1320	1320	2200	1800	600	220	280	630	2400	3210
1RA4 636-6HE.0-Z K96	12850	1320	1330	2210	1800	600	220	280	630	2400	3210

<sup>1)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

<sup>2)</sup> Dimension HD for 1RP6 on request.

## Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD <sup>1)</sup> mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RA4, 1RA6 series</b>											
<b>8-pole</b>											
1RA6 450-8HJ.0-Z K96	4215	850	1070	1840	1180	500	140	200	450	1408	2438
1RA6 452-8HJ.0-Z K96	4514	850	1070	1840	1180	500	140	200	450	1408	2438
1RA6 454-8HJ.0-Z K96	4861	850	1070	1840	1400	500	140	200	450	1408	2648
1RA6 456-8HJ.0-Z K96	5208	850	1070	1840	1400	500	140	200	450	1408	2648
1RA4 500-8HE.0-Z K96	5450	950	1150	1980	1320	500	160	240	500	1520	2430
1RA4 502-8HE.0-Z K96	5850	950	1150	1980	1320	500	160	240	500	1520	2430
1RA4 504-8HE.0-Z K96	6350	950	1150	1980	1500	500	170	240	500	1520	2680
1RA4 506-8HE.0-Z K96	6700	950	1150	1980	1500	500	170	240	500	1520	2680
1RA4 560-8HE.0-Z K96	7400	1060	1220	2040	1400	530	180	240	560	1750	2670
1RA4 562-8HE.0-Z K96	7950	1060	1220	2040	1400	530	180	240	560	1750	2670
1RA4 564-8HE.0-Z K96	8750	1060	1220	2040	1600	530	190	280	560	1750	2960
1RA4 566-8HE.0-Z K96	9150	1060	1220	2040	1600	530	190	280	560	1750	2960
1RA4 630-8HE.0-Z K96	10300	1320	1320	2200	1600	600	220	280	630	2400	2970
1RA4 632-8HE.0-Z K96	10900	1320	1320	2200	1600	600	220	280	630	2400	2970
1RA4 634-8HE.0-Z K96	11900	1320	1320	2200	1800	600	220	280	630	2400	3210
1RA4 636-8HE.0-Z K96	12600	1320	1320	2200	1800	600	220	280	630	2400	3210
<b>10-pole</b>											
1RA4 500-3HE.0-Z K96	5400	950	1150	1980	1320	500	160	240	500	1520	2430
1RA4 502-3HE.0-Z K96	5800	950	1150	1980	1320	500	160	240	500	1520	2430
1RA4 504-3HE.0-Z K96	6300	950	1150	1980	1500	500	170	240	500	1520	2680
1RA4 506-3HE.0-Z K96	6650	950	1150	1980	1500	500	170	240	500	1520	2680
1RA4 560-3HE.0-Z K96	7550	1060	1220	2040	1400	530	180	240	560	1750	2670
1RA4 562-3HE.0-Z K96	8150	1060	1220	2040	1400	530	180	240	560	1750	2670
1RA4 564-3HE.0-Z K96	8950	1060	1220	2040	1600	530	190	280	560	1750	2960
1RA4 566-3HE.0-Z K96	9400	1060	1220	2040	1600	530	190	280	560	1750	2960
1RA4 630-3HE.0-Z K96	10300	1320	1320	2200	1600	600	220	280	630	2400	2970
1RA4 632-3HE.0-Z K96	10900	1320	1320	2200	1600	600	220	280	630	2400	2970
1RA4 634-3HE.0-Z K96	11850	1320	1320	2200	1800	600	220	280	630	2400	3210
1RA4 636-3HE.0-Z K96	12550	1320	1320	2200	1800	600	220	280	630	2400	3210

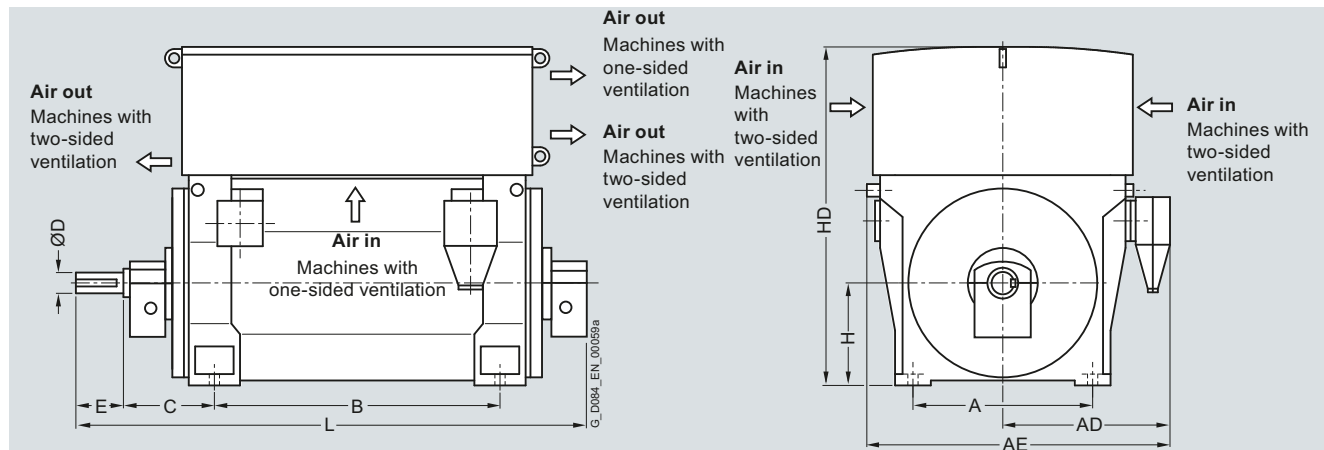
<sup>1)</sup> Dimension HD for 1RP6 on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

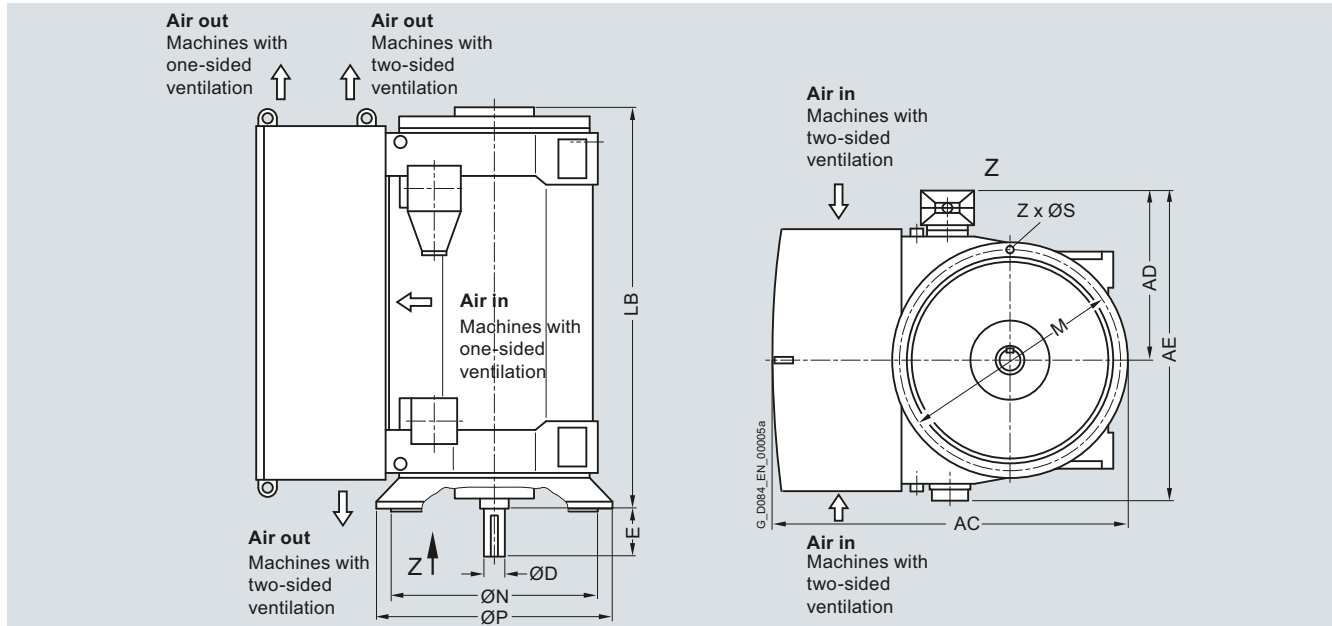
Motor type	Weight kg	Dimensions									
		A	AD	AE	B	C	D	E	H	HD <sup>1)</sup>	L
9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RA4 series											
12-pole											
1RA4 502-5HE.0-Z K96	5800	950	1150	1980	1320	500	160	240	500	1520	2430
1RA4 504-5HE.0-Z K96	6250	950	1150	1980	1500	500	170	240	500	1520	2680
1RA4 506-5HE.0-Z K96	6650	950	1150	1980	1500	500	170	240	500	1520	2680
1RA4 560-5HE.0-Z K96	7350	1060	1220	2040	1400	530	180	240	560	1750	2670
1RA4 562-5HE.0-Z K96	7850	1060	1220	2040	1400	530	180	240	560	1750	2670
1RA4 564-5HE.0-Z K96	8650	1060	1220	2040	1600	530	190	280	560	1750	2960
1RA4 566-5HE.0-Z K96	9150	1060	1220	2040	1600	530	190	280	560	1750	2960
1RA4 630-5HE.0-Z K96	10300	1320	1320	2200	1600	600	220	280	630	2400	2970
1RA4 632-5HE.0-Z K96	10950	1320	1320	2200	1600	600	220	280	630	2400	2970
1RA4 634-5HE.0-Z K96	11950	1320	1320	2200	1800	600	220	280	630	2400	3210
1RA4 636-5HE.0-Z K96	12650	1320	1320	2200	1800	600	220	280	630	2400	3210

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> Dimension HD for 1RP6 on request.

## Dimension drawings



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC <sup>3)</sup> mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – 1RA4, 1RA6 series</b>												
<b>4-pole</b>												
1RA6 450-4HJ.8	4213	1533	930	1620	130	200	1720	1150	1000	1080	26	8
1RA6 452-4HJ.8	4446	1533	930	1620	130	200	1720	1150	1000	1080	26	8
1RA6 454-4HJ.8	4824	1533	930	1620	130	200	1930	1150	1000	1080	26	8
1RA6 456-4HJ.8	5102	1533	930	1620	130	200	1930	1150	1000	1080	26	8
1RA4 500-4HE.8	5250	1640	1000	1810	150	200	1910	1250	1120	1180	26	16
1RA4 502-4HE.8	5450	1640	1000	1810	150	200	1910	1250	1120	1180	26	16
1RA4 504-4HE.8	6150	1640	1000	1810	160	240	2120	1250	1120	1180	26	16
1RA4 506-4HE.8	6550	1640	1000	1810	160	240	2120	1250	1120	1180	26	16
1RA4 560-4HE.8	7250	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 562-4HE.8 <sup>2)</sup>	7700	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 564-4HE.8 <sup>2)</sup>	8600	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 566-4HE.8 <sup>2)</sup>	9050	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 630-4HE.8 <sup>2)</sup>	11600	2430	1330	2300	200	280	2470	2000	1800	1900	33	16
1RA4 632-4HE.8 <sup>2)</sup>	12300	2430	1330	2300	200	280	2470	2000	1800	1900	33	16
1RA4 634-4HE.8 <sup>2)</sup>	13350	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
1RA4 636-4HE.8 <sup>2)</sup>	13900	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
<b>6-pole</b>												
1RA6 450-6HJ.8	4314	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6 452-6HJ.8	4598	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6 454-6HJ.8	4948	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6 456-6HJ.8	5290	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA4 500-6HE.8	5400	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA4 502-6HE.8	5750	1640	1000	1810	160	240	1910	1250	1120	1180	26	16

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> Vertical type of construction, only in the 50 Hz version.

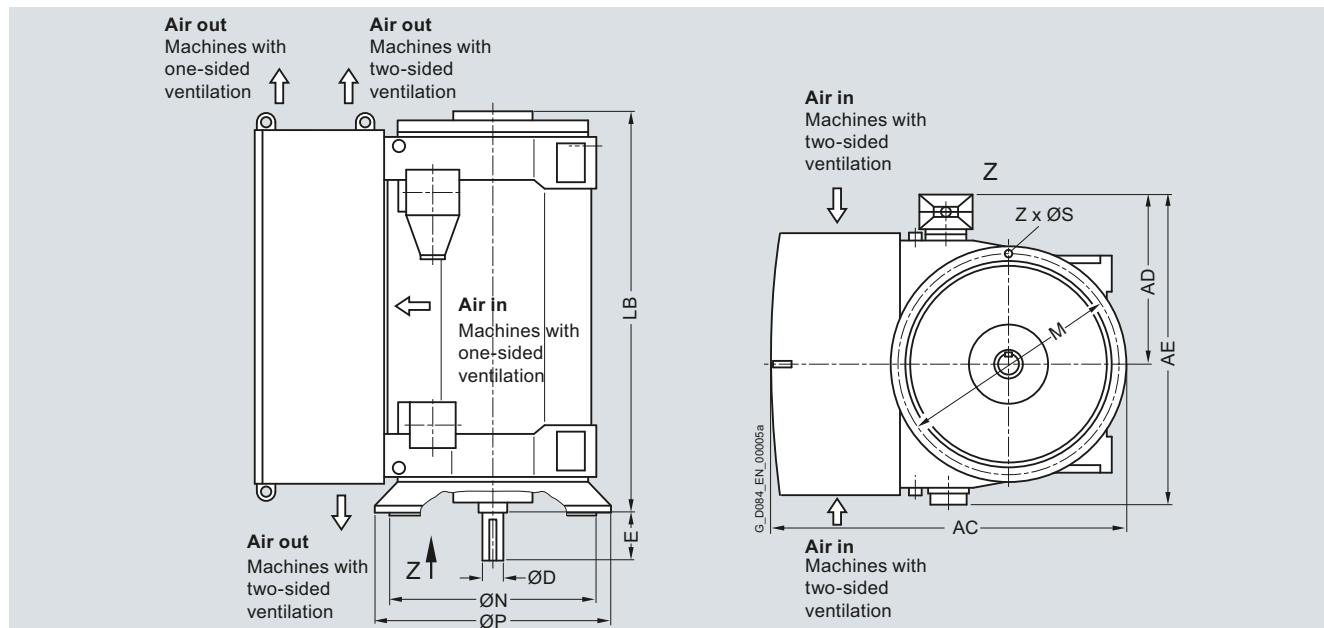
<sup>3)</sup> Dimension AC for 1RP6 on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings (continued)



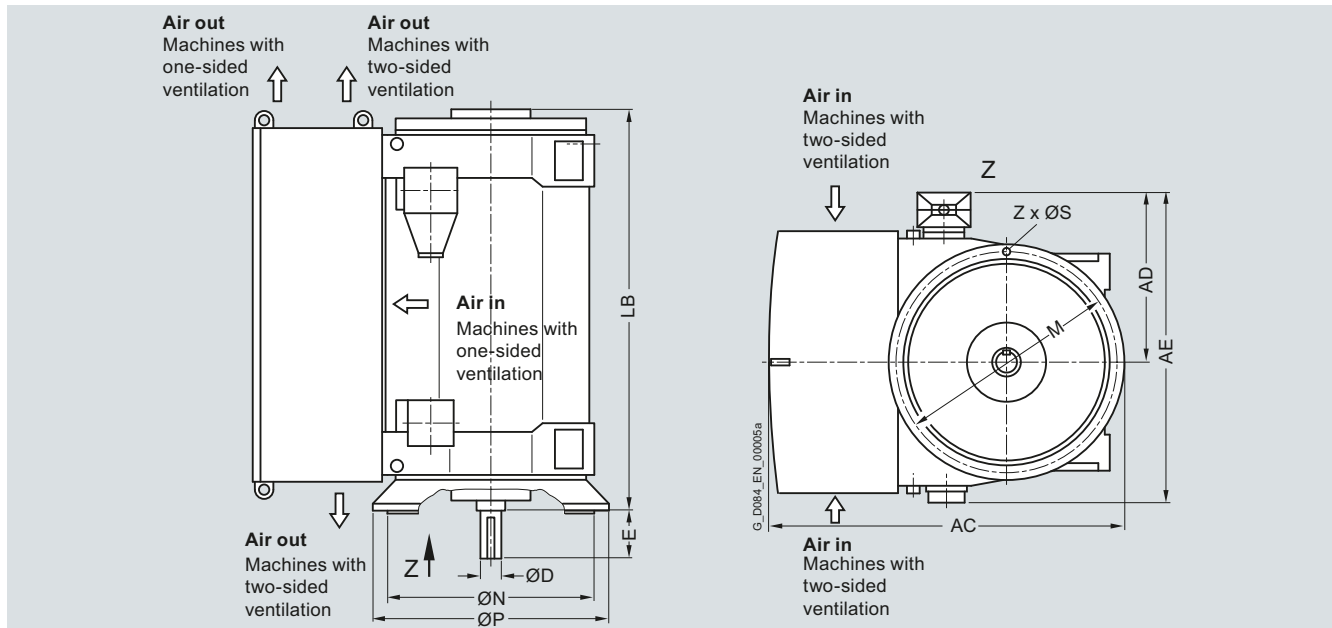
Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC <sup>2)</sup> mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – 1RA4, 1RA6 series</b>												
<b>6-pole</b>												
1RA4 504-6HE.8	6300	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA4 506-6HE.8	6700	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA4 560-6HE.8	7400	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 562-6HE.8	8000	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 564-6HE.8	8800	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 566-6HE.8	9300	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 630-6HE.8	11900	2430	1330	2300	220	280	2470	2000	1800	1900	33	16
1RA4 632-6HE.8	12450	2430	1330	2300	220	280	2470	2000	1800	1900	33	16
1RA4 634-6HE.8	13450	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
1RA4 636-6HE.8	14200	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
<b>8-pole</b>												
1RA6 450-8HJ.8	4329	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6 452-8HJ.8	4628	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6 454-8HJ.8	4982	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6 456-8HJ.8	5330	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA4 500-8HE.8	5450	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA4 502-8HE.8	5800	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA4 504-8HE.8	6300	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA4 506-8HE.8	6700	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA4 560-8HE.8	7350	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA4 562-8HE.8	7900	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA4 564-8HE.8	8700	1890	1070	1960	190	280	2320	1400	1250	1320	26	16
1RA4 566-8HE.8	9200	1890	1070	1960	190	280	2320	1400	1250	1320	26	16

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> Dimension AC for 1RP6 on request.

## Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC <sup>3)</sup> mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – 1RA4, 1RA6 series</b>												
<b>8-pole</b>												
1RA4 630-8HE.8 <sup>2)</sup>	11800	2430	1330	2300	220	280	2470	2000	1800	1900	33	16
1RA4 632-8HE.8 <sup>2)</sup>	12450	2430	1330	2300	220	280	2470	2000	1800	1900	33	16
1RA4 634-8HE.8 <sup>2)</sup>	13350	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
1RA4 636-8HE.8 <sup>2)</sup>	14100	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
<b>10-pole</b>												
1RA6 450-3HJ.8	4329	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6 452-3HJ.8	4628	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6 454-3HJ.8	4982	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6 456-3HJ.8	5330	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA4 500-3HE.8	5350	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA4 502-3HE.8	5750	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA4 504-3HE.8	6300	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA4 506-3HE.8	6650	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA4 560-3HE.8	7300	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA4 562-3HE.8	7900	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA4 564-3HE.8	8700	1890	1070	1960	190	280	2320	1400	1250	1320	26	16
1RA4 566-3HE.8	9150	1890	1070	1960	190	280	2320	1400	1250	1320	26	16
1RA4 630-3HE.8 <sup>2)</sup>	11700	2430	1330	2300	220	280	2470	2000	1800	1900	33	16
1RA4 632-3HE.8 <sup>2)</sup>	12400	2430	1330	2300	220	280	2470	2000	1800	1900	33	16
1RA4 634-3HE.8 <sup>2)</sup>	13400	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
1RA4 636-3HE.8 <sup>2)</sup>	14100	2430	1330	2300	220	280	2710	2000	1800	1900	33	16

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> Vertical type of construction, only in the 50 Hz version.

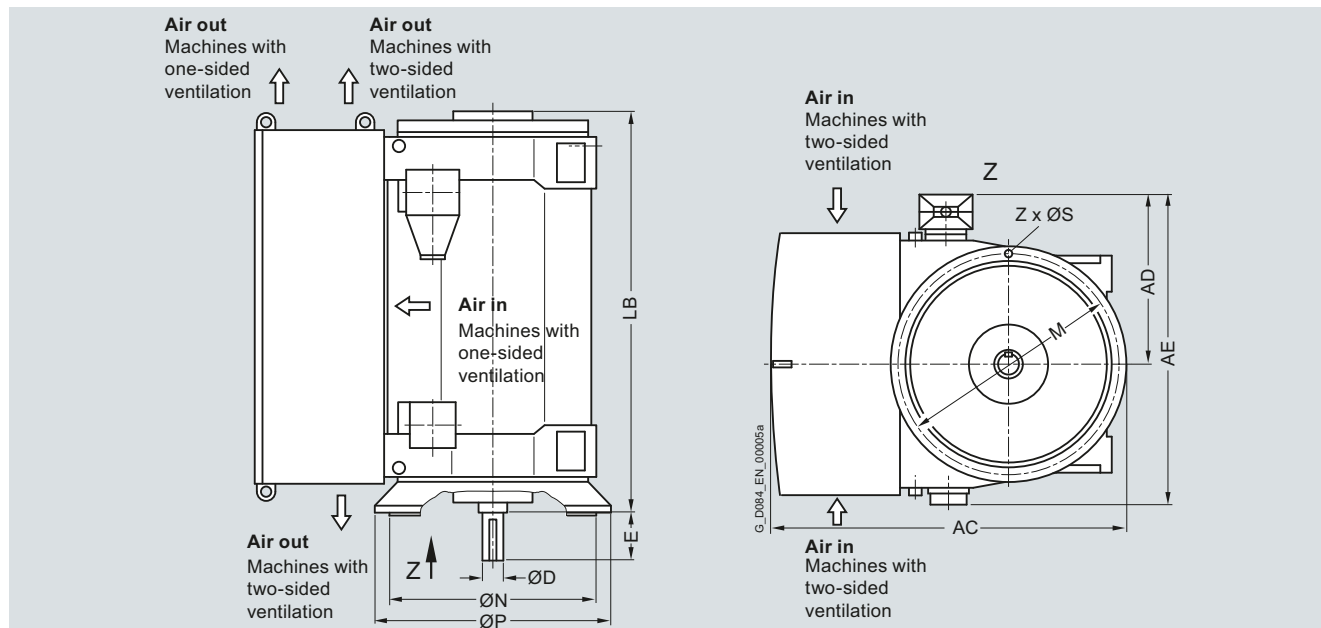
<sup>3)</sup> Dimension AC for 1RP6 on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC <sup>3)</sup> mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – 1RA4, 1RA6 series</b>												
<b>12-pole</b>												
1RA6 450-5HJ.8	4329	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6 452-5HJ.8	4628	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6 454-5HJ.8	4982	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6 456-5HJ.8	5330	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA4 500-5HE.8	5400	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA4 502-5HE.8	5750	1640	1000	1810	160	240	1910	1250	1120	1180	26	16
1RA4 504-5HE.8	6250	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA4 506-5HE.8	6650	1640	1000	1810	170	240	2120	1250	1120	1180	26	16
1RA4 560-5HE.8	7350	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA4 562-5HE.8	7900	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA4 564-5HE.8	8650	1890	1070	1960	190	280	2320	1400	1250	1320	26	16
1RA4 566-5HE.8	9150	1890	1070	1960	190	280	2320	1400	1250	1320	26	16
1RA4 630-5HE.8 <sup>2)</sup>	11600	2430	1180	2150	220	280	2470	2000	1800	1900	33	16
1RA4 632-5HE.8 <sup>2)</sup>	12250	2430	1180	2150	220	280	2470	2000	1800	1900	33	16
1RA4 634-5HE.8 <sup>2)</sup>	13250	2430	1180	2150	220	280	2710	2000	1800	1900	33	16
1RA4 636-5HE.8 <sup>2)</sup>	14050	2430	1180	2150	220	280	2710	2000	1800	1900	33	16

#### Note:

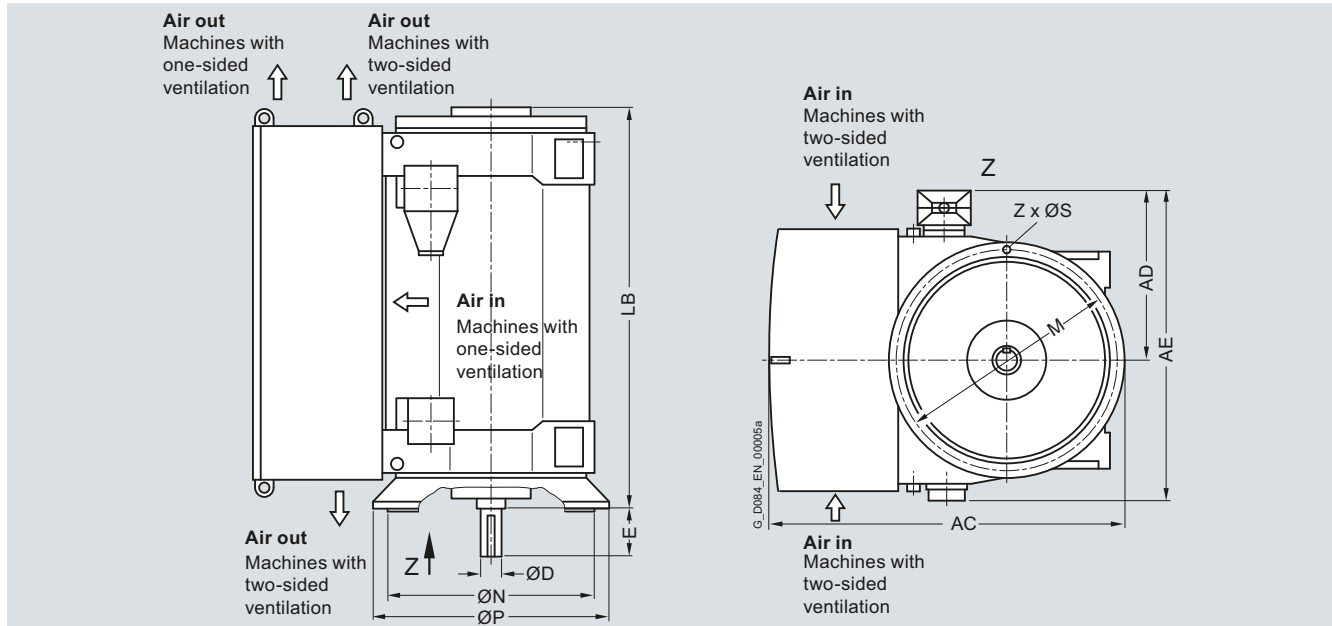
Higher pole numbers are available on request.

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> Vertical type of construction, only in the 50 Hz version.

<sup>3)</sup> Dimension AC for 1RP6 on request.

## Dimension drawings



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC <sup>1)</sup> mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings – 1RA4, 1RA6 series</b>												
<b>4-pole</b>												
1RA6 450-4HJ.8	4213	1533	1070	1840	130	200	1720	1150	1000	1080	26	8
1RA6 452-4HJ.8	4446	1533	1070	1840	130	200	1720	1150	1000	1080	26	8
1RA6 454-4HJ.8	4824	1533	1070	1840	130	200	1930	1150	1000	1080	26	8
1RA6 456-4HJ.8	5102	1533	1070	1840	130	200	1930	1150	1000	1080	26	8
1RA4 500-4HE.8	5250	1640	1140	1950	150	200	1910	1250	1120	1180	26	16
1RA4 502-4HE.8	5450	1640	1140	1950	150	200	1910	1250	1120	1180	26	16
1RA4 504-4HE.8	6100	1640	1140	1950	160	240	2120	1250	1120	1180	26	16
1RA4 506-4HE.8	6450	1640	1140	1950	160	240	2120	1250	1120	1180	26	16
1RA4 560-4HE.8	7150	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 562-4HE.8	7600	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 564-4HE.8	8450	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 566-4HE.8	8900	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 630-4HE.8	11500	2430	1320	2290	200	280	2470	2000	1800	1900	33	16
1RA4 632-4HE.8	12150	2430	1330	2300	200	280	2470	2000	1800	1900	33	16
1RA4 634-4HE.8	13200	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
1RA4 636-4HE.8	13800	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
<b>6-pole</b>												
1RA6 450-6HJ.8	4314	1533	1070	1840	140	200	1720	1150	1000	1080	26	8
1RA6 452-6HJ.8	4598	1533	1070	1840	140	200	1720	1150	1000	1080	26	8
1RA6 454-6HJ.8	4948	1533	1070	1840	140	200	1930	1150	1000	1080	26	8
1RA6 456-6HJ.8	5290	1533	1070	1840	140	200	1930	1150	1000	1080	26	8
1RA4 500-6HE.8	5400	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA4 502-6HE.8	5800	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA4 504-6HE.8	6250	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA4 506-6HE.8	6650	1640	1140	1950	170	240	2120	1250	1120	1180	26	16

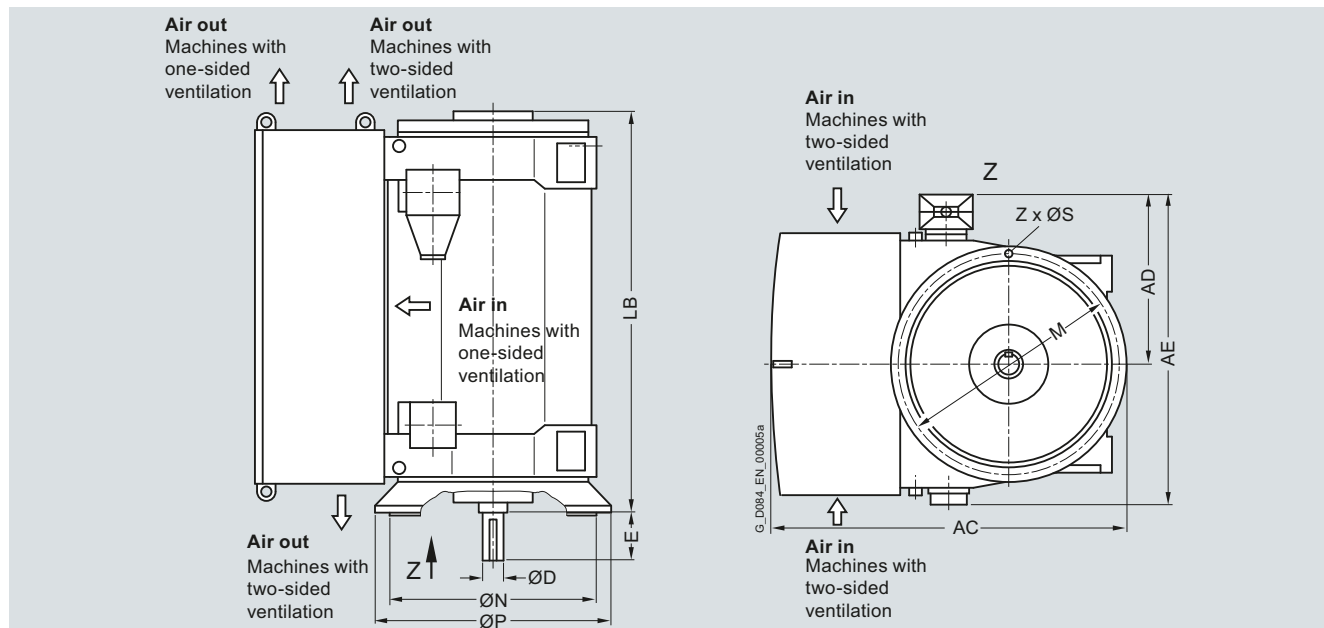
<sup>1)</sup> Dimension AC for 1RP6 on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings (continued)

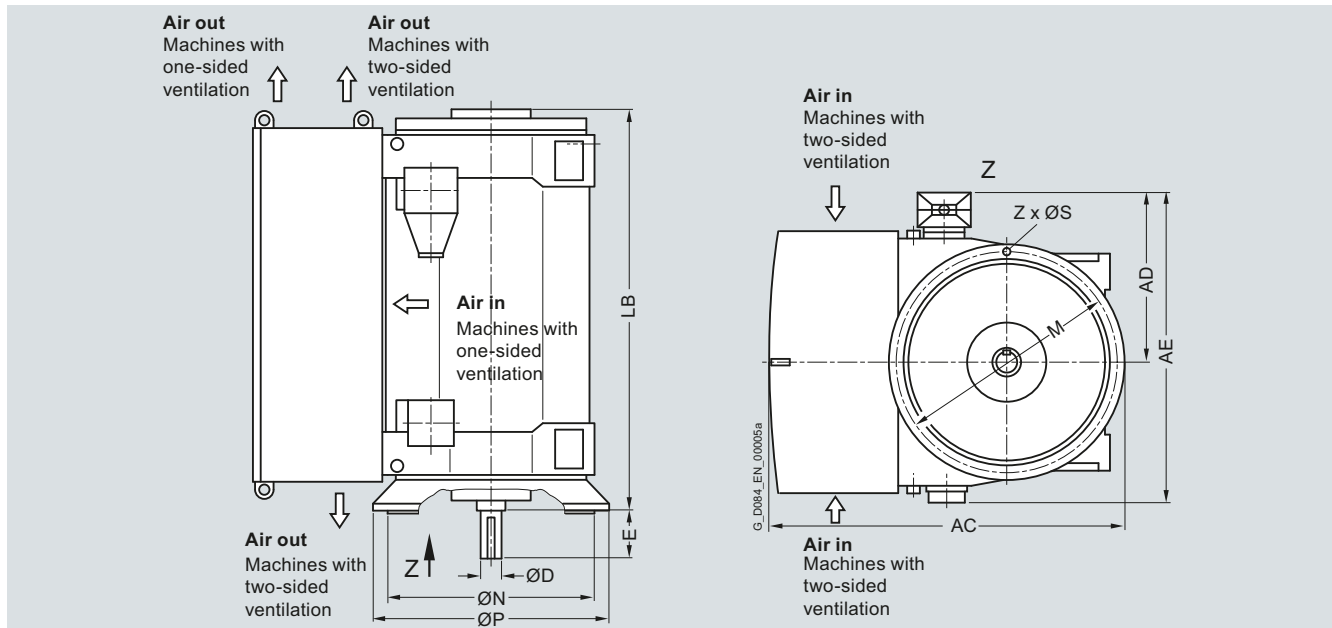


Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC <sup>1)</sup> mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings – 1RA4, 1RA6 series</b>												
<b>6-pole</b>												
1RA4 560-6HE.8	7400	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 562-6HE.8	7850	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 564-6HE.8	8700	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 566-6HE.8	9150	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 630-6HE.8	11850	2430	1320	2290	220	280	2470	2000	1800	1900	33	16
1RA4 632-6HE.8	12400	2430	1320	2290	220	280	2470	2000	1800	1900	33	16
1RA4 634-6HE.8	13450	2430	1320	2290	220	280	2710	2000	1800	1900	33	16
1RA4 636-6HE.8	14200	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
<b>8-pole</b>												
1RA6 450-8HJ.8	4329	1533	1070	1840	140	200	1720	1150	1000	1080	26	8
1RA6 452-8HJ.8	4628	1533	1070	1840	140	200	1720	1150	1000	1080	26	8
1RA6 454-8HJ.8	4982	1533	1070	1840	140	200	1930	1150	1000	1080	26	8
1RA6 -456-8HJ.8	5330	1533	1070	1840	140	200	1930	1150	1000	1080	26	8
1RA4 500-8HE.8	5400	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA4 502-8HE.8	5800	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA4 504-8HE.8	6300	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA4 506-8HE.8	6650	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA4 560-8HE.8	7350	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 562-8HE.8	7900	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 564-8HE.8	8700	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 566-8HE.8	9100	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 630-8HE.8	11700	2430	1320	2290	220	280	2470	2000	1800	1900	33	16
1RA4 632-8HE.8	12250	2430	1320	2290	220	280	2470	2000	1800	1900	33	16
1RA4 634-8HE.8	13250	2430	1320	2290	220	280	2710	2000	1800	1900	33	16
1RA4 636-8HE.8	14000	2430	1320	2290	220	280	2710	2000	1800	1900	33	16

<sup>1)</sup> Dimension AC for 1RP6 on request.

## Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC <sup>1)</sup> mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings – 1RA4 series</b>												
<b>10-pole</b>												
1RA4 500-3HE.8	5350	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA4 502-3HE.8	5750	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA4 504-3HE.8	6250	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA4 506-3HE.8	6600	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA4 560-3HE.8	7450	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 562-3HE.8	8000	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 564-3HE.8	8750	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 566-3HE.8	9250	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 630-3HE.8	11650	2430	1320	2290	220	280	2470	2000	1800	1900	33	16
1RA4 632-3HE.8	12250	2430	1320	2290	220	280	2470	2000	1800	1900	33	16
1RA4 634-3HE.8	13200	2430	1320	2290	220	280	2710	2000	1800	1900	33	16
1RA4 636-3HE.8	13950	2430	1320	2290	220	280	2710	2000	1800	1900	33	16
<b>12-pole</b>												
1RA4 502-5HE.8	5750	1640	1140	1950	160	240	1910	1250	1120	1180	26	16
1RA4 504-5HE.8	6200	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA4 506-5HE.8	6600	1640	1140	1950	170	240	2120	1250	1120	1180	26	16
1RA4 560-5HE.8	7300	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 562-5HE.8	7850	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4 564-5HE.8	8650	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 566-5HE.8	9100	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4 630-5HE.8	11700	2430	1320	2290	220	280	2470	2000	1800	1900	33	16
1RA4 632-5HE.8	12300	2430	1320	2290	220	280	2470	2000	1800	1900	33	16
1RA4 634-5HE.8	13300	2430	1320	2290	220	280	2710	2000	1800	1900	33	16
1RA4 636-5HE.8	14050	2430	1320	2290	220	280	2710	2000	1800	1900	33	16

## Note:

Higher pole numbers are available on request.

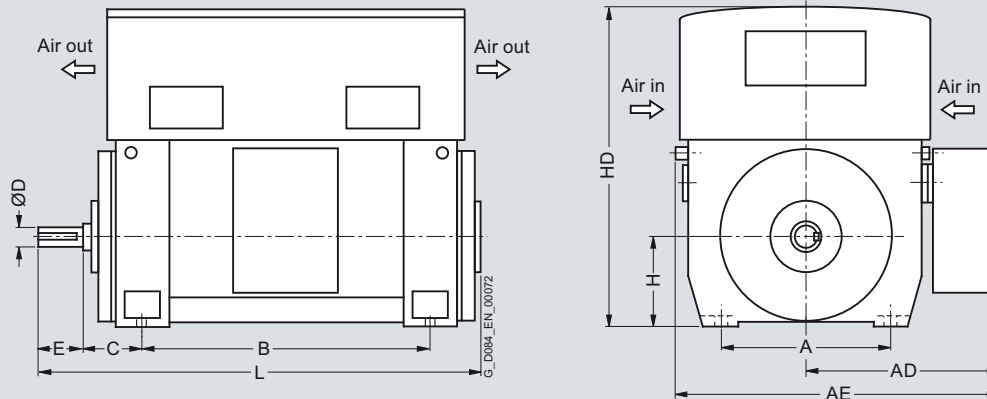
<sup>1)</sup> Dimension AC for 1RP6 on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings

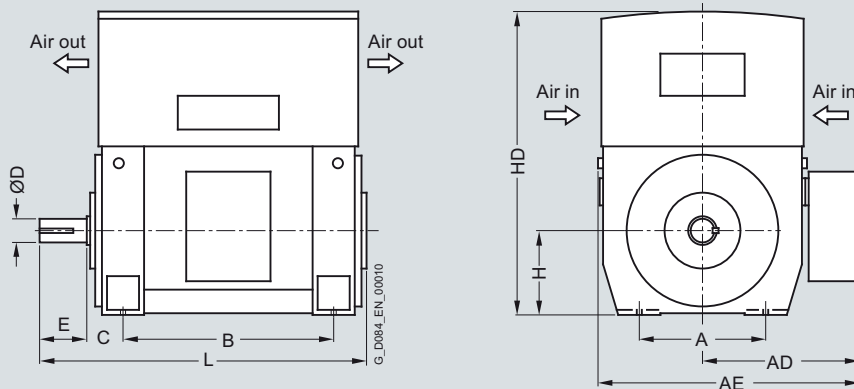


Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings, X ventilation – 1RP6 series</b>											
4-pole											
1RP6 710-4HJ.0 <sup>1)</sup>	18100	1500	1500	2530	2000	355	220	280	710	3030	2980
1RP6 712-4HJ.0 <sup>1)</sup>	18900	1500	1500	2530	2000	355	220	280	710	3030	2980
1RP6 714-4HJ.0 <sup>1)</sup>	20300	1500	1500	2530	2240	355	220	280	710	3030	3220
1RP6 716-4HJ.0 <sup>1)</sup>	21300	1500	1500	2530	2240	355	220	280	710	3030	3220

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings, X ventilation – 1RP6 series</b>											
4-pole											
1RP6 710-4HJ.0 <sup>1)</sup>	17800	1500	1500	2530	2000	355	220	280	710	3030	2980
1RP6 712-4HJ.0 <sup>1)</sup>	18600	1500	1500	2530	2000	355	220	280	710	3030	2980
1RP6 714-4HJ.0 <sup>1)</sup>	20100	1500	1500	2530	2240	355	220	280	710	3030	3220
1RP6 716-4HJ.0 <sup>1)</sup>	21000	1500	1500	2530	2240	355	220	280	710	3030	3220

<sup>1)</sup> Roller bearings only for 50 Hz operation.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings, Z ventilation – 1RP6 series</b>											
<b>6-pole</b>											
1RP6 710-6HJ.0	17200	1500	1500	2530	2000	355	240	330	710	3040	3030
1RP6 712-6HJ.0	17900	1500	1500	2530	2000	355	240	330	710	3040	3030
1RP6 714-6HJ.0	19600	1500	1500	2530	2240	355	240	330	710	3040	3270
1RP6 716-6HJ.0	20800	1500	1500	2530	2240	355	240	330	710	3040	3270
<b>8-pole</b>											
1RP6 710-8HJ.0	17000	1500	1500	2530	2000	355	240	330	710	3040	3030
1RP6 712-8HJ.0	17800	1500	1500	2530	2000	355	240	330	710	3040	3030
1RP6 714-8HJ.0	19400	1500	1500	2530	2240	355	240	330	710	3040	3270
1RP6 716-8HJ.0	20500	1500	1500	2530	2240	355	240	330	710	3040	3270
<b>10-pole</b>											
1RP6 710-3HJ.0	16800	1500	1500	2530	2000	355	240	330	710	3040	3030
1RP6 712-3HJ.0	17600	1500	1500	2530	2000	355	240	330	710	3040	3030
1RP6 714-3HJ.0	19300	1500	1500	2530	2240	355	240	330	710	3040	3270
1RP6 716-3HJ.0	20400	1500	1500	2530	2240	355	240	330	710	3040	3270

Note:

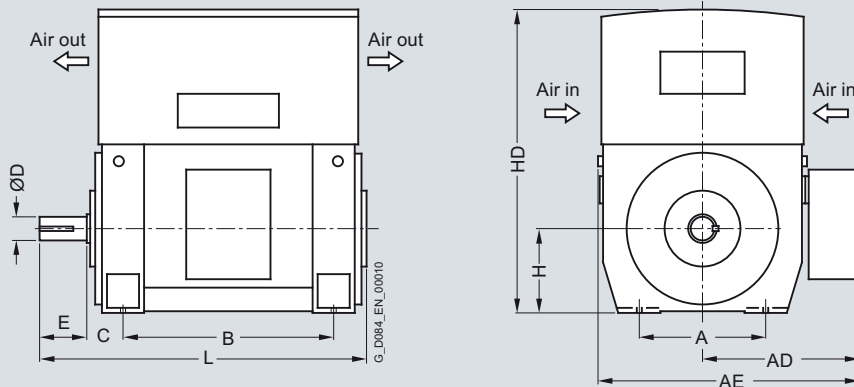
Higher pole numbers are available on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings

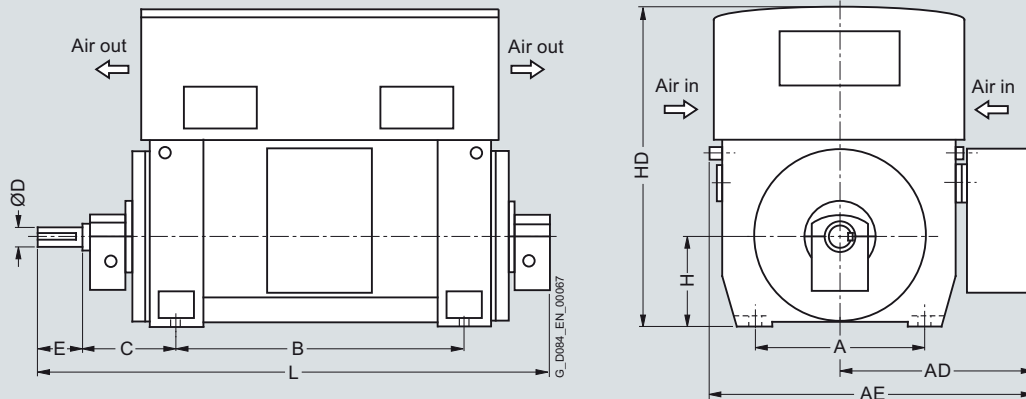


Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings, Z ventilation – 1RP6 series</b>											
<b>6-pole</b>											
1RP6 710-6HJ.0	17000	1500	1500	2530	2000	355	240	330	710	3040	3030
1RP6 712-6HJ.0	17700	1500	1500	2530	2000	355	240	330	710	3040	3030
1RP6 714-6HJ.0	19500	1500	1500	2530	2240	355	240	330	710	3040	3270
1RP6 716-6HJ.0	20500	1500	1500	2530	2240	355	240	330	710	3040	3270
<b>8-pole</b>											
1RP6 710-8HJ.0	16900	1500	1500	2530	2000	355	240	330	710	3040	3030
1RP6 712-8HJ.0	17600	1500	1500	2530	2000	355	240	330	710	3040	3030
1RP6 714-8HJ.0	19300	1500	1500	2530	2240	355	240	330	710	3040	3270
1RP6 716-8HJ.0	20300	1500	1500	2530	2240	355	240	330	710	3040	3270
<b>10-pole</b>											
1RP6 710-3HJ.0	16800	1500	1500	2530	2000	355	240	330	710	3040	3030
1RP6 712-3HJ.0	17500	1500	1500	2530	2000	355	240	330	710	3040	3030
1RP6 714-3HJ.0	19200	1500	1500	2530	2240	355	240	330	710	3040	3270
1RP6 716-3HJ.0	20300	1500	1500	2530	2240	355	240	330	710	3040	3270

**Note:**

Higher pole numbers are available on request.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings, X ventilation – 1RP6 series</b>											
2-pole											
1RP6 710-2HJ.0	16300	1500	1500	2530	2000	600	180	240	710	3030	3370
1RP6 712-2HJ.0	17100	1500	1500	2530	2000	600	180	240	710	3030	3370
1RP6 714-2HJ.0	18400	1500	1500	2530	2240	600	180	240	710	3030	3610
1RP6 716-2HJ.0	19400	1500	1500	2530	2240	600	180	240	710	3030	3610
4-pole											
1RP6 710-4HJ.0-Z K96 <sup>1)</sup>	18100	1500	1500	2530	2000	530	220	280	710	3030	3260
1RP6 712-4HJ.0-Z K96 <sup>1)</sup>	18900	1500	1500	2530	2000	530	220	280	710	3030	3260
1RP6 714-4HJ.0-Z K96 <sup>1)</sup>	20300	1500	1500	2530	2240	530	220	280	710	3030	3500
1RP6 716-4HJ.0-Z K96 <sup>1)</sup>	21300	1500	1500	2530	2240	530	220	280	710	3030	3500

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings, X ventilation – 1RP6 series</b>											
2-pole											
1RP6 710-2HJ.0	16200	1500	1500	2530	2000	600	180	240	710	3030	3370
1RP6 712-2HJ.0	17000	1500	1500	2530	2000	600	180	240	710	3030	3370
1RP6 714-2HJ.0	18200	1500	1500	2530	2240	600	180	240	710	3030	3610
1RP6 716-2HJ.0	19200	1500	1500	2530	2240	600	180	240	710	3030	3610
4-pole											
1RP6 710-4HJ.0-Z K96 <sup>1)</sup>	17800	1500	1500	2530	2000	530	220	280	710	3030	3260
1RP6 712-4HJ.0-Z K96 <sup>1)</sup>	18600	1500	1500	2530	2000	530	220	280	710	3030	3260
1RP6 714-4HJ.0-Z K96 <sup>1)</sup>	20100	1500	1500	2530	2240	530	220	280	710	3030	3500
1RP6 716-4HJ.0-Z K96 <sup>1)</sup>	21000	1500	1500	2530	2240	530	220	280	710	3030	3500

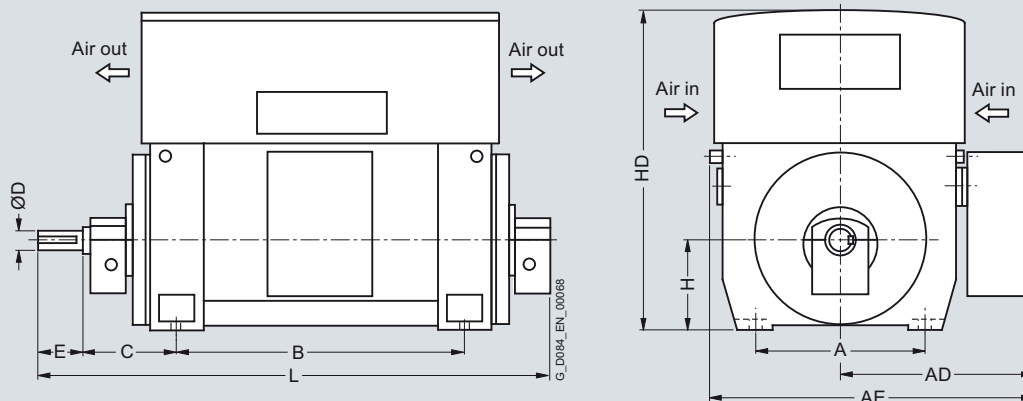
<sup>1)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings

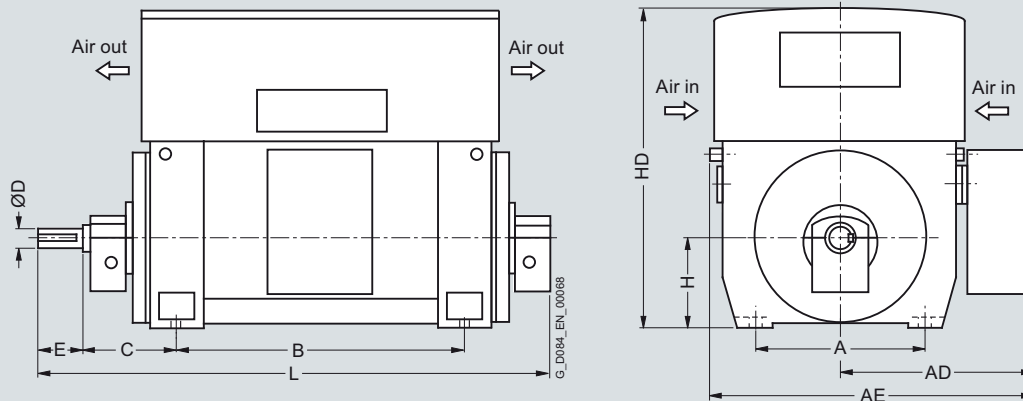


Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings, Z ventilation – 1RP6 series</b>											
<b>6-pole</b>											
1RP6 710-6HJ.0-Z K96	18200	1500	1500	2530	2000	670	240	330	710	3040	3600
1RP6 712-6HJ.0-Z K96	18900	1500	1500	2530	2000	670	240	330	710	3040	3600
1RP6 714-6HJ.0-Z K96	20700	1500	1500	2530	2240	670	240	330	710	3040	3840
1RP6 716-6HJ.0-Z K96	21800	1500	1500	2530	2240	670	240	330	710	3040	3840
<b>8-pole</b>											
1RP6 710-8HJ.0-Z K96	18000	1500	1500	2530	2000	670	240	330	710	3040	3600
1RP6 712-8HJ.0-Z K96	18800	1500	1500	2530	2000	670	240	330	710	3040	3600
1RP6 714-8HJ.0-Z K96	20500	1500	1500	2530	2240	670	240	330	710	3040	3840
1RP6 716-8HJ.0-Z K96	21600	1500	1500	2530	2240	670	240	330	710	3040	3840
<b>10-pole</b>											
1RP6 710-3HJ.0-Z K96	17800	1500	1500	2530	2000	670	240	330	710	3040	3600
1RP6 712-3HJ.0-Z K96	18700	1500	1500	2530	2000	670	240	330	710	3040	3600
1RP6 714-3HJ.0-Z K96	20300	1500	1500	2530	2240	670	240	330	710	3040	3840
1RP6 716-3HJ.0-Z K96	21500	1500	1500	2530	2240	670	240	330	710	3040	3840

#### Note:

Higher pole numbers are available on request.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings, Z ventilation – 1RP6 series</b>											
<b>6-pole</b>											
1RP6 710-6HJ.0-Z K96	18000	1500	1500	2530	2000	670	240	330	710	3040	3600
1RP6 712-6HJ.0-Z K96	18800	1500	1500	2530	2000	670	240	330	710	3040	3600
1RP6 714-6HJ.0-Z K96	20500	1500	1500	2530	2240	670	240	330	710	3040	3840
1RP6 716-6HJ.0-Z K96	21600	1500	1500	2530	2240	670	240	330	710	3040	3840
<b>8-pole</b>											
1RP6 710-8HJ.0-Z K96	17900	1500	1500	2530	2000	670	240	330	710	3040	3600
1RP6 712-8HJ.0-Z K96	18700	1500	1500	2530	2000	670	240	330	710	3040	3600
1RP6 714-8HJ.0-Z K96	20300	1500	1500	2530	2240	670	240	330	710	3040	3840
1RP6 716-8HJ.0-Z K96	21400	1500	1500	2530	2240	670	240	330	710	3040	3840
<b>10-pole</b>											
1RP6 710-3HJ.0-Z K96	17800	1500	1500	2530	2000	670	240	330	710	3040	3600
1RP6 712-3HJ.0-Z K96	18600	1500	1500	2530	2000	670	240	330	710	3040	3600
1RP6 714-3HJ.0-Z K96	20200	1500	1500	2530	2240	670	240	330	710	3040	3840
1RP6 716-3HJ.0-Z K96	21300	1500	1500	2530	2240	670	240	330	710	3040	3840

Note:

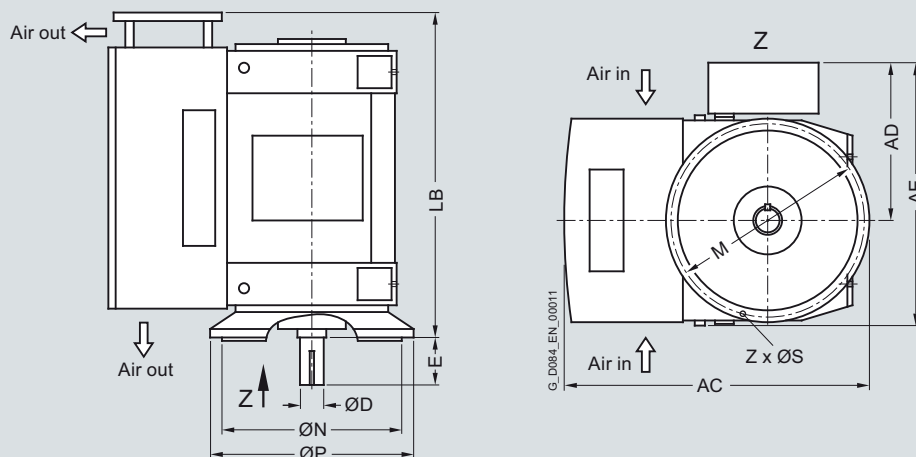
Higher pole numbers are available on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings



Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings, Z ventilation – 1RP6 series</b>												
<b>6-pole</b>												
1RP6 710-6HE.4	18400	3330	1500	2530	240	330	3065	2000	1800	1900	33	24
1RP6 712-6HE.4	19100	3330	1500	2530	240	330	3065	2000	1800	1900	33	24
1RP6 714-6HE.4	20800	3330	1500	2530	240	330	3305	2000	1800	1900	33	24
1RP6 716-6HE.4	22000	3330	1500	2530	240	330	3305	2000	1800	1900	33	24
<b>8-pole</b>												
1RP6 710-8HE.4	18200	3330	1500	2530	240	330	3065	2000	1800	1900	33	24
1RP6 712-8HE.4	19000	3330	1500	2530	240	330	3065	2000	1800	1900	33	24
1RP6 714-8HE.4	20600	3330	1500	2530	240	330	3305	2000	1800	1900	33	24
1RP6 716-8HE.4	21800	3330	1500	2530	240	330	3305	2000	1800	1900	33	24
<b>10-pole</b>												
1RP6 710-3HE.4	18000	3330	1500	2530	240	330	3065	2000	1800	1900	33	24
1RP6 712-3HE.4	18900	3330	1500	2530	240	330	3065	2000	1800	1900	33	24
1RP6 714-3HE.4	20500	3330	1500	2530	240	330	3305	2000	1800	1900	33	24
1RP6 716-3HE.4	21600	3330	1500	2530	240	330	3305	2000	1800	1900	33	24

#### Note:

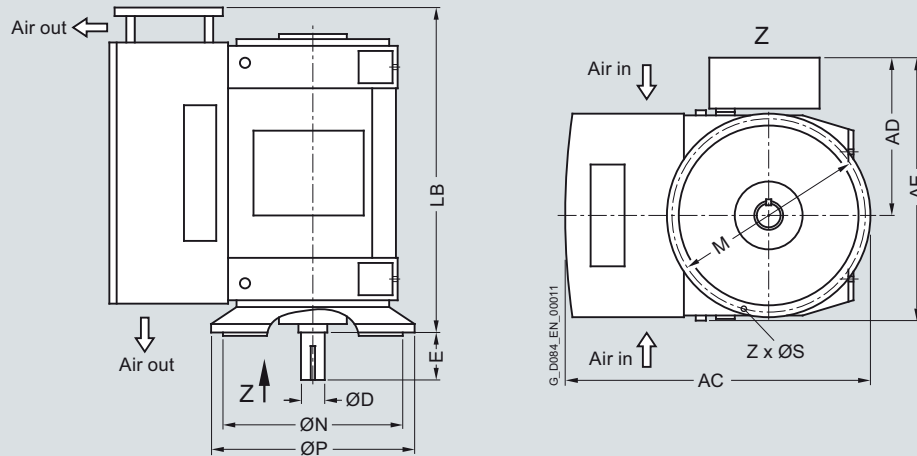
Higher pole numbers are available on request.

# Motors for line operation

## Air-cooled motors

### H-compact PLUS 1RA4, 1RA6 and 1RP6

#### Dimension drawings



Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings, Z ventilation – 1RP6 series</b>												
<b>6-pole</b>												
1RP6 710-6HE.4	18200	3330	1500	2530	240	330	3065	2000	1800	1900	33	24
1RP6 712-6HE.4	19000	3330	1500	2530	240	330	3065	2000	1800	1900	33	24
1RP6 714-6HE.4	20700	3330	1500	2530	240	330	3305	2000	1800	1900	33	24
1RP6 716-6HE.4	21800	3330	1500	2530	240	330	3305	2000	1800	1900	33	24
<b>8-pole</b>												
1RP6 710-8HE.4	18100	3330	1500	2530	240	330	3065	2000	1800	1900	33	24
1RP6 712-8HE.4	18900	3330	1500	2530	240	330	3065	2000	1800	1900	33	24
1RP6 714-8HE.4	20500	3330	1500	2530	240	330	3305	2000	1800	1900	33	24
1RP6 716-8HE.4	21600	3330	1500	2530	240	330	3305	2000	1800	1900	33	24
<b>10-pole</b>												
1RP6 710-3HE.4	18000	3330	1500	2530	240	330	3065	2000	1800	1900	33	24
1RP6 712-3HE.4	18800	3330	1500	2530	240	330	3065	2000	1800	1900	33	24
1RP6 714-3HE.4	20400	3330	1500	2530	240	330	3305	2000	1800	1900	33	24
1RP6 716-3HE.4	21500	3330	1500	2530	240	330	3305	2000	1800	1900	33	24

#### Note:

Higher pole numbers are available on request.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Overview



#### Technical data

##### Overview of technical data

H-compact PLUS 1RN4/1RN6	
Rated voltage	3.3 ... 13.8 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Cooling method	IC81W
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	450 ... 710 mm
Bearings	Roller bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN, NEMA
Frame design for shaft heights 450 ... 560 mm	Frame: Cast iron Design: Steel
Frame design for shaft heights 630 ... 710 mm	Frame: Steel Design: Steel

#### Technical data (continued)

##### Power ranges for IEC motors for line operation

1RN4, 1SL4 (Ex nA), 1SQ4 (Ex px) series

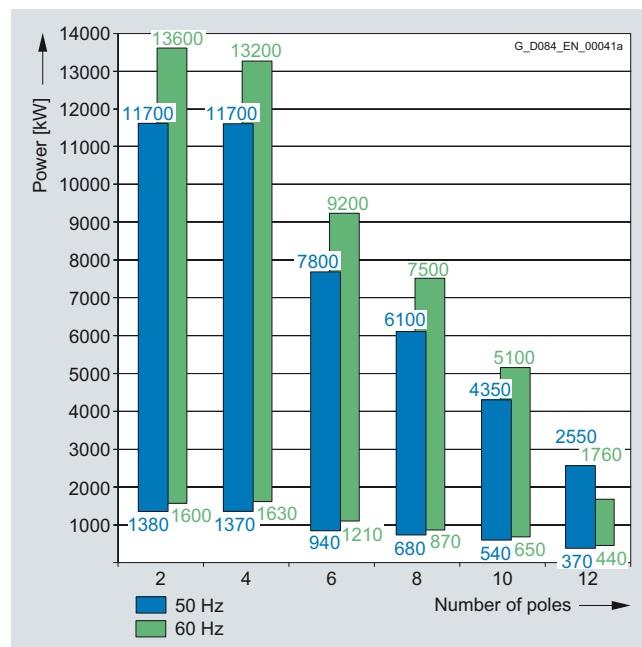
1RN6, 1SL6 (Ex nA), 1SQ6 (Ex px) series

Insulation system, thermal class 155 (F), utilized to 130 (B).

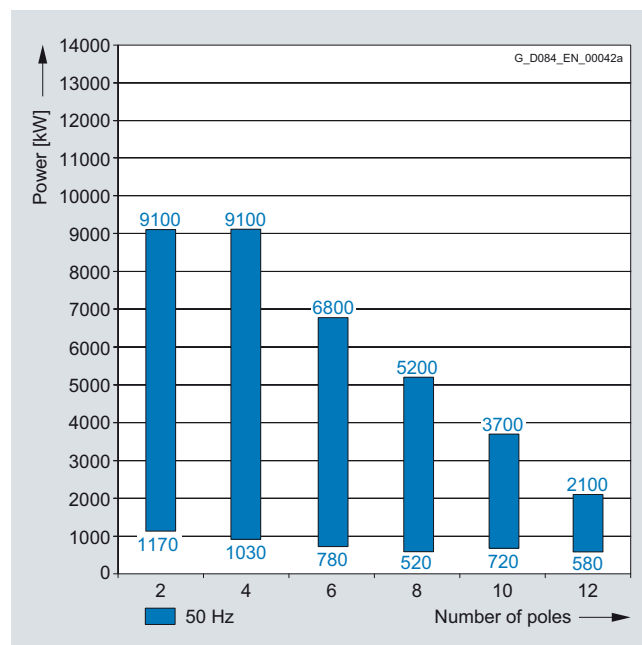
Coolant temperature up to 25 °C, installation altitude up to 1000 m.

3.3 to 6.6 kV; 50 Hz

4.0 to 6.6 kV; 60 Hz



9 to 11 kV; 50 Hz



# Motors for line operation

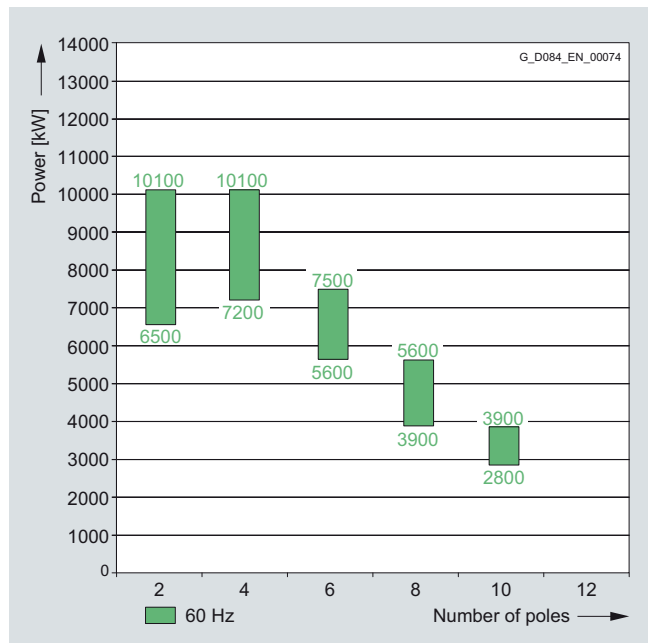
## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

**Technical data** (continued)

**Power ranges for IEC motors for line operation**  
(continued)

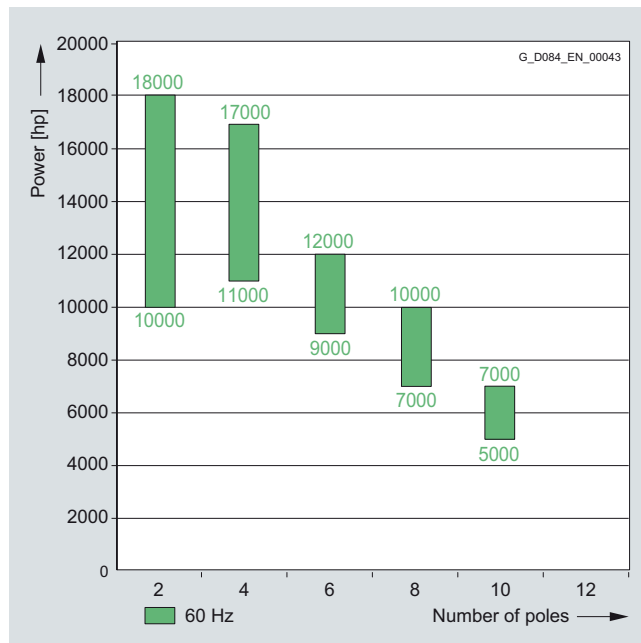
12.5 to 13.8 kV; 60 Hz



**Power ranges for NEMA motors for line operation**

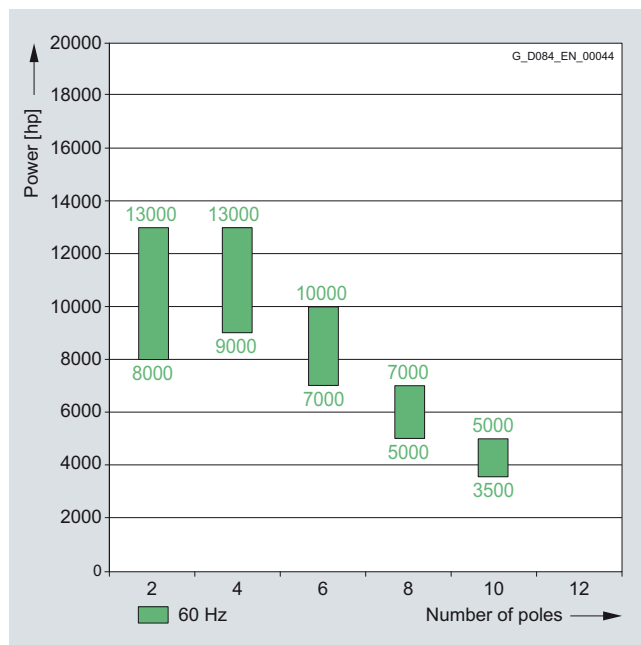
Insulation system, thermal class 155 (F), utilized to 130 (B)

4 to 6.6 kV; 60 Hz



2

12.5 to 13.8 kV; 60 Hz



# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data

##### IEC version

The following data also apply to explosion-protected motors 1SL4/1SL6 (Ex nA) and 1SQ4/1SQ6 (Ex px).

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>3.3 ... 6.6 kV, 50 Hz</b>														
2-pole														
1380	<b>1RN6 450-2HJ</b> ■ 0	2972	156	95.9	96.3	0.89	0.90	4436	1.9	0.50	4.8	13	64	
1570	<b>1RN6 452-2HJ</b> ■ 0	2973	174	96.1	96.6	0.90	0.91	5043	2.0	0.55	5.2	14	70	
1750	<b>1RN6 454-2HJ</b> ■ 0	2977	192	96.3	96.7	0.91	0.91	5618	2.3	0.60	5.5	16	74	
1950	<b>1RN6 456-2HJ</b> ■ 0	2980	215	96.5	96.9	0.91	0.91	6252	2.4	0.60	5.5	17	81	
2250	<b>1RN6 457-2HJ</b> ■ 0	2979	245	96.7	97.0	0.92	0.92	7217	2.4	0.55	5.5	19	88	
2520	<b>1RN6 458-2HJ</b> ■ 0	2979	270	96.8	97.1	0.93	0.93	8082	2.4	0.60	5.5	21	95	
2750	<b>1RN4 504-2HE</b> ■ 0	2977	310	96.6	96.8	0.89	0.87	8822	2.4	0.68	5.4	24	60	
3100	<b>1RN4 506-2HE</b> ■ 0	2978	345	96.9	97.0	0.89	0.88	9941	2.4	0.68	5.5	26	69	
3350	<b>1RN4 560-2HE</b> ■ 0	2978	375	96.6	96.7	0.89	0.88	10743	2.0	0.45	4.3	32	55	
3700	<b>1RN4 562-2HE</b> ■ 0	2980	415	96.8	96.9	0.89	0.88	11857	2.1	0.50	4.7	35	64	
4350	<b>1RN4 564-2HE</b> ■ 0	2982	480	97.0	97.2	0.90	0.88	13931	2.3	0.55	5.2	40	82	
4900	<b>1RN4 566-2HE</b> ■ 0	2984	540	97.2	97.3	0.90	0.88	15682	2.5	0.60	5.5	44	102	
4900	<b>1RN4 630-2HE</b> ■ 0	2982	550	96.9	97.1	0.88	0.88	15692	2.10	0.31	4.0	75	110	
5700	<b>1RN4 632-2HE</b> ■ 0	2983	630	97.3	97.3	0.89	0.89	18248	2.20	0.34	4.3	85	150	
6500	<b>1RN4 634-2HE</b> ■ 0	2985	710	97.5	97.6	0.90	0.89	20796	2.50	0.41	5.0	90	190	
7500	<b>1RN4 636-2HE</b> ■ 0	2986	820	97.7	97.8	0.90	0.89	23987	2.60	0.46	5.4	100	240	
4-pole														
1370	<b>1RN6 450-4HJ</b> ■ ■	1483	154	95.6	96.1	0.89	0.88	8822	2.0	0.70	5.5	20	340	
1500	<b>1RN6 452-4HJ</b> ■ ■	1485	170	95.8	96.2	0.89	0.88	9650	2.6	0.70	5.5	22	385	
1640	<b>1RN6 454-4HJ</b> ■ ■	1486	184	96.0	96.3	0.89	0.88	10544	2.2	0.70	5.5	25	440	
1860	<b>1RN6 456-4HJ</b> ■ ■	1487	210	96.2	96.5	0.89	0.87	11948	2.3	0.70	5.5	28	500	
2100	<b>1RN4 500-4HE</b> ■ ■	1485	235	96.2	96.4	0.89	0.88	13505	2.1	0.72	5.2	39	310	
2300	<b>1RN4 502-4HE</b> ■ ■	1486	260	96.4	96.6	0.89	0.88	14781	2.1	0.75	5.3	42	340	
2650	<b>1RN4 504-4HE</b> ■ ■	1487	295	96.6	98.8	0.89	0.88	17019	2.2	0.80	5.5	48	410	
3000	<b>1RN4 506-4HE</b> ■ ■	1487	335	96.8	97.0	0.89	0.88	19267	2.2	0.80	5.5	53	460	
3600	<b>1RN4 560-4HE</b> ■ ■	1487	400	96.7	96.9	0.90	0.89	23120	2.0	0.65	4.9	76	340	
4000	<b>1RN4 562-4HE</b> ■ ■	1488	440	96.9	97.2	0.90	0.89	25672	2.2	0.70	5.3	84	400	
4500	<b>1RN4 564-4HE</b> ■ ■	1489	495	97.1	97.3	0.90	0.89	28862	2.2	0.70	5.3	96	470	
4900	<b>1RN4 566-4HE</b> ■ ■	1489	540	97.2	97.4	0.90	0.89	31427	2.2	0.70	5.3	105	530	
5300	<b>1RN4 630-4HE</b> ■ ■	1489	590	97.1	97.3	0.89	0.89	33993	2.00	0.54	4.6	150	780	
6000	<b>1RN4 632-4HE</b> ■ ■	1490	670	97.3	97.4	0.89	0.89	38456	2.15	0.60	4.9	165	1050	
6600	<b>1RN4 634-4HE</b> ■ ■	1490	720	97.4	97.6	0.90	0.90	42302	2.20	0.63	5.1	180	1200	
7100	<b>1RN4 636-4HE</b> ■ ■	1491	780	97.6	97.6	0.90	0.89	45476	2.40	0.70	5.5	195	1100	

#### Voltage code:

3.3 kV, 50 Hz  
5 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

0  
5  
6  
7  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data (continued)

Rated power kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked-rotor torque $T_{LR}/T_{rated}$	Locked-rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>3.3 ... 6.6 kV, 50 Hz</b>														
<b>6-pole</b>														
940	<b>1RN6 450-6HJ</b>	989	110	95.3	95.9	0.86	0.85	9088	2.1	0.90	5.5	26	660	
1040	<b>1RN6 452-6HJ</b>	990	122	95.6	96.1	0.86	0.84	10044	2.1	0.90	5.5	29	770	
1180	<b>1RN6 454-6HJ</b>	990	136	95.7	96.3	0.87	0.85	11394	2.2	0.95	5.5	33	870	
1330	<b>1RN6 456-6HJ</b>	990	156	96.0	96.5	0.86	0.84	12832	2.2	0.90	5.5	37	1040	
1700	<b>1RN4 500-6HE</b>	989	196	95.8	96.4	0.87	0.85	16416	2.0	0.75	5.0	57	900	
1920	<b>1RN4 502-6HE</b>	989	220	96.0	96.5	0.87	0.86	18540	2.0	0.80	5.1	65	950	
2150	<b>1RN4 504-6HE</b>	990	245	96.2	96.6	0.87	0.85	20740	2.0	0.80	5.2	72	1200	
2350	<b>1RN4 506-6HE</b>	990	270	96.3	96.7	0.87	0.85	22669	2.0	0.80	5.2	81	1400	
2750	<b>1RN4 560-6HE</b>	991	315	96.3	96.8	0.87	0.85	26501	1.9	0.72	4.9	105	1250	
3100	<b>1RN4 562-6HE</b>	992	355	96.6	97.0	0.87	0.85	29844	2.0	0.75	5.1	120	1500	
3450	<b>1RN4 564-6HE</b>	992	395	96.8	97.1	0.87	0.86	33213	2.0	0.75	5.1	135	1700	
3750	<b>1RN4 566-6HE</b>	992	430	96.9	97.2	0.87	0.85	36101	2.0	0.75	5.1	147	1900	
4200	<b>1RN4 630-6HE</b>	992	490	96.8	97.2	0.85	0.84	40433	2.00	0.57	4.5	190	2000	
4700	<b>1RN4 632-6HE</b>	993	540	97.0	97.3	0.86	0.85	45201	2.10	0.62	4.8	210	2100	
5100	<b>1RN4 634-6HE</b>	993	590	97.2	97.4	0.86	0.84	49048	2.25	0.69	5.2	230	2800	
5600	<b>1RN4 636-6HE</b>	994	640	97.3	97.4	0.86	0.84	53803	2.30	0.70	5.3	255	3300	
<b>8-pole</b>														
680	<b>1RN6 450-8HJ</b>	742	82	94.7	95.3	0.84	0.82	8758	2.1	0.70	5.5	32	730	
750	<b>1RN6 452-8HJ</b>	742	91	94.9	95.5	0.84	0.81	9657	2.1	0.70	5.5	36	890	
880	<b>1RN6 454-8HJ</b>	743	108	95.1	95.6	0.83	0.80	11314	2.1	0.75	5.5	41	1040	
970	<b>1RN6 456-8HJ</b>	743	116	95.3	95.7	0.84	0.81	12475	2.2	0.80	5.5	47	1300	
1250	<b>1RN4 500-8HE</b>	741	150	95.4	95.7	0.84	0.82	16110	1.9	0.75	4.9	70	1350	
1400	<b>1RN4 502-8HE</b>	742	166	95.6	95.8	0.85	0.83	18019	2.0	0.80	5.1	80	1650	
1550	<b>1RN4 504-8HE</b>	742	184	95.7	95.9	0.85	0.83	19949	2.0	0.80	5.1	88	1750	
1700	<b>1RN4 506-8HE</b>	742	200	95.8	96.0	0.85	0.83	21880	2.1	0.85	5.3	99	1800	
1950	<b>1RN4 560-8HE</b>	744	235	96.0	96.3	0.84	0.82	25030	2.0	0.72	4.9	123	2300	
2200	<b>1RN4 562-8HE</b>	744	260	96.2	96.3	0.84	0.82	28239	2.0	0.72	5.0	141	2400	
2400	<b>1RN4 564-8HE</b>	744	285	96.3	96.5	0.84	0.82	30806	2.0	0.75	5.1	158	2800	
2600	<b>1RN4 566-8HE</b>	744	305	96.3	96.6	0.85	0.84	33374	1.95	0.75	5.0	173	3500	
3200	<b>1RN4 630-8HE</b>	743	375	96.5	96.7	0.85	0.83	41131	1.90	0.60	4.3	255	3100	
3500	<b>1RN4 632-8HE</b>	743	410	96.7	96.8	0.85	0.82	44987	2.10	0.67	4.6	280	3400	
3750	<b>1RN4 634-8HE</b>	743	440	96.7	96.9	0.85	0.84	48200	2.00	0.65	4.6	310	3600	
4100	<b>1RN4 636-8HE</b>	744	485	96.9	96.9	0.84	0.81	52628	2.30	0.76	5.3	340	3800	

#### Voltage code:

3.3 kV, 50 Hz  
5 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

0  
5  
6  
7  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data (continued)

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked-rotor torque $T_{LR}/T_{rated}$	Locked-rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>3.3 ... 6.6 kV, 50 Hz</b>														
<b>10-pole</b>														
540	<b>1RN6 450-3HJ</b>	590	70	93.4	93.7	0.80	0.76	8741	2.0	0.80	4.6	37	1150	
600	<b>1RN6 452-3HJ</b>	590	76	93.7	93.9	0.81	0.76	9712	2.0	0.80	4.7	41	1350	
670	<b>1RN6 454-3HJ</b>	591	86	93.9	94.1	0.80	0.75	10827	2.1	0.82	4.9	46	1450	
760	<b>1RN6 456-3HJ</b>	591	97	94.1	94.2	0.80	0.75	12281	2.2	0.90	5.2	52	1800	
900	<b>1RN4 500-3HE</b>	591	112	94.4	94.7	0.82	0.80	14543	1.9	0.68	4.3	70	1400	
1000	<b>1RN4 502-3HE</b>	592	122	95.7	94.9	0.83	0.80	16132	1.9	0.70	4.5	80	1700	
1100	<b>1RN4 504-3HE</b>	592	134	94.8	95.0	0.83	0.80	17745	1.9	0.72	4.6	88	2200	
1250	<b>1RN4 506-3HE</b>	592	152	95.0	95.1	0.83	0.80	20165	1.9	0.75	4.7	99	2600	
1480	<b>1RN4 560-3HE</b>	593	184	95.1	95.4	0.81	0.77	23835	2.0	0.70	4.5	123	2700	
1700	<b>1RN4 562-3HE</b>	593	210	95.4	95.7	0.82	0.78	27378	2.0	0.70	4.5	141	4100	
1880	<b>1RN4 564-3HE</b>	593	230	95.6	95.7	0.82	0.78	30277	2.0	0.72	4.7	158	4400	
2050	<b>1RN4 566-3HE</b>	593	255	95.7	95.8	0.81	0.76	33014	2.1	0.78	5.0	173	5200	
2400	<b>1RN4 630-3HE</b>	592	285	95.8	96.4	0.84	0.83	38716	1.80	0.62	4.0	250	4700	
2650	<b>1RN4 632-3HE</b>	592	315	96.0	96.5	0.84	0.83	42749	1.80	0.65	4.2	280	5300	
2900	<b>1RN4 634-3HE</b>	593	345	96.2	96.6	0.84	0.82	46703	2.00	0.70	4.5	305	6300	
3150	<b>1RN4 636-3HE</b>	593	375	96.4	96.7	0.84	0.82	50729	2.00	0.73	4.6	335	7500	
<b>12-pole</b>														
370	<b>1RN6 450-5HJ</b>	491	53	92.4	92.7	0.73	0.68	7197	1.8	0.60	4.0	37	1100	
425	<b>1RN6 452-5HJ</b>	492	60	92.8	93.0	0.73	0.67	8249	1.8	0.63	4.2	41	1400	
475	<b>1RN6 454-5HJ</b>	491	66	93.1	93.3	0.74	0.69	9239	1.8	0.60	4.0	46	1600	
540	<b>1RN6 456-5HJ</b>	492	77	93.5	93.5	0.72	0.65	10482	2.0	0.68	4.4	52	2000	
680	<b>1RN4 500-5HE</b>	491	94	93.9	94.0	0.74	0.69	13226	1.9	0.62	4.1	70	2350	
760	<b>1RN4 502-5HE</b>	491	102	94.1	94.2	0.76	0.71	14782	1.8	0.60	4.0	79	2600	
840	<b>1RN4 504-5HE</b>	491	112	94.3	94.4	0.76	0.71	16338	1.9	0.62	4.1	87	3100	
930	<b>1RN4 506-5HE</b>	492	128	94.5	94.6	0.74	0.69	18052	1.9	0.62	4.3	98	3700	
1100	<b>1RN4 560-5HE</b>	493	150	94.5	94.8	0.75	0.71	21308	1.8	0.57	3.9	123	3600	
1230	<b>1RN4 562-5HE</b>	493	168	94.9	95.0	0.74	0.68	23827	1.8	0.60	4.0	141	4100	
1350	<b>1RN4 564-5HE</b>	494	184	95.0	95.1	0.74	0.68	26098	2.0	0.63	4.3	158	4700	
1470	<b>1RN4 566-5HE</b>	494	198	95.1	95.2	0.75	0.69	28418	2.0	0.65	4.3	173	5200	
1900	<b>1RN4 630-5HE</b>	493	245	95.4	95.8	0.79	0.76	36805	1.90	0.70	4.3	250	5500	
2150	<b>1RN4 632-5HE</b>	493	270	95.6	96.0	0.80	0.76	41648	1.90	0.71	4.3	275	7000	
2350	<b>1RN4 634-5HE</b>	493	295	95.8	96.3	0.80	0.77	45522	1.90	0.72	4.4	305	8300	
2550	<b>1RN4 636-5HE</b>	493	320	95.9	96.4	0.80	0.77	49397	2.00	0.74	4.5	335	9800	

#### Voltage code:

3.3 kV, 50 Hz  
5 kV, 50 Hz  
6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

0  
5  
6  
7  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL4/1SL6 (Ex nA) and 1SQ4/1SQ6 (Ex px).

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6 kV A	4/4 load %	3/4 load %	4/4 load cos $\phi$	3/4 load cos $\phi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>3.3 ... 6.6 kV, 50 Hz</b>														
2-pole														
6700 <sup>2)</sup>	<b>1RN6 710-2HJ</b>	2989	740	97.0	96.8	0.90	0.90	21414	2.0	0.43	4.6	132	108	
8700 <sup>2)</sup>	<b>1RN6 712-2HJ</b>	2987	960	97.2	97.1	0.90	0.91	27818	1.8	0.42	4.3	147	158	
10100 <sup>2)</sup>	<b>1RN6 714-2HJ</b>	2988	1100	97.4	97.2	0.91	0.91	32286	2.0	0.46	4.7	162	158	
11700 <sup>2)</sup>	<b>1RN6 716-2HJ</b>	2988	1260	97.5	97.3	0.91	0.91	37396	2.0	0.49	4.9	179	171	
4-pole														
7600 <sup>2)</sup>	<b>1RN6 710-4HJ</b>	1493	840	97.7	97.9	0.89	0.87	48609	2.3	0.60	5.5	273	627	
8900 <sup>2)</sup>	<b>1RN6 712-4HJ</b>	1493	970	97.8	98.0	0.90	0.89	56954	2.1	0.59	5.5	300	700	
10100 <sup>2)</sup>	<b>1RN6 714-4HJ</b>	1493	1100	97.8	98.0	0.91	0.90	64636	2.1	0.62	5.5	337	803	
11700 <sup>2)</sup>	<b>1RN6 716-4HJ</b>	1492	1260	97.9	98.0	0.91	0.91	74886	2.1	0.63	5.5	369	881	
6-pole														
5700	<b>1RN6 710-6HJ</b>	994	660	97.3	97.6	0.86	0.84	54792	2.0	0.68	5.1	330	1720	
6400	<b>1RN6 712-6HJ</b>	994	730	97.4	97.6	0.87	0.85	61526	2.0	0.72	5.2	367	1933	
7100	<b>1RN6 714-6HJ</b>	994	810	97.5	97.7	0.87	0.85	68225	2.1	0.79	5.5	419	2361	
7800	<b>1RN6 716-6HJ</b>	994	880	97.5	97.7	0.87	0.85	74930	2.2	0.82	5.5	468	3032	
8-pole														
4550	<b>1RN6 710-8HJ</b>	745	540	96.9	97.3	0.84	0.82	58354	1.9	0.76	5.0	415	4735	
5000	<b>1RN6 712-8HJ</b>	745	590	97.1	97.4	0.84	0.82	64111	1.9	0.79	5.2	465	5335	
5500	<b>1RN6 714-8HJ</b>	745	640	97.1	97.4	0.85	0.83	70512	1.9	0.80	5.2	531	6469	
6100	<b>1RN6 716-8HJ</b>	745	710	97.3	97.5	0.85	0.83	78174	2.0	0.85	5.5	597	7503	
10-pole														
3050	<b>1RN6 710-3HJ</b>	596	380	96.4	96.9	0.80	0.77	48916	2.1	0.72	5.0	415	8485	
3450	<b>1RN6 712-3HJ</b>	596	430	96.7	97.0	0.80	0.77	55318	2.1	0.73	5.1	465	10335	
3850	<b>1RN6 714-3HJ</b>	596	480	96.8	97.1	0.80	0.77	61707	2.2	0.78	5.4	531	11469	
4350	<b>1RN6 716-3HJ</b>	596	530	96.6	97.2	0.81	0.77	69716	2.2	0.80	5.5	598	13202	

#### Voltage code:

3.3 kV, 50 Hz	0
6 kV, 50 Hz	6
6.6 kV, 50 Hz	7
Other voltage	9

#### Type of construction:

IM B3	0
IM V1 (without canopy)	8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup>  $V_{rated} < 6$  kV on request.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked-rotor torque $T_{LR}/T_{rated}$	Locked-rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$	Motor kgm <sup>2</sup>					External, max. 1) kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
<b>2-pole</b>														
1170	<b>1RN6 450-2HJ</b> 0	2976	79	95.6	96.1	0.90	0.90	3755	2.1	0.55	5.5	13	31	
1330	<b>1RN6 452-2HJ</b> 0	2978	88	95.9	96.3	0.91	0.91	4268	2.3	0.60	5.5	14	33.5	
1450	<b>1RN6 454-2HJ</b> 0	2980	96	96.1	96.4	0.91	0.91	4649	2.3	0.55	5.5	15	36	
1630	<b>1RN6 456-2HJ</b> 0	2981	106	96.3	96.7	0.92	0.92	5224	2.4	0.55	5.5	17	39.5	
1870	<b>1RN6 457-2HJ</b> 0	2980	122	96.4	96.8	0.92	0.93	5997	2.3	0.55	5.5	19	42.5	
2080	<b>1RN6 458-2HJ</b> 0	2981	134	96.5	96.9	0.93	0.93	6668	2.4	0.55	5.5	21	46	
2200	<b>1RN4 504-2HE</b> 0	2980	146	96.4	96.5	0.90	0.89	7050	2.5	0.68	5.5	24	48	
2500	<b>1RN4 506-2HE</b> 0	2980	166	96.6	96.7	0.90	0.88	8012	2.4	0.68	5.5	26	54	
2850	<b>1RN4 560-2HE</b> 0	2982	194	96.4	96.4	0.88	0.86	9127	2.1	0.50	4.9	32	56	
3150	<b>1RN4 562-2HE</b> 0	2983	210	96.7	96.6	0.89	0.87	10085	2.3	0.50	5.1	35	59	
3700	<b>1RN4 564-2HE</b> 0	2984	245	96.9	96.9	0.90	0.88	11841	2.5	0.57	5.5	40	83	
4100	<b>1RN4 566-2HE</b> 0	2984	270	97.0	97.1	0.90	0.89	13122	2.5	0.60	5.5	44	93	
4300	<b>1RN4 630-2HE</b> 0	2984	290	96.8	96.9	0.89	0.88	13762	2.30	0.34	4.5	75	75	
5000	<b>1RN4 632-2HE</b> 0	2985	330	97.3	97.3	0.9	0.89	15997	2.50	0.39	4.9	85	100	
5700	<b>1RN4 634-2HE</b> 0	2986	375	97.4	97.4	0.90	0.89	18230	2.60	0.42	5.2	90	110	
6700	<b>1RN4 636-2HE</b> 0	2987	440	97.6	97.7	0.90	0.89	21421	2.60	0.45	5.5	100	160	
<b>4-pole</b>														
1030	<b>1RN6 450-4HJ</b> 0	1485	69	95.2	95.7	0.90	0.89	6627	2.1	0.75	5.5	20	170	
1190	<b>1RN6 452-4HJ</b> 0	1484	80	95.4	95.9	0.90	0.90	7658	2.1	0.70	5.5	22	194	
1340	<b>1RN6 454-4HJ</b> 0	1486	90	95.6	96.1	0.90	0.90	8619	2.1	0.70	5.5	25	225	
1520	<b>1RN6 456-4HJ</b> 0	1487	102	95.9	96.2	0.90	0.89	9764	2.2	0.70	5.5	28	260	
1750	<b>1RN4 500-4HE</b> 0	1488	118	96.0	96.2	0.89	0.88	11232	2.3	0.75	5.5	39	220	
1920	<b>1RN4 502-4HE</b> 0	1488	130	96.2	96.3	0.89	0.87	12323	2.2	0.75	5.5	42	230	
2150	<b>1RN4 504-4HE</b> 0	1488	144	96.4	96.5	0.89	0.88	13799	2.2	0.75	5.5	48	270	
2450	<b>1RN4 506-4HE</b> 0	1488	164	96.6	96.8	0.89	0.88	15724	2.2	0.75	5.5	53	320	
3000	<b>1RN4 560-4HE</b> 0	1489	200	96.4	96.7	0.90	0.89	19241	2.1	0.65	5.2	76	280	
3400	<b>1RN4 562-4HE</b> 0	1489	225	96.7	96.9	0.90	0.89	21807	2.1	0.65	5.2	84	370	
3800	<b>1RN4 564-4HE</b> 0	1489	250	96.8	97.0	0.90	0.90	24372	2.1	0.65	5.2	96	410	
4150	<b>1RN4 566-4HE</b> 0	1489	275	96.9	97.2	0.90	0.90	26617	2.1	0.65	5.3	105	490	
4500	<b>1RN4 630-4HE</b> 0	1490	300	96.9	97.1	0.89	0.89	28842	2.10	0.57	4.9	150	550	
5000	<b>1RN4 632-4HE</b> 0	1490	330	97.1	97.2	0.90	0.90	32047	2.15	0.59	5.0	165	650	
5600	<b>1RN4 634-4HE</b> 0	1490	370	97.3	97.4	0.90	0.90	35893	2.20	0.63	5.3	180	750	
6200	<b>1RN4 636-4HE</b> 0	1491	410	97.4	97.5	0.90	0.90	39712	2.40	0.68	5.5	195	780	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

1) Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on Page 2/2.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data (continued)

Rated power kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$	Locked- rotor torque $T_{LR}/T_{rated}$	Locked- rotor current $I_{LR}/I_{rated}$	Moment of inertia	
			$I_{rated}$ at 10 kV A	4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
6-pole														
780	<b>1RN6 450-6HJ</b>	990	55	95.0	95.5	0.86	0.83	7528	2.1	0.90	5.5	26	340	
850	<b>1RN6 452-6HJ</b>	990	59	95.1	95.7	0.87	0.85	8205	2.2	0.95	5.5	29	400	
930	<b>1RN6 454-6HJ</b>	990	65	95.3	95.9	0.87	0.86	8977	2.1	0.95	5.5	32	460	
1080	<b>1RN6 456-6HJ</b>	992	75	95.6	96.1	0.87	0.85	10403	2.2	0.83	5.5	37	560	
1350	<b>1RN4 500-6HE</b>	991	94	95.4	95.7	0.87	0.85	13010	2.2	0.80	5.4	57	430	
1520	<b>1RN4 502-6HE</b>	991	106	95.6	95.9	0.87	0.86	14648	2.1	0.80	5.2	65	540	
1700	<b>1RN4 504-6HE</b>	991	118	95.8	96.0	0.87	0.85	16382	2.1	0.80	5.4	72	590	
1900	<b>1RN4 506-6HE</b>	991	132	96.0	96.1	0.87	0.85	18310	2.2	0.80	5.5	81	710	
2400	<b>1RN4 560-6HE</b>	992	168	96.3	96.5	0.86	0.85	23105	2.1	0.75	5.3	105	950	
2650	<b>1RN4 562-6HE</b>	992	182	96.3	96.6	0.87	0.86	25512	2.1	0.75	5.2	120	980	
2950	<b>1RN4 564-6HE</b>	993	205	96.5	96.7	0.87	0.85	28371	2.2	0.75	5.5	135	1250	
3200	<b>1RN4 566-6HE</b>	993	220	96.7	96.8	0.87	0.85	30775	2.1	0.75	5.4	147	1300	
3600	<b>1RN4 630-6HE</b>	993	250	96.7	96.9	0.86	0.84	34622	2.20	0.63	5.0	190	1200	
4000	<b>1RN4 632-6HE</b>	993	275	96.8	97.0	0.87	0.09	38469	2.10	0.64	5.0	210	1500	
4400	<b>1RN4 634-6HE</b>	993	300	97.0	97.1	0.87	0.86	42316	2.20	0.66	5.2	230	1750	
4800	<b>1RN4 636-6HE</b>	994	330	97.1	97.2	0.87	0.86	46117	2.30	0.71	5.5	255	2000	
8-pole														
520	<b>1RN6 450-8HJ</b>	742	37.5	94.0	94.6	0.85	0.82	6688	2.1	0.75	5.5	32	215	
560	<b>1RN6 452-8HJ</b>	742	40.5	94.1	94.9	0.85	0.84	7206	2.1	0.65	5.5	36	290	
580	<b>1RN6 454-8HJ</b>	742	41.5	94.1	94.9	0.86	0.83	7463	2.2	0.75	5.5	41	365	
750	<b>1RN6 456-8HJ</b>	743	55	94.7	95.1	0.83	0.79	9649	2.3	0.80	5.5	47	485	
1000	<b>1RN4 500-8HE</b>	743	72	94.9	95.1	0.84	0.81	12853	2.1	0.85	5.4	70	600	
1160	<b>1RN4 502-8HE</b>	744	85	95.3	95.3	0.83	0.80	14890	2.2	0.85	5.5	80	750	
1280	<b>1RN4 504-8HE</b>	744	93	95.4	95.5	0.83	0.80	16430	2.2	0.80	5.5	88	800	
1400	<b>1RN4 506-8HE</b>	744	102	95.5	95.6	0.83	0.80	17970	2.1	0.80	5.5	99	870	
1650	<b>1RN4 560-8HE</b>	744	118	95.8	96.0	0.84	0.81	21179	2.1	0.75	5.3	123	1350	
1900	<b>1RN4 562-8HE</b>	744	134	96.0	96.1	0.85	0.82	24388	2.0	0.75	5.3	141	1400	
2050	<b>1RN4 564-8HE</b>	745	144	96.2	96.2	0.85	0.82	26279	2.2	0.80	5.5	158	1800	
2250	<b>1RN4 566-8HE</b>	745	158	96.2	96.2	0.85	0.82	28842	2.1	0.80	5.5	173	1700	
2600	<b>1RN4 630-8HE</b>	744	186	96.3	96.4	0.84	0.81	33374	2.40	0.75	5.2	255	1800	
2900	<b>1RN4 632-8HE</b>	744	205	96.4	96.5	0.84	0.81	37224	2.30	0.75	5.2	280	2000	
3200	<b>1RN4 634-8HE</b>	744	225	96.6	96.7	0.85	0.82	41075	2.30	0.74	5.1	310	2200	
3500	<b>1RN4 636-8HE</b>	744	245	96.7	96.8	0.86	0.83	44926	2.30	0.75	5.2	340	2600	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data (continued)

Rated power IEC	High voltage motor H-compact PLUS	Speed	Rated current		Efficiency		Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
			$I_{\text{rated}}$ at 10 kV	4/4 load	3/4 load	4/4 load	3/4 load	$T_{\text{B}}/T_{\text{rated}}$					$T_{\text{LR}}/T_{\text{rated}}$	$I_{\text{LR}}/I_{\text{rated}}$
kW	Order No.	rpm	A	%	%	cos φ	cos φ	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
10-pole														
720	<b>1RN4 500-3HE</b>	593	55	93.8	93.9	0.80	0.76	11595	2.20	0.82	5.2	70	900	
830	<b>1RN4 502-3HE</b>	594	64	94.2	94.2	0.79	0.74	13344	2.20	0.82	5.3	80	1100	
920	<b>1RN4 504-3HE</b>	594	71	94.3	94.3	0.79	0.74	14791	2.20	0.82	5.3	88	1200	
1020	<b>1RN4 506-3HE</b>	594	79	94.5	94.5	0.79	0.75	16399	2.20	0.80	5.3	99	1400	
1250	<b>1RN4 560-3HE</b>	593	94	94.8	94.9	0.81	0.77	20131	2.10	0.72	4.7	123	1650	
1420	<b>1RN4 562-3HE</b>	593	106	94.9	95.2	0.82	0.78	22868	2.00	0.70	4.7	141	2050	
1570	<b>1RN4 564-3HE</b>	593	116	95.1	95.4	0.82	0.78	25284	2.00	0.72	5.0	158	2500	
1700	<b>1RN4 566-3HE</b>	595	128	95.3	95.4	0.80	0.75	27286	2.40	0.85	5.5	173	2700	
2100	<b>1RN4 630-3HE</b>	593	152	95.8	96.1	0.83	0.80	33820	2.10	0.73	4.7	250	2500	
2350	<b>1RN4 632-3HE</b>	594	172	96.0	96.2	0.82	0.78	37782	2.30	0.82	5.1	280	2900	
2550	<b>1RN4 634-3HE</b>	594	184	96.0	96.3	0.83	0.79	40997	2.30	0.80	5.1	305	3000	
2750	<b>1RN4 636-3HE</b>	594	196	96.2	96.5	0.84	0.80	44213	2.30	0.83	5.2	335	3500	
12-pole														
580	<b>1RN4 502-5HE</b>	493	48	93.3	93.3	0.74	0.68	11235	2.00	0.70	4.7	79	1350	
640	<b>1RN4 504-5HE</b>	493	53	93.5	93.6	0.74	0.68	12398	2.00	0.70	4.8	87	1500	
700	<b>1RN4 506-5HE</b>	493	58	93.6	93.7	0.75	0.69	13560	2.10	0.70	4.8	98	1600	
850	<b>1RN4 560-5HE</b>	494	69	93.8	94.1	0.76	0.71	16432	1.85	0.60	4.2	123	1750	
1000	<b>1RN4 562-5HE</b>	494	82	94.4	94.6	0.75	0.69	19332	1.95	0.65	4.5	141	2200	
1100	<b>1RN4 564-5HE</b>	494	88	94.5	94.7	0.76	0.71	21265	1.95	0.63	4.4	158	2500	
1200	<b>1RN4 566-5HE</b>	494	96	94.8	94.8	0.76	0.71	23198	1.95	0.63	4.4	173	2900	
1650	<b>1RN4 630-5HE</b>	494	126	95.1	95.5	0.79	0.74	31898	2.10	0.75	4.6	250	3000	
1800	<b>1RN4 632-5HE</b>	494	142	95.4	95.7	0.77	0.71	34798	2.40	0.88	5.2	275	3500	
1950	<b>1RN4 634-5HE</b>	494	152	95.5	95.7	0.78	0.73	37697	2.30	0.85	5.1	305	3400	
2100	<b>1RN4 636-5HE</b>	495	162	95.7	95.9	0.78	0.73	40515	2.35	0.88	5.3	335	4000	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data

Rated power IEC	High voltage motor H-compact PLUS	Speed	Rated current		Efficiency		Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
			$I_{rated}$ at 10 kV	4/4 load	3/4 load	4/4 load	3/4 load	$T_B/T_{rated}$					$T_{LR}/T_{rated}$	$I_{LR}/I_{rated}$
kW	Order No.	rpm	A	%	%	cos $\phi$	cos $\phi$	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>9 ... 11 kV, 50 Hz</b>														
<b>2-pole</b>														
6400	<b>1RN6 710-2HJ</b> ■ 0	2989	425	96.9	96.8	0.90	0.89	20451	2.1	0.45	4.8	132	138	
7500	<b>1RN6 712-2HJ</b> ■ 0	2990	495	97.0	96.9	0.90	0.89	23961	2.2	0.48	5.1	147	163	
8200	<b>1RN6 714-2HJ</b> ■ 0	2990	540	97.2	97.0	0.91	0.91	26197	2.2	0.51	5.3	162	188	
9100	<b>1RN6 716-2HJ</b> ■ 0	2990	590	97.2	97.1	0.92	0.92	29072	2.3	0.53	5.4	179	221	
<b>4-pole</b>														
6700	<b>1RN6 710-4HJ</b> ■ 0	1493	440	97.5	97.7	0.90	0.88	42853	2.3	0.61	5.5	273	697	
7500	<b>1RN6 712-4HJ</b> ■ 0	1493	485	97.6	97.8	0.91	0.90	47979	2.2	0.59	5.5	300	800	
8200	<b>1RN6 714-4HJ</b> ■ 0	1493	530	97.7	97.8	0.91	0.90	52456	2.2	0.61	5.5	337	933	
9100	<b>1RN6 716-4HJ</b> ■ 0	1493	590	97.7	97.8	0.91	0.90	58205	2.2	0.62	5.5	369	1031	
<b>6-pole</b>														
5000	<b>1RN6 710-6HJ</b> ■ ■	994	345	97.2	97.4	0.86	0.85	48051	2.1	0.69	5.3	330	2520	
5500	<b>1RN6 712-6HJ</b> ■ ■	994	375	97.3	97.5	0.87	0.85	52847	2.1	0.74	5.5	367	2133	
6100	<b>1RN6 714-6HJ</b> ■ ■	994	415	97.4	97.6	0.87	0.85	58591	2.2	0.78	5.5	419	2561	
6800	<b>1RN6 716-6HJ</b> ■ ■	995	465	97.4	97.6	0.87	0.86	65303	2.3	0.82	5.5	468	2982	
<b>8-pole</b>														
3850	<b>1RN6 710-8HJ</b> ■ ■	745	270	96.7	97.2	0.85	0.83	49372	1.9	0.71	4.9	415	5185	
4200	<b>1RN6 712-8HJ</b> ■ ■	745	295	96.8	97.2	0.85	0.83	53835	2.0	0.78	5.3	465	5935	
4650	<b>1RN6 714-8HJ</b> ■ ■	746	325	97.0	97.3	0.85	0.82	59562	2.2	0.93	5.5	531	7019	
5200	<b>1RN6 716-8HJ</b> ■ ■	746	365	97.1	97.3	0.85	0.82	66595	2.2	0.93	5.5	597	8203	
<b>10-pole</b>														
2800	<b>1RN6 710-3HJ</b> ■ ■	596	210	96.4	96.8	0.80	0.77	44889	2.1	0.72	5.2	415	8485	
3100	<b>1RN6 712-3HJ</b> ■ ■	596	230	96.6	96.9	0.81	0.78	49700	2.1	0.71	5.1	465	10335	
3400	<b>1RN6 714-3HJ</b> ■ ■	596	250	96.7	97.0	0.81	0.77	54475	2.3	0.78	5.5	531	11369	
3700	<b>1RN6 716-3HJ</b> ■ ■	596	275	96.7	97.0	0.81	0.77	59266	2.3	0.82	5.5	598	12702	

#### Voltage code:

10 kV, 50 Hz  
Other voltage

8  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL4/1SL6 (Ex nA) and 1SQ4/1SQ6 (Ex px).

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current		Efficiency		Power factor		Torque Nm	Break-down torque $T_B/T_{rated}$ [-]	Locked-rotor torque $T_{LR}/T_{rated}$ [-]	Locked-rotor current $I_{LR}/I_{rated}$ [-]	Moment of inertia	
			$I_{rated}$ at 6.6 kV A	4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ	Motor kgm <sup>2</sup>					External, max. <sup>1)</sup> kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
<b>2-pole</b>														
1600	<b>1RN6 450-2HJ</b> 0	3572	162	96.0	96.2	0.90	0.90	4279	2.0	0.55	5.1	13	34.5	
1850	<b>1RN6 452-2HJ</b> 0	3573	184	96.2	96.5	0.91	0.91	4946	2.1	0.55	5.4	14	40	
2060	<b>1RN6 454-2HJ</b> 0	3577	205	96.4	96.6	0.91	0.91	5504	2.2	0.55	5.5	16	45	
2300	<b>1RN6 456-2HJ</b> 0	3580	230	96.6	96.8	0.91	0.91	6137	2.4	0.55	5.5	17	52	
2690	<b>1RN6 457-2HJ</b> 0	3580	265	96.8	96.9	0.92	0.92	7180	2.3	0.50	5.5	19	59	
3030	<b>1RN6 458-2HJ</b> 0	3580	295	97.0	97.1	0.92	0.93	8086	2.4	0.55	5.5	21	67	
3250	<b>1RN4 504-2HE</b> 0	3578	330	96.8	96.8	0.89	0.88	8675	2.3	0.60	5.3	24	27	
3700	<b>1RN4 506-2HE</b> 0	3578	370	97.0	96.9	0.90	0.88	9876	2.4	0.62	5.5	26	34	
4000	<b>1RN4 560-2HE</b> 0	3579	410	96.6	96.5	0.88	0.86	10673	2.0	0.43	4.5	32	26	
4300	<b>1RN4 562-2HE</b> 0	3581	435	96.8	96.7	0.89	0.87	11467	2.2	0.50	5.2	35	34	
4950	<b>1RN4 564-2HE</b> 0	3583	495	97.0	96.9	0.90	0.88	13194	2.5	0.55	5.5	40	47	
5300 <sup>2)</sup>	<b>1RN4 566-2HE</b> 0	3584	530	97.2	97.1	0.90	0.89	14122	2.5	0.55	5.5	44	57	
5700	<b>1RN4 630-2HE</b> 0	3583	580	97.0	96.9	0.88	0.87	15193	2.10	0.30	4.2	75	95	
6500	<b>1RN4 632-2HE</b> 0	3584	660	97.2	97.2	0.89	0.89	17320	2.30	0.34	4.6	85	140	
7500	<b>1RN4 634-2HE</b> 0	3585	750	97.5	97.5	0.90	0.89	19979	2.60	0.41	5.3	90	150	
8200	<b>1RN4 636-2HE</b> 0	3585	820	97.6	97.6	0.90	0.90	21844	2.60	0.42	5.4	100	110	
<b>4-pole</b>														
1630	<b>1RN6 450-4HJ</b> 0	1783	168	95.8	96.1	0.89	0.88	8733	2.1	0.70	5.5	20	178	
1750	<b>1RN6 452-4HJ</b> 0	1785	180	95.9	96.1	0.89	0.88	9362	2.2	0.70	5.5	22	225	
2070	<b>1RN6 454-4HJ</b> 0	1785	210	96.1	96.3	0.90	0.89	11078	2.2	0.70	5.5	25	285	
2310	<b>1RN6 456-4HJ</b> 0	1787	235	96.3	96.4	0.89	0.88	12350	2.2	0.70	5.5	28	355	
2500	<b>1RN4 500-4HE</b> 0	1785	255	96.5	96.6	0.89	0.88	13375	2.1	0.70	5.2	39	180	
2750	<b>1RN4 502-4HE</b> 0	1786	280	96.6	96.7	0.89	0.88	14705	2.2	0.72	5.4	42	200	
3200	<b>1RN4 504-4HE</b> 0	1786	325	96.9	96.9	0.89	0.88	17111	2.2	0.72	5.4	48	240	
3600	<b>1RN4 506-4HE</b> 0	1787	365	97.0	97.0	0.89	0.88	19239	2.2	0.75	5.5	53	280	
4300	<b>1RN4 560-4HE</b> 0	1787	430	96.9	97.1	0.90	0.89	22980	2.0	0.55	4.9	76	180	
4800	<b>1RN4 562-4HE</b> 0	1788	480	97.0	97.2	0.90	0.89	25638	2.1	0.63	5.3	84	220	
5400	<b>1RN4 564-4HE</b> 0	1789	540	97.3	97.3	0.90	0.89	28826	2.1	0.63	5.3	96	270	
5600	<b>1RN4 566-4HE</b> 0	1790	560	97.3	97.3	0.90	0.89	29877	2.3	0.65	5.5	105	310	
6500	<b>1RN4 630-4HE</b> 0	1789	660	97.2	97.3	0.88	0.88	34698	2.10	0.52	4.8	150	600	
7300	<b>1RN4 632-4HE</b> 0	1789	740	97.3	97.5	0.89	0.89	38969	2.10	0.54	4.8	165	650	
8000	<b>1RN4 634-4HE</b> 0	1790	810	97.5	97.6	0.89	0.89	42682	2.20	0.59	5.2	180	680	
8600	<b>1RN4 636-4HE</b> 0	1791	870	97.7	97.7	0.89	0.88	45857	2.40	0.61	5.5	195	800	

#### Voltage code:

4 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
1  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup>  $V_{rated} < 6.6$  kV on request.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data (continued)

Rated power IEC	High voltage motor H-compact PLUS	Speed	Rated current	Efficiency			Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
				$I_{\text{rated}}$ at 6.6 kV	4/4 load	3/4 load	4/4 load	3/4 load					$T_B/T_{\text{rated}}$	$T_{LR}/T_{\text{rated}}$
kW	Order No.	rpm	A	%	%	cos φ	cos φ	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
<b>6-pole</b>														
1210	<b>1RN6 450-6HJ</b>	1188	128	95.7	96.2	0.86	0.85	9734	1.9	0.80	5.5	26	550	
1350	<b>1RN6 452-6HJ</b>	1188	144	95.9	96.3	0.86	0.85	10858	2.0	0.75	5.5	29	610	
1480	<b>1RN6 454-6HJ</b>	1189	156	96.0	96.5	0.86	0.85	11894	2.0	0.85	5.5	33	660	
1620	<b>1RN6 456-6HJ</b>	1190	170	96.3	96.6	0.87	0.85	13006	2.2	0.95	5.5	38	730	
2050	<b>1RN4 500-6HE</b>	1189	215	96.1	96.1	0.87	0.85	16466	2.0	0.72	5.1	57	600	
2300	<b>1RN4 502-6HE</b>	1189	240	96.3	96.4	0.87	0.86	18474	2.0	0.70	5.0	65	650	
2600	<b>1RN4 504-6HE</b>	1189	270	96.4	96.6	0.87	0.86	20883	2.0	0.72	5.1	72	800	
2850	<b>1RN4 506-6HE</b>	1190	295	96.5	96.6	0.87	0.85	22872	2.0	0.75	5.3	81	950	
3300	<b>1RN4 560-6HE</b>	1191	345	96.6	96.6	0.87	0.86	26461	2.0	0.65	4.9	105	750	
3750	<b>1RN4 562-6HE</b>	1192	390	96.8	96.9	0.87	0.85	30044	2.0	0.70	5.1	120	900	
4150	<b>1RN4 564-6HE</b>	1192	430	96.9	97.0	0.87	0.86	33249	2.0	0.75	5.3	135	1050	
4500	<b>1RN4 566-6HE</b>	1192	465	97.0	97.1	0.87	0.86	36053	2.0	0.70	5.2	147	1200	
5100	<b>1RN4 630-6HE</b>	1192	530	97.1	97.2	0.86	0.85	40860	1.90	0.51	4.3	190	1700	
5700	<b>1RN4 632-6HE</b>	1193	600	97.2	97.2	0.85	0.84	45629	2.00	0.56	4.7	210	2100	
6200	<b>1RN4 634-6HE</b>	1193	650	97.3	97.3	0.86	0.85	49631	2.10	0.61	4.9	230	2000	
6700	<b>1RN4 636-6HE</b>	1193	700	97.4	97.4	0.86	0.84	53634	2.30	0.64	5.2	255	2600	
<b>8-pole</b>														
870	<b>1RN6 450-8HJ</b>	890	95	95.1	95.6	0.84	0.82	9333	1.8	0.60	5.3	32	475	
960	<b>1RN6 452-8HJ</b>	892	106	95.2	95.6	0.84	0.81	10285	1.9	0.65	5.4	36	570	
1050	<b>1RN6 454-8HJ</b>	892	114	95.3	95.7	0.84	0.82	11254	2.0	0.65	5.5	41	670	
1180	<b>1RN6 456-8HJ</b>	892	128	95.6	95.9	0.85	0.83	12637	1.9	0.65	5.5	47	820	
1500	<b>1RN4 500-8HE</b>	892	164	95.7	95.7	0.84	0.81	16059	2.0	0.75	5.2	70	750	
1700	<b>1RN4 502-8HE</b>	892	182	95.9	95.9	0.85	0.83	18201	2.0	0.75	5.2	80	1050	
1860	<b>1RN4 504-8HE</b>	892	200	96.0	96.0	0.85	0.83	19914	2.0	0.78	5.1	88	1200	
2050	<b>1RN4 506-8HE</b>	893	220	96.2	96.1	0.84	0.81	21923	2.1	0.82	5.5	99	1300	
2350	<b>1RN4 560-8HE</b>	893	255	96.2	96.3	0.84	0.81	25132	1.9	0.65	4.9	123	1600	
2700	<b>1RN4 562-8HE</b>	894	290	96.4	96.4	0.84	0.82	28842	2.0	0.70	5.1	141	1650	
2900	<b>1RN4 564-8HE</b>	894	315	96.4	96.6	0.84	0.82	30979	2.0	0.70	5.0	158	2300	
3100	<b>1RN4 566-8HE</b>	894	330	96.6	96.7	0.85	0.84	33115	2.0	0.70	5.0	173	2500	

#### Voltage code:

4 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
1  
9

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data (continued)

Rated power IEC	High voltage motor H-compact PLUS	Speed	Rated current		Efficiency		Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
			$I_{rated}$ at 6.6 kV	4/4 load	3/4 load	4/4 load	3/4 load	$T_B/T_{rated}$					$T_{LR}/T_{rated}$	$I_{LR}/I_{rated}$
kW	Order No.	rpm	A	%	%	cos $\phi$	cos $\phi$	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>4 ... 6.6 kV, 60 Hz</b>														
<b>10-pole</b>														
650	<b>1RN6 450-3HJ</b>	710	74	93.7	94.0	0.82	0.78	8743	1.9	0.72	4.5	37	650	
720	<b>1RN6 452-3HJ</b>	710	83	94.1	94.3	0.81	0.77	9685	2.0	0.75	4.7	41	850	
800	<b>1RN6 454-3HJ</b>	711	92	94.3	94.4	0.81	0.76	10745	2.1	0.80	4.9	46	900	
910	<b>1RN6 456-3HJ</b>	711	104	94.5	94.6	0.81	0.77	12223	2.1	0.80	5.0	52	1100	
1080	<b>1RN4 500-3HE</b>	711	122	94.8	95.0	0.82	0.80	14506	1.8	0.65	4.4	70	1200	
1200	<b>1RN4 502-3HE</b>	712	134	95.2	95.2	0.82	0.80	16096	1.9	0.68	4.7	80	1500	
1320	<b>1RN4 504-3HE</b>	712	146	95.1	95.2	0.83	0.80	17705	1.9	0.70	4.7	88	1450	
1500	<b>1RN4 506-3HE</b>	712	166	95.4	95.5	0.83	0.79	20119	2.0	0.72	4.9	99	1900	
1780	<b>1RN4 560-3HE</b>	713	205	95.5	95.6	0.80	0.76	23842	2.0	0.70	4.6	123	2100	
2040	<b>1RN4 562-3HE</b>	713	235	95.8	95.8	0.80	0.76	27324	2.0	0.70	4.8	141	2600	
2200	<b>1RN4 564-3HE</b>	713	245	95.9	95.8	0.82	0.79	29467	2.0	0.68	4.6	158	2800	
2400	<b>1RN4 566-3HE</b>	713	270	96.0	96.0	0.81	0.77	32146	2.1	0.75	5.0	173	3300	
<b>12-pole</b>														
440	<b>1RN6 450-5HJ</b>	591	56	92.9	93.1	0.74	0.71	7110	1.8	0.56	4.0	37	630	
510	<b>1RN6 452-5HJ</b>	591	65	93.3	93.3	0.73	0.68	8241	1.8	0.60	4.2	41	850	
570	<b>1RN6 454-5HJ</b>	592	73	93.9	93.9	0.73	0.68	9195	1.8	0.60	4.2	46	1150	
650	<b>1RN6 456-5HJ</b>	592	82	94.0	93.9	0.74	0.68	10486	1.9	0.60	4.3	52	1300	
820	<b>1RN4 500-5HE</b>	592	102	94.4	94.3	0.74	0.68	13228	2.0	0.62	4.5	70	1650	
920	<b>1RN4 502-5HE</b>	592	114	94.6	94.6	0.75	0.70	14841	1.9	0.62	4.4	79	2000	
1020	<b>1RN4 504-5HE</b>	592	128	94.8	94.7	0.74	0.68	16454	2.0	0.65	4.7	87	2400	
1120	<b>1RN4 506-5HE</b>	592	136	94.8	94.8	0.76	0.71	18068	1.9	0.60	4.4	98	2200	
1300	<b>1RN4 560-5HE</b>	593	160	95.0	95.1	0.75	0.70	20936	1.8	0.53	3.9	123	2050	
1470	<b>1RN4 562-5HE</b>	593	182	95.2	95.3	0.74	0.69	23674	1.8	0.55	4.0	141	2500	
1620	<b>1RN4 564-5HE</b>	594	205	95.4	95.4	0.73	0.67	26045	2.0	0.63	4.3	158	3500	
1760	<b>1RN4 566-5HE</b>	594	220	95.5	95.5	0.73	0.68	28296	2.0	0.63	4.4	173	3900	

#### Voltage code:

4 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
1  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements. NEMA version on request.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data

The following data also apply to explosion-protected motors 1SL4/1SL6 (Ex nA) and 1SQ4/1SQ6 (Ex px).

Rated power IEC kW	High voltage motor H-compact PLUS Order No.	Speed rpm	Rated current A	Efficiency		Power factor		Torque Nm	Break- down torque $T_B/T_{rated}$	Locked- rotor torque $T_{LR}/T_{rated}$	Locked- rotor current $I_{LR}/I_{rated}$	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor	External, max. <sup>1)</sup>
<b>4 ... 6.6 kV, 60 Hz</b>													
2-pole													
7600 <sup>2)</sup>	<b>1RN6 710-2HJ</b> ■ ■ 0	3589	760	96.8	96.6	0.90	0.90	20229	2.0	0.40	4.6	132	48
9700 <sup>2)</sup>	<b>1RN6 712-2HJ</b> ■ ■ 0	3589	970	97.1	96.9	0.90	0.89	25813	2.2	0.47	5.2	147	43
11900 <sup>2)</sup>	<b>1RN6 714-2HJ</b> ■ ■ 0	3589	1180	97.3	97.1	0.91	0.91	31672	2.2	0.49	5.2	162	38
13600 <sup>2)</sup>	<b>1RN6 716-2HJ</b> ■ ■ 0	3590	1340	97.4	97.2	0.91	0.91	36190	2.3	0.52	5.5	179	41
4-pole													
8700 <sup>2)</sup>	<b>1RN6 710-4HJ</b> ■ ■ 0	1793	860	97.8	97.8	0.90	0.88	46340	2.3	0.59	5.5	273	297
10400 <sup>2)</sup>	<b>1RN6 712-4HJ</b> ■ ■ 0	1793	1040	97.9	97.9	0.90	0.89	55399	2.3	0.60	5.5	300	310
11900 <sup>2)</sup>	<b>1RN6 714-4HJ</b> ■ ■ 0	1793	1160	97.9	98.0	0.91	0.90	63396	2.2	0.61	5.5	337	353
13200 <sup>2)</sup>	<b>1RN6 716-4HJ</b> ■ ■ 0	1793	1300	98.0	98.0	0.91	0.89	70311	2.3	0.62	5.5	369	406
6-pole													
6900	<b>1RN6 710-6HJ</b> ■ ■ ■	1194	720	97.4	97.6	0.86	0.84	55212	2.1	0.69	5.4	330	970
7600	<b>1RN6 712-6HJ</b> ■ ■ ■	1194	790	97.5	97.6	0.86	0.84	60797	2.1	0.70	5.5	367	1083
8400	<b>1RN6 714-6HJ</b> ■ ■ ■	1194	860	97.7	97.7	0.87	0.85	67196	2.1	0.73	5.5	419	1311
9200	<b>1RN6 716-6HJ</b> ■ ■ ■	1194	940	97.7	97.7	0.88	0.87	73603	2.1	0.74	5.5	468	1572
8-pole													
5400	<b>1RN6 710-8HJ</b> ■ ■ ■	895	590	97.2	97.4	0.83	0.81	57627	2.0	0.76	5.3	415	2835
6100	<b>1RN6 712-8HJ</b> ■ ■ ■	895	660	97.2	97.4	0.83	0.81	65089	2.0	0.78	5.4	465	3185
6800	<b>1RN6 714-8HJ</b> ■ ■ ■	895	730	97.3	97.5	0.84	0.81	72542	2.1	0.82	5.5	531	3769
7500	<b>1RN6 716-8HJ</b> ■ ■ ■	896	810	97.4	97.5	0.83	0.80	79967	2.2	0.88	5.5	597	4453
10-pole													
3700	<b>1RN6 710-3HJ</b> ■ ■ ■	716	425	96.8	97.0	0.79	0.75	49369	2.2	0.73	5.4	415	5185
4050	<b>1RN6 712-3HJ</b> ■ ■ ■	716	455	96.9	97.1	0.80	0.76	54035	2.2	0.73	5.4	465	5935
4500	<b>1RN6 714-3HJ</b> ■ ■ ■	716	510	96.9	97.1	0.80	0.77	60031	2.2	0.74	5.5	531	7119
5100	<b>1RN6 716-3HJ</b> ■ ■ ■	716	570	97.1	97.2	0.80	0.77	68021	2.3	0.79	5.5	598	8202

#### Voltage code:

4 kV, 60 Hz  
4.16 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
3  
1  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

<sup>2)</sup>  $V_{rated} < 6$  kV on request.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data

Rated power IEC	High voltage motor H-compact PLUS	Speed	Rated current		Efficiency		Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
			$I_{rated}$ at 13.2 kV	4/4 load	3/4 load	4/4 load	3/4 load	$T_B/T_{rated}$					$T_{LR}/T_{rated}$	$I_{LR}/I_{rated}$
kW	Order No.	rpm	A	%	%	cos φ	cos φ	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>	
<b>12.5 ... 13.8 kV, 60 Hz</b>														
<b>2-pole</b>														
6500	<b>1RN6 710-2HJ</b>	3590	330	96.4	96.1	0.90	0.89	17293	2.3	0.44	5.2	132	58	
8000	<b>1RN6 712-2HJ</b>	3591	405	96.8	96.4	0.89	0.88	21278	2.5	0.50	5.5	147	53	
8800	<b>1RN6 714-2HJ</b>	3591	435	96.8	96.4	0.91	0.89	23406	2.5	0.53	5.5	162	78	
10100	<b>1RN6 716-2HJ</b>	3591	495	96.9	96.6	0.92	0.91	26867	2.4	0.53	5.5	179	111	
<b>4-pole</b>														
7200	<b>1RN6 710-4HJ</b>	1794	365	97.4	97.5	0.89	0.88	38335	2.4	0.58	5.5	273	367	
8000	<b>1RN6 712-4HJ</b>	1794	395	97.5	97.6	0.91	0.90	42606	2.3	0.59	5.5	300	427	
8800	<b>1RN6 714-4HJ</b>	1793	435	97.6	97.6	0.91	0.91	46869	2.3	0.59	5.5	337	503	
10100	<b>1RN6 716-4HJ</b>	1793	490	97.6	97.7	0.92	0.91	53794	2.3	0.61	5.5	369	546	
<b>6-pole</b>														
5600	<b>1RN6 710-6HJ</b>	1195	295	97.2	97.3	0.85	0.83	44775	2.3	0.70	5.5	330	1105	
6200	<b>1RN6 712-6HJ</b>	1195	325	97.3	97.4	0.86	0.83	49566	2.3	0.73	5.5	367	1253	
6800	<b>1RN6 714-6HJ</b>	1195	355	97.3	97.4	0.86	0.84	54357	2.3	0.72	5.5	419	1535	
7500	<b>1RN6 716-6HJ</b>	1195	390	97.4	97.5	0.86	0.84	59945	2.3	0.72	5.5	468	17832	
<b>8-pole</b>														
3900	<b>1RN6 710-8HJ</b>	896	210	96.6	96.8	0.84	0.80	41582	2.2	0.79	5.5	415	3485	
4400	<b>1RN6 712-8HJ</b>	896	235	96.7	97.0	0.84	0.81	46912	2.2	0.81	5.5	465	3935	
5000	<b>1RN6 714-8HJ</b>	896	270	96.9	97.0	0.83	0.80	53295	2.2	0.78	5.5	531	4669	
5600	<b>1RN6 716-8HJ</b>	896	305	97.0	97.0	0.83	0.79	59674	2.3	0.76	5.5	597	5303	
<b>10-pole</b>														
2800	<b>1RN6 710-3HJ</b>	716	160	96.2	96.5	0.80	0.75	37334	2.4	0.76	5.5	415	3985	
3200	<b>1RN6 712-3HJ</b>	716	182	96.5	96.6	0.80	0.75	42664	2.4	0.78	5.5	465	4785	
3550	<b>1RN6 714-3HJ</b>	716	198	96.6	96.8	0.81	0.78	47340	2.3	0.74	5.5	531	5569	
3900	<b>1RN6 716-3HJ</b>	716	215	96.7	96.9	0.82	0.79	52006	2.3	0.75	5.5	598	6552	

#### Voltage code:

13.2 kV, 60 Hz  
Other voltage

2  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Efficiencies according to IEC 60034-2-1:2007; load-dependent supplementary losses determined by statistically evaluating measurements.

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data

##### NEMA version

Rated power	High voltage motor H-compact PLUS	Speed	Rated current	Efficiency		Power factor		Torque	Break-down torque	Locked-rotor torque	Locked-rotor current	Moment of inertia	
NEMA				$I_{rated}$ at 13.2 kV	4/4 load	3/4 load	4/4 load					3/4 load	$T_B/T_{rated}$
hp	Order No.	rpm	A	%	%	cos $\phi$	cos $\phi$	Nm	[-]	[-]	[-]	kgm <sup>2</sup>	kgm <sup>2</sup>
<b>4 ... 6.6 kV, 60 Hz</b>													
2-pole													
10000	<b>1RN6 710-2BM</b> ■ 0	3586	747	96.4	96.2	0.90	0.89	19861	2.2	0.60	5.2	132	56
11000	<b>1RN6 712-2BM</b> ■ 0	3588	828	96.5	96.2	0.89	0.88	21837	2.5	0.60	5.8	147	55
12000	<b>1RN6 712-2BN</b> ■ 0	3587	898	96.6	96.4	0.90	0.89	23827	2.3	0.60	5.4	147	54
13000	<b>1RN6 714-2BM</b> ■ 0	3587	956	96.6	96.4	0.92	0.91	25814	2.5	0.64	6.0	162	54
14000	<b>1RN6 714-2BN</b> ■ 0	3587	1036	96.7	96.5	0.91	0.90	27801	2.4	0.60	5.7	162	53
16000	<b>1RN6 716-2BM</b> ■ 0	3586	1166	96.8	96.7	0.92	0.92	31777	2.4	0.62	5.8	179	51
17000	<b>1RN6 716-2BN</b> ■ 0	3587	1251	96.9	96.8	0.91	0.90	33759	2.4	0.60	5.8	179	49
4-pole													
11000	<b>1RN6 710-4BJ</b> ■ 0	1793	815	97.4	97.6	0.90	0.89	43695	2.3	0.60	5.9	273	603
12000	<b>1RN6 712-4BJ</b> ■ 0	1793	880	97.5	97.6	0.91	0.90	47668	2.2	0.60	5.9	300	637
13000	<b>1RN6 712-4BK</b> ■ 0	1793	962	97.5	97.6	0.90	0.89	51635	2.3	0.60	5.9	300	620
14000	<b>1RN6 714-4BJ</b> ■ 0	1793	1021	97.4	97.6	0.91	0.91	55625	2.2	0.60	5.8	337	651
15000	<b>1RN6 714-4BK</b> ■ 0	1793	1104	97.5	97.7	0.91	0.89	59583	2.3	0.60	6.0	337	665
16000	<b>1RN6 716-4BJ</b> ■ 0	1793	1161	97.5	97.7	0.92	0.91	63575	2.2	0.61	5.8	369	678
17000	<b>1RN6 716-4BK</b> ■ 0	1792	1238	97.5	97.7	0.92	0.91	67557	2.1	0.60	5.6	369	691
18000	<b>1RN6 716-4BL</b> ■ 0	1793	1324	97.6	97.7	0.91	0.90	71504	2.2	0.61	5.9	369	702
6-pole													
9000	<b>1RN6 710-6BJ</b> ■ ■	1194	702	97.1	97.3	0.86	0.84	53690	2.1	0.71	5.5	330	1954
10000	<b>1RN6 712-6BJ</b> ■ ■	1194	781	97.2	97.4	0.86	0.83	59647	2.2	0.71	5.6	367	2043
11000	<b>1RN6 714-6BJ</b> ■ ■	1194	846	97.3	97.4	0.87	0.85	65612	2.2	0.75	5.7	419	2113
12000	<b>1RN6 716-6BJ</b> ■ ■	1194	915	97.2	97.3	0.88	0.86	71577	2.2	0.77	5.7	468	2168
8-pole													
7000	<b>1RN6 710-8BJ</b> ■ ■	895	566	96.9	97.1	0.83	0.80	55695	2.1	0.79	5.5	415	3817
8000	<b>1RN6 712-8BJ</b> ■ ■	895	646	97.0	97.1	0.83	0.81	63651	2.0	0.80	5.5	465	4154
9000	<b>1RN6 714-8BJ</b> ■ ■	895	721	97.1	97.2	0.84	0.81	71587	2.1	0.83	5.7	531	4458
10000	<b>1RN6 716-8BJ</b> ■ ■	896	810	97.1	97.2	0.83	0.80	79506	2.2	0.87	6.0	597	4732
10-pole													
5000	<b>1RN6 710-3BJ</b> ■ ■	716	427	96.6	96.7	0.79	0.75	49758	2.2	0.73	5.3	415	5006
5500	<b>1RN6 712-3BJ</b> ■ ■	716	464	96.7	96.9	0.80	0.76	54720	2.2	0.72	5.3	465	5428
6000	<b>1RN6 714-3BJ</b> ■ ■	716	502	96.8	96.9	0.80	0.77	59682	2.2	0.74	5.5	531	6221
7000	<b>1RN6 716-3BJ</b> ■ ■	716	584	96.9	97.0	0.80	0.77	69631	2.2	0.77	5.6	598	6955

#### Voltage code:

4 kV, 60 Hz  
4.16 kV, 60 Hz  
6.6 kV, 60 Hz  
Other voltage

4  
3  
1  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data

##### NEMA version

Rated power  NEMA  hp	High voltage motor H-compact PLUS  Order No.	Speed  rpm	Rated current  I <sub>rated</sub> at 13.2 kV  A	Efficiency		Power factor		Torque  Nm	Break-down torque  T <sub>B</sub> / T <sub>rated</sub>  [-]	Locked-rotor torque  T <sub>LR</sub> / T <sub>rated</sub>  [-]	Locked-rotor current  I <sub>LR</sub> / I <sub>rated</sub>  [-]	Moment of inertia	
				4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm <sup>2</sup>	External, max. <sup>1)</sup> kgm <sup>2</sup>
<b>12.5 ... 13.8 kV, 60 Hz</b>													
<b>2-pole</b>													
8000	<b>1RN6 710-2BM</b> ■ 0	3588	301	96.0	95.6	0.90	0.89	15881	2.5	0.60	5.6	132	52
9000	<b>1RN6 712-2BM</b> ■ 0	3588	334	96.0	95.6	0.91	0.90	17864	2.6	0.60	6.0	147	51
10000	<b>1RN6 712-2BN</b> ■ 0	3588	375	96.2	95.9	0.90	0.89	19849	2.6	0.60	6.0	147	49
11000	<b>1RN6 714-2BM</b> ■ 0	3588	407	96.2	95.9	0.91	0.90	21837	2.5	0.60	6.0	162	48
12000	<b>1RN6 716-2BM</b> ■ 0	3587	437	96.3	96.0	0.93	0.92	23827	2.4	0.60	5.8	179	47
13000	<b>1RN6 716-2BN</b> ■ 0	3588	478	96.4	96.2	0.92	0.91	25806	2.5	0.60	6.0	179	45
<b>4-pole</b>													
9000	<b>1RN6 710-4BJ</b> ■ 0	1794	337	97.1	97.2	0.89	0.88	35727	2.4	0.60	6.2	273	553
10000	<b>1RN6 712-4BJ</b> ■ 0	1794	368	97.1	97.3	0.91	0.90	39708	2.3	0.60	6.2	300	555
11000	<b>1RN6 714-4BJ</b> ■ 0	1794	403	97.2	97.3	0.91	0.90	43682	2.3	0.60	6.2	337	603
12000	<b>1RN6 716-4BJ</b> ■ 0	1793	436	97.2	97.3	0.92	0.92	47662	2.3	0.63	6.2	369	620
13000	<b>1RN6 716-4BK</b> ■ 0	1794	475	97.2	97.4	0.91	0.91	51625	2.3	0.60	6.1	369	637
<b>6-pole</b>													
7000	<b>1RN6 710-6BJ</b> ■ ■	1195	278	96.9	97.0	0.85	0.82	41723	2.4	0.72	6.0	330	1722
8000	<b>1RN6 712-6BJ</b> ■ ■	1195	315	97.0	97.1	0.85	0.82	47688	2.4	0.73	6.0	367	1849
9000	<b>1RN6 714-6BJ</b> ■ ■	1195	350	97.0	97.1	0.86	0.84	53642	2.3	0.73	6.0	419	1954
10000	<b>1RN6 716-6BJ</b> ■ ■	1195	388	97.1	97.2	0.86	0.84	59600	2.3	0.72	6.0	468	2042
<b>8-pole</b>													
5000	<b>1RN6 710-8BJ</b> ■ ■	896	201	96.5	96.6	0.84	0.81	39760	2.2	0.79	5.9	415	3024
5500	<b>1RN6 712-8BJ</b> ■ ■	896	220	96.6	96.7	0.84	0.81	43721	2.2	0.80	6.0	465	3235
6000	<b>1RN6 714-8BJ</b> ■ ■	896	239	96.6	96.7	0.84	0.82	47691	2.3	0.80	6.0	531	3438
7000	<b>1RN6 716-8BJ</b> ■ ■	896	279	96.7	96.8	0.85	0.82	55642	2.2	0.79	6.0	597	3817
<b>10-pole</b>													
3500	<b>1RN6 710-3BJ</b> ■ ■	717	151	96.2	96.2	0.79	0.74	34788	2.5	0.78	6.0	415	4104
4000	<b>1RN6 712-3BJ</b> ■ ■	717	172	96.3	96.3	0.79	0.74	39757	2.5	0.78	6.0	465	4564
4500	<b>1RN6 714-3BJ</b> ■ ■	717	188	96.4	96.5	0.81	0.77	44739	2.4	0.79	6.0	531	5006
5000	<b>1RN6 716-3BJ</b> ■ ■	717	207	96.5	96.6	0.82	0.78	49713	2.4	0.78	6.0	598	5428

#### Voltage code:

13.2 kV, 60 Hz  
Other voltage

2  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

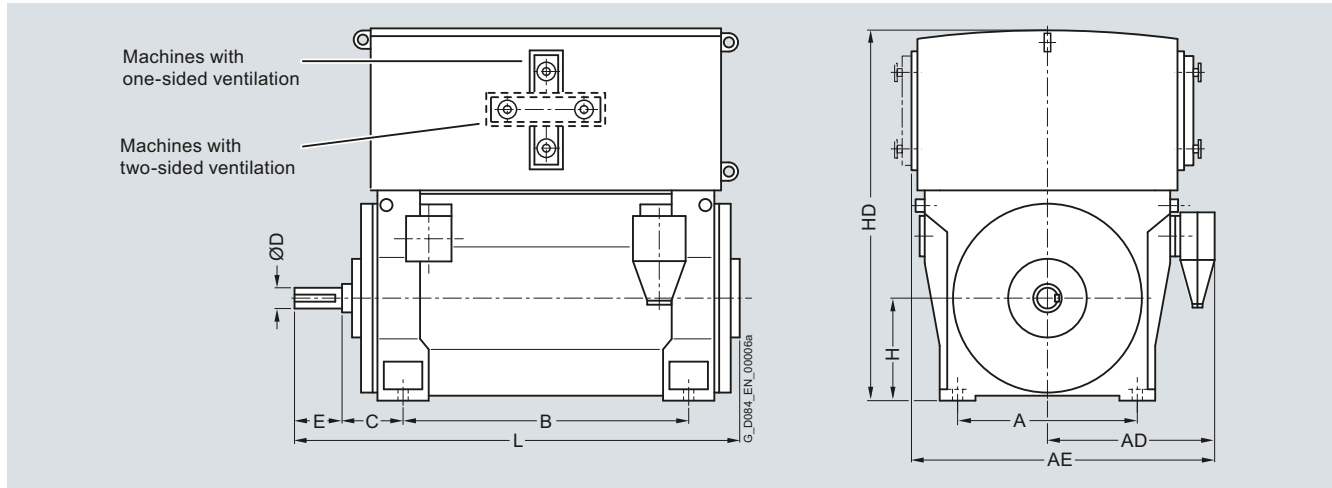
0  
8

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> Max. permissible external moment of inertia for three starts from cold or two starts from warm under the conditions described on [Page 2/2](#).

## Dimension drawings



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings – series 1RN4<sup>2)</sup>, 1RN6</b>											
<b>2-pole</b>											
1RN6 450-2HJ.0	4001	850	930	1620	1180	250	95	130	450	1725	1843
1RN6 452-2HJ.0	4207	850	930	1620	1180	250	95	130	450	1725	1843
1RN6 454-2HJ.0	4548	850	930	1620	1400	250	95	130	450	1725	2053
1RN6 456-2HJ.0	4813	850	930	1620	1400	250	95	130	450	1725	2053
<b>4-pole</b>											
1RN6 450-4HJ.0	4318	850	930	1620	1180	250	130	200	450	1715	1896
1RN6 452-4HJ.0	4246	850	930	1620	1180	250	130	200	450	1715	1896
1RN6 454-4HJ.0	4944	850	930	1620	1400	250	130	200	450	1715	2106
1RN6 456-4HJ.0	5222	850	930	1620	1400	250	130	200	450	1715	2106
1RN4 500-4HE.0	5400	950	1000	1790	1320	280	150	200	500	1830	2230
1RN4 502-4HE.0	5600	950	1000	1790	1320	280	150	200	500	1830	2230
1RN4 504-4HE.0	6250	950	1000	1790	1500	280	160	240	500	1830	2480
1RN4 506-4HE.0	6650	950	1000	1790	1500	280	160	240	500	1830	2480
1RN4 560-4HE.0	7400	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 562-4HE.0	7850	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 564-4HE.0	8750	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 566-4HE.0	9200	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 630-4HE.0 <sup>3)</sup>	10400	1320	1330	2290	1600	335	200	280	630	2400	2500
1RN4 632-4HE.0 <sup>3)</sup>	11100	1320	1330	2290	1600	335	200	280	630	2400	2500
1RN4 634-4HE.0 <sup>3)</sup>	12150	1320	1330	2290	1800	335	220	280	630	2400	2740
1RN4 636-4HE.0 <sup>3)</sup>	12700	1320	1330	2290	1800	335	220	280	630	2400	2740
<b>6-pole</b>											
1RN6 450-6HJ.0	4418	850	930	1620	1180	280	140	200	450	1715	1896
1RN6 452-6HJ.0	4703	850	930	1620	1180	280	140	200	450	1715	1896
1RN6 454-6HJ.0	5068	850	930	1620	1400	280	140	200	450	1715	2136
1RN6 456-6HJ.0	5410	850	930	1620	1400	280	140	200	450	1715	2136
1RN4 500-6HE.0	5550	950	1000	1790	1320	280	160	240	500	1830	2270
1RN4 502-6HE.0	5900	950	1000	1790	1320	280	160	240	500	1830	2270
1RN4 504-6HE.0	6450	950	1000	1790	1500	280	170	240	500	1830	2480
1RN4 506-6HE.0	6850	950	1000	1790	1500	280	170	240	500	1830	2480

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

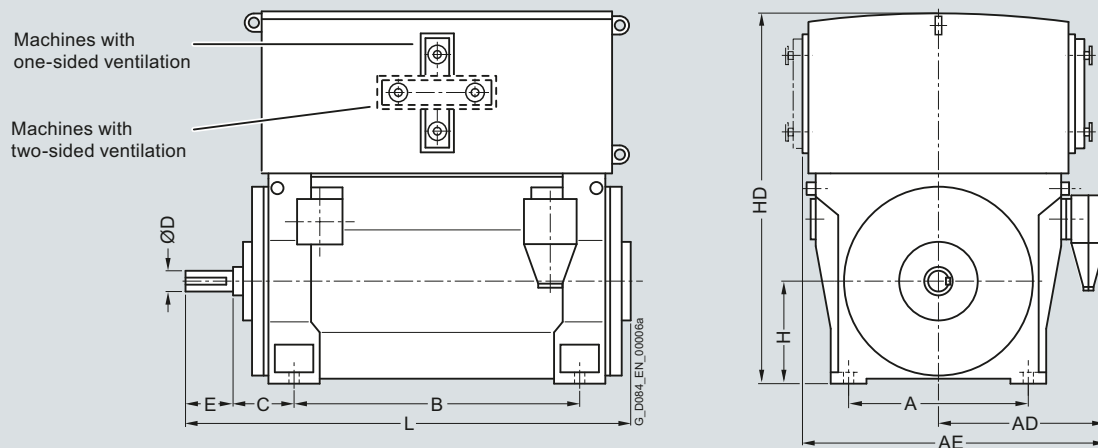
<sup>3)</sup> Roller bearings only for 50 Hz version.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

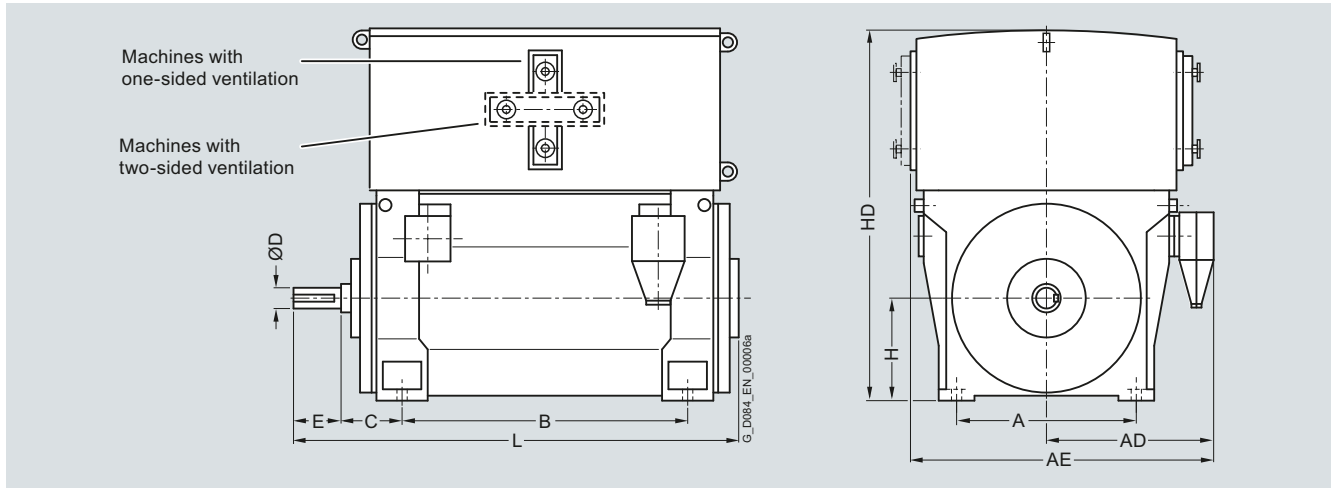
Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings – series 1RN4<sup>2)</sup>, 1RN6</b>											
<b>6-pole</b>											
1RN4 560-6HE.0	7500	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 562-6HE.0	8150	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 564-6HE.0	8950	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 566-6HE.0	9400	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 630-6HE.0	10650	1320	1330	2290	1600	335	220	280	630	2400	2500
1RN4 632-6HE.0	11200	1320	1330	2290	1600	335	220	280	630	2400	2500
1RN4 634-6HE.0	12300	1320	1330	2290	1800	335	220	280	630	2400	2740
1RN4 636-6HE.0	13000	1320	1330	2290	1800	335	220	280	630	2400	2740
<b>8-pole</b>											
1RN6 450-8HJ.0	4434	850	930	1620	1180	280	140	200	450	1715	1896
1RN6 452-8HJ.0	4733	850	930	1620	1180	280	140	200	450	1715	1896
1RN6 454-8HJ.0	5102	850	930	1620	1400	280	140	200	450	1715	2136
1RN6 456-8HJ.0	5450	850	930	1620	1400	280	140	200	450	1715	2136
1RN4 500-8HE.0	5550	950	1000	1790	1320	280	160	240	500	1830	2270
1RN4 502-8HE.0	5950	950	1000	1790	1320	280	160	240	500	1830	2270
1RN4 504-8HE.0	6450	950	1000	1790	1500	280	170	240	500	1830	2480
1RN4 506-8HE.0	6800	950	1000	1790	1500	280	170	240	500	1830	2480
1RN4 560-8HE.0	7500	1060	1070	1920	1400	315	180	240	560	2040	2300
1RN4 562-8HE.0	8000	1060	1070	1920	1400	315	180	240	560	2040	2300
1RN4 564-8HE.0	8850	1060	1070	1920	1600	315	190	280	560	2040	2570
1RN4 566-8HE.0	9350	1060	1070	1920	1600	315	190	280	560	2040	2570
1RN4 630-8HE.0 <sup>3)</sup>	10600	1320	1330	2290	1600	335	220	280	630	2400	2500
1RN4 632-8HE.0 <sup>3)</sup>	11200	1320	1330	2290	1600	335	220	280	630	2400	2500
1RN4 634-8HE.0 <sup>3)</sup>	12150	1320	1330	2290	1800	335	220	280	630	2400	2740
1RN4 636-8HE.0 <sup>3)</sup>	12900	1320	1330	2290	1800	335	220	280	630	2400	2740
<b>10-pole</b>											
1RN6 450-3HJ.0	4434	850	930	1620	1180	280	140	200	450	1715	1896
1RN6 452-3HJ.0	4733	850	930	1620	1180	280	140	200	450	1715	1896
1RN6 454-3HJ.0	5102	850	930	1620	1400	280	140	200	450	1715	2136
1RN6 456-3HJ.0	5450	850	930	1620	1400	280	140	200	450	1715	2136

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

<sup>3)</sup> Roller bearings only for 50 Hz version.

## Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings – series 1RN4<sup>2)</sup>, 1RN6</b>											
<b>10-pole</b>											
1RN4 500-3HE.0	5500	950	1000	1790	1320	280	160	240	500	1830	2270
1RN4 502-3HE.0	5850	950	1000	1790	1320	280	160	240	500	1830	2270
1RN4 504-3HE.0	6450	950	1000	1790	1500	280	170	240	500	1830	2480
1RN4 506-3HE.0	6800	950	1000	1790	1500	280	170	240	500	1830	2480
1RN4 560-3HE.0	7450	1060	1070	1920	1400	315	180	240	560	2040	2300
1RN4 562-3HE.0	8000	1060	1070	1920	1400	315	180	240	560	2040	2300
1RN4 564-3HE.0	8800	1060	1070	1920	1600	315	190	280	560	2040	2570
1RN4 566-3HE.0	9300	1060	1070	1920	1600	315	190	280	560	2040	2570
1RN4 630-3HE.0 <sup>3)</sup>	10500	1320	1180	2290	1600	335	220	280	630	2400	2500
1RN4 632-3HE.0 <sup>3)</sup>	11200	1320	1330	2290	1600	335	220	280	630	2400	2500
1RN4 634-3HE.0 <sup>3)</sup>	12200	1320	1330	2290	1800	335	220	280	630	2400	2740
1RN4 636-3HE.0 <sup>3)</sup>	12900	1320	1330	2290	1800	335	220	280	630	2400	2740
<b>12-pole</b>											
1RN6 450-5HJ.0	4434	850	930	1620	1180	280	140	200	450	1715	1896
1RN6 452-5HJ.0	4733	850	930	1620	1180	280	140	200	450	1715	1896
1RN6 454-5HJ.0	5102	850	930	1620	1400	280	140	200	450	1715	2136
1RN6 456-5HJ.0	5450	850	930	1620	1400	280	140	200	450	1715	2136
1RN4 500-5HE.0	5550	950	1000	1790	1320	280	160	240	500	1830	2270
1RN4 502-5HE.0	5900	950	1000	1790	1320	280	160	240	500	1830	2270
1RN4 504-5HE.0	6350	950	1000	1790	1500	280	170	240	500	1830	2480
1RN4 506-5HE.0	6800	950	1000	1790	1500	280	170	240	500	1830	2480
1RN4 560-5HE.0	7450	1060	1070	1920	1400	315	180	240	560	2040	2300
1RN4 562-5HE.0	8000	1060	1070	1920	1400	315	180	240	560	2040	2300
1RN4 564-5HE.0	8800	1060	1070	1920	1600	315	190	280	560	2040	2570
1RN4 566-5HE.0	9250	1060	1070	1920	1600	315	190	280	560	2040	2570
1RN4 630-5HE.0 <sup>3)</sup>	10400	1320	1180	2140	1600	335	220	280	630	2400	2500
1RN4 632-5HE.0 <sup>3)</sup>	11000	1320	1180	2140	1600	335	220	280	630	2400	2500
1RN4 634-5HE.0 <sup>3)</sup>	12050	1320	1180	2140	1800	335	220	280	630	2400	2740
1RN4 636-5HE.0 <sup>3)</sup>	12850	1320	1180	2140	1800	335	220	280	630	2400	2740

Note: Higher pole numbers are available on request.

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

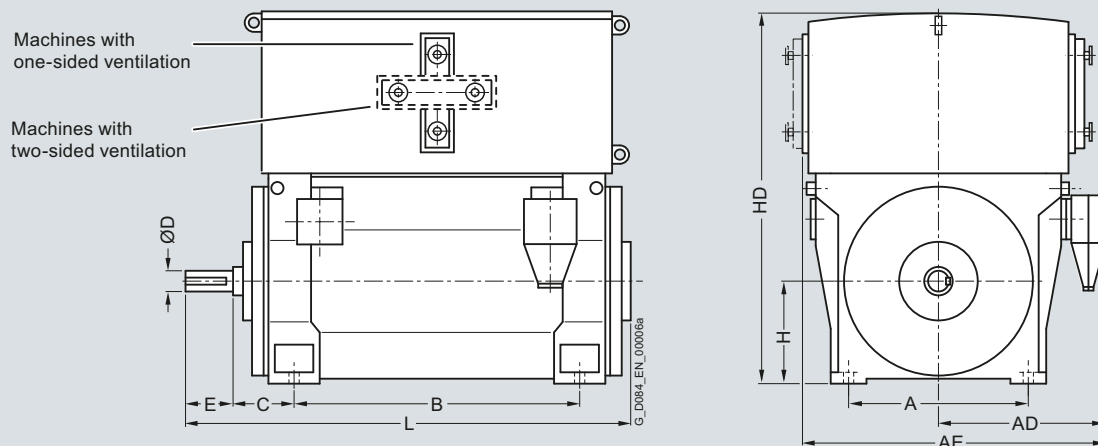
<sup>3)</sup> Roller bearings only for 50 Hz version.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings

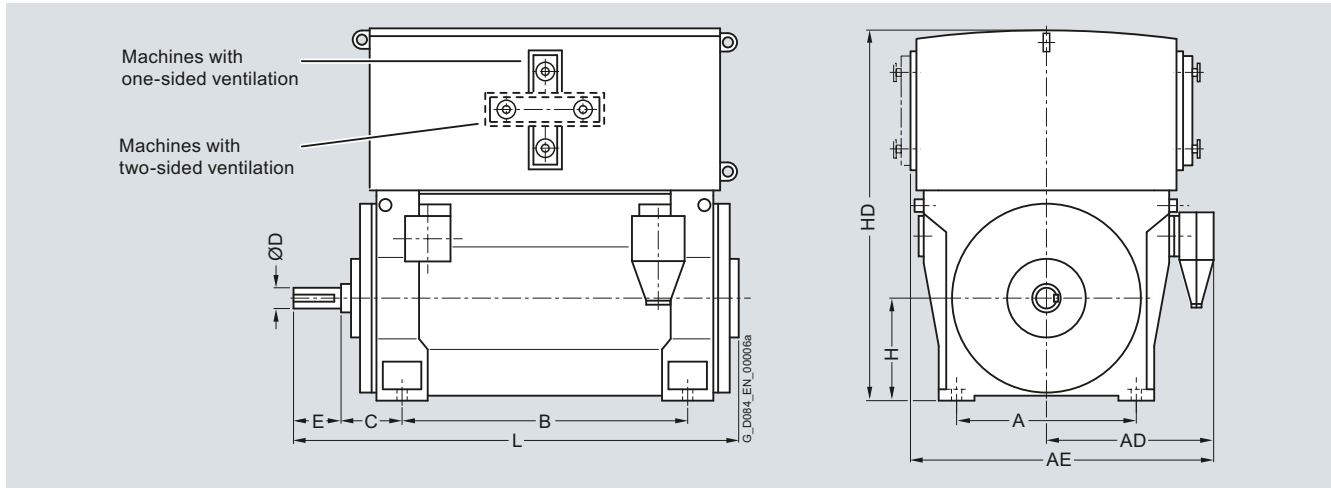


Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings – series 1RN4<sup>1)</sup>, 1RN6</b>											
<b>2-pole</b>											
1RN6 450-2HJ.0	4001	850	1070	1840	1180	250	95	130	450	1725	1875
1RN6 452-2HJ.0	4207	850	1070	1840	1180	250	95	130	450	1725	1875
1RN6 454-2HJ.0	4548	850	1070	1840	1400	250	95	130	450	1725	2085
1RN6 456-2HJ.0	4813	850	1070	1840	1400	250	95	130	450	1725	2085
<b>4-pole</b>											
1RN6 450-4HJ.0	4318	850	1070	1840	1180	250	130	200	450	1715	1896
1RN6 452-4HJ.0	4246	850	1070	1840	1180	250	130	200	450	1715	1896
1RN6 454-4HJ.0	4944	850	1070	1840	1400	250	130	200	450	1715	2106
1RN6 456-4HJ.0	5222	850	1070	1840	1400	250	130	200	450	1715	2106
1RN4 500-4HE.0	5400	950	1220	2010	1320	280	150	200	500	1830	2230
1RN4 502-4HE.0	5600	950	1220	2010	1320	280	150	200	500	1830	2230
1RN4 504-4HE.0	6250	950	1220	2010	1500	280	160	240	500	1830	2480
1RN4 506-4HE.0	6600	950	1220	2010	1500	280	160	240	500	1830	2480
1RN4 560-4HE.0	7250	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 562-4HE.0	7750	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 564-4HE.0	8600	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 566-4HE.0	9050	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 630-4HE.0	10300	1320	1320	2280	1600	335	200	280	630	2400	2500
1RN4 632-4HE.0	10950	1320	1330	2290	1600	335	200	280	630	2400	2500
1RN4 634-4HE.0	12000	1320	1330	2290	1800	335	220	280	630	2400	2740
1RN4 636-4HE.0	12600	1320	1330	2290	1800	335	220	280	630	2400	2740
<b>6-pole</b>											
1RN6 450-6HJ.0	4418	850	1070	1840	1180	280	140	200	450	1715	1896
1RN6 452-6HJ.0	4703	850	1070	1840	1180	280	140	200	450	1715	1896
1RN6 454-6HJ.0	5068	850	1070	1840	1400	280	140	200	450	1715	2136
1RN6 456-6HJ.0	5410	850	1070	1840	1400	280	140	200	450	1715	2136
1RN4 500-6HE.0	5500	950	1220	2010	1320	280	160	240	500	1830	2270
1RN4 502-6HE.0	5900	950	1220	2010	1320	280	160	240	500	1830	2270
1RN4 504-6HE.0	6400	950	1220	2010	1500	280	170	240	500	1830	2480
1RN4 506-6HE.0	6800	950	1220	2010	1500	280	170	240	500	1830	2480

<sup>1)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

## Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings – series 1RN4<sup>1)</sup>, 1RN6</b>											
<b>6-pole</b>											
1RN4 560-6HE.0	7500	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 562-6HE.0	8000	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 564-6HE.0	8850	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 566-6HE.0	9250	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 630-6HE.0	10650	1320	1320	2280	1600	335	220	280	630	2400	2500
1RN4 632-6HE.0	11200	1320	1320	2280	1600	335	220	280	630	2400	2500
1RN4 634-6HE.0	12250	1320	1320	2280	1800	335	220	280	630	2400	2740
1RN4 636-6HE.0	13000	1320	1330	2290	1800	335	220	280	630	2400	2740
<b>8-pole</b>											
1RN6 450-8HJ.0	4434	850	1070	1840	1180	280	140	200	450	1715	1896
1RN6 452-8HJ.0	4733	850	1070	1840	1180	280	140	200	450	1715	1896
1RN6 454-8HJ.0	5102	850	1070	1840	1400	280	140	200	450	1715	2136
1RN6 -456-8HJ.0	5450	850	1070	1840	1400	280	140	200	450	1715	2136
1RN4 500-8HE.0	5550	950	1220	2010	1320	280	160	240	500	1830	2270
1RN4 502-8HE.0	5900	950	1220	2010	1320	280	160	240	500	1830	2270
1RN4 504-8HE.0	6450	950	1220	2010	1500	280	170	240	500	1830	2480
1RN4 506-8HE.0	6800	950	1220	2010	1500	280	170	240	500	1830	2480
1RN4 560-8HE.0	7500	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 562-8HE.0	8000	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 564-8HE.0	8850	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 566-8HE.0	9250	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 630-8HE.0	10450	1320	1320	2280	1600	335	220	280	630	2400	2500
1RN4 632-8HE.0	11050	1320	1320	2280	1600	335	220	280	630	2400	2500
1RN4 634-8HE.0	12050	1320	1320	2280	1800	335	220	280	630	2400	2740
1RN4 636-8HE.0	12800	1320	1320	2280	1800	335	220	280	630	2400	2740

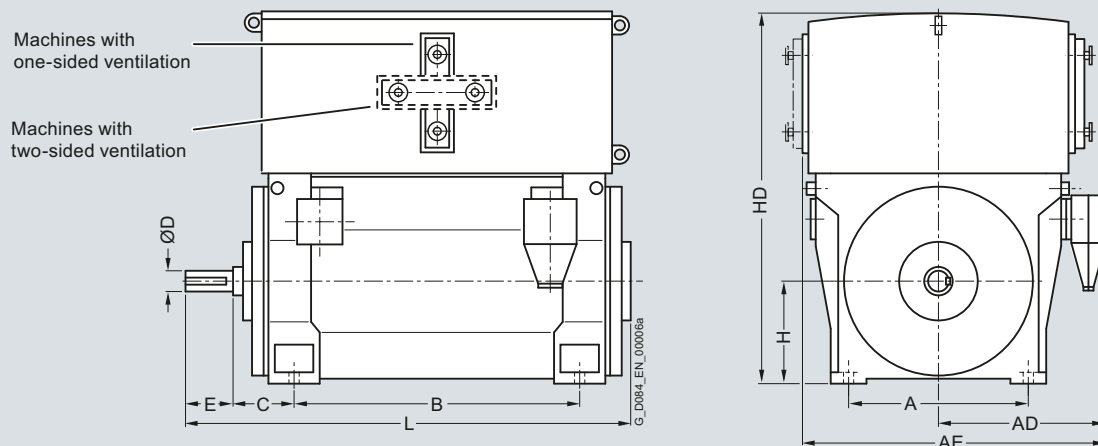
<sup>1)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

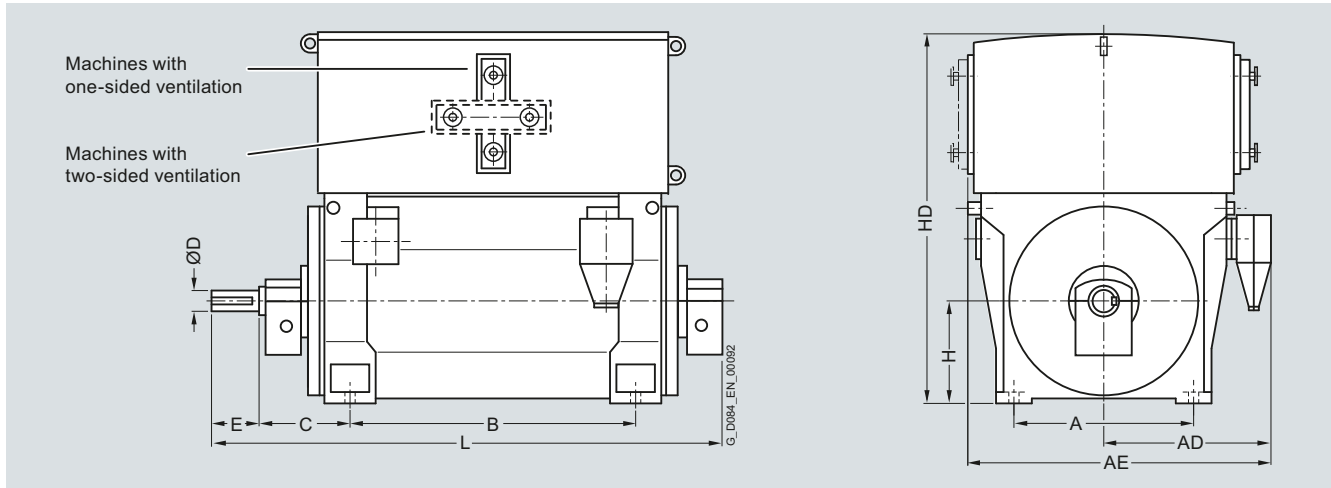
Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings – 1RN4 series<sup>1)</sup></b>											
<b>10-pole</b>											
1RN4 500-3HE.0	5500	950	1220	2010	1320	280	160	240	500	1830	2270
1RN4 502-3HE.0	5850	950	1220	2010	1320	280	160	240	500	1830	2270
1RN4 504-3HE.0	6400	950	1220	2010	1500	280	170	240	500	1830	2480
1RN4 506-3HE.0	6750	950	1220	2010	1500	280	170	240	500	1830	2480
1RN4 560-3HE.0	7850	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 562-3HE.0	8350	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 564-3HE.0	8950	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 566-3HE.0	9350	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 630-3HE.0	10450	1320	1320	2280	1600	335	220	280	630	2400	2500
1RN4 632-3HE.0	11050	1320	1320	2280	1600	335	220	280	630	2400	2500
1RN4 634-3HE.0	12000	1320	1320	2280	1800	335	220	280	630	2400	2740
1RN4 636-3HE.0	12750	1320	1320	2280	1800	335	220	280	630	2400	2740
<b>12-pole</b>											
1RN4 502-5HE.0	5900	950	1220	2010	1320	280	160	240	500	1830	2270
1RN4 504-5HE.0	6350	950	1220	2010	1500	280	170	240	500	1830	2480
1RN4 506-5HE.0	6750	950	1220	2010	1500	280	170	240	500	1830	2480
1RN4 560-5HE.0	7450	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 562-5HE.0	7950	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4 564-5HE.0	8800	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 566-5HE.0	9250	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4 630-5HE.0	10450	1320	1320	2280	1600	335	220	280	630	2400	2500
1RN4 632-5HE.0	11100	1320	1320	2280	1600	335	220	280	630	2400	2500
1RN4 634-5HE.0	12100	1320	1320	2280	1800	335	220	280	630	2400	2740
1RN4 636-5HE.0	12850	1320	1320	2280	1800	335	220	280	630	2400	2740

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

## Dimension drawings



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – series 1RN4<sup>2)</sup>, 1RN6</b>											
<b>2-pole</b>											
1RN6 450-2HJ.0	4048	850	930	1620	1180	425	95	130	450	1725	2218
1RN6 452-2HJ.0	4254	850	930	1620	1180	425	95	130	450	1725	2218
1RN6 454-2HJ.0	4595	850	930	1620	1400	425	95	130	450	1725	2428
1RN6 456-2HJ.0	4860	850	930	1620	1400	425	95	130	450	1725	2428
1RN6 457-2HJ.0	5339	850	930	1620	1600	425	95	130	450	1725	2638
1RN6 458-2HJ.0	5592	850	930	1620	1600	425	95	130	450	1725	2638
1RN4 504-2HE.0	5700	950	1000	1790	1500	475	120	165	500	1830	2600
1RN4 506-2HE.0	6150	950	1000	1790	1500	475	120	165	500	1830	2600
1RN4 560-2HE.0	6850	1060	1210	2060	1400	500	140	200	560	2040	2560
1RN4 562-2HE.0	7150	1060	1210	2060	1400	500	140	200	560	2040	2560
1RN4 564-2HE.0	8000	1060	1210	2060	1600	530	150	200	560	2040	2820
1RN4 566-2HE.0	8450	1060	1210	2060	1600	530	150	200	560	2040	2820
1RN4 630-2HE.0	10150	1320	1330	2290	1600	560	150	200	630	2400	2820
1RN4 632-2HE.0	10800	1320	1330	2290	1600	560	150	200	630	2400	2820
1RN4 634-2HE.0	11900	1320	1330	2290	1800	560	160	240	630	2400	3100
1RN4 636-2HE.0	12750	1320	1330	2290	1800	560	160	240	630	2400	3100
<b>4-pole</b>											
1RN6 450-4HJ.0-Z K96	4382	850	930	1620	1180	500	130	200	450	1715	2438
1RN6 452-4HJ.0-Z K96	4636	850	930	1620	1180	500	130	200	450	1715	2438
1RN6 454-4HJ.0-Z K96	5030	850	930	1620	1400	500	130	200	450	1715	2648
1RN6 456-4HJ.0-Z K96	5308	850	930	1620	1400	500	130	200	450	1715	2648
1RN4 500-4HE.0-Z K96	5550	950	1000	1790	1320	500	150	200	500	1830	2580
1RN4 502-4HE.0-Z K96	5750	950	1000	1790	1320	500	150	200	500	1830	2580
1RN4 504-4HE.0-Z K96	6450	950	1000	1790	1500	500	160	240	500	1830	2830
1RN4 506-4HE.0-Z K96	6850	950	1000	2010	1500	500	160	240	500	1830	2830
1RN4 560-4HE.0-Z K96	7550	1060	1210	2060	1400	530	180	240	560	2040	2630
1RN4 562-4HE.0-Z K96	8000	1060	1210	2060	1400	530	180	240	560	2040	2630

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

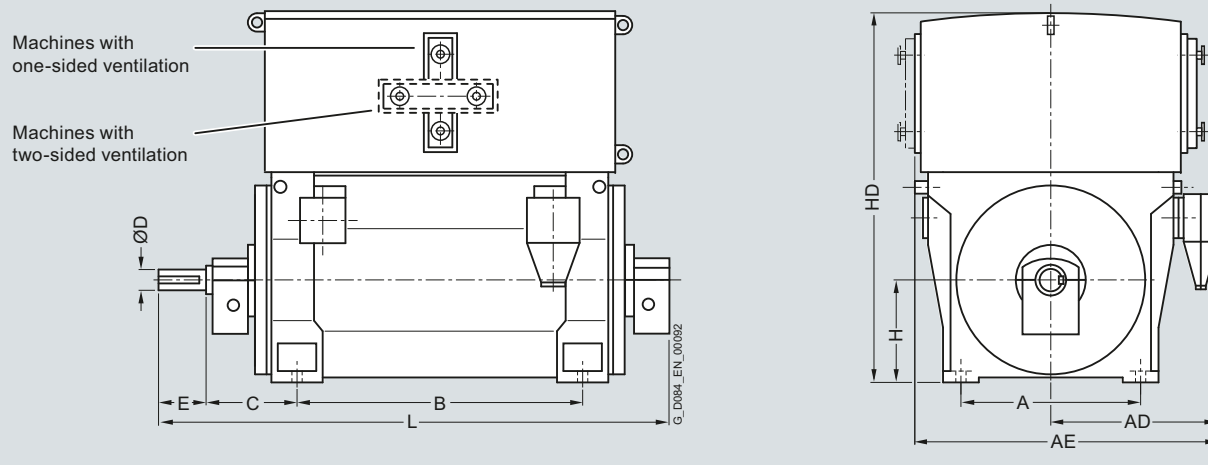
<sup>2)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

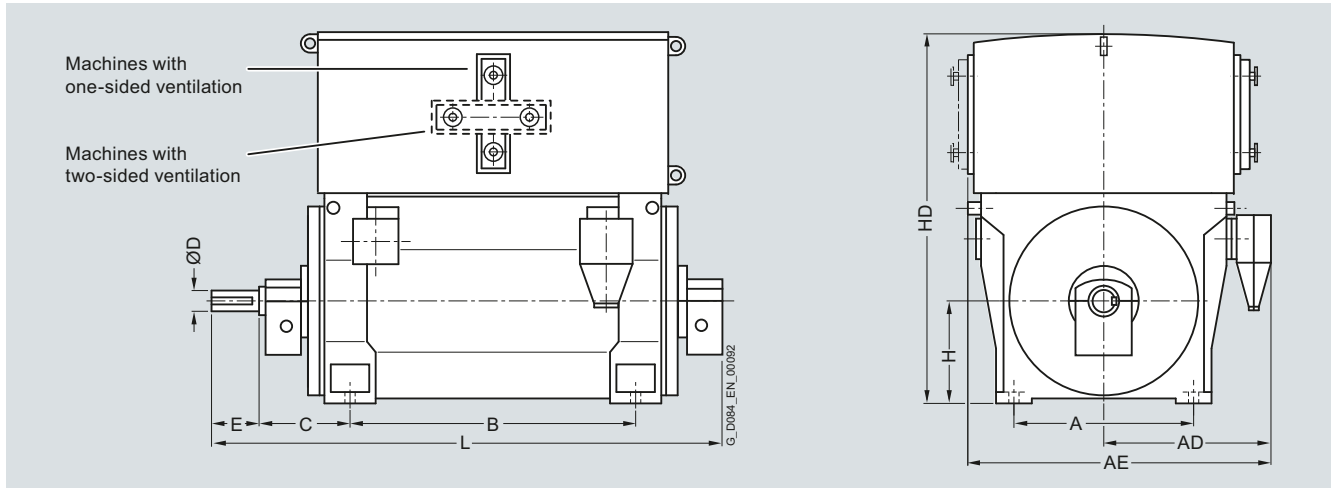
Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – series 1RN4<sup>2)</sup>, 1RN6</b>											
<b>4-pole</b>											
1RN4 564-4HE.0-Z K96	8950	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 566-4HE.0-Z K96	9400	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 630-4HE.0-Z K96 <sup>3)</sup>	10650	1320	1330	2290	1600	600	200	280	630	2400	2970
1RN4 632-4HE.0-Z K96 <sup>3)</sup>	11350	1320	1330	2290	1600	600	200	280	630	2400	2970
1RN4 634-4HE.0-Z K96 <sup>3)</sup>	12400	1320	1330	2290	1800	600	220	280	630	2400	3210
1RN4 636-4HE.0-Z K96 <sup>3)</sup>	13000	1320	1330	2290	1800	600	220	280	630	2400	3210
<b>6-pole</b>											
1RN6 450-6HJ.0-Z K96	4504	850	930	1620	1180	500	140	200	450	1715	2438
1RN6 452-6HJ.0-Z K96	4789	850	930	1620	1180	500	140	200	450	1715	2438
1RN6 454-6HJ.0-Z K96	5147	850	930	1620	1400	500	140	200	450	1715	2648
1RN6 456-6HJ.0-Z K96	5489	850	930	1620	1400	500	140	200	450	1715	2648
1RN4 500-6HE.0-Z K96	5700	950	1000	1790	1320	500	160	240	500	1830	2620
1RN4 502-6HE.0-Z K96	6100	950	1000	1790	1320	500	160	240	500	1830	2620
1RN4 504-6HE.0-Z K96	6600	950	1000	1790	1500	500	170	240	500	1830	2830
1RN4 506-6HE.0-Z K96	7000	950	1000	1790	1500	500	170	240	500	1830	2830
1RN4 560-6HE.0-Z K96	7750	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN4 562-6HE.0-Z K96	8350	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN4 564-6HE.0-Z K96	9150	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 566-6HE.0-Z K96	9650	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 630-6HE.0-Z K96	10950	1320	1330	2290	1600	600	220	280	630	2400	2970
1RN4 632-6HE.0-Z K96	11500	1320	1330	2290	1600	600	220	280	630	2400	2970
1RN4 634-6HE.0-Z K96	12550	1320	1330	2290	1800	600	220	280	630	2400	3210
1RN4 636-6HE.0-Z K96	13300	1320	1330	2290	1800	600	220	280	630	2400	3210
<b>8-pole</b>											
1RN6 450-8HJ.0-Z K96	4520	850	930	1620	1180	500	140	200	450	1715	2438
1RN6 452-8HJ.0-Z K96	4819	850	930	1620	1180	500	140	200	450	1715	2438
1RN6 454-8HJ.0-Z K96	5181	850	930	1620	1400	500	140	200	450	1715	2648
1RN6 456-8HJ.0-Z K96	5528	850	930	1620	1400	500	140	200	450	1715	2648

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

<sup>3)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – series 1RN4<sup>2)</sup>, 1RN6</b>											
<b>8-pole</b>											
1RN4 500-8HE.0-Z K96	5750	950	1000	1790	1320	500	160	240	500	1830	2620
1RN4 502-8HE.0-Z K96	6100	950	1000	1790	1320	500	160	240	500	1830	2620
1RN4 504-8HE.0-Z K96	6600	950	1000	1790	1500	500	170	240	500	1830	2830
1RN4 506-8HE.0-Z K96	7000	950	1000	1790	1500	500	170	240	500	1830	2830
1RN4 560-8HE.0-Z K96	7700	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN4 562-8HE.0-Z K96	8250	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN4 564-8HE.0-Z K96	9050	1060	1070	1920	1600	530	190	280	560	2040	2940
1RN4 566-8HE.0-Z K96	9550	1060	1070	1920	1600	530	190	280	560	2040	2940
1RN4 630-8HE.0-Z K96 <sup>3)</sup>	10850	1320	1330	2290	1600	600	220	280	630	2400	2970
1RN4 632-8HE.0-Z K96 <sup>3)</sup>	11500	1320	1330	2290	1600	600	220	280	630	2400	2970
1RN4 634-8HE.0-Z K96 <sup>3)</sup>	12450	1320	1330	2290	1800	600	220	280	630	2400	3210
1RN4 636-8HE.0-Z K96 <sup>3)</sup>	13150	1320	1330	2290	1800	600	220	280	630	2400	3210
<b>10-pole</b>											
1RN6 450-3HJ.0-Z K96	4520	850	930	1620	1180	500	140	200	450	1715	2438
1RN6 452-3HJ.0-Z K96	4819	850	930	1620	1180	500	140	200	450	1715	2438
1RN6 454-3HJ.0-Z K96	5181	850	930	1620	1400	500	140	200	450	1715	2648
1RN6 456-3HJ.0-Z K96	5528	850	930	1620	1400	500	140	200	450	1715	2648
1RN4 500-3HE.0-Z K96	5700	950	1000	1790	1320	500	160	240	500	1830	2620
1RN4 502-3HE.0-Z K96	6050	950	1000	1790	1320	500	160	240	500	1830	2620
1RN4 504-3HE.0-Z K96	6600	950	1000	1790	1500	500	170	240	500	1830	2830
1RN4 506-3HE.0-Z K96	6950	950	1000	1790	1500	500	170	240	500	1830	2830
1RN4 560-3HE.0-Z K96	7650	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN4 562-3HE.0-Z K96	8200	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN4 564-3HE.0-Z K96	9050	1060	1070	1920	1600	530	190	280	560	2040	2940
1RN4 566-3HE.0-Z K96	9500	1060	1070	1920	1600	530	190	280	560	2040	2940
1RN4 630-3HE.0-Z K96 <sup>3)</sup>	10750	1320	1180	2140	1600	600	220	280	630	2400	2970
1RN4 632-3HE.0-Z K96 <sup>3)</sup>	11450	1320	1330	2290	1600	600	220	280	630	2400	2970
1RN4 634-3HE.0-Z K96 <sup>3)</sup>	12500	1320	1330	2290	1800	600	220	280	630	2400	3210
1RN4 636-3HE.0-Z K96 <sup>3)</sup>	13200	1320	1330	2290	1800	600	220	280	630	2400	3210

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

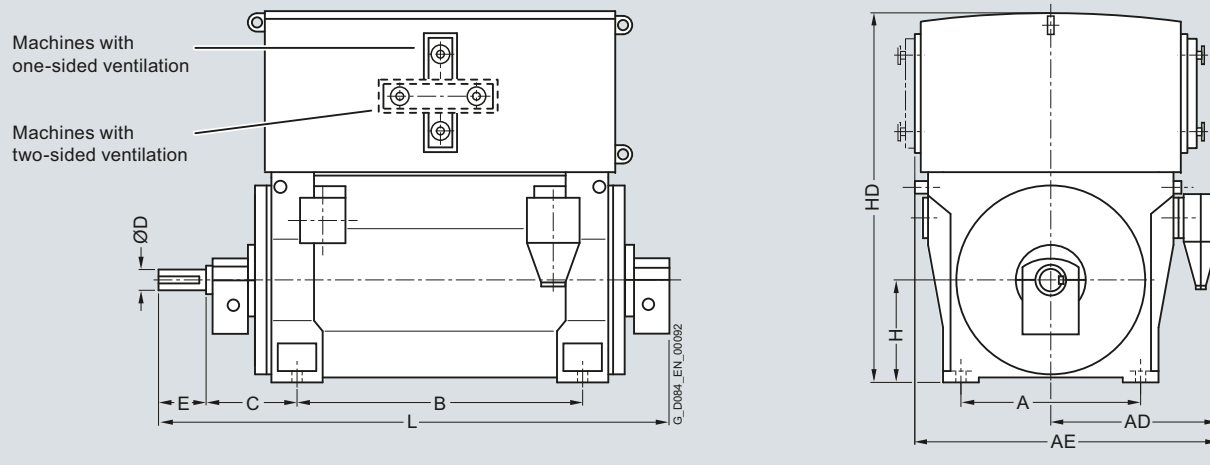
<sup>3)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings – series 1RN4<sup>2)</sup>, 1RN6</b>											
<b>12-pole</b>											
1RN6 450-5HJ.0-Z K96	4520	850	930	1620	1180	500	140	200	450	1715	2438
1RN6 452-5HJ.0-Z K96	4819	850	930	1620	1180	500	140	200	450	1715	2438
1RN6 454-5HJ.0-Z K96	5181	850	930	1620	1400	500	140	200	450	1715	2648
1RN6 456-5HJ.0-Z K96	5528	850	930	1620	1400	500	140	200	450	1715	2648
1RN4 500-5HE.0-Z K96	5700	950	1000	1790	1320	500	160	240	500	1830	2620
1RN4 502-5HE.0-Z K96	6050	950	1000	1790	1320	500	160	240	500	1830	2620
1RN4 504-5HE.0-Z K96	6550	950	1000	1790	1500	500	170	240	500	1830	2830
1RN4 506-5HE.0-Z K96	6950	950	1000	1790	1500	500	170	240	500	1830	2830
1RN4 560-5HE.0-Z K96	7650	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN4 562-5HE.0-Z K96	8250	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN4 564-5HE.0-Z K96	9000	1060	1070	1920	1600	530	190	280	560	2040	2940
1RN4 566-5HE.0-Z K96	9500	1060	1070	1920	1600	530	190	280	560	2040	2940
1RN4 630-5HE.0-Z K96 <sup>3)</sup>	10650	1320	1180	2140	1600	600	220	280	630	2400	2970
1RN4 632-5HE.0-Z K96 <sup>3)</sup>	11300	1320	1180	2140	1600	600	220	280	630	2400	2970
1RN4 634-5HE.0-Z K96 <sup>3)</sup>	12300	1320	1180	2140	1800	600	220	280	630	2400	3210
1RN4 636-5HE.0-Z K96 <sup>3)</sup>	13150	1320	1330	2290	1800	600	220	280	630	2400	3210

Note:

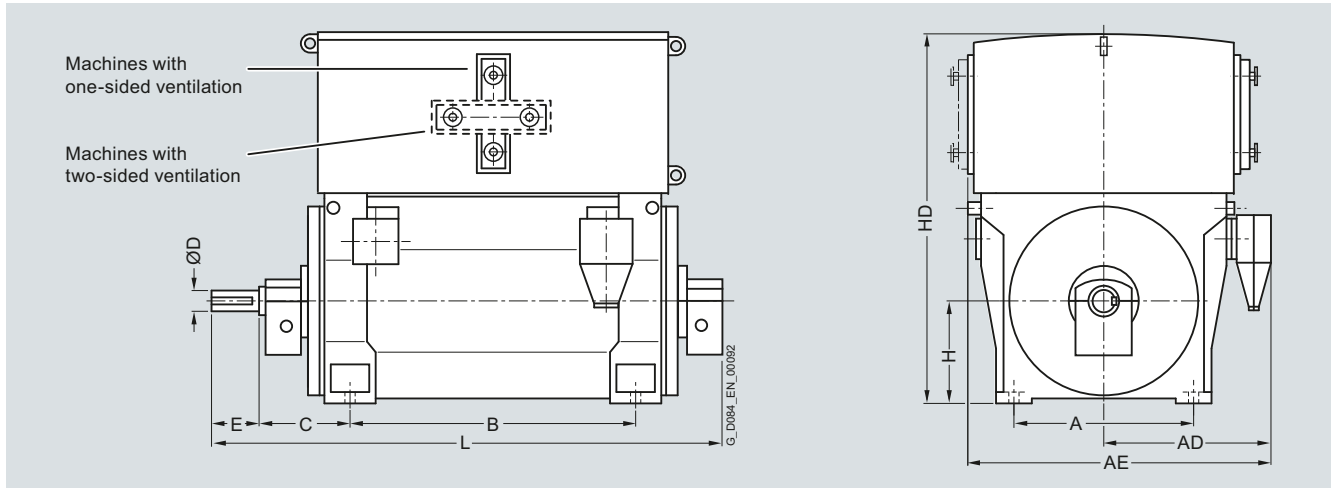
Higher pole numbers are available on request.

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

<sup>3)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Dimension drawings



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – series 1RN4<sup>1)</sup>, 1RN6</b>											
<b>2-pole</b>											
1RN6 450-2HJ.0	4048	850	1070	1840	1180	425	95	130	450	1725	2218
1RN6 452-2HJ.0	4254	850	1070	1840	1180	425	95	130	450	1725	2218
1RN6 454-2HJ.0	4595	850	1070	1840	1400	425	95	130	450	1725	2428
1RN6 456-2HJ.0	4860	850	1070	1840	1400	425	95	130	450	1725	2428
1RN6 457-2HJ.0	5339	850	1070	1840	1600	425	95	130	450	1725	2638
1RN6 458-2HJ.0	5592	850	1070	1840	1600	425	95	130	450	1725	2638
1RN4 504-2HE.0	5700	950	1220	2010	1500	475	120	165	500	1830	2570
1RN4 506-2HE.0	6050	950	1220	2010	1500	475	120	165	500	1830	2570
1RN4 560-2HE.0	6750	1060	1210	2060	1400	500	140	200	560	2040	2570
1RN4 562-2HE.0	7000	1060	1210	2060	1400	500	140	200	560	2040	2570
1RN4 564-2HE.0	7850	1060	1210	2060	1600	530	150	200	560	2040	2830
1RN4 566-2HE.0	8350	1060	1210	2060	1600	530	150	200	560	2040	2830
1RN4 630-2HE.0	10050	1320	1320	2280	1600	560	150	200	630	2400	2820
1RN4 632-2HE.0	10700	1320	1330	2290	1600	560	150	200	630	2400	2820
1RN4 634-2HE.0	11750	1320	1330	2290	1800	560	160	240	630	2400	3100
1RN4 636-2HE.0	12600	1320	1330	2290	1800	560	160	240	630	2400	3100
<b>4-pole</b>											
1RN6 450-4HJ.0-Z K96	4382	850	1070	1840	1180	500	130	200	450	1715	2438
1RN6 452-4HJ.0-Z K96	4636	850	1070	1840	1180	500	130	200	450	1715	2438
1RN6 454-4HJ.0-Z K96	5030	850	1070	1840	1400	500	130	200	450	1715	2645
1RN6 456-4HJ.0-Z K96	5308	850	1070	1840	1400	500	130	200	450	1715	2645
1RN4 500-4HE.0-Z K96	5600	950	1220	2010	1320	500	150	200	500	1830	2580
1RN4 502-4HE.0-Z K96	5750	950	1220	2010	1320	500	150	200	500	1830	2580
1RN4 504-4HE.0-Z K96	6400	950	1220	2010	1500	500	160	240	500	1830	2830
1RN4 506-4HE.0-Z K96	6750	950	1220	2010	1500	500	160	240	500	1830	2830
1RN4 560-4HE.0-Z K96	7400	1060	1210	2060	1400	530	180	240	560	2040	2630
1RN4 562-4HE.0-Z K96	7900	1060	1210	2060	1400	530	180	240	560	2040	2630
1RN4 564-4HE.0-Z K96	8800	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 566-4HE.0-Z K96	9250	1060	1210	2060	1600	530	190	280	560	2040	2940

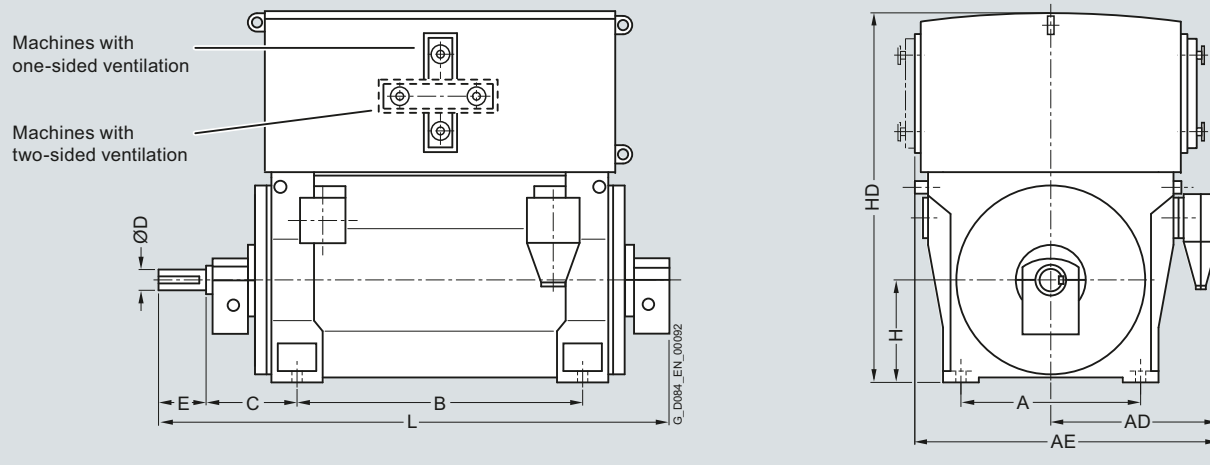
<sup>1)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings (continued)

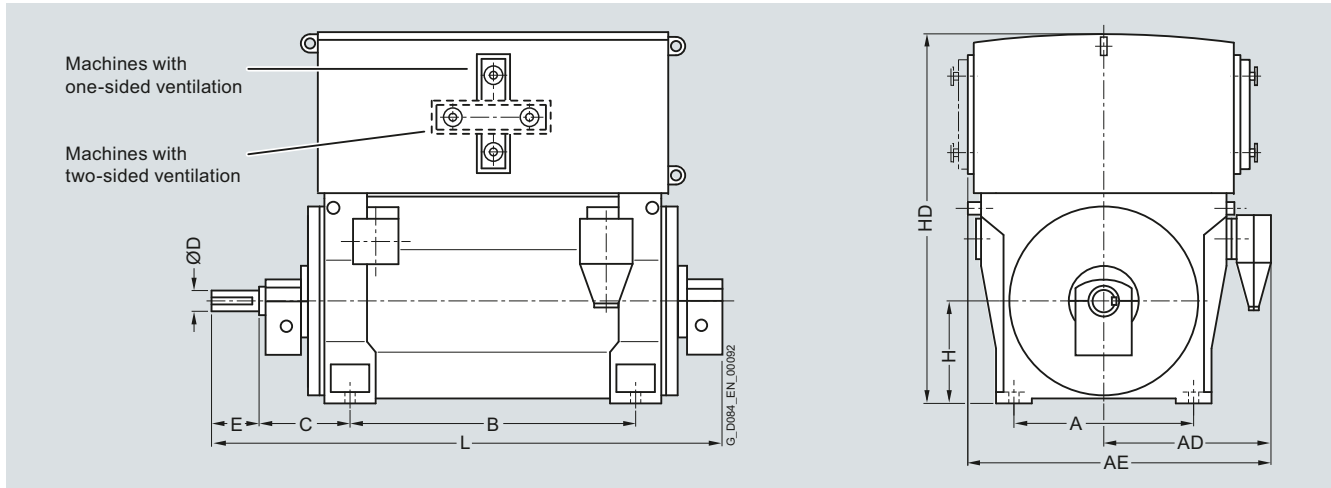


Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – series 1RN4<sup>1)</sup>, 1RN6</b>											
<b>4-pole</b>											
1RN4 630-4HE.0-Z K96	10550	1320	1320	2280	1600	600	200	280	630	2400	2970
1RN4 632-4HE.0-Z K96	11250	1320	1330	2290	1600	600	200	280	630	2400	2970
1RN4 634-4HE.0-Z K96	12250	1320	1330	2290	1800	600	220	280	630	2400	3210
1RN4 636-4HE.0-Z K96	12900	1320	1330	2290	1800	600	220	280	630	2400	3210
<b>6-pole</b>											
1RN6 450-6HJ.0-Z K96	4504	850	1070	1840	1180	500	140	200	450	1715	2438
1RN6 452-6HJ.0-Z K96	4789	850	1070	1840	1180	500	140	200	450	1715	2438
1RN6 454-6HJ.0-Z K96	5147	850	1070	1840	1400	500	140	200	450	1715	2648
1RN6 456-6HJ.0-Z K96	5489	850	1070	1840	1400	500	140	200	450	1715	2648
1RN4 500-6HE.0-Z K96	5700	950	1220	2010	1320	500	160	240	500	1830	2620
1RN4 502-6HE.0-Z K96	6100	950	1220	2010	1320	500	160	240	500	1830	2620
1RN4 504-6HE.0-Z K96	6550	950	1220	2010	1500	500	170	240	500	1830	2830
1RN4 506-6HE.0-Z K96	6950	950	1220	2010	1500	500	170	240	500	1830	2830
1RN4 560-6HE.0-Z K96	7700	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN4 562-6HE.0-Z K96	8200	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN4 564-6HE.0-Z K96	9050	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 566-6HE.0-Z K96	9450	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 630-6HE.0-Z K96	10900	1320	1320	2280	1600	600	220	280	630	2400	2970
1RN4 632-6HE.0-Z K96	11500	1320	1320	2280	1600	600	220	280	630	2400	2970
1RN4 634-6HE.0-Z K96	12550	1320	1320	2280	1800	600	220	280	630	2400	3210
1RN4 636-6HE.0-Z K96	13300	1320	1330	2290	1800	600	220	280	630	2400	3210
<b>8-pole</b>											
1RN6 450-8HJ.0-Z K96	4520	850	1070	1840	1180	500	140	200	450	1715	2438
1RN6 452-8HJ.0-Z K96	4819	850	1070	1840	1180	500	140	200	450	1715	2438
1RN6 454-8HJ.0-Z K96	5181	850	1070	1840	1400	500	140	200	450	1715	2648
1RN6 456-8HJ.0-Z K96	5528	850	1070	1840	1400	500	140	200	450	1715	2648
1RN4 500-8HE.0-Z K96	5700	950	1220	2010	1320	500	160	240	500	1830	2620
1RN4 502-8HE.0-Z K96	6100	950	1220	2010	1320	500	160	240	500	1830	2620
1RN4 504-8HE.0-Z K96	6600	950	1220	2010	1500	500	170	240	500	1830	2830
1RN4 506-8HE.0-Z K96	6950	950	1220	2010	1500	500	170	240	500	1830	2830
1RN4 560-8HE.0-Z K96	7700	1060	1210	2060	1400	530	180	240	560	2040	2670

<sup>1)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

## Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings – 1RN4 series<sup>1)</sup></b>											
<b>8-pole</b>											
1RN4 562-8HE.0-Z K96	8250	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN4 564-8HE.0-Z K96	9050	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 566-8HE.0-Z K96	9450	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 630-8HE.0-Z K96	10750	1320	1320	2280	1600	600	220	280	630	2400	2970
1RN4 632-8HE.0-Z K96	11350	1320	1320	2280	1600	600	220	280	630	2400	2970
1RN4 634-8HE.0-Z K96	12350	1320	1320	2280	1800	600	220	280	630	2400	3210
1RN4 636-8HE.0-Z K96	13050	1320	1320	2280	1800	600	220	280	630	2400	3210
<b>10-pole</b>											
1RN4 500-3HE.0-Z K96	5700	950	1220	2010	1320	500	160	240	500	1830	2620
1RN4 502-3HE.0-Z K96	6050	950	1220	2010	1320	500	160	240	500	1830	2620
1RN4 504-3HE.0-Z K96	6550	950	1220	2010	1500	500	170	240	500	1830	2830
1RN4 506-3HE.0-Z K96	6900	950	1220	2010	1500	500	170	240	500	1830	2830
1RN4 560-3HE.0-Z K96	8050	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN4 562-3HE.0-Z K96	8550	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN4 564-3HE.0-Z K96	9150	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 566-3HE.0-Z K96	9550	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 630-3HE.0-Z K96	10700	1320	1320	2280	1600	600	220	280	630	2400	2970
1RN4 632-3HE.0-Z K96	11350	1320	1320	2280	1600	600	220	280	630	2400	2970
1RN4 634-3HE.0-Z K96	12300	1320	1320	2280	1800	600	220	280	630	2400	3210
1RN4 636-3HE.0-Z K96	13000	1320	1320	2280	1800	600	220	280	630	2400	3210
<b>12-pole</b>											
1RN4 502-5HE.0-Z K96	6050	950	1220	2010	1320	500	160	240	500	1830	2620
1RN4 504-5HE.0-Z K96	6500	950	1220	2010	1500	500	170	240	500	1830	2830
1RN4 506-5HE.0-Z K96	6900	950	1220	2010	1500	500	170	240	500	1830	2830
1RN4 560-5HE.0-Z K96	7650	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN4 562-5HE.0-Z K96	8200	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN4 564-5HE.0-Z K96	9000	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 566-5HE.0-Z K96	9450	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4 630-5HE.0-Z K96	10750	1320	1320	2280	1600	600	220	280	630	2400	2970
1RN4 632-5HE.0-Z K96	11350	1320	1320	2280	1600	600	220	280	630	2400	2970
1RN4 634-5HE.0-Z K96	12400	1320	1320	2280	1800	600	220	280	630	2400	3210
1RN4 636-5HE.0-Z K96	13100	1320	1320	2280	1800	600	220	280	630	2400	3210

Note: Higher pole numbers are available on request.

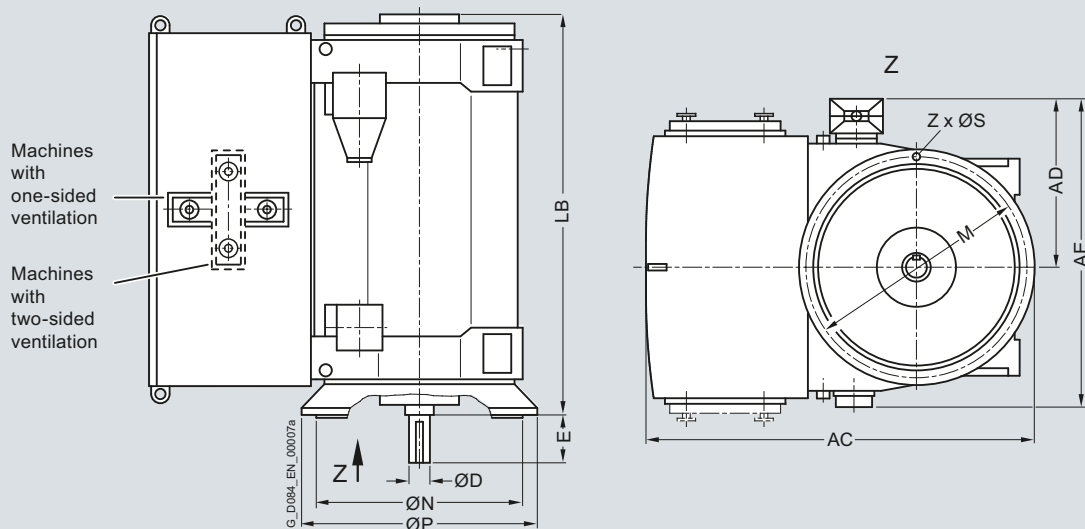
<sup>1)</sup> The dimensions are also valid for the 1SN4/1SN6, 1SL4/1SL6 and 1SQ4/1SQ6 series.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

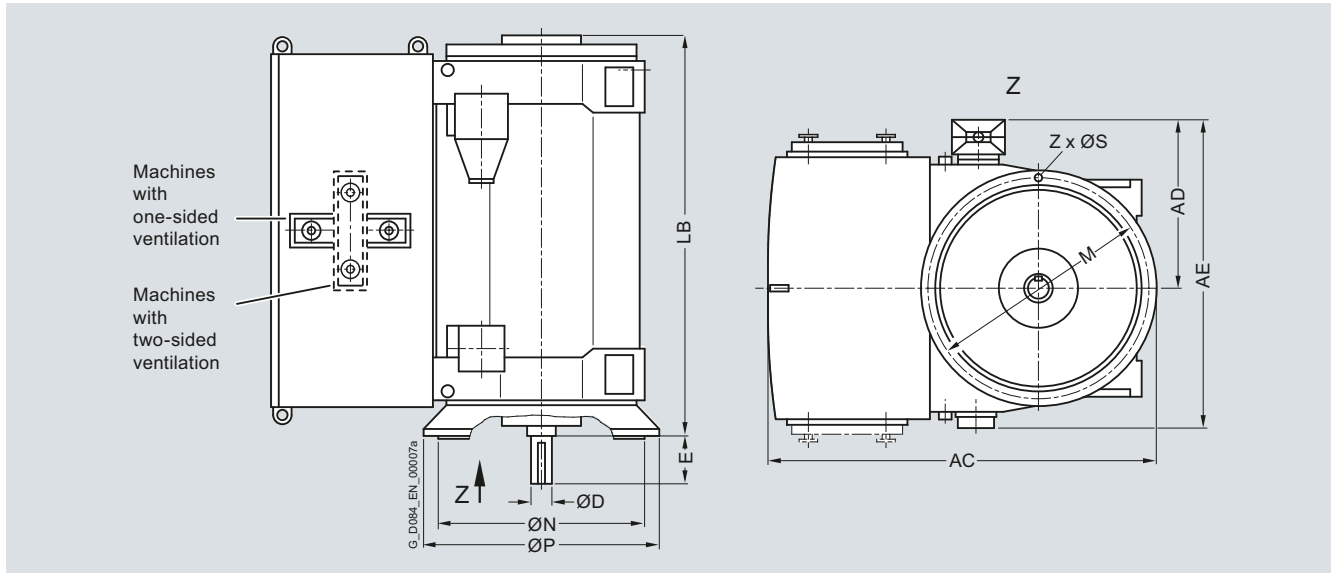
Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – series 1RN4<sup>2)</sup>, 1RN6</b>												
<b>4-pole</b>												
1RN6 450-4HJ.8	4518	1840	930	1620	130	200	1720	1150	1000	1080	26	8
1RN6 452-4HJ.8	4750	1840	930	1620	130	200	1720	1150	1000	1080	26	8
1RN6 454-4HJ.8	5144	1840	930	1620	130	200	1930	1150	1000	1080	26	8
1RN6 456-4HJ.8	5422	1840	930	1620	130	200	1930	1150	1000	1080	26	8
1RN4 500-4HE.8	5500	1960	1000	1810	150	200	1910	1250	1120	1180	26	8
1RN4 502-4HE.8	5700	1960	1000	1810	150	200	1910	1250	1120	1180	26	8
1RN4 504-4HE.8	6400	1960	1000	1810	160	240	2120	1250	1120	1180	26	8
1RN4 506-4HE.8	6800	1960	1000	1810	160	240	2120	1250	1120	1180	26	8
1RN4 560-4HE.8	7550	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 562-4HE.8	8000	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 564-4HE.8 <sup>3)</sup>	8900	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 566-4HE.8 <sup>3)</sup>	9350	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 630-4HE.8 <sup>3)</sup>	12050	2875	1330	2300	200	280	2400	2000	1800	1900	33	8
1RN4 632-4HE.8 <sup>3)</sup>	12750	2875	1330	2300	200	280	2400	2000	1800	1900	33	8
1RN4 634-4HE.8 <sup>3)</sup>	13800	2875	1330	2300	220	280	2640	2000	1800	1900	33	8
1RN4 636-4HE.8 <sup>3)</sup>	14350	2875	1330	2300	220	280	2640	2000	1800	1900	33	8
<b>6-pole</b>												
1RN6 450-6HJ.8	4618	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6 452-6HJ.8	4903	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6 454-6HJ.8	5268	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6 456-6HJ.8	5610	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN4 500-6HE.8	5650	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN4 502-6HE.8	6050	1960	1000	1810	160	240	1910	1250	1120	1180	26	8

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

<sup>3)</sup> Vertical type of construction, only in the 50 Hz version.

## Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – series 1RN4<sup>2)</sup>, 1RN6</b>												
<b>6-pole</b>												
1RN4 504-6HE.8	6550	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN4 506-6HE.8	6950	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN4 560-6HE.8	7650	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 562-6HE.8	8250	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 564-6HE.8	9100	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 566-6HE.8	9550	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 630-6HE.8	12300	2875	1330	2300	220	280	2400	2000	1800	1900	33	8
1RN4 632-6HE.8	12850	2875	1330	2300	220	280	2400	2000	1800	1900	33	8
1RN4 634-6HE.8	13950	2875	1330	2300	220	280	2640	2000	1800	1900	33	8
1RN4 636-6HE.8	14650	2875	1330	2300	220	280	2640	2000	1800	1900	33	8
<b>8-pole</b>												
1RN6 450-8HJ.8	4634	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6 452-8HJ.8	4933	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6 454-8HJ.8	5302	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6 456-8HJ.8	5650	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN4 500-8HE.8	5700	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN4 502-8HE.8	6050	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN4 504-8HE.8	6550	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN4 506-8HE.8	6950	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN4 560-8HE.8	7650	2180	1070	1960	180	240	2090	1400	1250	1320	26	8
1RN4 562-8HE.8	8150	2180	1070	1960	180	240	2090	1400	1250	1320	26	8
1RN4 564-8HE.8	9000	2180	1070	1960	190	280	2320	1400	1250	1320	26	8
1RN4 566-8HE.8	9450	2180	1070	1960	190	280	2320	1400	1250	1320	26	8
1RN4 630-8HE.8 <sup>3)</sup>	12250	2875	1330	2300	220	280	2400	2000	1800	1900	33	8
1RN4 632-8HE.8 <sup>3)</sup>	12850	2875	1330	2300	220	280	2400	2000	1800	1900	33	8
1RN4 634-8HE.8 <sup>3)</sup>	13800	2875	1330	2300	220	280	2640	2000	1800	1900	33	8
1RN4 636-8HE.8 <sup>3)</sup>	14550	2875	1330	2300	220	280	2640	2000	1800	1900	33	8

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

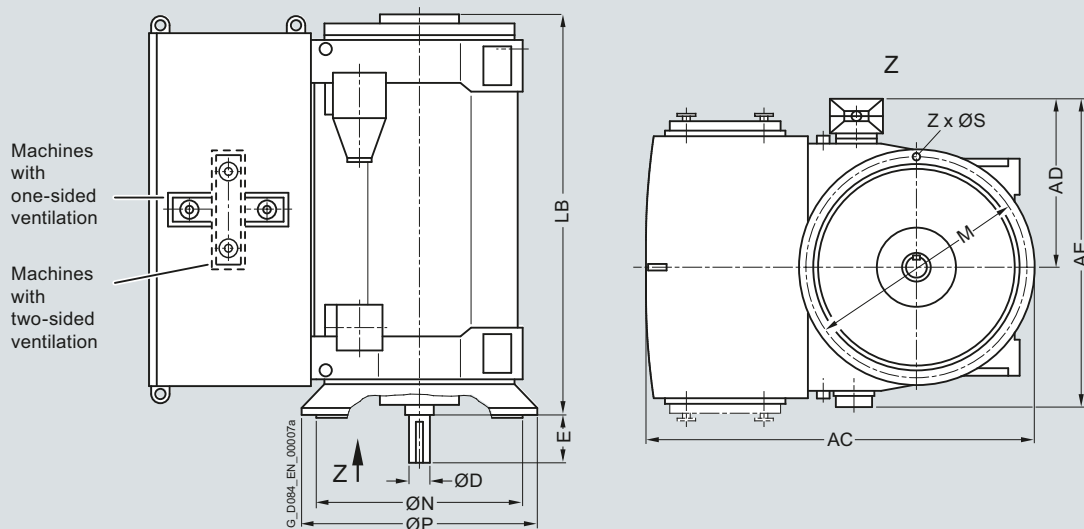
<sup>3)</sup> Vertical type of construction, only in the 50 Hz version.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

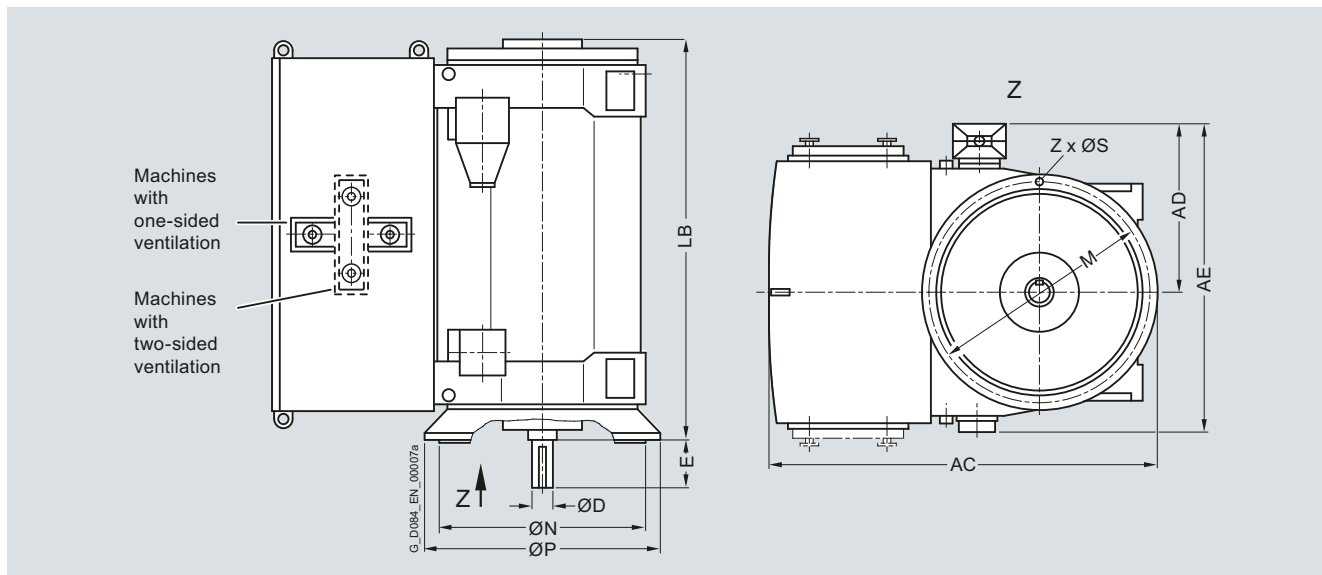
Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – series 1RN4<sup>2)</sup>, 1RN6</b>												
<b>10-pole</b>												
1RN6 450-3HJ.8	4634	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6 452-3HJ.8	4933	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6 454-3HJ.8	5302	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6 456-3HJ.8	5650	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN4 500-3HE.8	5650	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN4 502-3HE.8	6000	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN4 504-3HE.8	6550	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN4 506-3HE.8	6900	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN4 560-3HE.8	7550	2180	1070	1960	180	240	2090	1400	1250	1320	26	8
1RN4 562-3HE.8	8150	2180	1070	1960	180	240	2090	1400	1250	1320	26	8
1RN4 564-3HE.8	8950	2180	1070	1960	190	280	2320	1400	1250	1320	26	8
1RN4 566-3HE.8	9400	2180	1070	1960	190	280	2320	1400	1250	1320	26	8
1RN4 630-3HE.8 <sup>3)</sup>	12150	2875	1180	2150	220	280	2400	2000	1800	1900	33	8
1RN4 632-3HE.8 <sup>3)</sup>	12850	2875	1330	2300	220	280	2400	2000	1800	1900	33	8
1RN4 634-3HE.8 <sup>3)</sup>	13850	2875	1330	2300	220	280	2640	2000	1800	1900	33	8
1RN4 636-3HE.8 <sup>3)</sup>	14550	2875	1330	2300	220	280	2640	2000	1800	1900	33	8

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

<sup>3)</sup> Vertical type of construction, only in the 50 Hz version.

## Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – series 1RN4<sup>2)</sup>, 1RN6</b>												
12-pole												
1RN6 450-5HJ.8	4634	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6 452-5HJ.8	4933	1840	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6 454-5HJ.8	5302	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6 456-5HJ.8	5650	1840	930	1620	140	200	1930	1150	1000	1080	26	8
1RN4 500-5HE.8	5650	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN4 502-5HE.8	6000	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN4 504-5HE.8	6500	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN4 506-5HE.8	6950	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN4 560-5HE.8	7600	2180	1070	1960	180	240	2090	1400	1250	1320	26	8
1RN4 562-5HE.8	8150	2180	1070	1960	180	240	2090	1400	1250	1320	26	8
1RN4 564-5HE.8	8950	2180	1070	1960	190	280	2320	1400	1250	1320	26	8
1RN4 566-5HE.8	9400	2180	1070	1960	190	280	2320	1400	1250	1320	26	8
1RN4 630-5HE.8 <sup>3)</sup>	12050	2875	1180	2150	220	280	2400	2000	1800	1900	33	8
1RN4 632-5HE.8 <sup>3)</sup>	12650	2875	1180	2150	220	280	2400	2000	1800	1900	33	8
1RN4 634-5HE.8 <sup>3)</sup>	13700	2875	1180	2150	220	280	2640	2000	1800	1900	33	8
1RN4 636-5HE.8 <sup>3)</sup>	14500	2875	1330	2300	220	280	2640	2000	1800	1900	33	8

Note:

Higher pole numbers are available on request.

<sup>1)</sup> The value applies for 6 kV. When a lower voltage is selected, the rated current increases. If, in this case, it exceeds the value of 315 A, then the dimension changes by + 140 mm.

<sup>2)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

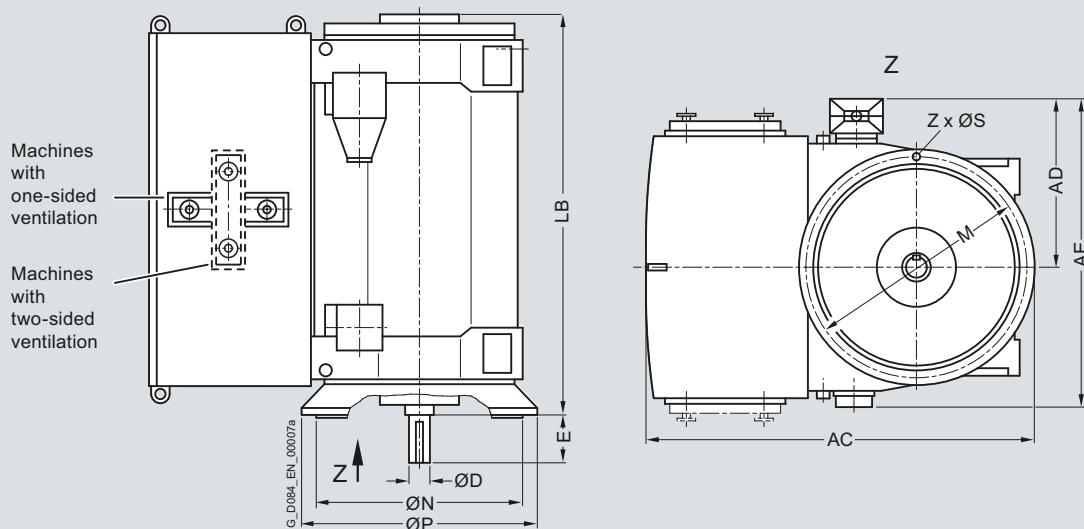
<sup>3)</sup> Vertical type of construction, only in the 50 Hz version.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings



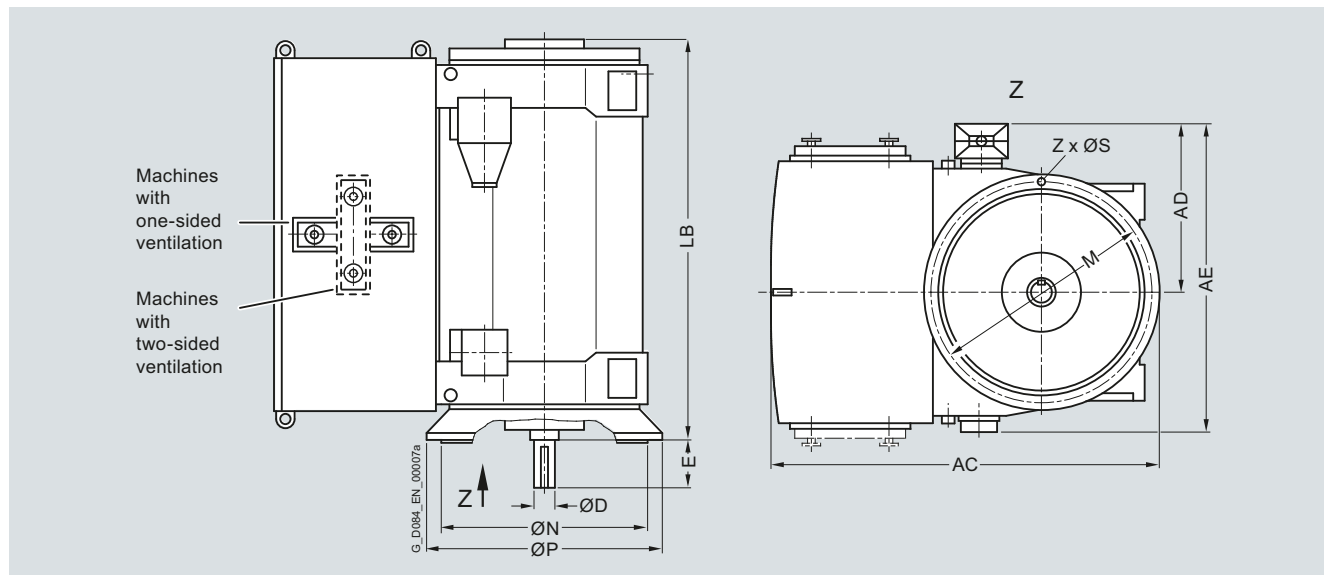
Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings – series 1RN4<sup>1)</sup>, 1RN6</b>												
<b>4-pole</b>												
1RN6 450-4HJ.8	4518	1840	1070	1840	130	200	1720	1150	1000	1080	26	8
1RN6 452-4HJ.8	4750	1840	1070	1840	130	200	1720	1150	1000	1080	26	8
1RN6 454-4HJ.8	5144	1840	1070	1840	130	200	1930	1150	1000	1080	26	8
1RN6 456-4HJ.8	5422	1840	1070	1840	130	200	1930	1150	1000	1080	26	8
1RN4 500-4HE.8	5550	1960	1140	1950	150	200	1910	1250	1120	1180	26	8
1RN4 502-4HE.8	5700	1960	1140	1950	150	200	1910	1250	1120	1180	26	8
1RN4 504-4HE.8	6350	1960	1140	1950	160	240	2120	1250	1120	1180	26	8
1RN4 506-4HE.8	6700	1960	1140	1950	160	240	2120	1250	1120	1180	26	8
1RN4 560-4HE.8	7400	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 562-4HE.8	7900	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 564-4HE.8	8750	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 566-4HE.8	9200	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 630-4HE.8 <sup>2)</sup>	11950	2875	1320	2290	200	280	2400	2000	1800	1900	33	8
1RN4 632-4HE.8 <sup>2)</sup>	12600	2875	1330	2300	200	280	2400	2000	1800	1900	33	8
1RN4 634-4HE.8 <sup>2)</sup>	13650	2875	1330	2300	220	280	2640	2000	1800	1900	33	8
1RN4 636-4HE.8 <sup>2)</sup>	14250	2875	1330	2300	220	280	2640	2000	1800	1900	33	8
<b>6-pole</b>												
1RN6 450-6HJ.8	4618	1840	1070	1840	140	200	1720	1150	1000	1080	26	8
1RN6 452-6HJ.8	4903	1840	1070	1840	140	200	1720	1150	1000	1080	26	8
1RN6 454-6HJ.8	5268	1840	1070	1840	140	200	1930	1150	1000	1080	26	8
1RN6 456-6HJ.8	5610	1840	1070	1840	140	200	1930	1150	1000	1080	26	8
1RN4 500-6HE.8	5650	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN4 502-6HE.8	6050	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN4 504-6HE.8	6550	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN4 506-6HE.8	6950	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN4 560-6HE.8	7650	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 562-6HE.8	8150	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 564-6HE.8	8950	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 566-6HE.8	9400	2180	1210	2100	190	280	2320	1400	1250	1320	26	8

<sup>1)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

<sup>2)</sup> Vertical type of construction, only in the 50 Hz version.

## Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings – series 1RN4<sup>1)</sup>, 1RN6</b>												
<b>6-pole</b>												
1RN4 630-6HE.8	12300	2875	1320	2290	220	280	2400	2000	1800	1900	33	8
1RN4 632-6HE.8	12850	2875	1320	2290	220	280	2400	2000	1800	1900	33	8
1RN4 634-6HE.8	13900	2875	1320	2290	220	280	2640	2000	1800	1900	33	8
1RN4 636-6HE.8	14650	2875	1330	2300	220	280	2640	2000	1800	1900	33	8
<b>8-pole</b>												
1RN6 450-8HJ.8	4634	1840	1070	1840	140	200	1720	1150	1000	1080	26	8
1RN6 452-8HJ.8	4933	1840	1070	1840	140	200	1720	1150	1000	1080	26	8
1RN6 454-8HJ.8	5302	1840	1070	1840	140	200	1930	1150	1000	1080	26	8
1RN6 -456-8HJ.8	5650	1840	1070	1840	140	200	1930	1150	1000	1080	26	8
1RN4 500-8HE.8	5700	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN4 502-8HE.8	6050	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN4 504-8HE.8	6550	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN4 506-8HE.8	6950	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN4 560-8HE.8	7600	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 562-8HE.8	8150	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 564-8HE.8	9000	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 566-8HE.8	9400	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 630-8HE.8	12100	2875	1320	2290	220	280	2400	2000	1800	1900	33	8
1RN4 632-8HE.8	12700	2875	1320	2290	220	280	2400	2000	1800	1900	33	8
1RN4 634-8HE.8	13700	2875	1320	2290	220	280	2640	2000	1800	1900	33	8
1RN4 636-8HE.8	14450	2875	1320	2290	220	280	2640	2000	1800	1900	33	8

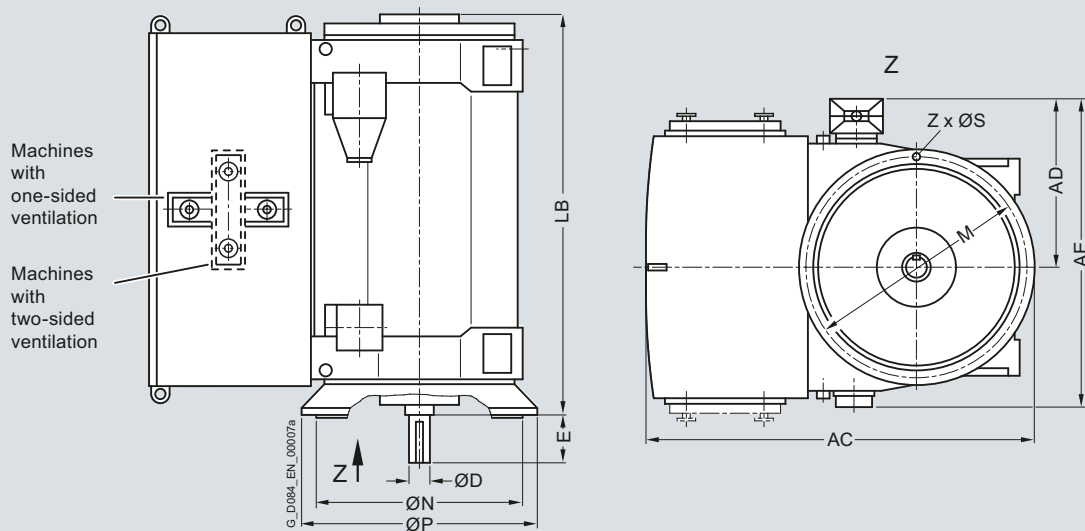
<sup>1)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

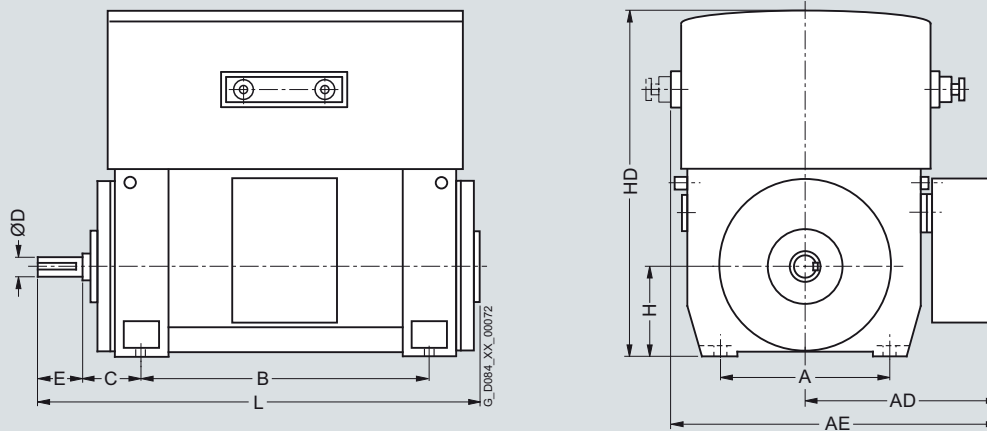
Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings – 1RN4 series<sup>1)</sup></b>												
<b>10-pole</b>												
1RN4 500-3HE.8	5650	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN4 502-3HE.8	6000	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN4 504-3HE.8	6500	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN4 506-3HE.8	6900	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN4 560-3HE.8	7900	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 562-3HE.8	8550	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 564-3HE.8	9400	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 566-3HE.8	10000	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 630-3HE.8	12100	2875	1320	2290	220	280	2400	2000	1800	1900	33	8
1RN4 632-3HE.8	12700	2875	1320	2290	220	280	2400	2000	1800	1900	33	8
1RN4 634-3HE.8	13650	2875	1320	2290	220	280	2640	2000	1800	1900	33	8
1RN4 636-3HE.8	14400	2875	1320	2290	220	280	2640	2000	1800	1900	33	8
<b>12-pole</b>												
1RN4 502-5HE.8	6050	1960	1140	1950	160	240	1910	1250	1120	1180	26	8
1RN4 504-5HE.8	6450	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN4 506-5HE.8	6900	1960	1140	1950	170	240	2120	1250	1120	1180	26	8
1RN4 560-5HE.8	7550	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 562-5HE.8	8100	2180	1210	2100	180	240	2090	1400	1250	1320	26	8
1RN4 564-5HE.8	8900	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 566-5HE.8	9350	2180	1210	2100	190	280	2320	1400	1250	1320	26	8
1RN4 630-5HE.8	12100	2875	1320	2290	220	280	2400	2000	1800	1900	33	8
1RN4 632-5HE.8	12750	2875	1320	2290	220	280	2400	2000	1800	1900	33	8
1RN4 634-5HE.8	13750	2875	1320	2290	220	280	2640	2000	1800	1900	33	8
1RN4 636-5HE.8	14500	2875	1320	2290	220	280	2640	2000	1800	1900	33	8

**Note:**

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SN4/1SN6 and 1SL4/1SL6 series.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings, X ventilation – 1RN6 series<sup>1)</sup></b>											
4-pole											
1RN6 710-4HJ.0 <sup>2)</sup>	17700	1500	1500	2560	2000	355	220	280	710	2510	2980
1RN6 712-4HJ.0 <sup>2)</sup>	18500	1500	1500	2560	2000	355	220	280	710	2510	2980
1RN6 714-4HJ.0 <sup>2)</sup>	19900	1500	1500	2560	2240	355	220	280	710	2510	3220
1RN6 716-4HJ.0 <sup>2)</sup>	20900	1500	1500	2560	2240	355	220	280	710	2510	3220

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings, X ventilation – 1RN6 series<sup>1)</sup></b>											
4-pole											
1RN6 710-4HJ.0 <sup>2)</sup>	17400	1500	1500	2560	2000	355	220	280	710	2510	2980
1RN6 712-4HJ.0 <sup>2)</sup>	18200	1500	1500	2560	2000	355	220	280	710	2510	2980
1RN6 714-4HJ.0 <sup>2)</sup>	19700	1500	1500	2560	2240	355	220	280	710	2510	3220
1RN6 716-4HJ.0 <sup>2)</sup>	20600	1500	1500	2560	2240	355	220	280	710	2510	3220

<sup>1)</sup> The dimensions are also valid for the 1SN6 and 1SL6 series.

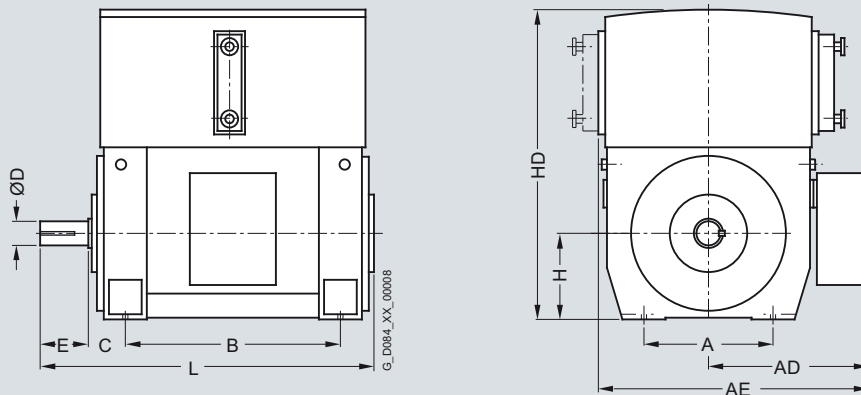
<sup>2)</sup> Roller bearings only for 50 Hz version.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings



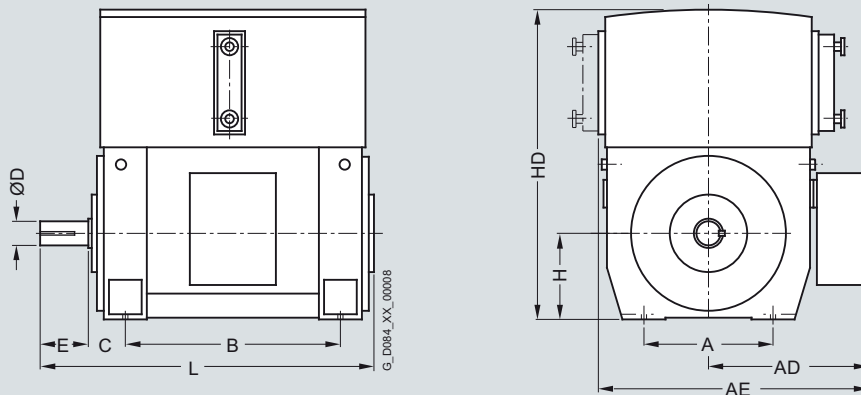
Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, roller bearings, Z ventilation – 1RN6 series<sup>1)</sup></b>											
<b>6-pole</b>											
1RN6 710-6HJ.0	16700	1500	1500	2560	2000	355	240	330	710	2600	3030
1RN6 712-6HJ.0	17400	1500	1500	2560	2000	355	240	330	710	2600	3030
1RN6 714-6HJ.0	19100	1500	1500	2560	2240	355	240	330	710	2600	3270
1RN6 716-6HJ.0	20200	1500	1500	2560	2240	355	240	330	710	2600	3270
<b>8-pole</b>											
1RN6 710-8HJ.0	16500	1500	1500	2560	2000	355	240	330	710	2600	3030
1RN6 712-8HJ.0	17300	1500	1500	2560	2000	355	240	330	710	2600	3030
1RN6 714-8HJ.0	18900	1500	1500	2560	2240	355	240	330	710	2600	3270
1RN6 716-8HJ.0	20000	1500	1500	2560	2240	355	240	330	710	2600	3270
<b>10-pole</b>											
1RN6 710-3HJ.0	16300	1500	1500	2560	2000	355	240	330	710	2600	3030
1RN6 712-3HJ.0	17100	1500	1500	2560	2000	355	240	330	710	2600	3030
1RN6 714-3HJ.0	18700	1500	1500	2560	2240	355	240	330	710	2600	3270
1RN6 716-3HJ.0	19900	1500	1500	2560	2240	355	240	330	710	2600	3270

**Note:**

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SN6 and 1SL6 series.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, roller bearings, Z ventilation – 1RN6 series<sup>1)</sup></b>											
<b>6-pole</b>											
1RN6 710-6HJ.0	16500	1500	1500	2560	2000	355	240	330	710	2600	3030
1RN6 712-6HJ.0	17200	1500	1500	2560	2000	355	240	330	710	2600	3030
1RN6 714-6HJ.0	18900	1500	1500	2560	2240	355	240	330	710	2600	3270
1RN6 716-6HJ.0	20000	1500	1500	2560	2240	355	240	330	710	2600	3270
<b>8-pole</b>											
1RN6 710-8HJ.0	16400	1500	1500	2560	2000	355	240	330	710	2600	3030
1RN6 712-8HJ.0	17100	1500	1500	2560	2000	355	240	330	710	2600	3030
1RN6 714-8HJ.0	18800	1500	1500	2560	2240	355	240	330	710	2600	3270
1RN6 716-8HJ.0	19800	1500	1500	2560	2240	355	240	330	710	2600	3270
<b>10-pole</b>											
1RN6 710-3HJ.0	16200	1500	1500	2560	2000	355	240	330	710	2600	3030
1RN6 712-3HJ.0	17000	1500	1500	2560	2000	355	240	330	710	2600	3030
1RN6 714-3HJ.0	18700	1500	1500	2560	2240	355	240	330	710	2600	3270
1RN6 716-3HJ.0	19800	1500	1500	2560	2240	355	240	330	710	2600	3270

Note:

Higher pole numbers are available on request.

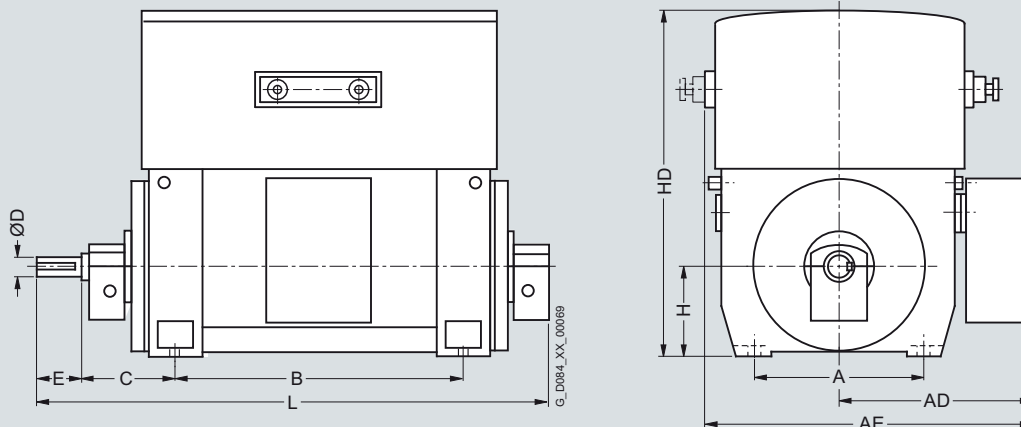
1) The dimensions are also valid for the 1SN6 and 1SL6 series.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### Up to 6.6 kV, IM B3 type of construction, sleeve bearings, X ventilation – 1RN6 series<sup>1)</sup>

##### 2-pole

1RN6 710-2HJ.0	15900	1500	1500	2560	2000	600	180	240	710	2510	3370
1RN6 712-2HJ.0	16800	1500	1500	2560	2000	600	180	240	710	2510	3370
1RN6 714-2HJ.0	18000	1500	1500	2560	2240	600	180	240	710	2510	3610
1RN6 716-2HJ.0	19000	1500	1500	2560	2240	600	180	240	710	2510	3610

##### 4-pole

1RN6 710-4HJ.0-Z K96 <sup>2)</sup>	17700	1500	1500	2560	2000	530	220	280	710	2510	3260
1RN6 712-4HJ.0-Z K96 <sup>2)</sup>	18500	1500	1500	2560	2000	530	220	280	710	2510	3260
1RN6 714-4HJ.0-Z K96 <sup>2)</sup>	19900	1500	1500	2560	2240	530	220	280	710	2510	3500
1RN6 716-4HJ.0-Z K96 <sup>2)</sup>	20900	1500	1500	2560	2240	530	220	280	710	2510	3500

Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm

#### 9 ... 11 kV, IM B3 type of construction, sleeve bearings, X ventilation – 1RN6 series<sup>1)</sup>

##### 2-pole

1RN6 710-2HJ.0	15800	1500	1500	2560	2000	600	180	240	710	2510	3370
1RN6 712-2HJ.0	16600	1500	1500	2560	2000	600	180	240	710	2510	3370
1RN6 714-2HJ.0	17800	1500	1500	2560	2240	600	180	240	710	2510	3610
1RN6 716-2HJ.0	18800	1500	1500	2560	2240	600	180	240	710	2510	3610

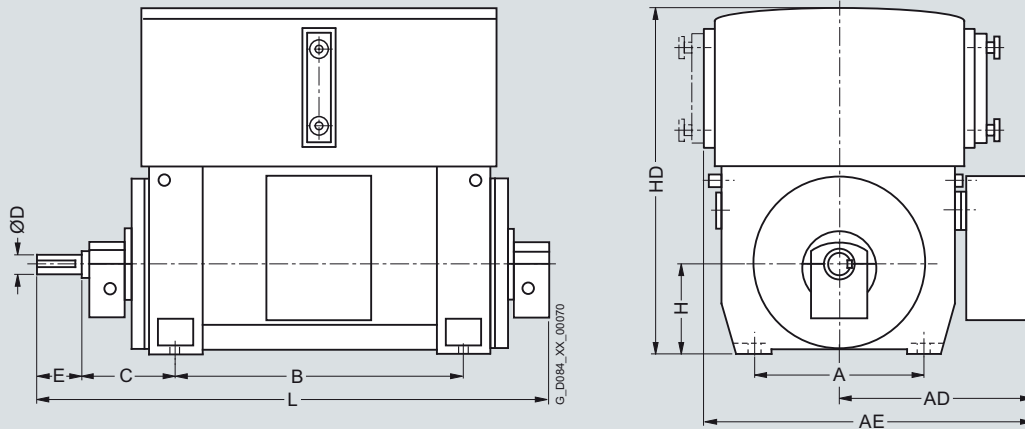
##### 4-pole

1RN6 710-4HJ.0-Z K96 <sup>2)</sup>	17400	1500	1500	2560	2000	530	220	280	710	2510	3260
1RN6 712-4HJ.0-Z K96 <sup>2)</sup>	18200	1500	1500	2560	2000	530	220	280	710	2510	3260
1RN6 714-4HJ.0-Z K96 <sup>2)</sup>	19700	1500	1500	2560	2240	530	220	280	710	2510	3500
1RN6 716-4HJ.0-Z K96 <sup>2)</sup>	20600	1500	1500	2560	2240	530	220	280	710	2510	3500

<sup>1)</sup> The dimensions are also valid for the 1SN6 and 1SL6 series.

<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

## Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, IM B3 type of construction, sleeve bearings, Z ventilation – 1RN6 series<sup>1)</sup></b>											
<b>6-pole</b>											
1RN6 710-6HJ.0-Z K96	17700	1500	1500	2560	2000	670	240	330	710	2600	3600
1RN6 712-6HJ.0-Z K96	18400	1500	1500	2560	2000	670	240	330	710	2600	3600
1RN6 714-6HJ.0-Z K96	20200	1500	1500	2560	2240	670	240	330	710	2600	3840
1RN6 716-6HJ.0-Z K96	21300	1500	1500	2560	2240	670	240	330	710	2600	3840
<b>8-pole</b>											
1RN6 710-8HJ.0-Z K96	17500	1500	1500	2560	2000	670	240	330	710	2600	3600
1RN6 712-8HJ.0-Z K96	18300	1500	1500	2560	2000	670	240	330	710	2600	3600
1RN6 714-8HJ.0-Z K96	20000	1500	1500	2560	2240	670	240	330	710	2600	3840
1RN6 716-8HJ.0-Z K96	21100	1500	1500	2560	2240	670	240	330	710	2600	3840
<b>10-pole</b>											
1RN6 710-3HJ.0-Z K96	17300	1500	1500	2560	2000	670	240	330	710	2600	3600
1RN6 712-3HJ.0-Z K96	18200	1500	1500	2560	2000	670	240	330	710	2600	3600
1RN6 714-3HJ.0-Z K96	19800	1500	1500	2560	2240	670	240	330	710	2600	3840
1RN6 716-3HJ.0-Z K96	21000	1500	1500	2560	2240	670	240	330	710	2600	3840

Note:

Higher pole numbers are available on request.

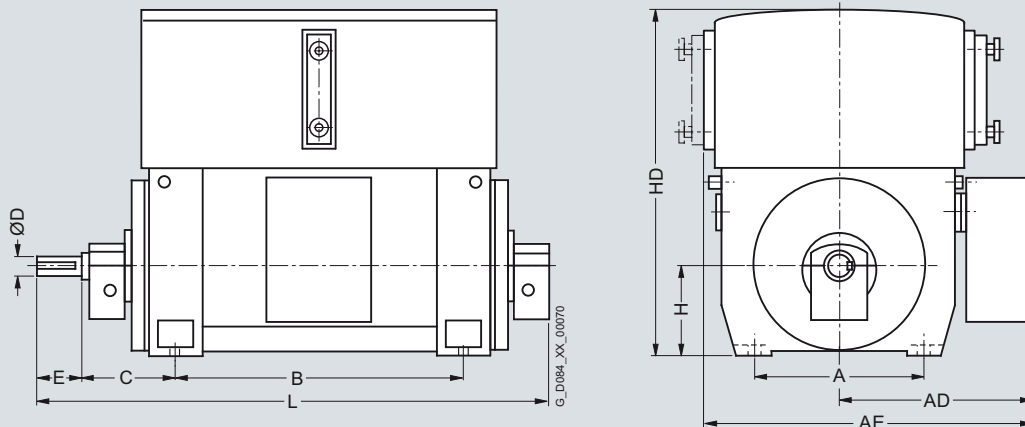
<sup>1)</sup> The dimensions are also valid for the 1SN6 and 1SL6 series.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings



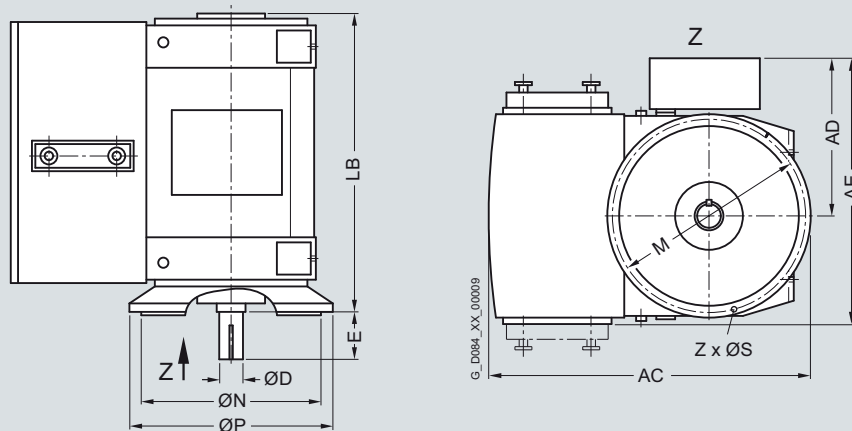
Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>9 ... 11 kV, IM B3 type of construction, sleeve bearings, Z ventilation – 1RN6 series<sup>1)</sup></b>											
<b>6-pole</b>											
1RN6 710-6HJ.0-Z K96	17500	1500	1500	2560	2000	670	240	330	710	2600	3600
1RN6 712-6HJ.0-Z K96	18300	1500	1500	2560	2000	670	240	330	710	2600	3600
1RN6 714-6HJ.0-Z K96	20000	1500	1500	2560	2240	670	240	330	710	2600	3840
1RN6 716-6HJ.0-Z K96	21100	1500	1500	2560	2240	670	240	330	710	2600	3840
<b>8-pole</b>											
1RN6 710-8HJ.0-Z K96	17400	1500	1500	2560	2000	670	240	330	710	2600	3600
1RN6 712-8HJ.0-Z K96	18200	1500	1500	2560	2000	670	240	330	710	2600	3600
1RN6 714-8HJ.0-Z K96	19800	1500	1500	2560	2240	670	240	330	710	2600	3840
1RN6 716-8HJ.0-Z K96	20900	1500	1500	2560	2240	670	240	330	710	2600	3840
<b>10-pole</b>											
1RN6 710-3HJ.0-Z K96	17300	1500	1500	2560	2000	670	240	330	710	2600	3600
1RN6 712-3HJ.0-Z K96	18100	1500	1500	2560	2000	670	240	330	710	2600	3600
1RN6 714-3HJ.0-Z K96	19700	1500	1500	2560	2240	670	240	330	710	2600	3840
1RN6 716-3HJ.0-Z K96	20800	1500	1500	2560	2240	670	240	330	710	2600	3840

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SN6 and 1SL6 series.

## Dimension drawings



Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, IM V1 type of construction, roller bearings – 1RN6 series<sup>1)</sup></b>												
<b>6-pole</b>												
1RN6 710-6HJ.8	17800	2890	1500	2560	240	330	2870	2000	1800	1900	33	24
1RN6 712-6HJ.8	18700	2890	1500	2560	240	330	2870	2000	1800	1900	33	24
1RN6 714-6HJ.8	20400	2890	1500	2560	240	330	3110	2000	1800	1900	33	24
1RN6 716-6HJ.8	21400	2890	1500	2560	240	330	3110	2000	1800	1900	33	24
<b>8-pole</b>												
1RN6 710-8HJ.8	17700	2890	1500	2560	240	330	2870	2000	1800	1900	33	24
1RN6 712-8HJ.8	18500	2890	1500	2560	240	330	2870	2000	1800	1900	33	24
1RN6 714-8HJ.8	20100	2890	1500	2560	240	330	3110	2000	1800	1900	33	24
1RN6 716-8HJ.8	21200	2890	1500	2560	240	330	3110	2000	1800	1900	33	24
<b>10-pole</b>												
1RN6 710-3HJ.8	17500	2890	1500	2560	240	330	2870	2000	1800	1900	33	24
1RN6 712-3HJ.8	18300	2890	1500	2560	240	330	2870	2000	1800	1900	33	24
1RN6 714-3HJ.8	20000	2890	1500	2560	240	330	3110	2000	1800	1900	33	24
1RN6 716-3HJ.8	21100	2890	1500	2560	240	330	3110	2000	1800	1900	33	24

Note:

Higher pole numbers are available on request.

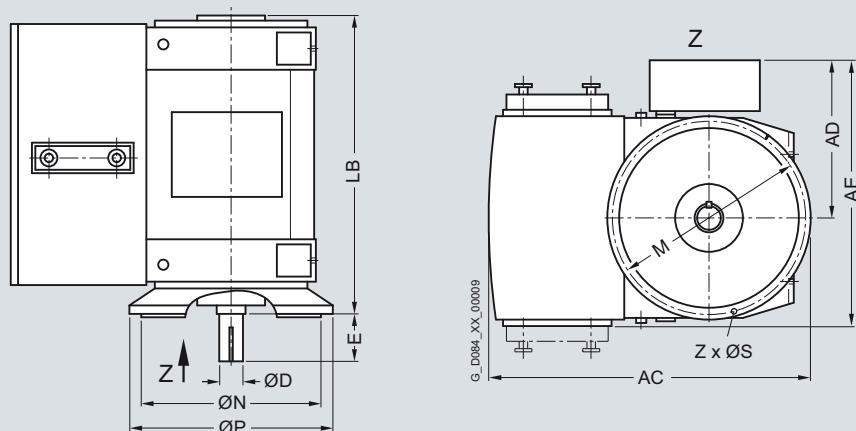
<sup>1)</sup> The dimensions are also valid for the 1SN6 and 1SL6 series.

# Motors for line operation

## Water-cooled motors

### H-compact PLUS 1RN4 and 1RN6

#### Dimension drawings



Motor type	Weight kg	Dimensions										
		AC mm	AD mm	AE mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>9 ... 11 kV, IM V1 type of construction, roller bearings – 1RN6 series<sup>1)</sup></b>												
<b>6-pole</b>												
1RN6 710-6HJ.8	17800	2890	1500	2560	240	330	2870	2000	1800	1900	33	24
1RN6 712-6HJ.8	18700	2890	1500	2560	240	330	2870	2000	1800	1900	33	24
1RN6 714-6HJ.8	20400	2890	1500	2560	240	330	3110	2000	1800	1900	33	24
1RN6 716-6HJ.8	21400	2890	1500	2560	240	330	3110	2000	1800	1900	33	24
<b>8-pole</b>												
1RN6 710-8HJ.8	17700	2890	1500	2560	240	330	2870	2000	1800	1900	33	24
1RN6 712-8HJ.8	18400	2890	1500	2560	240	330	2870	2000	1800	1900	33	24
1RN6 714-8HJ.8	20100	2890	1500	2560	240	330	3110	2000	1800	1900	33	24
1RN6 716-8HJ.8	21200	2890	1500	2560	240	330	3110	2000	1800	1900	33	24
<b>10-pole</b>												
1RN6 710-3HJ.8	17500	2890	1500	2560	240	330	2870	2000	1800	1900	33	24
1RN6 712-3HJ.8	18300	2890	1500	2560	240	330	2870	2000	1800	1900	33	24
1RN6 714-3HJ.8	20000	2890	1500	2560	240	330	3110	2000	1800	1900	33	24
1RN6 716-3HJ.8	21100	2890	1500	2560	240	330	3110	2000	1800	1900	33	24

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> The dimensions are also valid for the 1SN6 and 1SL6 series.

### Overview

Using the following options, H-compact and H-compact PLUS can be adapted to order-specific requirements. The Order No. is supplemented with a "-Z" and with either one or several order codes.

Other options can be addressed on request with the Vario (rib-cooled) or Vario PLUS (modular design) motor series.

Example:

**1LA4354-4AN60-Z H05 + K16 + L20**

As standard, 6x PT 100 slot resistance thermometers without surge arrester for 3-wire or 4-wire circuit from the terminal box are integrated in the stator winding.

The motors are prepared as standard with SPM nipples to monitor the roller bearings.

Order code	Option description	Remark
<b>Paint finish</b>		
<b>K26</b>	Special paint finish in the standard color RAL 7030	
<b>Y53</b>	Normal paint finish not in the standard color	
<b>Y54</b>	Special paint finish not in the standard color	
<b>Documentation</b>		
<b>B00</b>	No motor manual	
<b>B21</b>	Motor manual on CD instead of paper (PDF format)	
<b>B22</b>	Motor manual as e-mail (PDF format) instead of paper	
<b>B23</b>	Motor manual printed on paper, 3x	
<b>B27</b>	Run out protocol	
<b>B28</b>	Protocol air gap calculation	
<b>B34</b>	Document standard inspection and test plan	
<b>B35</b>	Document balance report	
<b>B36</b>	Document test and inspection description	
<b>B37</b>	Document load characteristics	
<b>B38</b>	Document recommended spare parts	
<b>B41</b>	Document instrumentation list	
<b>B43</b>	Document production schedule: Generated once	
<b>B44</b>	Document production schedule: Updated biweekly	
<b>B45</b>	Document production schedule: Updated monthly	
<b>B48</b>	Document order-specific inspection and test plan	
<b>Document language</b>		
<b>D00</b>	Documentation in German	
<b>D54</b>	Documentation in Czech	
<b>D55</b>	Dokumentation in Polnisch	
<b>D56</b>	Documentation in Russian	
<b>D72</b>	Documentation in Italian	
<b>D73</b>	Documentation in Finnish	
<b>D74</b>	Documentation in Dutch	
<b>D75</b>	Documentation in Turkish	
<b>D76</b>	Documentation in English	Standard
<b>D77</b>	Documentation in French	
<b>D78</b>	Documentation in Spanish	
<b>D79</b>	Documentation in Portuguese	
<b>D80</b>	Documentation in Bulgarian	
<b>D81</b>	Documentation in Norwegian	
<b>D82</b>	Documentation in Hungarian	
<b>D83</b>	Documentation in Swedish	
<b>D84</b>	Documentation in Chinese	

# Motors for line operation

## Options and tests

### Description of options

#### Overview (continued)

Order code	Option description	Remark
<b>Speed monitoring</b>		
H70	Rotary pulse encoder LL 861 900 220 (Leine+Linde)	
H73	Rotary pulse encoder HOG 10 D1024 I (16 mm)	
H88	Rotary pulse encoder HOG 11 DN 1024 I (16 mm) with special anti-corrosion protection	For marine applications
H89	Rotary pulse encoder HOG 11 DN 1024 I (16 mm) with integrated shaft grounding and special anti-corrosion protection	For marine applications
<b>Direction of rotation</b>		
K97	Clockwise rotation	
K98	Anticlockwise rotation	
<b>Noise reduction</b>		
L20	Silencer for air inlet	
L21	Noise reduction: Silencer for air outlet	Only for H-compact PLUS
L22	Noise reduction: Lining of interior space	Only for H-compact PLUS
L23	External metal fan, unique directional	
L25	Rustless grid at inlet silencer	Only for H-compact PLUS
<b>Terminal box mounting position</b>		
K09	Terminal box on right-hand side, view from DE	
K10	Terminal box on left-hand side, view from DE	
K83	Terminal box turned through 90°, cable from DE	
K84	Terminal box turned through 90°, cable from NDE	
K85	Terminal box turned through 180°	
<b>Terminal box, main and auxiliary terminal box</b>		
L54	Terminal box 1XB8 751, 6 terminals with 2 cable entries for connection to power supply, rated current > 315 A	
L55	Star-point terminal box 1XA8 711, up to 6 kV, 3 terminals	
L56	Star-point terminal box 1XB8 911, up to 10 kV, 3 terminals	
L57	Star-point terminal box 1XB8 751, up to 6 kV, 6 terminals	
L58	Star-point terminal box 1XB9 011, for installing current transformer (without current transformer)	
L59	Terminal box 1XB8 911 for 1 cable entry for power supply	
M50	Auxiliary terminal box material: Cast iron	
M51	Auxiliary terminal box material: Stainless steel	
M52	Separate auxiliary terminal box for anti-condensation heater	Standard for H-compact PLUS
<b>Terminal box – accessories/equipping</b>		
K59	Cable plug connection, rated voltage 2 to 6.6 kV	
L79	Gland plate for 3 winding ends to connect to the line supply via separately mounted terminal box, 3 m free cable length from the frame	
L80	Gland plate for 6 winding ends to connect to the line supply via separately mounted terminal box, 3 m free cable length from the frame	
L83	Cable plug connection, rated voltage 9 to 11 kV	

## Overview (continued)

Order code	Option description	Remark
<b>Cooling air monitoring</b>		
A44	1 resistance thermometer Pt 100 for 2-, 3- or 4-wire connection from terminal box for cold air temperature	
A45	1 resistance thermometer Pt 100 for 2-, 3- or 4-wire connection from terminal box for hot air temperature	
A46	1 double resistance thermometer Pt 100 for 2-, 3- or 4-wire connection from terminal box, for cold air temperature	
A47	1 double resistance thermometer Pt 100 for 2-, 3- or 4-wire connection from terminal box, for hot air temperature	
A86	1 dial-type thermometer with 2 NO-Contacts for cold air temperature incl. terminal box	
A87	1 dial-type thermometer with 2 NO-Contacts for hot air temperature incl. terminal box	
<b>Bearing version/instrumentation</b>		
H09 + H11	DIN flange type for forced oil lubrication for oil inlet with flowmeter, manometer and throttle valve (incl. counter flange) + DIN flange type forced oil lubrication for oil outlet with sight glass (incl. counter flange)	
H10 + H12	ANSI flange type for forced oil lubrication for oil inlet with flowmeter, manometer and throttle valve (incl. counter flange) + ANSI flange type for forced oil lubrication for oil outlet with sight glass (incl. counter flange)	
H43	DIN flange type for forced oil lubrication for in- and outlet without instruments (with counter flanges)	
H44	ANSI flange type for forced oil lubrication for in- and outlet without instruments (with counter flanges)	
K20	Bearing design on DE for increased forces (reinforced)	H-compact SH 315 and SH 355 only
K94	Fixed bearing at DE for sleeve bearing	
K96	Sleeve bearing instead of roller bearing	
L18	DE insulation	
L27	NDE insulation	Standard for H-compact PLUS
L60	Forced-circulation oil lubrication (with oil cooling) instead of oil-ring lubrication	
L66	Air cooling, but prepared for future conversion to forced-circulation oil lubrication	
P44	Oil manifold; connections with counter flange; flange flush with the axial shaft face	
<b>Bearing monitoring – sleeve bearings</b>		
A02	Shaft vibration monitoring for sleeve bearings, Bently Nevada system	
A03	Speed monitoring using an inductive proximity switch, Pepperl + Fuchs, incl. terminal box, without evaluation unit	
A39	Prepared for shaft vibration monitoring for sleeve bearings (without monitoring system)	
A41	2 resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminals for sleeve bearing	
A43	2 double resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminals for sleeve bearing	
A70	2 dial-type thermometers without contacts	
A71	2 dial-type thermometers with contacts	

# Motors for line operation

## Options and tests

### Description of options

#### Overview (continued)

Order code	Option description	Remark
<b>Bearing monitoring – roller bearings</b>		
A40	2 resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminal box for rolling-contact bearings	
A42	2 double resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminals for rolling-contact bearing	
G50	Shock pulse measuring nipple (SPM) at DE and NDE	Standard
H05	Shock pulse measurement (SPM), fixed sensors and distributor box	
H07	Shock pulse measurement (SPM), complete alarm box	
<b>Mechanical versions</b>		
K16	Second shaft extension up to 50 % rated torque	
L81	Vibration severity grade B according to IEC/ EN 60034-14	
Y55	Non-standard cylindrical shaft extension (an inquiry must be sent to the factory)	
Y85	Oil shrink fit for cylindrical, single-stage shaft extension instead of a key connection	
<b>Certified for pump drives</b>		
E88	Construction supervision for motors for seawater desalination plants where Siemens AG commissions the acceptance authority	
E89	Construction supervision for motors for seawater desalination plants where a third party commissions the acceptance authority	
E90	Pump drive for seawater desalination plants certified according to Lloyds Register	
<b>Marine applications</b>		Options and tests for marine and offshore applications: <a href="#">see Chapter 5</a> .
<b>Others/additional options</b>		
H08	Leakage water detection	
K52	Degree of protection IP56 non-heavy-sea	
L15	Supporting ring for coupling guard	
L17	Mounting a coupling provided (finish machined and balanced)	
L23	External metal fan, unique directional	
L31	Motor mounting materials for mounting on a steel foundation: Bolts, shims and taper dowels	
L32	Motor mounting materials for mounting on a concrete foundation or concrete base: Threaded bolts, armature plates, sole plates, shims, leveling plates and taper dowels	
L33	Motor mounting materials to mount on a concrete foundation or concrete base: T-head bolts, foundation bolt sleeves, sole plates, shims, leveling plates and taper dowels	
L91	Higher number of starts, > 1000 ... 10000 starts per year, for Cu rotors	
L92	Higher number of starts, > 5000 ... 10000 starts per year, for Al rotors	
P45	External screws made of stainless steel	

## Overview (continued)

Order code	Option description	Remark
<b>Anti-condensation heating</b>		
L08	Anti-condensation heater, rated voltage 400 V	
L09	Anti-condensation heater, rated voltage 500 V	
M12	Anti-condensation heater 110 to 120 V (min. 100 V, max. 132 V)	
M13	Anti-condensation heater 220 to 240 V (min. 200 V, max. 264 V)	Standard for H-compact PLUS
Y83	Anti-condensation heater with other rated voltages, V = additional text required)	
<b>Ambient conditions</b>		
D02	Operation at ambient temperatures up to -50 °C, transport up to -50 °C	
D03	Operation at ambient temperatures up to -40 °C, transport up to -40 °C	
D04	Operation at ambient temperatures up to -30 °C, transport up to -40 °C	
M06	For use in sulfurous or hydrogenous atmosphere	
<b>Winding and motor protection</b>		
A12	6 PTC thermistors without lightning arresters	
A23	1 temperature sensor KTY 84-130	
A65	6 embedded resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminal box without lightning arresters	Standard
A66	6 embedded resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminal box with lightning arresters	
<b>Tests with acceptance</b>		
F01	All standard tests (routine test), with acceptance	
F15	Recording of no-load characteristic and determination of core and friction losses, with acceptance	
F17	Recording of short-circuit characteristic and determination of short-circuit losses, with acceptance	
F19	Recording of load characteristic, with acceptance	
F23	Dissipation factor test (tan delta) on 2 (test) coils, with acceptance	
F29	No-load noise measurement, without noise analysis, with acceptance	
F31	Cooling air flow and pressure drop measurement, with acceptance	
F35	Recording of current and torque characteristics during acceleration, with acceptance	
F37	Determination of moment of inertia by retardation method, with acceptance	
F39	Overspeed test, with acceptance	
F41	Recording of residual voltage curve, with acceptance	
F53	Locked-rotor torque and current measurement, with acceptance	
F55	Polarization index measurement, with acceptance	
F61	Impulse or AC voltage test on 2 (test) coils, with acceptance	In addition, specify order code F90
F63	Noise analysis, with acceptance	
F67	Sleeve bearing inspection after testrun	
F83	Type test for horizontal motors with temperature rise test, with acceptance	
F90	2 test coils	
F93	Type test for vertical motors with temperature rise test, with acceptance	

# Motors for line operation

## Options and tests

### Description of options

#### Overview (continued)

Order code	Option description	Remark
<b>Tests without acceptance</b>		
F14	Recording of no-load characteristic and determination of core and friction losses, without acceptance	
F16	Recording of short-circuit characteristic and determination of short-circuit losses, without acceptance	
F18	Recording of load characteristic, without acceptance	
F22	Dissipation factor test (tan delta) on 2 (test) coils, without acceptance	In addition, specify order code F90
F28	No-load noise measurement, without noise analysis, without acceptance	
F30	Cooling air flow and pressure drop measurement, without acceptance	
F34	Recording of current and torque characteristics during acceleration, without acceptance	
F36	Determination of moment of inertia by retardation method, without acceptance	
F38	Overspeed test, without acceptance	
F42	"Conformance Test (Wet Test)" to NEMA Standard, without acceptance	
F52	Locked-rotor torque and current measurement, without acceptance	
F54	Polarization index measurement, without acceptance	
F60	Impulse or AC voltage test on 2 (test) coils, without acceptance	In addition, specify order code F90
F62	Noise analysis, without acceptance	
F82	Type test for horizontal motors with temperature rise test, without acceptance	
F90	2 test coils	
F92	Type test for vertical motors with temperature rise test, without acceptance	
<b>Extension of liability for defects</b>		
Q80	Extension of liability for defects, by 12 months to a total of 24 months (2 years) from delivery	
Q81	Extension of liability for defects, by 18 months to a total of 30 months (2.5 years) from delivery	
Q82	Extension of liability for defects, by 24 months to a total of 36 months (3 years) from delivery	
Q83	Extension of liability for defects, by 30 months to a total of 42 months (3.5 years) from delivery	
Q84	Extension of liability for defects, by 36 months to a total of 48 months (4 years) from delivery	
Q85	Extension of liability for defects, by 48 months to a total of 60 months (5 years) from delivery	

#### Conditions for an extension of liability for defects

- For the duration of the extended liability for defects in the case of a new order and reordering after delivery, the final destination of the product must be specified. The process EUNA is available at [www.siemens.com/euna](http://www.siemens.com/euna) for the purpose of this notification process, which must be performed by your Siemens sales contact.
- For all durations of the extension of liability for defects of 4 and 5 years (Q84, Q85) this can only be agreed in conjunction with a corresponding service contract including regular inspection. This maintenance contract must be agreed via the responsible service center. The process EUNA is available at [www.siemens.com/euna](http://www.siemens.com/euna) for the purpose of documenting this, which must be performed by your Siemens sales contact.
- The general storage conditions described in the operating instructions must be adhered to, especially the specifications for long-term storage.
- Commissioning must be performed by appropriately qualified personnel. When claiming under liability for defects, it is necessary under certain circumstances to supply the corresponding commissioning.
- Periodic maintenance must be performed in accordance with the specifications in the operating instructions. When claiming under liability for defects, it is necessary under certain circumstances to supply the corresponding maintenance records.
- The operating conditions must correspond to the specifications in the operating instructions, configuration manual, or special conditions specified in the contract.
- The extension of liability for defects excludes wear parts, such as carbon brushes or rolling-contact bearings. An exception applies if irrefutable evidence of their premature failure is provided.

Otherwise the general liability for defects conditions apply.

# Motors for converter operation



3/2	<b>Overview</b>	3/64	6 to 6.6 kV, 50 Hz (fluid-flow machine drive)
3/2	<u>With sinusoidal output</u>	3/68	690 kV, 60 Hz (fluid-flow machine drive)
3/2	<u>With non-sinusoidal output</u>	3/70	2.3 kV, 60 Hz (fluid-flow machine drive)
3/3	<b>With non-sinusoidal output</b>	3/72	3.4 to 4.16 kV, 60 Hz (fluid-flow machine drive)
3/3	<u>Air-cooled H-compact 1LA4 motors</u>		Dimension drawings
	Selection and ordering data	3/76	IM B3 type of construction, roller bearings
3/6	690 V, 50 Hz (fluid-flow machine drive)	3/78	IM B3 type of construction, sleeve bearings
3/8	690 V, 50 Hz (constant-torque drive)	3/80	IM V1 type of construction, roller bearings
3/10	2.3 kV, 50 Hz (fluid-flow machine drive)	3/83	<u>Air-cooled H-compact PLUS 1RQ4 and 1RQ6 motors</u>
3/12	3.4 to 4.16 kV, 50 Hz (fluid-flow machine drive)		Selection and ordering data
3/14	6 to 6.6 kV, 50 Hz (fluid-flow machine drive)	3/86	690 kV, 50 Hz (fluid-flow machine drive)
3/16	2.3 kV, 60 Hz (fluid-flow machine drive)	3/88	2.3 kV, 50 Hz (fluid-flow machine drive)
3/18	3.4 to 4.16 kV, 60 Hz (fluid-flow machine drive)	3/90	3.4 to 4.16 kV, 50 Hz (fluid-flow machine drive)
3/20	2.3 kV, 50 Hz (constant-torque drive)	3/94	6 to 6.6 kV, 50 Hz (fluid-flow machine drive)
3/22	3.4 to 4.16 kV, 50 Hz (constant-torque drive)	3/96	690 kV, 60 Hz (fluid-flow machine drive)
3/24	6 to 6.6 kV, 50 Hz (constant-torque drive)	3/98	2.3 kV, 60 Hz (fluid-flow machine drive)
3/26	2.3 kV, 60 Hz (constant-torque drive)	3/100	3.4 to 4.16 kV, 60 Hz (fluid-flow machine drive)
3/28	3.4 to 4.16 kV, 60 Hz (constant-torque drive)		Dimension drawings
	Dimension drawings	3/104	IM B3 type of construction, roller bearings
3/30	IM B3 type of construction, roller bearings	3/106	IM B3 type of construction, sleeve bearings
3/31	IM B3 type of construction, sleeve bearings	3/108	IM V1 type of construction, roller bearings
3/33	IM V1 type of construction, roller bearings	3/111	<u>Water-cooled H-compact 1LH4 motors</u>
			Selection and ordering data
3/35	<u>Air-cooled H-compact 1PQ4 motors</u>	3/112	690 V, 50 Hz
	Selection and ordering data	3/112	2.3 to 4.16 kV, 50 Hz
3/38	690 V, 50 Hz (constant-torque drive)		Dimension drawings
3/40	2.3 kV, 50 Hz (constant-torque drive)	3/113	IM B3 type of construction, roller bearings
3/42	3.4 to 4.16 kV, 50 Hz (constant-torque drive)	3/114	IM V1 type of construction, roller bearings
3/44	6 to 6.6 kV, 50 Hz (constant-torque drive)	3/115	<u>Water-cooled H-compact PLUS 1RN4 and 1RN6 motors</u>
3/46	2.3 kV, 60 Hz (constant-torque drive)		Selection and ordering data
3/48	3.4 to 4.16 kV, 60 Hz (constant-torque drive)	3/118	690 kV, 50 Hz (fluid-flow machine drive)
	Dimension drawings	3/120	2.3 kV, 50 Hz (fluid-flow machine drive)
3/50	IM B3 type of construction, roller bearings	3/122	3.4 to 4.16 kV, 50 Hz (fluid-flow machine drive)
3/51	IM B3 type of construction, sleeve bearings	3/126	6 to 6.6 kV, 50 Hz (fluid-flow machine drive)
3/52	IM V1 type of construction, roller bearings	3/130	690 kV, 60 Hz (fluid-flow machine drive)
3/53	<u>Air-cooled H-compact PLUS 1RA4, 1RA6 and 1RP6 motors</u>	3/132	2.3 kV, 60 Hz (fluid-flow machine drive)
	Selection and ordering data	3/134	3.4 to 4.16 kV, 60 Hz (fluid-flow machine drive)
3/56	690 kV, 50 Hz (fluid-flow machine drive)		Dimension drawings
3/58	2.3 kV, 50 Hz (fluid-flow machine drive)	3/138	IM B3 type of construction, roller bearings
3/60	3.4 to 4.16 kV, 50 Hz (fluid-flow machine drive)	3/140	IM B3 type of construction, sleeve bearings
		3/142	IM V1 type of construction, roller bearings
		3/144	<b>Options and tests</b>
			<u>Description of options</u>

# Motors for converter operation

## Overview

### With sinusoidal output

#### Overview

When compared to fixed-speed operation, by using variable-speed motors, cost savings can be achieved in many applications as a result of the higher system efficiencies.

H-compact and H-compact PLUS motors have proven themselves many times over in variable-speed applications.

For operation with medium-voltage converters ROBICON Perfect Harmony or SINAMICS GM150 and SINAMICS SM150 with sine-wave filter, as a result of the sinusoidal output, line motors for applications with square-law load characteristic are suitable. For converter operation, these motors must be equipped with electrically-isolated bearings at the NDE. The technical data can be taken from the tables in Chapter 2.

The insulation system of these motors corresponds to thermal class 155 (F) – and they are generally utilized to thermal class 130 (B).

### With non-sinusoidal output

#### Overview

When compared to fixed-speed operation, by using variable-speed motors, cost savings can be achieved in many applications as a result of the higher system efficiencies.

H-compact and H-compact PLUS motors have proven themselves many times over in variable-speed applications.

For the H-compact and H-compact PLUS motor series, special versions have been designed for operation with medium-voltage SINAMICS GM150 and SINAMICS SM150 drive converters or low-voltage SINAMICS G and SINAMICS S drive converters.

These motors have, as standard, a reinforced stator winding insulation so that they can be fed from the specified drive converters without requiring a sine-wave filter. Further, for the medium-voltage version of the motors, both bearings are electrically insulated and the shaft is equipped with a grounding system.

The technical data can be taken from the tables in Chapter 3. The insulation system of these motors corresponds to thermal class 155 (F) – and they are generally utilized to thermal class 155 (F).

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

### Overview



### Technical data

#### Overview of technical data

H-compact 1LA4	
<b>Rated voltage</b>	690 V ... 6.6 kV
<b>Rated frequency</b>	50/60 Hz
<b>Motor type</b>	Induction motor with squirrel-cage rotor
<b>Type of construction</b>	IM B3, IM V1
<b>Degree of protection</b>	IP55
<b>Cooling method</b>	IC411
<b>Stator winding insulation</b>	Insulation system, thermal class 155 (F), utilized to 155 (F)
<b>Shaft height</b>	450 ... 630 mm
<b>Bearings</b>	Roller bearings, sleeve bearings
<b>Cage material</b>	Die-cast aluminum or copper (dependent on the shaft height and number of poles)
<b>Standards</b>	IEC, EN
<b>Frame design</b>	Cast iron with cooling ribs

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Technical data (continued)

#### Power ranges for IEC motors with reinforced insulation for SINAMICS converters without sine-wave filter

##### 1LA4, 1MS4 (Ex nA), 1MG4 (Ex px) series

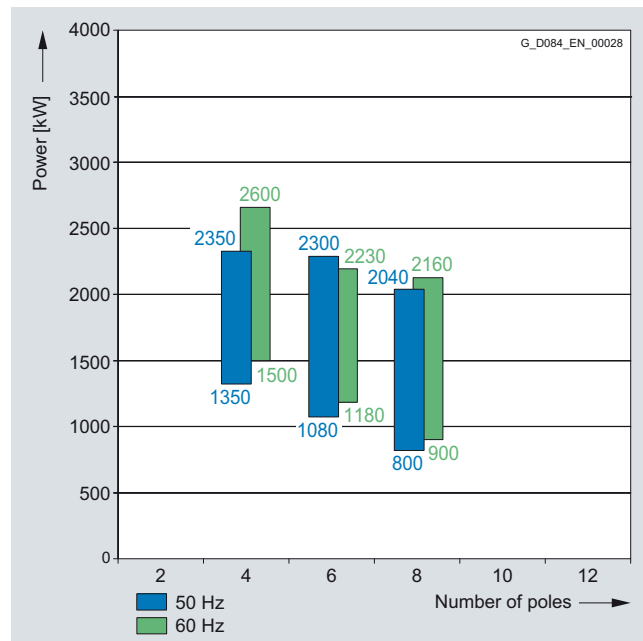
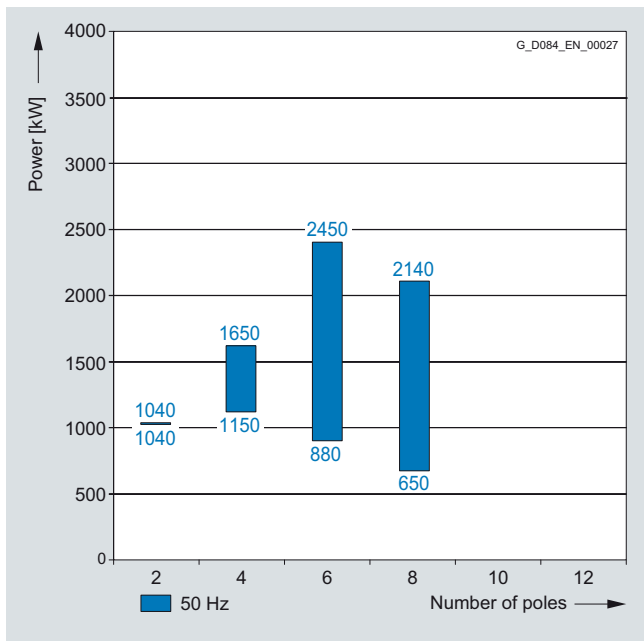
Insulation system, thermal class 155 (F), utilized to 155 (F)

The power data listed here apply for an ambient temperature of 40 °C and an installation altitude ≤ 1000 m.

690 V; 50 Hz

2.3 kV; 50 and 60 Hz

3

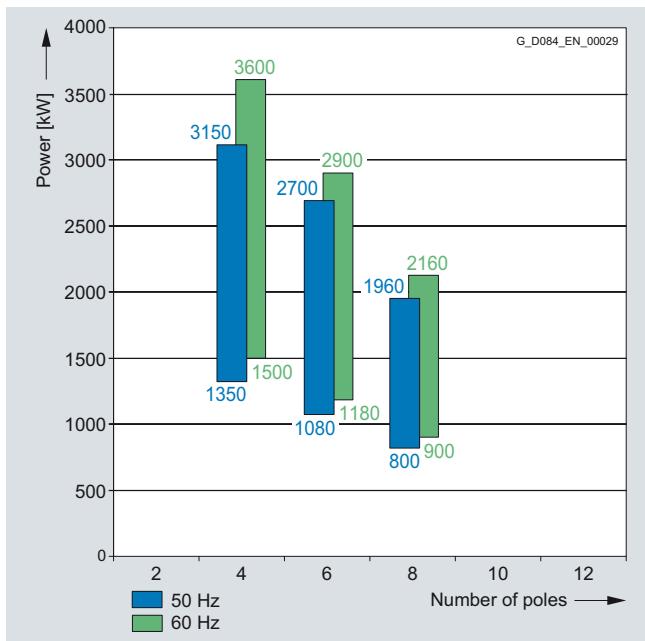


# Motors for converter operation With non-sinusoidal output

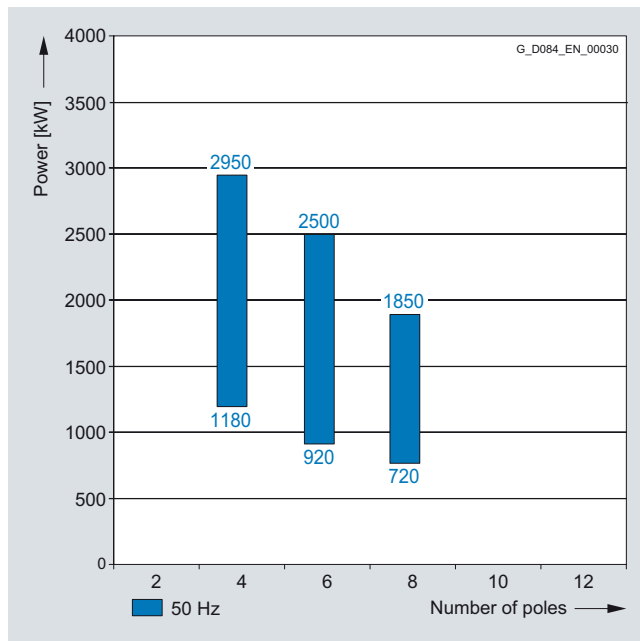
Air-cooled motors  
H-compact 1LA4

**Technical data** (continued)

3.4 to 4.16 kV; 50 and 60 Hz



6 to 6.6 kV; 50 Hz



3

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	Low-voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 690 V  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_B/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>690 V, 50 Hz</b>									
2-pole									
1040	<b>1LA4 454-2CM00</b>	2981	97.2	0.92	970	3331	2.70	22.2	3000
4-pole									
1150	<b>1LA4 454-4AM0</b>	1491	97.2	0.89	1120	7365	2.50	33.9	2400
1300	<b>1LA4 500-4CM0</b>	1491	96.9	0.88	1280	8326	2.10	44.3	2200
1500	<b>1LA4 502-4CM0</b>	1492	97.2	0.87	1480	9600	2.30	49.0	2200
1650	<b>1LA4 504-4CM0</b>	1491	97.2	0.89	1600	10567	2.10	56.2	2200
6-pole									
880	<b>1LA4 454-6AM0</b>	993	97.1	0.86	880	8462	2.50	53.5	2200
1250	<b>1LA4 500-6CM0</b>	995	97.1	0.85	1260	11996	2.35	82.1	2100
1350	<b>1LA4 502-6CM0</b>	995	97.1	0.86	1360	12956	2.35	92.4	2100
1500	<b>1LA4 504-6CM0</b>	995	97.2	0.86	1500	14395	2.35	102.6	2100
1750	<b>1LA4 560-6CM0</b>	995	97.4	0.86	1740	16795	2.60	141.5	2000
1950	<b>1LA4 562-6CM0</b>	995	97.5	0.86	1940	18714	2.60	162.1	2000
2150	<b>1LA4 564-6CM0</b>	995	97.6	0.86	2150	20634	2.60	188.5	2000
2300	<b>1LA4 634-6CM0</b>	997	97.3	0.88	2250	22030	2.70	297.0	O. R. <sup>2)</sup>
2450	<b>1LA4 636-6CM0</b>	997	97.3	0.89	2350	23495	2.70	323.0	O. R. <sup>2)</sup>
8-pole									
650	<b>1LA4 454-8AM0</b>	745	96.6	0.80	700	8331	2.40	52.8	2200
900	<b>1LA4 500-8CM0</b>	746	96.6	0.80	970	11520	2.20	81.7	2100
970	<b>1LA4 502-8CM0</b>	746	96.7	0.80	1040	12416	2.30	91.9	2100
1080	<b>1LA4 504-8CM0</b>	746	96.8	0.80	1160	13824	2.30	102.2	2100
1250	<b>1LA4 560-8CM0</b>	746	96.9	0.80	1340	16000	2.60	141.6	2000
1400	<b>1LA4 562-8CM0</b>	746	97.0	0.80	1500	17920	2.60	162.3	2000
1630	<b>1LA4 564-8CM0</b>	746	97.1	0.81	1740	20864	2.60	188.8	2000
1900	<b>1LA4 634-8CM0</b>	746	96.8	0.86	1900	24321	2.65	294.0	O. R. <sup>2)</sup>
2140	<b>1LA4 636-8CM0</b>	746	97.0	0.85	2150	27357	2.60	320.0	O. R. <sup>2)</sup>

#### Type of construction:

IM B3	<b>0</b>
IM V1 (with canopy)	<b>4</b>
IM V1 (without canopy)	<b>8</b>

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> On request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
<b>Fluid flow machine drive</b>												
<b>2-pole</b>												
1LA4 454-2...	780	2709	97.2	0.92	520	2366	97.1	0.90	260	1878	96.6	0.83
<b>4-pole</b>												
1LA4 454-4...	863	1355	97.2	0.89	575	1183	97.2	0.86	288	939	96.7	0.76
1LA4 500-4...	975	1355	97.0	0.88	650	1183	96.9	0.86	325	939	96.3	0.77
1LA4 502-4...	1125	1356	97.2	0.86	750	1184	97.0	0.84	375	940	96.4	0.73
1LA4 504-4...	1238	1355	97.3	0.89	825	1183	97.2	0.87	413	939	96.7	0.79
<b>6-pole</b>												
1LA4 454-6...	660	902	96.9	0.85	440	788	96.8	0.81	220	626	96.0	0.69
1LA4 500-6...	938	904	97.1	0.85	625	790	96.9	0.81	313	627	96.0	0.69
1LA4 502-6...	1013	904	97.1	0.86	675	790	97.0	0.82	338	627	96.1	0.70
1LA4 504-6...	1125	904	97.2	0.86	750	790	97.0	0.83	375	627	96.2	0.72
1LA4 560-6...	1313	904	97.4	0.86	875	790	97.1	0.81	438	627	96.3	0.70
1LA4 562-6...	1463	904	97.5	0.86	975	790	97.1	0.81	488	627	96.2	0.69
1LA4 564-6...	1613	904	97.6	0.86	1075	790	97.2	0.82	538	627	96.3	0.70
1LA4 634-6...	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>
1LA4 636-6...	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>
<b>8-pole</b>												
1LA4 454-8...	488	677	96.5	0.77	325	591	96.2	0.72	163	469	95.1	0.58
1LA4 500-8...	675	678	96.6	0.78	450	592	96.2	0.73	225	470	95.0	0.60
1LA4 502-8...	728	678	96.7	0.79	485	592	96.3	0.74	243	470	95.1	0.61
1LA4 504-8...	810	678	96.8	0.79	540	592	96.3	0.74	270	470	95.2	0.60
1LA4 560-8...	938	678	96.8	0.78	625	592	96.4	0.73	313	470	95.1	0.58
1LA4 562-8...	1050	678	96.9	0.78	700	592	96.4	0.73	350	470	95.1	0.58
1LA4 564-8...	1223	678	97.0	0.79	815	592	96.4	0.73	408	470	95.2	0.59
1LA4 634-8...	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>
1LA4 636-8...	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>	O. R. <sup>2)</sup>

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	Low-voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 690 V  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>690 V, 50 Hz</b>									
2-pole									
1040	<b>1LA4 454-2CM00</b>	2981	97.2	0.92	970	3331	2.70	22.2	3000
4-pole									
1150	<b>1LA4 454-4AM0</b>	1491	97.2	0.89	1120	7365	2.50	33.9	2400
1300	<b>1LA4 500-4CM0</b>	1491	96.9	0.88	1280	8326	2.10	44.3	2200
1500	<b>1LA4 502-4CM0</b>	1492	97.2	0.87	1480	9600	2.30	49.0	2200
1650	<b>1LA4 504-4CM0</b>	1491	97.2	0.89	1600	10567	2.10	56.2	2200
6-pole									
880	<b>1LA4 454-6AM0</b>	993	96.9	0.86	880	8462	2.50	53.5	2200
1250	<b>1LA4 500-6CM0</b>	995	97.1	0.85	1260	11996	2.35	82.1	2100
1350	<b>1LA4 502-6CM0</b>	995	97.1	0.86	1360	12956	2.35	92.4	2100
1500	<b>1LA4 504-6CM0</b>	995	97.2	0.86	1500	14395	2.35	102.6	2100
1750	<b>1LA4 560-6CM0</b>	995	97.4	0.86	1740	16795	2.60	141.5	2000
1950	<b>1LA4 562-6CM0</b>	995	97.5	0.86	1940	18714	2.60	162.1	2000
2150	<b>1LA4 564-6CM0</b>	995	97.6	0.86	2150	20634	2.60	188.5	2000
2300	<b>1LA4 634-6CM0</b>	997	97.3	0.88	2250	22030	2.70	297.0	1200
2450	<b>1LA4 636-6CM0</b>	997	97.3	0.89	2350	23495	2.70	323.0	1200
8-pole									
650	<b>1LA4 454-8AM0</b>	745	96.6	0.80	700	8331	2.40	52.8	2200
900	<b>1LA4 500-8CM0</b>	746	96.6	0.80	970	11520	2.20	81.7	2100
970	<b>1LA4 502-8CM0</b>	746	96.7	0.80	1040	12416	2.30	91.9	2100
1080	<b>1LA4 504-8CM0</b>	760	96.8	0.80	1160	13570	2.30	102.2	2100
1250	<b>1LA4 560-8CM0</b>	746	96.9	0.80	1340	16000	2.60	141.6	2000
1400	<b>1LA4 562-8CM0</b>	746	97.0	0.80	1500	17920	2.60	162.3	2000
1630	<b>1LA4 564-8CM0</b>	746	97.1	0.81	1740	20864	2.60	188.8	2000
1900	<b>1LA4 634-8CM0</b>	746	96.8	0.86	1900	24321	2.65	294.0	1200
2140	<b>1LA4 636-8CM0</b>	746	97.0	0.85	2150	27357	2.60	320.0	1200

#### Type of construction:

IM B3	<b>0</b>
IM V1 (with canopy)	<b>4</b>
IM V1 (without canopy)	<b>8</b>

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:5				1:10			
	$P_{\max}$ kW	$T_{\max}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ rpm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant torque drive</b>											
2-pole												
1LA4 454-2...	970	3107	96.9	0.91	800	2563	97.1	0.91	750	2402	97.1	0.91
4-pole												
1LA4 454-4...	1060	6789	97.1	0.88	940	6020	97.3	0.88	900	5764	97.3	0.88
1LA4 500-4...	1200	7685	96.7	0.87	1000	6404	96.9	0.87	940	6020	96.9	0.87
1LA4 502-4...	1400	8960	96.9	0.85	1170	7488	97.1	0.85	1100	7040	97.1	0.85
1LA4 504-4...	1500	9607	97.0	0.88	1250	8006	97.2	0.88	1200	7685	97.2	0.88
6-pole												
1LA4 454-6...	820	7885	97.0	0.85	700	6731	97.2	0.84	660	6347	97.2	0.84
1LA4 500-6...	1180	11324	96.8	0.84	1020	9789	97.0	0.83	960	9213	97.1	0.83
1LA4 502-6...	1280	12284	97.0	0.84	1120	10749	97.1	0.84	1040	9981	97.2	0.84
1LA4 504-6...	1430	13724	97.1	0.84	1260	12092	97.2	0.84	1180	11324	97.3	0.84
1LA4 560-6...	1650	15835	97.1	0.82	1450	13916	97.3	0.83	1350	12956	97.4	0.83
1LA4 562-6...	1850	17754	97.2	0.83	1650	15835	97.3	0.83	1550	14875	97.4	0.83
1LA4 564-6...	2100	20154	97.1	0.83	1850	17754	97.4	0.84	1800	17275	97.4	0.84
1LA4 634-6...	2180	20880	97.2	0.88	1960	18773	97.2	0.87	1875	17959	97.1	0.87
1LA4 636-6...	2325	22269	97.3	0.89	2080	19922	97.2	0.89	1985	19012	97.2	0.89
8-pole												
1LA4 454-8...	580	7434	96.4	0.79	490	6281	96.6	0.76	450	5768	96.6	0.74
1LA4 500-8...	900	11520	96.5	0.81	770	9856	96.5	0.79	710	9088	96.5	0.78
1LA4 502-8...	970	12416	96.6	0.81	850	10880	96.6	0.79	780	9984	96.6	0.78
1LA4 504-8...	1080	13570	96.7	0.81	940	11811	96.7	0.79	880	11057	96.7	0.78
1LA4 560-8...	1150	14720	96.8	0.79	980	12544	96.8	0.77	930	11904	96.8	0.76
1LA4 562-8...	1290	16512	96.9	0.79	1100	14080	96.9	0.78	1050	13440	96.9	0.77
1LA4 564-8...	1500	19200	96.9	0.80	1280	16384	97.0	0.79	1250	16000	97.0	0.78
1LA4 634-8...	1725	22081	96.8	0.85	1560	19969	96.7	0.84	1460	18689	96.7	0.83
1LA4 636-8...	1950	24961	97.0	0.85	1760	22529	96.9	0.84	1670	21377	96.9	0.83

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>2.3 kV, 50 Hz</b>									
4-pole									
1350	<b>1LA4 500-4CV0</b>	1493	97.0	0.87	400	8634	2.50	42	2200
1500	<b>1LA4 502-4CV0</b>	1493	97.2	0.87	445	9594	2.60	47	2200
1650	<b>1LA4 504-4CV0</b>	1493	97.3	0.88	485	10553	2.60	54	2200
1850	<b>1LA4 560-4CV0</b>	1494	97.5	0.87	550	11824	2.40	79	2000
2100	<b>1LA4 562-4CV0</b>	1494	97.5	0.87	620	13422	2.40	92	2000
2350	<b>1LA4 564-4CV0</b>	1494	97.5	0.87	700	15020	2.40	104	2000
6-pole									
1080	<b>1LA4 500-6CV0</b>	995	97.0	0.86	325	10365	2.40	82	2100
1180	<b>1LA4 502-6CV0</b>	995	97.0	0.87	350	11324	2.40	92	2100
1280	<b>1LA4 504-6CV0</b>	995	97.1	0.87	380	12284	2.40	103	2100
1500	<b>1LA4 560-6CV0</b>	995	97.3	0.86	450	14395	2.60	142	2000
1750	<b>1LA4 562-6CV0</b>	995	97.4	0.86	520	16795	2.70	162	2000
1950	<b>1LA4 564-6CV0</b>	995	97.5	0.87	580	18714	2.50	189	2000
2300	<b>1LA4 632-6CV0</b>	995	97.1	0.89	670	22075	2.40	269	1500
8-pole									
800	<b>1LA4 500-8CV0</b>	745	96.5	0.81	255	10254	2.10	82	2100
850	<b>1LA4 502-8CV0</b>	745	96.5	0.81	275	10895	2.10	92	2100
950	<b>1LA4 504-8CV0</b>	745	96.5	0.81	305	12177	2.10	102	2100
1120	<b>1LA4 560-8CV0</b>	745	96.8	0.83	350	14356	2.20	142	2000
1250	<b>1LA4 562-8CV0</b>	745	96.9	0.83	390	16022	2.20	162	2000
1450	<b>1LA4 564-8CV0</b>	745	97.0	0.83	450	18585	2.20	189	2000
1650	<b>1LA4 632-8CV0</b>	745	96.7	0.84	510	21151	2.20	265	1500
1850	<b>1LA4 634-8CV0</b>	746	96.8	0.84	570	23683	2.40	294	1500
2040	<b>1LA4 636-8CV0</b>	745	96.9	0.85	620	26150	2.10	320	1500

#### Type of construction:

IM B3	<b>0</b>
IM V1 (with canopy)	<b>4</b>
IM V1 (without canopy)	<b>8</b>

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

$P/P_{\text{rated}} = 50\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

$P/P_{\text{rated}} = 25\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

Fluid flow machine drive

4-pole

1LA4 500-4...	1013	1357	97.0	0.87	675	1185	96.9	0.84	338	941	96.5	0.73
1LA4 502-4...	1125	1357	97.1	0.87	750	1185	97.0	0.84	375	941	96.5	0.73
1LA4 504-4...	1238	1357	97.2	0.88	825	1185	97.1	0.86	413	941	96.8	0.77
1LA4 560-4...	1388	1357	97.4	0.85	925	1186	97.2	0.81	463	941	96.8	0.68
1LA4 562-4...	1575	1357	97.5	0.86	1050	1186	97.4	0.83	525	941	97.0	0.71
1LA4 564-4...	1763	1357	97.5	0.86	1175	1186	97.4	0.83	588	941	97.0	0.72

6-pole

1LA4 500-6...	810	904	96.9	0.86	540	790	96.7	0.83	270	627	96.2	0.72
1LA4 502-6...	885	904	97.0	0.86	590	790	97.0	0.84	295	627	96.4	0.73
1LA4 504-6...	960	904	97.1	0.87	640	790	97.0	0.84	320	627	96.5	0.74
1LA4 560-6...	1125	904	97.3	0.85	750	790	97.2	0.81	375	627	96.7	0.70
1LA4 562-6...	1313	904	97.4	0.85	875	790	97.2	0.82	438	627	96.7	0.70
1LA4 564-6...	1463	904	97.5	0.86	975	790	97.3	0.84	488	627	96.9	0.73
1LA4 632-6...	1725	904	97.2	0.89	1150	789	97.0	0.86	575	626	96.7	0.77

8-pole

1LA4 500-8...	600	677	96.3	0.80	400	591	96.1	0.75	200	469	95.2	0.62
1LA4 502-8...	638	677	96.4	0.80	425	591	96.1	0.75	213	469	95.2	0.62
1LA4 504-8...	713	677	96.4	0.80	475	591	96.2	0.75	238	469	95.2	0.62
1LA4 560-8...	840	677	96.8	0.82	560	591	96.6	0.78	280	469	96.1	0.66
1LA4 562-8...	938	677	96.9	0.82	625	591	96.7	0.78	313	469	96.1	0.66
1LA4 564-8...	1088	677	97.0	0.82	725	591	96.8	0.78	363	469	96.1	0.66
1LA4 632-8...	1240	677	96.6	0.83	825	592	96.4	0.79	415	470	95.8	0.68
1LA4 634-8...	1390	678	96.7	0.82	925	592	96.4	0.78	465	470	95.7	0.66
1LA4 636-8...	1530	677	96.8	0.84	1020	592	96.7	0.80	510	470	96.1	0.70

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 3.4 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 50 Hz</b>									
4-pole									
1350	<b>1LA4 500-4CV</b>	1493	97.0	0.87	280	8634	2.50	42	2200
1500	<b>1LA4 502-4CV</b>	1493	97.2	0.87	310	9594	2.60	47	2200
1650	<b>1LA4 504-4CV</b>	1493	97.3	0.88	335	10553	2.60	54	2200
1850	<b>1LA4 560-4CV</b>	1494	97.5	0.87	380	11824	2.40	79	2000
2100	<b>1LA4 562-4CV</b>	1494	97.5	0.87	435	13422	2.40	92	2000
2350	<b>1LA4 564-4CV</b>	1494	97.5	0.87	485	15020	2.40	104	2000
2600	<b>1LA4 632-4CV</b>	1494	97.5	0.88	530	16620	2.20	157	1500
2900	<b>1LA4 634-4CV</b>	1494	97.6	0.88	590	18537	2.20	171	1500
3150	<b>1LA4 636-4CV</b>	1494	97.7	0.88	640	20136	2.20	186	1500
6-pole									
1080	<b>1LA4 500-6CV</b>	995	97.0	0.86	225	10365	2.40	82	2100
1180	<b>1LA4 502-6CV</b>	995	97.0	0.87	245	11324	2.40	92	2100
1280	<b>1LA4 504-6CV</b>	995	97.1	0.87	265	12284	2.40	103	2100
1500	<b>1LA4 560-6CV</b>	995	97.3	0.86	315	14395	2.60	142	2000
1750	<b>1LA4 562-6CV</b>	995	97.4	0.86	365	16795	2.70	162	2000
1950	<b>1LA4 564-6CV</b>	995	97.5	0.87	400	18714	2.50	189	2000
2220	<b>1LA4 632-6CV</b>	995	97.1	0.89	450	21308	2.30	269	1500
2480	<b>1LA4 634-6CV</b>	995	97.2	0.89	500	23803	2.20	297	1500
2700	<b>1LA4 636-6CV</b>	995	97.3	0.89	550	25915	2.20	323	1500
8-pole									
800	<b>1LA4 500-8CV</b>	745	96.5	0.81	180	10254	2.10	82	2100
850	<b>1LA4 502-8CV</b>	745	96.5	0.81	190	10895	2.10	92	2100
950	<b>1LA4 504-8CV</b>	745	96.5	0.81	215	12177	2.10	102	2100
1120	<b>1LA4 560-8CV</b>	745	96.8	0.83	245	14356	2.20	142	2000
1250	<b>1LA4 562-8CV</b>	745	96.9	0.83	270	16022	2.20	162	2000
1450	<b>1LA4 564-8CV</b>	745	97.0	0.83	315	18585	2.20	189	2000
1570	<b>1LA4 632-8CV 0</b>	745	96.6	0.84	340	20126	2.30	265	1500
1780	<b>1LA4 634-8CV 0</b>	745	96.7	0.84	385	22817	2.30	294	1500
1960	<b>1LA4 636-8CV 0</b>	745	96.8	0.85	415	25125	2.20	320	1500

#### Voltage code:

4.16 kV, 50 Hz

4  
9

Other voltage

#### Type of construction:

IM B3

0

IM V1 (with canopy)

4

IM V1 (without canopy)

8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
<b>Fluid flow machine drive</b>												
<b>4-pole</b>												
1LA4 500-4...	1013	1357	97.0	0.87	675	1185	96.9	0.84	338	941	96.5	0.73
1LA4 502-4...	1125	1357	97.1	0.87	750	1185	97.0	0.84	375	941	96.5	0.73
1LA4 504-4...	1238	1357	97.2	0.88	825	1185	97.1	0.86	413	941	96.8	0.77
1LA4 560-4...	1388	1357	97.4	0.85	925	1186	97.2	0.81	463	941	96.8	0.68
1LA4 562-4...	1575	1357	97.5	0.86	1050	1186	97.4	0.83	525	941	97.0	0.71
1LA4 564-4...	1763	1357	97.5	0.86	1175	1186	97.4	0.83	588	941	97.0	0.72
1LA4 632-4...	1950	1357	97.5	0.87	1300	1185	97.5	0.85	650	940	97.2	0.76
1LA4 634-4...	2175	1357	97.6	0.87	1450	1185	97.6	0.85	725	940	97.3	0.76
1LA4 636-4...	2363	1357	97.6	0.87	1575	1185	97.6	0.85	788	940	97.4	0.77
<b>6-pole</b>												
1LA4 500-6...	810	904	96.9	0.86	540	790	96.7	0.83	270	627	96.2	0.72
1LA4 502-6...	885	904	97.0	0.86	590	790	97.0	0.84	295	627	96.4	0.73
1LA4 504-6...	960	904	97.1	0.87	640	790	97.0	0.84	320	627	96.5	0.74
1LA4 560-6...	1125	904	97.3	0.85	750	790	97.2	0.81	375	627	96.7	0.70
1LA4 562-6...	1313	904	97.4	0.85	875	790	97.2	0.82	438	627	96.7	0.70
1LA4 564-6...	1463	904	97.5	0.86	975	790	97.3	0.84	488	627	96.9	0.73
1LA4 632-6...	1665	904	97.1	0.89	1110	789	97.1	0.87	555	626	96.7	0.79
1LA4 634-6...	1860	904	97.2	0.89	1240	789	97.2	0.87	620	626	96.9	0.80
1LA4 636-6...	2025	905	97.3	0.89	1350	789	97.3	0.87	675	627	96.9	0.80
<b>8-pole</b>												
1LA4 500-8...	600	677	96.3	0.80	400	591	96.1	0.75	200	469	95.2	0.62
1LA4 502-8...	638	677	96.4	0.80	425	591	96.1	0.75	213	469	95.2	0.62
1LA4 504-8...	713	677	96.4	0.80	475	591	96.2	0.75	238	469	95.2	0.62
1LA4 560-8...	840	677	96.8	0.82	560	591	96.6	0.78	280	469	96.1	0.66
1LA4 562-8...	938	677	96.9	0.82	625	591	96.7	0.78	313	469	96.1	0.66
1LA4 564-8...	1088	677	97.0	0.82	725	591	96.8	0.78	363	469	96.1	0.66
1LA4 632-8...	1180	678	96.6	0.82	785	592	96.5	0.78	395	470	95.9	0.66
1LA4 634-8...	1335	678	96.7	0.83	890	592	96.5	0.79	445	470	95.9	0.68
1LA4 636-8...	1470	677	96.8	0.84	980	592	96.7	0.80	490	470	96.1	0.70

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 6.6 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>6 ... 6.6 kV, 50 Hz</b>									
4-pole									
1180	<b>1LA4 500-4CV</b>	1493	96.8	0.87	122	7548	2.60	42	2200
1300	<b>1LA4 502-4CV</b>	1493	96.9	0.87	134	8315	2.60	47	2200
1450	<b>1LA4 504-4CV</b>	1493	97.1	0.88	148	9275	2.50	54	2200
1600	<b>1LA4 560-4CV</b>	1494	97.2	0.86	168	10228	2.60	79	2000
1850	<b>1LA4 562-4CV</b>	1494	97.4	0.87	190	11826	2.60	92	2000
2100	<b>1LA4 564-4CV</b>	1494	97.5	0.87	215	13424	2.60	104	2000
2400	<b>1LA4 632-4CV 0</b>	1494	97.3	0.88	245	15341	2.40	157	1500
2700	<b>1LA4 634-4CV 0</b>	1494	97.4	0.87	280	17259	2.40	171	1500
2950	<b>1LA4 636-4CV 0</b>	1494	97.5	0.87	305	18857	2.40	186	1500
6-pole									
920	<b>1LA4 500-6CV</b>	995	96.6	0.86	97	8830	2.50	82	2100
1030	<b>1LA4 502-6CV</b>	995	96.7	0.87	108	9886	2.40	92	2100
1120	<b>1LA4 504-6CV</b>	995	96.8	0.87	116	10750	2.40	103	2100
1400	<b>1LA4 560-6CV</b>	996	97.1	0.86	146	13424	2.70	142	2000
1550	<b>1LA4 562-6CV</b>	996	97.2	0.86	162	14862	2.70	162	2000
1700	<b>1LA4 564-6CV</b>	996	97.3	0.87	176	16300	2.50	189	2000
2050	<b>1LA4 632-6CV</b>	995	97.0	0.88	210	19676	2.40	269	1500
2300	<b>1LA46 34-6CV</b>	995	97.1	0.89	235	22075	2.40	297	1500
2500	<b>1LA4 636-6CV</b>	995	97.1	0.88	255	23995	2.40	323	1500
8-pole									
720	<b>1LA4 500-8CV</b>	746	96.0	0.8	82	9217	2.30	82	2100
760	<b>1LA45 02-8CV</b>	746	96.2	0.81	85	9729	2.30	92	2100
820	<b>1LA4 504-8CV</b>	746	96.3	0.81	92	10497	2.30	102	2100
1050	<b>1LA4 560-8CV</b>	745	96.6	0.82	116	13460	2.40	142	2000
1180	<b>1LA4 562-8CV</b>	745	96.7	0.82	130	15126	2.40	162	2000
1350	<b>1LA4 564-8CV</b>	745	96.8	0.83	146	17305	2.40	189	2000
1500	<b>1LA4 632-8CV</b>	746	96.5	0.83	164	19202	2.50	265	1500
1700	<b>1LA4 634-8CV</b>	746	96.6	0.83	186	21763	2.50	294	1500
1850	<b>1LA4 636-8CV</b>	746	96.7	0.83	200	23683	2.50	320	1500

#### Voltage code:

6 kV, 50 Hz	6
6.6 kV, 50 Hz	7
Other voltage	9

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see Page 3/2.

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
<b>Fluid flow machine drive</b>												
<b>4-pole</b>												
1LA4 500-4...	885	1356	96.8	0.86	590	1185	96.7	0.82	295	941	96.3	0.72
1LA4 502-4...	975	1356	96.9	0.87	650	1185	96.8	0.83	325	941	96.5	0.73
1LA4 504-4...	1088	1356	97.1	0.87	725	1185	97.0	0.85	363	941	96.7	0.75
1LA4 560-4...	1200	1357	97.1	0.85	800	1186	97.0	0.80	400	941	96.7	0.68
1LA4 562-4...	1388	1357	97.3	0.86	925	1186	97.2	0.83	463	941	96.9	0.72
1LA4 564-4...	1575	1357	97.5	0.86	1050	1186	97.4	0.83	525	941	97.2	0.73
1LA4 632-4...	1800	1357	97.2	0.88	1200	1186	97.1	0.85	600	941	96.9	0.76
1LA4 634-4...	2025	1357	97.4	0.86	1350	1186	97.3	0.83	675	941	97.0	0.73
1LA4 636-4...	2213	1357	97.5	0.86	1475	1186	97.4	0.83	738	941	97.1	0.73
<b>6-pole</b>												
1LA4 500-6...	690	904	96.6	0.85	460	790	96.5	0.83	230	627	96.1	0.72
1LA4 502-6...	773	904	96.7	0.86	515	790	96.7	0.83	258	627	96.3	0.74
1LA4 504-6...	840	904	96.8	0.87	560	790	96.8	0.84	280	627	96.4	0.74
1LA4 560-6...	1050	905	97.1	0.85	700	791	97.0	0.81	350	627	96.5	0.69
1LA4 562-6...	1163	905	97.1	0.85	775	791	97.0	0.82	388	627	96.6	0.71
1LA4 564-6...	1275	905	97.3	0.87	850	791	97.2	0.84	425	627	96.8	0.74
1LA4 632-6...	1538	904	96.9	0.88	1025	790	96.7	0.86	513	627	96.3	0.77
1LA46 34-6...	1725	904	97.1	0.89	1150	790	97.0	0.86	575	627	96.6	0.79
1LA4 636-6...	1875	904	97.1	0.88	1250	790	97.0	0.86	625	627	96.6	0.78
<b>8-pole</b>												
1LA4 500-8...	540	678	96.0	0.79	360	592	95.8	0.74	180	470	95.1	0.62
1LA45 02-8...	570	678	96.2	0.80	380	592	96.0	0.76	190	470	95.3	0.64
1LA4 504-8...	615	678	96.3	0.79	410	592	96.0	0.75	205	470	95.2	0.63
1LA4 560-8...	788	677	96.5	0.81	525	591	96.4	0.77	263	469	95.8	0.65
1LA4 562-8...	885	677	96.6	0.81	590	591	96.4	0.77	295	469	95.8	0.65
1LA4 564-8...	1013	677	96.8	0.81	675	591	96.6	0.76	338	469	96.0	0.64
1LA4 632-8...	1125	678	96.4	0.81	750	592	96.1	0.77	375	470	95.4	0.65
1LA4 634-8...	1275	678	96.5	0.81	850	592	96.2	0.77	425	470	95.5	0.65
1LA4 636-8...	1388	678	96.6	0.82	925	592	96.3	0.77	463	470	95.6	0.65

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>2.3 kV, 60 Hz</b>									
4-pole									
1500	<b>1LA4 500-4CV1</b>	1793	96.8	0.87	445	7989	2.50	42	2200
1650	<b>1LA4 502-4CV1</b>	1793	96.8	0.87	490	8787	2.50	47	2200
1800	<b>1LA4 504-4CV1</b>	1793	96.8	0.87	540	9586	2.50	54	2200
2000	<b>1LA4 560-4CV1</b>	1794	97.3	0.87	590	10645	2.40	79	2000
2300	<b>1LA4 562-4CV1</b>	1794	97.3	0.87	680	12242	2.40	92	2000
2600	<b>1LA4 564-4CV1</b>	1794	97.3	0.87	770	13839	2.40	104	2000
6-pole									
1180	<b>1LA4 500-6CV1</b>	1195	96.8	0.87	350	9429	2.40	82	2100
1320	<b>1LA4 502-6CV1</b>	1195	97.0	0.87	395	10548	2.40	92	2100
1450	<b>1LA4 504-6CV1</b>	1195	97.1	0.87	430	11587	2.50	103	2100
1650	<b>1LA4 560-6CV1</b>	1195	97.2	0.86	495	13185	2.60	142	2000
1900	<b>1LA4 562-6CV1</b>	1195	97.4	0.86	570	15183	2.60	162	2000
2150	<b>1LA4 564-6CV1</b>	1195	97.5	0.87	640	17180	2.60	189	2000
2230	<b>1LA4 632-6CV1</b>	1195	96.7	0.89	650	17825	2.40	234	1500
8-pole									
900	<b>1LA4 500-8CV1</b>	896	96.4	0.79	295	9592	2.30	82	2100
950	<b>1LA4 502-8CV1</b>	896	96.4	0.79	315	10124	2.30	92	2100
1050	<b>1LA4 504-8CV1</b>	896	96.4	0.79	345	11190	2.30	102	2100
1200	<b>1LA4 560-8CV1</b>	895	96.8	0.83	375	12803	2.20	142	2000
1380	<b>1LA4 562-8CV1</b>	895	96.8	0.83	430	14724	2.30	162	2000
1580	<b>1LA4 564-8CV1</b>	895	96.9	0.83	495	16857	2.40	189	2000
1800	<b>1LA4 632-8CV1</b>	895	96.6	0.85	550	19205	2.10	265	1500
2000	<b>1LA4 634-8CV1</b>	895	96.7	0.86	600	21339	2.00	294	1500
2160	<b>1LA4 636-8CV1</b>	895	96.8	0.86	650	23046	2.10	320	1500

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

$P/P_{\text{rated}} = 50\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

$P/P_{\text{rated}} = 25\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

Fluid flow machine drive

4-pole

1LA4 500-4...	1125	1629	96.5	0.86	750	1423	96.2	0.82	375	1130	95.5	0.71
1LA4 502-4...	1238	1629	96.7	0.86	825	1423	96.4	0.83	413	1130	95.7	0.73
1LA4 504-4...	1350	1629	96.8	0.87	900	1423	96.5	0.84	450	1130	95.9	0.75
1LA4 560-4...	1500	1630	97.1	0.86	1000	1424	96.9	0.82	500	1130	96.4	0.72
1LA4 562-4...	1725	1630	97.2	0.86	1150	1424	97.2	0.83	575	1130	96.8	0.74
1LA4 564-4...	1950	1630	97.3	0.87	1300	1424	97.3	0.84	650	1130	96.9	0.74

6-pole

1LA4 500-6...	885	1086	96.8	0.86	590	949	96.6	0.83	295	753	96.0	0.74
1LA4 502-6...	990	1086	96.9	0.86	660	949	96.7	0.83	330	753	96.0	0.74
1LA4 504-6...	1088	1086	97.0	0.86	725	949	96.7	0.83	363	753	96.0	0.73
1LA4 560-6...	1238	1086	97.2	0.85	825	949	97.0	0.82	413	753	96.3	0.72
1LA4 562-6...	1425	1086	97.3	0.85	950	949	97.0	0.82	475	753	96.4	0.72
1LA4 564-6...	1613	1086	97.4	0.86	1075	949	97.1	0.83	538	753	96.5	0.73
1LA4 632-6...	1675	1086	96.6	0.88	1115	945	96.4	0.85	560	755	95.8	0.77

8-pole

1LA4 500-8...	675	814	96.3	0.79	450	711	95.8	0.74	225	564	94.8	0.62
1LA4 502-8...	713	814	96.3	0.78	475	711	95.8	0.73	238	564	94.8	0.60
1LA4 504-8...	788	814	96.3	0.78	525	711	95.9	0.73	263	564	94.9	0.61
1LA4 560-8...	900	813	96.7	0.82	600	710	96.4	0.78	300	564	95.7	0.66
1LA4 562-8...	1035	813	96.8	0.82	690	710	96.4	0.77	345	564	95.7	0.66
1LA4 564-8...	1185	813	96.8	0.81	790	710	96.4	0.76	395	564	95.7	0.65
1LA4 632-8...	1350	814	96.4	0.84	900	708	96.1	0.81	450	566	95.5	0.71
1LA4 634-8...	1500	814	96.6	0.85	1000	708	96.4	0.82	500	565	95.8	0.73
1LA4 636-8...	1620	814	96.7	0.84	1080	708	96.5	0.82	540	565	95.9	0.72

3

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 4.16 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_B/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 60 Hz</b>									
4-pole									
1500	<b>1LA4 500-4CV5</b>	1793	96.8	0.87	245	7989	2.50	42	2200
1650	<b>1LA4 502-4CV5</b>	1793	96.8	0.87	270	8787	2.50	47	2200
1800	<b>1LA4 504-4CV5</b>	1793	96.8	0.87	295	9586	2.50	54	2200
2000	<b>1LA4 560-4CV5</b>	1794	97.3	0.87	330	10645	2.40	79	2000
2300	<b>1LA4 562-4CV5</b>	1794	97.3	0.87	375	12242	2.40	92	2000
2600	<b>1LA4 564-4CV5</b>	1794	97.3	0.87	425	13839	2.40	104	2000
2950	<b>1LA4 632-4CV5 0</b>	1794	97.2	0.87	485	15702	2.40	157	1500
3320	<b>1LA4 634-4CV5 0</b>	1794	97.3	0.87	540	17672	2.20	171	1500
3600	<b>1LA4 636-4CV5 0</b>	1795	97.5	0.87	590	19161	2.40	186	1500
6-pole									
1180	<b>1LA4 500-6CV5</b>	1195	96.8	0.87	194	9429	2.40	82	2100
1320	<b>1LA4 502-6CV5</b>	1195	97.0	0.87	215	10548	2.40	92	2100
1450	<b>1LA4 504-6CV5</b>	1195	97.1	0.87	240	11587	2.50	103	2100
1650	<b>1LA4 560-6CV5</b>	1195	97.2	0.86	275	13185	2.60	142	2000
1900	<b>1LA4 562-6CV5</b>	1195	97.4	0.86	315	15183	2.60	162	2000
2150	<b>1LA4 564-6CV5</b>	1195	97.5	0.87	350	17180	2.60	189	2000
2400	<b>1LA4 632-6CV5</b>	1195	96.8	0.89	385	19183	2.40	269	1500
2700	<b>1LA4 634-6CV5</b>	1195	96.9	0.89	435	21587	2.20	297	1500
2900	<b>1LA4 636-6CV5</b>	1195	97.0	0.89	465	23181	2.20	323	1500
8-pole									
900	<b>1LA4 500-8CV5</b>	896	96.4	0.79	164	9592	2.30	82	2100
950	<b>1LA4 502-8CV5</b>	896	96.4	0.79	174	10124	2.30	92	2100
1050	<b>1LA4 504-8CV5</b>	896	96.4	0.79	192	11190	2.30	102	2100
1200	<b>1LA4 560-8CV5</b>	895	96.8	0.83	205	12803	2.20	142	2000
1380	<b>1LA4 562-8CV5</b>	895	96.8	0.83	240	14724	2.30	162	2000
1580	<b>1LA4 564-8CV5</b>	895	96.9	0.83	275	16857	2.40	189	2000
1800	<b>1LA4 632-8CV5</b>	895	96.6	0.85	305	19205	2.20	265	1500
1960	<b>1LA4 634-8CV5</b>	895	96.7	0.86	325	20912	2.00	294	1500
2160	<b>1LA4 636-8CV5</b>	895	96.8	0.86	360	23046	2.10	320	1500

#### Type of construction:

IM B3	<b>0</b>
IM V1 (with canopy)	<b>4</b>
IM V1 (without canopy)	<b>8</b>

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
<b>Fluid flow machine drive</b>												
<b>4-pole</b>												
1LA4 500-4...	1125	1629	96.5	0.86	750	1423	96.2	0.82	375	1130	95.5	0.71
1LA4 502-4...	1238	1629	96.7	0.86	825	1423	96.4	0.83	413	1130	95.7	0.73
1LA4 504-4...	1350	1629	96.8	0.87	900	1423	96.5	0.84	450	1130	95.9	0.75
1LA4 560-4...	1500	1630	97.1	0.86	1000	1424	96.9	0.82	500	1130	96.4	0.72
1LA4 562-4...	1725	1630	97.2	0.86	1150	1424	97.2	0.83	575	1130	96.8	0.74
1LA4 564-4...	1950	1630	97.3	0.87	1300	1424	97.3	0.84	650	1130	96.9	0.74
1LA4 632-4...	2215	1630	97.2	0.86	1475	1419	97.0	0.83	740	1132	96.6	0.73
1LA4 634-4...	2490	1631	97.3	0.86	1660	1419	97.2	0.83	830	1132	96.8	0.74
1LA4 636-4...	2700	1631	97.4	0.87	1800	1419	97.2	0.83	900	1132	96.8	0.74
<b>6-pole</b>												
1LA4 500-6...	885	1086	96.8	0.86	590	949	96.6	0.83	295	753	96.0	0.74
1LA4 502-6...	990	1086	96.9	0.86	660	949	96.7	0.83	330	753	96.0	0.74
1LA4 504-6...	1088	1086	97.0	0.86	725	949	96.7	0.83	363	753	96.0	0.73
1LA4 560-6...	1238	1086	97.2	0.85	825	949	97.0	0.82	413	753	96.3	0.72
1LA4 562-6...	1425	1086	97.3	0.85	950	949	97.0	0.82	475	753	96.4	0.72
1LA4 564-6...	1613	1086	97.4	0.86	1075	949	97.1	0.83	538	753	96.5	0.73
1LA4 632-6...	1800	1086	96.7	0.88	1200	945	96.5	0.86	600	755	95.9	0.78
1LA4 634-6...	2025	1086	97.0	0.89	1350	945	96.8	0.87	675	755	96.4	0.80
1LA4 636-6...	2175	1086	97.0	0.89	1450	945	96.9	0.87	725	755	96.4	0.80
<b>8-pole</b>												
1LA4 500-8...	675	814	96.3	0.79	450	711	95.8	0.74	225	564	94.8	0.62
1LA4 502-8...	713	814	96.3	0.78	475	711	95.8	0.73	238	564	94.8	0.60
1LA4 504-8...	788	814	96.3	0.78	525	711	95.9	0.73	263	564	94.9	0.61
1LA4 560-8...	900	813	96.7	0.82	600	710	96.4	0.78	300	564	95.7	0.66
1LA4 562-8...	1035	813	96.8	0.82	690	710	96.4	0.77	345	564	95.7	0.66
1LA4 564-8...	1185	813	96.8	0.81	790	710	96.4	0.76	395	564	95.7	0.65
1LA4 632-8...	1350	814	96.3	0.83	900	709	95.9	0.79	450	566	95.1	0.67
1LA4 634-8...	1470	814	96.5	0.84	980	708	96.3	0.82	490	566	95.8	0.72
1LA4 636-8...	1620	814	96.6	0.84	1080	708	96.4	0.81	540	566	95.8	0.72

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>2.3 kV, 50 Hz</b>									
4-pole									
1350	<b>1LA4 500-4CV0</b>	1493	97.0	0.87	400	8634	2.50	42	2200
1500	<b>1LA4 502-4CV0</b>	1493	97.2	0.87	445	9594	2.60	47	2200
1650	<b>1LA4 504-4CV0</b>	1493	97.3	0.88	485	10553	2.60	54	2200
1850	<b>1LA4 560-4CV0</b>	1494	97.5	0.87	550	11824	2.40	79	2000
2100	<b>1LA4 562-4CV0</b>	1494	97.5	0.87	620	13422	2.40	92	2000
2350	<b>1LA4 564-4CV0</b>	1494	97.5	0.87	700	15020	2.40	104	2000
6-pole									
1080	<b>1LA4 500-6CV0</b>	995	97.0	0.86	325	10365	2.40	82	2100
1180	<b>1LA4 502-6CV0</b>	995	97.0	0.87	350	11324	2.40	92	2100
1280	<b>1LA4 504-6CV0</b>	995	97.1	0.87	380	12284	2.40	103	2100
1500	<b>1LA4 560-6CV0</b>	995	97.3	0.86	450	14395	2.60	142	2000
1750	<b>1LA4 562-6CV0</b>	995	97.4	0.86	520	16795	2.70	162	2000
1950	<b>1LA4 564-6CV0</b>	995	97.5	0.87	580	18714	2.50	189	2000
2300	<b>1LA4 632-6CV0</b>	995	97.1	0.89	670	22075	2.40	269	1500
8-pole									
800	<b>1LA4 500-8CV0</b>	745	96.5	0.81	255	10254	2.10	82	2100
850	<b>1LA4 502-8CV0</b>	745	96.5	0.81	275	10895	2.10	92	2100
950	<b>1LA4 504-8CV0</b>	745	96.5	0.81	305	12177	2.10	102	2100
1120	<b>1LA4 560-8CV0</b>	745	96.8	0.83	350	14356	2.20	142	2000
1250	<b>1LA4 562-8CV0</b>	745	96.9	0.83	390	16022	2.20	162	2000
1450	<b>1LA4 564-8CV0</b>	745	97.0	0.83	450	18585	2.20	189	2000
1650	<b>1LA4 632-8CV0</b>	745	96.7	0.84	510	21151	2.20	265	1500
1850	<b>1LA4 634-8CV0</b>	746	96.8	0.84	570	23683	2.40	294	1500
2040	<b>1LA4 636-8CV0</b>	745	96.9	0.85	620	26150	2.10	320	1500

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:5				1:10			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant torque drive</b>											
<b>4-pole</b>												
1LA4 500-4...	1300	8315	96.8	0.85	1050	6716	96.9	0.85	940	6012	96.9	0.84
1LA4 502-4...	1450	9274	97.0	0.85	1180	7547	97.1	0.85	1060	6780	97.1	0.85
1LA4 504-4...	1600	10233	97.1	0.86	1320	8443	97.2	0.86	1180	7547	97.2	0.86
1LA4 560-4...	1760	11249	97.3	0.85	1450	9268	97.4	0.84	1320	8437	97.4	0.83
1LA4 562-4...	2040	13039	97.3	0.85	1680	10738	97.4	0.85	1550	9907	97.4	0.84
1LA4 564-4...	2300	14701	97.3	0.85	1900	12144	97.4	0.85	1750	11185	97.4	0.84
<b>6-pole</b>												
1LA4 500-6...	1060	10173	96.6	0.85	880	8445	96.8	0.84	800	7678	96.9	0.84
1LA4 502-6...	1160	11133	96.8	0.86	970	9309	97.0	0.86	880	8445	97.0	0.85
1LA4 504-6...	1260	12092	96.8	0.86	1060	10173	97.0	0.86	960	9213	97.1	0.86
1LA4 560-6...	1480	14204	97.0	0.84	1250	11996	97.2	0.84	1120	10749	97.2	0.83
1LA4 562-6...	1720	16507	97.1	0.84	1450	13916	97.3	0.83	1250	11996	97.3	0.83
1LA4 564-6...	1930	18522	97.3	0.85	1650	15835	97.4	0.85	1400	13436	97.5	0.85
1LA4 632-6...	2210	21190	97.1	0.89	1795	17720	97.0	0.88	1680	16115	97.0	0.87
<b>8-pole</b>												
1LA4 500-8...	790	10126	96.1	0.79	650	8331	96.3	0.78	580	7434	96.3	0.76
1LA4 502-8...	850	10895	96.1	0.80	730	9357	96.2	0.79	650	8331	96.3	0.77
1LA4 504-8...	950	12177	96.1	0.80	800	10254	96.2	0.78	710	9100	96.3	0.77
1LA4 560-8...	1090	13971	96.6	0.82	890	11408	96.8	0.81	800	10254	96.8	0.79
1LA4 562-8...	1240	15894	96.7	0.82	1020	13074	96.9	0.81	920	11792	96.9	0.80
1LA4 564-8...	1440	18457	96.8	0.82	1200	15381	97.0	0.81	1100	14099	97.0	0.80
1LA4 632-8...	1585	20305	96.6	0.84	1285	16495	96.5	0.82	1205	15440	96.4	0.81
1LA4 634-8...	1775	22735	96.7	0.83	1445	18470	96.6	0.81	1350	17285	96.5	0.80
1LA4 636-8...	1960	25100	96.8	0.85	1590	20395	96.8	0.83	1490	19090	96.7	0.82

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 3.4 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break- down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 50 Hz</b>									
4-pole									
1350	<b>1LA4 500-4CV</b>	1493	97.0	0.87	280	8634	2.50	42	2200
1500	<b>1LA4 502-4CV</b>	1493	97.2	0.87	310	9594	2.60	47	2200
1650	<b>1LA4 504-4CV</b>	1493	97.3	0.88	335	10553	2.60	54	2200
1850	<b>1LA4 560-4CV</b>	1494	97.5	0.87	380	11824	2.40	79	2000
2100	<b>1LA4 562-4CV</b>	1494	97.5	0.87	435	13422	2.40	92	2000
2350	<b>1LA4 564-4CV</b>	1494	97.5	0.87	485	15020	2.40	104	2000
2600	<b>1LA4 632-4CV 0</b>	1494	97.5	0.88	530	16620	2.20	157	1500
2900	<b>1LA4 634-4CV 0</b>	1494	97.6	0.88	590	18537	2.20	171	1500
3150	<b>1LA4 636-4CV 0</b>	1494	97.7	0.88	640	20136	2.20	186	1500
6-pole									
1080	<b>1LA4 500-6CV</b>	995	97.0	0.86	225	10365	2.40	82	2100
1180	<b>1LA4 502-6CV</b>	995	97.0	0.87	245	11324	2.40	92	2100
1280	<b>1LA4 504-6CV</b>	995	97.1	0.87	265	12284	2.40	103	2100
1500	<b>1LA4 560-6CV</b>	995	97.3	0.86	315	14395	2.60	142	2000
1750	<b>1LA4 562-6CV</b>	995	97.4	0.86	365	16795	2.70	162	2000
1950	<b>1LA4 564-6CV</b>	995	97.5	0.87	400	18714	2.50	189	2000
2220	<b>1LA4 632-6CV</b>	995	97.1	0.89	450	21308	2.30	269	1500
2480	<b>1LA4 634-6CV</b>	995	97.2	0.89	500	23803	2.20	297	1500
2700	<b>1LA4 636-6CV</b>	995	97.3	0.89	550	25915	2.20	323	1500
8-pole									
800	<b>1LA4 500-8CV</b>	745	96.5	0.81	180	10254	2.10	82	2100
850	<b>1LA4 502-8CV</b>	745	96.5	0.81	190	10895	2.10	92	2100
950	<b>1LA4 504-8CV</b>	745	96.5	0.81	215	12177	2.10	102	2100
1120	<b>1LA4 560-8CV</b>	745	96.8	0.83	245	14356	2.20	142	2000
1250	<b>1LA4 562-8CV</b>	745	96.9	0.83	270	16022	2.20	162	2000
1450	<b>1LA4 564-8CV</b>	745	97.0	0.83	315	18585	2.20	189	2000
1570	<b>1LA4 632-8CV</b>	745	96.6	0.84	340	20126	2.30	265	1500
1780	<b>1LA4 634-8CV</b>	745	96.7	0.84	385	22817	2.30	294	1500
1960	<b>1LA4 636-8CV</b>	745	96.8	0.85	415	25125	2.20	320	1500

#### Voltage code:

4.16 kV, 50 Hz

4  
9

Other voltage

#### Type of construction:

IM B3

0

IM V1 (with canopy)

4

IM V1 (without canopy)

8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:5				1:10			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant torque drive</b>											
<b>4-pole</b>												
1LA4 500-4...	1300	8315	96.8	0.85	1050	6716	96.9	0.85	940	6012	96.9	0.84
1LA4 502-4...	1450	9274	97.0	0.85	1180	7547	97.1	0.85	1060	6780	97.1	0.85
1LA4 504-4...	1600	10233	97.1	0.86	1320	8443	97.2	0.86	1180	7547	97.2	0.86
1LA4 560-4...	1760	11249	97.3	0.85	1450	9268	97.4	0.84	1320	8437	97.4	0.83
1LA4 562-4...	2040	13039	97.3	0.85	1680	10738	97.4	0.85	1550	9907	97.4	0.84
1LA4 564-4...	2300	14701	97.3	0.85	1900	12144	97.4	0.85	1750	11185	97.4	0.84
1LA4 632-4...	2495	15950	97.4	0.88	2030	12960	97.4	0.87	1900	12130	97.4	0.87
1LA4 634-4...	2780	17790	97.5	0.88	2260	14460	97.5	0.87	2110	13530	97.4	0.87
1LA4 636-4...	3020	19330	97.6	0.88	2460	15700	97.6	0.87	2300	14700	97.5	0.87
<b>6-pole</b>												
1LA4 500-6...	1060	10173	96.6	0.85	880	8445	96.8	0.84	800	7678	96.9	0.84
1LA4 502-6...	1160	11133	96.8	0.86	970	9309	97.0	0.86	880	8445	97.0	0.85
1LA4 504-6...	1260	12092	96.8	0.86	1060	10173	97.0	0.86	960	9213	97.1	0.86
1LA4 560-6...	1480	14204	97.0	0.84	1250	11996	97.2	0.84	1120	10749	97.2	0.83
1LA4 562-6...	1720	16507	97.1	0.84	1450	13916	97.3	0.83	1250	11996	97.3	0.83
1LA4 564-6...	1930	18522	97.3	0.85	1650	15835	97.4	0.85	1400	13436	97.5	0.85
1LA4 632-6...	2130	20456	97.0	0.89	1730	16620	97.0	0.88	1620	15555	97.0	0.88
1LA4 634-6...	2380	22839	97.1	0.89	1935	18545	97.2	0.89	1810	17342	97.1	0.88
1LA4 636-6...	2590	24880	97.3	0.89	2100	20215	97.3	0.89	1970	18920	97.2	0.88
<b>8-pole</b>												
1LA4 500-8...	790	10126	96.1	0.79	650	8331	96.3	0.78	580	7434	96.3	0.76
1LA4 502-8...	850	10895	96.1	0.80	730	9357	96.2	0.79	650	8331	96.3	0.77
1LA4 504-8...	950	12177	96.1	0.80	800	10254	96.2	0.78	710	9100	96.3	0.77
1LA4 560-8...	1090	13971	96.6	0.82	890	11408	96.8	0.81	800	10254	96.8	0.79
1LA4 562-8...	1240	15894	96.7	0.82	1020	13074	96.9	0.81	920	11792	96.9	0.80
1LA4 564-8...	1440	18457	96.8	0.82	1200	15381	97.0	0.81	1100	14099	97.0	0.80
1LA4 632-8...	1510	19310	96.5	0.84	1225	15697	96.4	0.82	1145	14690	96.3	0.81
1LA4 634-8...	1710	21903	96.7	0.84	1390	17796	96.6	0.82	1300	16666	96.5	0.81
1LA4 636-8...	1880	24118	96.8	0.85	1530	19596	96.7	0.83	1430	18340	96.7	0.82

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 6.6 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>6 ... 6.6 kV, 50 Hz</b>									
4-pole									
1180	<b>1LA4 500-4CV</b>	1493	96.8	0.87	122	7548	2.60	42	2200
1300	<b>1LA4 502-4CV</b>	1493	96.9	0.87	134	8315	2.60	47	2200
1450	<b>1LA4 504-4CV</b>	1493	97.1	0.88	148	9275	2.50	54	2200
1600	<b>1LA4 560-4CV</b>	1494	97.2	0.86	168	10228	2.60	79	2000
1850	<b>1LA4 562-4CV</b>	1494	97.4	0.87	190	11826	2.60	92	2000
2100	<b>1LA4 564-4CV</b>	1494	97.5	0.87	215	13424	2.60	104	2000
2400	<b>1LA4 632-4CV 0</b>	1494	97.3	0.88	245	15341	2.40	157	1500
2700	<b>1LA4 634-4CV 0</b>	1494	97.4	0.87	280	17259	2.40	171	1500
2950	<b>1LA4 636-4CV 0</b>	1494	97.5	0.87	305	18857	2.40	186	1500
6-pole									
920	<b>1LA4 500-6CV</b>	995	96.6	0.86	97	8830	2.50	82	2100
1030	<b>1LA4 502-6CV</b>	995	96.7	0.87	108	9886	2.40	92	2100
1120	<b>1LA4 504-6CV</b>	995	96.8	0.87	116	10750	2.40	103	2100
1400	<b>1LA4 560-6CV</b>	996	97.1	0.86	146	13424	2.70	142	2000
1550	<b>1LA4 562-6CV</b>	996	97.2	0.86	162	14862	2.70	162	2000
1700	<b>1LA4 564-6CV</b>	996	97.3	0.87	176	16300	2.50	189	2000
2050	<b>1LA4 632-6CV</b>	995	97.0	0.88	210	19676	2.40	269	1500
2300	<b>1LA4 634-6CV</b>	995	97.1	0.89	235	22075	2.40	297	1500
2500	<b>1LA4 636-6CV</b>	995	97.1	0.88	255	23995	2.40	323	1500
8-pole									
720	<b>1LA4 500-8CV</b>	746	96.0	0.8	82	9217	2.30	82	2100
760	<b>1LA4 502-8CV</b>	746	96.2	0.81	85	9729	2.30	92	2100
820	<b>1LA4 504-8CV</b>	746	96.3	0.81	92	10497	2.30	102	2100
1050	<b>1LA4 560-8CV</b>	745	96.6	0.82	116	13460	2.40	142	2000
1180	<b>1LA4 562-8CV</b>	745	96.7	0.82	130	15126	2.40	162	2000
1350	<b>1LA4 564-8CV</b>	745	96.8	0.83	146	17305	2.40	189	2000
1500	<b>1LA4 632-8CV</b>	746	96.5	0.83	164	19202	2.50	265	1500
1700	<b>1LA4 634-8CV</b>	746	96.6	0.83	186	21763	2.50	294	1500
1850	<b>1LA4 636-8CV</b>	746	96.7	0.83	200	23683	2.50	320	1500

#### Voltage code:

6 kV, 50 Hz	6
6.6 kV, 50 Hz	7
Other voltage	9

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:5				1:10			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant torque drive</b>											
<b>4-pole</b>												
1LA4 500-4...	1150	7356	96.8	0.87	950	6077	96.6	0.86	750	4797	96.3	0.81
1LA4 502-4...	1250	7996	96.9	0.87	1050	6716	96.8	0.86	830	5309	96.5	0.82
1LA4 504-4...	1400	8955	97.1	0.88	1200	7676	96.9	0.87	950	6077	96.7	0.84
1LA4 560-4...	1550	9908	97.2	0.86	1350	8630	97.1	0.84	980	6264	96.7	0.78
1LA4 562-4...	1750	11186	97.4	0.87	1550	9908	97.3	0.85	1150	7351	97.0	0.81
1LA4 564-4...	2000	12784	97.5	0.87	1750	11186	97.4	0.86	1400	8949	97.3	0.83
1LA4 632-4...	2300	14702	97.3	0.88	2000	12784	97.3	0.87	1540	9844	97.0	0.84
1LA4 634-4...	2650	16939	97.4	0.87	2300	14702	97.4	0.86	1800	11506	97.1	0.83
1LA4 636-4...	2900	18537	97.5	0.87	2600	16620	97.5	0.86	1950	12465	97.3	0.83
<b>6-pole</b>												
1LA4 500-6...	900	8638	96.6	0.86	760	7294	96.6	0.85	600	5759	96.4	0.81
1LA4 502-6...	1000	9598	96.7	0.87	850	8158	96.7	0.86	680	6527	96.6	0.83
1LA4 504-6...	1070	10270	96.8	0.87	930	8926	96.8	0.86	750	7198	96.7	0.83
1LA4 560-6...	1380	13232	97.1	0.86	1200	11506	97.1	0.85	900	8630	96.9	0.79
1LA4 562-6...	1500	14383	97.2	0.86	1320	12657	97.2	0.85	1000	9588	97.0	0.80
1LA4 564-6...	1680	16108	97.3	0.87	1480	14191	97.3	0.86	1180	11314	97.3	0.83
1LA4 632-6...	2050	19676	97.0	0.88	1830	17564	96.9	0.87	1480	14205	96.8	0.86
1LA4 634-6...	2300	22075	97.1	0.89	2000	19196	97.0	0.88	1650	15837	96.9	0.87
1LA4 636-6...	2500	23995	97.1	0.88	2230	21404	97.1	0.87	1850	17756	97.0	0.87
<b>8-pole</b>												
1LA4 500-8...	700	8961	96.0	0.80	600	7681	96.0	0.78	420	5377	95.6	0.70
1LA4 502-8...	750	9601	96.2	0.81	630	8065	96.1	0.79	480	6145	95.8	0.73
1LA4 504-8...	820	10497	96.3	0.81	710	9089	96.2	0.79	520	6657	95.8	0.73
1LA4 560-8...	1000	12819	96.6	0.82	860	11024	96.6	0.81	650	8332	96.3	0.74
1LA4 562-8...	1150	14742	96.7	0.82	1000	12819	96.7	0.81	780	9999	96.6	0.76
1LA4 564-8...	1300	16664	96.8	0.83	1130	14485	96.8	0.81	850	10896	96.5	0.74
1LA4 632-8...	1500	19202	96.5	0.83	1330	17026	96.4	0.81	1050	13442	96.0	0.77
1LA4 634-8...	1700	21763	96.6	0.83	1520	19458	96.5	0.81	1180	15106	96.2	0.77
1LA4 636-8...	1850	23683	96.7	0.83	1680	21507	96.6	0.81	1340	17154	96.4	0.78

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>2.3 kV, 60 Hz</b>									
4-pole									
1500	<b>1LA4 500-4CV1</b>	1793	96.8	0.87	445	7989	2.50	42	2200
1650	<b>1LA4 502-4CV1</b>	1793	96.8	0.87	490	8787	2.50	47	2200
1800	<b>1LA4 504-4CV1</b>	1793	96.8	0.87	540	9586	2.50	54	2200
2000	<b>1LA4 560-4CV1</b>	1794	97.3	0.87	590	10645	2.40	79	2000
2300	<b>1LA4 562-4CV1</b>	1794	97.3	0.87	680	12242	2.40	92	2000
2600	<b>1LA4 564-4CV1</b>	1794	97.3	0.87	770	13839	2.40	104	2000
6-pole									
1180	<b>1LA4 500-6CV1</b>	1195	96.8	0.87	350	9429	2.40	82	2100
1320	<b>1LA4 502-6CV1</b>	1195	97.0	0.87	395	10548	2.40	92	2100
1450	<b>1LA4 504-6CV1</b>	1195	97.1	0.87	430	11587	2.50	103	2100
1650	<b>1LA4 560-6CV1</b>	1195	97.2	0.86	495	13185	2.60	142	2000
1900	<b>1LA4 562-6CV1</b>	1195	97.4	0.86	570	15183	2.60	162	2000
2150	<b>1LA4 564-6CV1</b>	1195	97.5	0.87	640	17180	2.60	189	2000
2230	<b>1LA4 632-6CV1</b>	1195	96.7	0.89	650	17825	2.40	234	1500
8-pole									
900	<b>1LA4 500-8CV1</b>	896	96.4	0.79	295	9592	2.30	82	2100
950	<b>1LA4 502-8CV1</b>	896	96.4	0.79	315	10124	2.30	92	2100
1050	<b>1LA4 504-8CV1</b>	896	96.4	0.79	345	11190	2.30	102	2100
1200	<b>1LA4 560-8CV1</b>	895	96.8	0.83	375	12803	2.20	142	2000
1380	<b>1LA4 562-8CV1</b>	895	96.8	0.83	430	14724	2.30	162	2000
1580	<b>1LA4 564-8CV1</b>	895	96.9	0.83	495	16857	2.40	189	2000
1800	<b>1LA4 632-8CV1</b>	895	96.6	0.85	550	19205	2.10	265	1500
2000	<b>1LA4 634-8CV1</b>	895	96.7	0.86	600	21339	2.00	294	1500
2160	<b>1LA4 636-8CV1</b>	895	96.8	0.86	650	23046	2.10	320	1500

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:5				1:10			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant torque drive</b>											
<b>4-pole</b>												
1LA4 500-4...	1470	7829	96.5	0.86	1270	6764	96.5	0.86	1150	6125	96.5	0.85
1LA4 502-4...	1600	8521	96.5	0.86	1320	7030	96.5	0.85	1200	6391	96.5	0.85
1LA4 504-4...	1750	9320	96.5	0.86	1500	7989	96.5	0.86	1350	7190	96.5	0.85
1LA4 560-4...	1920	10220	97.1	0.87	1610	8570	97.2	0.86	1500	7984	97.2	0.85
1LA4 562-4...	2250	11976	97.1	0.87	1880	10007	97.2	0.86	1750	9315	97.2	0.85
1LA4 564-4...	2580	13733	97.1	0.87	2250	11976	97.2	0.86	2100	11178	97.2	0.86
<b>6-pole</b>												
1LA4 500-6...	1160	9269	96.6	0.86	980	7831	96.7	0.86	880	7032	96.7	0.85
1LA4 502-6...	1300	10388	96.7	0.85	1120	8950	96.8	0.85	1020	8151	96.8	0.85
1LA4 504-6...	1430	11427	96.9	0.86	1250	9988	97.0	0.86	1150	9189	97.0	0.85
1LA4 560-6...	1630	13025	97.0	0.84	1450	11587	97.1	0.84	1350	10788	97.1	0.84
1LA4 562-6...	1880	15023	97.1	0.85	1650	13185	97.1	0.85	1520	12146	97.2	0.84
1LA4 564-6...	2130	17020	97.3	0.86	1930	15422	97.3	0.86	1800	14383	97.4	0.86
1LA4 632-6...	2165	17297	96.6	0.89	1760	14048	96.4	0.88	1650	13166	96.3	0.87
<b>8-pole</b>												
1LA4 500-8...	880	9378	96.0	0.79	780	8313	96.0	0.77	710	7567	96.0	0.76
1LA4 502-8...	950	10124	96.0	0.79	870	9272	96.0	0.78	780	8313	96.0	0.77
1LA4 504-8...	1050	11190	96.0	0.79	970	10338	96.0	0.78	880	9378	96.0	0.77
1LA4 560-8...	1200	12803	96.6	0.83	1010	10776	96.7	0.82	930	9922	96.7	0.81
1LA4 562-8...	1380	14724	96.6	0.82	1190	12696	96.7	0.81	1100	11736	96.8	0.81
1LA4 564-8...	1580	16857	96.8	0.82	1420	15150	96.9	0.81	1320	14083	96.9	0.81
1LA4 632-8...	1746	18629	96.4	0.85	1422	15172	96.2	0.84	1332	14212	96.3	0.83
1LA4 634-8...	1940	20699	96.6	0.85	1580	16858	96.4	0.84	1480	15791	96.4	0.84
1LA4 636-8...	2095	22355	96.6	0.85	1705	18206	96.5	0.84	1598	17054	96.4	0.84

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1LA4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 4.16 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_B/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 60 Hz</b>									
4-pole									
1500	<b>1LA4 500-4CV5</b>	1793	96.8	0.87	245	7989	2.50	42	2200
1650	<b>1LA4 502-4CV5</b>	1793	96.8	0.87	270	8787	2.50	47	2200
1800	<b>1LA4 504-4CV5</b>	1793	96.8	0.87	295	9586	2.50	54	2200
2000	<b>1LA4 560-4CV5</b>	1794	97.3	0.87	330	10645	2.40	79	2000
2300	<b>1LA4 562-4CV5</b>	1794	97.3	0.87	375	12242	2.40	92	2000
2600	<b>1LA4 564-4CV5</b>	1794	97.3	0.87	425	13839	2.40	104	2000
2950	<b>1LA4 632-4CV5 0</b>	1794	97.2	0.87	485	15702	2.40	157	1500
3320	<b>1LA4 634-4CV5 0</b>	1794	97.3	0.87	540	17672	2.20	171	1500
3600	<b>1LA4 636-4CV5 0</b>	1795	97.5	0.87	590	19161	2.40	186	1500
6-pole									
1180	<b>1LA4 500-6CV5</b>	1195	96.8	0.87	194	9429	2.40	82	2100
1320	<b>1LA4 502-6CV5</b>	1195	97.0	0.87	215	10548	2.40	92	2100
1450	<b>1LA4 504-6CV5</b>	1195	97.1	0.87	240	11587	2.50	103	2100
1650	<b>1LA4 560-6CV5</b>	1195	97.2	0.86	275	13185	2.60	142	2000
1900	<b>1LA4 562-6CV5</b>	1195	97.4	0.86	315	15183	2.60	162	2000
2150	<b>1LA4 564-6CV5</b>	1195	97.5	0.87	350	17180	2.60	189	2000
2400	<b>1LA4 632-6CV5</b>	1195	96.8	0.89	385	19183	2.40	269	1500
2700	<b>1LA4 634-6CV5</b>	1195	96.9	0.89	435	21587	2.20	297	1500
2900	<b>1LA4 636-6CV5</b>	1195	97.0	0.89	465	23181	2.20	323	1500
8-pole									
900	<b>1LA4 500-8CV5</b>	896	96.4	0.79	164	9592	2.30	82	2100
950	<b>1LA4 502-8CV5</b>	896	96.4	0.79	174	10124	2.30	92	2100
1050	<b>1LA4 504-8CV5</b>	896	96.4	0.79	192	11190	2.30	102	2100
1200	<b>1LA4 560-8CV5</b>	895	96.8	0.83	205	12803	2.20	142	2000
1380	<b>1LA4 562-8CV5</b>	895	96.8	0.83	240	14724	2.30	162	2000
1580	<b>1LA4 564-8CV5</b>	895	96.9	0.83	275	16857	2.40	189	2000
1800	<b>1LA4 632-8CV5</b>	895	96.6	0.85	305	19205	2.20	265	1500
1960	<b>1LA4 634-8CV5</b>	895	96.7	0.86	325	20912	2.00	294	1500
2160	<b>1LA4 636-8CV5</b>	895	96.8	0.86	360	23046	2.10	320	1500

#### Type of construction:

IM B3	<b>0</b>
IM V1 (with canopy)	<b>4</b>
IM V1 (without canopy)	<b>8</b>

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

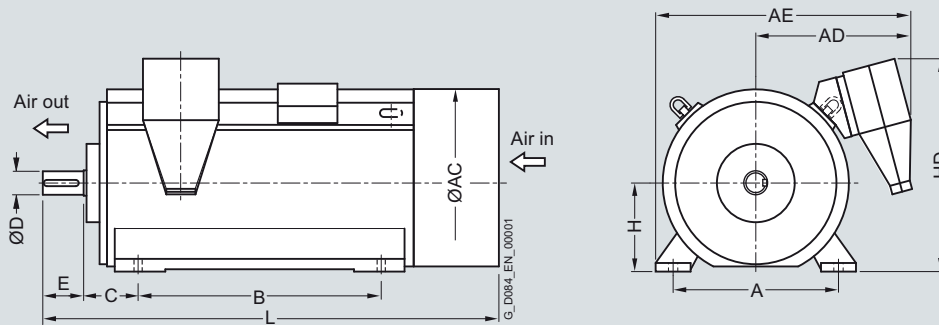
Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:5				1:10			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant torque drive</b>											
<b>4-pole</b>												
1LA4 500-4...	1470	7829	96.5	0.86	1270	6764	96.5	0.86	1150	6125	96.5	0.85
1LA4 502-4...	1600	8521	96.5	0.86	1320	7030	96.5	0.85	1200	6391	96.5	0.85
1LA4 504-4...	1750	9320	96.5	0.86	1500	7989	96.5	0.86	1350	7190	96.5	0.85
1LA4 560-4...	1920	10220	97.1	0.87	1610	8570	97.2	0.86	1500	7984	97.2	0.85
1LA4 562-4...	2250	11976	97.1	0.87	1880	10007	97.2	0.86	1750	9315	97.2	0.85
1LA4 564-4...	2580	13733	97.1	0.87	2250	11976	97.2	0.86	2100	11178	97.2	0.86
1LA4 632-4...	2860	15219	97.2	0.87	2330	12389	97.0	0.86	2185	11616	96.9	0.85
1LA4 634-4...	3220	17135	97.3	0.87	2625	13957	97.1	0.86	2455	13052	97.1	0.85
1LA4 636-4...	3490	18567	97.4	0.87	2845	15125	97.2	0.86	2665	14166	97.2	0.85
<b>6-pole</b>												
1LA4 500-6...	1160	9269	96.6	0.86	980	7831	96.7	0.86	880	7032	96.7	0.85
1LA4 502-6...	1300	10388	96.7	0.85	1120	8950	96.8	0.85	1020	8151	96.8	0.85
1LA4 504-6...	1430	11427	96.9	0.86	1250	9988	97.0	0.86	1150	9189	97.0	0.85
1LA4 560-6...	1630	13025	97.0	0.84	1450	11587	97.1	0.84	1350	10788	97.1	0.84
1LA4 562-6...	1880	15023	97.1	0.85	1650	13185	97.1	0.85	1520	12146	97.2	0.84
1LA4 564-6...	2130	17020	97.3	0.86	1930	15422	97.3	0.86	1800	14383	97.4	0.86
1LA4 632-6...	2330	18613	96.7	0.89	1895	15124	96.5	0.88	1775	14163	96.4	0.88
1LA4 634-6...	2620	20937	96.9	0.89	2135	17042	96.8	0.89	2000	15960	96.7	0.88
1LA4 636-6...	2815	22489	97.0	0.89	2290	18276	96.9	0.89	2145	17115	96.8	0.88
<b>8-pole</b>												
1LA4 500-8...	880	9378	96.0	0.79	780	8313	96.0	0.77	710	7567	96.0	0.76
1LA4 502-8...	950	10124	96.0	0.79	870	9272	96.0	0.78	780	8313	96.0	0.77
1LA4 504-8...	1050	11190	96.0	0.79	970	10338	96.0	0.78	880	9378	96.0	0.77
1LA4 560-8...	1200	12803	96.6	0.83	1010	10776	96.7	0.82	930	9922	96.7	0.81
1LA4 562-8...	1380	14724	96.6	0.82	1190	12696	96.7	0.81	1100	11736	96.8	0.81
1LA4 564-8...	1580	16857	96.8	0.82	1420	15150	96.9	0.81	1320	14083	96.9	0.81
1LA4 632-8...	1746	18629	96.3	0.84	1422	15172	96.1	0.82	1332	14212	95.9	0.81
1LA4 634-8...	1901	20285	96.5	0.85	1548	16520	96.4	0.84	1450	15475	96.3	0.83
1LA4 636-8...	2095	22355	96.6	0.85	1706	18206	96.5	0.84	1598	17054	96.4	0.83

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

### Dimension drawings



Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD <sup>1)3)</sup> mm	AE <sup>1)2)3)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>4)</sup> mm	L mm
<b>Up to 6.6 kV, roller bearings, IM B3 type of construction</b>												
<b>2-pole</b>												
1LA4454-2CM00	5200	850	960	825	1340	1250	280	95	130	450	1100	2320
<b>4-pole</b>												
1LA4454-4A..0	5300	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4500-4C..0	6200	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4502-4C..0	6500	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4504-4C..0	7000	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4560-4C..0	8200	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4562-4C..0	8900	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4564-4C..0	9700	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4632-4C..0	12200	1120	1350	945	1560	1600	335	170	240	630	1410	3015
1LA4634-4C..0	12800	1120	1350	945	1560	1600	335	170	240	630	1410	3015
1LA4636-4C..0	13600	1120	1350	945	1560	1600	335	170	240	630	1410	3015
<b>6-pole</b>												
1LA4454-6AM00	5200	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4500-6C..0	6400	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4502-6C..0	6800	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4504-6C..0	7300	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4560-6C..0	8500	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4562-6C..0	9300	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4564-6C..0	10100	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4632-6C..0	12700	1120	1350	945	1560	1600	335	180	240	630	1410	3015
1LA4634-6C..0	13400	1120	1350	945	1560	1600	335	180	240	630	1410	3015
1LA4636-6C..0	14100	1120	1350	945	1560	1600	335	180	240	630	1410	3015
<b>8-pole</b>												
1LA4454-8AM00	5200	850	960	825	1340	1250	280	130	200	450	1100	2390
1LA4500-8C..0	6400	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4502-8C..0	6700	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4504-8C..0	7200	950	1070	875	1440	1320	315	140	200	500	1200	2525
1LA4560-8C..0	8500	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4562-8C..0	9200	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4564-8C..0	10000	1060	1210	925	1560	1400	335	160	240	560	1310	2775
1LA4632-8C..0	12500	1120	1350	945	1560	1600	335	180	240	630	1410	3015
1LA4634-8C..0	13300	1120	1350	945	1560	1600	335	180	240	630	1410	3015
1LA4636-8C..0	14000	1120	1350	945	1560	1600	335	180	240	630	1410	3015

Note: Higher pole numbers are available on request.

<sup>1)</sup> For  $V_{\text{rated}} = 690$  V, the dimension changes by + 100 mm.

<sup>2)</sup> For  $V_{\text{rated}} = 690$  V and  $I_{\text{rated}} > 1230$  A, the dimension changes by + 475 mm (a second main terminal box is required).

<sup>3)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

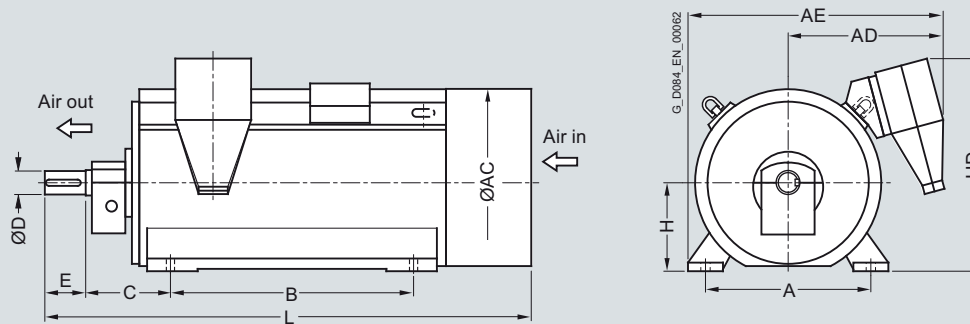
<sup>4)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 70 mm.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

### Dimension drawings



Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD <sup>1)3)</sup> mm	AE <sup>1)2)3)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>4)</sup> mm	L mm
<b>Up to 6.6 kV, sleeve bearings, IM B3 type of construction</b>												
<b>2-pole</b>												
1LA4454-2CM00-Z K96	5200	850	960	825	1340	1250	475	95	130	450	1100	2515
<b>4-pole</b>												
1LA4454-4A..0-Z K96	5400	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4500-4C..0-Z K96	6300	950	1070	875	1440	1320	500	140	200	500	1200	2870
1LA4502-4C..0-Z K96	6700	950	1070	875	1440	1320	500	140	200	500	1200	2870
1LA4504-4C..0-Z K96	7200	950	1070	875	1440	1320	500	140	200	500	1200	2870
1LA4560-4C..0-Z K96	8500	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4562-4C..0-Z K96	9200	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4564-4C..0-Z K96	10000	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4632-4C..0-Z K96	12500	1120	1350	945	1560	1600	560	170	240	630	1410	3450
1LA4634-4C..0-Z K96	13100	1120	1350	945	1560	1600	560	170	240	630	1410	3450
1LA4636-4C..0-Z K96	13900	1120	1350	945	1560	1600	560	170	240	630	1410	3450
<b>6-pole</b>												
1LA4454-6AM00-Z K96	5300	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4500-6C..0-Z K96	6600	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4502-6C..0-Z K96	7000	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4504-6C..0-Z K96	7500	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4560-6C..0-Z K96	8800	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4562-6C..0-Z K96	9500	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4564-6C..0-Z K96	10400	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4632-6C..0-Z K96	13000	1120	1350	945	1560	1600	560	180	240	630	1410	3450
1LA4634-6C..0-Z K96	13700	1120	1350	945	1560	1600	560	180	240	630	1410	3450
1LA4636-6C..0-Z K96	14500	1120	1350	945	1560	1600	560	180	240	630	1410	3450

<sup>1)</sup> For  $V_{\text{rated}} = 690$  V, the dimension changes by + 100 mm.

<sup>2)</sup> For  $V_{\text{rated}} = 690$  V and  $I_{\text{rated}} > 1230$  A, the dimension changes by + 475 mm (a second main terminal box is required).

<sup>3)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

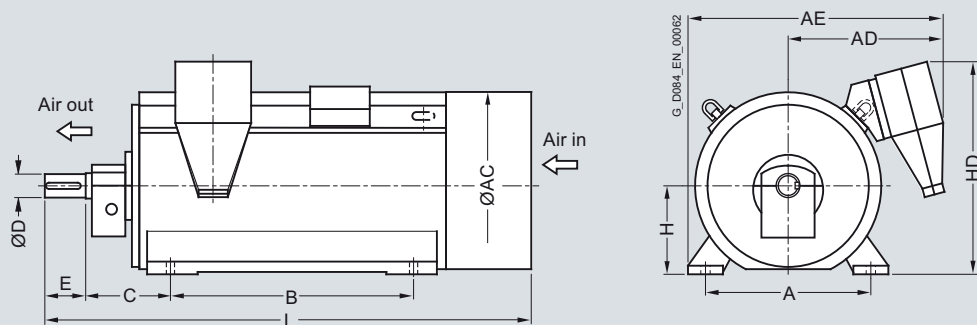
<sup>4)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 70 mm.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD <sup>1)3)</sup> mm	AE <sup>1)2)3)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>4)</sup> mm	L mm
<b>Up to 6.6 kV, sleeve bearings, IM B3 type of construction</b>												
8-pole												
1LA4454-8AM00-Z K96	5300	850	960	825	1340	1250	475	130	200	450	1100	2745
1LA4500-8C..0-Z K96	6600	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4502-8C..0-Z K96	6900	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4504-8C..0-Z K96	7400	950	1070	875	1440	1320	530	140	200	500	1200	2900
1LA4560-8C..0-Z K96	8800	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4562-8C..0-Z K96	9500	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4564-8C..0-Z K96	10300	1060	1210	925	1560	1400	560	160	240	560	1310	3170
1LA4632-8C..0-Z K96	12800	1120	1350	945	1560	1600	560	180	240	630	1410	3450
1LA4634-8C..0-Z K96	13600	1120	1350	945	1560	1600	560	180	240	630	1410	3450
1LA4636-8C..0-Z K96	14400	1120	1350	945	1560	1600	560	180	240	630	1410	3450

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> For  $V_{\text{rated}} = 690$  V, the dimension changes by + 100 mm.

<sup>2)</sup> For  $V_{\text{rated}} = 690$  V and  $I_{\text{rated}} > 1230$  A, the dimension changes by + 475 mm (a second main terminal box is required).

<sup>3)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

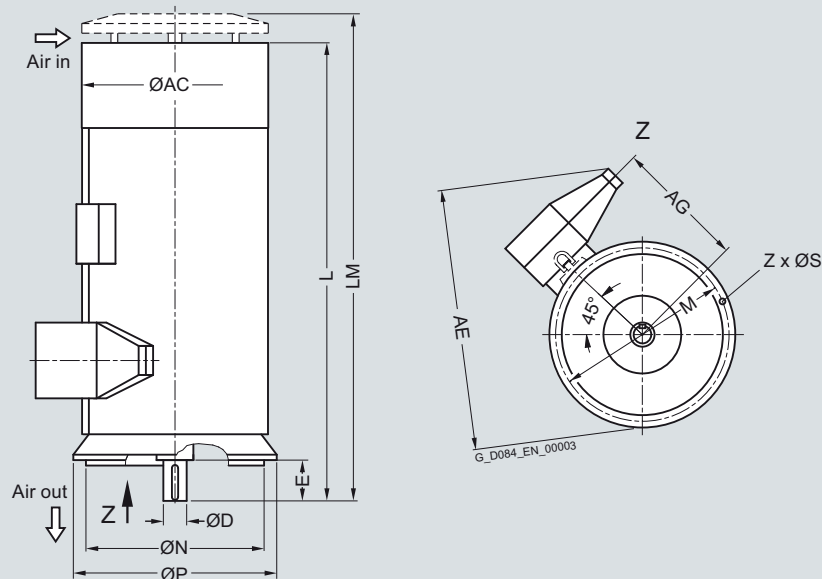
<sup>4)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 70 mm.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

### Dimension drawings



Motor type	Weight kg	Dimensions											
		AC	AG <sup>1)2)</sup>	AE <sup>3)</sup>	D	E	L	LM	P	N	M	S	Z
Up to 6.6 kV, roller bearings, IM V1 type of construction													
4-pole													
1LA4454-4AM0.	5200	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4500-4C...	6100	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4502-4C...	6500	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4504-4C...	7000	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4560-4C...	8300	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4562-4C...	9000	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4564-4C...	9700	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
6-pole													
1LA4454-6AM0.	5200	960	770	1550	130	200	2390	2550	1150	1000	1080	26	8
1LA4500-6C...	6400	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4502-6C...	6800	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4504-6C...	7300	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4560-6C...	8500	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4562-6C...	9300	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4564-6C...	10100	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4632-6C...	12700	1350	980	1820	180	240	3115	3305	1400	1250	1320	26	16
1LA4634-6C...	13400	1350	980	1820	180	240	3115	3305	1400	1250	1320	26	16
1LA4636-6C...	14100	1350	980	1820	180	240	3115	3305	1400	1250	1320	26	16

<sup>1)</sup> For  $V_{\text{rated}} = 690$  V, the dimension changes by  $-50$  mm.

<sup>2)</sup> For currents  $I_{\text{rated}} > 315$  A, the dimension changes by  $+45$  mm.

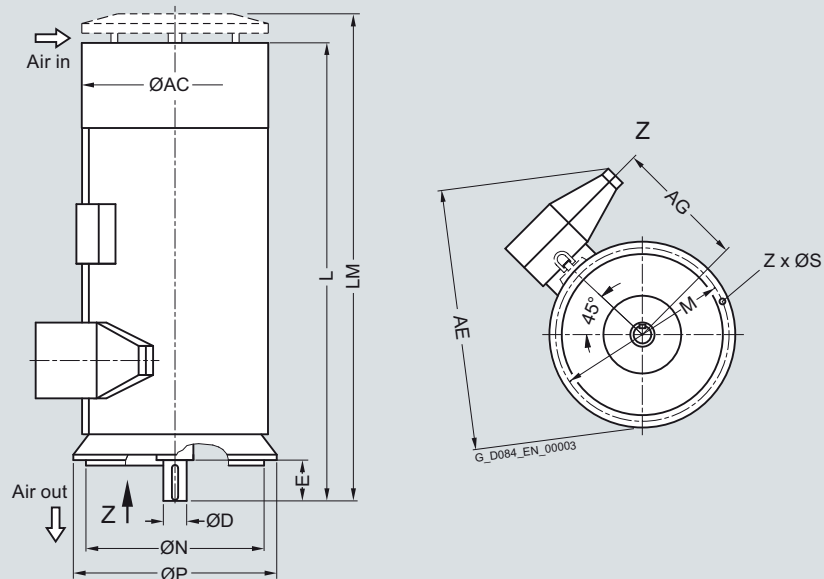
<sup>3)</sup> For currents  $I_{\text{rated}} > 315$  A, the dimension changes by  $+180$  mm.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1LA4

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions											
		AC mm	AG <sup>1)2)</sup> mm	AE <sup>3)</sup> mm	D mm	E mm	L mm	LM mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, roller bearings, IM V1 type of construction</b>													
<b>8-pole</b>													
1LA4454-8AM0.	5200	960	770	1550	130	200	2390	2550	1000	1150	1080	26	8
1LA4500-8C...	6400	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4502-8C...	6800	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4504-8C...	7200	1070	840	1660	140	200	2525	2695	1250	1120	1180	26	16
1LA4560-8C...	8500	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4562-8C...	9200	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4564-8C...	10000	1210	910	1800	160	240	2775	2955	1400	1250	1320	26	16
1LA4632-8C...	12500	1350	980	1820	180	240	3115	3305	1400	1250	1320	26	16
1LA4634-8C...	13300	1350	980	1820	180	240	3115	3305	1400	1250	1320	26	16
1LA4636-8C...	14000	1350	980	1820	180	240	3115	3305	1400	1250	1320	26	16

**Note:**

Higher pole numbers are available on request.

<sup>1)</sup> For  $V_{rated} = 690$  V, the dimension changes by  $- 50$  mm.

<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by  $+ 45$  mm.

<sup>3)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by  $+ 180$  mm.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

### Overview



### Technical data

#### Overview of technical data

H-compact 1PQ4	
<b>Rated voltage</b>	690 V ... 6.6 kV
<b>Rated frequency</b>	50/60 Hz
<b>Motor type</b>	Induction motor with squirrel-cage rotor
<b>Type of construction</b>	IM B3, IM V1
<b>Degree of protection</b>	IP55
<b>Cooling method</b>	IC416
<b>Stator winding insulation</b>	Insulation system, thermal class 155 (F), utilized to 155 (F)
<b>Shaft height</b>	450 ... 630 mm
<b>Bearings</b>	Roller bearings, sleeve bearings
<b>Cage material</b>	Die-cast aluminum or copper (dependent on the shaft height and number of poles)
<b>Standards</b>	IEC, EN
<b>Frame design</b>	Cast iron with cooling ribs

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1PQ4

#### Technical data (continued)

**Power ranges for IEC motors with reinforced insulation for SINAMICS drive converters without sine-wave filter**

#### 1PQ4 series

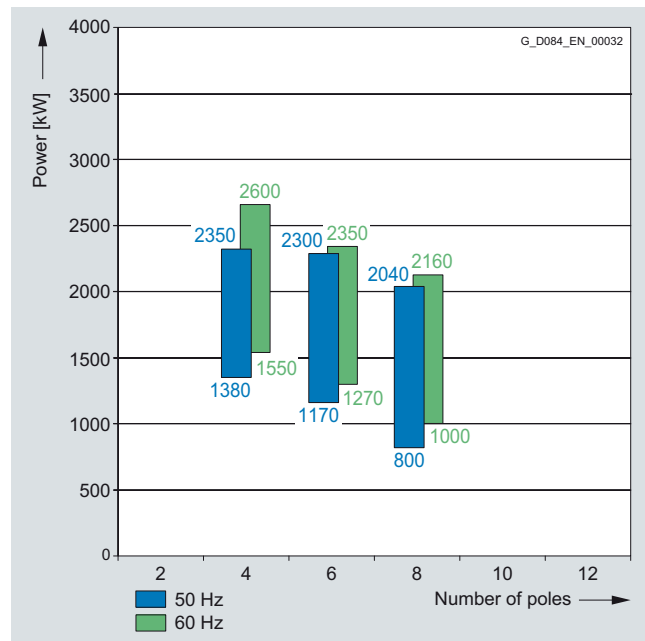
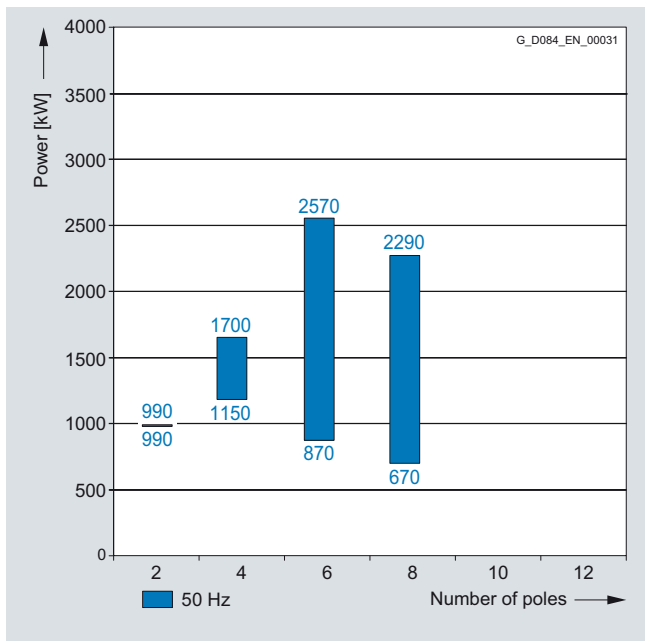
Insulation system, thermal class 155 (F), utilized to 155 (F)

The power data listed here apply for an ambient temperature of 40 °C and an installation altitude ≤ 1000 m.

690 V; 50 Hz

2.3 kV; 50 and 60 Hz

3

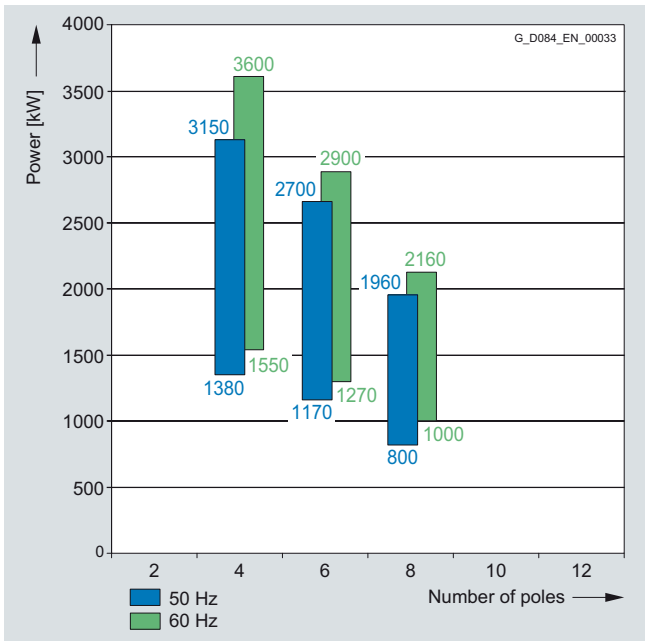


# Motors for converter operation With non-sinusoidal output

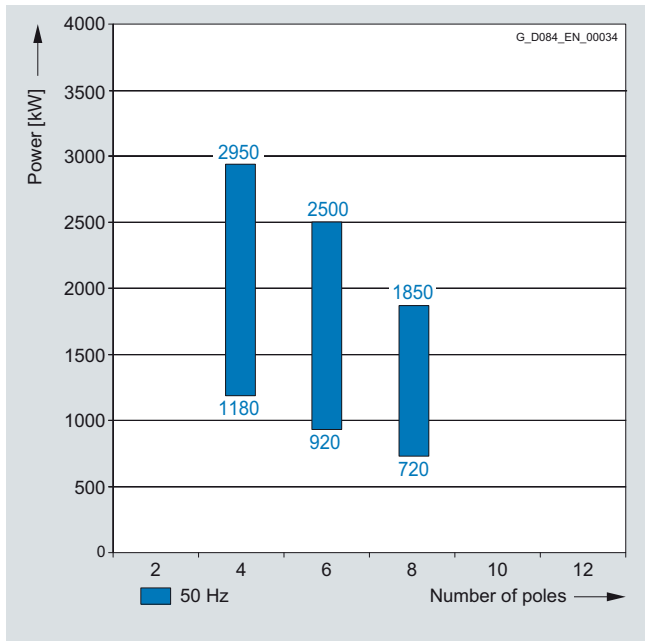
Air-cooled motors  
H-compact 1PQ4

**Technical data** (continued)

3.4 to 4.16 kV; 50 and 60 Hz



6 to 6.6 kV; 50 Hz



3

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact 1PQ4

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	Low-voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 690 V  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>690 V, 50 Hz</b>									
2-pole									
990	<b>1PQ4 454-2CM0</b>	2983	97.3	0.92	930	3169	2.80	22.2	3000
4-pole									
1150	<b>1PQ4 454-4AM0</b>	1491	97.5	0.89	1100	7365	2.50	33.9	2400
1340	<b>1PQ4 500-4CM0</b>	1490	97.3	0.88	1300	8588	2.00	44.3	2400
1550	<b>1PQ4 502-4CM0</b>	1492	97.5	0.87	1520	9920	2.20	49.0	2400
1700	<b>1PQ4 504-4CM0</b>	1490	97.4	0.89	1640	10895	2.00	56.2	2400
6-pole									
870	<b>1PQ4 454-6AM0</b>	993	97.3	0.86	870	8366	2.50	53.5	2200
1350	<b>1PQ4 500-6CM0</b>	995	97.2	0.86	1360	12956	2.20	82.1	2200
1480	<b>1PQ4 502-6CM0</b>	995	97.2	0.86	1480	14204	2.15	92.4	2200
1630	<b>1PQ4 504-6CM0</b>	995	97.3	0.87	1620	15643	2.15	102.6	2200
1900	<b>1PQ4 560-6CM0</b>	995	97.5	0.86	1900	18234	2.30	141.5	2000
2100	<b>1PQ4 562-6CM0</b>	995	97.5	0.86	2100	20154	2.40	162.1	2000
2300	<b>1PQ4 564-6CM0</b>	995	97.6	0.87	2250	22073	2.40	188.5	2000
2455	<b>1PQ4 634-6CM0</b>	996	97.4	0.88	2400	23538	3.00	331.5	1200
2570	<b>1PQ4 636-6CM0</b>	996	97.4	0.89	2500	24640	3.00	361.5	1200
8-pole									
670	<b>1PQ4 454-8AM0</b>	745	96.7	0.80	720	8588	2.40	52.8	2200
950	<b>1PQ4 500-8CM0</b>	746	96.7	0.80	1020	12160	2.10	81.7	2200
1050	<b>1PQ4 502-8CM0</b>	746	96.8	0.81	1120	13440	2.10	91.9	2200
1150	<b>1PQ4 504-8CM0</b>	746	96.9	0.81	1220	14720	2.10	102.2	2200
1400	<b>1PQ4 560-8CM0</b>	745	97.0	0.81	1500	17944	2.30	141.6	2000
1600	<b>1PQ4 562-8CM0</b>	746	97.1	0.82	1680	20480	2.30	162.3	2000
1850	<b>1PQ4 564-8CM0</b>	746	97.1	0.82	1940	23680	2.30	188.8	2000
2030	<b>1PQ4 634-8CM0</b>	746	97.0	0.86	2050	25985	2.40	330.0	1200
2290	<b>1PQ4 636-8CM0</b>	746	97.1	0.86	2300	29314	2.40	360.0	1200

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:5				1:10			
	$P_{max}$ kW	$T_{max}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$P_{max}$ kW	$T_{max}$ rpm	$\eta$ %	$\cos \varphi$ [-]	$P_{max}$ kW	$T_{max}$ rpm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant torque drive</b>											
<b>2-pole</b>												
1PQ4 454-2...	990	3169	97.3	0.92	880	2817	97.3	0.92	850	2721	97.3	0.92
<b>4-pole</b>												
1PQ4 454-4...	1130	7237	97.5	0.89	1060	6789	97.6	0.89	1020	6533	97.6	0.88
1PQ4 500-4...	1320	8460	97.2	0.88	1230	7883	97.3	0.88	1200	7690	97.3	0.88
1PQ4 502-4...	1530	9792	97.5	0.87	1420	9088	97.6	0.87	1390	8896	97.6	0.87
1PQ4 504-4...	1680	10767	97.4	0.89	1540	9869	97.5	0.89	1510	9677	97.5	0.89
<b>6-pole</b>												
1PQ4 454-6...	870	8366	97.3	0.86	770	7405	97.4	0.85	740	7116	97.4	0.85
1PQ4 500-6...	1350	12956	97.2	0.85	1320	12668	97.2	0.85	1300	12476	97.2	0.85
1PQ4 502-6...	1480	14204	97.2	0.86	1430	13724	97.2	0.86	1420	13628	97.2	0.86
1PQ4 504-6...	1630	15643	97.3	0.87	1580	15163	97.3	0.87	1570	15067	97.3	0.87
1PQ4 560-6...	1900	18234	97.5	0.86	1750	16795	97.5	0.86	1700	16315	97.5	0.85
1PQ4 562-6...	2100	20154	97.5	0.86	2000	19194	97.5	0.86	1950	18714	97.6	0.86
1PQ4 564-6...	2300	22073	97.6	0.87	2250	21593	97.6	0.87	2200	21113	97.6	0.87
1PQ4 634-6...	2455	23538	97.4	0.88	2455	23538	97.4	0.88	2455	23538	97.4	0.88
1PQ4 636-6...	2570	24640	97.4	0.89	2570	24640	97.4	0.89	2570	24640	97.4	0.89
<b>8-pole</b>												
1PQ4 454-8...	670	8588	96.7	0.80	640	8203	96.7	0.80	610	7819	96.8	0.79
1PQ4 500-8...	950	12160	96.7	0.80	950	12160	96.7	0.80	950	12160	96.7	0.80
1PQ4 502-8...	1050	13440	96.8	0.81	1050	13440	96.8	0.81	1050	13440	96.8	0.81
1PQ4 504-8...	1150	14720	96.9	0.81	1150	14720	96.9	0.81	1150	14720	96.9	0.81
1PQ4 560-8...	1400	17944	97.0	0.81	1300	16663	97.0	0.80	1300	16663	97.0	0.80
1PQ4 562-8...	1600	20480	97.1	0.82	1500	19200	97.1	0.82	1500	19200	97.1	0.82
1PQ4 564-8...	1850	23680	97.1	0.82	1700	21760	97.1	0.81	1700	21760	97.1	0.81
1PQ4 634-8...	2030	25985	97.0	0.86	2030	25985	97.0	0.86	2030	25985	97.0	0.86
1PQ4 636-8...	2290	29314	97.1	0.86	2290	29314	97.1	0.86	2290	29314	97.1	0.86

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>2.3 kV, 50 Hz</b>									
4-pole									
1380	<b>1PQ4 500-4CV0</b>	1492	97.4	0.87	410	8833	2.35	42.3	2400
1530	<b>1PQ4 502-4CV0</b>	1492	97.5	0.87	455	9793	2.35	47.0	2400
1680	<b>1PQ4 504-4CV0</b>	1492	97.6	0.88	490	10753	2.35	54.2	2400
1850	<b>1PQ4 560-4CV0</b>	1494	97.8	0.87	550	11826	2.45	79.0	2200
2100	<b>1PQ4 562-4CV0</b>	1494	97.8	0.87	620	13424	2.45	92.0	2200
2350	<b>1PQ4 564-4CV0</b>	1494	97.8	0.87	690	15022	2.45	104.0	2200
6-pole									
1170	<b>1PQ4 500-6CV0</b>	994	97.2	0.87	345	11241	2.20	82.1	2200
1280	<b>1PQ4 502-6CV0</b>	994	97.2	0.87	380	12298	2.20	92.4	2200
1380	<b>1PQ4 504-6CV0</b>	994	97.2	0.87	410	13259	2.20	102.6	2200
1700	<b>1PQ4 560-6CV0</b>	995	97.4	0.86	510	16317	2.25	141.5	2000
1900	<b>1PQ4 562-6CV0</b>	995	97.5	0.87	560	18236	2.40	162.1	2000
2150	<b>1PQ4 564-6CV0</b>	995	97.6	0.87	640	20636	2.25	188.5	2000
2300	<b>1PQ4 632-6CV0</b>	995	97.1	0.89	670	22075	2.40	269.0	O. R. <sup>2)</sup>
8-pole									
800	<b>1PQ4 500-8CV0</b>	746	96.6	0.81	255	10241	2.20	81.7	2200
850	<b>1PQ4 502-8CV0</b>	746	96.6	0.81	275	10881	2.20	91.9	2200
950	<b>1PQ4 504-8CV0</b>	746	96.6	0.81	305	12162	2.20	102.2	2200
1300	<b>1PQ4 560-8CV0</b>	744	96.8	0.84	400	16687	1.90	141.6	2000
1450	<b>1PQ4 562-8CV0</b>	744	96.9	0.84	445	18612	1.90	162.3	2000
1700	<b>1PQ4 564-8CV0</b>	744	97.0	0.84	520	21821	1.90	188.8	2000
1850	<b>1PQ4 634-8CV0</b>	746	96.8	0.84	570	23683	2.40	294.0	O. R. <sup>2)</sup>
2040	<b>1PQ4 636-8CV0</b>	745	96.9	0.85	620	26150	2.10	320.0	O. R. <sup>2)</sup>

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> On request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:5				1:10			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant torque drive</b>											
<b>4-pole</b>												
1PQ4 500-4...	1350	8641	97.4	0.87	1280	8193	97.4	0.87	1230	7873	97.4	0.86
1PQ4 502-4...	1500	9601	97.5	0.87	1430	9153	97.5	0.87	1380	8833	97.5	0.87
1PQ4 504-4...	1650	10561	97.6	0.88	1560	9985	97.6	0.88	1500	9601	97.6	0.88
1PQ4 560-4...	1850	11826	97.8	0.87	1780	11378	97.8	0.87	1730	11059	97.8	0.87
1PQ4 562-4...	2100	13424	97.8	0.87	2030	12976	97.8	0.87	1980	12657	97.8	0.87
1PQ4 564-4...	2350	15022	97.8	0.87	2300	14702	97.8	0.87	2250	14383	97.8	0.87
<b>6-pole</b>												
1PQ4 500-6...	1170	11241	97.2	0.87	1170	11241	97.2	0.87	1120	10761	97.2	0.87
1PQ4 502-6...	1280	12298	97.2	0.87	1280	12298	97.2	0.87	1220	11721	97.2	0.87
1PQ4 504-6...	1380	13259	97.2	0.87	1380	13259	97.2	0.87	1320	12682	97.3	0.87
1PQ4 560-6...	1700	16317	97.4	0.86	1700	16317	97.4	0.86	1600	15357	97.4	0.86
1PQ4 562-6...	1900	18236	97.5	0.87	1900	18236	97.5	0.87	1800	17276	97.5	0.87
1PQ4 564-6...	2150	20636	97.6	0.87	2150	20636	97.6	0.87	2050	19676	97.6	0.87
1PQ4 632-6...	2210	21212	97.1	0.89	1795	17228	97.0	0.88	1680	16125	97.0	0.87
<b>8-pole</b>												
1PQ4 500-8...	800	10241	96.6	0.81	800	10241	96.6	0.81	760	9729	96.6	0.81
1PQ4 502-8...	850	10881	96.6	0.81	850	10881	96.6	0.81	810	10369	96.6	0.81
1PQ4 504-8...	980	12546	96.6	0.81	980	12546	96.6	0.81	930	11905	96.6	0.81
1PQ4 560-8...	1300	16687	96.8	0.84	1260	16173	96.8	0.84	1230	15788	96.8	0.84
1PQ4 562-8...	1450	18612	96.9	0.84	1440	18484	96.9	0.84	1400	17970	96.9	0.84
1PQ4 564-8...	1700	21821	97.0	0.84	1690	21693	97.0	0.84	1650	21179	97.0	0.84
1PQ4 634-8...	1775	22723	96.7	0.83	1445	18498	96.6	0.81	1350	17282	96.5	0.80
1PQ4 636-8...	1960	25125	96.8	0.85	1590	20382	96.8	0.83	1490	19100	96.7	0.82

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 3.4 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_B/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 50 Hz</b>									
4-pole									
1380	<b>1PQ4 500-4CV</b> ■■■	1492	97.4	0.87	285	8833	2.35	42.3	2400
1530	<b>1PQ4 502-4CV</b> ■■■	1492	97.5	0.87	315	9793	2.35	47.0	2400
1680	<b>1PQ4 504-4CV</b> ■■■	1492	97.6	0.88	340	10753	2.35	54.2	2400
1850	<b>1PQ4 560-4CV</b> ■■■	1494	97.8	0.87	380	11826	2.45	79.0	2200
2100	<b>1PQ4 562-4CV</b> ■■■	1494	97.8	0.87	430	13424	2.45	92.0	2200
2350	<b>1PQ4 564-4CV</b> ■■■	1494	97.8	0.87	485	15022	2.45	104.0	2200
2600	<b>1PQ4 632-4CV</b> ■ 0	1494	97.5	0.88	530	16620	2.20	157.0	O. R. <sup>2)</sup>
2900	<b>1PQ4 634-4CV</b> ■ 0	1494	97.6	0.88	590	18537	2.20	171.0	O. R. <sup>2)</sup>
3150	<b>1PQ4 636-4CV</b> ■ 0	1494	97.7	0.88	640	20136	2.20	186.0	O. R. <sup>2)</sup>
6-pole									
1170	<b>1PQ4 500-6CV</b> ■■■	994	97.2	0.87	240	11241	2.20	82.1	2200
1280	<b>1PQ4 502-6CV</b> ■■■	994	97.2	0.87	265	12298	2.20	92.4	2200
1380	<b>1PQ4 504-6CV</b> ■■■	994	97.2	0.87	285	13259	2.20	102.6	2200
1700	<b>1PQ4 560-6CV</b> ■■■	995	97.4	0.86	355	16317	2.25	141.5	2000
1900	<b>1PQ4 562-6CV</b> ■■■	995	97.5	0.87	390	18236	2.40	162.1	2000
2150	<b>1PQ4 564-6CV</b> ■■■	995	97.6	0.87	445	20636	2.25	188.5	2000
2220	<b>1PQ4 632-6CV</b> ■■■	995	97.1	0.89	450	21308	2.30	269.0	O. R. <sup>2)</sup>
2480	<b>1PQ4 634-6CV</b> ■■■	995	97.2	0.89	500	23803	2.20	297.0	O. R. <sup>2)</sup>
2700	<b>1PQ4 636-6CV</b> ■■■	995	97.3	0.89	550	25915	2.20	323.0	O. R. <sup>2)</sup>
8-pole									
800	<b>1PQ4 500-8CV</b> ■■■	746	96.6	0.81	178	10241	2.20	81.7	2200
850	<b>1PQ4 502-8CV</b> ■■■	746	96.6	0.81	190	10881	2.20	91.9	2200
950	<b>1PQ4 504-8CV</b> ■■■	746	96.6	0.81	210	12162	2.20	102.2	2200
1300	<b>1PQ4 560-8CV</b> ■■■	744	96.8	0.84	280	16687	1.90	141.6	2000
1450	<b>1PQ4 562-8CV</b> ■■■	744	96.9	0.84	310	18612	1.90	162.3	2000
1700	<b>1PQ4 564-8CV</b> ■■■	744	97.0	0.84	365	21821	1.90	188.8	2000
1780	<b>1PQ4 634-8CV</b> ■■■	745	96.7	0.84	385	22817	2.30	294.0	O. R. <sup>2)</sup>
1960	<b>1PQ4 636-8CV</b> ■■■	745	96.8	0.85	415	25125	2.20	320.0	O. R. <sup>2)</sup>

#### Voltage code:

4.16 kV, 50 Hz  
Other voltage

4  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)  
IM V1 (without canopy)

0  
4  
8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> On request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:5				1:10			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant torque drive</b>											
<b>4-pole</b>												
1PQ4 500-4...	1350	8641	97.4	0.87	1280	8193	97.4	0.87	1230	7873	97.4	0.86
1PQ4 502-4...	1500	9601	97.5	0.87	1430	9153	97.5	0.87	1380	8833	97.5	0.87
1PQ4 504-4...	1650	10561	97.6	0.88	1560	9985	97.6	0.88	1500	9601	97.6	0.88
1PQ4 560-4...	1850	11826	97.8	0.87	1780	11378	97.8	0.87	1730	11059	97.8	0.87
1PQ4 562-4...	2100	13424	97.8	0.87	2030	12976	97.8	0.87	1980	12657	97.8	0.87
1PQ4 564-4...	2350	15022	97.3	0.85	1900	12145	97.8	0.87	2250	14383	97.8	0.87
1PQ4 632-4...	2495	15949	97.4	0.88	2030	12976	97.4	0.87	1900	12145	97.4	0.87
1PQ4 634-4...	2780	17770	97.5	0.88	2260	14446	97.5	0.87	2110	13488	97.4	0.87
1PQ4 636-4...	3020	19305	97.6	0.88	2460	15725	97.6	0.87	2300	14702	97.5	0.87
<b>6-pole</b>												
1PQ4 500-6...	1170	11241	97.2	0.87	1170	11241	97.1	0.87	1120	11529	97.2	0.87
1PQ4 502-6...	1280	12298	97.2	0.87	1280	12298	96.9	0.87	1220	12970	97.2	0.87
1PQ4 504-6...	1380	13259	97.2	0.87	1380	13259	97.4	0.87	1320	14700	97.3	0.87
1PQ4 560-6...	1700	16317	97.4	0.86	1700	16317	97.5	0.87	1600	16796	97.4	0.86
1PQ4 562-6...	1900	18236	97.5	0.87	1900	18236	97.5	0.87	1800	18716	97.5	0.87
1PQ4 564-6...	2150	20636	97.6	0.87	2150	20636	97.6	0.87	2050	21595	97.6	0.87
1PQ4 632-6...	2130	20444	97.0	0.89	1730	16605	97.0	0.88	1620	15549	97.0	0.88
1PQ4 634-6...	2380	22843	97.1	0.89	1935	18572	97.2	0.89	1810	17372	97.1	0.88
1PQ4 636-6...	2590	24859	97.3	0.89	2100	20156	97.3	0.89	1970	18908	97.2	0.88
<b>8-pole</b>												
1PQ4 500-8...	800	10241	96.6	0.81	800	10241	96.6	0.81	760	9729	96.6	0.81
1PQ4 502-8...	850	10881	96.6	0.81	850	10881	96.6	0.81	810	10369	96.6	0.81
1PQ4 504-8...	980	12546	96.6	0.81	980	12546	96.6	0.81	930	11905	96.6	0.81
1PQ4 560-8...	1300	16687	96.8	0.84	1260	16173	96.8	0.84	1230	15788	96.8	0.84
1PQ4 562-8...	1450	18612	96.9	0.84	1440	18484	96.9	0.84	1400	17970	96.9	0.84
1PQ4 564-8...	1700	21821	97.0	0.84	1690	21693	97.0	0.84	1650	21179	97.0	0.84
1PQ4 634-8...	1710	21920	96.7	0.84	1390	17818	96.6	0.82	1300	16664	96.5	0.81
1PQ4 636-8...	1880	24099	96.8	0.85	1530	19613	96.7	0.83	1430	18331	96.7	0.82

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 6.6 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>6 ... 6.6 kV, 50 Hz</b>									
4-pole									
1180	<b>1PQ4 500-4CV</b> ■■■	1493	96.8	0.87	122	7548	2.60	42.0	2400
1300	<b>1PQ4 502-4CV</b> ■■■	1493	96.9	0.87	134	8315	2.60	47.0	2400
1450	<b>1PQ4 504-4CV</b> ■■■	1493	97.1	0.88	148	9275	2.50	54.0	2400
1600	<b>1PQ4 560-4CV</b> ■■■	1494	97.2	0.86	168	10228	2.60	79.0	2200
1850	<b>1PQ4 562-4CV</b> ■■■	1494	97.4	0.87	190	11826	2.60	92.0	2200
2100	<b>1PQ4 564-4CV</b> ■■■	1494	97.5	0.87	215	13424	2.60	104.0	2200
2400	<b>1PQ4 632-4CV</b> ■ 0	1494	97.3	0.88	245	15341	2.40	157.0	O. R. <sup>2)</sup>
2700	<b>1PQ4 634-4CV</b> ■ 0	1494	97.4	0.87	280	17259	2.40	171.0	O. R. <sup>2)</sup>
2950	<b>1PQ4 636-4CV</b> ■ 0	1494	97.5	0.87	305	18857	2.40	186.0	O. R. <sup>2)</sup>
6-pole									
920	<b>1PQ4 500-6CV</b> ■■■	995	96.6	0.86	97	8830	2.50	82.0	2200
1030	<b>1PQ4 502-6CV</b> ■■■	995	96.7	0.87	108	9886	2.40	92.0	2200
1120	<b>1PQ4 504-6CV</b> ■■■	995	96.8	0.87	116	10750	2.40	103.0	2200
1400	<b>1PQ4 560-6CV</b> ■■■	996	97.1	0.86	146	13424	2.70	142.0	2000
1550	<b>1PQ4 562-6CV</b> ■■■	996	97.2	0.86	162	14862	2.70	162.0	2000
1700	<b>1PQ4 564-6CV</b> ■■■	996	97.3	0.87	176	16300	2.50	189.0	2000
2050	<b>1PQ4 632-6CV</b> ■■■	995	97.0	0.88	210	19676	2.40	269.0	O. R. <sup>2)</sup>
2300	<b>1PQ4 634-6CV</b> ■■■	995	97.1	0.89	235	22075	2.40	297.0	O. R. <sup>2)</sup>
2500	<b>1PQ4 636-6CV</b> ■■■	995	97.1	0.88	255	23995	2.40	323.0	O. R. <sup>2)</sup>
8-pole									
720	<b>1PQ4 500-8CV</b> ■■■	746	96.0	0.80	82	9217	2.30	82.0	2200
760	<b>1PQ4 502-8CV</b> ■■■	746	96.2	0.81	85	9729	2.30	92.0	2200
820	<b>1PQ4 504-8CV</b> ■■■	746	96.3	0.81	92	10497	2.30	102.0	2200
1050	<b>1PQ4 560-8CV</b> ■■■	745	96.6	0.82	116	13460	2.40	142.0	2000
1180	<b>1PQ4 562-8CV</b> ■■■	745	96.7	0.82	130	15126	2.40	162.0	2000
1350	<b>1PQ4 564-8CV</b> ■■■	745	96.8	0.83	146	17305	2.40	189.0	2000
1500	<b>1PQ4 632-8CV</b> ■■■	746	96.5	0.83	164	19202	2.50	265.0	O. R. <sup>2)</sup>
1700	<b>1PQ4 634-8CV</b> ■■■	746	96.6	0.83	186	21763	2.50	294.0	O. R. <sup>2)</sup>
1850	<b>1PQ4 636-8CV</b> ■■■	746	96.7	0.83	200	23683	2.50	320.0	O. R. <sup>2)</sup>

#### Voltage code:

6 kV, 50 Hz	6
6.6 kV, 50 Hz	7
Other voltage	9

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see Page 3/2.

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> On request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:5				1:10			
	$P_{max}$ kW	$T_{max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{max}$ kW	$T_{max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{max}$ kW	$T_{max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant torque drive</b>											
<b>4-pole</b>												
1PQ4 500-4...	1180	7548	96.8	0.87	1180	7548	96.8	0.87	1070	6844	96.7	0.86
1PQ4 502-4...	1300	8315	96.9	0.87	1300	8315	96.9	0.87	1200	7676	96.8	0.87
1PQ4 504-4...	1450	9275	97.1	0.88	1450	9275	97.1	0.88	1370	8763	97.0	0.88
1PQ4 560-4...	1600	10228	97.2	0.86	1600	10228	97.2	0.86	1450	9269	97.1	0.84
1PQ4 562-4...	1850	11826	97.4	0.87	1850	11826	97.4	0.87	1700	10867	97.3	0.86
1PQ4 564-4...	2100	13424	97.5	0.87	2100	13424	97.5	0.87	1950	12465	97.4	0.87
1PQ4 632-4...	2400	15341	97.3	0.88	2400	15341	97.3	0.88	2100	13424	97.3	0.87
1PQ4 634-4...	2700	17259	97.4	0.87	2700	17259	97.4	0.87	2450	15661	97.4	0.86
1PQ4 636-4...	2950	18857	97.5	0.87	2950	18857	97.5	0.87	2750	17579	97.5	0.86
<b>6-pole</b>												
1PQ4 500-6...	920	8830	96.6	0.86	920	8830	96.6	0.86	920	8830	96.6	0.86
1PQ4 502-6...	1030	9886	96.7	0.87	1030	9886	96.7	0.87	1030	9886	96.7	0.87
1PQ4 504-6...	1120	10750	96.8	0.87	1120	10750	96.8	0.87	1120	10750	96.8	0.87
1PQ4 560-6...	1400	13424	97.1	0.86	1400	13424	97.1	0.86	1400	13424	97.2	0.86
1PQ4 562-6...	1550	14862	97.2	0.86	1550	14862	97.2	0.86	1550	14862	97.3	0.86
1PQ4 564-6...	1700	16300	97.3	0.87	1700	16300	97.3	0.87	1700	16300	97.4	0.87
1PQ4 632-6...	2050	19676	97.0	0.88	2050	19676	97.0	0.88	2050	19676	97.0	0.88
1PQ4 634-6...	2300	22075	97.1	0.89	2300	22075	97.1	0.89	2300	22075	97.0	0.89
1PQ4 636-6...	2500	23995	97.1	0.88	2500	23995	97.1	0.88	2500	23995	97.1	0.88
<b>8-pole</b>												
1PQ4 500-8...	720	9217	96.0	0.80	720	9217	96.0	0.80	720	9217	96.1	0.81
1PQ4 502-8...	760	9729	96.2	0.81	760	9729	96.2	0.81	760	9729	96.2	0.81
1PQ4 504-8...	820	10497	96.3	0.81	820	10497	96.3	0.81	820	10497	96.3	0.81
1PQ4 560-8...	1050	13460	96.6	0.82	1050	13460	96.6	0.82	1050	13460	96.6	0.82
1PQ4 562-8...	1180	15126	96.7	0.82	1180	15126	96.7	0.82	1180	15126	96.8	0.82
1PQ4 564-8...	1350	17305	96.8	0.83	1350	17305	96.8	0.83	1350	17305	96.8	0.82
1PQ4 632-8...	1500	19202	96.5	0.83	1500	19202	96.5	0.83	1500	19202	96.5	0.83
1PQ4 634-8...	1700	21763	96.6	0.83	1700	21763	96.6	0.83	1700	21763	96.6	0.83
1PQ4 636-8...	1850	23683	96.7	0.83	1850	23683	96.7	0.83	1850	23683	96.7	0.83

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>2.3 kV, 60 Hz</b>									
4-pole									
1550	<b>1PQ4 500-4CV1</b>	1793	97.5	0.88	455	8256	2.50	42.3	2400
1700	<b>1PQ4 502-4CV1</b>	1793	97.5	0.88	495	9055	2.50	47.0	2400
1850	<b>1PQ4 504-4CV1</b>	1793	97.5	0.88	540	9854	2.50	54.2	2400
2000	<b>1PQ4 560-4CV1</b>	1794	97.7	0.87	590	10647	2.40	79.0	2200
2300	<b>1PQ4 562-4CV1</b>	1794	97.7	0.87	680	12244	2.40	92.0	2200
2600	<b>1PQ4 564-4CV1</b>	1794	97.7	0.87	770	13841	2.40	104.0	2200
6-pole									
1270	<b>1PQ4 500-6CV1</b>	1195	97.1	0.87	375	10149	2.25	82.1	2200
1420	<b>1PQ4 502-6CV1</b>	1196	97.3	0.87	420	11339	2.25	92.4	2200
1600	<b>1PQ4 504-6CV1</b>	1195	97.4	0.87	475	12787	2.25	102.6	2200
1850	<b>1PQ4 560-6CV1</b>	1195	97.5	0.87	550	14785	2.40	141.5	2000
2050	<b>1PQ4 562-6CV1</b>	1195	97.5	0.87	610	16383	2.40	162.1	2000
2350	<b>1PQ4 564-6CV1</b>	1195	97.6	0.87	690	18780	2.40	188.5	2000
8-pole									
1000	<b>1PQ4 500-8CV1</b>	895	96.7	0.81	320	10670	2.10	81.7	2200
1100	<b>1PQ4 502-8CV1</b>	895	96.7	0.81	355	11737	2.10	91.9	2200
1200	<b>1PQ4 504-8CV1</b>	895	96.7	0.81	385	12804	2.10	102.2	2200
1400	<b>1PQ4 560-8CV1</b>	894	96.9	0.84	430	14955	1.90	141.6	2000
1630	<b>1PQ4 562-8CV1</b>	894	97.0	0.84	500	17412	1.90	162.3	2000
1860	<b>1PQ4 564-8CV1</b>	894	97.1	0.84	570	19869	2.10	188.8	2000
2000	<b>1PQ4 634-8CV1</b>	895	96.7	0.86	600	21341	2.00	294.0	O. R. <sup>2)</sup>
2160	<b>1PQ4 636-8CV1</b>	895	96.8	0.86	650	23048	2.10	320.0	O. R. <sup>2)</sup>

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> On request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:5				1:10			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant torque drive</b>											
<b>4-pole</b>												
1PQ4 500-4...	1550	8256	97.5	0.88	1550	8256	97.5	0.88	1480	7883	97.5	0.88
1PQ4 502-4...	1700	9055	97.5	0.88	1700	9055	97.5	0.88	1620	8629	97.5	0.88
1PQ4.504-4...	1850	9854	97.5	0.88	1850	9854	97.5	0.88	1780	9481	97.5	0.88
1PQ4 560-4...	2000	10647	97.7	0.87	1940	10327	97.7	0.87	1900	10114	97.7	0.87
1PQ4 562-4...	2300	12244	97.7	0.87	2300	12244	97.7	0.87	2250	11977	97.7	0.87
1PQ4 564-4...	2600	13841	97.7	0.87	2600	13841	97.7	0.87	2550	13574	97.7	0.87
<b>6-pole</b>												
1PQ4 500-6...	1270	10149	97.1	0.87	1270	10149	97.1	0.87	1200	9590	97.1	0.87
1PQ4 502-6...	1420	11339	96.9	0.87	1420	11339	96.9	0.87	1350	10780	96.9	0.87
1PQ4 504-6...	1600	12787	97.4	0.87	1600	12787	97.4	0.87	1530	12227	97.4	0.87
1PQ4 560-6...	1850	14785	97.5	0.87	1850	14785	97.5	0.87	1750	13985	97.5	0.87
1PQ4 562-6...	2050	16383	97.5	0.87	2050	16383	97.5	0.87	1950	15584	97.5	0.87
1PQ4 564-6...	2350	18780	97.6	0.87	2350	18780	97.6	0.87	2250	17981	97.6	0.87
<b>8-pole</b>												
1PQ4 500-8...	1000	10670	96.7	0.81	1000	10670	96.7	0.81	950	10137	96.7	0.81
1PQ4 502-8...	1100	11737	96.7	0.81	1100	11737	96.7	0.81	1050	11204	96.7	0.81
1PQ4 504-8...	1200	12804	96.7	0.81	1200	12804	96.7	0.81	1150	12271	96.7	0.81
1PQ4 560-8...	1400	14955	96.9	0.84	1400	14955	96.9	0.84	1350	14421	96.9	0.84
1PQ4 562-8...	1630	17412	97.0	0.84	1630	17412	97.0	0.84	1580	16878	97.0	0.84
1PQ4 564-8...	1860	19869	97.1	0.84	1860	19869	97.1	0.84	1800	19228	97.1	0.84
1PQ4 634-8...	1940	20701	96.6	0.85	1580	16859	96.4	0.84	1480	15792	96.4	0.84
1PQ4 636-8...	2095	22354	96.6	0.85	1705	18193	96.5	0.84	1598	17051	96.4	0.84

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 4.16 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 60 Hz</b>									
4-pole									
1550	<b>1PQ4 500-4CV5</b>	1793	97.5	0.88	250	8256	2.50	42.3	2400
1700	<b>1PQ4 502-4CV5</b>	1793	97.5	0.88	275	9055	2.50	47.0	2400
1850	<b>1PQ4 504-4CV5</b>	1793	97.5	0.88	300	9854	2.50	54.2	2400
2000	<b>1PQ4 560-4CV5</b>	1794	97.7	0.87	325	10647	2.40	79.0	2200
2300	<b>1PQ4 562-4CV5</b>	1794	97.7	0.87	375	12244	2.40	92.0	2200
2600	<b>1PQ4 564-4CV5</b>	1794	97.7	0.87	425	13841	2.40	104.0	2200
2950	<b>1PQ4 632-4CV5 0</b>	1794	97.2	0.87	485	15704	2.40	157.0	O. R. <sup>2)</sup>
3320	<b>1PQ4 634-4CV5 0</b>	1794	97.3	0.87	540	17673	2.20	171.0	O. R. <sup>2)</sup>
3600	<b>1PQ4 636-4CV5 0</b>	1795	97.5	0.87	590	19153	2.40	186.0	O. R. <sup>2)</sup>
6-pole									
1270	<b>1PQ4 500-6CV5</b>	1195	97.1	0.87	210	10149	2.25	82.1	2200
1420	<b>1PQ4 502-6CV5</b>	1196	97.3	0.87	235	11339	2.25	92.4	2200
1600	<b>1PQ4 504-6CV5</b>	1195	97.4	0.87	260	12787	2.25	102.6	2200
1850	<b>1PQ4 560-6CV5</b>	1195	97.5	0.87	305	14785	2.40	141.5	2000
2050	<b>1PQ4 562-6CV5</b>	1195	97.5	0.87	335	16383	2.40	162.1	2000
2350	<b>1PQ4 564-6CV5</b>	1195	97.6	0.87	385	18780	2.40	188.5	2000
2400	<b>1PQ4 632-6CV5</b>	1195	96.8	0.89	385	19180	2.40	269.0	O. R. <sup>2)</sup>
2700	<b>1PQ4 634-6CV5</b>	1195	96.9	0.89	435	21577	2.20	297.0	O. R. <sup>2)</sup>
2900	<b>1PQ4 636-6CV5</b>	1195	97.0	0.89	465	23176	2.20	323.0	O. R. <sup>2)</sup>
8-pole									
1000	<b>1PQ4 500-8CV5</b>	895	96.7	0.81	178	10670	2.10	81.7	2200
1100	<b>1PQ4 502-8CV5</b>	895	96.7	0.81	194	11737	2.10	91.9	2200
1200	<b>1PQ4 504-8CV5</b>	895	96.7	0.81	215	12804	2.10	102.2	2200
1400	<b>1PQ4 560-8CV5</b>	894	96.9	0.84	240	14955	1.90	141.6	2000
1630	<b>1PQ4 562-8CV5</b>	894	97.0	0.84	280	17412	1.90	162.3	2000
1860	<b>1PQ4 564-8CV5</b>	894	97.1	0.84	315	19869	2.10	188.8	2000
1960	<b>1PQ4 634-8CV5</b>	895	96.7	0.86	325	20914	2.00	294.0	O. R. <sup>2)</sup>
2160	<b>1PQ4 636-8CV5</b>	895	96.8	0.86	360	23048	2.10	320.0	O. R. <sup>2)</sup>
<b>Type of construction:</b>									
IM B3 <b>0</b>									
IM V1 (with canopy) <b>4</b>									
IM V1 (without canopy) <b>8</b>									

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see Page 3/2.

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> On request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

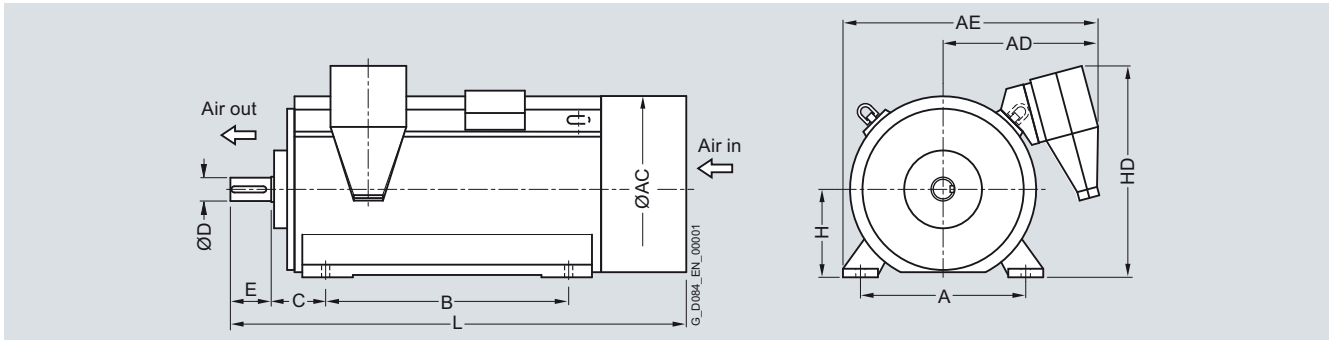
Motor type (repeated)	Constant-torque drive, speed range											
	1:2				1:5				1:10			
	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]	$P_{\max}$ kW	$T_{\max}$ Nm	$\eta$ %	$\cos \varphi$ [-]
	<b>Constant torque drive</b>											
<b>4-pole</b>												
1PQ4 500-4...	1550	8256	97.5	0.88	1550	8256	97.5	0.88	1480	7883	97.5	0.88
1PQ4 502-4...	1700	9055	97.5	0.88	1700	9055	97.5	0.88	1620	8629	97.5	0.88
1PQ4 504-4...	1850	9854	97.5	0.88	1850	9854	97.5	0.88	1780	9481	97.5	0.88
1PQ4 560-4...	2000	10647	97.7	0.87	1940	10327	97.7	0.87	1900	10114	97.7	0.87
1PQ4 562-4...	2300	12244	97.7	0.87	2300	12244	97.7	0.87	2250	11977	97.7	0.87
1PQ4 564-4...	2600	13841	97.7	0.87	2600	13841	97.7	0.87	2550	13574	97.7	0.87
1PQ4 632-4...	2860	15225	97.2	0.87	2330	12403	97.0	0.86	2185	11631	96.9	0.85
1PQ4 634-4...	3220	17141	97.3	0.87	2625	13974	97.1	0.86	2455	13069	97.1	0.85
1PQ4 636-4...	3490	18568	97.4	0.87	2845	15136	97.2	0.86	2665	14179	97.2	0.85
<b>6-pole</b>												
1PQ4 500-6...	1270	10149	97.1	0.87	1270	10149	97.1	0.87	1200	9590	97.1	0.87
1PQ4 502-6...	1420	11339	96.9	0.87	1420	11339	96.9	0.87	1350	10780	96.9	0.87
1PQ4 504-6...	1600	12787	97.4	0.87	1600	12787	97.4	0.87	1530	12227	97.4	0.87
1PQ4 560-6...	1850	14785	97.5	0.87	1850	14785	97.5	0.87	1750	13985	97.5	0.87
1PQ4 562-6...	2050	16383	97.5	0.87	2050	16383	97.5	0.87	1950	15584	97.5	0.87
1PQ4 564-6...	2350	18780	97.6	0.87	2350	18780	97.6	0.87	2250	17981	97.6	0.87
1PQ4 632-6...	2330	18621	96.7	0.89	1895	15144	96.5	0.88	1775	14185	96.4	0.88
1PQ4 634-6...	2620	20938	96.9	0.89	2135	17062	96.8	0.89	2000	15983	96.7	0.88
1PQ4 636-6...	2815	22496	97.0	0.89	2290	18301	96.9	0.89	2145	17142	96.8	0.88
<b>8-pole</b>												
1PQ4 500-8...	1000	10670	96.7	0.81	1000	10670	96.7	0.81	950	10137	96.7	0.81
1PQ4 502-8...	1100	11737	96.7	0.81	1100	11737	96.7	0.81	1050	11204	96.7	0.81
1PQ4 504-8...	1200	12804	96.7	0.81	1200	12804	96.7	0.81	1150	12271	96.7	0.81
1PQ4 560-8...	1400	14955	96.9	0.84	1400	14955	96.9	0.84	1350	14421	96.9	0.84
1PQ4 562-8...	1630	17412	97.0	0.84	1630	17412	97.0	0.84	1580	16878	97.0	0.84
1PQ4 564-8...	1860	19869	97.1	0.84	1860	19869	97.1	0.84	1800	19228	97.1	0.84
1PQ4 634-8...	1901	20284	96.5	0.85	1548	16518	96.4	0.84	1450	15472	96.3	0.83
1PQ4 636-8...	2095	22354	96.6	0.85	1706	18204	96.5	0.84	1598	17051	96.4	0.83

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

### Dimension drawings



Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD <sup>1)3)</sup> mm	AE <sup>1)2)3)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>4)</sup> mm	L mm
<b>Up to 6.6 kV, roller bearings, IM B3 type of construction</b>												
<b>2-pole</b>												
1PQ4454-2CM00	5350	850	960	920	1440	1250	280	95	130	450	1100	2770
<b>4-pole</b>												
1PQ4454-4AM00	5300	850	960	920	1440	1250	280	130	200	450	1100	2840
1PQ4500-4C..0	6400	950	1070	875	1440	1320	315	140	200	500	1200	3040
1PQ4502-4C..0	6800	950	1070	875	1440	1320	315	140	200	500	1200	3040
1PQ4504-4C..0	7300	950	1070	875	1440	1320	315	140	200	500	1200	3040
1PQ4560-4C..0	8600	1060	1210	925	1560	1400	335	160	240	560	1310	3315
1PQ4562-4C..0	9300	1060	1210	925	1560	1400	335	160	240	560	1310	3315
1PQ4564-4C..0	10100	1060	1210	925	1560	1400	335	160	240	560	1310	3315
1PQ4632-4C..0	12700	1120	1350	945	1560	1600	335	170	240	630	1410	3420
1PQ4634-4C..0	13300	1120	1350	945	1560	1600	335	170	240	630	1410	3420
1PQ4636-4C..0	14200	1120	1350	945	1560	1600	335	170	240	630	1410	3420
<b>6-pole</b>												
1PQ4454-6AM00	5400	850	960	920	1440	1250	280	130	200	450	1100	2840
1PQ4500-6C..0	6700	950	1070	875	1440	1320	315	140	200	500	1200	3040
1PQ4502-6C..0	7100	950	1070	875	1440	1320	315	140	200	500	1200	3040
1PQ4504-6C..0	7600	950	1070	875	1440	1320	315	140	200	500	1200	3040
1PQ4560-6C..0	8900	1060	1210	925	1560	1400	335	160	240	560	1310	3315
1PQ4562-6C..0	9600	1060	1210	925	1560	1400	335	160	240	560	1310	3315
1PQ4564-6C..0	10500	1060	1210	925	1560	1400	335	160	240	560	1310	3315
1PQ4632-6C..0	12800	1120	1350	960	1630	1600	335	180	240	630	1410	3420
1PQ4634-6C..0	13800	1120	1350	960	1630	1600	335	180	240	630	1410	3420
1PQ4636-6C..0	14600	1120	1350	960	1630	1600	335	180	240	630	1410	3420
<b>8-pole</b>												
1PQ4454-8AM00	5400	850	960	920	1630	1250	280	130	200	450	1100	2840
1PQ4500-8C..0	6700	950	1070	875	1440	1320	315	140	200	500	1200	3040
1PQ4502-8C..0	7000	950	1070	875	1440	1320	315	140	200	500	1200	3040
1PQ4504-8C..0	7500	950	1070	875	1440	1320	315	140	200	500	1200	3040
1PQ4560-8C..0	8900	1060	1210	925	1560	1400	335	160	240	560	1310	3315
1PQ4562-8C..0	9600	1060	1210	925	1560	1400	335	160	240	560	1310	3315
1PQ4564-8C..0	10400	1060	1210	925	1560	1400	335	160	240	560	1310	3315
1PQ4632-8C..0	12800	1120	1350	960	1630	1600	335	180	240	630	1410	3420
1PQ4634-8C..0	13400	1120	1350	960	1630	1600	335	180	240	630	1410	3420
1PQ4636-8C..0	14300	1120	1350	960	1630	1600	335	180	240	630	1410	3420

**Note:** Higher pole numbers are available on request.

<sup>1)</sup> For  $V_{\text{rated}} = 690$  V, the dimension changes by + 100 mm.

<sup>2)</sup> For  $V_{\text{rated}} = 690$  V and  $I_{\text{rated}} > 1230$  A, the dimension changes by + 475 mm (a second main terminal box is required).

<sup>3)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

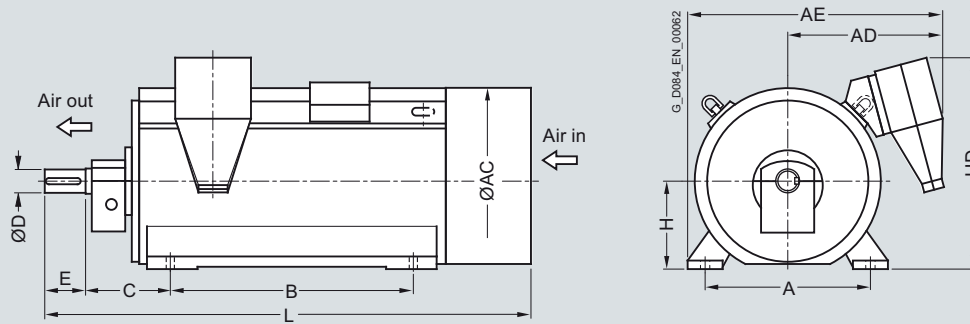
<sup>4)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 70 mm.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

### Dimension drawings



Motor type	Weight kg	Dimensions										
		A mm	AC mm	AD <sup>1)3)</sup> mm	AE <sup>1)2)3)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>4)</sup> mm	L mm
<b>Up to 6.6 kV, sleeve bearings, IM B3 type of construction</b>												
<b>2-pole</b>												
1PQ4454-2AM00-Z K96	5400	850	960	920	1440	1250	475	95	130	450	1100	2965
<b>4-pole</b>												
1PQ4454-4AM00-Z K96	5300	850	960	920	1440	1250	475	130	200	450	1100	3035
1PQ4500-4C..0-Z K96	6400	950	1070	875	1440	1320	500	140	200	500	1200	3225
1PQ4502-4C..0-Z K96	6800	950	1070	875	1440	1320	500	140	200	500	1200	3225
1PQ4504-4C..0-Z K96	7300	950	1070	875	1440	1320	500	140	200	500	1200	3225
1PQ4560-4C..0-Z K96	8600	1060	1210	925	1560	1400	560	160	240	560	1310	3540
1PQ4562-4C..0-Z K96	9300	1060	1210	925	1560	1400	560	160	240	560	1310	3540
1PQ4564-4C..0-Z K96	10100	1060	1210	925	1560	1400	560	160	240	560	1310	3540
1PQ4632-4C..0-Z K96	12700	1120	1350	945	1560	1600	560	170	240	630	1410	3645
1PQ4634-4C..0-Z K96	13300	1120	1350	945	1560	1600	560	170	240	630	1410	3645
1PQ4636-4C..0-Z K96	14200	1120	1350	945	1560	1600	560	170	240	630	1410	3645
<b>6-pole</b>												
1PQ4454-6AM00-Z K96	5400	850	960	920	1440	1250	475	130	200	450	1100	3035
1PQ4500-6C..0-Z K96	6700	950	1070	875	1440	1320	530	140	200	500	1200	3255
1PQ4502-6C..0-Z K96	7100	950	1070	875	1440	1320	530	140	200	500	1200	3255
1PQ4504-6C..0-Z K96	7600	950	1070	875	1440	1320	530	140	200	500	1200	3255
1PQ4560-6C..0-Z K96	8900	1060	1210	925	1560	1400	560	160	240	560	1310	3540
1PQ4562-6C..0-Z K96	9600	1060	1210	925	1560	1400	560	160	240	560	1310	3540
1PQ4564-6C..0-Z K96	10500	1060	1210	925	1560	1400	560	160	240	560	1310	3540
1PQ4632-6C..0-Z K96	12800	1120	1350	960	1630	1600	560	180	240	630	1410	3645
1PQ4634-6C..0-Z K96	13800	1120	1350	960	1630	1600	560	180	240	630	1410	3645
1PQ4636-6C..0-Z K96	14600	1120	1350	960	1630	1600	560	180	240	630	1410	3645
<b>8-pole</b>												
1PQ4454-8AM00-Z K96	5400	850	960	920	1630	1250	475	130	200	450	1100	3035
1PQ4500-8C..0-Z K96	6700	950	1070	875	1440	1320	530	140	200	500	1200	3255
1PQ4502-8C..0-Z K96	7000	950	1070	875	1440	1320	530	140	200	500	1200	3255
1PQ4504-8C..0-Z K96	7500	950	1070	875	1440	1320	530	140	200	500	1200	3255
1PQ4560-8C..0-Z K96	8900	1060	1210	925	1560	1400	560	160	240	560	1310	3540
1PQ4562-8C..0-Z K96	9600	1060	1210	925	1560	1400	560	160	240	560	1310	3540
1PQ4564-8C..0-Z K96	10400	1060	1210	925	1560	1400	560	160	240	560	1310	3540
1PQ4632-8C..0-Z K96	12800	1120	1350	960	1630	1600	560	180	240	630	1410	3645
1PQ4634-8C..0-Z K96	13400	1120	1350	960	1630	1600	560	180	240	630	1410	3645
1PQ4636-8C..0-Z K96	14300	1120	1350	960	1630	1600	560	180	240	630	1410	3645

**Note:** Higher pole numbers are available on request.

<sup>1)</sup> For  $V_{\text{rated}} = 690$  V, the dimension changes by + 100 mm.

<sup>2)</sup> For  $V_{\text{rated}} = 690$  V and  $I_{\text{rated}} > 1230$  A, the dimension changes by + 475 mm (a second main terminal box is required).

<sup>3)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

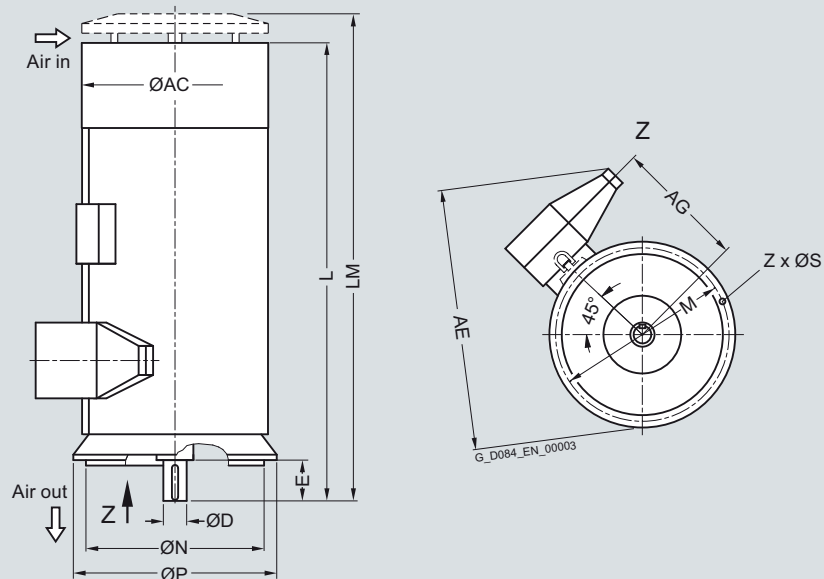
<sup>4)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 70 mm.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact 1PQ4

### Dimension drawings



Motor type	Weight kg	Dimensions											
		AC mm	AG <sup>1)2)</sup> mm	AE <sup>3)</sup> mm	D mm	E mm	L mm	LM mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, roller bearings, IM V1 type of construction</b>													
<b>4-pole</b>													
1PQ4454-4AM04	5200	960	770	1550	130	200	2900	3050	1150	1000	1080	26	8
1PQ4500-4C..4	6200	1070	840	1660	140	200	3050	3100	1250	1120	1180	26	16
1PQ4502-4C..4	6600	1070	840	1660	140	200	3050	3100	1250	1120	1180	26	16
1PQ4504-4C..4	7100	1070	840	1660	140	200	3050	3100	1250	1120	1180	26	16
1PQ4560-4C..4	8400	1210	910	1800	160	240	3330	3380	1400	1250	1320	26	16
1PQ4562-4C..4	9100	1210	910	1800	160	240	3330	3380	1400	1250	1320	26	16
1PQ4564-4C..4	9800	1210	910	1800	160	240	3330	3380	1400	1250	1320	26	16
<b>6-pole</b>													
1PQ4454-6AM04	5500	960	770	1550	130	200	2900	3050	1150	1000	1080	26	8
1PQ4500-6C..4	6500	1070	840	1660	140	200	3050	3100	1250	1120	1180	26	16
1PQ4502-6C..4	6900	1070	840	1660	140	200	3050	3100	1250	1120	1180	26	16
1PQ4504-6C..4	7400	1070	840	1660	140	200	3050	3100	1250	1120	1180	26	16
1PQ4560-6C..4	8600	1210	910	1800	160	240	3330	3380	1400	1250	1320	26	16
1PQ4562-6C..4	9400	1210	910	1800	160	240	3330	3380	1400	1250	1320	26	16
1PQ4564-6C..4	10200	1210	910	1800	160	240	3330	3380	1400	1250	1320	26	16
1PQ4632-6C..4	13100	1350	980	1820	180	240	3650	3700	1400	1250	1320	26	16
1PQ4634-6C..4	13800	1350	980	1820	180	240	3650	3700	1400	1250	1320	26	16
1PQ4636-6C..4	14600	1350	980	1820	180	240	3650	3700	1400	1250	1320	26	16
<b>8-pole</b>													
1PQ4454-8AM04	5500	960	770	1550	130	200	2900	3050	1000	1150	1080	26	8
1PQ4500-8C..4	6500	1070	840	1660	140	200	3050	3100	1250	1120	1180	26	16
1PQ4502-8C..4	6900	1070	840	1660	140	200	3050	3100	1250	1120	1180	26	16
1PQ4504-8C..4	7300	1070	840	1660	140	200	3050	3100	1250	1120	1180	26	16
1PQ4560-8C..4	8600	1210	910	1800	160	240	3330	3380	1400	1250	1320	26	16
1PQ4562-8C..4	9300	1210	910	1800	160	240	3330	3380	1400	1250	1320	26	16
1PQ4564-8C..4	10100	1210	910	1800	160	240	3330	3380	1400	1250	1320	26	16
1PQ4632-8C..4	13100	1350	980	1820	180	240	3650	3700	1400	1250	1320	26	16
1PQ4634-8C..4	13800	1350	980	1820	180	240	3650	3700	1400	1250	1320	26	16
1PQ4636-8C..4	14600	1350	980	1820	180	240	3650	3700	1400	1250	1320	26	16

Note: Higher pole numbers are available on request.

<sup>1)</sup> For  $V_{rated} = 690$  V, the dimension changes by  $- 50$  mm.

<sup>2)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by  $+ 45$  mm.

<sup>3)</sup> For currents  $I_{rated} > 315$  A, the dimension changes by  $+ 180$  mm.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Overview



### Technical data

#### Overview of technical data

H-compact PLUS 1RA4 and 1RA6	
<b>Rated voltage</b>	690 V ... 6.6 kV
<b>Rated frequency</b>	50/60 Hz
<b>Motor type</b>	Induction motor with squirrel-cage rotor
<b>Type of construction</b>	IM B3, IM V1
<b>Degree of protection</b>	IP23
<b>Cooling method</b>	IC01
<b>Stator winding insulation</b>	Insulation system, thermal class 155 (F), utilized to 155 (F)
<b>Shaft height</b>	450 ... 630 mm
<b>Bearings</b>	Roller bearings, sleeve bearings
<b>Cage material</b>	Copper
<b>Standards</b>	IEC, EN
<b>Frame design for shaft heights 450 ... 560 mm</b>	Frame: Cast iron Design: Steel
<b>Frame design for shaft heights 630 mm</b>	Frame: Steel Design: Steel

The following versions can be offered on request:

- 2-pole up to 75 Hz
- 4-pole up to 100 Hz
- 6-pole up to 90 Hz

For individual motor types, it must be ensured that the motor does not run-through any critical speed in the required speed control range and that the maximum speed does not exceed the mechanical limit speed of the motor! Please contact your Siemens sales person regarding this check. The motor types are marked with footnotes in the following data tables.

# Motors for converter operation

## With non-sinusoidal output

**Air-cooled motors**  
**H-compact PLUS 1RA4, 1RA6 and 1RP6**

**Technical data** (continued)

**Power ranges for IEC motors with reinforced insulation for SINAMICS drive converters without sine-wave filter**

**1RA4 series**

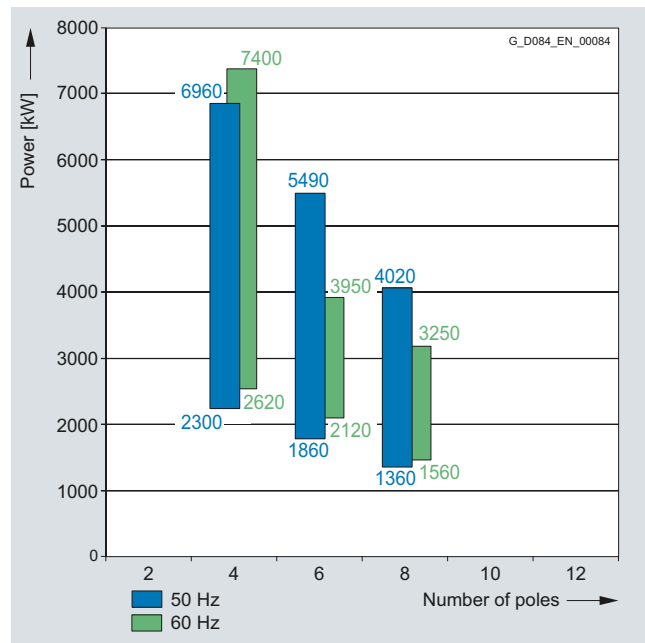
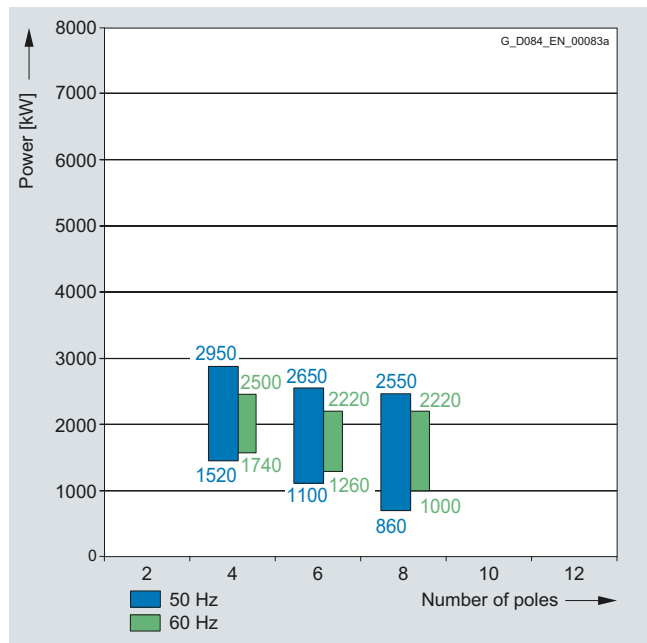
Insulation system, thermal class 155 (F), utilized to 155 (F)

The power data listed here apply for an ambient temperature of 40 °C and an installation altitude ≤ 1000 m.

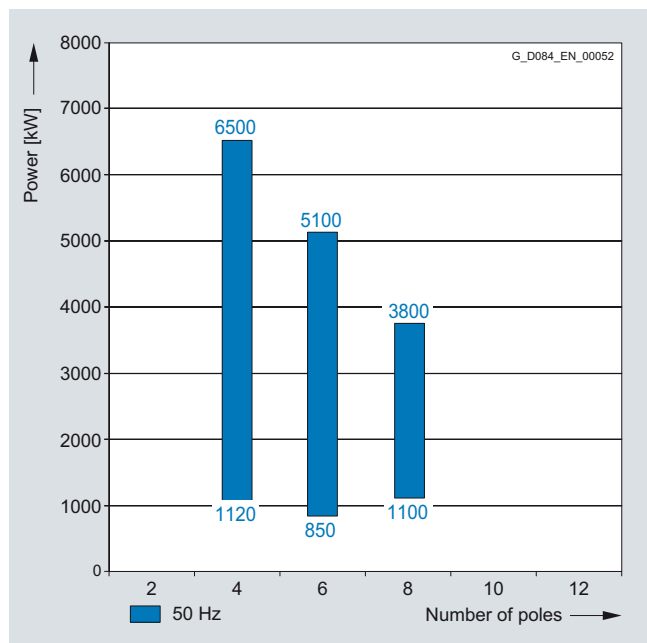
2.3 kV; 50 and 60 Hz

3.4 kV to 4.16 kV; 50 and 60 Hz

3



6 to 6.6 kV; 50 Hz



# Motors for converter operation

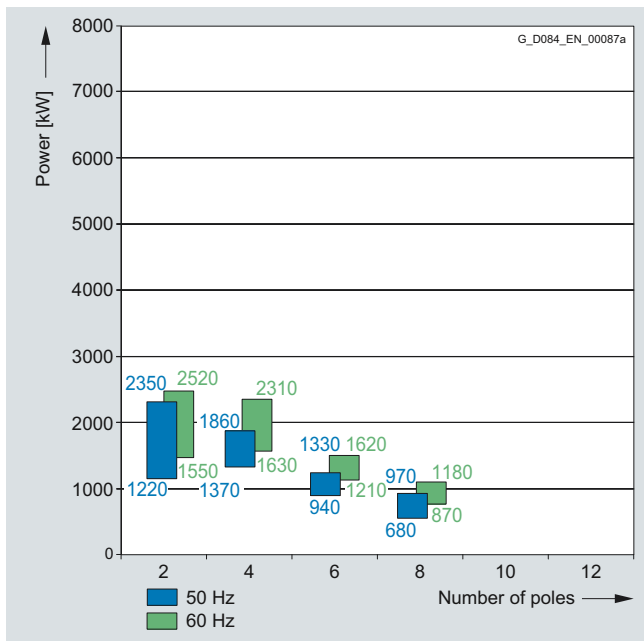
## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

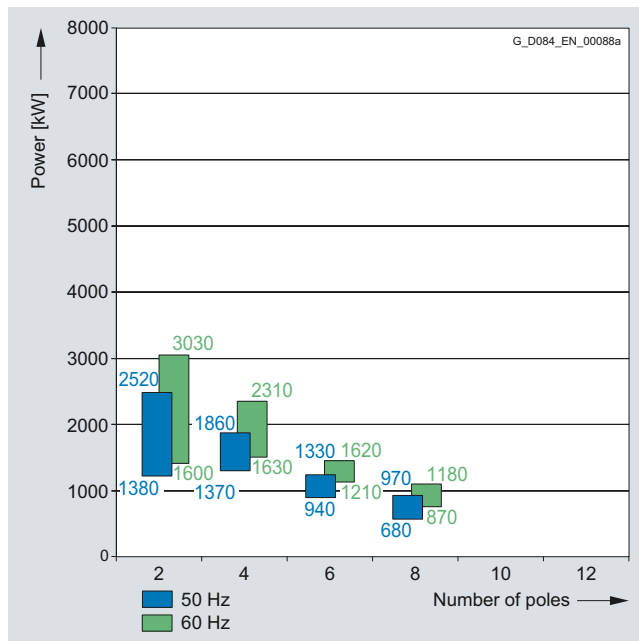
### Technical data (continued)

#### 1RA6 series

690 V; 50 Hz and 60 Hz



4.16 kV; 50 Hz and 60 Hz



3

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>690 V, 50 Hz</b>									
2-pole									
1220	<b>1RA6 450-2HP00</b>	2980	95.5	0.90	1180	3913	2.2	12.7	3000
1520	<b>1RA6 452-2HP00</b>	2980	96.0	0.90	2x740	4875	2.1	14.3	3000
1600	<b>1RA6 454-2HP00</b>	2983	96.2	0.92	2x760	5129	2.3	15.6	3000
1700	<b>1RA6 456-2HP00</b>	2983	96.2	0.92	2x800	5445	2.3	17.6	3000
2250	<b>1RA6 457-2HP00</b>	2984	96.7	0.92	2x1060	7207	2.4	19.3	3000 <sup>1)</sup>
2350	<b>1RA6 458-2HP00</b>	2985	96.8	0.93	2x1100	7526	2.4	21.4	3000 <sup>1)</sup>
4-pole									
1370	<b>1RA6 450-4HP0</b>	1484	95.6	0.89	2x670	8833	2.4	20.0	1800
1500	<b>1RA6 452-4HP0</b>	1484	95.6	0.90	2x730	9671	2.4	22.3	1800
1640	<b>1RA6 454-4HP0</b>	1484	96.0	0.90	2x790	10568	2.4	25.3	1800
1860	<b>1RA6 456-4HP0</b>	1485	96.2	0.90	2x900	11977	2.3	28.6	1800
6-pole									
940	<b>1RA6 450-6HP0</b>	990	95.8	0.86	950	9079	2.3	25.9	1200
1040	<b>1RA6 452-6HP0</b>	991	95.9	0.86	1060	10039	2.3	29.1	1200
1180	<b>1RA6 454-6HP0</b>	991	96.0	0.86	1200	11394	2.3	32.4	1200
1330	<b>1RA6 456-6HP0</b>	992	96.2	0.86	2x670	12823	2.3	37.3	1200
8-pole									
680	<b>1RA6 450-8HP0</b>	743	94.9	0.83	720	8750	2.3	32.1	900
750	<b>1RA6 452-8HP0</b>	743	95.2	0.84	780	9651	2.4	36.1	900
880	<b>1RA6 454-8HP0</b>	743	95.2	0.84	920	11324	2.4	40.2	900
970	<b>1RA6 456-8HP0</b>	744	95.4	0.84	1020	12476	2.4	46.4	900

#### Type of construction:

IM B3	0
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

2-pole

1RA6 450-2HP0.	916	2709	95.8	0.91	610	2371	96.0	0.90	305	1883	96.0	0.85
1RA6 452-2HP0.	1141	2708	96.4	0.91	760	2371	96.6	0.91	380	1883	96.5	0.87
1RA6 454-2HP0.	1201	2710	96.5	0.92	800	2372	96.6	0.91	400	1884	96.6	0.87
1RA6 456-2HP0.	1276	2711	96.5	0.92	850	2373	96.7	0.92	425	1884	96.6	0.88
1RA6 457-2HP0.	1689	2712	96.9	0.92	1125	2373	97.0	0.90	563	1885	96.9	0.85
1RA6 458-2HP0.	1763	2712	97.0	0.93	1175	2373	97.1	0.92	588	1885	97.0	0.88

4-pole

1RA6 450-4HP0.	1028	1350	95.9	0.88	685	1182	96.1	0.86	343	940	95.9	0.79
1RA6 452-4HP0.	1125	1350	96.0	0.90	750	1182	96.2	0.88	375	940	96.2	0.83
1RA6 454-4HP0.	1230	1350	96.3	0.90	820	1183	96.5	0.89	410	940	96.4	0.84
1RA6 456-4HP0.	1395	1351	96.5	0.89	930	1183	96.6	0.88	465	941	96.5	0.82

6-pole

1RA6 450-6HP0.	705	900	96.1	0.85	470	789	96.3	0.82	235	627	96.2	0.73
1RA6 452-6HP0.	780	901	96.3	0.85	520	789	96.4	0.82	260	627	96.3	0.73
1RA6 454-6HP0.	885	901	96.3	0.85	590	789	96.4	0.83	295	627	96.4	0.74
1RA6 456-6HP0.	998	902	96.5	0.84	665	789	96.6	0.81	333	627	96.3	0.71

8-pole

1RA6 450-8HP0.	510	676	95.1	0.80	340	592	95.0	0.75	170	470	94.4	0.63
1RA6 452-8HP0.	563	676	95.4	0.81	375	592	95.4	0.77	188	470	94.9	0.65
1RA6 454-8HP0.	660	676	95.4	0.82	440	592	95.4	0.77	220	470	94.8	0.65
1RA6 456-8HP0.	728	676	95.6	0.82	485	592	95.6	0.77	243	470	95.1	0.65

3

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_B/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>2.3 kV, 50 Hz</b>									
4-pole									
1520	<b>1RA4 450-4HV0</b>	1480	96.2	0.89	445	9807	2.00	21	1800
1700	<b>1RA4 452-4HV0</b>	1482	96.3	0.89	500	10954	2.00	23	1800
1920	<b>1RA4 454-4HV0</b>	1482	96.4	0.89	560	12372	1.90	26	1800
2180	<b>1RA4 456-4HV0</b>	1483	96.6	0.89	640	14037	2.00	29	1800
2400	<b>1RA4 500-4HV0</b>	1484	96.2	0.89	700	15445	2.00	39	1800
2550	<b>1RA4 502-4HV0</b>	1484	96.5	0.89	750	16410	2.00	42	1800
2950	<b>1RA4 504-4HV0</b>	1484	96.6	0.89	860	18984	2.00	48	1800
6-pole									
1100	<b>1RA4 450-6HV0</b>	985	95.3	0.85	340	10665	1.90	29	1200
1240	<b>1RA4 452-6HV0</b>	986	95.6	0.85	385	12010	1.90	33	1200
1440	<b>1RA4 454-6HV0</b>	985	95.6	0.87	435	13961	1.80	36	1200
1700	<b>1RA4 456-6HV0</b>	986	95.9	0.87	510	16466	1.90	41	1200
1960	<b>1RA4 500-6HV0</b>	988	95.9	0.86	600	18945	1.90	57	1200
2200	<b>1RA4 502-6HV0</b>	988	96.1	0.87	660	21265	1.90	65	1200
2450	<b>1RA4 504-6HV0</b>	989	96.1	0.86	740	23658	1.90	72	1200
2650	<b>1RA4 506-6HV0</b>	989	96.3	0.86	800	25589	1.90	81	1200
8-pole									
860	<b>1RA4 450-8HV0</b>	740	94.9	0.84	270	11099	2.00	37	900
960	<b>1RA4 452-8HV0</b>	740	95.3	0.84	300	12389	2.00	41	900
1080	<b>1RA4 454-8HV0</b>	741	95.4	0.83	340	13919	2.00	46	900
1220	<b>1RA4 456-8HV0</b>	741	95.5	0.83	385	15723	2.00	52	900
1440	<b>1RA4 500-8HV0</b>	741	95.6	0.83	455	18559	1.90	70	900
1600	<b>1RA4 502-8HV0</b>	742	95.8	0.83	510	20593	1.90	80	900
1780	<b>1RA4 504-8HV0</b>	742	96.0	0.84	550	22910	1.90	88	900
1960	<b>1RA4 506-8HV0</b>	742	96.0	0.84	610	25226	1.90	99	900
2250	<b>1RA4 560-8HV0</b>	743	96.0	0.82	720	28920	1.90	123	900
2550	<b>1RA4 562-8HV0</b>	743	96.2	0.82	810	32776	1.90	141	900

#### Type of construction:

IM B3	0
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]

Fluid flow machine drive

4-pole

1RA4 450-4...	1140	1347	96.2	0.89	760	1174	96.4	0.87	380	933	96.3	0.80
1RA4 452-4...	1275	1348	96.4	0.88	850	1175	96.6	0.86	425	933	96.3	0.78
1RA4 454-4...	1440	1348	96.5	0.88	960	1175	96.8	0.87	480	933	96.7	0.79
1RA4 456-4...	1635	1349	96.7	0.88	1090	1176	96.9	0.87	545	934	96.8	0.79
1RA4 500-4...	1800	1348	96.5	0.89	1200	1178	96.8	0.88	600	935	96.8	0.82
1RA4 502-4...	1913	1348	96.5	0.89	1275	1178	96.8	0.88	638	935	96.8	0.82
1RA4 504-4...	2213	1348	96.7	0.90	1475	1178	96.9	0.89	738	935	96.9	0.82

6-pole

1RA4 450-6...	825	895	95.6	0.84	550	782	95.9	0.81	275	621	95.6	0.72
1RA4 452-6...	930	896	95.8	0.84	620	783	96.1	0.82	310	621	95.8	0.73
1RA4 454-6...	1080	895	95.9	0.87	720	782	96.2	0.85	360	621	96.0	0.78
1RA4 456-6...	1275	896	96.1	0.86	850	783	96.3	0.84	425	621	96.1	0.76
1RA4 500-6...	1470	898	96.1	0.86	980	784	96.2	0.83	490	622	96.0	0.74
1RA4 502-6...	1650	898	96.4	0.87	1100	784	96.5	0.85	550	622	96.4	0.77
1RA4 504-6...	1838	899	96.4	0.87	1225	785	96.5	0.84	613	623	96.4	0.77
1RA4 506-6...	1988	899	96.5	0.87	1325	785	96.6	0.84	663	623	96.4	0.77

8-pole

1RA4 450-8...	645	672	95.3	0.81	430	587	95.4	0.77	215	466	94.8	0.66
1RA4 452-8...	720	672	95.5	0.82	480	587	95.6	0.78	240	466	95.1	0.68
1RA4 454-8...	810	673	95.6	0.80	540	588	95.7	0.76	270	467	95.1	0.64
1RA4 456-8...	915	673	95.8	0.80	610	588	95.8	0.76	305	467	95.3	0.64
1RA4 500-8...	1080	673	95.9	0.82	720	588	95.9	0.78	360	467	95.5	0.67
1RA4 502-8...	1200	674	96.1	0.83	800	589	96.1	0.80	400	467	95.7	0.69
1RA4 504-8...	1335	674	96.2	0.83	890	589	96.2	0.80	445	467	95.9	0.70
1RA4 506-8...	1470	674	96.2	0.83	980	589	96.2	0.81	490	467	95.9	0.71
1RA4 560-8...	1688	675	96.2	0.82	1125	590	96.2	0.79	563	468	95.9	0.69
1RA4 562-8...	1913	675	96.3	0.82	1275	590	96.3	0.79	638	468	96.0	0.69

3

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  h	Power factor  $\cos \varphi$ [-]	Rated current at 3.4 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>2)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 50 Hz</b>									
2-pole									
1380	<b>1RA6 450-2HS90 L6P</b>	2973	95.9	0.90	220	4433	2.00	12.7	3000
1570	<b>1RA6 452-2HS90 L6P</b>	2977	96.2	0.90	250	5040	2.20	14.3	3000
1750	<b>1RA6 454-2HS90 L6P</b>	2978	96.4	0.91	275	5616	2.30	15.6	3000
1950	<b>1RA6 456-2HS90 L6P</b>	2981	96.6	0.92	305	6252	2.30	17.6	3000
2250	<b>1RA6 457-2HS90 L6P</b>	2981	96.8	0.92	350	7210	2.50	19.3	3000 <sup>4)</sup>
2520	<b>1RA6 458-2HS90 L6P</b>	2981	96.9	0.93	390	8075	2.50	21.4	3000 <sup>4)</sup>
4-pole									
1370	<b>1RA6 450-4HS9 L6P</b>	1484	95.6	0.88	225	8824	2.60	20.0	1800
1500	<b>1RA6 452-4HS9 L6P</b>	1485	95.8	0.88	245	9649	2.50	22.3	1800
1640	<b>1RA6 454-4HS9 L6P</b>	1485	96.0	0.89	265	10549	2.50	25.3	1800
1860	<b>1RA6 456-4HS9 L6P</b>	1485	96.1	0.90	300	11966	2.50	28.6	1800
2300	<b>1RA4 500-4HV L6P</b>	1485	96.4	0.88	475	14790	2.00	39	1800
2500	<b>1RA4 502-4HV L6P</b>	1485	96.4	0.89	510	16076	2.00	42	1800
2900	<b>1RA4 504-4HV L6P</b>	1485	96.7	0.89	590	18648	2.00	48	1800
3260 <sup>1)</sup>	<b>1RA4 506-4HV L6P</b>	1485	96.8	0.89	660	20965	2.00	53	1800
3920 <sup>1)</sup>	<b>1RA4 560-4HV L6P</b>	1486	96.8	0.90	790	25192	2.00	76	1800
4500 <sup>1)</sup>	<b>1RA4 562-4HV L6P</b>	1486	96.9	0.90	900	28920	2.00	84	O. R. <sup>3)</sup>
5000 <sup>1)</sup>	<b>1RA4 564-4HV L6P</b>	1487	97.1	0.90	1000	32112	2.00	96	O. R. <sup>3)</sup>
5500 <sup>1)</sup>	<b>1RA4 566-4HV L6P</b>	1487	97.1	0.90	1100	35323	2.00	105	O. R. <sup>3)</sup>
5880 <sup>1)</sup>	<b>1RA4 632-4HV L6P</b>	1490	97.2	0.89	1180	37687	2.20	150	1800
6470 <sup>1)</sup>	<b>1RA4 634-4HV L6P</b>	1490	97.3	0.90	1300	41469	2.20	168	1800
6960 <sup>1)</sup>	<b>1RA4 636-4HV L6P</b>	1491	97.4	0.90	1390	44579	2.40	197	1800

#### Voltage code:

4.16 kV, 50 Hz **4**  
Other voltage **9**

#### Type of construction:

IM B3 **0**  
IM V1 (without canopy) **8**

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

<sup>1)</sup> Rated voltage less than 4.16 kV on request.

<sup>2)</sup> For IM B3, roller bearings.

<sup>3)</sup> On request.

<sup>4)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

2-pole

1RA6 450-2...	1035	2704	96.1	0.91	690	2368	96.3	0.91	345	1882	96.4	0.87
1RA6 452-2...	1178	2707	96.4	0.91	785	2370	96.5	0.90	393	1883	96.4	0.87
1RA6 454-2...	1313	2707	96.6	0.92	875	2370	96.7	0.91	438	1883	96.6	0.88
1RA6 456-2...	1464	2709	96.8	0.92	975	2371	96.9	0.91	488	1884	96.8	0.88
1RA6 457-2...	1688	2709	96.9	0.93	1125	2372	97.0	0.92	563	1884	96.9	0.88
1RA6 458-2...	1891	2710	97.0	0.93	1260	2372	97.1	0.93	630	1884	97.0	0.89

4-pole

1RA6 450-4...	1028	1350	95.8	0.87	685	1183	96.0	0.85	343	940	95.8	0.78
1RA6 452-4...	1125	1351	96.0	0.87	750	1183	96.1	0.85	375	941	95.9	0.77
1RA6 454-4...	1230	1351	96.2	0.89	820	1183	96.3	0.87	410	941	96.2	0.80
1RA6 456-4...	1395	1351	96.3	0.90	930	1183	96.5	0.88	465	941	96.4	0.83
1RA4 500-4...	1725	1351	96.6	0.89	1150	1180	96.7	0.87	575	937	96.6	0.79
1RA4 502-4...	1875	1351	96.6	0.89	1250	1180	96.8	0.88	625	937	96.7	0.81
1RA4 504-4...	2175	1351	96.9	0.89	1450	1180	97.1	0.88	725	938	97.0	0.81
1RA4 506-4...	2445	1349	97.0	0.90	1630	1179	97.1	0.88	815	935	97.1	0.82
1RA4 560-4...	2940	1350	97.0	0.90	1960	1179	97.1	0.88	980	936	97.1	0.82
1RA4 562-4...	3375	1350	97.2	0.90	2250	1179	97.3	0.88	1125	936	97.2	0.82
1RA4 564-4...	3750	1351	97.4	0.90	2500	1180	97.5	0.88	1250	937	97.2	0.82
1RA4 566-4...	4125	1351	97.5	0.90	2750	1180	97.6	0.89	1375	937	97.3	0.83
1RA4 632-4...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>
1RA4 634-4...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>
1RA4 636-4...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  h	Power factor  $\cos \varphi$ [-]	Rated current at 3.4 kV $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>2)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 50 Hz</b>									
6-pole									
940	<b>1RA6 450-6HS9 L6P</b>	990	95.7	0.85	160	9071	2.40	25.9	1200
1040	<b>1RA6 452-6HS9 L6P</b>	991	95.9	0.85	178	10026	2.50	29.1	1200
1180	<b>1RA6 454-6HS9 L6P</b>	991	96.1	0.86	198	11381	2.50	32.4	1200
1330	<b>1RA6 456-6HS9 L6P</b>	992	96.2	0.85	225	12811	2.50	37.3	1200
1860	<b>1RA4 500-6HV</b>	988	95.7	0.86	395	17977	1.90	57	1200
2100	<b>1RA4 502-6HV</b>	989	96.1	0.87	440	20277	2.00	65	1200
2340	<b>1RA4 504-6HV</b>	990	96.2	0.87	490	22571	2.00	72	1200
2560	<b>1RA4 506-6HV</b>	990	96.4	0.87	530	24693	2.00	81	1200
3000	<b>1RA4 560-6HV</b>	990	96.5	0.86	630	28939	1.90	105	1200
3380 <sup>1)</sup>	<b>1RA4 562-6HV</b>	991	96.7	0.86	710	32572	1.90	120	1200
3750 <sup>1)</sup>	<b>1RA4 564-6HV</b>	991	96.7	0.87	780	36138	2.00	135	1200
4300 <sup>1)</sup>	<b>1RA4 566-6HV</b>	991	97.0	0.87	890	41438	2.00	147	O. R. <sup>3)</sup>
4610 <sup>1)</sup>	<b>1RA4 632-6HV</b>	993	97.0	0.86	970	44336	2.10	202	1200
5000 <sup>1)</sup>	<b>1RA4 634-6HV</b>	993	97.1	0.86	1040	48087	2.30	223	1200
5490 <sup>1)</sup>	<b>1RA4 636-6HV</b>	994	97.2	0.86	1140	52746	2.30	246	1200
8-pole									
680	<b>1RA6 450-8HS9 L6P</b>	743	94.7	0.82	122	8743	2.50	32.1	900
750	<b>1RA6 452-8HS9 L6P</b>	744	95.0	0.82	134	9638	2.50	36.1	900
880	<b>1RA6 454-8HS9 L6P</b>	743	95.1	0.83	154	11318	2.50	40.2	900
970	<b>1RA6 456-8HS9 L6P</b>	743	95.3	0.85	166	12477	2.40	46.4	900
1360	<b>1RA4 500-8HV</b>	741	95.3	0.84	295	17526	1.80	70	900
1520	<b>1RA4 502-8HV</b>	742	95.5	0.85	330	19562	1.90	80	900
1700	<b>1RA4 504-8HV</b>	742	95.6	0.84	370	21878	2.00	88	900
1860	<b>1RA4 506-8HV</b>	742	95.8	0.85	400	23938	1.90	99	900
2120	<b>1RA4 560-8HV</b>	742	95.9	0.83	465	27286	1.80	123	900
2400	<b>1RA4 562-8HV</b>	742	96.1	0.83	530	30889	1.80	141	900
2600	<b>1RA4 564-8HV</b>	743	96.2	0.83	570	33419	1.90	158	900
2830	<b>1RA4 566-8HV</b>	742	96.3	0.85	600	36424	1.80	173	900
3140 <sup>1)</sup>	<b>1RA4 630-8HV</b>	743	96.5	0.85	670	40359	1.90	239	900
3430 <sup>1)</sup>	<b>1RA4 632-8HV</b>	743	96.7	0.85	730	44087	2.10	265	900
3680 <sup>1)</sup>	<b>1RA4 634-8HV</b>	743	96.7	0.85	780	47300	2.00	293	900
4020 <sup>1)</sup>	<b>1RA4 636-8HV</b>	744	96.9	0.84	860	51601	2.30	324	900

#### Voltage code:

4.16 kV, 50 Hz **4**  
Other voltage **9**

#### Type of construction:

IM B3 **0**  
IM V1 (without canopy) **8**

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see Page 3/2.

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> Rated voltage less than 4.16 kV on request.

<sup>3)</sup> On request.

<sup>2)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$        $n$        $\eta$        $\cos \varphi$        $P$        $n$        $\eta$        $\cos \varphi$        $P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]      kW      rpm      %      [-]      kW      rpm      %      [-]

Fluid flow machine drive

6-pole

1RA6 450-6...	705	901	96.0	0.84	470	789	96.1	0.81	235	627	96.0	0.71
1RA6 452-6...	780	901	96.1	0.84	520	789	96.2	0.80	260	627	96.0	0.70
1RA6 454-6...	885	901	96.3	0.85	590	789	96.4	0.82	295	627	96.3	0.73
1RA6 456-6...	998	902	96.4	0.83	665	790	96.5	0.80	333	627	96.2	0.69
1RA4 500-6...	1395	900	96.2	0.86	930	786	96.3	0.84	465	625	96.1	0.75
1RA4 502-6...	1575	900	96.3	0.86	1050	786	96.5	0.84	525	625	96.3	0.76
1RA4 504-6...	1755	900	96.5	0.86	1170	786	96.6	0.84	585	625	96.3	0.75
1RA4 506-6...	1920	900	96.6	0.86	1280	787	96.6	0.84	640	625	96.4	0.76
1RA4 560-6...	2250	901	96.6	0.85	1500	787	96.7	0.83	750	625	96.4	0.74
1RA4 562-6...	2535	900	96.9	0.86	1690	787	97.0	0.84	845	624	96.8	0.75
1RA4 564-6...	2813	900	96.8	0.86	1875	787	96.9	0.84	938	624	96.7	0.76
1RA4 566-6...	3225	900	97.0	0.86	2150	787	97.0	0.83	1075	624	96.8	0.75
1RA4 632-6...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>
1RA4 634-6...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>
1RA4 636-6...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>

8-pole

1RA6 450-8...	510	676	94.8	0.80	340	592	94.7	0.75	170	470	94.0	0.63
1RA6 452-8...	563	676	95.1	0.80	375	592	95.1	0.75	188	470	94.4	0.62
1RA6 454-8...	660	676	95.3	0.82	440	592	95.3	0.78	220	470	94.8	0.66
1RA6 456-8...	728	676	95.5	0.83	485	592	95.5	0.80	243	470	95.1	0.69
1RA4 500-8...	1020	675	95.7	0.83	680	590	95.8	0.81	340	468	95.5	0.71
1RA4 502-8...	1140	675	95.8	0.83	760	590	95.9	0.80	380	468	95.5	0.69
1RA4 504-8...	1275	675	95.9	0.82	850	590	95.9	0.78	425	468	95.4	0.67
1RA4 506-8...	1395	675	96.1	0.84	930	590	96.1	0.81	465	468	95.8	0.72
1RA4 560-8...	1590	675	96.2	0.82	1060	590	96.2	0.79	530	469	95.9	0.69
1RA4 562-8...	1800	676	96.3	0.83	1200	590	96.4	0.80	600	469	96.0	0.70
1RA4 564-8...	1950	676	96.5	0.82	1300	590	96.5	0.79	650	469	96.2	0.69
1RA4 566-8...	2125	676	96.6	0.84	1415	590	96.7	0.82	710	469	96.4	0.74
1RA4 630-8...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>
1RA4 632-8...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>
1RA4 634-8...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>
1RA4 636-8...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 6.6 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>6 ... 6.6 kV, 50 Hz</b>									
4-pole									
1120	1RA4 450-4HV	1485	95.6	0.89	116	7203	2.35	21	1800
1300	1RA4 452-4HV	1487	96.0	0.88	134	8349	2.35	23	1800
1450	1RA4 454-4HV	1487	96.1	0.88	150	9312	2.35	26	1800
1750	1RA4 456-4HV	1487	96.4	0.88	180	11239	2.35	29	1800
1900	1RA4 500-4HV	1488	96.3	0.88	196	12194	2.25	39	1800
2150	1RA4 502-4HV	1488	96.3	0.88	220	13799	2.25	42	1800
2450	1RA4 504-4HV	1488	96.5	0.88	250	15724	2.25	48	1800
2700	1RA4 506-4HV	1488	96.7	0.88	280	17329	2.25	53	1800
3200	1RA4 560-4HV	1487	96.6	0.90	320	20551	2.10	76	1800
3700	1RA4 562-4HV	1488	96.8	0.90	370	23747	2.10	84	O. R. <sup>2)</sup>
4150	1RA4 564-4HV	1488	96.8	0.90	415	26635	2.10	96	O. R. <sup>2)</sup>
4450	1RA4 566-4HV	1488	97.0	0.90	445	28560	2.10	105	O. R. <sup>2)</sup>
4800	1RA4 630-4HV	1491	97.0	0.90	480	30744	2.10	134	1800
5300	1RA4 632-4HV	1491	97.1	0.90	530	33947	2.10	150	1800
5800	1RA4 634-4HV	1491	97.1	0.90	580	37150	2.10	168	1800
6500	1RA4 636-4HV	1491	97.4	0.90	650	41633	2.10	197	1800
6-pole									
850	1RA4 450-6HV	990	95.2	0.83	94	8199	2.30	29	1200
950	1RA4 452-6HV	990	95.3	0.84	104	9164	2.30	33	1200
1060	1RA4 454-6HV	990	95.0	0.86	114	10225	2.30	36	1200
1270	1RA4 456-6HV	990	95.5	0.84	138	12251	2.30	41	1200
1450	1RA4 500-6HV	991	95.6	0.87	152	13973	2.20	57	1200
1630	1RA4 502-6HV	991	95.8	0.87	172	15708	2.20	65	1200
1820	1RA4 504-6HV	991	96.0	0.87	190	17539	2.20	72	1200
2070	1RA4 506-6HV	991	96.1	0.87	215	19948	2.20	81	1200
2570	1RA4 560-6HV	992	96.5	0.87	270	24741	2.20	105	1200
2900	1RA4 562-6HV	992	96.7	0.87	300	27918	2.20	120	1200
3300	1RA4 564-6HV	992	96.8	0.87	345	31769	2.20	135	1200
3600	1RA4 566-6HV	992	96.9	0.87	375	34657	2.20	147	O. R. <sup>2)</sup>
4000	1RA4 630-6HV	994	97.0	0.84	430	38431	2.10	183	1200
4300	1RA4 632-6HV	994	97.0	0.84	460	41313	2.10	202	1200
4700	1RA4 634-6HV	994	97.1	0.85	500	45156	2.10	223	1200
5100	1RA4 636-6HV	994	97.1	0.86	530	48999	2.10	246	1200

#### Voltage code:

6 kV, 50 Hz	6
6.6 kV, 50 Hz	7
Other voltage	9

#### Type of construction:

IM B3	0
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see Page 3/2.

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

4-pole

1RA4 450-4...	840	1349	96.0	0.89	560	1179	96.2	0.87	280	935	96.2	0.80
1RA4 452-4...	975	1351	96.2	0.87	650	1180	96.3	0.84	325	937	96.2	0.75
1RA4 454-4...	1088	1351	96.3	0.87	725	1180	96.4	0.84	363	937	96.2	0.75
1RA4 456-4...	1313	1351	96.5	0.87	875	1180	96.5	0.84	438	937	96.4	0.76
1RA4 500-4...	1425	1352	96.6	0.88	950	1181	96.6	0.85	475	937	96.5	0.78
1RA4 502-4...	1613	1352	96.6	0.89	1075	1181	96.7	0.87	538	937	96.6	0.80
1RA4 504-4...	1838	1352	96.7	0.88	1225	1181	96.8	0.86	613	937	96.7	0.78
1RA4 506-4...	2025	1352	96.8	0.88	1350	1181	96.9	0.86	675	937	96.7	0.78
1RA4 560-4...	2400	1351	96.8	0.91	1600	1180	96.9	0.90	800	937	96.9	0.85
1RA4 562-4...	2775	1352	97.0	0.91	1850	1181	97.1	0.90	925	937	97.1	0.85
1RA4 564-4...	3113	1352	97.1	0.91	2075	1181	97.2	0.90	1038	937	97.2	0.86
1RA4 566-4...	3338	1352	97.2	0.91	2225	1181	97.3	0.90	1113	937	97.3	0.86
1RA4 630-4...	3600	1355	97.1	0.90	2400	1183	97.1	0.89	1200	939	97.0	0.83
1RA4 632-4...	3975	1355	97.2	0.91	2650	1183	97.2	0.90	1325	939	97.2	0.85
1RA4 634-4...	4350	1355	97.2	0.91	2900	1183	97.3	0.91	1450	939	97.2	0.87
1RA4 636-4...	4875	1355	97.3	0.90	3250	1183	97.3	0.89	1625	939	97.2	0.83
6-pole												
1RA4 450-6...	638	899	95.4	0.83	425	786	95.4	0.80	213	624	95.1	0.69
1RA4 452-6...	713	899	95.5	0.83	475	786	95.5	0.80	238	624	95.2	0.69
1RA4 454-6...	795	899	95.5	0.85	530	786	95.5	0.82	265	624	95.2	0.71
1RA4 456-6...	953	899	95.6	0.84	635	786	95.6	0.80	318	624	95.2	0.69
1RA4 500-6...	1088	900	95.8	0.87	725	787	95.9	0.84	363	624	95.7	0.76
1RA4 502-6...	1223	900	96.2	0.87	815	787	96.2	0.84	408	624	95.9	0.76
1RA4 504-6...	1365	900	96.4	0.87	910	787	96.3	0.84	455	624	96.1	0.76
1RA4 506-6...	1553	900	96.5	0.87	1035	787	96.4	0.84	518	624	96.2	0.76
1RA4 560-6...	1928	901	96.8	0.87	1285	787	96.9	0.84	643	625	96.8	0.75
1RA4 562-6...	2175	901	96.9	0.87	1450	787	96.9	0.84	725	625	96.8	0.75
1RA4 564-6...	2475	901	97.0	0.87	1650	787	97.0	0.84	825	625	96.9	0.75
1RA4 566-6...	2700	901	97.0	0.87	1800	787	97.0	0.84	900	625	96.9	0.75
1RA4 630-6...	3000	903	96.9	0.83	2000	789	96.9	0.80	1000	626	96.7	0.70
1RA4 632-6...	3225	903	96.9	0.85	2150	789	96.9	0.82	1075	626	96.8	0.72
1RA4 634-6...	3525	903	97.0	0.86	2350	789	97.0	0.84	1175	626	96.9	0.76
1RA4 636-6...	3825	903	97.1	0.86	2550	789	97.1	0.84	1275	626	97.0	0.76

1) For IM B3, roller bearings.

2) On request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 6.6 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>6 ... 6.6 kV, 50 Hz</b>									
8-pole									
1100	<b>1RA4 500-8HV</b>	743	95.3	0.83	122	14139	2.10	70	900
1250	<b>1RA4 502-8HV</b>	743	95.5	0.83	138	16067	2.10	80	900
1350	<b>1RA4 504-8HV</b>	744	95.5	0.81	152	17329	2.20	88	900
1450	<b>1RA4 506-8HV</b>	744	95.6	0.81	164	18612	2.20	99	900
1800	<b>1RA4 560-8HV</b>	744	96.0	0.84	196	23105	2.00	123	900
2000	<b>1RA4 562-8HV</b>	744	96.1	0.84	215	25672	2.00	141	900
2250	<b>1RA4 564-8HV</b>	744	96.3	0.84	245	28881	2.00	158	900
2400	<b>1RA4 566-8HV</b>	744	96.4	0.85	255	30806	2.00	173	900
2900	<b>1RA4 630-8HV</b>	745	96.4	0.83	315	37174	2.15	239	900
3300	<b>1RA4 632-8HV</b>	745	96.6	0.83	360	42302	2.15	265	900
3500	<b>1RA4 634-8HV</b>	745	96.6	0.84	375	44866	2.15	293	900
3800	<b>1RA4 636-8HV</b>	745	96.7	0.84	410	48711	2.15	324	900

#### Voltage code:

6 kV, 50 Hz	6
6.6 kV, 50 Hz	7
Other voltage	9

#### Type of construction:

IM B3	0
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

8-pole

Motor type (repeated)	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
1RA4 500-8...	825	675	95.5	0.82	550	590	95.5	0.78	275	468	95.1	0.68
1RA4 502-8...	938	675	95.6	0.82	625	590	95.6	0.78	313	468	95.2	0.68
1RA4 504-8...	1013	676	95.6	0.80	675	591	95.5	0.74	338	469	95.0	0.63
1RA4 506-8...	1088	676	95.7	0.80	725	591	95.6	0.76	363	469	95.0	0.66
1RA4 560-8...	1350	676	96.2	0.84	900	591	96.3	0.81	450	469	96.1	0.71
1RA4 562-8...	1500	676	96.4	0.84	1000	591	96.4	0.81	500	469	96.2	0.71
1RA4 564-8...	1688	676	96.5	0.84	1125	591	96.5	0.81	563	469	96.3	0.71
1RA4 566-8...	1800	676	96.6	0.85	1200	591	96.6	0.82	600	469	96.5	0.73
1RA4 630-8...	2175	677	96.3	0.82	1450	591	96.3	0.80	725	469	95.9	0.66
1RA4 632-8...	2475	677	96.4	0.83	1650	591	96.4	0.80	825	469	96.1	0.68
1RA4 634-8...	2625	677	96.6	0.83	1750	591	96.6	0.80	875	469	96.4	0.70
1RA4 636-8...	2850	677	96.7	0.83	1900	591	96.7	0.80	950	469	96.4	0.70

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>690 V, 60 Hz</b>									
2-pole									
1550	<b>1RA6 450-2HP70</b>	3578	95.9	0.90	2x750	4140	1.9	12.7	3600
1650	<b>1RA6 452-2HP70</b>	3581	96.0	0.91	2x790	4403	2.2	14.3	3600
1720	<b>1RA6 454-2HP70</b>	3584	96.1	0.91	2x820	4586	2.4	15.6	3600 <sup>1)</sup>
2180	<b>1RA6 456-2HP70</b>	3584	96.7	0.92	2x1020	5814	2.4	17.6	3600 <sup>1)</sup>
2450	<b>1RA6 457-2HP70</b>	3585	96.6	0.92	2x1160	6534	2.4	19.3	3600 <sup>1)</sup>
2520	<b>1RA6 458-2HP70</b>	3585	96.6	0.92	2x1180	6716	2.4	21.4	3600 <sup>1)</sup>
4-pole									
1630	<b>1RA6 450-4HP7</b>	1784	95.9	0.88	2x810	8740	2.3	20.0	1800
1750	<b>1RA6 452-4HP7</b>	1783	96.0	0.90	2x850	9385	2.3	22.3	1800
2070	<b>1RA6 454-4HP7</b>	1783	96.2	0.90	2x1000	11104	2.3	25.3	1800
2310	<b>1RA6 456-4HP7</b>	1786	96.4	0.89	2x1120	12364	2.5	28.6	1800
6-pole									
1210	<b>1RA6 450-6HP7</b>	1191	96.1	0.85	2x620	9718	2.4	25.9	1200
1350	<b>1RA6 452-6HP7</b>	1191	96.3	0.84	2x700	10837	2.4	29.1	1200
1480	<b>1RA6 454-6HP7</b>	1191	96.3	0.86	2x750	11883	2.3	32.4	1200
1620	<b>1RA6 456-6HP7</b>	1192	96.6	0.86	2x820	12995	2.4	37.3	1200
8-pole									
870	<b>1RA6 450-8HP7</b>	893	95.3	0.84	910	9323	2.3	32.1	900
960	<b>1RA6 452-8HP7</b>	892	95.4	0.84	1000	10290	2.2	36.1	900
1050	<b>1RA6 454-8HP7</b>	893	95.5	0.84	1100	11239	2.4	40.2	900
1180	<b>1RA6 456-8HP7</b>	893	95.7	0.85	1220	12636	2.3	46.4	900

#### Type of construction:

IM B3	0
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

$P/P_{\text{rated}} = 50\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

$P/P_{\text{rated}} = 25\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

Fluid flow machine drive

2-pole

1RA6 450-2HP7.	1164	3253	96.2	0.90	775	2844	96.3	0.90	388	2261	96.2	0.86
1RA6 452-2HP7.	1239	3255	96.3	0.92	825	2845	96.4	0.91	413	2262	96.3	0.87
1RA6 454-2HP7.	1291	3257	96.3	0.92	860	2847	96.4	0.91	430	2262	96.2	0.86
1RA6 456-2HP7.	1636	3258	96.9	0.92	1090	2847	96.9	0.91	545	2263	96.7	0.87
1RA6 457-2HP7.	1839	3258	96.8	0.92	1225	2847	96.8	0.91	613	2263	96.7	0.86
1RA6 458-2HP7.	1891	3258	96.8	0.93	1260	2847	96.9	0.92	631	2263	96.8	0.88

4-pole

1RA6 450-4HP7.	1223	1623	96.1	0.88	815	1420	96.2	0.86	408	1129	95.9	0.78
1RA6 452-4HP7.	1313	1623	96.3	0.90	875	1419	96.4	0.89	438	1129	96.3	0.84
1RA6 454-4HP7.	1553	1623	96.5	0.90	1035	1419	96.6	0.89	518	1129	96.5	0.85
1RA6 456-4HP7.	1733	1625	96.6	0.89	1155	1421	96.6	0.87	578	1130	96.3	0.79

6-pole

1RA6 450-6HP7.	908	1083	96.3	0.82	605	947	96.4	0.79	303	753	96.0	0.67
1RA6 452-6HP7.	1013	1083	96.5	0.82	675	947	96.5	0.78	338	753	96.2	0.67
1RA6 454-6HP7.	1110	1083	96.5	0.84	740	947	96.6	0.81	370	753	96.3	0.71
1RA6 456-6HP7.	1215	1084	96.8	0.84	810	947	96.8	0.81	405	753	96.5	0.71

8-pole

1RA6 450-8HP7.	653	812	95.5	0.81	435	710	95.4	0.77	218	565	94.9	0.66
1RA6 452-8HP7.	720	812	95.7	0.83	480	710	95.6	0.79	240	565	95.2	0.68
1RA6 454-8HP7.	788	812	95.6	0.81	525	710	95.6	0.77	263	565	95.0	0.65
1RA6 456-8HP7.	885	812	95.9	0.83	590	710	95.8	0.79	295	565	95.3	0.69

3

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>2.3 kV, 60 Hz</b>									
4-pole									
1740	<b>1RA4 450-4HV1</b> ■	1781	96.5	0.89	510	9329	2.00	21	1800
1940	<b>1RA4 452-4HV1</b> ■	1783	96.6	0.89	570	10390	2.10	23	1800
2200	<b>1RA4 454-4HV1</b> ■	1782	96.7	0.89	640	11789	2.00	26	1800
2500	<b>1RA4 456-4HV1</b> ■	1784	96.8	0.89	730	13382	2.10	29	1800
6-pole									
1260	<b>1RA4 450-6HV1</b> ■	1186	95.7	0.85	390	10145	1.90	29	1200
1420	<b>1RA4 452-6HV1</b> ■	1186	96.0	0.85	435	11433	1.90	33	1200
1640	<b>1RA4 454-6HV1</b> ■	1186	96.0	0.87	495	13205	1.90	36	1200
1940	<b>1RA4 456-6HV1</b> ■	1187	96.3	0.86	590	15607	2.00	41	1200
2220	<b>1RA4 500-6HV1</b> ■	1189	96.3	0.86	670	17830	2.00	57	1200
8-pole									
1000	<b>1RA4 450-8HV1</b> ■	889	95.3	0.84	315	10742	1.90	37	900
1120	<b>1RA4 452-8HV1</b> ■	890	95.7	0.84	350	12017	2.00	41	900
1260	<b>1RA4 454-8HV1</b> ■	891	95.6	0.83	400	13504	2.00	46	900
1420	<b>1RA4 456-8HV1</b> ■	891	95.7	0.83	450	15219	2.00	52	900
1640	<b>1RA4 500-8HV1</b> ■	891	95.9	0.84	510	17577	1.90	70	900
1840	<b>1RA4 502-8HV1</b> ■	892	96.0	0.84	570	19698	1.90	80	900
2020	<b>1RA4 504-8HV1</b> ■	892	96.2	0.84	630	21625	1.90	88	900
2220	<b>1RA4 506-8HV1</b> ■	892	96.4	0.84	690	23766	2.00	99	900

#### Type of construction:

IM B3	<b>0</b>
IM V1 (without canopy)	<b>8</b>

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

4-pole

1RA4 450-4...	1305	1618	96.3	0.89	870	1412	96.3	0.87	435	1122	96.0	0.79
1RA4 452-4...	1455	1619	96.4	0.88	970	1413	96.4	0.85	485	1122	96.1	0.77
1RA4 454-4...	1650	1619	96.8	0.89	1100	1413	96.9	0.87	550	1123	96.7	0.79
1RA4 456-4...	1875	1620	96.9	0.88	1250	1413	96.9	0.86	625	1123	96.7	0.78

6-pole

1RA4 450-6...	945	1078	95.9	0.83	630	941	96.0	0.81	315	748	95.6	0.71
1RA4 452-6...	1065	1078	96.1	0.84	710	939	96.1	0.81	355	746	95.7	0.72
1RA4 454-6...	1230	1078	96.1	0.87	820	941	96.1	0.85	410	748	95.8	0.77
1RA4 456-6...	1455	1078	96.3	0.85	970	941	96.3	0.82	485	748	95.9	0.73
1RA4 500-6...	1665	1080	96.3	0.86	1110	942	96.2	0.83	555	750	95.9	0.74

8-pole

1RA4 450-8...	750	808	95.5	0.82	500	705	95.4	0.79	250	561	94.8	0.68
1RA4 452-8...	840	809	95.6	0.82	560	706	95.5	0.78	280	561	94.9	0.67
1RA4 454-8...	945	809	95.7	0.81	630	706	95.6	0.77	315	561	95.0	0.65
1RA4 456-8...	1065	809	95.7	0.81	710	706	95.6	0.77	355	561	95.0	0.65
1RA4 500-8...	1230	810	96.0	0.82	820	706	96.0	0.79	410	563	95.5	0.69
1RA4 502-8...	1380	810	96.2	0.83	920	707	96.2	0.80	460	563	95.8	0.70
1RA4 504-8...	1515	810	96.3	0.84	1010	707	96.3	0.82	505	563	95.9	0.72
1RA4 506-8...	1665	810	96.4	0.84	1110	707	96.3	0.80	555	563	95.8	0.70

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# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 4.16 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 60 Hz</b>									
2-pole									
1600	<b>1RA6 450-2HS30</b>	3576	96.0	0.89	260	4274	2.1	12.7	3600
1850	<b>1RA6 452-2HS30</b>	3578	96.3	0.91	295	4941	2.3	14.3	3600
2060	<b>1RA6 454-2HS30</b>	3579	96.6	0.91	325	5500	2.3	15.6	3600 <sup>4)</sup>
2300	<b>1RA6 456-2HS30</b>	3581	96.8	0.92	360	6137	2.4	17.6	3600 <sup>4)</sup>
2690	<b>1RA6 457-2HS30</b>	3579	96.8	0.93	415	7181	2.4	19.3	3600 <sup>4)</sup>
3030	<b>1RA6 458-2HS30</b>	3582	96.9	0.93	465	8083	2.4	21.4	3600 <sup>4)</sup>
4-pole									
1630	<b>1RA6 450-4HS3</b>	1782	95.7	0.89	265	8742	2.3	20.0	1800
1750	<b>1RA6 452-4HS3</b>	1783	95.9	0.89	285	9375	2.4	22.3	1800
2070	<b>1RA6 454-4HS3</b>	1784	96.1	0.90	330	11088	2.5	25.3	1800
2310	<b>1RA6 456-4HS3</b>	1786	96.3	0.89	375	12358	2.5	28.6	1800
2620	<b>1RA4 500-4HV5</b>	1786	96.6	0.88	430	14010	2.1	39	1800
2880	<b>1RA4 502-4HV5</b>	1785	96.7	0.89	465	15408	2.1	42	1800
3320	<b>1RA4 504-4HV5</b>	1786	96.9	0.89	530	17753	2.1	48	1800
3760	<b>1RA4 506-4HV5</b>	1786	97.1	0.89	600	20105	2.1	53	1800
4320	<b>1RA4 560-4HV5</b>	1786	96.8	0.90	690	23100	1.9	76	1800
5400	<b>1RA4 562-4HV5</b>	1786	97.1	0.90	860	28875	2.0	84	O. R. <sup>2)</sup>
6000	<b>1RA4 564-4HV5</b>	1787	97.2	0.90	950	32065	2.0	96	O. R. <sup>2)</sup>
6600	<b>1RA4 566-4HV5</b>	1787	97.3	0.90	1040	35271	2.0	105	O. R. <sup>2)</sup>
7400 <sup>3)</sup>	<b>1RA4 632-4HV5</b>	1790	97.3	0.89	1180	39480	1.9	150	1800

#### Type of construction:

IM B3	<b>0</b>
IM V1 (without canopy)	<b>8</b>

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
<b>Fluid flow machine drive</b>												
<b>2-pole</b>												
1RA6 450-2...	1201	3251	96.1	0.90	800	2843	96.2	0.90	400	2260	96.1	0.85
1RA6 452-2...	1389	3253	96.4	0.91	925	2844	96.5	0.91	463	2261	96.3	0.87
1RA6 454-2...	1545	3254	96.7	0.91	1030	2845	96.7	0.90	515	2261	96.5	0.86
1RA6 456-2...	1725	3256	96.9	0.92	1150	2846	96.9	0.91	575	2262	96.7	0.87
1RA6 457-2...	2018	3254	96.9	0.93	1345	2845	97.0	0.93	674	2261	96.9	0.90
1RA6 458-2...	2273	3256	97.0	0.93	1515	2846	97.1	0.92	758	2262	96.9	0.89
<b>4-pole</b>												
1RA6 450-4...	1224	1622	96.0	0.89	815	1419	96.1	0.88	408	1129	96.0	0.83
1RA6 452-4...	1313	1623	96.1	0.89	875	1420	96.2	0.88	438	1129	96.1	0.82
1RA6 454-4...	1553	1623	96.3	0.90	1035	1420	96.4	0.89	518	1129	96.3	0.83
1RA6 456-4...	1733	1624	96.5	0.89	1155	1421	96.5	0.87	578	1130	96.2	0.80
1RA4 500-4...	1965	1623	96.7	0.88	1310	1418	96.7	0.86	655	1125	96.5	0.78
1RA4 502-4...	2160	1622	96.8	0.89	1440	1417	96.9	0.87	720	1124	96.7	0.80
1RA4 504-4...	2490	1623	97.0	0.89	1660	1418	97.0	0.87	830	1125	96.9	0.80
1RA4 506-4...	2820	1623	97.1	0.89	1880	1418	97.1	0.88	940	1125	97.0	0.81
1RA4 560-4...	3240	1623	96.9	0.90	2160	1418	97.0	0.89	1080	1125	96.9	0.84
1RA4 562-4...	4050	1623	97.2	0.90	2700	1418	97.2	0.87	1350	1125	96.0	0.75
1RA4 564-4...	4500	1624	97.4	0.90	3000	1418	97.3	0.87	1500	1126	96.1	0.75
1RA4 566-4...	4950	1624	97.5	0.90	3300	1418	97.4	0.87	1650	1126	96.3	0.75
1RA4 632-4...	5550	1626	97.5	0.90	3700	1421	97.1	0.87	1850	1128	96.5	0.75

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> On request.

<sup>3)</sup> Rated voltage less than 4.16 kV on request.

<sup>4)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 4.16 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 60 Hz</b>									
6-pole									
1210	<b>1RA6 450-6HS3</b>	1190	96.0	0.84	210	9715	2.4	25.9	1200
1350	<b>1RA6 452-6HS3</b>	1191	96.2	0.85	230	10833	2.4	29.1	1200
1480	<b>1RA6 454-6HS3</b>	1191	96.3	0.85	250	11875	2.5	32.4	1200
1620	<b>1RA6 456-6HS3</b>	1191	96.4	0.87	270	12995	2.5	37.3	1200
2120	<b>1RA4 500-6HV5</b>	1189	96.2	0.86	355	17028	1.9	57	1200
2400	<b>1RA4 502-6HV5</b>	1188	96.3	0.87	400	19293	1.9	65	1200
2680	<b>1RA4 504-6HV5</b>	1189	96.4	0.87	445	21526	1.9	72	1200
2940	<b>1RA4 506-6HV5</b>	1189	96.6	0.87	485	23614	1.9	81	1200
3400	<b>1RA4 560-6HV5</b>	1190	96.6	0.87	560	27286	1.9	105	1200
3950	<b>1RA4 562-6HV5</b>	1191	96.9	0.86	660	31673	1.9	120	1200
8-pole									
870	<b>1RA6 450-8HS3</b>	893	95.2	0.81	156	9308	2.5	32.1	900
960	<b>1RA6 452-8HS3</b>	893	95.3	0.82	170	10269	2.5	36.1	900
1050	<b>1RA6 454-8HS3</b>	893	95.4	0.84	182	11239	2.4	40.2	900
1180	<b>1RA6 456-8HS3</b>	894	95.6	0.82	210	12613	2.5	46.4	900
1560	<b>1RA4 500-8HV5</b>	891	95.6	0.84	270	16721	1.8	70	900
1760	<b>1RA4 502-8HV5</b>	892	95.7	0.84	305	18843	1.9	80	900
1940	<b>1RA4 504-8HV5</b>	892	96.0	0.84	335	20770	2.0	88	900
2120	<b>1RA4 506-8HV5</b>	892	96.2	0.84	365	22697	2.0	99	900
2440	<b>1RA4 560-8HV5</b>	893	96.3	0.84	420	26094	1.9	123	900
2750	<b>1RA4 562-8HV5</b>	893	96.5	0.84	470	29409	1.9	141	900
3000	<b>1RA4 564-8HV5</b>	893	96.6	0.84	510	32083	1.9	158	900
3250	<b>1RA4 566-8HV5</b>	893	96.7	0.85	550	34756	1.9	173	900

#### Type of construction:

IM B3	<b>0</b>
IM V1 (without canopy)	<b>8</b>

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

$P/P_{\text{rated}} = 50\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

$P/P_{\text{rated}} = 25\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

Fluid flow machine drive

6-pole

1RA6 450-6...	908	1083	96.2	0.83	605	947	96.2	0.80	303	753	96.0	0.69
1RA6 452-6...	1013	1083	96.3	0.84	675	947	96.4	0.80	338	753	96.1	0.70
1RA6 454-6...	1110	1083	96.5	0.84	740	947	96.5	0.81	370	753	96.3	0.71
1RA6 456-6...	1215	1083	96.6	0.86	810	947	96.7	0.83	405	753	96.5	0.74
1RA4 500-6...	1590	1080	96.4	0.86	1060	944	96.4	0.84	530	749	96.1	0.75
1RA4 502-6...	1800	1079	96.5	0.87	1200	943	96.5	0.85	600	748	96.3	0.78
1RA4 504-6...	2010	1080	96.5	0.87	1340	944	96.5	0.85	670	749	96.3	0.77
1RA4 506-6...	2205	1080	96.6	0.87	1470	944	96.6	0.86	735	749	96.4	0.78
1RA4 560-6...	2550	1081	96.7	0.86	1700	945	96.7	0.84	850	750	96.4	0.76
1RA4 562-6...	2963	1082	96.9	0.85	1975	945	96.8	0.82	988	750	96.5	0.73

8-pole

1RA6 450-8...	653	812	95.2	0.79	435	710	95.1	0.74	218	565	94.3	0.61
1RA6 452-8...	720	812	95.4	0.80	480	710	95.3	0.75	240	565	94.5	0.62
1RA6 454-8...	788	812	95.5	0.83	525	710	95.5	0.79	263	565	95.0	0.69
1RA6 456-8...	885	813	95.6	0.79	590	711	95.5	0.75	295	565	94.8	0.62
1RA4 500-8...	1170	810	95.8	0.83	780	707	95.9	0.81	390	561	95.5	0.71
1RA4 502-8...	1320	810	95.9	0.83	880	708	95.9	0.80	440	562	95.5	0.70
1RA4 504-8...	1455	810	96.1	0.83	970	708	96.0	0.80	485	562	95.5	0.69
1RA4 506-8...	1590	810	96.3	0.83	1060	708	96.2	0.80	530	562	95.8	0.70
1RA4 560-8...	1830	811	96.4	0.82	1220	709	96.3	0.79	610	563	95.9	0.69
1RA4 562-8...	2063	811	96.5	0.83	1375	709	96.4	0.80	688	563	96.0	0.70
1RA4 564-8...	2250	811	96.6	0.83	1500	709	96.5	0.80	750	563	96.0	0.70
1RA4 566-8...	2438	811	96.6	0.84	1625	709	96.6	0.82	813	563	96.2	0.73

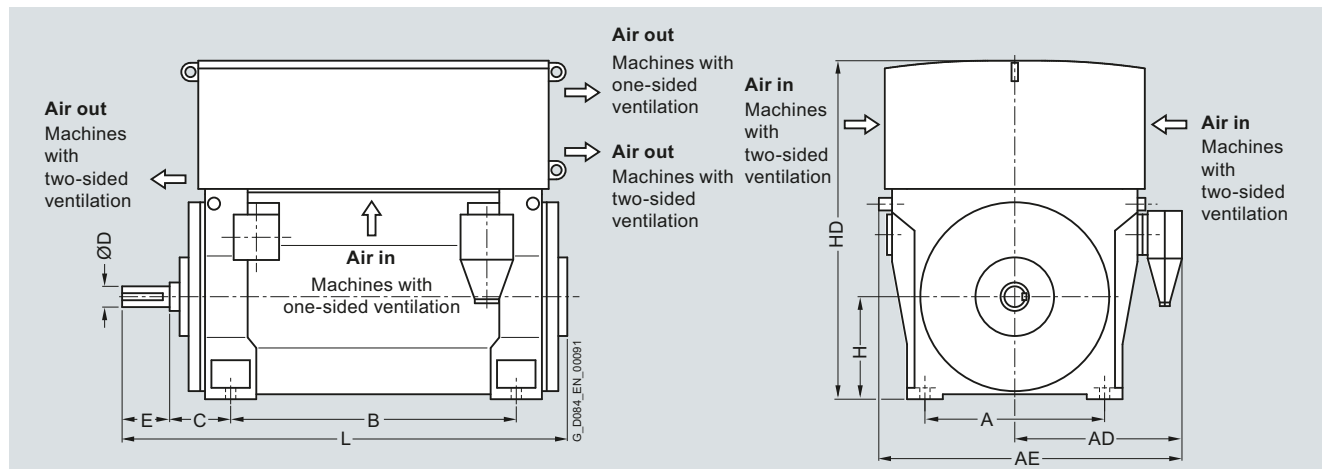
1) For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Dimension drawings



Note: For 1R.6. various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>3)</sup> mm	L mm
<b>Up to 6.6 kV, roller bearings, IM B3 type of construction</b>											
<b>2-pole</b>											
1RA6450-2H..0	3669	850	930	1620	1180	250	95	130	450	1628	1843
1RA6452-2H..0	3872	850	930	1620	1180	250	95	130	450	1628	1843
1RA6454-2H..0	4273	850	930	1620	1400	250	95	130	450	1628	2053
1RA6456-2H..0	4538	850	930	1620	1400	250	95	130	450	1628	2053
<b>4-pole</b>											
1RA6450-4H..0	4013	850	930	1620	1180	250	130	200	450	1408	1896
1RA6452-4H..0	4246	850	930	1620	1180	250	130	200	450	1408	1896
1RA6454-4H..0	4624	850	930	1620	1400	250	130	200	450	1408	2106
1RA6456-4H..0	4902	850	930	1620	1400	250	130	200	450	1408	2106
1RA4500-4H..0	5150	950	1000	1760	1320	280	150	200	500	1520	2230
1RA4502-4H..0	5350	950	1000	1760	1320	280	150	200	500	1520	2230
1RA4504-4H..0	6000	950	1000	1760	1500	280	160	240	500	1520	2480
1RA4506-4H..0	6400	950	1000	1760	1500	280	160	240	500	1520	2480
1RA4560-4H..0	7100	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4562-4H..0	7550	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4564-4H..0	8400	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4566-4H..0	8900	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4630-4H..0 <sup>2)</sup>	9950	1320	1330	2210	1600	335	200	280	630	2400	2500
1RA4632-4H..0 <sup>2)</sup>	10650	1320	1330	2210	1600	335	200	280	630	2400	2500
1RA4634-4H..0 <sup>2)</sup>	11700	1320	1330	2210	1800	335	220	280	630	2400	2740
1RA4636-4H..0 <sup>2)</sup>	12250	1320	1330	2210	1800	335	220	280	630	2400	2740
<b>6-pole</b>											
1RA6450-6H..0	4114	850	930	1620	1180	280	140	200	450	1408	1896
1RA6452-6H..0	4398	850	930	1620	1180	280	140	200	450	1408	1896
1RA6454-6H..0	4748	850	930	1620	1400	280	140	200	450	1408	2136
1RA6456-6H..0	5090	850	930	1620	1400	280	140	200	450	1408	2136
1RA4500-6H..0	5250	950	1000	1760	1320	280	160	240	500	1520	2270
1RA4502-6H..0	5650	950	1000	1760	1320	280	160	240	500	1520	2270
1RA4504-6H..0	6200	950	1000	1760	1500	280	170	240	500	1520	2480
1RA4506-6H..0	6550	950	1000	1760	1500	280	170	240	500	1520	2480

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

<sup>2)</sup> Roller bearings only for 50 Hz version.

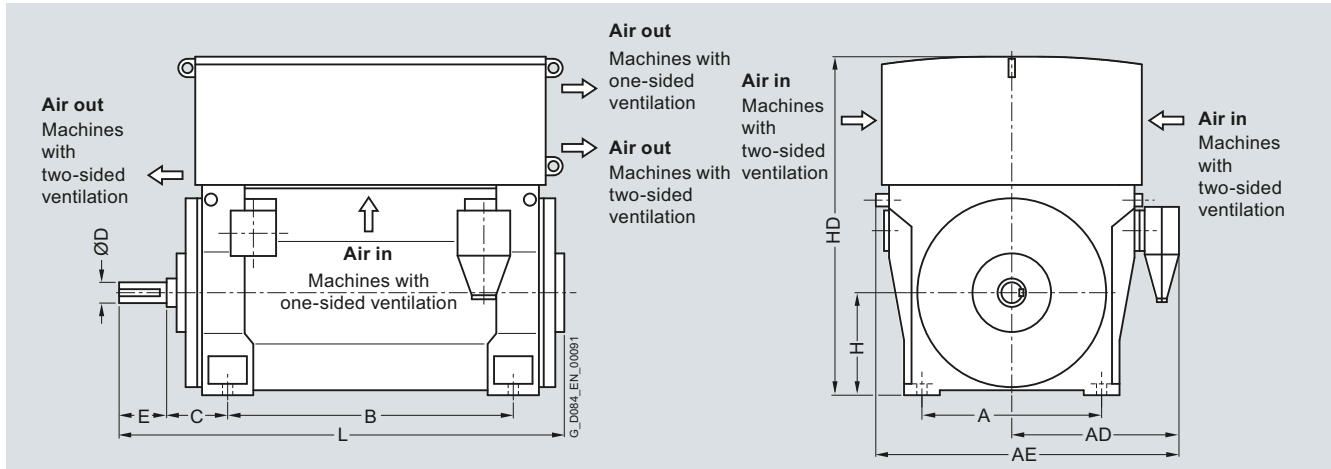
<sup>3)</sup> Dimension HD for 1RP6 on request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Dimension drawings (continued)



Note: For 1R.6. various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>3)</sup> mm	L mm
<b>Up to 6.6 kV, roller bearings, IM B3 type of construction</b>											
<b>6-pole</b>											
1RA4560-6H..0	7200	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4562-6H..0	7850	1060	1210	2040	1400	315	180	240	560	1750	2300
1RA4564-6H..0	8650	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4566-6H..0	9100	1060	1210	2040	1600	315	190	280	560	1750	2570
1RA4630-6H..0	10250	1320	1330	2210	1600	335	220	280	630	2400	2500
1RA4632-6H..0	10800	1320	1330	2210	1600	335	220	280	630	2400	2500
1RA4634-6H..0	11800	1320	1330	2210	1800	335	220	280	630	2400	2740
1RA4636-6H..0	12550	1320	1330	2210	1800	335	220	280	630	2400	2740
<b>8-pole</b>											
1RA6450-8H..0	4129	850	930	1620	1180	280	140	200	450	1408	1896
1RA6452-8H..0	4428	850	930	1620	1180	280	140	200	450	1408	1896
1RA6454-8H..0	4782	850	930	1620	1400	280	140	200	450	1408	2136
1RA6456-8H..0	5130	850	930	1620	1400	280	140	200	450	1408	2136
1RA4500-8H..0	5300	950	1000	1760	1320	280	160	240	500	1520	2270
1RA4502-8H..0	5700	950	1000	1760	1320	280	160	240	500	1520	2270
1RA4504-8H..0	6200	950	1000	1760	1500	280	170	240	500	1520	2480
1RA4506-8H..0	6550	950	1000	1760	1500	280	170	240	500	1520	2480
1RA4560-8H..0	7200	1060	1070	1900	1400	315	180	240	560	1750	2300
1RA4562-8H..0	7700	1060	1070	1900	1400	315	180	240	560	1750	2300
1RA4564-8H..0	8550	1060	1070	1900	1600	315	190	280	560	1750	2570
1RA4566-8H..0	9000	1060	1070	1900	1600	315	190	280	560	1750	2570
1RA4630-8H..0 <sup>2)</sup>	10150	1320	1330	2210	1600	335	220	280	630	2400	2500
1RA4632-8H..0 <sup>2)</sup>	10800	1320	1330	2210	1600	335	220	280	630	2400	2500
1RA4634-8H..0 <sup>2)</sup>	11700	1320	1330	2210	1800	335	220	280	630	2400	2740
1RA4636-8H..0 <sup>2)</sup>	12450	1320	1330	2210	1800	335	220	280	630	2400	2740

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> For  $V_{rated} \geq 2.0$  kV and current  $I_{rated} > 315$  A, the dimension changes by + 140 mm.

<sup>2)</sup> Roller bearings only for 50 Hz version.

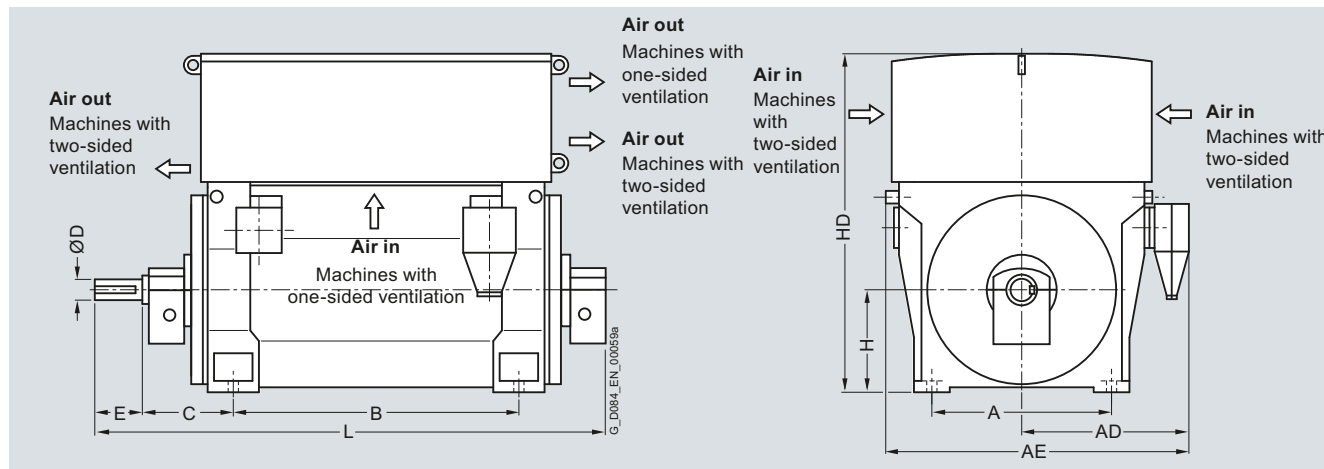
<sup>3)</sup> Dimension HD for 1RP6 on request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Dimension drawings



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD <sup>3)</sup> mm	L mm
<b>Up to 6.6 kV, sleeve bearings, IM B3 type of construction</b>											
<b>2-pole</b>											
1RA6450-2HJ.0-Z K96	3731	850	930	1620	1180	425	95	130	450	1628	2218
1RA6452-2HJ.0-Z K96	3937	850	930	1620	1180	425	95	130	450	1628	2218
1RA6454-2HJ.0-Z K96	4275	850	930	1620	1400	425	95	130	450	1628	2428
1RA6456-2HJ.0-Z K96	4540	850	930	1620	1400	425	95	130	450	1628	2428
1RA6457-2HJ.0-Z K96	5006	850	930	1620	1600	425	95	130	450	1628	2638
1RA6458-2HJ.0-Z K96	5259	850	930	1620	1600	425	95	130	450	1628	2638
<b>4-pole</b>											
1RA6450-4HJ.0-Z K96	4077	850	930	1620	1180	500	130	200	450	1408	2438
1RA6452-4HJ.0-Z K96	4331	850	930	1620	1180	500	130	200	450	1408	2438
1RA6454-4HJ.0-Z K96	4710	850	930	1620	1400	500	130	200	450	1408	2648
1RA6456-4HJ.0-Z K96	4988	850	930	1620	1400	500	130	200	450	1408	2648
1RA4500-4HV.0-Z K96	5300	950	1000	1760	1320	500	150	200	500	1520	2580
1RA4502-4HV.0-Z K96	5500	950	1000	1760	1320	500	150	200	500	1520	2580
1RA4504-4HV.0-Z K96	6200	950	1000	1760	1500	500	160	240	500	1520	2830
1RA4506-4HV.0-Z K96	6600	950	1000	1760	1500	500	160	240	500	1520	2830
1RA4560-4HV.0-Z K96	7250	1060	1210	2040	1400	530	180	240	560	1750	2630
1RA4562-4HV.0-Z K96	7700	1060	1210	2040	1400	530	180	240	560	1750	2630
1RA4564-4HV.0-Z K96	8600	1060	1210	2040	1600	530	190	280	560	1750	2940
1RA4566-4HV.0-Z K96	9100	1060	1210	2040	1600	530	190	280	560	1750	2940
1RA4630-4HV.0-Z K96 <sup>2)</sup>	10250	1320	1330	2210	1600	600	200	280	630	2400	2970
1RA4632-4HV.0-Z K96 <sup>2)</sup>	10950	1320	1330	2210	1600	600	200	280	630	2400	2970
1RA4634-4HV.0-Z K96 <sup>2)</sup>	11950	1320	1330	2210	1800	600	220	280	630	2400	3210
1RA4636-4HV.0-Z K96 <sup>2)</sup>	12500	1320	1330	2210	1800	600	220	280	630	2400	3210
<b>6-pole</b>											
1RA6450-6HJ.0-Z K96	4199	850	930	1620	1180	500	140	200	450	1408	2438
1RA6452-6HJ.0-Z K96	4484	850	930	1620	1180	500	140	200	450	1408	2438
1RA6454-6HJ.0-Z K96	4827	850	930	1620	1400	500	140	200	450	1408	2648
1RA6456-6HJ.0-Z K96	5169	850	930	1620	1400	500	140	200	450	1408	2648

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

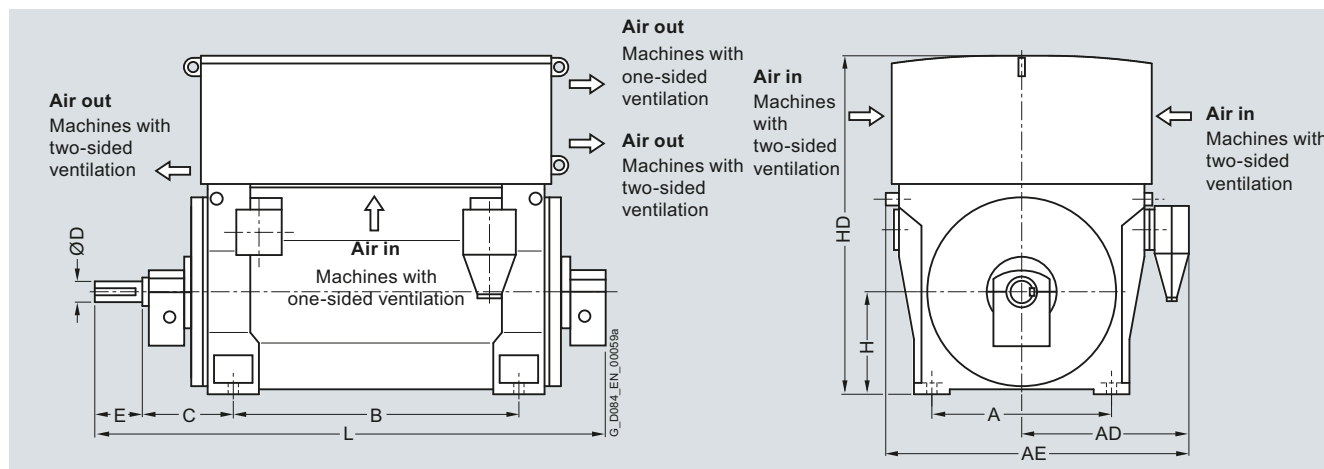
<sup>3)</sup> Dimension HD for 1RP6 on request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Dimension drawings (continued)



Note: For 1R.6, various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A	AD <sup>1)</sup>	AE <sup>1)</sup>	B	C	D	E	H	HD <sup>2)</sup>	L
Up to 6.6 kV, sleeve bearings, IM B3 type of construction											
6-pole											
1RA4500-6HV.0-Z K96	5450	950	1000	1760	1320	500	160	240	500	1520	2620
1RA4502-6HV.0-Z K96	5800	950	1000	1760	1320	500	160	240	500	1520	2620
1RA4504-6HV.0-Z K96	6350	950	1000	1760	1500	500	170	240	500	1520	2830
1RA4506-6HV.0-Z K96	6750	950	1000	1760	1500	500	170	240	500	1520	2830
1RA4560-6HV.0-Z K96	7450	1060	1210	2040	1400	530	180	240	560	1750	2670
1RA4562-6HV.0-Z K96	8050	1060	1210	2040	1400	530	180	240	560	1750	2670
1RA4564-6HV.0-Z K96	8850	1060	1210	2040	1600	530	190	280	560	1750	2940
1RA4566-6HV.0-Z K96	9300	1060	1210	2040	1600	530	190	280	560	1750	2940
1RA4630-6HV.0-Z K96	10500	1320	1330	2210	1600	600	220	280	630	2400	2970
1RA4632-6HV.0-Z K96	11050	1320	1330	2210	1600	600	220	280	630	2400	2970
1RA4634-6HV.0-Z K96	12100	1320	1330	2210	1800	600	220	280	630	2400	3210
1RA4636-6HV.0-Z K96	12850	1320	1330	2210	1800	600	220	280	630	2400	3210
8-pole											
1RA6450-8HJ.0-Z K96	4215	850	930	1620	1180	500	140	200	450	1408	2438
1RA6452-8HJ.0-Z K96	4514	850	930	1620	1180	500	140	200	450	1408	2438
1RA6454-8HJ.0-Z K96	4861	850	930	1620	1400	500	140	200	450	1408	2648
1RA6456-8HJ.0-Z K96	5208	850	930	1620	1400	500	140	200	450	1408	2648
1RA4500-8HV.0-Z K96	5500	950	1000	1760	1320	500	160	240	500	1520	2620
1RA4502-8HV.0-Z K96	5850	950	1000	1760	1320	500	160	240	500	1520	2620
1RA4504-8HV.0-Z K96	6350	950	1000	1760	1500	500	170	240	500	1520	2830
1RA4506-8HV.0-Z K96	6700	950	1000	1760	1500	500	170	240	500	1520	2830
1RA4560-8HV.0-Z K96	7400	1060	1070	1900	1400	530	180	240	560	1750	2670
1RA4562-8HV.0-Z K96	7950	1060	1070	1900	1400	530	180	240	560	1750	2670
1RA4564-8HV.0-Z K96	8750	1060	1070	1900	1600	530	190	280	560	1750	2940
1RA4566-8HV.0-Z K96	9250	1060	1070	1900	1600	530	190	280	560	1750	2940
1RA4630-8HV.0-Z K96	10400	1320	1330	2210	1600	600	220	280	630	2400	2970
1RA4632-8HV.0-Z K96	11050	1320	1330	2210	1600	600	220	280	630	2400	2970
1RA4634-8HV.0-Z K96	12000	1320	1330	2210	1800	600	220	280	630	2400	3210
1RA4636-8HV.0-Z K96	12700	1320	1330	2210	1800	600	220	280	630	2400	3210

#### Note:

Higher pole numbers are available on request.

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

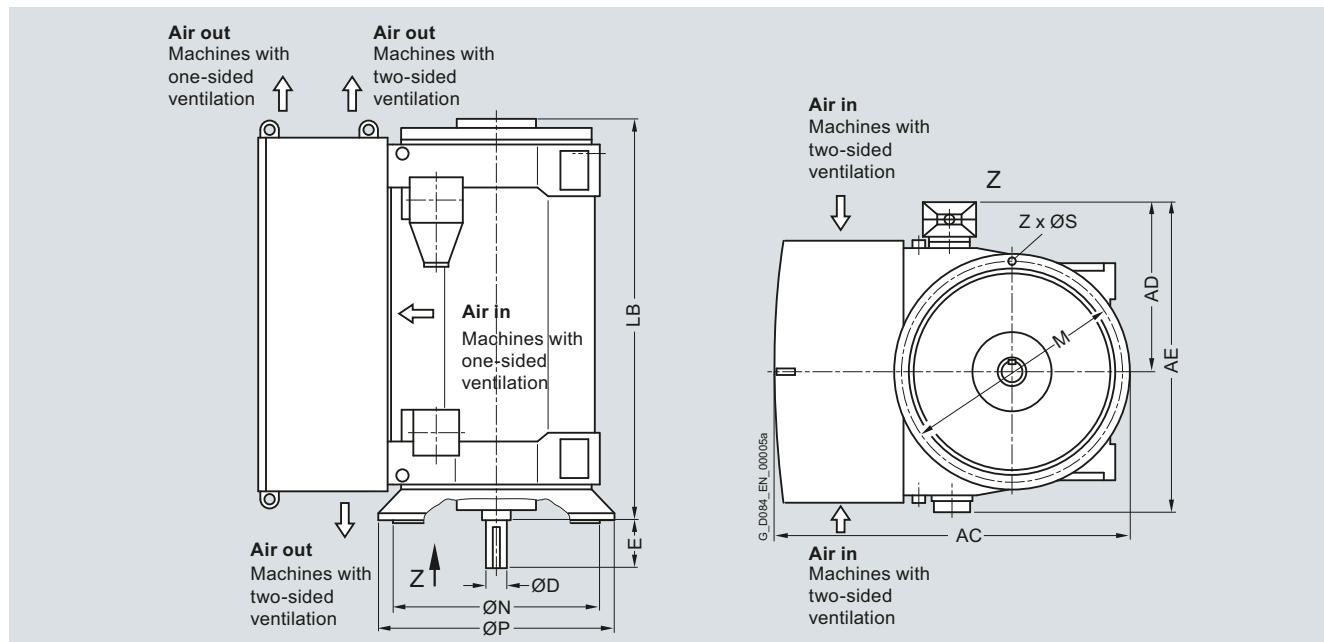
<sup>2)</sup> Dimension HD for 1RP6 on request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Dimension drawings



Note: For 1R.6. various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC <sup>3)</sup> mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, roller bearings, IM V1 type of construction</b>												
<b>4-pole</b>												
1RA6450-4H..8	4213	1533	930	1620	130	200	1720	1150	1000	1080	26	8
1RA6452-4H..8	4446	1533	930	1620	130	200	1720	1150	1000	1080	26	8
1RA6454-4H..8	4824	1533	930	1620	130	200	1930	1150	1000	1080	26	8
1RA6456-4H..8	5102	1533	930	1620	130	200	1930	1150	1000	1080	26	8
1RA4500-4H..8	5250	1640	1000	1810	150	200	1910	1250	1120	1180	26	8
1RA4502-4H..8	5450	1640	1000	1810	150	200	1910	1250	1120	1180	26	8
1RA4504-4H..8	6150	1640	1000	1810	160	240	2120	1250	1120	1180	26	8
1RA4506-4H..8	6550	1640	1000	1810	160	240	2120	1250	1120	1180	26	8
1RA4560-4H..8	7250	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4562-4H..8 <sup>2)</sup>	7700	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4564-4H..8 <sup>2)</sup>	8600	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4566-4H..8 <sup>2)</sup>	9050	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4630-4H..8 <sup>2)</sup>	11600	2430	1330	2300	200	280	2470	2000	1800	1900	33	16
1RA4632-4H..8 <sup>2)</sup>	12300	2430	1330	2300	200	280	2470	2000	1800	1900	33	16
1RA4634-4H..8 <sup>2)</sup>	13350	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
1RA4636-4H..8 <sup>2)</sup>	13900	2430	1330	2300	220	280	2710	2000	1800	1900	33	16

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

<sup>2)</sup> Only in the 50 Hz version.

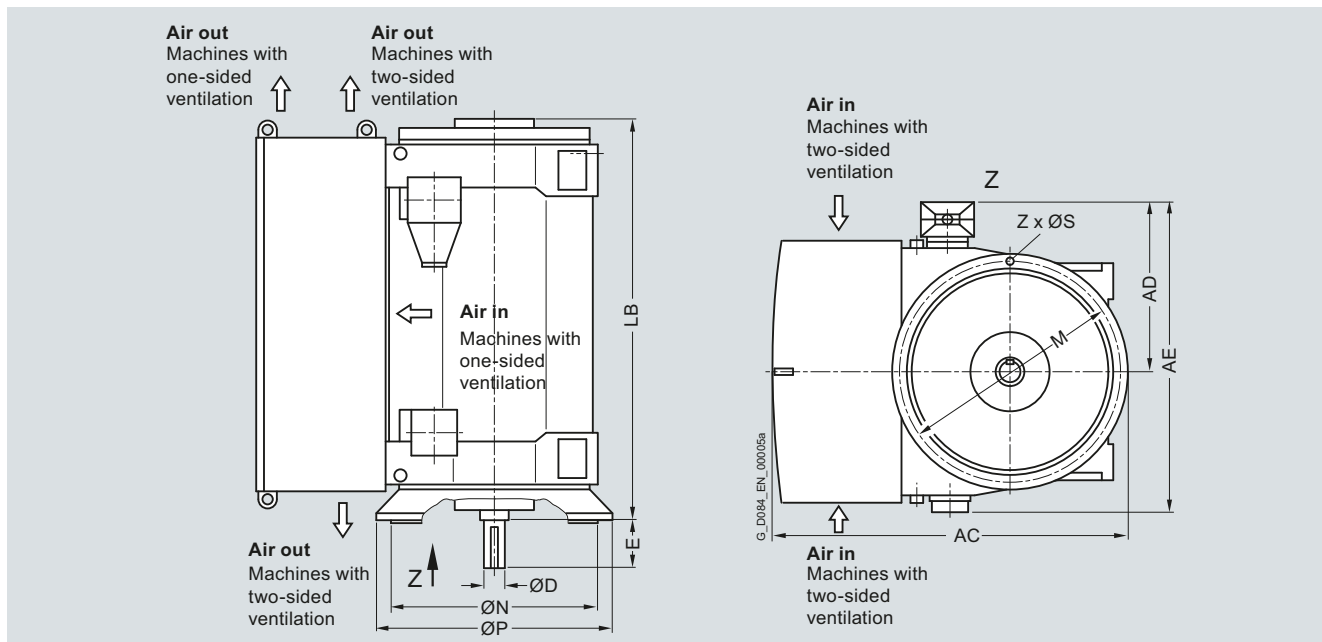
<sup>3)</sup> Dimension AC for 1RP6 on request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Dimension drawings (continued)



Note: For 1R.6. various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC <sup>2)</sup> mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, roller bearings, IM V1 type of construction</b>												
<b>6-pole</b>												
1RA6450-6H..8	4314	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6452-6H..8	4598	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6454-6H..8	4948	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6456-6H..8	5290	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA4500-6H..8	5400	1640	1000	1810	160	240	1910	1250	1120	1180	26	8
1RA4502-6H..8	5750	1640	1000	1810	160	240	1910	1250	1120	1180	26	8
1RA4504-6H..8	6300	1640	1000	1810	170	240	2120	1250	1120	1180	26	8
1RA4506-6H..8	6700	1640	1000	1810	170	240	2120	1250	1120	1180	26	8
1RA4560-6H..8	7400	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4562-6H..8	8000	1890	1210	2100	180	240	2090	1400	1250	1320	26	16
1RA4564-6H..8	8800	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4566-6H..8	9300	1890	1210	2100	190	280	2320	1400	1250	1320	26	16
1RA4630-6H..8	11900	2430	1330	2300	220	280	2470	2000	1800	1900	33	16
1RA4632-6H..8	12450	2430	1330	2300	220	280	2470	2000	1800	1900	33	16
1RA4634-6H..8	13450	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
1RA4636-6H..8	14200	2430	1330	2300	220	280	2710	2000	1800	1900	33	16

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

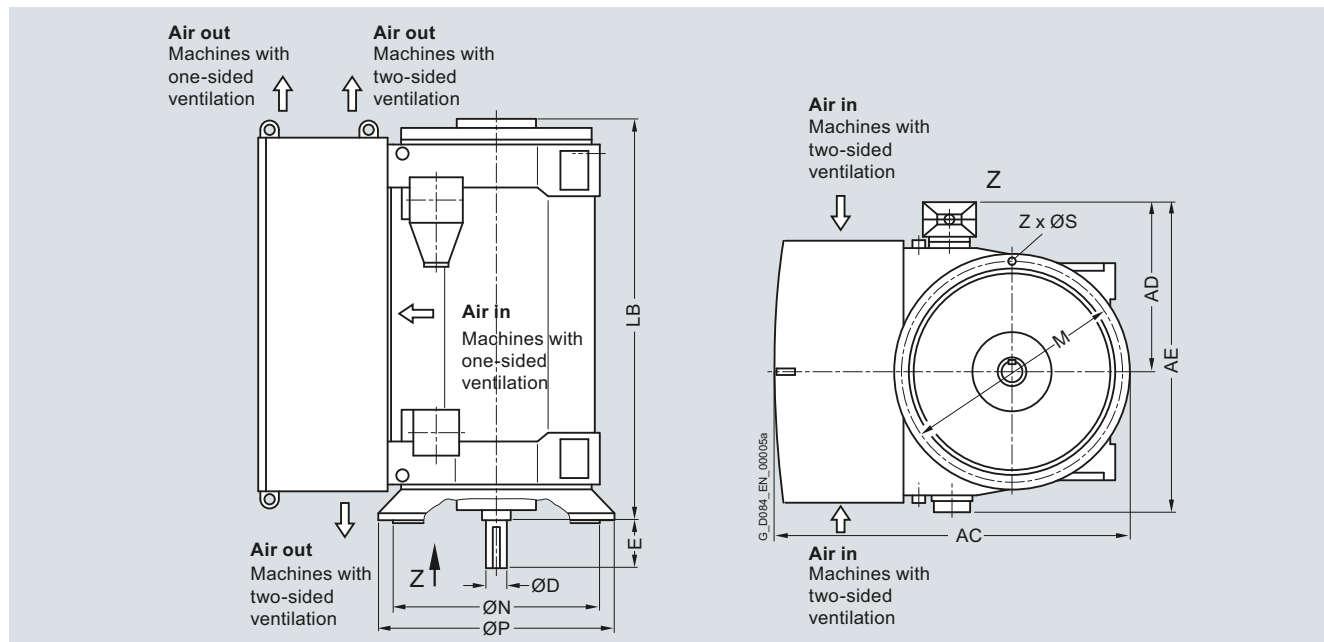
<sup>2)</sup> Dimension AC for 1RP6 on request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RA4, 1RA6 and 1RP6

### Dimension drawings (continued)



Note: For 1R.6. various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC <sup>2)</sup> mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, roller bearings, IM V1 type of construction</b>												
<b>8-pole</b>												
1RA6450-8H..8	4329	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6452-8H..8	4628	1533	930	1620	140	200	1720	1150	1000	1080	26	8
1RA6454-8H..8	4982	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA6456-8H..8	5330	1533	930	1620	140	200	1930	1150	1000	1080	26	8
1RA4500-8H..8	5450	1640	1000	1810	160	240	1910	1250	1120	1180	26	8
1RA4502-8H..8	5800	1640	1000	1810	160	240	1910	1250	1120	1180	26	8
1RA4504-8H..8	6300	1640	1000	1810	170	240	2120	1250	1120	1180	26	8
1RA4506-8H..8	6700	1640	1000	1810	170	240	2120	1250	1120	1180	26	8
1RA4560-8H..8	7350	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA4562-8H..8	7900	1890	1070	1960	180	240	2090	1400	1250	1320	26	16
1RA4564-8H..8	8700	1890	1070	1960	190	280	2320	1400	1250	1320	26	16
1RA4566-8H..8	9200	1890	1070	1960	190	280	2320	1400	1250	1320	26	16
1RA4566-8H..8	9200	1890	1070	1960	190	280	2320	1400	1250	1320	26	16
1RA4630-8H..8	11800	2430	1330	2300	220	280	2470	2000	1800	1900	33	16
1RA4632-8H..8	12450	2430	1330	2300	220	280	2470	2000	1800	1900	33	16
1RA4634-8H..8	13350	2430	1330	2300	220	280	2710	2000	1800	1900	33	16
1RA4636-8H..8	14100	2430	1330	2300	220	280	2710	2000	1800	1900	33	16

Note:

Higher pole numbers are available on request.

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

<sup>2)</sup> Dimension AC for 1RP6 on request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Overview



### Technical data

#### Overview of technical data

H-compact PLUS 1RQ4 and 1RQ6	
<b>Rated voltage</b>	690 V ... 6.6 kV
<b>Rated frequency</b>	50/60 Hz
<b>Motor type</b>	Induction motor with squirrel-cage rotor
<b>Type of construction</b>	IM B3, IM V1
<b>Degree of protection</b>	IP55
<b>Cooling method</b>	IC611/IC616
<b>Stator winding insulation</b>	Insulation system, thermal class 155 (F), utilized to 155 (F)
<b>Shaft height</b>	450 ... 630 mm
<b>Bearings</b>	Roller bearings, sleeve bearings
<b>Cage material</b>	Copper
<b>Standards</b>	IEC, EN
<b>Frame design for shaft heights 450 ... 560 mm</b>	Frame: Cast iron Design: Steel
<b>Frame design for shaft heights 630 mm</b>	Frame: Steel Design: Steel

The following versions can be offered on request:

- 2-pole up to 75 Hz
- 4-pole up to 100 Hz
- 6-pole up to 90 Hz

For individual motor types, it must be ensured that the motor does not run-through any critical speed in the required speed control range and that the maximum speed does not exceed the mechanical limit speed of the motor! Please contact your Siemens sales person regarding this check. The motor types are marked with footnotes in the following data tables.

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact PLUS 1RQ4 and 1RQ6

#### Technical data (continued)

**Power ranges for IEC motors with reinforced insulation for SINAMICS drive converters without sine-wave filter**

1RQ4, 1SG4 (Ex nA), 1SB4 (Ex px) series

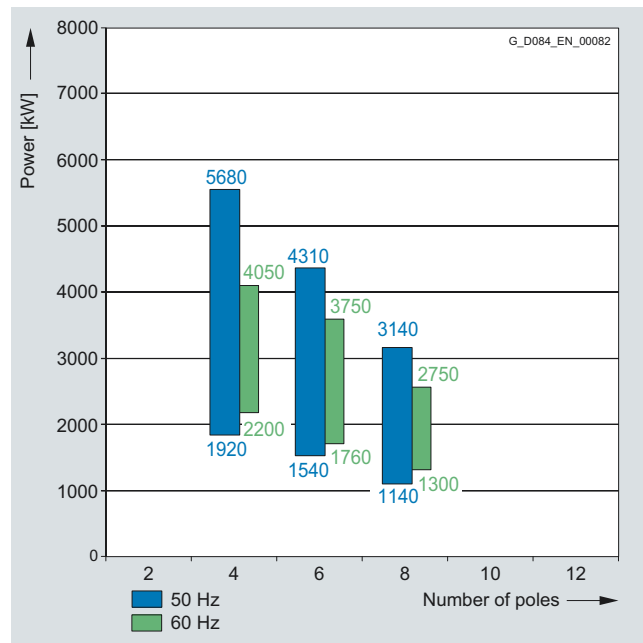
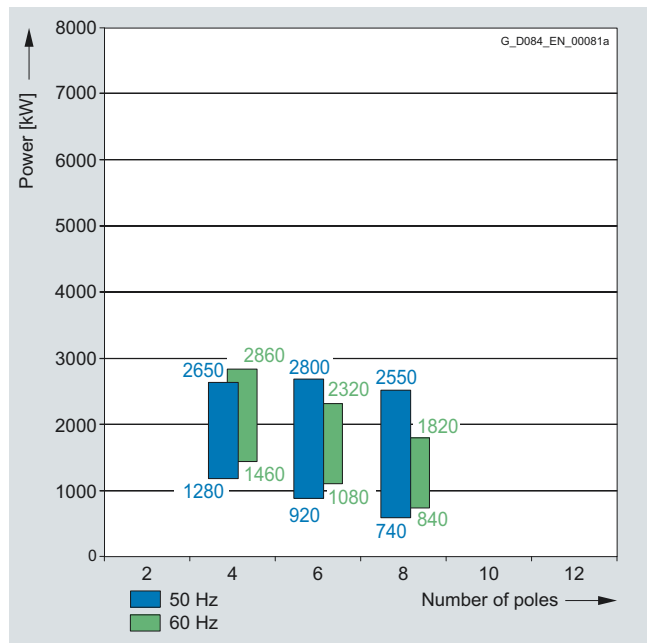
Insulation system, thermal class 155 (F), utilized to 155 (F)

The power data listed here apply for an ambient temperature of 40 °C and an installation altitude ≤ 1000 m.

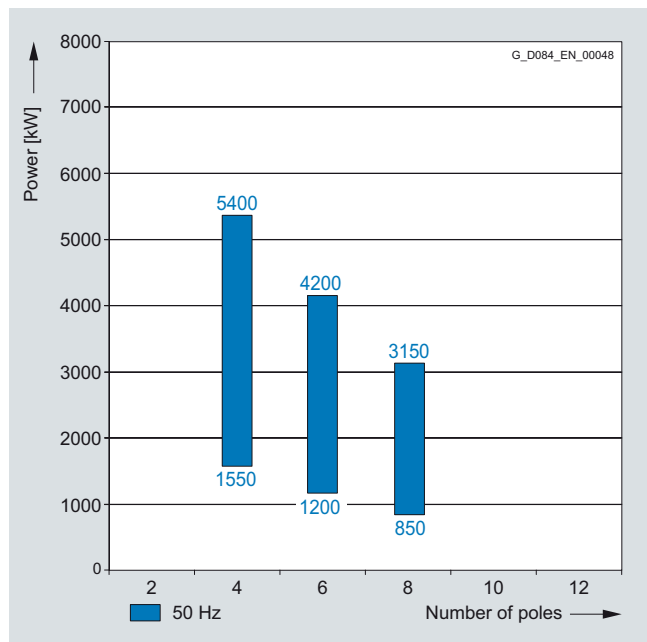
2.3 kV; 50 and 60 Hz

3.4 kV to 4.16 kV; 50 and 60 Hz

3



6 kV to 6.6 kV; 50 Hz



# Motors for converter operation

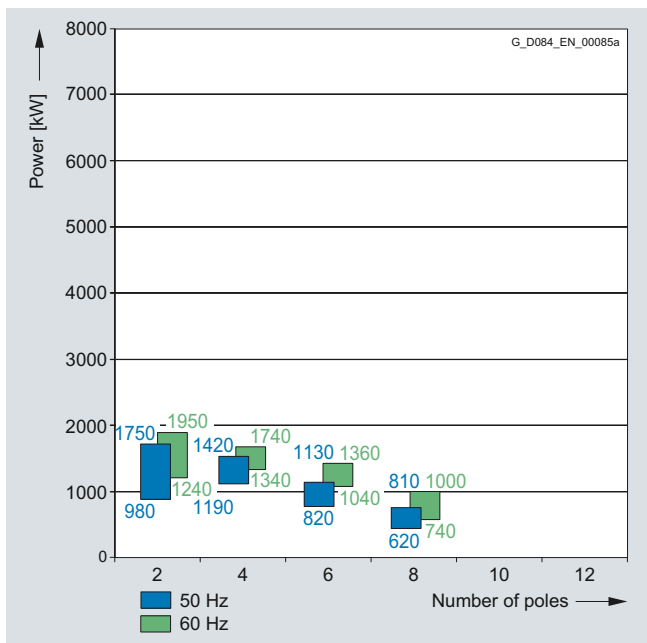
## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

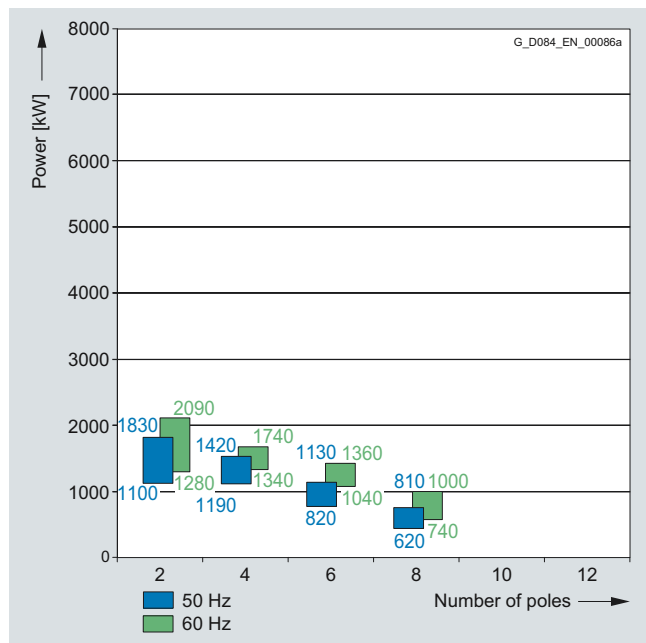
**Technical data** (continued)

1RQ6, 1SG6 (Ex nA), 1SB6 (Ex px) series

690 V; 50 and 60 Hz



4.16 kV; 50 and 60 Hz



3

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>690 V, 50 Hz</b>									
2-pole									
980	<b>1RQ6 450-2JP00</b>	2983	95.1	0.91	950	3141	2.4	12.7	3000
1040	<b>1RQ6 452-2JP00</b>	2984	95.2	0.91	1000	3331	2.4	14.3	3000
1320	<b>1RQ6 454-2JP00</b>	2983	95.9	0.92	2x630	4232	2.3	15.6	3000
1370	<b>1RQ6 456-2JP00</b>	2982	95.9	0.93	2x640	4394	2.4	17.6	3000
1650	<b>1RQ6 457-2JP00</b>	2989	96.4	0.91	2x790	5275	3	19.3	3000 <sup>2)</sup>
1750	<b>1RQ6 458-2JP00</b>	2987	96.5	0.93	2x820	5599	2.8	21.4	3000 <sup>2)</sup>
4-pole									
1090	<b>1RQ6 450-4JP00</b>	1487	95.4	0.87	1100	7008	2.6	20.0	1800
1200	<b>1RQ6 452-4JP00</b>	1486	95.5	0.90	1160	7724	2.5	22.3	1800
1290	<b>1RQ6 454-4JP00</b>	1488	95.9	0.89	2x630	8289	2.6	25.3	1800
1420	<b>1RQ6 456-4JP00</b>	1490	96.1	0.89	2x690	9113	2.9	28.6	1800
6-pole									
820	<b>1RQ6 450-6JP00</b>	991	95.6	0.85	840	7915	2.3	25.9	1200
910	<b>1RQ6 452-6JP00</b>	992	95.9	0.85	930	8775	2.4	29.1	1200
1020	<b>1RQ6 454-6JP00</b>	992	95.9	0.85	1040	9835	2.4	32.4	1200
1130	<b>1RQ6 456-6JP00</b>	991	95.8	0.87	1140	10906	2.3	37.3	1200
8-pole									
620	<b>1RQ6 450-8JP00</b>	744	94.9	0.82	670	7967	2.7	32.1	900
675	<b>1RQ6 452-8JP00</b>	744	95.1	0.82	720	8679	2.4	36.1	900
750	<b>1RQ6 454-8JP00</b>	744	95.1	0.82	800	9635	2.5	40.2	900
810	<b>1RQ6 456-8JP00</b>	745	95.4	0.82	870	10398	2.7	46.4	900
<b>Type of construction:</b>									
IM B3 <b>0</b>									
IM V1 (with canopy) <b>4</b>									

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

2-pole

1RQ6 450-2JPO. 735 2711 95.4 0.91 490 2372 95.5 0.90 245 1884 95.3 0.84

1RQ6 452-2JPO. 780 2712 95.5 0.91 520 2373 95.6 0.90 260 1885 95.4 0.85

1RQ6 454-2JPO. 991 2711 96.1 0.92 660 2372 96.2 0.91 330 1884 96.1 0.87

1RQ6 456-2JPO. 1028 2710 96.2 0.94 685 2372 96.3 0.93 343 1884 96.4 0.90

1RQ6 457-2JPO. 1238 2715 96.4 0.89 826 2375 96.4 0.86 413 1886 95.9 0.76

1RQ6 458-2JPO. 1313 2714 96.6 0.93 875 2375 96.7 0.92 438 1886 96.5 0.86

4-pole

1RQ6 450-4JPO. 818 1352 95.6 0.85 545 1184 95.6 0.82 273 941 95.1 0.72

1RQ6 452-4JPO. 900 1351 95.8 0.89 600 1184 95.9 0.87 300 941 95.7 0.81

1RQ6 454-4JPO. 968 1353 96.1 0.88 645 1185 96.1 0.86 323 941 95.8 0.78

1RQ6 456-4JPO. 1065 1354 96.2 0.88 711 1185 96.2 0.85 355 941 95.8 0.76

6-pole

1RQ6 450-6JPO. 96.0 0.84 410 789 96.0 0.81 205 627 95.8 0.71 96.0 0.84

1RQ6 452-6JPO. 96.1 0.83 455 789 96.1 0.80 228 627 95.8 0.69 96.1 0.83

1RQ6 454-6JPO. 96.2 0.84 510 789 96.2 0.80 255 627 95.9 0.70 96.2 0.84

1RQ6 456-6JPO. 96.2 0.87 565 789 96.3 0.84 283 627 96.2 0.76 96.2 0.87

8-pole

1RQ6 450-8JPO. 95.0 0.77 310 592 94.8 0.71 155 471 93.8 0.57 95.0 0.77

1RQ6 452-8JPO. 95.2 0.79 338 592 95.1 0.74 169 470 94.4 0.61 95.2 0.79

1RQ6 454-8JPO. 95.2 0.79 375 592 95.0 0.73 188 471 94.2 0.60 95.2 0.79

1RQ6 456-8JPO. 95.5 0.79 405 592 95.3 0.73 203 471 94.5 0.59 95.5 0.79

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>2.3 kV, 50 Hz</b>									
4-pole									
1280	<b>1RQ4 450-4JV0</b>	1482	96.10	0.88	380	8248	2.20	22	1800
1420	<b>1RQ4 452-4JV0</b>	1484	96.30	0.88	420	9138	2.10	24	1800
1580	<b>1RQ4 454-4JV0</b>	1485	96.40	0.88	470	10161	2.20	27	1800
1780	<b>1RQ4 456-4JV0</b>	1486	96.60	0.87	530	11439	2.10	30	1800
1980	<b>1RQ4 500-4JV0</b>	1485	96.30	0.89	580	12733	2.10	42	1800
2200	<b>1RQ4 502-4JV0</b>	1486	96.50	0.89	640	14139	2.20	45	1800
2500	<b>1RQ4 504-4JV0</b>	1487	96.60	0.89	730	16056	2.10	51	1800
2650	<b>1RQ4 506-4JV0</b>	1487	96.60	0.89	770	17019	2.10	56	1800
6-pole									
920	<b>1RQ4 450-6JV0</b>	987	95.50	0.85	285	8902	2.00	31	1200
1040	<b>1RQ4 452-6JV0</b>	987	95.60	0.86	320	10063	2.00	35	1200
1220	<b>1RQ4 454-6JV0</b>	988	95.70	0.86	370	11793	2.10	38	1200
1380	<b>1RQ4 456-6JV0</b>	989	96.10	0.85	425	13326	2.10	43	1200
1600	<b>1RQ4 500-6JV0</b>	989	95.90	0.87	480	15450	2.00	62	1200
1820	<b>1RQ4 502-6JV0</b>	990	96.30	0.87	550	17557	2.10	70	1200
2040	<b>1RQ4 504-6JV0</b>	990	96.40	0.87	610	19679	2.10	77	1200
2220	<b>1RQ4 506-6JV0</b>	990	96.50	0.87	660	21415	2.10	85	1200
2500	<b>1RQ4 560-6JV0</b>	991	96.40	0.86	760	24092	2.00	108	1200
2800	<b>1RQ4 562-6JV0</b>	991	96.70	0.86	850	26983	2.00	123	1200
8-pole									
740	<b>1RQ4 450-8JV0</b>	741	95.10	0.82	240	9537	2.10	39	900
820	<b>1RQ4 452-8JV0</b>	741	95.40	0.82	265	10568	2.10	43	900
900	<b>1RQ4 454-8JV0</b>	742	95.50	0.82	290	11584	2.20	48	900
1020	<b>1RQ4 456-8JV0</b>	742	95.70	0.82	325	13128	2.20	54	900
1180	<b>1RQ4 500-8JV0</b>	742	95.60	0.83	375	15187	2.10	74	900
1320	<b>1RQ4 502-8JV0</b>	743	96.00	0.83	415	16966	2.10	84	900
1460	<b>1RQ4 504-8JV0</b>	742	95.90	0.84	455	18791	1.90	92	900
1600	<b>1RQ4 506-8JV0</b>	742	96.10	0.85	490	20593	1.90	103	900
1850	<b>1RQ4 560-8JV0</b>	743	96.00	0.83	580	23779	2.00	128	900
2100	<b>1RQ4 562-8JV0</b>	743	96.10	0.83	660	26992	2.00	146	900
2350	<b>1RQ4 564-8JV0</b>	743	96.30	0.83	740	30205	2.00	163	900
2550	<b>1RQ4 566-8JV0</b>	743	96.40	0.83	800	32776	2.00	178	900

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
<b>Fluid flow machine drive</b>												
<b>4-pole</b>												
1RQ4 450-4...	960	1346	96.1	0.88	640	1176	96.2	0.85	320	934	95.9	0.77
1RQ4 452-4...	1065	1348	96.3	0.87	710	1178	96.3	0.84	355	935	96.0	0.75
1RQ4 454-4...	1185	1349	96.5	0.86	790	1179	96.6	0.83	395	935	96.2	0.74
1RQ4 456-4...	1335	1350	96.6	0.85	890	1179	96.7	0.82	445	936	96.3	0.71
1RQ4 500-4...	1485	1349	96.4	0.89	990	1179	96.5	0.87	495	935	96.4	0.80
1RQ4 502-4...	1650	1350	96.6	0.89	1100	1179	96.6	0.87	550	936	96.4	0.79
1RQ4 504-4...	1875	1351	96.7	0.89	1250	1180	96.8	0.86	625	937	96.7	0.79
1RQ4 506-4...	1988	1351	96.8	0.89	1325	1180	96.8	0.86	663	937	96.7	0.80
<b>6-pole</b>												
1RQ4 450-6...	690	897	95.6	0.84	460	783	95.8	0.81	230	622	95.4	0.71
1RQ4 452-6...	780	897	95.8	0.84	520	783	96.0	0.81	260	622	95.6	0.72
1RQ4 454-6...	915	898	95.9	0.85	610	784	96.0	0.83	305	622	95.7	0.73
1RQ4 456-6...	1035	899	96.2	0.83	690	785	96.3	0.80	345	623	96.0	0.69
1RQ4 500-6...	1200	899	96.0	0.87	800	785	96.1	0.84	400	623	95.8	0.76
1RQ4 502-6...	1365	899	96.2	0.86	910	786	96.2	0.83	455	624	95.9	0.74
1RQ4 504-6...	1530	899	96.4	0.86	1020	786	96.4	0.83	510	624	96.1	0.74
1RQ4 506-6...	1665	899	96.6	0.86	1110	786	96.6	0.84	555	624	96.3	0.76
1RQ4 560-6...	1875	900	96.6	0.86	1250	787	96.7	0.84	625	624	96.4	0.76
1RQ4 562-6...	2100	900	96.9	0.87	1400	787	96.9	0.84	700	624	96.8	0.77
<b>8-pole</b>												
1RQ4 450-8...	555	673	95.2	0.78	370	588	95.1	0.73	185	467	94.3	0.61
1RQ4 452-8...	615	673	95.4	0.79	410	588	95.4	0.75	205	467	94.7	0.62
1RQ4 454-8...	675	674	95.5	0.77	450	589	95.4	0.71	225	467	94.5	0.58
1RQ4 456-8...	765	674	95.7	0.77	510	589	95.6	0.71	255	467	94.7	0.58
1RQ4 500-8...	885	674	95.6	0.82	590	589	95.6	0.78	295	467	95.1	0.66
1RQ4 502-8...	990	675	96.0	0.80	660	590	95.9	0.75	330	468	95.2	0.63
1RQ4 504-8...	1095	674	96.0	0.83	730	589	96.1	0.80	365	467	95.7	0.70
1RQ4 506-8...	1200	674	96.1	0.84	800	589	96.1	0.81	400	467	95.8	0.71
1RQ4 560-8...	1388	675	96.1	0.83	925	590	96.2	0.80	463	468	95.8	0.70
1RQ4 562-8...	1575	675	96.3	0.83	1050	590	96.3	0.80	525	468	96.0	0.70
1RQ4 564-8...	1763	675	96.4	0.83	1175	590	96.4	0.80	588	468	96.1	0.70
1RQ4 566-8...	1913	675	96.5	0.83	1275	590	96.4	0.80	638	468	96.1	0.70

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 3.4 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>2)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 50 Hz</b>									
2-pole									
1100	<b>1RQ6 450-2JS9 0 L6P</b>	2979	95.4	0.90	178	3529	2.30	12.7	3000
1220	<b>1RQ6 452-2JS9 0 L6P</b>	2981	95.8	0.91	194	3910	2.60	14.3	3000
1350	<b>1RQ6 454-2JS9 0 L6P</b>	2982	96.0	0.91	215	4325	2.60	15.6	3000
1490	<b>1RQ6 456-2JS9 0 L6P</b>	2984	96.3	0.92	235	4771	2.70	17.6	3000
1680	<b>1RQ6 457-2JS9 0 L6P</b>	2982	96.4	0.93	260	5382	2.50	19.3	3000 <sup>4)</sup>
1830	<b>1RQ6 458-2JS9 0 L6P</b>	2982	96.5	0.93	285	5863	2.50	21.4	3000 <sup>4)</sup>
4-pole									
1090	<b>1RQ6 450-4JS9 ■ L6P</b>	1486	95.3	0.88	180	7007	2.70	20.0	1800
1200	<b>1RQ6 452-4JS9 ■ L6P</b>	1486	95.5	0.89	196	7716	2.60	22.3	1800
1290	<b>1RQ6 454-4JS9 ■ L6P</b>	1488	95.8	0.89	210	8281	2.80	25.3	1800
1420	<b>1RQ6 456-4JS9 ■ L6P</b>	1489	96.0	0.89	230	9114	2.90	28.6	1800
1920	<b>1RQ4 500-4JV ■■</b>	1486	96.30	0.89	390	12338	2.20	42	1800
2100	<b>1RQ4 502-4JV ■■</b>	1487	96.30	0.88	435	13886	2.20	45	1800
2400	<b>1RQ4 504-4JV ■■</b>	1488	96.60	0.88	495	15402	2.20	51	1800
2680	<b>1RQ4 506-4JV ■■</b>	1487	96.70	0.88	550	17211	2.10	56	1800
3200	<b>1RQ4 560-4JV ■■</b>	1488	96.70	0.90	640	20538	2.10	77	1800
3500 <sup>1)</sup>	<b>1RQ4 562-4JV ■■</b>	1489	96.90	0.90	700	22448	2.20	86	1800
4000 <sup>1)</sup>	<b>1RQ4 564-4JV ■■</b>	1489	97.10	0.89	810	25655	2.20	97	1800
4400 <sup>1)</sup>	<b>1RQ4 566-4JV ■■</b>	1489	97.20	0.89	890	28220	2.10	106	O. R. <sup>3)</sup>
4800 <sup>1)</sup>	<b>1RQ4 632-4JV ■■</b>	1491	97.00	0.89	970	30744	2.50	154	1800
5190 <sup>1)</sup>	<b>1RQ4 634-4JV ■■</b>	1492	97.20	0.89	1040	33220	2.40	174	1800
5680 <sup>1)</sup>	<b>1RQ4 636-4JV ■■</b>	1492	97.20	0.88	1160	36357	2.40	186	1800

#### Voltage code:

4.16 kV, 50 Hz      **4**  
Other voltage      **9**

#### Type of construction:

IM B3      **0**  
IM V1 (with canopy)      **4**

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

<sup>1)</sup> Rated voltage less than 4.16 kV on request.

<sup>2)</sup> For IM B3, roller bearings.

<sup>3)</sup> On request.

<sup>4)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

2-pole

1RQ6 450-2...	825	2708	95.6	0.90	550	2371	95.6	0.89	275	1883	95.4	0.84
1RQ6 452-2...	915	2709	95.9	0.92	610	2372	96.0	0.91	305	1884	95.7	0.86
1RQ6 454-2...	1013	2710	96.1	0.91	675	2372	96.2	0.90	338	1884	95.9	0.85
1RQ6 456-2...	1118	2711	96.4	0.92	745	2373	96.4	0.91	373	1885	96.2	0.87
1RQ6 457-2...	1260	2710	96.5	0.93	840	2372	96.5	0.92	420	1884	96.4	0.89
1RQ6 458-2...	1373	2710	96.6	0.93	915	2372	96.7	0.93	458	1884	96.6	0.90

4-pole

1RQ6 450-4...	818	1352	95.5	0.87	545	1184	95.6	0.85	273	941	95.3	0.76
1RQ6 452-4...	900	1352	95.7	0.89	600	1184	95.8	0.87	300	941	95.6	0.80
1RQ6 454-4...	968	1353	95.9	0.88	645	1185	96.0	0.85	323	941	95.6	0.77
1RQ6 456-4...	1065	1353	96.1	0.89	711	1185	96.2	0.87	355	941	95.8	0.79
1RQ4 500-4...	1440	1352	96.4	0.89	960	1181	96.5	0.86	480	938	96.2	0.78
1RQ4 502-4...	1575	1352	96.4	0.88	1050	1181	96.5	0.86	525	938	96.2	0.77
1RQ4 504-4...	1800	1353	96.7	0.88	1200	1182	96.8	0.85	600	938	96.5	0.76
1RQ4 506-4...	2010	1353	96.9	0.88	1340	1181	96.9	0.86	670	938	96.7	0.78
1RQ4 560-4...	2400	1353	96.9	0.90	1600	1181	96.9	0.88	800	938	96.8	0.81
1RQ4 562-4...	2625	1353	97.1	0.90	1750	1182	97.3	0.88	875	938	97.2	0.81
1RQ4 564-4...	3000	1353	97.2	0.89	2000	1182	97.2	0.87	1000	938	97.0	0.79
1RQ4 566-4...	3300	1353	97.3	0.89	2200	1182	97.2	0.86	1100	938	97.0	0.78
1RQ4 632-4...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>
1RQ4 634-4...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>
1RQ4 636-4...	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>	O. R. <sup>(3)</sup>

3

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data (continued)

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 3.4 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>2)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 50 Hz</b>									
6-pole									
820	<b>1RQ6 450-6JS9 L6P</b>	991	95.5	0.85	140	7905	2.5	25.9	1200
910	<b>1RQ6 452-6JS9 L6P</b>	990	95.6	0.87	152	8783	2.4	29.1	1200
1020	<b>1RQ6 454-6JS9 L6P</b>	990	95.7	0.87	170	9845	2.4	32.4	1200
1130	<b>1RQ6 456-6JS9 L6P</b>	992	96.0	0.86	190	10890	2.5	37.3	1200
1540	<b>1RQ4 500-6JV</b>	989	95.80	0.87	325	14869	2.1	62	1200
1760	<b>1RQ4 502-6JV</b>	990	96.10	0.87	370	16977	2.1	70	1200
1960	<b>1RQ4 504-6JV</b>	990	96.30	0.87	410	18906	2.2	77	1200
2140	<b>1RQ4 506-6JV</b>	991	96.40	0.87	445	20621	2.2	85	1200
2430	<b>1RQ4 560-6JV</b>	992	96.50	0.86	510	23394	2.0	108	1200
2750	<b>1RQ4 562-6JV</b>	992	96.60	0.86	580	26474	2.0	123	1200
3000	<b>1RQ4 564-6JV</b>	992	96.70	0.86	630	28881	2.1	137	1200
3240 <sup>1)</sup>	<b>1RQ4 566-6JV</b>	993	96.90	0.85	690	31160	2.1	149	1200
3480 <sup>1)</sup>	<b>1RQ4 630-6JV</b>	993	96.80	0.86	730	33468	2.2	188	1200
3770 <sup>1)</sup>	<b>1RQ4 632-6JV</b>	993	96.90	0.87	780	36257	2.2	207	1200
4020 <sup>1)</sup>	<b>1RQ4 634-6JV</b>	994	96.90	0.86	840	38623	2.3	228	1200
4310 <sup>1)</sup>	<b>1RQ4 636-6JV</b>	994	97.10	0.86	900	41409	2.4	251	1200
8-pole									
620	<b>1RQ6 450-8JS9 L6P</b>	743	94.6	0.83	110	7976	2.4	32.1	900
675	<b>1RQ6 452-8JS9 L6P</b>	744	94.8	0.82	120	8674	2.5	36.1	900
750	<b>1RQ6 454-8JS9 L6P</b>	743	95.0	0.83	132	9640	2.5	40.2	900
810	<b>1RQ6 456-8JS9 L6P</b>	744	95.2	0.83	142	10399	2.7	46.4	900
1140	<b>1RQ4 500-8JV</b>	743	95.50	0.83	250	14652	2.1	74	900
1280	<b>1RQ4 502-8JV</b>	743	95.80	0.83	280	16451	2.1	84	900
1400	<b>1RQ4 504-8JV</b>	742	95.80	0.84	305	18018	2.0	92	900
1540	<b>1RQ4 506-8JV</b>	742	95.90	0.85	330	19819	2.0	103	900
1800	<b>1RQ4 560-8JV</b>	743	95.90	0.84	390	23136	1.9	128	900
2000	<b>1RQ4 562-8JV</b>	743	96.10	0.84	435	25707	1.9	146	900
2180	<b>1RQ4 564-8JV</b>	744	96.30	0.84	470	27983	2.0	163	900
2400	<b>1RQ4 566-8JV</b>	744	96.40	0.84	520	30806	2.0	178	900
2600 <sup>1)</sup>	<b>1RQ4 630-8JV</b>	744	96.50	0.84	560	33374	2.4	246	900
2790 <sup>1)</sup>	<b>1RQ4 632-8JV</b>	745	96.60	0.83	610	35764	2.5	272	900
2940 <sup>1)</sup>	<b>1RQ4 634-8JV</b>	745	96.60	0.84	630	37687	2.5	300	900
3140 <sup>1)</sup>	<b>1RQ4 636-8JV</b>	745	96.70	0.85	670	40251	2.5	331	900

#### Voltage code:

4.16 kV, 50 Hz  
Other voltage

4  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
<b>Fluid flow machine drive</b>												
<b>6-pole</b>												
1RQ6 450-6...	615	901	95.7	0.84	410	789	95.8	0.80	205	627	95.5	0.70
1RQ6 452-6...	683	900	95.8	0.86	455	789	96.0	0.84	228	627	95.9	0.76
1RQ6 454-6...	765	901	95.9	0.87	510	789	96.1	0.84	255	627	96.1	0.76
1RQ6 456-6...	848	902	96.2	0.85	565	789	96.3	0.83	283	627	96.1	0.73
1RQ4 500-6...	1155	900	96.1	0.86	770	787	96.1	0.83	385	625	95.8	0.74
1RQ4 502-6...	1320	900	96.2	0.86	880	787	96.3	0.83	440	625	95.9	0.74
1RQ4 504-6...	1470	901	96.4	0.86	980	787	96.4	0.83	490	625	96.0	0.74
1RQ4 506-6...	1605	901	96.5	0.86	1070	787	96.5	0.83	535	625	96.1	0.74
1RQ4 560-6...	1825	902	96.6	0.85	1215	788	96.6	0.82	610	625	96.2	0.72
1RQ4 562-6...	2065	902	96.7	0.85	1375	788	96.7	0.82	690	626	96.3	0.72
1RQ4 564-6...	2250	902	96.8	0.86	1500	788	96.8	0.83	750	626	96.5	0.74
1RQ4 566-6...	2430	902	96.9	0.84	1620	788	96.8	0.81	810	626	96.4	0.71
1RQ4 630-6...	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>
1RQ4 632-6...	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>
1RQ4 634-6...	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>
1RQ4 636-6...	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>
<b>8-pole</b>												
1RQ6 450-8...	465	676	94.8	0.81	310	592	94.7	0.77	155	470	94.1	0.65
1RQ6 452-8...	506	676	94.9	0.80	338	592	94.8	0.76	169	470	94.1	0.63
1RQ6 454-8...	563	676	95.1	0.82	375	592	95.1	0.77	188	470	94.5	0.66
1RQ6 456-8...	608	677	95.3	0.81	405	592	95.2	0.76	203	471	94.5	0.63
1RQ4 500-8...	855	675	95.6	0.81	570	590	95.6	0.77	285	469	95.0	0.66
1RQ4 502-8...	960	676	95.9	0.80	640	590	95.8	0.76	320	469	95.2	0.63
1RQ4 504-8...	1050	675	95.9	0.82	700	590	95.9	0.78	350	469	95.4	0.68
1RQ4 506-8...	1155	675	96.1	0.83	770	590	96.1	0.80	385	469	95.7	0.70
1RQ4 560-8...	1350	676	96.1	0.83	900	590	96.2	0.79	450	469	95.8	0.69
1RQ4 562-8...	1500	676	96.2	0.84	1000	590	96.3	0.81	500	469	95.9	0.71
1RQ4 564-8...	1635	676	96.4	0.82	1090	591	96.4	0.79	545	469	95.9	0.67
1RQ4 566-8...	1800	676	96.5	0.83	1200	591	96.5	0.80	600	469	96.1	0.69
1RQ4 630-8...	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>
1RQ4 632-8...	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>
1RQ4 634-8...	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>
1RQ4 636-8...	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>	O. R. <sup>3)</sup>

1) Rated voltage less than 4.16 kV on request.

2) For IM B3, roller bearings.

3) On request.

# Motors for converter operation

## With non-sinusoidal output

### Air-cooled motors H-compact PLUS 1RQ4 and 1RQ6

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 6.6 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>6 ... 6.6 kV, 50 Hz</b>									
4-pole									
1550	1RQ4 500-4JV	1489	95.90	0.88	160	9941	2.35	42	1800
1700	1RQ4 502-4JV	1489	96.00	0.88	176	10903	2.35	45	1800
2050	1RQ4 504-4JV	1489	96.40	0.88	210	13148	2.35	51	1800
2250	1RQ4 506-4JV	1490	96.50	0.87	235	14421	2.35	56	1800
2700	1RQ4 560-4JV	1489	96.50	0.90	270	17317	2.35	77	1800
3050	1RQ4 562-4JV	1490	96.70	0.89	310	19549	2.35	86	1800
3400	1RQ4 564-4JV	1490	96.80	0.90	340	21792	2.35	97	1800
3650	1RQ4 566-4JV	1491	97.00	0.89	370	23379	2.35	106	O. R. <sup>2)</sup>
4100	1RQ4 630-4JV	1492	96.80	0.90	410	26243	2.40	139	1800
4700	1RQ4 632-4JV	1492	97.00	0.90	470	30084	2.40	154	1800
5100	1RQ4 634-4JV	1493	97.10	0.89	520	32622	2.40	174	1800
5400	1RQ4 636-4JV	1494	97.20	0.88	550	34518	2.40	186	1800
6-pole									
1200	1RQ4 500-6JV	990	95.20	0.87	126	11576	2.20	62	1200
1300	1RQ4 502-6JV	991	95.50	0.87	136	12528	2.20	70	1200
1450	1RQ4 504-6JV	992	95.70	0.87	152	13959	2.20	77	1200
1700	1RQ4 506-6JV	993	96.00	0.85	182	16349	2.30	85	1200
2200	1RQ4 560-6JV	992	96.40	0.86	230	21179	2.20	108	1200
2350	1RQ4 562-6JV	993	96.60	0.85	250	22601	2.20	123	1200
2650	1RQ4 564-6JV	994	96.80	0.85	280	25460	2.20	137	1200
3000	1RQ4 566-6JV	994	96.90	0.84	320	28823	2.20	149	1200
3300	1RQ4 630-6JV	994	96.70	0.85	350	31705	2.20	188	1200
3700	1RQ4 632-6JV	994	96.80	0.85	395	35548	2.20	207	1200
3900	1RQ4 634-6JV	995	96.90	0.85	415	37432	2.20	228	1200
4200	1RQ4 636-6JV	995	97.00	0.85	445	40312	2.20	251	1200
8-pole									
850	1RQ4 500-8JV	744	95.00	0.80	98	10911	2.30	74	900
1000	1RQ4 502-8JV	744	95.30	0.82	112	12836	2.30	84	900
1100	1RQ4 504-8JV	744	95.40	0.82	124	14120	2.30	92	900
1200	1RQ4 506-8JV	744	95.40	0.83	132	15403	2.30	103	900
1500	1RQ4 560-8JV	744	96.00	0.83	164	19254	2.10	128	900
1700	1RQ4 562-8JV	744	96.10	0.83	186	21821	2.10	146	900
1900	1RQ4 564-8JV	744	96.20	0.83	210	24388	2.10	163	900
2100	1RQ4 566-8JV	745	96.40	0.83	230	26919	2.10	178	900
2500	1RQ4 630-8JV	745	96.30	0.82	275	32047	2.40	246	900
2700	1RQ4 632-8JV	745	96.40	0.82	300	34611	2.40	272	900
2900	1RQ4 634-8JV	745	96.50	0.82	320	37174	2.40	300	900
3150	1RQ4 636-8JV	745	96.60	0.83	345	40379	2.40	331	900

#### Voltage code:

6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

6  
7  
9

#### Type of construction:

IM B3  
IM V1 (with canopy)

0  
4

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details, see [Page 3/2](#).  
The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Fluid flow machine drive</b>											
4-pole												
1RQ4 500-4...	1163	1353	96.1	0.88	775	1182	96.1	0.85	388	938	96.0	0.76
1RQ4 502-4...	1275	1353	96.2	0.88	850	1182	96.2	0.85	425	938	96.1	0.76
1RQ4 504-4...	1538	1353	96.4	0.88	1025	1182	96.4	0.85	513	938	96.2	0.76
1RQ4 506-4...	1688	1354	96.5	0.86	1125	1183	96.5	0.83	563	939	96.2	0.73
1RQ4 560-4...	2025	1353	96.7	0.90	1350	1182	96.8	0.88	675	938	96.7	0.81
1RQ4 562-4...	2288	1354	96.8	0.89	1525	1183	96.9	0.87	763	939	96.8	0.79
1RQ4 564-4...	2550	1354	96.8	0.89	1700	1183	96.9	0.87	850	939	96.9	0.80
1RQ4 566-4...	2738	1355	96.7	0.89	1825	1183	96.9	0.88	913	939	97.0	0.82
1RQ4 630-4...	3075	1356	96.8	0.90	2050	1184	96.8	0.89	1025	940	96.8	0.84
1RQ4 632-4...	3525	1356	97.0	0.90	2350	1184	97.0	0.88	1175	940	96.8	0.82
1RQ4 634-4...	3825	1356	97.1	0.88	2550	1185	97.1	0.86	1275	941	96.8	0.79
1RQ4 636-4...	4050	1357	97.1	0.88	2700	1186	97.0	0.85	1350	941	96.9	0.77
6-pole												
1RQ4 500-6...	900	899	95.4	0.87	600	786	95.6	0.85	300	624	95.4	0.78
1RQ4 502-6...	975	900	95.7	0.87	650	787	95.8	0.84	325	624	95.6	0.77
1RQ4 504-6...	1088	901	95.8	0.87	725	787	95.9	0.84	363	625	95.6	0.76
1RQ4 506-6...	1275	902	96.0	0.85	850	788	96.0	0.82	425	626	95.6	0.72
1RQ4 560-6...	1650	901	96.5	0.85	1100	787	96.6	0.83	550	625	96.4	0.72
1RQ4 562-6...	1763	902	96.6	0.84	1175	788	96.7	0.81	588	626	96.4	0.72
1RQ4 564-6...	1988	903	96.7	0.84	1325	789	96.6	0.81	663	626	96.4	0.71
1RQ4 566-6...	2250	903	96.9	0.84	1500	789	96.9	0.81	750	626	96.5	0.70
1RQ4 630-6...	2475	903	96.7	0.85	1650	789	96.6	0.82	825	626	96.2	0.72
1RQ4 632-6...	2775	903	96.8	0.85	1850	789	96.7	0.82	925	626	96.3	0.72
1RQ4 634-6...	2925	904	96.9	0.85	1950	790	96.8	0.82	975	627	96.3	0.71
1RQ4 636-6...	3150	904	97.0	0.85	2100	790	96.9	0.82	1050	627	96.6	0.70
8-pole												
1RQ4 500-8...	638	676	95.1	0.80	425	591	95.0	0.75	213	469	94.2	0.63
1RQ4 502-8...	750	676	95.5	0.81	500	591	95.4	0.77	250	469	94.7	0.65
1RQ4 504-8...	825	676	95.6	0.81	550	591	95.5	0.77	275	469	94.8	0.65
1RQ4 506-8...	900	676	95.6	0.82	600	591	95.5	0.79	300	469	95.1	0.68
1RQ4 560-8...	1125	676	96.2	0.83	750	591	96.2	0.81	375	469	96.0	0.70
1RQ4 562-8...	1275	676	96.2	0.83	850	591	96.2	0.81	425	469	96.0	0.70
1RQ4 564-8...	1425	676	96.3	0.83	950	591	96.3	0.81	475	469	96.1	0.70
1RQ4 566-8...	1575	677	96.4	0.82	1050	591	96.4	0.79	525	469	96.1	0.68
1RQ4 630-8...	1875	677	96.3	0.81	1250	591	96.1	0.78	625	469	95.5	0.65
1RQ4 632-8...	2025	677	96.3	0.81	1350	591	96.1	0.76	675	469	95.4	0.63
1RQ4 634-8...	2175	677	96.5	0.81	1450	591	96.4	0.78	725	469	95.8	0.66
1RQ4 636-8...	2363	677	96.6	0.82	1575	591	96.5	0.78	788	469	96.0	0.68

1) For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>690 V, 60 Hz</b>									
2-pole									
1240	<b>1RQ6 450-2JP7 0</b>	3583	95.2	0.90	1220	3309	2.4	12.7	3600
1300	<b>1RQ6 452-2JP7 0</b>	3582	95.4	0.92	2x620	3470	2.4	14.3	3600
1400	<b>1RQ6 454-2JP7 0</b>	3582	95.4	0.92	2x670	3734	2.4	15.6	3600 <sup>2)</sup>
1700	<b>1RQ6 456-2JP7 0</b>	3587	96.1	0.92	2x800	4530	2.6	17.6	3600 <sup>2)</sup>
1850	<b>1RQ6 457-2JP7 0</b>	3585	96.1	0.93	2x870	4932	2.7	19.3	3600 <sup>2)</sup>
1950	<b>1RQ6 458-2JP7 0</b>	3587	96.1	0.93	2x910	5196	2.8	21.4	3600 <sup>2)</sup>
4-pole									
1340	<b>1RQ6 450-4JP7 ■</b>	1786	95.5	0.88	2x670	7174	2.4	20.0	1800
1410	<b>1RQ6 452-4JP7 ■</b>	1785	95.6	0.89	2x690	7553	2.3	22.3	1800
1590	<b>1RQ6 454-4JP7 ■</b>	1787	95.9	0.89	2x780	8509	2.4	25.3	1800
1740	<b>1RQ6 456-4JP7 ■</b>	1784	95.9	0.90	2x840	9329	2.1	28.6	1800
6-pole									
1040	<b>1RQ6 450-6JP7 ■</b>	1190	95.7	0.86	1060	8350	2.3	25.9	1200
1130	<b>1RQ6 452-6JP7 ■</b>	1191	95.9	0.85	1160	9070	2.2	29.1	1200
1270	<b>1RQ6 454-6JP7 ■</b>	1191	96.1	0.86	2x640	10192	2.3	32.4	1200
1360	<b>1RQ6 456-6JP7 ■</b>	1193	96.3	0.84	2x700	10905	2.3	37.3	1200
8-pole									
740	<b>1RQ6 450-8JP7 ■</b>	893	95.1	0.83	780	7922	2.3	32.1	900
820	<b>1RQ6 452-8JP7 ■</b>	893	95.2	0.84	860	8783	2.3	36.1	900
910	<b>1RQ6 454-8JP7 ■</b>	893	95.5	0.84	950	9739	2.4	40.2	900
1000	<b>1RQ6 456-8JP7 ■</b>	893	95.6	0.85	1020	10704	2.3	46.4	900
<b>Type of construction:</b>									
IM B3 <b>0</b>									
IM V1 (with canopy) <b>4</b>									

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

2-pole

1RQ6 450-2JP7. 930 3257 95.4 0.90 620 2846 95.3 0.89 310 2262 95.0 0.83

1RQ6 452-2JP7. 975 3256 95.6 0.92 650 2846 95.6 0.92 325 2262 95.4 0.88

1RQ6 454-2JP7. 1050 3257 95.7 0.92 700 2846 95.7 0.92 350 2262 95.5 0.88

1RQ6 456-2JP7. 1275 3260 96.2 0.91 850 2848 96.1 0.90 425 2263 95.8 0.83

1RQ6 457-2JP7. 1388 3259 96.2 0.93 925 2848 96.2 0.92 463 2263 96.0 0.88

1RQ6 458-2JP7. 1463 3260 96.2 0.93 975 2848 96.2 0.92 488 2263 96.0 0.87

4-pole

1RQ6 450-4JP7. 1005 1624 95.6 0.86 670 1421 95.6 0.84 335 1130 95.2 0.75

1RQ6 452-4JP7. 1058 1624 95.9 0.89 705 1420 95.9 0.88 353 1129 95.6 0.82

1RQ6 454-4JP7. 1193 1625 96.1 0.89 795 1421 96.0 0.87 398 1130 95.7 0.81

1RQ6 456-4JP7. 1306 1624 96.2 0.90 870 1420 96.3 0.90 435 1129 96.2 0.86

6-pole

1RQ6 450-6JP7. 780 1083 96.0 0.85 520 947 96.1 0.82 260 753 95.8 0.72

1RQ6 452-6JP7. 848 1083 96.1 0.84 565 947 96.1 0.80 283 753 95.8 0.70

1RQ6 454-6JP7. 953 1083 96.3 0.85 635 947 96.4 0.83 318 753 96.1 0.73

1RQ6 456-6JP7. 1020 1084 96.5 0.82 680 948 96.4 0.79 340 754 96.1 0.68

8-pole

1RQ6 450-8JP7. 555 812 95.2 0.80 370 710 95.1 0.76 185 565 94.4 0.63

1RQ6 452-8JP7. 615 812 95.4 0.82 410 710 95.4 0.79 205 565 94.8 0.67

1RQ6 454-8JP7. 683 813 95.5 0.81 455 710 95.5 0.77 228 565 94.8 0.65

1RQ6 456-8JP7. 750 813 95.8 0.83 500 710 95.7 0.79 250 565 95.1 0.68

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>2.3 kV, 60 Hz</b>									
4-pole									
1460	<b>1RQ4 450-4JV1</b>	1783	96.10	0.88	435	7819	2.20	22	1800
1620	<b>1RQ4 452-4JV1</b>	1785	96.30	0.88	480	8667	2.20	24	1800
1820	<b>1RQ4 454-4JV1</b>	1785	96.40	0.88	540	9737	2.30	27	1800
2040	<b>1RQ4 456-4JV1</b>	1787	96.60	0.87	610	10901	2.20	30	1800
2280	<b>1RQ4 500-4JV1</b>	1786	96.30	0.89	670	12191	2.20	42	1800
2500	<b>1RQ4 502-4JV1</b>	1787	96.50	0.89	730	13359	2.30	45	1800
2860	<b>1RQ4 504-4JV1</b>	1787	96.70	0.89	835	15283	2.30	51	1800
6-pole									
1080	<b>1RQ4 450-6JV1</b>	1187	95.50	0.85	335	8688	2.00	31	1200
1180	<b>1RQ4 452-6JV1</b>	1187	95.80	0.86	360	9493	2.00	35	1200
1380	<b>1RQ4 454-6JV1</b>	1187	95.90	0.86	420	11102	2.00	38	1200
1560	<b>1RQ4 456-6JV1</b>	1189	96.10	0.85	480	12529	2.10	43	1200
1820	<b>1RQ4 500-6JV1</b>	1189	96.00	0.87	550	14617	2.00	62	1200
2100	<b>1RQ4 502-6JV1</b>	1190	96.40	0.87	630	16852	2.20	70	1200
2320	<b>1RQ4 504-6JV1</b>	1190	96.40	0.87	690	18617	2.10	77	1200
8-pole									
840	<b>1RQ4 450-8JV1</b>	891	95.30	0.82	270	9003	2.10	39	900
940	<b>1RQ4 452-8JV1</b>	892	95.50	0.82	300	10063	2.20	43	900
1040	<b>1RQ4 454-8JV1</b>	892	95.60	0.82	335	11134	2.30	48	900
1160	<b>1RQ4 456-8JV1</b>	892	95.80	0.82	370	12418	2.00	54	900
1360	<b>1RQ4 500-8JV1</b>	892	95.90	0.83	430	14559	2.10	74	900
1520	<b>1RQ4 502-8JV1</b>	893	96.10	0.83	480	16254	2.10	84	900
1680	<b>1RQ4 504-8JV1</b>	892	96.10	0.84	520	17985	2.00	92	900
1820	<b>1RQ4 506-8JV1</b>	893	96.30	0.85	560	19462	2.10	103	900

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details, [see Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

$P/P_{\text{rated}} = 50\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

$P/P_{\text{rated}} = 25\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

Fluid flow machine drive

4-pole

1RQ4 450-4...	1095	1619	96.0	0.88	730	1413	95.9	0.85	365	1123	95.5	0.77
1RQ4 452-4...	1215	1620	96.1	0.87	810	1414	96.0	0.84	405	1123	95.6	0.74
1RQ4 454-4...	1365	1621	96.4	0.87	910	1414	96.3	0.84	455	1123	95.9	0.74
1RQ4 456-4...	1530	1625	96.6	0.85	1020	1418	96.5	0.81	510	1124	96.1	0.70
1RQ4 500-4...	1710	1622	96.4	0.89	1140	1415	96.4	0.87	570	1127	96.1	0.80
1RQ4 502-4...	1875	1622	96.4	0.88	1250	1415	96.3	0.86	625	1127	96.0	0.78
1RQ4 504-4...	2145	1623	96.7	0.88	1430	1415	96.6	0.86	715	1127	96.3	0.77

6-pole

1RQ4 450-6...	810	1078	95.7	0.84	540	941	95.7	0.81	270	748	95.3	0.72
1RQ4 452-6...	885	1078	95.9	0.85	590	941	95.9	0.82	295	748	95.5	0.73
1RQ4 454-6...	1035	1078	95.9	0.86	690	941	95.9	0.84	345	748	95.5	0.75
1RQ4 456-6...	1170	1080	96.0	0.84	780	942	95.9	0.81	390	749	95.3	0.71
1RQ4 500-6...	1365	1080	95.9	0.87	910	942	95.9	0.85	455	751	95.5	0.77
1RQ4 502-6...	1575	1081	96.3	0.86	1050	943	96.2	0.83	525	751	95.7	0.74
1RQ4 504-6...	1740	1081	96.4	0.86	1160	943	96.3	0.84	580	751	95.9	0.75

8-pole

1RQ4 450-8...	630	809	95.3	0.79	420	706	95.1	0.74	210	561	94.2	0.62
1RQ4 452-8...	705	810	95.4	0.79	470	706	95.2	0.74	235	561	94.3	0.61
1RQ4 454-8...	780	810	95.5	0.77	520	707	95.2	0.72	260	561	94.3	0.59
1RQ4 456-8...	870	810	95.7	0.80	580	707	95.5	0.76	290	561	94.8	0.64
1RQ4 500-8...	1020	810	95.9	0.81	680	707	95.7	0.77	340	563	95.0	0.66
1RQ4 502-8...	1140	811	96.0	0.81	760	707	95.8	0.77	380	563	95.2	0.65
1RQ4 504-8...	1260	810	96.1	0.83	840	707	95.9	0.79	420	563	95.4	0.69
1RQ4 506-8...	1365	811	96.3	0.83	910	707	96.2	0.79	455	563	95.6	0.69

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# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 4.16 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 60 Hz</b>									
2-pole									
1280	<b>1RQ6 450-2JS30</b>	3579	95.1	0.90	210	3418	2.5	12.7	3600
1420	<b>1RQ6 452-2JS30</b>	3581	95.6	0.91	225	3788	2.6	14.3	3600
1580	<b>1RQ6 454-2JS30</b>	3580	95.8	0.93	245	4217	2.6	15.6	3600 <sup>2)</sup>
1740	<b>1RQ6 456-2JS30</b>	3586	96.0	0.92	275	4634	3.5	17.6	3600 <sup>2)</sup>
1950	<b>1RQ6 457-2JS30</b>	3583	96.2	0.92	305	5200	2.5	19.3	3600 <sup>2)</sup>
2090	<b>1RQ6 458-2JS30</b>	3581	96.3	0.93	325	5576	2.5	21.4	3600 <sup>2)</sup>
4-pole									
1340	<b>1RQ6 450-4JS3</b>	1784	95.4	0.88	220	7177	2.4	20.0	1800
1410	<b>1RQ6 452-4JS3</b>	1785	95.6	0.89	230	7546	2.4	22.3	1800
1590	<b>1RQ6 454-4JS3</b>	1785	95.8	0.90	255	8509	2.5	25.3	1800
1740	<b>1RQ6 456-4JS3</b>	1785	95.9	0.91	275	9313	2.7	28.6	1800
2200	<b>1RQ4 500-4JV5</b>	1787	96.20	0.89	355	11756	2.3	42	1800
2400	<b>1RQ4 502-4JV5</b>	1787	96.40	0.89	390	12825	2.2	45	1800
2780	<b>1RQ4 504-4JV5</b>	1788	96.70	0.88	455	14847	2.3	51	1800
3080	<b>1RQ4 506-4JV5</b>	1788	96.90	0.88	500	16450	2.3	56	1800
3650	<b>1RQ4 560-4JV5</b>	1788	96.70	0.90	580	19497	2.2	77	1800
4050	<b>1RQ4 562-4JV5</b>	1788	96.80	0.90	650	21631	2.2	86	1800

#### Type of construction:

IM B3	<b>0</b>
IM V1 (with canopy)	<b>4</b>

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
<b>Fluid flow machine drive</b>												
<b>2-pole</b>												
1RQ6 450-2...	960	3254	95.2	0.90	640	2845	95.1	0.89	320	2261	94.8	0.83
1RQ6 452-2...	1065	3256	95.6	0.91	710	2846	95.6	0.90	355	2262	95.2	0.85
1RQ6 454-2...	1185	3255	95.9	0.93	790	2845	95.9	0.92	395	2261	95.7	0.89
1RQ6 456-2...	1305	3259	96.0	0.91	871	2848	95.8	0.89	435	2263	95.3	0.81
1RQ6 457-2...	1463	3257	96.3	0.93	975	2846	96.3	0.92	488	2262	96.0	0.88
1RQ6 458-2...	1568	3255	96.4	0.94	2420	2373	78.6	0.89	523	2262	96.3	0.91
<b>4-pole</b>												
1RQ6 450-4...	1005	1623	95.6	0.88	670	1420	95.6	0.87	335	1129	95.4	0.80
1RQ6 452-4...	1058	1624	95.7	0.88	705	1420	95.8	0.87	353	1130	95.5	0.81
1RQ6 454-4...	1193	1624	96.0	0.90	795	1420	96.0	0.89	398	1130	95.8	0.83
1RQ6 456-4...	1305	1624	96.1	0.91	870	1420	96.2	0.91	435	1130	96.1	0.86
1RQ4 500-4...	1650	1622	96.2	0.89	1100	1415	96.1	0.86	550	1127	95.8	0.78
1RQ4 502-4...	1800	1622	96.4	0.89	1200	1415	96.4	0.86	600	1127	96.1	0.78
1RQ4 504-4...	2085	1623	96.6	0.88	1390	1416	96.5	0.85	695	1127	96.1	0.75
1RQ4 506-4...	2310	1623	96.8	0.88	1540	1416	96.7	0.85	770	1127	96.3	0.76
1RQ4 560-4...	2740	1626	96.7	0.90	1825	1416	96.6	0.88	915	1130	96.4	0.81
1RQ4 562-4...	3040	1626	97.0	0.90	2025	1416	96.9	0.88	1015	1130	96.7	0.82

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Selection and ordering data (continued)

Rated power $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency $\eta$ %	Power factor $\cos \varphi$ [-]	Rated current at 4.16 kV $I_{\text{rated}}$ A	Rated torque $T_{\text{rated}}$ Nm	Break-down torque $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup> $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 60 Hz</b>									
6-pole									
1040	<b>1RQ6 450-6JS3</b>	1190	95.7	0.86	176	8354	2.4	25.9	1200
1130	<b>1RQ6 452-6JS3</b>	1191	95.9	0.86	190	9071	2.4	29.1	1200
1270	<b>1RQ6 454-6JS3</b>	1191	96.1	0.86	215	10187	2.5	32.4	1200
1360	<b>1RQ6 456-6JS3</b>	1192	96.2	0.85	230	10902	2.5	37.3	1200
1760	<b>1RQ4 500-6JV5</b>	1190	96.00	0.87	290	14123	2.2	62	1200
2000	<b>1RQ4 502-6JV5</b>	1190	96.20	0.87	330	16049	2.2	70	1200
2240	<b>1RQ4 504-6JV5</b>	1191	96.40	0.87	370	17960	2.3	77	1200
2440	<b>1RQ4 506-6JV5</b>	1191	96.50	0.87	405	19564	2.3	85	1200
2800	<b>1RQ4 560-6JV5</b>	1191	96.50	0.86	470	22448	2.0	108	1200
3190	<b>1RQ4 562-6JV5</b>	1192	96.70	0.85	540	25553	2.1	123	1200
3500	<b>1RQ4 564-6JV5</b>	1193	96.80	0.85	590	28024	2.2	137	1200
3750	<b>1RQ4 566-6JV5</b>	1193	96.90	0.85	630	30019	2.2	149	1200
8-pole									
740	<b>1RQ6 450-8JS3</b>	892	94.9	0.84	128	7927	2.3	32.1	900
820	<b>1RQ6 452-8JS3</b>	893	95.2	0.84	142	8778	2.4	36.1	900
910	<b>1RQ6 454-8JS3</b>	893	95.3	0.84	158	9739	2.4	40.2	900
1000	<b>1RQ6 456-8JS3</b>	893	95.5	0.84	174	10702	2.3	46.4	900
1300	<b>1RQ4 500-8JV5</b>	892	95.70	0.83	225	13917	2.1	74	900
1460	<b>1RQ4 502-8JV5</b>	893	96.10	0.83	255	15613	2.2	84	900
1600	<b>1RQ4 504-8JV5</b>	893	95.90	0.84	275	17110	2.1	92	900
1760	<b>1RQ4 506-8JV5</b>	893	96.20	0.85	300	18821	2.1	103	900
2060	<b>1RQ4 560-8JV5</b>	893	96.30	0.84	355	22029	2.0	128	900
2310	<b>1RQ4 562-8JV5</b>	893	96.40	0.85	390	24702	2.0	146	900
2500	<b>1RQ4 564-8JV5</b>	894	96.50	0.85	425	26704	2.1	163	900
2750	<b>1RQ4 566-8JV5</b>	894	96.60	0.85	465	29374	2.1	178	900

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

$P/P_{\text{rated}} = 50\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

$P/P_{\text{rated}} = 25\%$

$P$        $n$        $\eta$        $\cos \varphi$   
kW      rpm      %      [-]

Fluid flow machine drive

6-pole

1RQ6 450-6...	780	1082	95.9	0.85	520	947	96.0	0.83	260	753	95.8	0.74
1RQ6 452-6...	848	1083	96.1	0.85	565	947	96.2	0.82	283	753	96.0	0.73
1RQ6 454-6...	953	1083	96.2	0.85	635	947	96.3	0.82	318	753	96.0	0.72
1RQ6 456-6...	1020	1084	96.4	0.84	680	948	96.4	0.81	340	753	96.1	0.71
1RQ4 500-6...	1320	1081	96.0	0.86	880	943	95.9	0.82	440	751	95.5	0.73
1RQ4 502-6...	1500	1081	96.2	0.86	1000	943	96.1	0.83	500	751	95.7	0.74
1RQ4 504-6...	1680	1081	96.3	0.85	1120	943	96.2	0.82	560	751	95.6	0.72
1RQ4 506-6...	1830	1081	96.4	0.86	1220	943	96.3	0.83	610	751	95.8	0.74
1RQ4 560-6...	2100	1084	96.5	0.85	1400	944	96.4	0.83	700	753	96.0	0.74
1RQ4 562-6...	2395	1084	96.7	0.84	1595	944	96.6	0.81	800	754	96.1	0.71
1RQ4 564-6...	2625	1085	96.8	0.84	1750	944	96.6	0.80	875	754	96.1	0.70
1RQ4 566-6...	2815	1085	96.8	0.84	1875	944	96.6	0.80	940	754	96.1	0.70

8-pole

1RQ6 450-8...	555	812	95.0	0.83	370	710	95.1	0.80	185	565	94.6	0.69
1RQ6 452-8...	615	812	95.3	0.82	410	710	95.3	0.79	205	565	94.7	0.68
1RQ6 454-8...	683	812	95.4	0.83	455	710	95.4	0.79	228	565	94.9	0.68
1RQ6 456-8...	750	812	95.6	0.83	500	710	95.6	0.80	250	565	95.2	0.70
1RQ4 500-8...	975	810	95.7	0.82	650	707	95.5	0.77	325	563	94.8	0.66
1RQ4 502-8...	1095	811	95.9	0.81	730	707	95.7	0.77	365	563	95.0	0.65
1RQ4 504-8...	1200	811	95.9	0.81	800	707	95.8	0.77	400	563	95.2	0.65
1RQ4 506-8...	1320	811	96.2	0.83	880	707	96.1	0.79	440	563	95.5	0.68
1RQ4 560-8...	1545	812	96.3	0.83	1030	707	96.3	0.79	515	565	95.9	0.69
1RQ4 562-8...	1733	812	96.3	0.83	1155	707	96.2	0.80	578	565	95.7	0.69
1RQ4 564-8...	1875	813	96.4	0.83	1250	707	96.3	0.80	625	565	95.7	0.70
1RQ4 566-8...	2063	813	96.5	0.83	1375	707	96.3	0.79	688	565	95.7	0.68

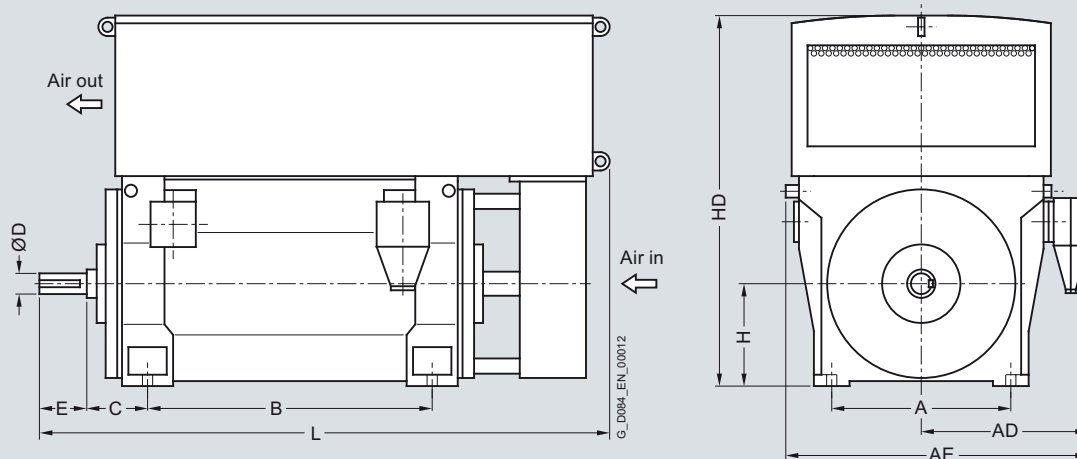
3

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, roller bearings, IM B3 type of construction</b>											
<b>2-pole</b>											
1RQ6450-2J..0	4203	850	930	1620	1180	250	95	130	450	1842	2425
1RQ6452-2J..0	4408	850	930	1620	1180	250	95	130	450	1842	2425
1RQ6454-2J..0	4783	850	930	1620	1400	250	95	130	450	1842	2635
1RQ6456-2J..0	5049	850	930	1620	1400	250	95	130	450	1842	2635
<b>4-pole</b>											
1RQ6450-4J..0	4518	850	930	1620	1180	250	130	200	450	1842	2455
1RQ6452-4J..0	4750	850	930	1620	1180	250	130	200	450	1842	2455
1RQ6454-4J..0	5165	850	930	1620	1400	250	130	200	450	1842	2665
1RQ6456-4J..0	5443	850	930	1620	1400	250	130	200	450	1842	2665
1RQ4500-4J..0	5900	950	1000	1760	1320	280	140	200	500	2000	2660
1RQ4502-4J..0	6100	950	1000	1760	1320	280	140	200	500	2000	2660
1RQ4504-4J..0	6800	950	1000	1760	1500	280	150	200	500	2000	2870
1RQ4506-4J..0	7150	950	1000	1760	1500	280	150	200	500	2000	2870
1RQ4560-4J..0	8000	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4562-4J..0	8450	1060	1210	2040	1400	315	170	240	560	2260	2950
1RQ4564-4J..0	9350	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4566-4J..0	9800	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4630-4J..0 <sup>2)</sup>	11100	1320	1330	2210	1600	335	190	280	630	2340	3140
1RQ4632-4J..0 <sup>2)</sup>	11800	1320	1330	2210	1600	335	190	280	630	2340	3140
1RQ4634-4J..0 <sup>2)</sup>	12900	1320	1330	2210	1800	335	200	280	630	2340	3380
1RQ4636-4J..0 <sup>2)</sup>	13450	1320	1330	2210	1800	335	200	280	630	2340	3380
<b>6-pole</b>											
1RQ6450-6J..0	4605	850	930	1620	1180	280	140	200	450	1842	2455
1RQ6452-6J..0	4890	850	930	1620	1180	280	140	200	450	1842	2455
1RQ6454-6J..0	5276	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6456-6J..0	5618	850	930	1620	1400	280	140	200	450	1842	2665
1RQ4500-6J..0	6000	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ4502-6J..0	6400	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ4504-6J..0	6950	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ4506-6J..0	7350	950	1000	1760	1500	280	160	240	500	2000	2910

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

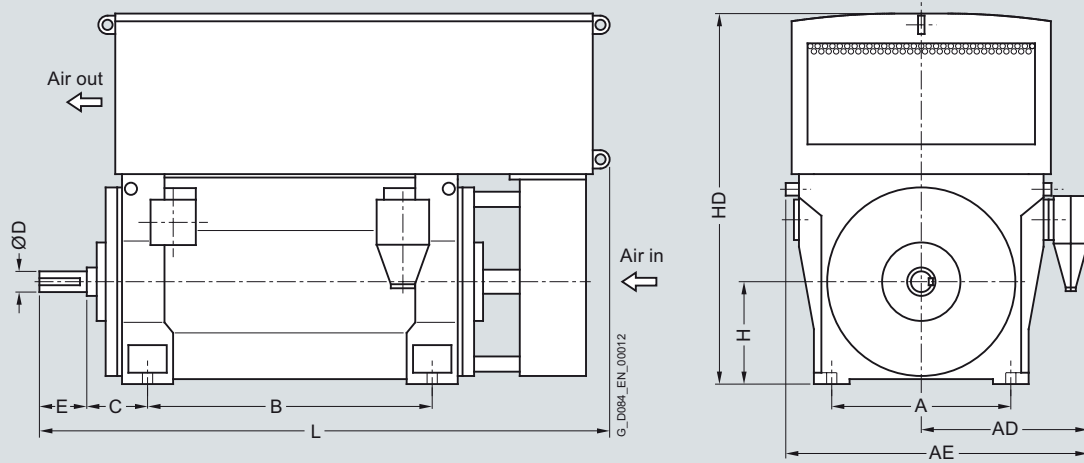
<sup>2)</sup> Roller bearings only for 50 Hz version.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, roller bearings, IM B3 type of construction</b>											
<b>6-pole</b>											
1RQ4560-6J..0	8100	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ4562-6J..0	8650	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ4564-6J..0	9600	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4566-6J..0	10050	1060	1210	2040	1600	315	180	240	560	2260	3180
1RQ4630-6J..0	11400	1320	1330	2210	1600	335	200	280	630	2340	3140
1RQ4632-6J..0	12000	1320	1330	2210	1600	335	200	280	630	2340	3140
1RQ4634-6J..0	12900	1320	1330	2210	1800	335	200	280	630	2340	3380
1RQ4636-6J..0	13750	1320	1330	2210	1800	335	200	280	630	2340	3380
<b>8-pole</b>											
1RQ6450-8J..0	4620	850	930	1620	1180	280	140	200	450	1842	2455
1RQ6452-8J..0	4920	850	930	1620	1180	280	140	200	450	1842	2455
1RQ6454-8J..0	5310	850	930	1620	1400	280	140	200	450	1842	2665
1RQ6456-8J..0	5658	850	930	1620	1400	280	140	200	450	1842	2665
1RQ4500-8J..0	6050	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ4502-8J..0	6400	950	1000	1760	1320	280	150	200	500	2000	2660
1RQ4504-8J..0	6950	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ4506-8J..0	7350	950	1000	1760	1500	280	160	240	500	2000	2910
1RQ4560-8J..0	8100	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ4562-8J..0	8650	1060	1070	1900	1400	315	170	240	560	2260	2950
1RQ4564-8J..0	9500	1060	1070	1900	1600	315	180	240	560	2260	3180
1RQ4566-8J..0	9950	1060	1070	1900	1600	315	180	240	560	2260	3180
1RQ4630-8J..0	11200	1320	1180	2060	1600	335	200	280	630	2340	3140
1RQ4632-8J..0	11950	1320	1330	2210	1600	335	200	280	630	2340	3140
1RQ4634-8J..0	12900	1320	1330	2210	1800	335	200	280	630	2340	3380
1RQ4636-8J..0	13650	1320	1330	2210	1800	335	200	280	630	2340	3380

#### Note:

Higher pole numbers are available on request.

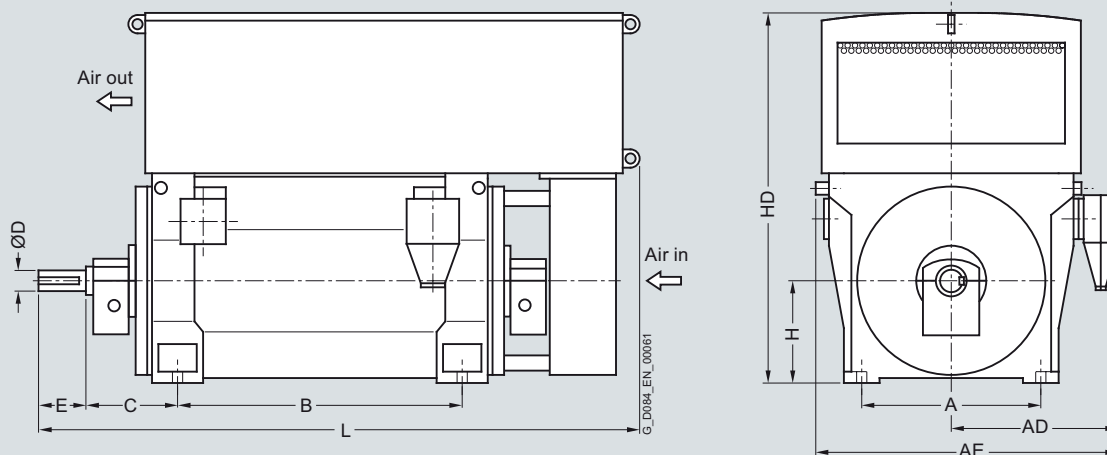
<sup>1)</sup> For  $V_{rated} \geq 2.0$  kV and current  $I_{rated} > 315$  A, the dimension changes by + 140 mm.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, sleeve bearings, IM B3 type of construction</b>											
<b>2-pole</b>											
1RQ6450-2J..0-Z K96	4250	850	930	1620	1180	425	95	130	450	1842	2575
1RQ6452-2J..0-Z K96	4455	850	930	1620	1180	425	95	130	450	1842	2575
1RQ6454-2J..0-Z K96	4830	850	930	1620	1400	425	95	130	450	1842	2790
1RQ6456-2J..0-Z K96	5097	850	930	1620	1400	425	95	130	450	1842	2790
1RQ6457-2J..0-Z K96	5541	850	930	1620	1600	425	95	130	450	1852	3000
1RQ6458-2J..0-Z K96	5872	850	930	1620	1600	425	95	130	450	1852	3000
<b>4-pole</b>											
1RQ6450-4J..0-Z K96	4604	850	930	1620	1180	500	130	200	450	1842	2705
1RQ6452-4J..0-Z K96	4836	850	930	1620	1180	500	130	200	450	1842	2705
1RQ6454-4J..0-Z K96	5251	850	930	1620	1400	500	130	200	450	1842	2915
1RQ6456-4J..0-Z K96	5529	850	930	1620	1400	500	130	200	450	1842	2915
1RQ4500-4J..0-Z K96	6000	950	1000	1760	1320	500	140	200	500	2000	2880
1RQ4502-4J..0-Z K96	6250	950	1000	1760	1320	500	140	200	500	2000	2880
1RQ4504-4J..0-Z K96	6950	950	1000	1760	1500	500	150	200	500	2000	3090
1RQ4506-4J..0-Z K96	7300	950	1000	1760	1500	500	150	200	500	2000	3090
1RQ4560-4J..0-Z K96	8150	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ4562-4J..0-Z K96	8600	1060	1210	2040	1400	530	170	240	560	2260	3170
1RQ4564-4J..0-Z K96	9500	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4566-4J..0-Z K96	9950	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4630-4J..0-Z K96 <sup>2)</sup>	11350	1320	1330	2210	1600	600	190	280	630	2340	3400
1RQ4632-4J..0-Z K96 <sup>2)</sup>	12050	1320	1330	2210	1600	600	190	280	630	2340	3400
1RQ4634-4J..0-Z K96 <sup>2)</sup>	13150	1320	1330	2210	1800	600	200	280	630	2340	3640
1RQ4636-4J..0-Z K96 <sup>2)</sup>	13700	1320	1330	2210	1800	600	200	280	630	2340	3640
<b>6-pole</b>											
1RQ6450-6J..0-Z K96	4760	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6452-6J..0-Z K96	5045	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6454-6J..0-Z K96	5429	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6456-6J..0-Z K96	5772	850	930	1620	1400	500	140	200	450	1842	2915
1RQ4500-6J..0-Z K96	6200	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ4502-6J..0-Z K96	6500	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ4504-6J..0-Z K96	7150	950	1000	1760	1500	500	160	240	500	2000	3130

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

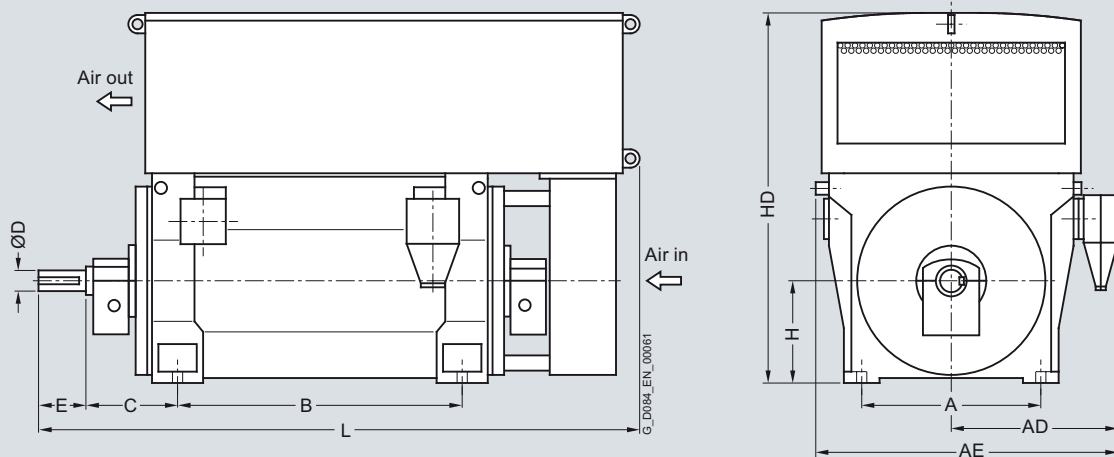
<sup>2)</sup> For the 60 Hz version, sleeve bearings are standard, "-Z K96" not necessary.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, sleeve bearings, IM B3 type of construction</b>											
<b>6-pole</b>											
1RQ4506-6J..0-Z K96	7550	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ4560-6J..0-Z K96	8250	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ4562-6J..0-Z K96	8800	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ4564-6J..0-Z K96	9750	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4566-6J..0-Z K96	10200	1060	1210	2040	1600	530	180	240	560	2260	3400
1RQ4630-6J..0-Z K96	11650	1320	1330	2210	1600	600	200	280	630	2340	3400
1RQ4632-6J..0-Z K96	12250	1320	1330	2210	1600	600	200	280	630	2340	3400
1RQ4634-6J..0-Z K96	13150	1320	1330	2210	1800	600	200	280	630	2340	3640
1RQ4636-6J..0-Z K96	14000	1320	1330	2210	1800	600	200	280	630	2340	3640
<b>8-pole</b>											
1RQ6450-8J..0-Z K96	4776	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6452-8J..0-Z K96	5075	850	930	1620	1180	500	140	200	450	1842	2705
1RQ6454-8J..0-Z K96	5464	850	930	1620	1400	500	140	200	450	1842	2915
1RQ6456-8J..0-Z K96	5811	850	930	1620	1400	500	140	200	450	1842	2915
1RQ4500-8J..0-Z K96	6200	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ4502-8J..0-Z K96	6550	950	1000	1760	1320	500	150	200	500	2000	2880
1RQ4504-8J..0-Z K96	7050	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ4506-8J..0-Z K96	7450	950	1000	1760	1500	500	160	240	500	2000	3130
1RQ4560-8J..0-Z K96	8250	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ4562-8J..0-Z K96	8800	1060	1070	1900	1400	530	170	240	560	2260	3170
1RQ4564-8J..0-Z K96	9650	1060	1070	1900	1600	530	180	240	560	2260	3400
1RQ4566-8J..0-Z K96	10100	1060	1070	1900	1600	530	180	240	560	2260	3400
1RQ4630-8J..0-Z K96	11450	1320	1180	2060	1600	600	200	280	630	2340	3400
1RQ4632-8J..0-Z K96	12200	1320	1330	2210	1600	600	200	280	630	2340	3400
1RQ4634-8J..0-Z K96	13150	1320	1330	2210	1800	600	200	280	630	2340	3640
1RQ4636-8J..0-Z K96	13900	1320	1330	2210	1800	600	200	280	630	2340	3640

#### Note:

Higher pole numbers are available on request.

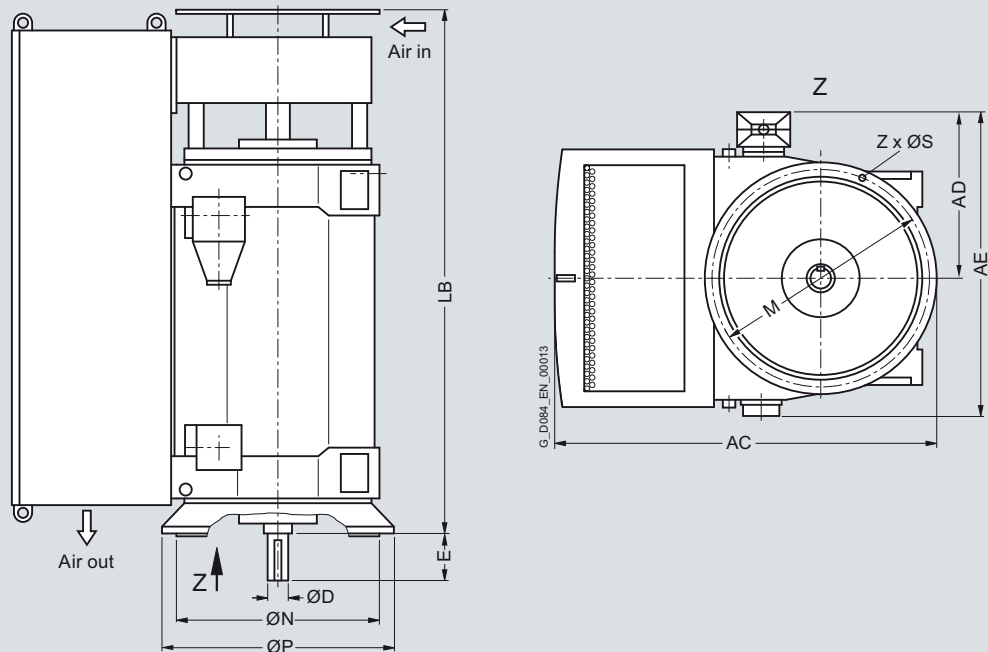
<sup>1)</sup> For  $V_{rated} \geq 2.0$  kV and current  $I_{rated} > 315$  A, the dimension changes by + 140 mm.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Dimension drawings



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, roller bearings, IM V1 type of construction</b>												
<b>4-pole</b>												
1RQ6450-4J..4	4731	1967	930	1620	130	200	2730	1150	1000	1080	26	8
1RQ6452-4J..4	4963	1967	930	1620	130	200	2730	1150	1000	1080	26	8
1RQ6454-4J..4	5378	1967	930	1620	130	200	2940	1150	1000	1080	26	8
1RQ6456-4J..4	5656	1967	930	1620	130	200	2940	1150	1000	1080	26	8
1RQ4500-4J..4	6050	2130	1000	1810	140	200	2560	1250	1120	1180	26	8
1RQ4502-4J..4	6250	2130	1000	1810	140	200	2560	1250	1120	1180	26	8
1RQ4504-4J..4	6950	2130	1000	1810	150	200	2770	1250	1120	1180	26	8
1RQ4506-4J..4	7300	2130	1000	1810	150	200	2770	1250	1120	1180	26	8
1RQ4560-4J..4	8200	2400	1210	2100	170	240	2800	1400	1250	1320	26	16
1RQ4562-4J..4	8600	2400	1210	2100	170	240	2800	1400	1250	1320	26	16
1RQ4564-4J..4	9500	2400	1210	2100	180	240	3030	1400	1250	1320	26	16
1RQ4566-4J..4 <sup>2)</sup>	9950	2400	1210	2100	180	240	3030	1400	1250	1320	26	16
1RQ4630-4J..4 <sup>2)</sup>	12750	2840	1330	2300	200	280	3170	2000	1800	1900	33	16
1RQ4632-4J..4 <sup>2)</sup>	13450	2840	1330	2300	200	280	3170	2000	1800	1900	33	16
1RQ4634-4J..4 <sup>2)</sup>	14550	2840	1330	2300	200	280	3410	2000	1800	1900	33	16
1RQ4636-4J..4 <sup>2)</sup>	15100	2840	1330	2300	200	280	3410	2000	1800	1900	33	16

<sup>1)</sup> For  $V_{rated} \geq 2.0$  kV and current  $I_{rated} > 315$  A, the dimension changes by + 140 mm.

<sup>2)</sup> Only in the 50 Hz version.

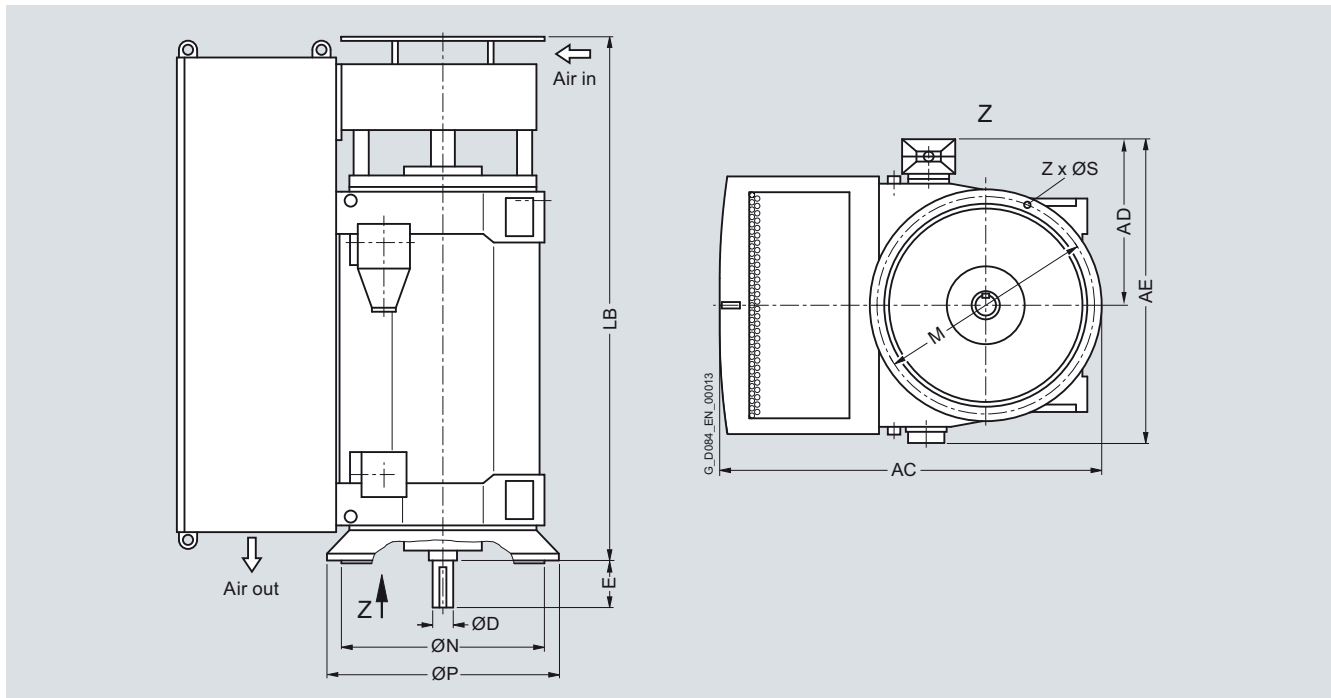
# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Dimension drawings (continued)

#### 1RQ4, up to 6.6 kV 50/60 Hz, roller bearings, IM V1 type of construction



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, roller bearings, IM V1 type of construction</b>												
<b>6-pole</b>												
1RQ6450-6J..4	4818	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6452-6J..4	5103	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6454-6J..4	5489	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6456-6J..4	5831	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ4500-6J..4	6200	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ4502-6J..4	6550	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ4504-6J..4	7100	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ4506-6J..4	7500	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ4560-6J..4	8300	2400	1070	1960	170	240	2800	1400	1250	1320	26	16
1RQ4562-6J..4	8800	2400	1070	1960	170	240	2800	1400	1250	1320	26	16
1RQ4564-6J..4	9750	2400	1210	2100	180	240	3030	1400	1250	1320	26	16
1RQ4566-6J..4	10200	2400	1210	2100	180	240	3030	1400	1250	1320	26	16
1RQ4630-6J..4	13050	2840	1330	2300	200	280	3170	2000	1800	1900	33	16
1RQ4632-6J..4	13650	2840	1330	2300	200	280	3170	2000	1800	1900	33	16
1RQ4634-6J..4	14550	2840	1330	2300	200	280	3410	2000	1800	1900	33	16
1RQ4636-6J..4	15400	2840	1330	2300	200	280	3410	2000	1800	1900	33	16

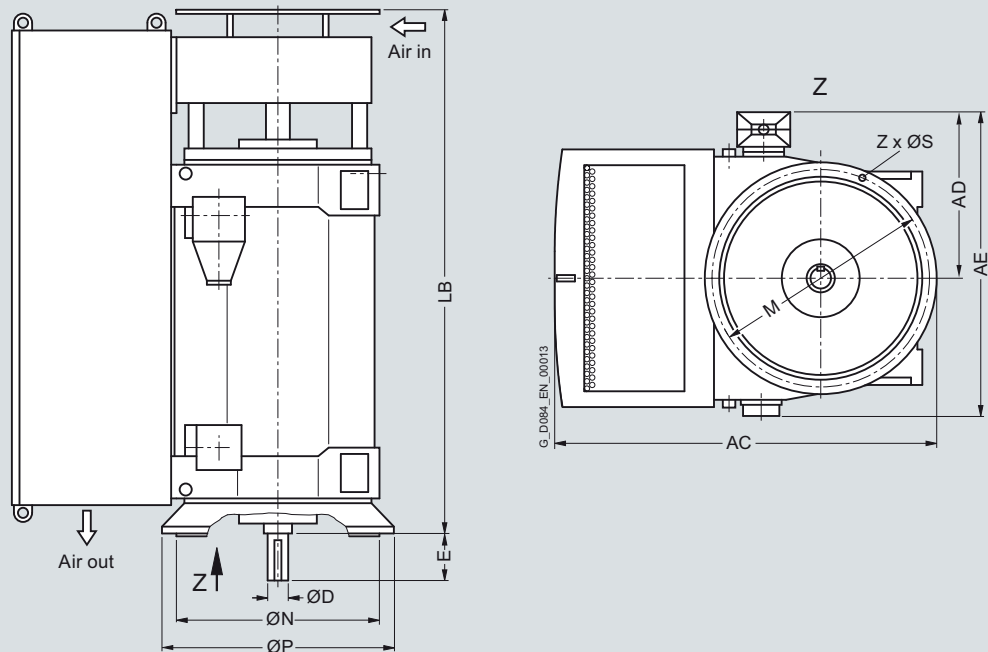
<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

# Motors for converter operation

## With non-sinusoidal output

Air-cooled motors  
H-compact PLUS 1RQ4 and 1RQ6

### Dimension drawings (continued)



Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, roller bearings, IM V1 type of construction</b>												
<b>8-pole</b>												
1RQ6450-8J..4	4833	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6452-8J..4	5133	1967	930	1620	140	200	2730	1150	1000	1080	26	8
1RQ6454-8J..4	5523	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ6456-8J..4	5871	1967	930	1620	140	200	2940	1150	1000	1080	26	8
1RQ4500-8J..4	6200	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ4502-8J..4	6600	2130	1000	1810	150	200	2560	1250	1120	1180	26	8
1RQ4504-8J..4	7100	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ4506-8J..4	7500	2130	1000	1810	160	240	2770	1250	1120	1180	26	8
1RQ4560-8J..4	8250	2400	1070	1960	170	240	2800	1400	1250	1320	26	16
1RQ4562-8J..4	8800	2400	1070	1960	170	240	2800	1400	1250	1320	26	16
1RQ4564-8J..4	9650	2400	1070	1960	180	240	3030	1400	1250	1320	26	16
1RQ4566-8J..4	10100	2400	1070	1960	180	240	3030	1400	1250	1320	26	16
1RQ4566-8J..4	10100	2400	1070	1960	180	240	3030	1400	1250	1320	26	16
1RQ4630-8J..4 <sup>2)</sup>	12850	2840	1180	2150	200	280	3170	2000	1800	1900	33	16
1RQ4632-8J..4 <sup>2)</sup>	13600	2840	1330	2300	200	280	3170	2000	1800	1900	33	16
1RQ4634-8J..4 <sup>2)</sup>	14550	2840	1330	2300	200	280	3410	2000	1800	1900	33	16
1RQ4636-8J..4 <sup>2)</sup>	15300	2840	1330	2300	200	280	3410	2000	1800	1900	33	16

**Note:**

Higher pole numbers are available on request.

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

<sup>2)</sup> Only in the 50 Hz version.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact 1LH4

### Overview



### Technical data

#### Overview of technical data

H-compact 1LH4	
Rated voltage	690 V ... 4.16 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM B35 and IM V1
Degree of protection	IP55
Cooling method	IC71W
Stator winding insulation	Insulation system, thermal class 155 (F), utilized to 155 (F)
Shaft height	500 mm
Bearings	Roller bearings
Cage material	Copper
Standards	IEC, EN
Frame design	Steel frame with water jacket

### Technical data (continued)

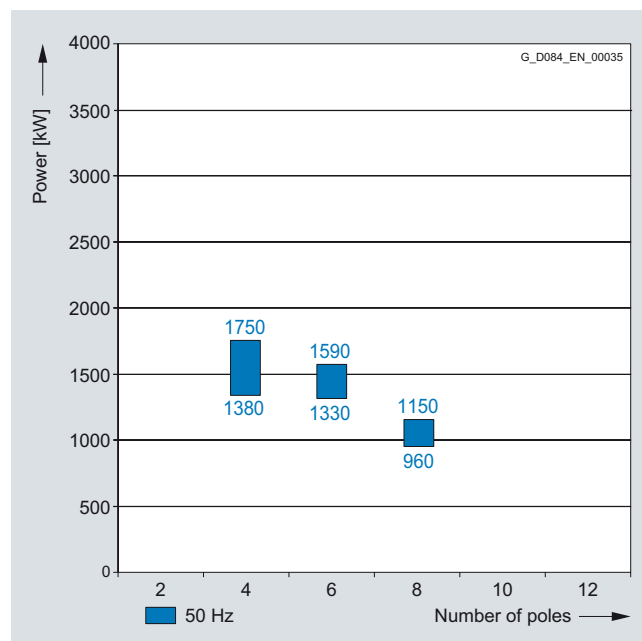
**Power ranges for IEC motors with reinforced insulation for SINAMICS drive converters without sine-wave filter**

#### 1LH4 series (water-jacket-cooled)

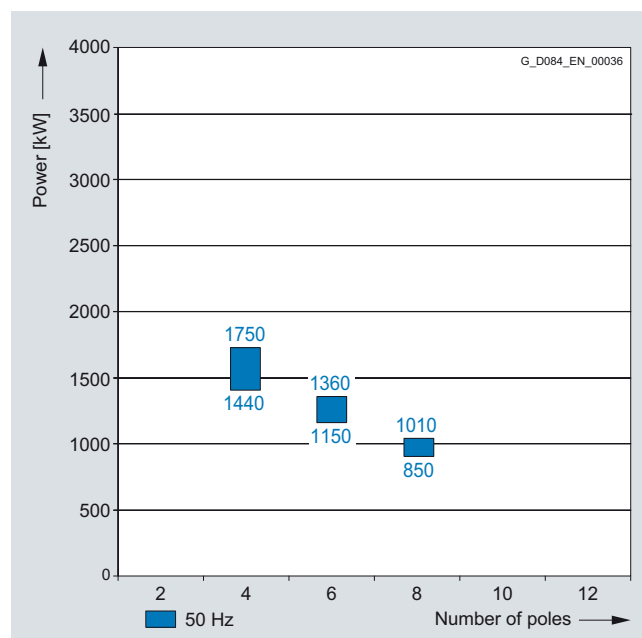
Insulation system, thermal class 155 (F), utilized to 155 (F)

The power data listed here apply for a water inlet temperature of 38 °C and an installation altitude ≤ 1000 m.

690 V; 50 Hz



2.3 to 4.16 kV; 50 Hz



# Motors for converter operation

## With non-sinusoidal output

### Water-cooled motors H-compact 1LH4

#### Selection and ordering data

Rated power  IEC  $P_{rated}$ kW	Low-voltage motor H-compact  Order No.	Rated speed  $n_{rated}$ rpm	Operating values at rated output							
			Efficiency $\eta$ %	Power factor $\cos \varphi$ [-]	Rated current at 690 V $I_{rated}$ A	Rated torque $T_{rated}$ Nm	Break-down torque $T_B/T_{rated}$ [-]	Moment of inertia J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup> $n_{max}$ rpm	
<b>690 V, 50 Hz</b>										
4-pole										
1380	1LH4500-4CM0	1490	96.8	0.88	1360	8844	2.0	44	1800	
1590	1LH4502-4CM0	1491	97.1	0.87	1580	10183	2.2	49	1800	
1750	1LH4504-4CM0	1490	97.1	0.88	1720	11216	2.0	56	1800	
6-pole										
1330	1LH4500-6CM0	994	97.0	0.85	1350	12777	2.2	82	1800	
1440	1LH4502-6CM0	994	97.0	0.86	1450	13834	2.2	92	1800	
1590	1LH4504-6CM0	994	97.1	0.86	1600	15275	2.2	102	1800	
8-pole										
960	1LH4500-8CM0	745	96.5	0.80	1040	12305	2.0	82	1800	
1030	1LH4502-8CM0	745	96.6	0.80	1120	13202	2.1	92	1800	
1150	1LH4504-8CM0	745	96.7	0.80	1250	14741	2.1	102	1800	

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see Page 3/2.  
The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

Rated power  IEC  $P_{rated}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{rated}$ rpm	Operating values at rated output							
			Efficiency $\eta$ %	Power factor $\cos \varphi$ [-]	Rated current at 4.16 kV $I_{rated}$ A	Rated torque $T_{rated}$ Nm	Break-down torque $T_B/T_{rated}$ [-]	Moment of inertia J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup> $n_{max}$ rpm	
<b>2.3 ... 4.16 kV, 50 Hz</b>										
4-pole										
1440	1LH4500-4CV	1492	97.0	0.87	235	9216	2.3	42	1800	
1590	1LH4502-4CV	1492	97.1	0.87	260	10177	2.4	47	1800	
1750	1LH4504-4CV	1492	97.2	0.88	285	11201	2.4	54	1800	
6-pole										
1150	1LH4500-6CV	994	96.9	0.86	192	11048	2.2	82	1800	
1250	1LH4502-6CV	994	97.0	0.87	205	12009	2.2	92	1800	
1360	1LH4504-6CV	994	97.0	0.87	225	13065	2.2	102	1800	
8-pole										
850	1LH4500-8CV	745	96.3	0.80	154	10895	2.0	82	1800	
910	1LH4502-8CV	745	96.4	0.80	164	11664	2.1	92	1800	
1010	1LH4504-8CV	745	96.5	0.81	180	12946	2.1	102	1800	

#### Voltage code:

3.3 kV, 50 Hz  
4.16 kV, 50 Hz  
Other voltage

2  
4  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

Partial load values for H-compact 1LH4 are available on request.

Higher pole numbers are available on request.

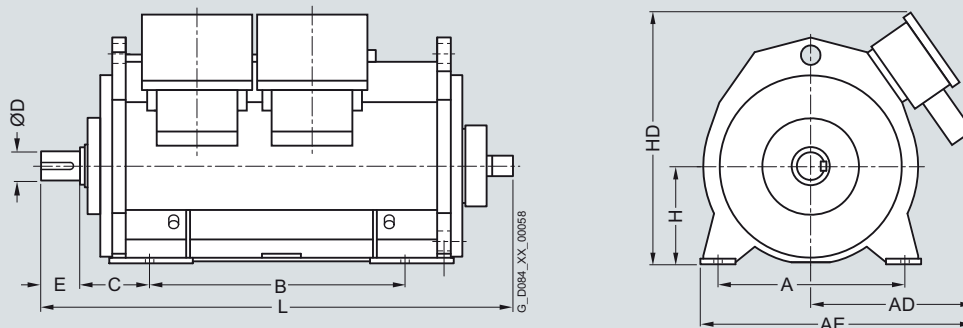
<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact 1LH4

### Dimension drawings



Motor type	Weight kg	Dimensions									
		A mm	AD mm	AE mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, roller bearings, IM B3 type of construction</b>											
<b>4-pole</b>											
1LH4500-4C..0	5910	950	820	1390	1320	355	150	200	500	1280	2250
1LH4502-4C..0	6310	950	820	1390	1320	355	150	200	500	1280	2250
1LH4504-4C..0	6810	950	820	1390	1320	355	150	200	500	1280	2250
<b>6-pole</b>											
1LH4500-6C..0	6210	950	820	1390	1320	355	150	200	500	1280	2250
1LH4502-6C..0	6610	950	820	1390	1320	355	150	200	500	1280	2250
1LH4504-6C..0	7110	950	820	1390	1320	355	150	200	500	1280	2250
<b>8-pole</b>											
1LH4500-8C..0	6210	950	820	1390	1320	355	150	200	500	1280	2250
1LH4502-8C..0	6510	950	820	1390	1320	355	150	200	500	1280	2250
1LH4504-8C..0	7010	950	820	1390	1320	355	150	200	500	1280	2250

**Note:**

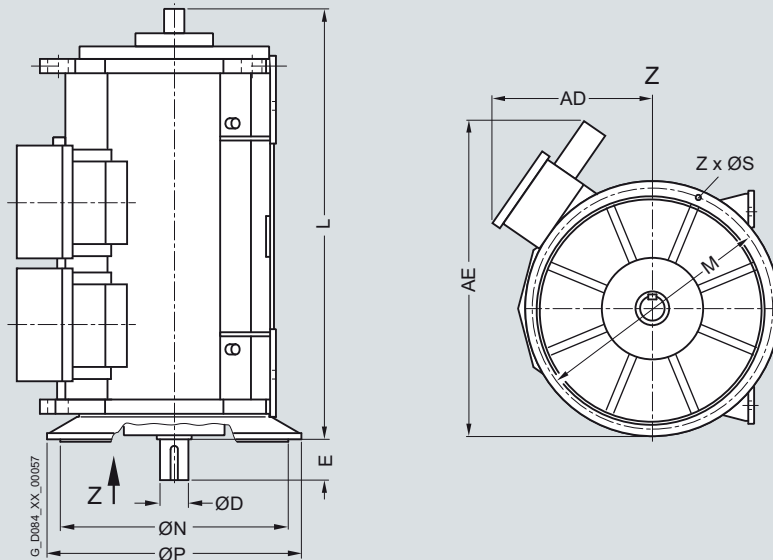
Higher pole numbers are available on request.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact 1LH4

### Dimension drawings



Motor type	Weight kg	Dimensions									
		AD mm	AE mm	D mm	E mm	L mm	P mm	N mm	M mm	S mm	Z mm
<b>Up to 6.6 kV, roller bearings, IM V1 type of construction</b>											
<b>4-pole</b>											
1LH4500-4C..8	5910	780	1450	150	200	2100	1250	1120	1180	26	16
1LH4502-4C..8	6310	780	1450	150	200	2100	1250	1120	1180	26	16
1LH4504-4C..8	6810	780	1450	150	200	2100	1250	1120	1180	26	16
<b>6-pole</b>											
1LH4500-6C..8	6210	780	1450	150	200	2100	1250	1120	1180	26	16
1LH4502-6C..8	6610	780	1450	150	200	2100	1250	1120	1180	26	16
1LH4504-6C..8	7110	780	1450	150	200	2100	1250	1120	1180	26	16
<b>8-pole</b>											
1LH4500-8C..8	6210	780	1450	150	200	2100	1250	1120	1180	26	16
1LH4502-8C..8	6510	780	1450	150	200	2100	1250	1120	1180	26	16
1LH4504-8C..8	7010	780	1450	150	200	2100	1250	1120	1180	26	16

**Note:**

Higher pole numbers are available on request.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Overview



### Technical data

#### Overview of technical data

H-compact PLUS 1RN4 and 1RN6	
<b>Rated voltage</b>	690 V ... 6.6 kV
<b>Rated frequency</b>	50/60 Hz
<b>Motor type</b>	Induction motor with squirrel-cage rotor
<b>Type of construction</b>	IM B3, IM V1
<b>Degree of protection</b>	IP55
<b>Cooling method</b>	IC81W
<b>Stator winding insulation</b>	Insulation system, thermal class 155 (F), utilized to 155 (F)
<b>Shaft height</b>	450 ... 630 mm
<b>Bearings</b>	Roller bearings, sleeve bearings
<b>Cage material</b>	Copper
<b>Standards</b>	IEC, EN
<b>Frame design for shaft heights 450 ... 560 mm</b>	Frame: Cast iron Design: Steel
<b>Frame design for shaft heights 630 mm</b>	Frame: Steel Design: Steel

The following versions can be offered on request:

- 2-pole up to 75 Hz
- 4-pole up to 100 Hz
- 6-pole up to 90 Hz

For individual motor types, it must be ensured that the motor does not run-through any critical speed in the required speed control range and that the maximum speed does not exceed the mechanical limit speed of the motor! Please contact your Siemens sales person regarding this check. The motor types are marked with footnotes in the following data tables.

# Motors for converter operation

## With non-sinusoidal output

**Water-cooled motors**  
**H-compact PLUS 1RN4 and 1RN6**

**Technical data** (continued)

**Power ranges for IEC motors with reinforced insulation for SINAMICS converters without sine-wave filter**

**1RN4, 1SL4 (Ex nA), SQ4 (Ex px) series**

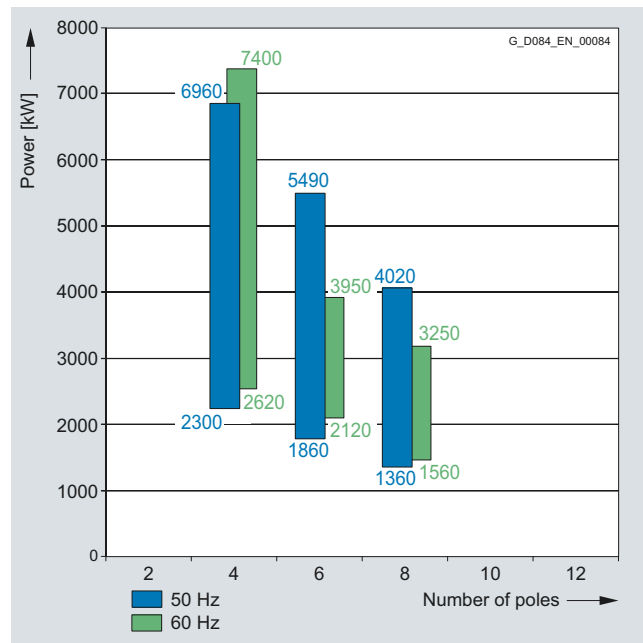
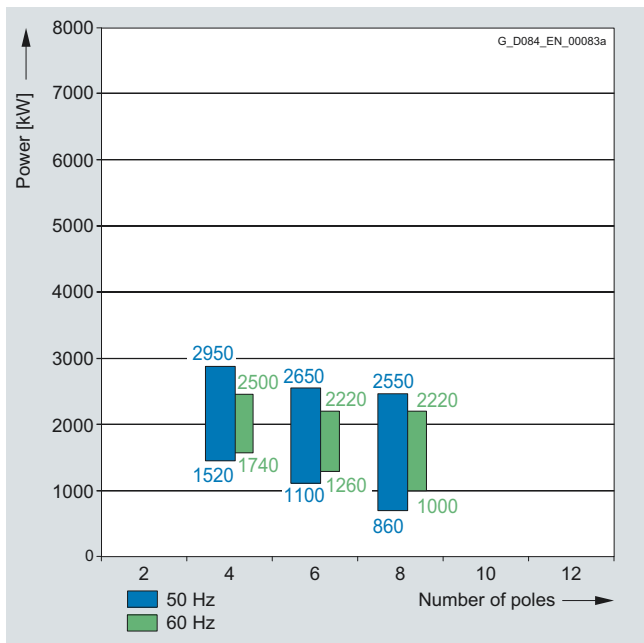
Insulation system, thermal class 155 (F), utilized to 155 (F)

The power data listed here apply for a water inlet temperature of 25 °C and an installation altitude ≤ 1000 m.

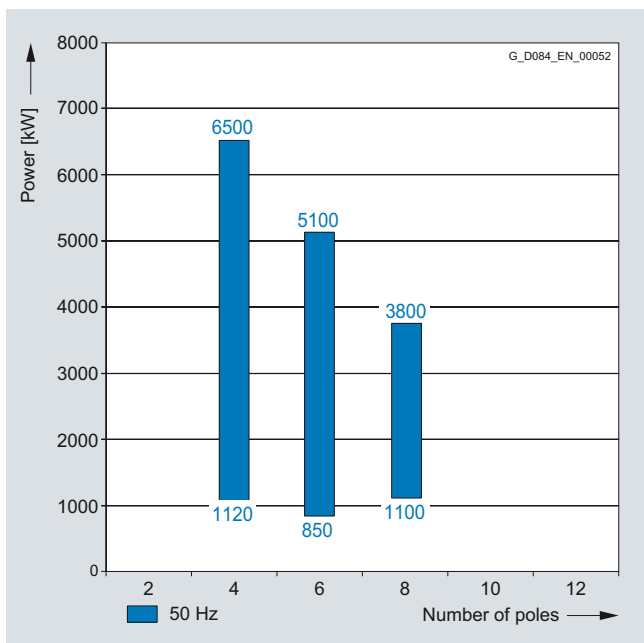
2.3 kV; 50 and 60 Hz

3.4 kV to 4.16 kV; 50 and 60 Hz

3



6 to 6.6 kV; 50 Hz



# Motors for converter operation

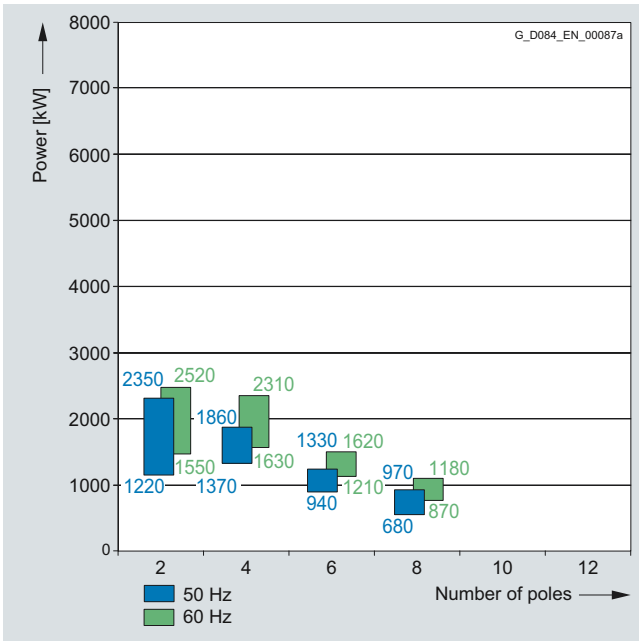
## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

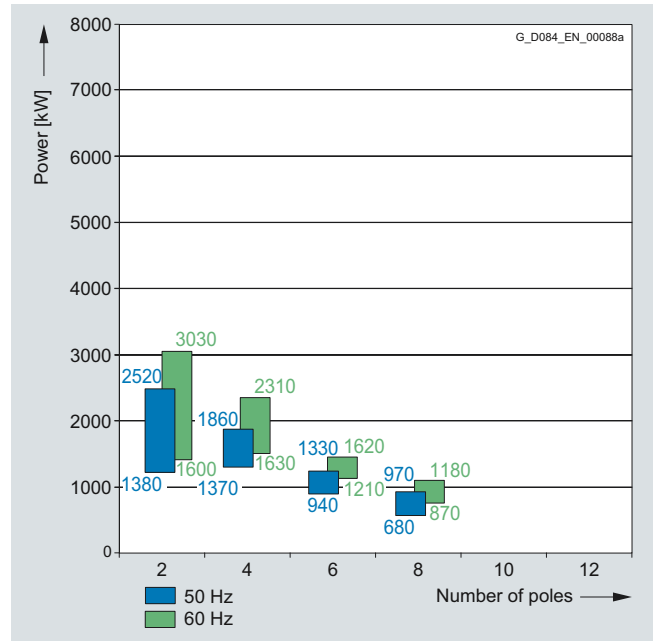
**Technical data** (continued)

1RN6, 1SL6 (Ex nA), 1SQ6 (Ex px) series

690 V; 50 Hz and 60 Hz



4.16 kV; 50 Hz and 60 Hz



3

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>690 V, 50 Hz</b>									
2-pole									
1220	<b>1RN6 450-2HP00</b>	2980	95.5	0.90	1180	3913	2.2	12.7	3000
1520	<b>1RN6 452-2HP00</b>	2980	96.0	0.90	2x740	4875	2.1	14.3	3000
1600	<b>1RN6 454-2HP00</b>	2983	96.2	0.92	2x760	5129	2.3	15.6	3000
1700	<b>1RN6 456-2HP00</b>	2983	96.2	0.92	2x800	5445	2.3	17.6	3000
2250	<b>1RN6 457-2HP00</b>	2984	96.7	0.92	2x1060	7207	2.4	19.3	3000 <sup>2)</sup>
2350	<b>1RN6 458-2HP00</b>	2985	96.8	0.93	2x1100	7526	2.4	21.4	3000 <sup>2)</sup>
4-pole									
1370	<b>1RN6 450-4HP0</b>	1484	95.6	0.89	2x670	8833	2.4	20.0	1800
1500	<b>1RN6 452-4HP0</b>	1484	95.6	0.90	2x730	9671	2.4	22.3	1800
1640	<b>1RN6 454-4HP0</b>	1484	96.0	0.90	2x790	10568	2.4	25.3	1800
1860	<b>1RN6 456-4HP0</b>	1485	96.2	0.90	2x900	11977	2.3	28.6	1800
6-pole									
940	<b>1RN6 450-6HP0</b>	990	95.8	0.86	950	9079	2.3	25.9	1200
1040	<b>1RN6 452-6HP0</b>	991	95.9	0.86	1060	10039	2.3	29.1	1200
1180	<b>1RN6 454-6HP0</b>	991	96.0	0.86	1200	11394	2.3	32.4	1200
1330	<b>1RN6 456-6HP0</b>	992	96.2	0.86	2x670	12823	2.3	37.3	1200
8-pole									
680	<b>1RN6 450-8HP0</b>	743	94.9	0.83	720	8750	2.3	32.1	900
750	<b>1RN6 452-8HP0</b>	743	95.2	0.84	780	9651	2.4	36.1	900
880	<b>1RN6 454-8HP0</b>	743	95.2	0.84	920	11324	2.4	40.2	900
970	<b>1RN6 456-8HP0</b>	744	95.4	0.84	1020	12476	2.4	46.4	900
<b>Type of construction:</b>									
IM B3 <b>0</b>									
IM V1 (without canopy) <b>8</b>									

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see Page 3/2.

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

2-pole

1RN6 450-2...	916	2709	95.8	0.91	610	2371	96.0	0.90	305	1883	96.0	0.85
1RN6 452-2...	1141	2708	96.4	0.91	760	2371	96.6	0.91	380	1883	96.5	0.87
1RN6 454-2...	1201	2710	96.5	0.92	800	2372	96.6	0.91	400	1884	96.6	0.87
1RN6 456-2...	1276	2711	96.5	0.92	850	2373	96.7	0.92	425	1884	96.6	0.88
1RN6 457-2...	1689	2712	96.9	0.92	1125	2373	97.0	0.90	563	1885	96.9	0.85
1RN6 458-2...	1763	2712	97.0	0.93	1175	2373	97.1	0.92	588	1885	97.0	0.88

4-pole

1RN6 450-4...	1028	1350	95.9	0.88	685	1182	96.1	0.86	343	940	95.9	0.79
1RN6 452-4...	1125	1350	96.0	0.90	750	1182	96.2	0.88	375	940	96.2	0.83
1RN6 454-4...	1230	1350	96.3	0.90	820	1183	96.5	0.89	410	940	96.4	0.84
1RN6 456-4...	1395	1351	96.5	0.89	930	1183	96.6	0.88	465	941	96.5	0.82

6-pole

1RN6 450-6...	705	900	96.1	0.85	470	789	96.3	0.82	235	627	96.2	0.73
1RN6 452-6...	780	901	96.3	0.85	520	789	96.4	0.82	260	627	96.3	0.73
1RN6 454-6...	885	901	96.3	0.85	590	789	96.4	0.83	295	627	96.4	0.74
1RN6 456-6...	998	902	96.5	0.84	665	789	96.6	0.81	333	627	96.3	0.71

8-pole

1RN6 450-8...	510	676	95.1	0.80	340	592	95.0	0.75	170	470	94.4	0.63
1RN6 452-8...	563	676	95.4	0.81	375	592	95.4	0.77	188	470	94.9	0.65
1RN6 454-8...	660	676	95.4	0.82	440	592	95.4	0.77	220	470	94.8	0.65
1RN6 456-8H...	728	676	95.6	0.82	485	592	95.6	0.77	243	470	95.1	0.65

3

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_B/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>2.3 kV, 50 Hz</b>									
4-pole									
1520	<b>1RN4 450-4HV0</b>	1480	96.2	0.89	445	9807	2.00	21	1800
1700	<b>1RN4 452-4HV0</b>	1482	96.3	0.89	500	10954	2.00	23	1800
1920	<b>1RN4 454-4HV0</b>	1482	96.4	0.89	560	12372	1.90	26	1800
2180	<b>1RN4 456-4HV0</b>	1483	96.6	0.89	640	14037	2.00	29	1800
2400	<b>1RN4 500-4HV0</b>	1484	96.2	0.89	700	15445	2.00	39	1800
2550	<b>1RN4 502-4HV0</b>	1484	96.5	0.89	750	16410	2.00	42	1800
2950	<b>1RN4 504-4HV0</b>	1484	96.6	0.89	860	18984	2.00	48	1800
6-pole									
1100	<b>1RN4 450-6HV0</b>	985	95.3	0.85	340	10665	1.90	29	1200
1240	<b>1RN4 452-6HV0</b>	986	95.6	0.85	385	12010	1.90	33	1200
1440	<b>1RN4 454-6HV0</b>	985	95.6	0.87	435	13961	1.80	36	1200
1700	<b>1RN4 456-6HV0</b>	986	95.9	0.87	510	16466	1.90	41	1200
1960	<b>1RN4 500-6HV0</b>	988	95.9	0.86	600	18945	1.90	57	1200
2200	<b>1RN4 502-6HV0</b>	988	96.1	0.87	660	21265	1.90	65	1200
2450	<b>1RN4 504-6HV0</b>	989	96.1	0.86	740	23658	1.90	72	1200
2650	<b>1RN4 506-6HV0</b>	989	96.3	0.86	800	25589	1.90	81	1200
8-pole									
860	<b>1RN4 450-8HV0</b>	740	94.9	0.84	270	11099	2.00	37	900
960	<b>1RN4 452-8HV0</b>	740	95.3	0.84	300	12389	2.00	41	900
1080	<b>1RN4 454-8HV0</b>	741	95.4	0.83	340	13919	2.00	46	900
1220	<b>1RN4 456-8HV0</b>	741	95.5	0.83	385	15723	2.00	52	900
1440	<b>1RN4 500-8HV0</b>	741	95.6	0.83	455	18559	1.90	70	900
1600	<b>1RN4 502-8HV0</b>	742	95.8	0.83	510	20593	1.90	80	900
1780	<b>1RN4 504-8HV0</b>	742	96.0	0.84	550	22910	1.90	88	900
1960	<b>1RN4 506-8HV0</b>	742	96.0	0.84	610	25226	1.90	99	900
2250	<b>1RN4 560-8HV0</b>	743	96.0	0.82	720	28920	1.90	123	900
2550	<b>1RN4 562-8HV0</b>	743	96.2	0.82	810	32776	1.90	141	900

#### Type of construction:

IM B3	0
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

4-pole

1RN4 450-4...	1140	1347	96.2	0.89	760	1174	96.4	0.87	380	933	96.3	0.80
1RN4 452-4...	1275	1348	96.4	0.88	850	1175	96.6	0.86	425	933	96.3	0.78
1RN4 454-4...	1440	1348	96.5	0.88	960	1175	96.8	0.87	480	933	96.7	0.79
1RN4 456-4...	1635	1349	96.7	0.88	1090	1176	96.9	0.87	545	934	96.8	0.79
1RN4 500-4...	1800	1348	96.5	0.89	1200	1178	96.8	0.88	600	935	96.8	0.82
1RN4 502-4...	1913	1348	96.5	0.89	1275	1178	96.8	0.88	638	935	96.8	0.82
1RN4 504-4...	2213	1348	96.7	0.90	1475	1178	96.9	0.89	738	935	96.9	0.82

6-pole

1RN4 450-6...	825	895	95.6	0.84	550	782	95.9	0.81	275	621	95.6	0.72
1RN4 452-6...	930	896	95.8	0.84	620	783	96.1	0.82	310	621	95.8	0.73
1RN4 454-6...	1080	895	95.9	0.87	720	782	96.2	0.85	360	621	96.0	0.78
1RN4 456-6...	1275	896	96.1	0.86	850	783	96.3	0.84	425	621	96.1	0.76
1RN4 500-6...	1470	898	96.1	0.86	980	784	96.2	0.83	490	622	96.0	0.74
1RN4 502-6...	1650	898	96.4	0.87	1100	784	96.5	0.85	550	622	96.4	0.77
1RN4 504-6...	1838	899	96.4	0.87	1225	785	96.5	0.84	613	623	96.4	0.77
1RN4 506-6...	1988	899	96.5	0.87	1325	785	96.6	0.84	663	623	96.4	0.77

8-pole

1RN4 450-8...	645	672	95.3	0.81	430	587	95.4	0.77	215	466	94.8	0.66
1RN4 452-8...	720	672	95.5	0.82	480	587	95.6	0.78	240	466	95.1	0.68
1RN4 454-8...	810	673	95.6	0.80	540	588	95.7	0.76	270	467	95.1	0.64
1RN4 456-8...	915	673	95.8	0.80	610	588	95.8	0.76	305	467	95.3	0.64
1RN4 500-8...	1080	673	95.9	0.82	720	588	95.9	0.78	360	467	95.5	0.67
1RN4 502-8...	1200	674	96.1	0.83	800	589	96.1	0.80	400	467	95.7	0.69
1RN4 504-8...	1335	674	96.2	0.83	890	589	96.2	0.80	445	467	95.9	0.70
1RN4 506-8...	1470	674	96.2	0.83	980	589	96.2	0.81	490	467	95.9	0.71
1RN4 560-8...	1688	675	96.2	0.82	1125	590	96.2	0.79	563	468	95.9	0.69
1RN4 562-8...	1913	675	96.3	0.82	1275	590	96.3	0.79	638	468	96.0	0.69

3

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 3.4 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>2)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 50 Hz</b>									
2-pole									
1380	<b>1RN6 450-2HS90 L6P</b>	2973	95.9	0.90	220	4433	2.00	12.7	3000
1570	<b>1RN6 452-2HS90 L6P</b>	2977	96.2	0.90	250	5040	2.20	14.3	3000
1750	<b>1RN6 454-2HS90 L6P</b>	2978	96.4	0.91	275	5616	2.30	15.6	3000
1950	<b>1RN6 456-2HS90 L6P</b>	2981	96.6	0.92	305	6252	2.30	17.6	3000
2250	<b>1RN6 457-2HS90 L6P</b>	2981	96.8	0.92	350	7210	2.50	19.3	3000 4)
2520	<b>1RN6 458-2HS90 L6P</b>	2981	96.9	0.93	390	8075	2.50	21.4	3000 4)
4-pole									
1370	<b>1RN6 450-4HS90 L6P</b>	1484	95.6	0.88	225	8824	2.60	20.0	1800
1500	<b>1RN6 452-4HS90 L6P</b>	1485	95.8	0.88	245	9649	2.50	22.3	1800
1640	<b>1RN6 454-4HS90 L6P</b>	1485	96.0	0.89	265	10549	2.50	25.3	1800
1860	<b>1RN6 456-4HS90 L6P</b>	1485	96.1	0.90	300	11966	2.50	28.6	1800
2300	<b>1RN4 500-4HV L6P</b>	1485	96.4	0.88	475	14790	2.00	39	1800
2500	<b>1RN4 502-4HV L6P</b>	1485	96.4	0.89	510	16076	2.00	42	1800
2900	<b>1RN4 504-4HV L6P</b>	1485	96.7	0.89	590	18648	2.00	48	1800
3260 <sup>1)</sup>	<b>1RN4 506-4HV L6P</b>	1485	96.8	0.89	660	20965	2.00	53	1800
3920 <sup>1)</sup>	<b>1RN4 560-4HV L6P</b>	1486	96.8	0.90	790	25192	2.00	76	1800
4500 <sup>1)</sup>	<b>1RN4 562-4HV L6P</b>	1486	96.9	0.90	900	28920	2.00	84	O. R. <sup>3)</sup>
5000 <sup>1)</sup>	<b>1RN4 564-4HV L6P</b>	1487	97.1	0.90	1000	32112	2.00	96	O. R. <sup>3)</sup>
5500 <sup>1)</sup>	<b>1RN4 566-4HV L6P</b>	1487	97.1	0.90	1100	35323	2.00	105	O. R. <sup>3)</sup>
5880 <sup>1)</sup>	<b>1RN4 632-4HV L6P</b>	1490	97.2	0.89	1180	37687	2.20	150	1800
6470 <sup>1)</sup>	<b>1RN4 634-4HV L6P</b>	1490	97.3	0.90	1300	41469	2.20	168	1800
6960 <sup>1)</sup>	<b>1RN4 636-4HV L6P</b>	1491	97.4	0.90	1390	44579	2.40	197	1800

#### Voltage code:

4.16 kV, 50 Hz **4**  
Other voltage **9**

#### Type of construction:

IM B3 **0**  
IM V1 (without canopy) **8**

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see Page 3/2.

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

<sup>1)</sup> Rated voltage < 4.16 kV on request

<sup>2)</sup> For IM B3, roller bearings.

<sup>3)</sup> On request.

<sup>4)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
<b>Fluid flow machine drive</b>												
<b>2-pole</b>												
1RN6 450-2...	1035	2704	96.1	0.91	690	2368	96.3	0.91	345	1882	96.4	0.87
1RN6 452-2...	1178	2707	96.4	0.91	785	2370	96.5	0.90	393	1883	96.4	0.87
1RN6 454-2...	1313	2707	96.6	0.92	875	2370	96.7	0.91	438	1883	96.6	0.88
1RN6 456-2...	1464	2709	96.8	0.92	975	2371	96.9	0.91	488	1884	96.8	0.88
1RN6 457-2...	1688	2709	96.9	0.93	1125	2372	97.0	0.92	563	1884	96.9	0.88
1RN6 458-2...	1891	2710	97.0	0.93	1260	2372	97.1	0.93	630	1884	97.0	0.89
<b>4-pole</b>												
1RN6 450-4...	1028	1350	95.8	0.87	685	1183	96.0	0.85	343	940	95.8	0.78
1RN6 452-4...	1125	1351	96.0	0.87	750	1183	96.1	0.85	375	941	95.9	0.77
1RN6 454-4...	1230	1351	96.2	0.89	820	1183	96.3	0.87	410	941	96.2	0.80
1RN6 456-4...	1395	1351	96.3	0.90	930	1183	96.5	0.88	465	941	96.4	0.83
1RN4 500-4...	1725	1351	96.6	0.89	1150	1180	96.7	0.87	575	937	96.6	0.79
1RN4 502-4...	1875	1351	96.6	0.89	1250	1180	96.8	0.88	625	937	96.7	0.81
1RN4 504-4...	2175	1351	96.9	0.89	1450	1180	97.1	0.88	725	938	97.0	0.81
1RN4 506-4...	2445	1349	97.0	0.90	1630	1179	97.1	0.88	815	935	97.1	0.82
1RN4 560-4...	2940	1350	97.0	0.90	1960	1179	97.1	0.88	980	936	97.1	0.82
1RN4 562-4...	3375	1350	97.2	0.90	2250	1179	97.3	0.88	1125	936	97.2	0.82
1RN4 564-4...	3750	1351	97.4	0.90	2500	1180	97.5	0.88	1250	937	97.2	0.82
1RN4 566-4...	4125	1351	97.5	0.90	2750	1180	97.6	0.89	1375	937	97.3	0.83
1RN4 632-4...	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>
1RN4 634-4...	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>
1RN4 636-4...	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>

<sup>1)</sup> On request.

# Motors for converter operation

## With non-sinusoidal output

### Water-cooled motors H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data (continued)

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 3.4 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>2)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 50 Hz</b>									
6-pole									
940	<b>1RN6 450-6HS9 L6P</b>	990	95.7	0.85	160	9071	2.4	25.9	1200
1040	<b>1RN6 452-6HS9 L6P</b>	991	95.9	0.85	178	10026	2.5	29.1	1200
1180	<b>1RN6 454-6HS9 L6P</b>	991	96.1	0.86	198	11381	2.5	32.4	1200
1330	<b>1RN6 456-6HS9 L6P</b>	992	96.2	0.85	225	12811	2.5	37.3	1200
1860	<b>1RN4 500-6HV</b>	988	95.7	0.86	395	17977	1.9	57	1200
2100	<b>1RN4 502-6HV</b>	989	96.1	0.87	440	20277	2.0	65	1200
2340	<b>1RN4 504-6HV</b>	990	96.2	0.87	490	22571	2.0	72	1200
2560	<b>1RN4 506-6HV</b>	990	96.4	0.87	530	24693	2.0	81	1200
3000	<b>1RN4 560-6HV</b>	990	96.5	0.86	630	28939	1.9	105	1200
3380 <sup>1)</sup>	<b>1RN4 562-6HV</b>	991	96.7	0.86	710	32572	1.9	120	1200
3750 <sup>1)</sup>	<b>1RN4 564-6HV</b>	991	96.7	0.87	780	36138	2.0	135	1200
4300 <sup>1)</sup>	<b>1RN4 566-6HV</b>	991	97.0	0.87	890	41438	2.0	147	O. R. <sup>3)</sup>
4610 <sup>1)</sup>	<b>1RN4 632-6HV</b>	993	97.0	0.86	970	44336	2.1	202	1200
5000 <sup>1)</sup>	<b>1RN4 634-6HV</b>	993	97.1	0.86	1040	48087	2.3	223	1200
5490 <sup>1)</sup>	<b>1RN4 636-6HV</b>	994	97.2	0.86	1140	52746	2.3	246	1200
8-pole									
680	<b>1RN6 450-8HS9 L6P</b>	743	94.7	0.82	122	8743	2.5	32.1	900
750	<b>1RN6 452-8HS9 L6P</b>	744	95.0	0.82	134	9638	2.5	36.1	900
880	<b>1RN6 454-8HS9 L6P</b>	743	95.1	0.83	154	11318	2.5	40.2	900
970	<b>1RN6 456-8HS9 L6P</b>	743	95.3	0.85	166	12477	2.4	46.4	900
1360	<b>1RN4 500-8HV</b>	741	95.3	0.84	295	17526	1.8	70	900
1520	<b>1RN4 502-8HV</b>	742	95.5	0.85	330	19562	1.9	80	900
1700	<b>1RN4 504-8HV</b>	742	95.6	0.84	370	21878	2.0	88	900
1860	<b>1RN4 506-8HV</b>	742	95.8	0.85	400	23938	1.9	99	900
2120	<b>1RN4 560-8HV</b>	742	95.9	0.83	465	27286	1.8	123	900
2400	<b>1RN4 562-8HV</b>	742	96.1	0.83	530	30889	1.8	141	900
2600	<b>1RN4 564-8HV</b>	743	96.2	0.83	570	33419	1.9	158	900
2830	<b>1RN4 566-8HV</b>	742	96.3	0.85	600	36424	1.8	173	900
3140 <sup>1)</sup>	<b>1RN4 630-8HV</b>	743	96.5	0.85	670	40359	1.9	239	900
3430 <sup>1)</sup>	<b>1RN4 632-8HV</b>	743	96.7	0.85	730	44087	2.1	265	900
3680 <sup>1)</sup>	<b>1RN4 634-8HV</b>	743	96.7	0.85	780	47300	2.0	293	900
4020 <sup>1)</sup>	<b>1RN4 636-8HV</b>	744	96.9	0.84	860	51601	2.3	324	900

#### Voltage code:

4.16 kV, 50 Hz **4**  
Other voltage **9**

#### Type of construction:

IM B3 **0**  
IM V1 (without canopy) **8**

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details see Page 3/2.

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> Rated voltage < 4.16 kV on request

<sup>2)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
<b>Fluid flow machine drive</b>												
<b>6-pole</b>												
1RN6 450-6...	705	901	96.0	0.84	470	789	96.1	0.81	235	627	96.0	0.71
1RN6 452-6...	780	901	96.1	0.84	520	789	96.2	0.80	260	627	96.0	0.70
1RN6 454-6...	885	901	96.3	0.85	590	789	96.4	0.82	295	627	96.3	0.73
1RN6 456-6...	998	902	96.4	0.83	665	790	96.5	0.80	333	627	96.2	0.69
1RN4 500-6...	1395	900	96.2	0.86	930	786	96.3	0.84	465	625	96.1	0.75
1RN4 502-6...	1575	900	96.3	0.86	1050	786	96.5	0.84	525	625	96.3	0.76
1RN4 504-6...	1755	900	96.5	0.86	1170	786	96.6	0.84	585	625	96.3	0.75
1RN4 506-6...	1920	900	96.6	0.86	1280	787	96.6	0.84	640	625	96.4	0.76
1RN4 560-6...	2250	901	96.6	0.85	1500	787	96.7	0.83	750	625	96.4	0.74
1RN4 562-6...	2535	900	96.9	0.86	1690	787	97.0	0.84	845	624	96.8	0.75
1RN4 564-6...	2813	900	96.8	0.86	1875	787	96.9	0.84	938	624	96.7	0.76
1RN4 566-6...	3225	900	97.0	0.86	2150	787	97.0	0.83	1075	624	96.8	0.75
1RN4 632-6...	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>
1RN4 634-6...	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>
1RN4 636-6...	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>
<b>8-pole</b>												
1RN6 450-8...	510	676	94.8	0.80	340	592	94.7	0.75	170	470	94.0	0.63
1RN6 452-8...	563	676	95.1	0.80	375	592	95.1	0.75	188	470	94.4	0.62
1RN6 454-8...	660	676	95.3	0.82	440	592	95.3	0.78	220	470	94.8	0.66
1RN6 456-8...	728	676	95.5	0.83	485	592	95.5	0.80	243	470	95.1	0.69
1RN4 500-8...	1020	675	95.7	0.83	680	590	95.8	0.81	340	468	95.5	0.71
1RN4 502-8...	1140	675	95.8	0.83	760	590	95.9	0.80	380	468	95.5	0.69
1RN4 504-8...	1275	675	95.9	0.82	850	590	95.9	0.78	425	468	95.4	0.67
1RN4 506-8...	1395	675	96.1	0.84	930	590	96.1	0.81	465	468	95.8	0.72
1RN4 560-8...	1590	675	96.2	0.82	1060	590	96.2	0.79	530	469	95.9	0.69
1RN4 562-8...	1800	676	96.3	0.83	1200	590	96.4	0.80	600	469	96.0	0.70
1RN4 564-8...	1950	676	96.5	0.82	1300	590	96.5	0.79	650	469	96.2	0.69
1RN4 566-8...	2125	676	96.6	0.84	1415	590	96.7	0.82	710	469	96.4	0.74
1RN4 630-8...	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>
1RN4 632-8...	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>
1RN4 634-8...	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>
1RN4 636-8...	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>	O. R. <sup>1)</sup>

<sup>1)</sup> On request.

# Motors for converter operation

## With non-sinusoidal output

### Water-cooled motors H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 6.6 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>6 ... 6.6 kV, 50 Hz</b>									
4-pole									
1120	1RN4 450-4HV	1485	95.6	0.89	116	7203	2.35	21	1800
1300	1RN4 452-4HV	1487	96.0	0.88	134	8349	2.35	23	1800
1450	1RN4 454-4HV	1487	96.1	0.88	150	9312	2.35	26	1800
1750	1RN4 456-4HV	1487	96.4	0.88	180	11239	2.35	29	1800
1900	1RN4 500-4HV	1488	96.3	0.88	196	12194	2.25	39	1800
2150	1RN4 502-4HV	1488	96.3	0.88	220	13799	2.25	42	1800
2450	1RN4 504-4HV	1488	96.5	0.88	250	15724	2.25	48	1800
2700	1RN4 506-4HV	1488	96.7	0.88	280	17329	2.25	53	1800
3200	1RN4 560-4HV	1487	96.6	0.90	320	20551	2.10	76	1800
3700	1RN4 562-4HV	1488	96.8	0.90	370	23747	2.10	84	O. R. <sup>2)</sup>
4150	1RN4 564-4HV	1488	96.8	0.90	415	26635	2.10	96	O. R. <sup>2)</sup>
4450	1RN4 566-4HV	1488	97.0	0.90	445	28560	2.10	105	O. R. <sup>2)</sup>
4800	1RN4 630-4HV	1491	97.0	0.90	480	30744	2.10	134	1800
5300	1RN4 632-4HV	1491	97.1	0.90	530	33947	2.10	150	1800
5800	1RN4 634-4HV	1491	97.1	0.90	580	37150	2.10	168	1800
6500	1RN4 636-4HV	1491	97.4	0.90	650	41633	2.10	197	1800
6-pole									
850	1RN4 450-6HV	990	95.2	0.83	94	8199	2.30	29	1200
950	1RN4 452-6HV	990	95.3	0.84	104	9164	2.30	33	1200
1060	1RN4 454-6HV	990	95.0	0.86	114	10225	2.30	36	1200
1270	1RN4 456-6HV	990	95.5	0.84	138	12251	2.30	41	1200
1450	1RN4 500-6HV	991	95.6	0.87	152	13973	2.20	57	1200
1630	1RN4 502-6HV	991	95.8	0.87	172	15708	2.20	65	1200
1820	1RN4 504-6HV	991	96.0	0.87	190	17539	2.20	72	1200
2070	1RN4 506-6HV	991	96.1	0.87	215	19948	2.20	81	1200
2570	1RN4 560-6HV	992	96.5	0.87	270	24741	2.20	105	1200
2900	1RN4 562-6HV	992	96.7	0.87	300	27918	2.20	120	1200
3300	1RN4 564-6HV	992	96.8	0.87	345	31769	2.20	135	1200
3600	1RN4 566-6HV	992	96.9	0.87	375	34657	2.20	147	O. R. <sup>2)</sup>
4000	1RN4 630-6HV	994	97.0	0.84	430	38431	2.10	183	1200
4300	1RN4 632-6HV	994	97.0	0.84	460	41313	2.10	202	1200
4700	1RN4 634-6HV	994	97.1	0.85	500	45156	2.10	223	1200
5100	1RN4 636-6HV	994	97.1	0.86	530	48999	2.10	246	1200

#### Voltage code:

6 kV, 50 Hz  
6.6 kV, 50 Hz  
Other voltage

6  
7  
9

#### Type of construction:

IM B3  
IM V1 (without canopy)

0  
8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).  
The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> On request.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
	<b>Fluid flow machine drive</b>											
<b>4-pole</b>												
1RN4 450-4...	840	1349	96.0	0.89	560	1179	96.2	0.87	280	935	96.2	0.80
1RN4 452-4...	975	1351	96.2	0.87	650	1180	96.3	0.84	325	937	96.2	0.75
1RN4 454-4...	1088	1351	96.3	0.87	725	1180	96.4	0.84	363	937	96.2	0.75
1RN4 456-4...	1313	1351	96.5	0.87	875	1180	96.5	0.84	438	937	96.4	0.76
1RN4 500-4...	1425	1352	96.6	0.88	950	1181	96.6	0.85	475	937	96.5	0.78
1RN4 502-4...	1613	1352	96.6	0.89	1075	1181	96.7	0.87	538	937	96.6	0.80
1RN4 504-4...	1838	1352	96.7	0.88	1225	1181	96.8	0.86	613	937	96.7	0.78
1RN4 506-4...	2025	1352	96.8	0.88	1350	1181	96.9	0.86	675	937	96.7	0.78
1RN4 560-4...	2400	1351	96.8	0.91	1600	1180	96.9	0.90	800	937	96.9	0.85
1RN4 562-4...	2775	1352	97.0	0.91	1850	1181	97.1	0.90	925	937	97.1	0.85
1RN4 564-4...	3113	1352	97.1	0.91	2075	1181	97.2	0.90	1038	937	97.2	0.86
1RN4 566-4...	3338	1352	97.2	0.91	2225	1181	97.3	0.90	1113	937	97.3	0.86
1RN4 630-4...	3600	1355	97.1	0.90	2400	1183	97.1	0.89	1200	939	97.0	0.83
1RN4 632-4...	3975	1355	97.2	0.91	2650	1183	97.2	0.90	1325	939	97.2	0.85
1RN4 634-4...	4350	1355	97.2	0.91	2900	1183	97.3	0.91	1450	939	97.2	0.87
1RN4 636-4...	4875	1355	97.3	0.90	3250	1183	97.3	0.89	1625	939	97.2	0.83
<b>6-pole</b>												
1RN4 450-6...	638	899	95.4	0.83	425	786	95.4	0.80	213	624	95.1	0.69
1RN4 452-6...	713	899	95.5	0.83	475	786	95.5	0.80	238	624	95.2	0.69
1RN4 454-6...	795	899	95.5	0.85	530	786	95.5	0.82	265	624	95.2	0.71
1RN4 456-6...	953	899	95.6	0.84	635	786	95.6	0.80	318	624	95.2	0.69
1RN4 500-6...	1088	900	95.8	0.87	725	787	95.9	0.84	363	624	95.7	0.76
1RN4 502-6...	1223	900	96.2	0.87	815	787	96.2	0.84	408	624	95.9	0.76
1RN4 504-6...	1365	900	96.4	0.87	910	787	96.3	0.84	455	624	96.1	0.76
1RN4 506-6...	1553	900	96.5	0.87	1035	787	96.4	0.84	518	624	96.2	0.76
1RN4 560-6...	1928	901	96.8	0.87	1285	787	96.9	0.84	643	625	96.8	0.75
1RN4 562-6...	2175	901	96.9	0.87	1450	787	96.9	0.84	725	625	96.8	0.75
1RN4 564-6...	2475	901	97.0	0.87	1650	787	97.0	0.84	825	625	96.9	0.75
1RN4 566-6...	2700	901	97.0	0.87	1800	787	97.0	0.84	900	625	96.9	0.75
1RN4 630-6...	3000	903	96.9	0.83	2000	789	96.9	0.80	1000	626	96.7	0.70
1RN4 632-6...	3225	903	96.9	0.85	2150	789	96.9	0.82	1075	626	96.8	0.72
1RN4 634-6...	3525	903	97.0	0.86	2350	789	97.0	0.84	1175	626	96.9	0.76
1RN4 636-6...	3825	903	97.1	0.86	2550	789	97.1	0.84	1275	626	97.0	0.76

# Motors for converter operation

## With non-sinusoidal output

### Water-cooled motors H-compact PLUS 1RN4 and 1RN6

#### Selection and ordering data (continued)

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 6.6 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>6 ... 6.6 kV, 50 Hz</b>									
8-pole									
1100	<b>1RN4 500-8HV</b>	743	95.3	0.83	122	14139	2.10	70	900
1250	<b>1RN4 502-8HV</b>	743	95.5	0.83	138	16067	2.10	80	900
1350	<b>1RN4 504-8HV</b>	744	95.5	0.81	152	17329	2.20	88	900
1450	<b>1RN4 506-8HV</b>	744	95.6	0.81	164	18612	2.20	99	900
1800	<b>1RN4 560-8HV</b>	744	96.0	0.84	196	23105	2.00	123	900
2000	<b>1RN4 562-8HV</b>	744	96.1	0.84	215	25672	2.00	141	900
2250	<b>1RN4 564-8HV</b>	744	96.3	0.84	245	28881	2.00	158	900
2400	<b>1RN4 566-8HV</b>	744	96.4	0.85	255	30806	2.00	173	900
2900	<b>1RN4 630-8HV</b>	745	96.4	0.83	315	37174	2.15	239	900
3300	<b>1RN4 632-8HV</b>	745	96.6	0.83	360	42302	2.15	265	900
3500	<b>1RN4 634-8HV</b>	745	96.6	0.84	375	44866	2.15	293	900
3800	<b>1RN4 636-8HV</b>	745	96.7	0.84	410	48711	2.15	324	900

#### Voltage code:

6 kV, 50 Hz	6
6.6 kV, 50 Hz	7
Other voltage	9

#### Type of construction:

IM B3	0
IM V1 (without canopy)	8

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details [see Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

Motor type (repeated)	Partial load values for fluid flow machine drive												
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$				
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]	
	<b>Fluid flow machine drive</b>												
8-pole													
1RN4 500-8...	825	675	95.5	0.82	550	590	95.5	0.78	275	468	95.1	0.68	
1RN4 502-8...	938	675	95.6	0.82	625	590	95.6	0.78	313	468	95.2	0.68	
1RN4 504-8...	1013	676	95.6	0.80	675	591	95.5	0.74	338	469	95.0	0.63	
1RN4 506-8...	1088	676	95.7	0.80	725	591	95.6	0.76	363	469	95.0	0.66	
1RN4 560-8...	1350	676	96.2	0.84	900	591	96.3	0.81	450	469	96.1	0.71	
1RN4 562-8...	1500	676	96.4	0.84	1000	591	96.4	0.81	500	469	96.2	0.71	
1RN4 564-8...	1688	676	96.5	0.84	1125	591	96.5	0.81	563	469	96.3	0.71	
1RN4 566-8...	1800	676	96.6	0.85	1200	591	96.6	0.82	600	469	96.5	0.73	
1RN4 630-8...	2175	677	96.3	0.82	1450	591	96.3	0.80	725	469	95.9	0.66	
1RN4 632-8...	2475	677	96.4	0.83	1650	591	96.4	0.80	825	469	96.1	0.68	
1RN4 634-8...	2625	677	96.6	0.83	1750	591	96.6	0.80	875	469	96.4	0.70	
1RN4 636-8...	2850	677	96.7	0.83	1900	591	96.7	0.80	950	469	96.4	0.70	

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>690 V, 60 Hz</b>									
2-pole									
1550	<b>1RN6 450-2HP70</b>	3578	95.9	0.90	2x750	4140	1.9	12.7	3600
1650	<b>1RN6 452-2HP70</b>	3581	96.0	0.91	2x790	4403	2.2	14.3	3600
1720	<b>1RN6 454-2HP70</b>	3584	96.1	0.91	2x820	4586	2.4	15.6	3600 <sup>2)</sup>
2180	<b>1RN6 456-2HP70</b>	3584	96.7	0.92	2x1020	5814	2.4	17.6	3600 <sup>2)</sup>
2450	<b>1RN6 457-2HP70</b>	3585	96.6	0.92	2x1160	6534	2.4	19.3	3600 <sup>2)</sup>
2520	<b>1RN6 458-2HP70</b>	3585	96.6	0.92	2x1180	6716	2.4	21.4	3600 <sup>2)</sup>
4-pole									
1630	<b>1RN6 450-4HP7</b>	1784	95.9	0.88	2x810	8740	2.3	20.0	1800
1750	<b>1RN6 452-4HP7</b>	1783	96.0	0.90	2x850	9385	2.3	22.3	1800
2070	<b>1RN6 454-4HP7</b>	1783	96.2	0.90	2x1000	11104	2.3	25.3	1800
2310	<b>1RN6 456-4HP7</b>	1786	96.4	0.89	2x1120	12364	2.5	28.6	1800
6-pole									
1210	<b>1RN6 450-6HP7</b>	1191	96.1	0.85	2x620	9718	2.4	25.9	1200
1350	<b>1RN6 452-6HP7</b>	1191	96.3	0.84	2x700	10837	2.4	29.1	1200
1480	<b>1RN6 454-6HP7</b>	1191	96.3	0.86	2x750	11883	2.3	32.4	1200
1620	<b>1RN6 456-6HP7</b>	1192	96.6	0.86	2x820	12995	2.4	37.3	1200
8-pole									
870	<b>1RN6 450-8HP7</b>	893	95.3	0.84	910	9323	2.3	32.1	900
960	<b>1RN6 452-8HP7</b>	892	95.4	0.84	1000	10290	2.2	36.1	900
1050	<b>1RN6 454-8HP7</b>	893	95.5	0.84	1100	11239	2.4	40.2	900
1180	<b>1RN6 456-8HP7</b>	893	95.7	0.85	1220	12636	2.3	46.4	900
<b>Type of construction:</b>									
IM B3 <b>0</b>									
IM V1 (without canopy) <b>8</b>									

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details, see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

<sup>2)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

2-pole

1RN6 450-2...	1164	3253	96.2	0.90	775	2844	96.3	0.90	388	2261	96.2	0.86
1RN6 452-2...	1239	3255	96.3	0.92	825	2845	96.4	0.91	413	2262	96.3	0.87
1RN6 454-2...	1291	3257	96.3	0.92	860	2847	96.4	0.91	430	2262	96.2	0.86
1RN6 456-2...	1636	3258	96.9	0.92	1090	2847	96.9	0.91	545	2263	96.7	0.87
1RN6 457-2...	1839	3258	96.8	0.92	1225	2847	96.8	0.91	613	2263	96.7	0.86
1RN6 458-2H...	1891	3258	96.8	0.93	1260	2847	96.9	0.92	631	2263	96.8	0.88

4-pole

1RN6 450-4...	1223	1623	96.1	0.88	815	1420	96.2	0.86	408	1129	95.9	0.78
1RN6 452-4...	1313	1623	96.3	0.90	875	1419	96.4	0.89	438	1129	96.3	0.84
1RN6 454-4...	1553	1623	96.5	0.90	1035	1419	96.6	0.89	518	1129	96.5	0.85
1RN6 456-4...	1733	1625	96.6	0.89	1155	1421	96.6	0.87	578	1130	96.3	0.79

6-pole

1RN6 450-6...	908	1083	96.3	0.82	605	947	96.4	0.79	303	753	96.0	0.67
1RN6 452-6...	1013	1083	96.5	0.82	675	947	96.5	0.78	338	753	96.2	0.67
1RN6 454-6...	1110	1083	96.5	0.84	740	947	96.6	0.81	370	753	96.3	0.71
1RN6 456-6...	1215	1084	96.8	0.84	810	947	96.8	0.81	405	753	96.5	0.71

8-pole

1RN6 450-8...	653	812	95.5	0.81	435	710	95.4	0.77	218	565	94.9	0.66
1RN6 452-8...	720	812	95.7	0.83	480	710	95.6	0.79	240	565	95.2	0.68
1RN6 454-8...	788	812	95.6	0.81	525	710	95.6	0.77	263	565	95.0	0.65
1RN6 456-8...	885	812	95.9	0.83	590	710	95.8	0.79	295	565	95.3	0.69

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact PLUS  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>1)</sup>  $n_{\text{max}}$ rpm
<b>2.3 kV, 60 Hz</b>									
4-pole									
1740	<b>1RN4 450-4HV1</b>	1781	96.5	0.89	510	9329	2.00	21	1800
1940	<b>1RN4 452-4HV1</b>	1783	96.6	0.89	570	10390	2.10	23	1800
2200	<b>1RN4 454-4HV1</b>	1782	96.7	0.89	640	11789	2.00	26	1800
2500	<b>1RN4 456-4HV1</b>	1784	96.8	0.89	730	13382	2.10	29	1800
6-pole									
1260	<b>1RN4 450-6HV1</b>	1186	95.7	0.85	390	10145	1.90	29	1200
1420	<b>1RN4 452-6HV1</b>	1186	96.0	0.85	435	11433	1.90	33	1200
1640	<b>1RN4 454-6HV1</b>	1186	96.0	0.87	495	13205	1.90	36	1200
1940	<b>1RN4 456-6HV1</b>	1187	96.3	0.86	590	15607	2.00	41	1200
2220	<b>1RN4 500-6HV1</b>	1189	96.3	0.86	670	17830	2.00	57	1200
8-pole									
1000	<b>1RN4 450-8HV1</b>	889	95.3	0.84	315	10742	1.90	37	900
1120	<b>1RN4 452-8HV1</b>	890	95.7	0.84	350	12017	2.00	41	900
1260	<b>1RN4 454-8HV1</b>	891	95.6	0.83	400	13504	2.00	46	900
1420	<b>1RN4 456-8HV1</b>	891	95.7	0.83	450	15219	2.00	52	900
1640	<b>1RN4 500-8HV1</b>	891	95.9	0.84	510	17577	1.90	70	900
1840	<b>1RN4 502-8HV1</b>	892	96.0	0.84	570	19698	1.90	80	900
2020	<b>1RN4 504-8HV1</b>	892	96.2	0.84	630	21625	1.90	88	900
2220	<b>1RN4 506-8HV1</b>	892	96.4	0.84	690	23766	2.00	99	900

#### Type of construction:

IM B3	<b>0</b>
IM V1 (without canopy)	<b>8</b>

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

<sup>1)</sup> For IM B3, roller bearings.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

4-pole

1RN4 450-4...	1305	1618	96.3	0.89	870	1412	96.3	0.87	435	1122	96.0	0.79
1RN4 452-4...	1455	1619	96.4	0.88	970	1413	96.4	0.85	485	1122	96.1	0.77
1RN4 454-4...	1650	1619	96.8	0.89	1100	1413	96.9	0.87	550	1123	96.7	0.79
1RN4 456-4...	1875	1620	96.9	0.88	1250	1413	96.9	0.86	625	1123	96.7	0.78

6-pole

1RN4 450-6...	945	1078	95.9	0.83	630	941	96.0	0.81	315	748	95.6	0.71
1RN4 452-6...	1065	1078	96.1	0.84	710	939	96.1	0.81	355	746	95.7	0.72
1RN4 454-6...	1230	1078	96.1	0.87	820	941	96.1	0.85	410	748	95.8	0.77
1RN4 456-6...	1455	1078	96.3	0.85	970	941	96.3	0.82	485	748	95.9	0.73
1RN4 500-6...	1665	1080	96.3	0.86	1110	942	96.2	0.83	555	750	95.9	0.74

8-pole

1RN4 450-8...	750	808	95.5	0.82	500	705	95.4	0.79	250	561	94.8	0.68
1RN4 452-8...	840	809	95.6	0.82	560	706	95.5	0.78	280	561	94.9	0.67
1RN4 454-8...	945	809	95.7	0.81	630	706	95.6	0.77	315	561	95.0	0.65
1RN4 456-8...	1065	809	95.7	0.81	710	706	95.6	0.77	355	561	95.0	0.65
1RN4 500-8...	1230	810	96.0	0.82	820	706	96.0	0.79	410	563	95.5	0.69
1RN4 502-8...	1380	810	96.2	0.83	920	707	96.2	0.80	460	563	95.8	0.70
1RN4 504-8...	1515	810	96.3	0.84	1010	707	96.3	0.82	505	563	95.9	0.72
1RN4 506-8...	1665	810	96.4	0.84	1110	707	96.3	0.80	555	563	95.8	0.70

3

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 4.16 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>2)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 60 Hz</b>									
2-pole									
1600	<b>1RN6 450-2HS30</b>	3576	96.0	0.89	260	4274	2.1	12.7	3600
1850	<b>1RN6 452-2HS30</b>	3578	96.3	0.91	295	4941	2.3	14.3	3600
2060	<b>1RN6 454-2HS30</b>	3579	96.6	0.91	325	5500	2.3	15.6	3600 <sup>4)</sup>
2300	<b>1RN6 456-2HS30</b>	3581	96.8	0.92	360	6137	2.4	17.6	3600 <sup>4)</sup>
2690	<b>1RN6 457-2HS30</b>	3579	96.8	0.93	415	7181	2.4	19.3	3600 <sup>4)</sup>
3030	<b>1RN6 458-2HS30</b>	3582	96.9	0.93	465	8083	2.4	21.4	3600 <sup>4)</sup>
4-pole									
1630	<b>1RN6 450-4HS3</b> ■	1782	95.7	0.89	265	8742	2.3	20.0	1800
1750	<b>1RN6 452-4HS3</b> ■	1783	95.9	0.89	285	9375	2.4	22.3	1800
2070	<b>1RN6 454-4HS3</b> ■	1784	96.1	0.90	330	11088	2.5	25.3	1800
2310	<b>1RN6 456-4HS3</b> ■	1786	96.3	0.89	375	12358	2.5	28.6	1800
2620	<b>1RN4 500-4HV5</b> ■	1786	96.6	0.88	430	14010	2.1	39	1800
2880	<b>1RN4 502-4HV5</b> ■	1785	96.7	0.89	465	15408	2.1	42	1800
3320	<b>1RN4 504-4HV5</b> ■	1786	96.9	0.89	530	17753	2.1	48	1800
3760	<b>1RN4 506-4HV5</b> ■	1786	97.1	0.89	600	20105	2.1	53	1800
4320	<b>1RN4 560-4HV5</b> ■	1786	96.8	0.90	690	23100	1.9	76	1800
5400	<b>1RN4 562-4HV5</b> ■	1786	97.1	0.90	860	28875	2.0	84	O. R. <sup>3)</sup>
6000	<b>1RN4 564-4HV5</b> ■	1787	97.2	0.90	950	32065	2.0	96	O. R. <sup>3)</sup>
6600	<b>1RN4 566-4HV5</b> ■	1787	97.3	0.90	1040	35271	2.0	105	O. R. <sup>3)</sup>
7400 <sup>1)</sup>	<b>1RN4 632-4HV5</b> ■	1790	97.3	0.89	1180	39480	1.9	150	1800

#### Type of construction:

IM B3	<b>0</b>
IM V1 (without canopy)	<b>8</b>

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation. Additional details see [Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

Motor type  
(repeated)

Partial load values for fluid flow machine drive

$P/P_{\text{rated}} = 75\%$

$P/P_{\text{rated}} = 50\%$

$P/P_{\text{rated}} = 25\%$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

$P$

$n$

$\eta$

$\cos \varphi$

kW

rpm

%

[-]

kW

rpm

%

[-]

kW

rpm

%

[-]

Fluid flow machine drive

2-pole

1RN6 450-2...	1201	3251	96.1	0.90	800	2843	96.2	0.90	400	2260	96.1	0.85
1RN6 452-2...	1389	3253	96.4	0.91	925	2844	96.5	0.91	463	2261	96.3	0.87
1RN6 454-2...	1545	3254	96.7	0.91	1030	2845	96.7	0.90	515	2261	96.5	0.86
1RN6 456-2...	1725	3256	96.9	0.92	1150	2846	96.9	0.91	575	2262	96.7	0.87
1RN6 457-2...	2018	3254	96.9	0.93	1345	2845	97.0	0.93	674	2261	96.9	0.90
1RN6 458-2...	2273	3256	97.0	0.93	1515	2846	97.1	0.92	758	2262	96.9	0.89

4-pole

1RN6 450-4...	1224	1622	96.0	0.89	815	1419	96.1	0.88	408	1129	96.0	0.83
1RN6 452-4...	1313	1623	96.1	0.89	875	1420	96.2	0.88	438	1129	96.1	0.82
1RN6 454-4...	1553	1623	96.3	0.90	1035	1420	96.4	0.89	518	1129	96.3	0.83
1RN6 456-4...	1733	1624	96.5	0.89	1155	1421	96.5	0.87	578	1130	96.2	0.80
1RN4 500-4...	1965	1623	96.7	0.88	1310	1418	96.7	0.86	655	1125	96.5	0.78
1RN4 502-4...	2160	1622	96.8	0.89	1440	1417	96.9	0.87	720	1124	96.7	0.80
1RN4 504-4...	2490	1623	97.0	0.89	1660	1418	97.0	0.87	830	1125	96.9	0.80
1RN4 506-4...	2820	1623	97.1	0.89	1880	1418	97.1	0.88	940	1125	97.0	0.81
1RN4 560-4...	3240	1623	96.9	0.90	2160	1418	97.0	0.89	1080	1125	96.9	0.84
1RN4 562-4...	4050	1623	97.2	0.90	2700	1418	97.2	0.87	1350	1125	96.0	0.75
1RN4 564-4...	4500	1624	97.4	0.90	3000	1418	97.3	0.87	1500	1126	96.1	0.75
1RN4 566-4...	4950	1624	97.5	0.90	3300	1418	97.4	0.87	1650	1126	96.3	0.75
1RN4 632-4...	5550	1626	97.5	0.90	3700	1421	97.1	0.87	1850	1128	96.5	0.75

<sup>1)</sup> Rated voltage < 4.16 kV on request

<sup>2)</sup> For IM B3, roller bearings.

<sup>3)</sup> On request.

<sup>4)</sup> There are speed exclusion ranges for this type. It must be ensured that the motors are not continuously operated in these speed ranges. The exclusion ranges must be clarified in advance in the factory.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Selection and ordering data

Rated power  $P_{\text{rated}}$ kW	High voltage motor H-compact  Order No.	Rated speed  $n_{\text{rated}}$ rpm	Operating values at rated output						
			Efficiency  $\eta$ %	Power factor  $\cos \varphi$ [-]	Rated current at 4.16 kV  $I_{\text{rated}}$ A	Rated torque  $T_{\text{rated}}$ Nm	Break-down torque  $T_{\text{B}}/T_{\text{rated}}$ [-]	Moment of inertia  J kgm <sup>2</sup>	Mechanical limit speed <sup>2)</sup>  $n_{\text{max}}$ rpm
<b>3.4 ... 4.16 kV, 60 Hz</b>									
6-pole									
1210	<b>1RN6 450-6HS3</b>	1190	96.0	0.84	210	9715	2.4	25.9	1200
1350	<b>1RN6 452-6HS3</b>	1191	96.2	0.85	230	10833	2.4	29.1	1200
1480	<b>1RN6 454-6HS3</b>	1191	96.3	0.85	250	11875	2.5	32.4	1200
1620	<b>1RN6 456-6HS3</b>	1191	96.4	0.87	270	12995	2.5	37.3	1200
2120	<b>1RN4 500-6HV5</b>	1189	96.2	0.86	355	17028	1.9	57	1200
2400	<b>1RN4 502-6HV5</b>	1188	96.3	0.87	400	19293	1.9	65	1200
2680	<b>1RN4 504-6HV5</b>	1189	96.4	0.87	445	21526	1.9	72	1200
2940	<b>1RN4 506-6HV5</b>	1189	96.6	0.87	485	23614	1.9	81	1200
3400	<b>1RN4 560-6HV5</b>	1190	96.6	0.87	560	27286	1.9	105	1200
3950	<b>1RN4 562-6HV5</b>	1191	96.9	0.86	660	31673	1.9	120	1200
8-pole									
870	<b>1RN6 450-8HS3</b>	893	95.2	0.81	156	9308	2.5	32.1	900
960	<b>1RN6 452-8HS3</b>	893	95.3	0.82	170	10269	2.5	36.1	900
1050	<b>1RN6 454-8HS3</b>	893	95.4	0.84	182	11239	2.4	40.2	900
1180	<b>1RN6 456-8HS3</b>	894	95.6	0.82	210	12613	2.5	46.4	900
1560	<b>1RN4 500-8HV5</b>	891	95.6	0.84	270	16721	1.8	70	900
1760	<b>1RN4 502-8HV5</b>	892	95.7	0.84	305	18843	1.9	80	900
1940	<b>1RN4 504-8HV5</b>	892	96.0	0.84	335	20770	2.0	88	900
2120	<b>1RN4 506-8HV5</b>	892	96.2	0.84	365	22697	2.0	99	900
2440	<b>1RN4 560-8HV5</b>	893	96.3	0.84	420	26094	1.9	123	900
2750	<b>1RN4 562-8HV5</b>	893	96.5	0.84	470	29409	1.9	141	900
3000	<b>1RN4 564-8HV5</b>	893	96.6	0.84	510	32083	1.9	158	900
3250	<b>1RN4 566-8HV5</b>	893	96.7	0.85	550	34756	1.9	173	900

#### Type of construction:

IM B3	<b>0</b>
IM V1 (without canopy)	<b>8</b>

#### Note:

The motors for converter operation with non-sinusoidal output have, among other things, a reinforced winding insulation.

Additional details [see Page 3/2](#).

The specified values were, based on IEC 60034-2-1:2007, defined for operation with a sinusoidal supply. The values for converter operation are dependent on the converter being used and cannot be specified in advance.

Higher pole numbers are available on request.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

Motor type (repeated)	Partial load values for fluid flow machine drive											
	$P/P_{\text{rated}} = 75\%$				$P/P_{\text{rated}} = 50\%$				$P/P_{\text{rated}} = 25\%$			
	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$	$P$	$n$	$\eta$	$\cos \varphi$
	kW	rpm	%	[-]	kW	rpm	%	[-]	kW	rpm	%	[-]
<b>Fluid flow machine drive</b>												
<b>6-pole</b>												
1RN6 450-6...	908	1083	96.2	0.83	605	947	96.2	0.80	303	753	96.0	0.69
1RN6 452-6...	1013	1083	96.3	0.84	675	947	96.4	0.80	338	753	96.1	0.70
1RN6 454-6...	1110	1083	96.5	0.84	740	947	96.5	0.81	370	753	96.3	0.71
1RN6 456-6...	1215	1083	96.6	0.86	810	947	96.7	0.83	405	753	96.5	0.74
1RN4 500-6...	1590	1080	96.4	0.86	1060	944	96.4	0.84	530	749	96.1	0.75
1RN4 502-6...	1800	1079	96.5	0.87	1200	943	96.5	0.85	600	748	96.3	0.78
1RN4 504-6...	2010	1080	96.5	0.87	1340	944	96.5	0.85	670	749	96.3	0.77
1RN4 506-6...	2205	1080	96.6	0.87	1470	944	96.6	0.86	735	749	96.4	0.78
1RN4 560-6...	2550	1081	96.7	0.86	1700	945	96.7	0.84	850	750	96.4	0.76
1RN4 562-6...	2963	1082	96.9	0.85	1975	945	96.8	0.82	988	750	96.5	0.73
<b>8-pole</b>												
1RN6 450-8...	653	812	95.2	0.79	435	710	95.1	0.74	218	565	94.3	0.61
1RN6 452-8...	720	812	95.4	0.80	480	710	95.3	0.75	240	565	94.5	0.62
1RN6 454-8...	788	812	95.5	0.83	525	710	95.5	0.79	263	565	95.0	0.69
1RN6 456-8...	885	813	95.6	0.79	590	711	95.5	0.75	295	565	94.8	0.62
1RN4 500-8...	1170	810	95.8	0.83	780	707	95.9	0.81	390	561	95.5	0.71
1RN4 502-8...	1320	810	95.9	0.83	880	708	95.9	0.80	440	562	95.5	0.70
1RN4 504-8...	1455	810	96.1	0.83	970	708	96.0	0.80	485	562	95.5	0.69
1RN4 506-8...	1590	810	96.3	0.83	1060	708	96.2	0.80	530	562	95.8	0.70
1RN4 560-8...	1830	811	96.4	0.82	1220	709	96.3	0.79	610	563	95.9	0.69
1RN4 562-8...	2063	811	96.5	0.83	1375	709	96.4	0.80	688	563	96.0	0.70
1RN4 564-8...	2250	811	96.6	0.83	1500	709	96.5	0.80	750	563	96.0	0.70
1RN4 566-8...	2438	811	96.6	0.84	1625	709	96.6	0.82	813	563	96.2	0.73

1) Rated voltage < 4.16 kV on request

2) For IM B3, roller bearings.

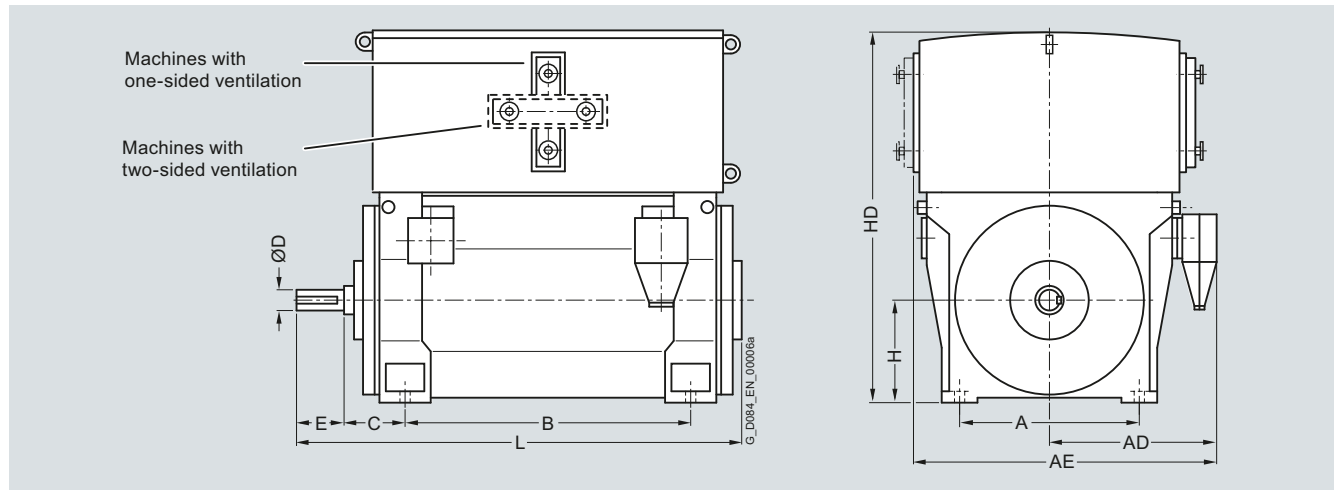
3) On request.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Dimension drawings



Note: For 1R.6. various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, roller bearings, IM B3 type of construction</b>											
<b>2-pole</b>											
1RN6450-2H..0	4001	850	930	1620	1180	250	95	130	450	1653	1843
1RN6452-2H..0	4207	850	930	1620	1180	250	95	130	450	1653	1843
1RN6454-2H..0	4548	850	930	1620	1400	250	95	130	450	1653	2053
1RN6456-2H..0	4813	850	930	1620	1400	250	95	130	450	1653	2053
<b>4-pole</b>											
1RN6450-4H..0	4318	850	930	1620	1180	250	130	200	450	1684	1896
1RN6452-4H..0	4246	850	930	1620	1180	250	130	200	450	1684	1896
1RN6454-4H..0	4944	850	930	1620	1400	250	130	200	450	1684	2106
1RN6456-4H..0	5222	850	930	1620	1400	250	130	200	450	1684	2106
1RN4500-4H..0	5400	950	1000	1790	1320	280	150	200	500	1830	2230
1RN4502-4H..0	5600	950	1000	1790	1320	280	150	200	500	1830	2230
1RN4504-4H..0	6250	950	1000	1790	1500	280	160	240	500	1830	2480
1RN4506-4H..0	6650	950	1000	1790	1500	280	160	240	500	1830	2480
1RN4560-4H..0	7400	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4562-4H..0	7850	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4564-4H..0	8750	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4566-4H..0	9200	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4630-4H..0 <sup>2)</sup>	10400	1320	1330	2290	1600	335	200	280	630	2400	2500
1RN4632-4H..0 <sup>2)</sup>	11100	1320	1330	2290	1600	335	200	280	630	2400	2500
1RN4634-4H..0 <sup>2)</sup>	12150	1320	1330	2290	1800	335	220	280	630	2400	2740
1RN4636-4H..0 <sup>2)</sup>	12700	1320	1330	2290	1800	335	220	280	630	2400	2740
<b>6-pole</b>											
1RN6450-6H..0	4418	850	930	1620	1180	280	140	200	450	1684	1896
1RN6452-6H..0	4703	850	930	1620	1180	280	140	200	450	1684	1896
1RN6454-6H..0	5068	850	930	1620	1400	280	140	200	450	1684	2136
1RN6456-6H..0	5410	850	930	1620	1400	280	140	200	450	1684	2136
1RN4500-6H..0	5550	950	1000	1790	1320	280	160	240	500	1830	2270
1RN4502-6H..0	5900	950	1000	1790	1320	280	160	240	500	1830	2270
1RN4504-6H..0	6450	950	1000	1790	1500	280	170	240	500	1830	2480
1RN4506-6H..0	6850	950	1000	1790	1500	280	170	240	500	1830	2480

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

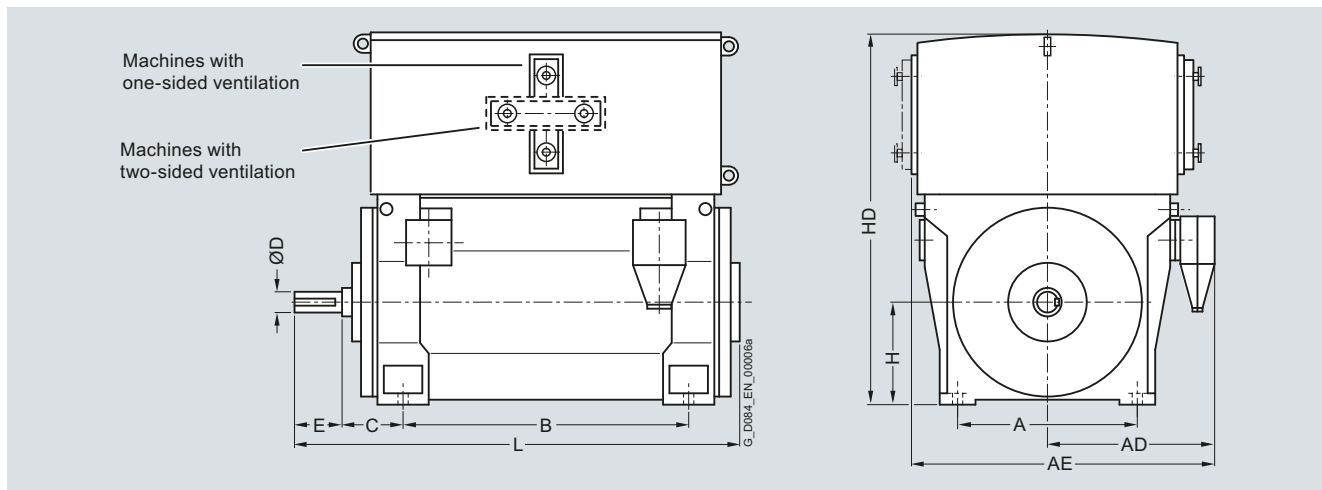
<sup>2)</sup> Roller bearings only for 50 Hz version.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Dimension drawings (continued)



Note: For 1R.6. various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, roller bearings, IM B3 type of construction</b>											
<b>6-pole</b>											
1RN4560-6H..0	7500	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4562-6H..0	8150	1060	1210	2060	1400	315	180	240	560	2040	2300
1RN4564-6H..0	8950	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4566-6H..0	9400	1060	1210	2060	1600	315	190	280	560	2040	2570
1RN4630-6H..0	10650	1320	1330	2290	1600	335	220	280	630	2400	2500
1RN4632-6H..0	11200	1320	1330	2290	1600	335	220	280	630	2400	2500
1RN4634-6H..0	12300	1320	1330	2290	1800	335	220	280	630	2400	2740
1RN4636-6H..0	13000	1320	1330	2290	1800	335	220	280	630	2400	2740
<b>8-pole</b>											
1RN6450-8H..0	4434	850	930	1620	1180	280	140	200	450	1684	1896
1RN6452-8H..0	4733	850	930	1620	1180	280	140	200	450	1684	1896
1RN6454-8H..0	5102	850	930	1620	1400	280	140	200	450	1684	2136
1RN6456-8H..0	5450	850	930	1620	1400	280	140	200	450	1684	2136
1RN4500-8H..0	5550	950	1000	1790	1320	280	160	240	500	1830	2270
1RN4502-8H..0	5950	950	1000	1790	1320	280	160	240	500	1830	2270
1RN4504-8H..0	6450	950	1000	1790	1500	280	170	240	500	1830	2480
1RN4506-8H..0	6800	950	1000	1790	1500	280	170	240	500	1830	2480
1RN4560-8H..0	7500	1060	1070	1920	1400	315	180	240	560	2040	2300
1RN4562-8H..0	8000	1060	1070	1920	1400	315	180	240	560	2040	2300
1RN4564-8H..0	8850	1060	1070	1920	1600	315	190	280	560	2040	2570
1RN4566-8H..0	9350	1060	1070	1920	1600	315	190	280	560	2040	2570
1RN4630-8H..0	10600	1320	1330	2290	1600	335	220	280	630	2400	2500
1RN4632-8H..0	11200	1320	1330	2290	1600	335	220	280	630	2400	2500
1RN4634-8H..0	12150	1320	1330	2290	1800	335	220	280	630	2400	2740
1RN4636-8H..0	12900	1320	1330	2290	1800	335	220	280	630	2400	2740

#### Note:

Higher pole numbers are available on request.

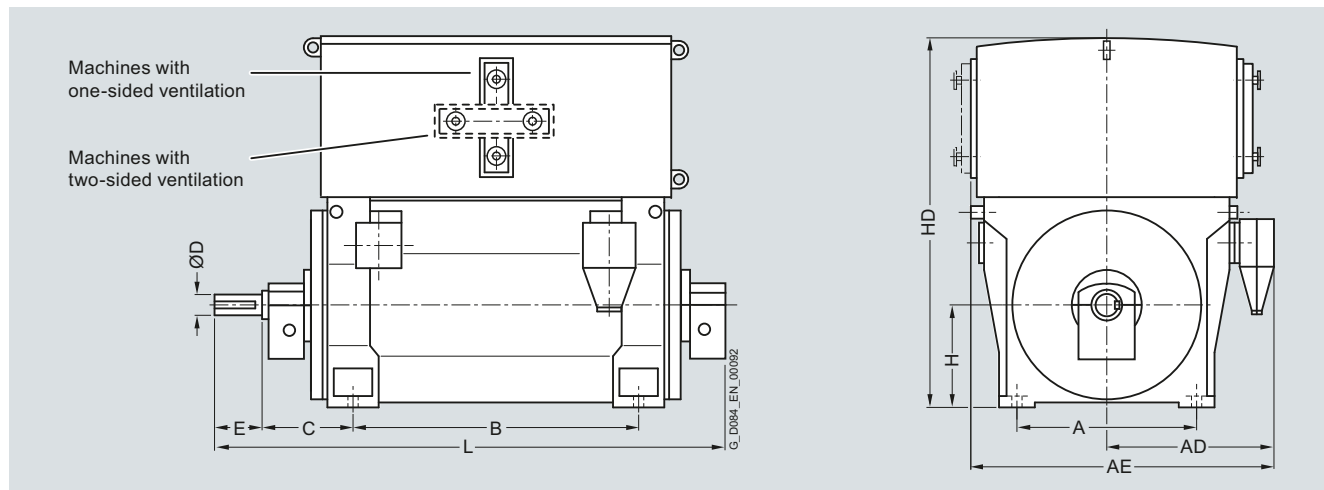
<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Dimension drawings



Note: For 1R.6. various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, sleeve bearings, IM B3 type of construction</b>											
<b>2-pole</b>											
1RN6450-2HJ.0-Z K96	4048	850	930	1620	1180	425	95	130	450	1653	2218
1RN6452-2HJ.0-Z K96	4254	850	930	1620	1180	425	95	130	450	1653	2218
1RN6454-2HJ.0-Z K96	4595	850	930	1620	1400	425	95	130	450	1653	2428
1RN6456-2HJ.0-Z K96	4860	850	930	1620	1400	425	95	130	450	1653	2428
1RN6457-2HJ.0-Z K96	5339	850	930	1620	1600	425	95	130	450	1653	2638
1RN6458-2HJ.0-Z K96	5592	850	930	1620	1600	425	95	130	450	1653	2638
<b>4-pole</b>											
1RN6450-4HJ.0-Z K96	4382	850	930	1620	1180	500	130	200	450	1684	2438
1RN6452-4HJ.0-Z K96	4636	850	930	1620	1180	500	130	200	450	1684	2438
1RN6454-4HJ.0-Z K96	5030	850	930	1620	1400	500	130	200	450	1684	2648
1RN6456-4HJ.0-Z K96	5308	850	930	1620	1400	500	130	200	450	1684	2648
1RN4500-4HV.0-Z K96	5550	950	1000	1790	1320	500	150	200	500	1830	2580
1RN4502-4HV.0-Z K96	5750	950	1000	1790	1320	500	150	200	500	1830	2580
1RN4504-4HV.0-Z K96	6450	950	1000	1790	1500	500	160	240	500	1830	2830
1RN4506-4HV.0-Z K96	6850	950	1000	1790	1500	500	160	240	500	1830	2830
1RN4560-4HV.0-Z K96	7550	1060	1210	2060	1400	530	180	240	560	2040	2630
1RN4562-4HV.0-Z K96	8000	1060	1210	2060	1400	530	180	240	560	2040	2630
1RN4564-4HV.0-Z K96	8950	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4566-4HV.0-Z K96	9400	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4630-4HV.0-Z K96 <sup>2)</sup>	10650	1320	1330	2290	1600	600	200	280	630	2400	2970
1RN4632-4HV.0-Z K96 <sup>2)</sup>	11350	1320	1330	2290	1600	600	200	280	630	2400	2970
1RN4634-4HV.0-Z K96 <sup>2)</sup>	12400	1320	1330	2290	1800	600	220	280	630	2400	3210
1RN4636-4HV.0-Z K96 <sup>2)</sup>	13000	1320	1330	2290	1800	600	220	280	630	2400	3210
<b>6-pole</b>											
1RN6450-6HJ.0-Z K96	4504	850	930	1620	1180	500	140	200	450	1684	2438
1RN6452-6HJ.0-Z K96	4789	850	930	1620	1180	500	140	200	450	1684	2438
1RN6454-6HJ.0-Z K96	5147	850	930	1620	1400	500	140	200	450	1684	2648
1RN6456-6HJ.0-Z K96	5489	850	930	1620	1400	500	140	200	450	1684	2648
1RN4500-6HV.0-Z K96	5700	950	1000	1790	1320	500	160	240	500	1830	2620
1RN4502-6HV.0-Z K96	6100	950	1000	1790	1320	500	160	240	500	1830	2620

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

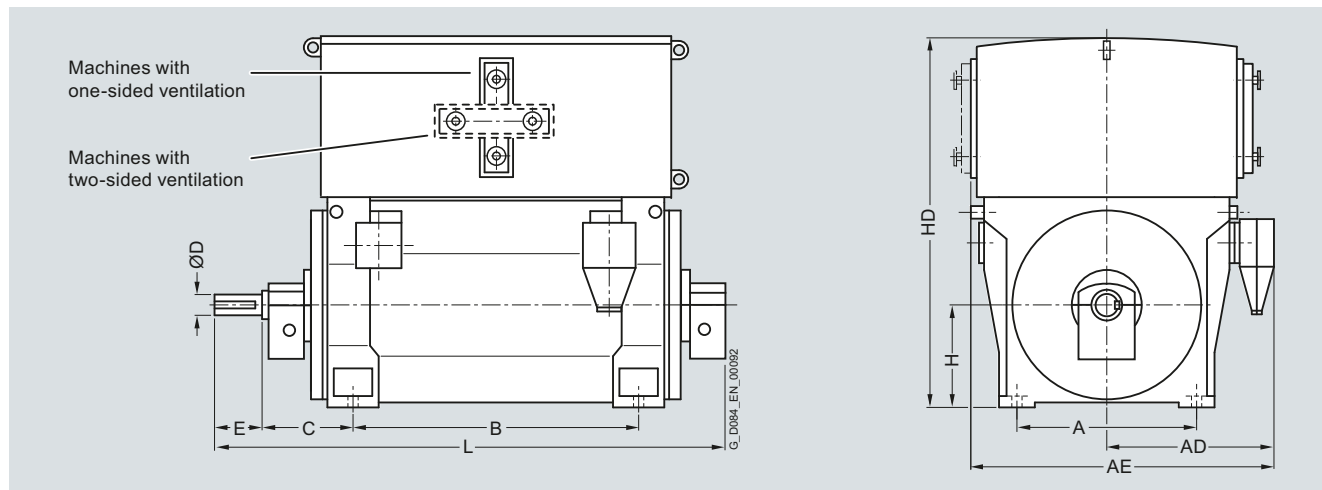
<sup>2)</sup> Roller bearings only for 50 Hz version.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Dimension drawings (continued)



Note: For 1R.6. various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions									
		A mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	B mm	C mm	D mm	E mm	H mm	HD mm	L mm
<b>Up to 6.6 kV, sleeve bearings, IM B3 type of construction</b>											
<b>6-pole</b>											
1RN4504-6HV.0-Z K96	6600	950	1000	1790	1500	500	170	240	500	1830	2830
1RN4506-6HV.0-Z K96	7000	950	1000	1790	1500	500	170	240	500	1830	2830
1RN4560-6HV.0-Z K96	7750	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN4562-6HV.0-Z K96	8350	1060	1210	2060	1400	530	180	240	560	2040	2670
1RN4564-6HV.0-Z K96	9150	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4566-6HE.0-Z K96	9650	1060	1210	2060	1600	530	190	280	560	2040	2940
1RN4630-6HV.0-Z K96	10950	1320	1330	2290	1600	600	220	280	630	2400	2970
1RN4632-6HV.0-Z K96	11500	1320	1330	2290	1600	600	220	280	630	2400	2970
1RN4634-6HV.0-Z K96	12550	1320	1330	2290	1800	600	220	280	630	2400	3210
1RN4636-6HV.0-Z K96	13300	1320	1330	2290	1800	600	220	280	630	2400	3210
<b>8-pole</b>											
1RN6450-8HJ.0-Z K96	4520	850	930	1620	1180	500	140	200	450	1684	2438
1RN6452-8HJ.0-Z K96	4819	850	930	1620	1180	500	140	200	450	1684	2438
1RN6454-8HJ.0-Z K96	5181	850	930	1620	1400	500	140	200	450	1684	2648
1RN6456-8HJ.0-Z K96	5528	850	930	1620	1400	500	140	200	450	1684	2648
1RN4500-8HV.0-Z K96	5750	950	1000	1790	1320	500	160	240	500	1830	2620
1RN4502-8HV.0-Z K96	6100	950	1000	1790	1320	500	160	240	500	1830	2620
1RN4504-8HV.0-Z K96	6600	950	1000	1790	1500	500	170	240	500	1830	2830
1RN4506-8HV.0-Z K96	7000	950	1000	1790	1500	500	170	240	500	1830	2830
1RN4560-8HV.0-Z K96	7700	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN4562-8HV.0-Z K96	8250	1060	1070	1920	1400	530	180	240	560	2040	2670
1RN4564-8HV.0-Z K96	9050	1060	1070	1920	1600	530	190	280	560	2040	2940
1RN4566-8HV.0-Z K96	9550	1060	1070	1920	1600	530	190	280	560	2040	2940
1RN4630-8HV.0-Z K96	10850	1320	1330	2290	1600	600	220	280	630	2400	2970
1RN4632-8HV.0-Z K96	11500	1320	1330	2290	1600	600	220	280	630	2400	2970
1RN4634-8HV.0-Z K96	12450	1320	1330	2290	1800	600	220	280	630	2400	3210
1RN4636-8HV.0-Z K96	13150	1320	1330	2290	1800	600	220	280	630	2400	3210

#### Note:

Higher pole numbers are available on request.

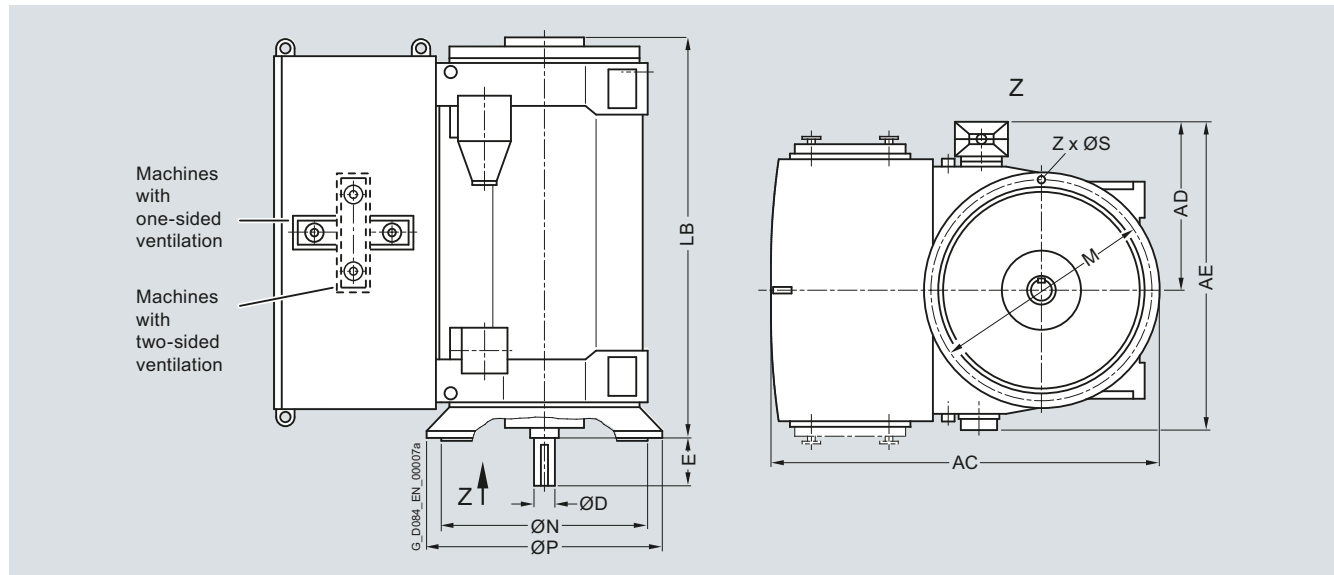
<sup>1)</sup> For  $V_{rated} \geq 2.0$  kV and current  $I_{rated} > 315$  A, the dimension changes by + 140 mm.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Dimension drawings



Note: For 1R.6. various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, roller bearings, IM V1 type of construction</b>												
<b>4-pole</b>												
1RN6450-4H..8	4518	1809	930	1620	130	200	1720	1150	1000	1080	26	8
1RN6452-4H..8	4750	1809	930	1620	130	200	1720	1150	1000	1080	26	8
1RN6454-4H..8	5144	1809	930	1620	130	200	1930	1150	1000	1080	26	8
1RN6456-4H..8	5422	1809	930	1620	130	200	1930	1150	1000	1080	26	8
1RN4500-4H..8	5500	1960	1000	1810	150	200	1910	1250	1120	1180	26	8
1RN4502-4H..8	5700	1960	1000	1810	150	200	1910	1250	1120	1180	26	8
1RN4504-4H..8	6400	1960	1000	1810	160	240	2120	1250	1120	1180	26	8
1RN4506-4H..8	6800	1960	1000	1810	160	240	2120	1250	1120	1180	26	8
1RN4560-4H..8	7550	2180	1210	2100	180	240	2090	1400	1250	1320	26	16
1RN4562-4H..8 <sup>2)</sup>	8000	2180	1210	2100	180	240	2090	1400	1250	1320	26	16
1RN4564-4H..8 <sup>2)</sup>	8900	2180	1210	2100	190	280	2320	1400	1250	1320	26	16
1RN4566-4H..8 <sup>2)</sup>	9350	2180	1210	2100	190	280	2320	1400	1250	1320	26	16
1RN4630-4H..8 <sup>2)</sup>	12050	2875	1330	2300	200	280	2400	2000	1800	1900	33	16
1RN4632-4H..8 <sup>2)</sup>	12750	2875	1330	2300	200	280	2400	2000	1800	1900	33	16
1RN4634-4H..8 <sup>2)</sup>	13800	2875	1330	2300	220	280	2640	2000	1800	1900	33	16
1RN4636-4H..8 <sup>2)</sup>	14350	2875	1330	2300	220	280	2640	2000	1800	1900	33	16
<b>6-pole</b>												
1RN6450-6H..8	4618	1809	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6452-6H..8	4903	1809	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6454-6H..8	5268	1809	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6456-6H..8	5610	1809	930	1620	140	200	1930	1150	1000	1080	26	8
1RN4500-6H..8	5650	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN4502-6H..8	6050	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN4504-6H..8	6550	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN4506-6H..8	6950	1960	1000	1810	170	240	2120	1250	1120	1180	26	8

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0$  kV and current  $I_{\text{rated}} > 315$  A, the dimension changes by + 140 mm.

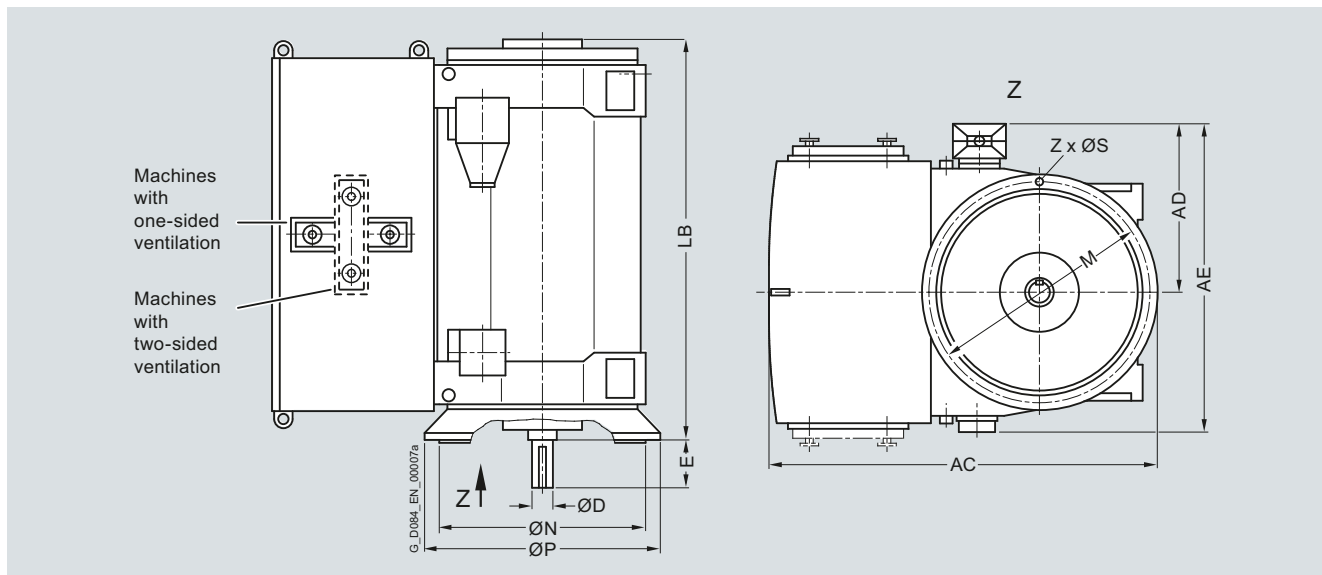
<sup>2)</sup> Only in the 50 Hz version.

# Motors for converter operation

## With non-sinusoidal output

Water-cooled motors  
H-compact PLUS 1RN4 and 1RN6

### Dimension drawings (continued)



Note: For 1R.6. various cooling types are available: 2-pole at both ends, and for higher pole numbers at one end.

Motor type	Weight kg	Dimensions										
		AC mm	AD <sup>1)</sup> mm	AE <sup>1)</sup> mm	D mm	E mm	LB mm	P mm	N mm	M mm	S mm	Z Quantity
<b>Up to 6.6 kV, roller bearings, IM V1 type of construction</b>												
<b>6-pole</b>												
1RN4560-6H..8	7650	2180	1210	2100	180	240	2090	1400	1250	1320	26	16
1RN4562-6H..8	8250	2180	1210	2100	180	240	2090	1400	1250	1320	26	16
1RN4564-6H..8	9100	2180	1210	2100	190	280	2320	1400	1250	1320	26	16
1RN4566-6H..8	9550	2180	1210	2100	190	280	2320	1400	1250	1320	26	16
1RN4630-6H..8	12300	2875	1330	2300	220	280	2400	2000	1800	1900	33	16
1RN4632-6H..8	12850	2875	1330	2300	220	280	2400	2000	1800	1900	33	16
1RN4634-6H..8	13950	2875	1330	2300	220	280	2640	2000	1800	1900	33	16
1RN4636-6H..8	14650	2875	1330	2300	220	280	2640	2000	1800	1900	33	16
<b>8-pole</b>												
1RN6450-8H..8	4634	1809	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6452-8H..8	4933	1809	930	1620	140	200	1720	1150	1000	1080	26	8
1RN6454-8H..8	5302	1809	930	1620	140	200	1930	1150	1000	1080	26	8
1RN6456-8H..8	5650	1809	930	1620	140	200	1930	1150	1000	1080	26	8
1RN4500-8H..8	5700	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN4502-8H..8	6050	1960	1000	1810	160	240	1910	1250	1120	1180	26	8
1RN4504-8H..8	6550	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN4506-8H..8	6950	1960	1000	1810	170	240	2120	1250	1120	1180	26	8
1RN4560-8H..8	7650	2180	1070	1960	180	240	2090	1400	1250	1320	26	16
1RN4562-8H..8	8150	2180	1070	1960	180	240	2090	1400	1250	1320	26	16
1RN4564-8H..8	9000	2180	1070	1960	190	280	2320	1400	1250	1320	26	16
1RN4566-8H..8	9450	2180	1070	1960	190	280	2320	1400	1250	1320	26	16
1RN4630-8H..8	12250	2875	1330	2300	220	280	2400	2000	1800	1900	33	16
1RN4632-8H..8	12850	2875	1330	2300	220	280	2400	2000	1800	1900	33	16
1RN4634-8H..8	13800	2875	1330	2300	220	280	2640	2000	1800	1900	33	16
1RN4636-8H..8	14550	2875	1330	2300	220	280	2640	2000	1800	1900	33	16

Note:

Higher pole numbers are available on request.

<sup>1)</sup> For  $V_{\text{rated}} \geq 2.0 \text{ kV}$  and current  $I_{\text{rated}} > 315 \text{ A}$ , the dimension changes by + 140 mm.

# Motors for converter operation

## Options and tests

### Description of options

#### Overview

Using the following options, H-compact and H-compact PLUS can be adapted to order-specific requirements. The Order No. is supplemented with a "-Z" and with either one or several order codes.

Other options can be addressed on request with the Vario (rib-cooled) or Vario PLUS (modular design) motor series.

Order code	Option description	Remark
<b>Paint finish</b>		
<b>K26</b>	Special paint finish in the standard color RAL 7030	
<b>Y53</b>	Normal paint finish not in the standard color	
<b>Y54</b>	Special paint finish not in the standard color	
<b>Documentation</b>		
<b>B00</b>	No motor manual	
<b>B21</b>	Motor manual on CD instead of paper (PDF format)	
<b>B22</b>	Motor manual as e-mail (PDF format) instead of paper	
<b>B23</b>	Motor manual printed on paper, 3x	
<b>B27</b>	Run out protocol	
<b>B28</b>	Protocol air gap calculation	
<b>B34</b>	Document standard inspection and test plan	
<b>B35</b>	Document balance report	
<b>B36</b>	Document test and inspection description	
<b>B37</b>	Document load characteristics	
<b>B38</b>	Document recommended spare parts	
<b>B41</b>	Document instrumentation list	
<b>B43</b>	Document production schedule: Generated once	
<b>B44</b>	Document production schedule: Updated biweekly	
<b>B45</b>	Document production schedule: Updated monthly	
<b>B48</b>	Document order-specific inspection and test plan	
<b>Document language</b>		
<b>D00</b>	Documentation in German	
<b>D54</b>	Documentation in Czech	
<b>D55</b>	Documentation in Polish	
<b>D56</b>	Documentation in Russian	
<b>D72</b>	Documentation in Italian	
<b>D73</b>	Documentation in Finnish	
<b>D74</b>	Documentation in Dutch	
<b>D75</b>	Documentation in Turkish	
<b>D76</b>	Documentation in English	Standard
<b>D77</b>	Documentation in French	
<b>D78</b>	Documentation in Spanish	
<b>D79</b>	Documentation in Portuguese	
<b>D80</b>	Documentation in Bulgarian	
<b>D81</b>	Documentation in Norwegian	
<b>D82</b>	Documentation in Hungarian	
<b>D83</b>	Documentation in Swedish	
<b>D84</b>	Documentation in Chinese	
<b>Speed monitoring</b>		
<b>H70</b>	Rotary pulse encoder LL 861 900 220 (Leine+Linde)	
<b>H73</b>	Rotary pulse encoder HOG 10 D1024 I (16 mm)	
<b>H76</b>	Rotary pulse encoder HOG 10 D1024 I with integrated shaft grounding	
<b>H88</b>	Rotary pulse encoder HOG 11 DN 1024 I (16 mm) with special anti-corrosion protection	For marine applications
<b>H89</b>	Rotary pulse encoder HOG 11 DN 1024 I (16 mm) with integrated shaft grounding and special anti-corrosion protection	For marine applications

## Overview (continued)

Order code	Option description	Remark
<b>Direction of rotation</b>		
K97	Clockwise rotation	Standard
K98	Anticlockwise rotation	
<b>Noise reduction</b>		
L20	Silencer for air inlet	
L21	Noise reduction: Silencer for air outlet	Only for H-compact PLUS
L22	Noise reduction: Lining of interior space	Only for H-compact PLUS
L23	External metal fan, unique directional	Only for H-compact PLUS
L25	Rustless grid at inlet silencer	
<b>Terminal box mounting position</b>		
K09	Terminal box on right-hand side, view from DE	Standard
K10	Terminal box on left-hand side, view from DE	
K83	Terminal box turned through 90°, cable from DE	
K84	Terminal box turned through 90°, cable from NDE	
K85	Terminal box turned through 180°	
<b>Terminal box, main and auxiliary terminal box</b>		
L54	Terminal box 1XB8 751, 6 terminals with 2 cable entries for connection to power supply, rated current > 315 A	
L59	Terminal box 1XB8 911 for 1 cable entry for power supply	
L55	Star-point terminal box 1XA8 711, up to 6 kV, 3 terminals	
L56	Star-point terminal box 1XB8 911, up to 10 kV, 3 terminals	
L57	Star-point terminal box 1XB8 751, up to 6 kV, 6 terminals	
L58	Star-point terminal box 1XB9 011, for installing current transformer (without current transformer)	
M50	Auxiliary terminal box material: Cast iron	
M51	Auxiliary terminal box material: Stainless steel	
M52	Separate auxiliary terminal box for anti-condensation heater	Standard for H-compact PLUS
<b>Terminal box – accessories/equipping</b>		
K59	Cable plug connection, rated voltage 2 to 6.6 kV	
L79	Gland plate for 3 winding ends to connect to the line supply via separately mounted terminal box, 3 m free cable length from the frame	
L80	Gland plate for 6 winding ends to connect to the line supply via separately mounted terminal box, 3 m free cable length from the frame	
L83	Cable plug connection, rated voltage 9 to 11 kV	
<b>Cooling air monitoring</b>		
A44	1 resistance thermometer Pt 100 for 2-, 3- or 4-wire connection from terminal box for cold air temperature	
A45	1 resistance thermometer Pt 100 for 2-, 3- or 4-wire connection from terminal box for hot air temperature	
A46	1 double resistance thermometer Pt 100 for 2-, 3- or 4-wire connection from terminal box, for cold air temperature	
A47	1 double resistance thermometer Pt 100 for 2-, 3- or 4-wire connection from terminal box, for hot air temperature	
A86	1 dial-type thermometer with 2 NO-Contacts for cold air temperature incl. terminal box	
A87	1 dial-type thermometer with 2 NO-Contacts for hot air temperature incl. terminal box	

# Motors for converter operation

## Options and tests

### Description of options

#### Overview (continued)

Order code	Option description	Remark
<b>Bearing version/instrumentation</b>		
<b>H09 + H11</b>	DIN flange type for forced oil lubrication for oil inlet with flowmeter, manometer and throttle valve (incl. counter flange) + DIN flange type forced oil lubrication for oil outlet with sight glass (incl. counter flange)	
<b>H10 + H12</b>	ANSI flange type for forced oil lubrication for oil inlet with flowmeter, manometer and throttle valve (incl. counter flange) + ANSI flange type for forced oil lubrication for oil outlet with sight glass (incl. counter flange)	
<b>H43</b>	DIN flange type for forced oil lubrication for in- and outlet without instruments (with counter flanges)	
<b>H44</b>	ANSI flange type for forced oil lubrication for in- and outlet without instruments (with counter flanges)	
<b>K20</b>	Bearing design on DE for increased forces (reinforced)	H-compact SH 315 and SH 355 only
<b>K94</b>	Fixed bearing at DE for sleeve bearing	
<b>K96</b>	Sleeve bearing instead of roller bearing	
<b>L18</b>	DE insulation	
<b>L27</b>	NDE insulation	
<b>L60</b>	Forced-circulation oil lubrication (with oil cooling) instead of oil-ring lubrication	
<b>L66</b>	Air cooling, but prepared for future conversion to forced-circulation oil lubrication	
<b>P44</b>	Oil manifold; connections with counter flange; flange flush with the axial shaft face	
<b>Bearing monitoring – sleeve bearings</b>		
<b>A02</b>	Shaft vibration monitoring for sleeve bearings, Bently Nevada system	
<b>A03</b>	Speed monitoring using an inductive proximity switch, Pepperl + Fuchs, incl. terminal box, without evaluation unit	
<b>A39</b>	Prepared for shaft vibration monitoring for sleeve bearings (without monitoring system)	
<b>A41</b>	2 resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminals for sleeve bearing	
<b>A43</b>	2 double resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminals for sleeve bearing	
<b>A70</b>	2 dial-type thermometers without contacts	
<b>A71</b>	2 dial-type thermometers with contacts	
<b>Bearing monitoring – roller bearings</b>		
<b>A40</b>	2 resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminal box for rolling-contact bearings	
<b>A42</b>	2 double resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminals for rolling-contact bearing	
<b>G50</b>	Shock pulse measuring nipple (SPM) at DE and NDE	Standard
<b>H05</b>	Shock pulse measurement (SPM), fixed sensors and distributor box	
<b>H07</b>	Shock pulse measurement (SPM), complete alarm box	
<b>Mechanical versions</b>		
<b>K16</b>	Second shaft extension up to 50 % rated torque	
<b>L81</b>	Vibration severity grade B according to IEC/ EN 60034-14	
<b>Y55</b>	Non-standard cylindrical shaft extension (an inquiry must be sent to the factory)	
<b>Y85</b>	Oil shrink fit for cylindrical, single-stage shaft extension instead of a key connection	

## Overview (continued)

Order code	Option description	Remark
<b>Certified for pump drives</b>		
E88	Construction supervision for motors for seawater desalination plants where Siemens AG commissions the acceptance authority	
E89	Construction supervision for motors for seawater desalination plants where a third party commissions the acceptance authority	
E90	Pump drive for seawater desalination plants certified according to Lloyds Register	
<b>Marine applications</b>		Options and tests for marine and offshore applications: see <a href="#">Chapter 5</a> .
<b>Others/additional options</b>		
H08	Leakage water detection	
K52	Degree of protection IP56 non-heavy-sea	
L15	Supporting ring for coupling guard	
L17	Mounting a coupling provided (finish machined and balanced)	
L23	External metal fan, unique directional	
L31	Motor mounting materials for mounting on a steel foundation: Bolts, shims and taper dowels	
L32	Motor mounting materials for mounting on a concrete foundation or concrete base: Threaded bolts, armature plates, sole plates, shims, leveling plates and taper dowels	
L33	Motor mounting materials to mount on a concrete foundation or concrete base: T-head bolts, foundation bolt sleeves, sole plates, shims, leveling plates and taper dowels	
L91	Higher number of starts, > 1000 ... 10000 starts per year, for Cu rotors	
L92	Higher number of starts, > 5000 ... 10000 starts per year, for Al rotors	
P45	External screws made of stainless steel	
<b>Anti-condensation heating</b>		
L08	Anti-condensation heater, rated voltage 400 V	
L09	Anti-condensation heater, rated voltage 500 V	
M12	Anti-condensation heater 110 to 120 V (min. 100 V, max. 132 V)	
M13	Anti-condensation heater 220 to 240 V (min. 200 V, max. 264 V)	Standard for H-compact PLUS
Y83	Anti-condensation heater with other rated voltages, V = additional text required)	
<b>Ambient conditions</b>		
D02	Operation at ambient temperatures up to -50 °C, transport up to -50 °C	
D03	Operation at ambient temperatures up to -40 °C, transport up to -40 °C	
D04	Operation at ambient temperatures up to -30 °C, transport up to -40 °C	
M06	For use in sulfurous or hydrogenous atmosphere	
<b>Winding and motor protection</b>		
A12	6 PTC thermistors without lightning arresters	
A23	2 temperature sensors KTY 84-130	
A65	6 embedded resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminal box without lightning arresters	Standard
A66	6 embedded resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminal box with lightning arresters	

# Motors for converter operation

## Options and tests

### Description of options

#### Overview (continued)

Order code	Option description	Remark
<b>Tests with acceptance</b>		
F01	All standard tests (routine test), with acceptance	
F15	Recording of no-load characteristic and determination of core and friction losses, with acceptance	
F17	Recording of short-circuit characteristic and determination of short-circuit losses, with acceptance	
F19	Recording of load characteristic, with acceptance	
F23	Dissipation factor test (tan delta) on 2 (test) coils, with acceptance	In addition, specify order code F90
F29	No-load noise measurement, without noise analysis, with acceptance	
F31	Cooling air flow and pressure drop measurement, with acceptance	
F35	Recording of current and torque characteristics during acceleration, with acceptance	
F37	Determination of moment of inertia by retardation method, with acceptance	
F39	Overspeed test, with acceptance	
F41	Recording of residual voltage curve, with acceptance	
F53	Locked-rotor torque and current measurement, with acceptance	
F55	Polarization index measurement, with acceptance	
F61	Impulse or AC voltage test on 2 (test) coils, with acceptance	In addition, specify order code F90
F63	Noise analysis, with acceptance	
F67	Sleeve bearing inspection after testrun	
F83	Type test for horizontal motors with temperature rise test, with acceptance	
F90	2 test coils	
F93	Type test for vertical motors with temperature rise test, with acceptance	
<b>Tests without acceptance</b>		
F14	Recording of no-load characteristic and determination of core and friction losses, without acceptance	
F16	Recording of short-circuit characteristic and determination of short-circuit losses, without acceptance	
F18	Recording of load characteristic, without acceptance	
F22	Dissipation factor test (tan delta) on 2 (test) coils, without acceptance	In addition, specify order code F90
F28	No-load noise measurement, without noise analysis, without acceptance	
F30	Cooling air flow and pressure drop measurement, without acceptance	
F34	Recording of current and torque characteristics during acceleration, without acceptance	
F36	Determination of moment of inertia by retardation method, without acceptance	
F38	Overspeed test, without acceptance	
F42	"Conformance Test (Wet Test)" to NEMA Standard, without acceptance	
F52	Locked-rotor torque and current measurement, without acceptance	
F54	Polarization index measurement, without acceptance	
F60	Impulse or AC voltage test on 2 (test) coils, without acceptance	In addition, specify order code F90
F62	Noise analysis, without acceptance	
F82	Type test for horizontal motors with temperature rise test, without acceptance	
F90	2 test coils	
F92	Type test for vertical motors with temperature rise test, without acceptance	

**Overview** (continued)

Order code	Option description	Remark
	<b>Extension of liability for defects</b>	
<b>Q80</b>	Extension of liability for defects, by 12 months to a total of 24 months (2 years) from delivery	
<b>Q81</b>	Extension of liability for defects, by 18 months to a total of 30 months (2.5 years) from delivery	
<b>Q82</b>	Extension of liability for defects, by 24 months to a total of 36 months (3 years) from delivery	
<b>Q83</b>	Extension of liability for defects, by 30 months to a total of 42 months (3.5 years) from delivery	
<b>Q84</b>	Extension of liability for defects, by 36 months to a total of 48 months (4 years) from delivery	
<b>Q85</b>	Extension of liability for defects, by 48 months to a total of 60 months (5 years) from delivery	

Conditions for an extension of liability for defects

- For the duration of the extended liability for defects in the case of a new order and reordering after delivery, the final destination of the product must be specified. The process EUNA is available at [www.siemens.com/euna](http://www.siemens.com/euna) for the purpose of this notification process, which must be performed by your Siemens sales contact.
  - For all durations of the extension of liability for defects of 4 and 5 years (Q84, Q85) this can only be agreed in conjunction with a corresponding service contract including regular inspection. This maintenance contract must be agreed via the responsible service center. The process EUNA is available at [www.siemens.com/euna](http://www.siemens.com/euna) for the purpose of documenting this, which must be performed by your Siemens sales contact.
  - The general storage conditions described in the operating instructions must be adhered to, especially the specifications for long-term storage.
- Commissioning must be performed by appropriately qualified personnel. When claiming under liability for defects, it is necessary under certain circumstances to supply the corresponding commissioning.
  - Periodic maintenance must be performed in accordance with the specifications in the operating instructions. When claiming under liability for defects, it is necessary under certain circumstances to supply the corresponding maintenance records.
  - The operating conditions must correspond to the specifications in the operating instructions, configuration manual, or special conditions specified in the contract.
  - The extension of liability for defects excludes wear parts, such as carbon brushes or rolling-contact bearings. An exception applies if irrefutable evidence of their premature failure is provided.
- Otherwise the general liability for defects conditions apply.

# Motors for converter operation

## Options and tests

Notes

3

## Explosion-protected motors



<b>4/2</b>	<b>Overview</b>
4/2	Classification of zones
4/3	Types of protection
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<b>4/5</b>	<b>Type of protection Ex nA/Ex tD</b>
4/5	Air-cooled motors H-compact 1MS4
4/6	Air-cooled motors H-compact PLUS 1SG4 and 1SG6
4/7	Water-cooled motors H-compact PLUS 1SL4 and 1SL6
<b>4/8</b>	<b>Type of protection Ex px</b>
4/8	Overview
4/9	Air-cooled motors H-compact 1MG4
4/10	Air-cooled motors H-compact PLUS 1SB4 and 1SB6
4/11	Water-cooled motors H-compact PLUS 1SQ4 and 1SQ6
<b>4/12</b>	<b>Type of protection Ex e</b>
4/12	Air-cooled motors H-compact 1MA4
4/14	Air-cooled motors H-compact PLUS 1SJ4 and 1SJ6
4/14	Water-cooled motors H-compact PLUS 1SN4 and 1SN6
<b>4/15</b>	<b>Options and tests</b>
4/15	Description of options

# Explosion-protected motors

## Overview

### Classification of zones

#### Overview

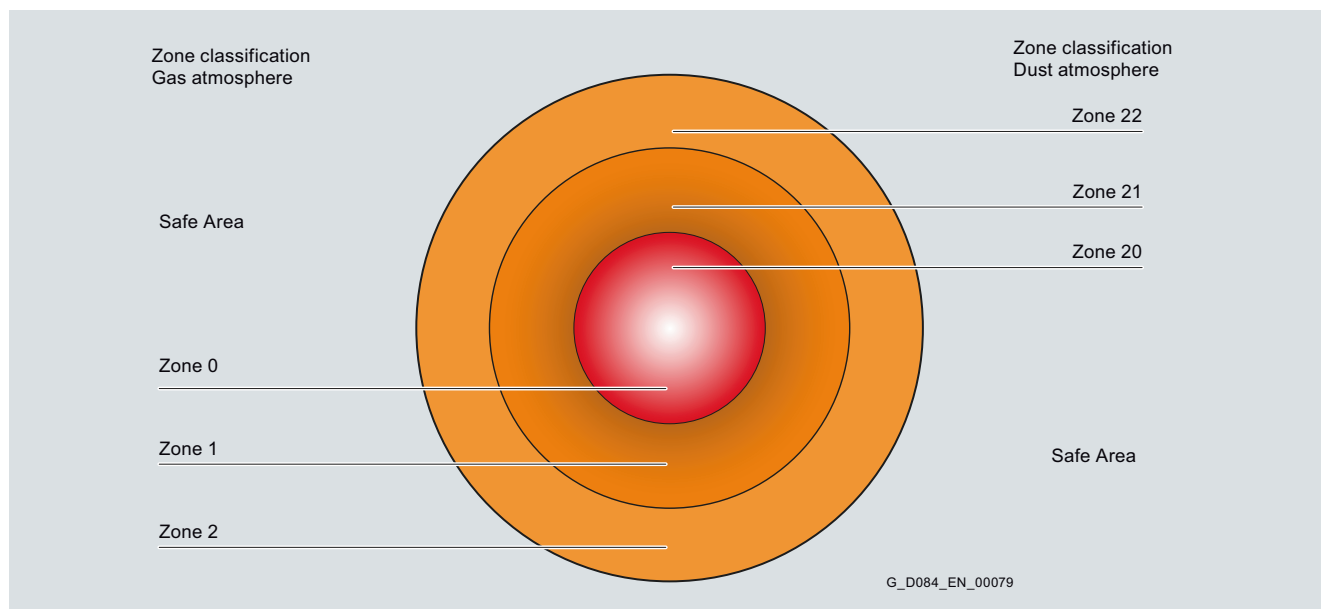
In many industries, the manufacture, processing, transport or storage of combustible materials results in the creation or release of gases, vapors or mist into the environment. Combustible dusts are created in other processes.

Explosive atmospheres are formed when gases, vapors, or mist come into contact with oxygen in the air. If ignited, this can result in an explosion. In the chemical and petrochemical industries in particular, when crude oil and natural gas are transported, or in mining, milling (e.g. grain and granular solids), this can result in serious injury to personnel and damage to equipment.

To ensure maximum safety in these areas, legislators in most countries have implemented appropriate stipulations in the form

of laws and regulations based on national and international standards.

Hazardous areas are classified in zones. Classification in zones depends on the probability of the presence of an explosive atmosphere, the duration and the location. Information and specifications regarding classification in zones are provided in DIN EN 60079-10-1/IEC 60079-10-1 for gas atmospheres and in DIN EN 60079-10-2/IEC 60079-10-2 for potentially explosive atmospheres as a result of dust. Further, a distinction is made between various explosion groups as well as temperature classes and these are included in the hazard assessment.



Depending on the particular zone and therefore the associated hazard, operating equipment must comply with defined minimum requirements regarding the type of protection. The different

types of protection require corresponding measures to prevent ignition that should be implemented at the motor in order to prevent that a surrounding explosive atmosphere is ignited.

Zone Dust <sup>1)2)</sup>	Gas <sup>1)2)</sup>	Zone definition acc. to DIN EN 60079-10-1/IEC 60079-10-1 for Gas atmospheres DIN EN 60079-10-2/IEC 60079-10-2 for dust atmospheres	Assigned types of protection	Category according to 94/9/EC
22	–	An area in which in normal operation it is not expected that an explosive atmosphere in the form of a cloud of combustible dust in the air occurs, and if it does occur then only briefly.	Ex tD	3
–	2	An area in which in normal operation it is not expected that an explosive gas atmosphere occurs and if so, only infrequently and only briefly.	Ex nA	3
–	1	An area in which it is expected that an explosive gas atmosphere occurs during normal operation.	Ex e Ex px Ex d	2
–	0	An area in which it is expected that a gas atmosphere is constantly present or for long periods of time	Motors are not permitted	

<sup>1)</sup> Motors for Zone 1 may also be used in Zone 2.

<sup>2)</sup> Motors, which are marked for gas or dust protection, must not be used in hybrid mixtures! Hybrid mixtures: When explosive gas and dust atmospheres occur simultaneously.

### Overview (continued)

#### **Type of protection, pressurized enclosure Ex px acc. to DIN EN 60079-2/IEC 60079-2**

In the motor, protective gas is kept under pressure in relation to the surrounding atmosphere to prevent the penetration of explosive atmospheres. The inside of the motor must be flushed with an inert gas before it is switched on.

H-compact motors fulfill this type of protection (type series 1MG4) and H-compact PLUS (air-cooled, type series 1SB4/1SB6 and water-cooled, type series 1SQ4/1SQ6).

#### **Type of protection, increased safety Ex e acc. to DIN EN 60079-7/IEC 60079-7**

Additional measures are taken to prevent the possibility of high temperatures and to prevent sparks or arcs from occurring inside the motor and at external motor components.

Increased safety can be guaranteed by H-compact motors (type series 1MA4) and H-compact PLUS (air-cooled, type series 1SJ4/1SJ6 and water-cooled (type series 1SN4/1SN6) (an inquiry must be sent to the factory).

#### **Type of protection, flameproof enclosure Ex d acc. to DIN EN 60079-1/IEC 60079-1**

The components that can ignite an explosive atmosphere are located in an enclosure that is not damaged by an internal explosion and flameproof joints prevent flames from escaping to the explosive atmosphere on the outside.

LOHER GmbH manufactures motors with flameproof enclosures.

#### **Type of protection, Ex nA acc. to DIN EN 60079-15/IEC 60079-15**

The type of protection **Ex nA** ensures that a motor in normal operation as well as when operated under deviating conditions as specified in the standard is not in a position to ignite a surrounding explosive gas atmosphere.

The series of H-compact motors (type series 1MS4) and H-compact PLUS (air-cooled, type series 1SG4/1SG6) and water-cooled (type series 1SL4/1SL6) are available in **Ex nA**.

#### **Type of protection Ex tD acc. to DIN EN 61241-1/IEC 61241-1**

This type of protection applies for electrical equipment protected using an enclosure and with limited surface temperature for use in areas in which combustible dust can occur in concentration levels that could cause a fire or an explosion.

The series of H-compact motors (type series 1MS4) and H-compact PLUS (air-cooled, 1SG4/1SG6 and water-cooled, 1SL4/1SL6) are available in **Ex tD**.

#### **Explosion-protected motors for converter operation**

Principally, explosion-protected motors can be fed from drive converters. As a result of the different design, system analyses, system tests etc. for the various types of protection, an inquiry is required to check whether these motors can be actually implemented.

# Explosion-protected motors

## Overview

### Certification

#### Overview (continued)

##### Certification

IEC motors for use in hazardous zones are certified according to the EU Directive 94/9/EC (ATEX) and are marked according to the following schematic.

Example, pressurized enclosure:	CE	XXXX	⊕Ex	II	2	G	Ex	px	II	T3	X
CE marking											
Number of the certifying "notified body"											
Ex marking											
Device group: • I = firedamp area • II = other areas than firedamp											
Category: • 2 (Zone 1/21) • 3 (Zone 2/22)											
Explosive atmosphere • G = gas • D = dust											
Explosion protected equipment											
Type of protection nA, d, e or px											
Note: Additional types of protection for accessories are alphabetically listed											
Explosion group, where relevant, restricted (IIA, IIB, IIC)											
Temperature class with max. surface temperature • T1 = 450 °C • T2 = 300 °C • T3 = 200 °C (standard for motors from Siemens I DT LD P) • T4 = 135 °C											
Special conditions according to the operating instructions or type examination certificate											

Additional information on the subject of explosion protection, types of protection and zones is provided in the Siemens brochure *Explosion Protection*.

# Explosion-protected motors

## Type of protection Ex nA/Ex tD

Air-cooled motors  
H-compact 1MS4

### Overview



### Technical data

#### Overview of technical data

H-compact 1MS4	
<b>Rated voltage</b>	2.0 ... 11 kV
<b>Rated frequency</b>	50/60 Hz
<b>Motor type</b>	Induction motor with squirrel-cage rotor
<b>Type of construction</b>	IM B3, IM V1
<b>Degree of protection</b>	IP55
<b>Type of protection</b>	Ex nA/Ex tD
<b>Operation in hazardous zones</b>	Zone 2/Zone 22
<b>Cooling method</b>	IC411/IC416
<b>Stator winding insulation</b>	Thermal class 155 (F), utilized to 130 (B)
<b>Shaft height</b>	315 ... 630 mm
<b>Bearings</b>	Roller bearings, sleeve bearings
<b>Cage material</b>	Die-cast aluminum or copper (dependent on the shaft height and number of poles)
<b>Standards</b>	IEC, EN
<b>Frame design</b>	Cast iron with cooling ribs

The series of H-compact motors (IC411/IC416 cooling type), developed for Zone 2 in type of protection **Ex nA** or for Zone 22 in type of protection **Ex tD** are available as 1MS4 motors. The Order No. schematic is shown in Chapter 1.

These **Ex nA** or **Ex tD** measures do not affect the performance data or main dimensions with respect to H-compact motors (1LA4 type series). This is the reason that the values of the 1LA4 type series from Chapter 2 and Chapter 3 can also be used for 1MS4 motors.

An extensive range of options and tests are available for H-compact motors, type of protection **Ex nA** or **Ex tD** (--> Options and tests).

# Explosion-protected motors

## Type of protection Ex nA/Ex tD

Air-cooled motors  
H-compact PLUS 1SG4 and 1SG6

### Overview



### Technical data

#### Overview of technical data

H-compact PLUS 1SG4/1SG6	
Rated voltage	3.3 ... 11 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Type of protection	Ex nA/Ex tD
Operation in hazardous zones	Zone 2/Zone 22
Cooling method	IC611/IC616/IC666
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	450 ... 710 mm
Bearings	Roller bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN
Frame design for shaft heights 450 ... 560 mm	Frame: Cast iron Design: Steel
Frame design for shaft heights 630 ... 710 mm	Frame: Steel Design: Steel

H-compact PLUS motors (type series 1SG4 and 1SG6) developed for Zone 2 in type of protection **Ex nA** or for Zone 22 in type of protection **Ex tD** are available as modular motors with air/air heat exchanger. The Order No. schematic is shown in Chapter 1.

These **Ex nA** or **Ex tD** measures do not affect the performance data or main dimensions with respect to H-compact PLUS motors. This is the reason that the values of the 1RQ4 or 1RQ6 type series from Chapter 2 can be used for 1SG4 and 1SG6 motors.

An extensive range of options and tests are available for H-compact PLUS motors, type of protection **Ex nA** or **Ex tD** (--> Options and tests).

# Explosion-protected motors

## Type of protection Ex nA/Ex tD

Water-cooled motors  
H-compact PLUS 1SL4 and 1SL6

### Overview



### Technical data

#### Overview of technical data

H-compact PLUS 1SL4/1SL6	
Rated voltage	3.3 ... 11 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Type of protection	Ex nA/Ex tD
Operation in hazardous zones	Zone 2/Zone 22
Cooling method	IC81W/IC86W
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	450 ... 710 mm
Bearings	Roller bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN
Frame design for shaft heights 450 ... 560 mm	Frame: Cast iron Design: Steel
Frame design for shaft heights 630 ... 710 mm	Frame: Steel Design: Steel

H-compact PLUS motors (type series 1SL4 and 1SL6) developed for Zone 2 in type of protection **Ex nA** or for Zone 22 in type of protection **Ex tD** are available as modular motors with air/water heat exchanger (cooling type IC81W/IC86W). The Order No. schematic is shown in Chapter 1.

These **Ex nA** or **Ex tD** measures do not affect the performance data or main dimensions with respect to H-compact PLUS motors. This is the reason that the values of the 1RN4 or 1RN6 type series from Chapter 2 can be used for 1SL4 and 1SL6 motors.

An extensive range of options and tests are available for H-compact PLUS motors, type of protection **Ex nA** or **Ex tD** (--> Options and tests).

# Explosion-protected motors

## Type of protection Ex px

### Overview

#### Overview

For motors with pressurized enclosure (type of protection **Ex px**) the terminal box is included in the pressurized enclosure or has increased safety (type of protection **Ex e**).

For motors > 11 kV, the terminal box is always included in the pressurized enclosure.

# Explosion-protected motors

## Type of protection Ex px

Air-cooled motors  
H-compact 1MG4

### Overview



### Technical data

#### Overview of technical data

H-compact 1MG4	
<b>Rated voltage</b>	2.0 ... 11 kV
<b>Rated frequency</b>	50/60 Hz
<b>Motor type</b>	Induction motor with squirrel-cage rotor
<b>Type of construction</b>	IM B3, IM V1
<b>Degree of protection</b>	IP55
<b>Type of protection</b>	Ex px
<b>Operation in hazardous zones</b>	Zone 1 (may also be used in Zone 2)
<b>Cooling method</b>	IC411/IC416
<b>Stator winding insulation</b>	Thermal class 155 (F), utilized to 155 (F)
<b>Shaft height</b>	450 ... 560 mm
<b>Bearings</b>	Roller bearings, sleeve bearings
<b>Cage material</b>	Die-cast aluminum or copper (dependent on the shaft height and number of poles)
<b>Standards</b>	IEC, EN
<b>Frame design</b>	Cast iron with cooling ribs

The H-compact motors (IC411/IC416 cooling type), developed for Zone 1 in type of protection **Ex px** are available as 1MG4 motors. The Order No. schematic is shown in Chapter 1.

The motors are shipped with a control unit to maintain the internal pressure and to carry out the purging process required each time before the motor is started.

These **Ex px** measures have no effect on the performance data with respect to H-compact motors of the 1LA4 type series. This is the reason that the values of the 1LA4 motors from Chapter 1 can be used for 1MG4 motors. Main dimensions on request.

A wide range of options and tests is available for H-compact motors, type of protection **Ex px**.

# Explosion-protected motors

## Type of protection Ex px

Air-cooled motors  
H-compact PLUS 1SB4 and 1SB6

### Overview



### Technical data

#### Overview of technical data

H-compact PLUS 1SB4/1SB6	
Rated voltage	3.3 ... 13.8 kV
Rated frequency	50/60 Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3, IM V1
Degree of protection	IP55
Type of protection	Ex px
Operation in hazardous zones	Zone 1 (may also be used in Zone 2)
Cooling method	IC611/IC616/IC666
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	450 ... 710 mm
Bearings	Roller bearings, sleeve bearings
Cage material	Copper
Standards	IEC, EN
Frame design for shaft heights 450 ... 560 mm	Frame: Cast iron Design: Steel
Frame design for shaft heights 630 ... 710 mm	Frame: Steel Design: Steel

This series of H-compact PLUS motors, developed for Zone 1 (type series 1SB4 and 1SB6) in type of protection **Ex px** are available as modular motors with air/air heat exchanger (IC611/IC616/IC666 cooling type). The Order No. schematic is shown in Chapter 1.

The motors are shipped with a control unit to maintain the internal pressure and to carry out the purging process required each time before the motor is started.

These **Ex px** measures have no effect on the performance data when compared to H-compact PLUS motors. This is the reason that the values of 1RQ4 or 1RQ6 motors from Chapter 2 can be used for 1SB4 and 1SB6 motors. Main dimensions on request.

A wide range of options and tests is available for H-compact PLUS motors, type of protection **Ex px**.

# Explosion-protected motors

## Type of protection Ex px

Water-cooled motors  
H-compact PLUS 1SQ4 and 1SQ6

### Overview



### Technical data

#### Overview of technical data

H-compact PLUS 1SQ4/1SQ6	
<b>Rated voltage</b>	3.3 ... 13.8 kV
<b>Rated frequency</b>	50/60 Hz
<b>Motor type</b>	Induction motor with squirrel-cage rotor
<b>Type of construction</b>	IM B3, IM V1
<b>Degree of protection</b>	IP55
<b>Type of protection</b>	Ex px
<b>Operation in hazardous zones</b>	Zone 1 (may also be used in Zone 2)
<b>Cooling method</b>	IC81W/IC86W
<b>Stator winding insulation</b>	Thermal class 155 (F), utilized to 130 (B)
<b>Shaft height</b>	450 ... 710 mm
<b>Bearings</b>	Roller bearings, sleeve bearings
<b>Cage material</b>	Copper
<b>Standards</b>	IEC, EN
<b>Frame design for shaft heights 450 ... 560 mm</b>	Frame: Cast iron Design: Steel
<b>Frame design for shaft heights 630 ... 710 mm</b>	Frame: Steel Design: Steel

This series of H-compact PLUS motors, developed for Zone 1 (type series 1SQ4 and 1SQ6) in type of protection **Ex px** is available as modular motors with air/water heat exchanger (IC81W/IC86W cooling type). The Order No. schematic is shown in Chapter 1.

The motors are shipped with a control unit to maintain the internal pressure and to carry out the purging process required each time before the motor is started.

These **Ex px** measures have no effect on the performance data when compared to H-compact PLUS motors. This is the reason that the values of 1RN4 or 1RN6 type series from Chapter 2 can be used for 1SQ4 and 1SQ6 motors. Main dimensions on request.

A wide range of options and tests is available for H-compact PLUS motors, type of protection **Ex px**.

# Explosion-protected motors

## Type of protection Ex e

Air-cooled motors  
H-compact 1MA4

### Overview



### Technical data

#### Overview of technical data

H-compact 1MA4	
<b>Rated voltage</b>	3.0 ... 6.6 kV
<b>Rated frequency</b>	50/60 Hz
<b>Motor type</b>	Induction motor with squirrel-cage rotor
<b>Type of construction</b>	IM B3, IM V1
<b>Degree of protection</b>	IP55
<b>Type of protection</b>	Ex e
<b>Operation in hazardous zones</b>	Zone 1 (may also be used in Zone 2)
<b>Cooling method</b>	IC411/IC416
<b>Stator winding insulation</b>	Thermal class 155 (F), utilized to 130 (B)
<b>Shaft height</b>	315 ... 400 mm
<b>Bearings</b>	Roller bearings, sleeve bearings
<b>Cage material</b>	Die-cast aluminum or copper (dependent on the shaft height and number of poles)
<b>Standards</b>	IEC, EN
<b>Frame design</b>	Cast iron with cooling ribs

The series of H-compact motors developed for Zone 1 in type of protection **Ex e** is available as 1MA4 motors (cooling type IC411/IC416). The Order No. code is shown in Chapter 1.

**Versions of motors that deviate from those listed in this chapter are available request.**

# Explosion-protected motors

## Type of protection Ex e

Air-cooled motors  
H-compact 1MA4

### Selection and ordering data

For H-compact in **Ex e**, the following power ratings are available as standard:

Rated power kW	High voltage motor H-compact Order No.	Speed rpm	Rated current at $I_{\text{rated}}$ at 6 kV A	Efficiency		Power factor		Torque Nm	Break- down torque $T_B/T_{\text{rated}}$ [-]	Locked- rotor torque $T_{LR}/T_{\text{rated}}$ [-]	Locked- rotor current $I_{LR}/I_{\text{rated}}$ [-]	Moment of inertia kgm <sup>2</sup>
				4/4 load %	3/4 load %	4/4 load cos $\varphi$	3/4 load cos $\varphi$					
<b>2.0 ... 6.6 kV, 50 Hz</b>												
2-pole												
185	1MA4312-2AN	2974	22	95.2	95.1	0.86	0.85	594	2.3	0.85	5.1	2.2
230	1MA4314-2AN	2977	26	95.6	95.6	0.88	0.86	738	2.3	0.9	5.5	2.7
280	1MA4316-2AN	2977	32	96	96	0.89	0.88	898	2.2	0.85	5.3	3.1
315	1MA4350-2CN	2982	35	96.2	96.2	0.9	0.88	1009	2.4	0.7	5.5	5.5
355	1MA4352-2CN	2981	39	96.3	96.3	0.91	0.9	1137	2.3	0.7	5.5	6
400	1MA4354-2CN	2981	44	96.6	96.7	0.91	0.9	1281	2.4	0.7	5.5	6.5
4-pole												
170	1MA4310-4AN	1486	21	94.4	94.3	0.82	0.78	1093	2.3	0.8	5.5	2.8
220	1MA4312-4AN	1485	26	95	95.1	0.85	0.82	1415	2.2	0.8	5.4	3.5
260	1MA4314-4AN	1486	31	95.3	95.5	0.85	0.82	1671	2.2	0.8	5.5	4
310	1MA4316-4AN	1486	36	95.6	95.8	0.86	0.84	1992	2.2	0.8	5.5	4.8
335	1MA4350-4AN	1487	40	95.7	95.7	0.84	0.81	2151	2.2	0.75	5.4	6
375	1MA4352-4AN	1487	44	95.9	95.9	0.86	0.84	2408	2.2	0.75	5.4	6.9
440	1MA4354-4AN	1487	51	96.1	96.2	0.87	0.85	2826	2.2	0.8	5.5	8.1
500	1MA4400-4AN	1490	60	96.2	96.1	0.84	0.82	3205	2.2	0.7	5.4	11.6
560	1MA4402-4AN	1490	66	96.3	96.2	0.85	0.82	3589	2.15	0.7	5.3	12.9
630	1MA4404-4AN	1490	73	96.6	96.5	0.86	0.84	4038	2.1	0.7	5.2	14.5

#### Voltage code:

3.3 kV, 50 Hz	0
3 kV, 50 Hz	3
5 kV, 50 Hz	5
6 kV, 50 Hz	6
6.6 kV, 50 Hz	7
Other voltage	9

#### Type of construction:

IM B3	0
IM V1 (with canopy)	4

#### Note:

Higher pole numbers are available on request.

The power/performance data of H-compact 1LA4 motors **CANNOT be used here**. On the other hand, the main dimensions correspond to those of the 1LA4 motors and can be taken from Chapter 2.

A wide range of options and tests is available for H-compact motors, type of protection **Ex e**.

# Explosion-protected motors

## Type of protection Ex e

**Air-cooled motors**  
H-compact PLUS 1SJ4 and 1SJ6

**Water-cooled motors**  
H-compact PLUS 1SN4 and 1SN6

### Overview

Based on the series of H-compact PLUS motors, air/air-cooled motors, type **1SJ4** and **1SJ6** are available for Zone 1 in **Ex e**.

**An inquiry must always be sent to the factory for these motors.**

### Overview

Based on the series of H-compact PLUS motors, air/water-cooled motors, type **1SN4** and **1SN6** are available for Zone 1 in **Ex e**.

**An inquiry must always be sent to the factory for these motors.**

### Options

Using the following options, H-compact and H-compact PLUS can be adapted to order-specific requirements. The Order No. is supplemented with a "-Z" and with either one or several order codes.

Other options can be addressed on request with the Vario (rib-cooled) or Vario PLUS (modular design) motor series.

Order code	Option description	Remark
<b>Paint finish</b>		
K26	Special paint finish in the standard color RAL 7030	
Y53	Normal paint finish not in the standard color	
Y54	Special paint finish not in the standard color	
<b>Documentation</b>		
B00	No motor manual	
B21	Motor manual on CD instead of paper (PDF format)	
B22	Motor manual as e-mail (PDF format) instead of paper	
B23	Motor manual printed on paper, 3x	
B27	Run out protocol	
B28	Protocol air gap calculation	
B34	Document standard inspection and test plan	
B35	Document balance report	
B36	Document test and inspection description	
B37	Document load characteristics	
B38	Document recommended spare parts	
B41	Document instrumentation list	
B43	Document production schedule: Generated once	
B44	Document production schedule: Updated biweekly	
B45	Document production schedule: Updated monthly	
B48	Document order-specific inspection and test plan	
<b>Document language</b>		
D00	Documentation in German	
D54	Documentation in Czech	
D55	Documentation in Polish	
D56	Documentation in Russian	
D72	Documentation in Italian	
D73	Documentation in Finnish	
D74	Documentation in Dutch	
D75	Documentation in Turkish	
D76	Documentation in English	Standard
D77	Documentation in French	
D78	Documentation in Spanish	
D79	Documentation in Portuguese	
D80	Documentation in Bulgarian	
D81	Documentation in Norwegian	
D82	Documentation in Hungarian	
D83	Documentation in Swedish	
D84	Documentation in Chinese	
<b>Direction of rotation</b>		
K97	Clockwise rotation	
K98	Anticlockwise rotation	

# Explosion-protected motors

## Options and tests

### Description of options

#### Options (continued)

Order code	Option description	Remark
<b>Noise reduction</b>		
L20	Silencer for air inlet	
L21	Noise reduction: Silencer for air outlet	Only for H-compact PLUS
L22	Noise reduction: Lining of interior space	Only for H-compact PLUS
L23	External metal fan, unique directional	
L25	Rustless grid at inlet silencer	
<b>Terminal box mounting position</b>		
K09	Terminal box on right-hand side, view from DE	Standard
K10	Terminal box on left-hand side, view from DE	
K83	Terminal box turned through 90°, cable from DE	
K84	Terminal box turned through 90°, cable from NDE	
K85	Terminal box turned through 180°	
<b>Terminal box, main and auxiliary terminal box</b>		
L54	Terminal box 1XB8 751, 6 terminals with 2 cable entries for connection to power supply, rated current > 315 A	
L59	Terminal box 1XB8 911 for 1 cable entry for power supply	
L55	Star-point terminal box 1XA8 711, up to 6 kV, 3 terminals	
L56	Star-point terminal box 1XB8 911, up to 10 kV, 3 terminals	
L57	Star-point terminal box 1XB8 751, up to 6 kV, 6 terminals	
M50	Auxiliary terminal box material: Cast iron	
M51	Auxiliary terminal box material: Stainless steel	
M52	Separate auxiliary terminal box for anti-condensation heater	
<b>Cooling air monitoring</b>		
A44	1 resistance thermometer Pt 100 for 2-, 3- or 4-wire connection from terminal box for cold air temperature	
A45	1 resistance thermometer Pt 100 for 2-, 3- or 4-wire connection from terminal box for hot air temperature	
A46	1 double resistance thermometer Pt 100 for 2-, 3- or 4-wire connection from terminal box, for cold air temperature	
A47	1 double resistance thermometer Pt 100 for 2-, 3- or 4-wire connection from terminal box, for hot air temperature	
A86	1 dial-type thermometer with 2 NO-Contacts for cold air temperature incl. terminal box	
A87	1 dial-type thermometer with 2 NO-Contacts for hot air temperature incl. terminal box	

## Options (continued)

Order code	Option description	Remark
<b>Bearing version/instrumentation</b>		
<b>H09 + H11</b>	DIN flange type for forced oil lubrication for oil inlet with flowmeter, manometer and throttle valve (incl. counter flange) + DIN flange type forced oil lubrication for oil outlet with sight glass (incl. counter flange)	
<b>H10 + H12</b>	ANSI flange type for forced oil lubrication for oil inlet with flowmeter, manometer and throttle valve (incl. counter flange) + ANSI flange type for forced oil lubrication for oil outlet with sight glass (incl. counter flange)	
<b>H43</b>	DIN flange type for forced oil lubrication for in- and outlet without instruments (with counter flanges)	
<b>H44</b>	ANSI flange type for forced oil lubrication for in- and outlet without instruments (with counter flanges)	
<b>K20</b>	Bearing design on DE for increased forces (reinforced)	H-compact SH 315 and SH 355 only
<b>K94</b>	Fixed bearing at DE for sleeve bearing	
<b>K96</b>	Sleeve bearing instead of roller bearing	
<b>L18</b>	DE insulation	
<b>L27</b>	NDE insulation	Standard for H-compact PLUS
<b>L60</b>	Forced-circulation oil lubrication (with oil cooling) instead of oil-ring lubrication	
<b>L66</b>	Air cooling, but prepared for future conversion to forced-circulation oil lubrication	
<b>P44</b>	Oil manifold; connections with counter flange; flange flush with the axial shaft face	
<b>Bearing monitoring – sleeve bearings</b>		
<b>A02</b>	Shaft vibration monitoring for sleeve bearings, Bently Nevada system	
<b>A03</b>	Speed monitoring using an inductive proximity switch, Pepperl + Fuchs, incl. terminal box, without evaluation unit	
<b>A39</b>	Prepared for shaft vibration monitoring for sleeve bearings (without monitoring system)	
<b>A41</b>	2 resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminals for sleeve bearing	
<b>A43</b>	2 double resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminals for sleeve bearing	
<b>A70</b>	2 dial-type thermometers without contacts	
<b>A71</b>	2 dial-type thermometers with contacts	
<b>Bearing monitoring – roller bearings</b>		
<b>A40</b>	2 resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminal box for rolling-contact bearings	
<b>A42</b>	2 double resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminals for rolling-contact bearing	
<b>G50</b>	Shock pulse measuring nipple (SPM) at DE and NDE	Standard
<b>Mechanical versions</b>		
<b>K16</b>	Second shaft extension up to 50 % rated torque	
<b>L81</b>	Vibration severity grade B according to IEC/ EN 60034-14	
<b>Y55</b>	Non-standard cylindrical shaft extension (an inquiry must be sent to the factory)	
<b>Y85</b>	Oil shrink fit for cylindrical, single-stage shaft extension instead of a key connection	

# Explosion-protected motors

## Options and tests

### Description of options

#### Options (continued)

Order code	Option description	Remark
<b>Others/additional options</b>		
H08	Leakage water detection	
K52	Degree of protection IP56 non-heavy-sea	
K35	Metal external fan, bidirectional	
L15	Supporting ring for coupling guard	
L17	Mounting a coupling provided (finish machined and balanced)	
L31	Motor mounting materials for mounting on a steel foundation: Bolts, shims and taper dowels	
L32	Motor mounting materials for mounting on a concrete foundation or concrete base: Threaded bolts, armature plates, sole plates, shims, leveling plates and taper dowels	
L33	Motor mounting materials to mount on a concrete foundation or concrete base: T-head bolts, foundation bolt sleeves, sole plates, shims, leveling plates and taper dowels	
L91	Higher number of starts, > 1000 ... 10000 starts per year, for Cu rotors	
L92	Higher number of starts, > 5000 ... 10000 starts per year, for Al rotors	
P45	External screws made of stainless steel	
<b>Anti-condensation heating</b>		
M14	Anti-condensation heater Ex e II T3, rated voltage range 110 to 120 V	
M15	Anti-condensation heater Ex e II T3, rated voltage range 220 to 240 V	Standard for H-compact in type of protection Ex e (1MA4) and H-compact PLUS
<b>Ambient conditions</b>		
D02	Operation at ambient temperatures up to -50 °C, transport up to -50 °C	
D03	Operation at ambient temperatures up to -40 °C, transport up to -40 °C	
D04	Operation at ambient temperatures up to -30 °C, transport up to -40 °C	
<b>Winding and motor protection</b>		
A12	6 PTC thermistors without lightning arresters	
A23	1 temperature sensor KTY 84-130	
A65	6 embedded resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminal box without lightning arresters	Standard
A67	6 embedded resistance thermometers Pt 100 for 2-, 3- or 4-wire connection from terminal box with lightning arresters	
<b>Marine applications</b>		Options and tests for marine and offshore applications: <a href="#">see Chapter 5</a> .

## Options (continued)

Order code	Option description	Remark
<b>Tests with acceptance</b>		
F01	All standard tests (routine test), with acceptance	
F15	Recording of no-load characteristic and determination of core and friction losses, with acceptance	
F17	Recording of short-circuit characteristic and determination of short-circuit losses, with acceptance	
F19	Recording of load characteristic, with acceptance	
F23	Dissipation factor test (tan delta) on 2 (test) coils, with acceptance	In addition, specify order code F90
F29	No-load noise measurement, without noise analysis, with acceptance	
F31	Cooling air flow and pressure drop measurement, with acceptance	
F35	Recording of current and torque characteristics during acceleration, with acceptance	
F37	Determination of moment of inertia by retardation method, with acceptance	
F39	Overspeed test, with acceptance	
F41	Recording of residual voltage curve, with acceptance	
F53	Locked-rotor torque and current measurement, with acceptance	
F55	Polarization index measurement, with acceptance	
F61	Impulse or AC voltage test on 2 (test) coils, with acceptance	In addition, specify order code F90
F63	Noise analysis, with acceptance	
F67	Sleeve bearing inspection after testrun	
F83	Type test for horizontal motors with temperature rise test, with acceptance	
F90	2 test coils	
F93	Type test for vertical motors with temperature rise test, with acceptance	
<b>Tests without acceptance</b>		
F14	Recording of no-load characteristic and determination of core and friction losses, without acceptance	
F16	Recording of short-circuit characteristic and determination of short-circuit losses, without acceptance	
F18	Recording of load characteristic, without acceptance	
F22	Dissipation factor test (tan delta) on 2 (test) coils, without acceptance	In addition, specify order code F90
F28	No-load noise measurement, without noise analysis, without acceptance	
F30	Cooling air flow and pressure drop measurement, without acceptance	
F34	Recording of current and torque characteristics during acceleration, without acceptance	
F36	Determination of moment of inertia by retardation method, without acceptance	
F38	Overspeed test, without acceptance	
F42	"Conformance Test (Wet Test)" to NEMA Standard, without acceptance	
F52	Locked-rotor torque and current measurement, without acceptance	
F54	Polarization index measurement, without acceptance	
F60	Impulse or AC voltage test on 2 (test) coils, without acceptance	In addition, specify order code F90
F62	Noise analysis, without acceptance	
F82	Type test for horizontal motors with temperature rise test, without acceptance	
F90	2 test coils	
F92	Type test for vertical motors with temperature rise test, without acceptance	
<b>Certificates for explosion protection</b>		
D32	Ex certification for China (CQST)	
D35	Ex certification for Russia (RosTechNadzor)	
D36	Conformity declaration acc. to 94/9/EG (ATEX) of an independent test body for Zone 2 motors (Ex nA)	
D37	IECEX certification	

# Explosion-protected motors

## Options and tests

### Description of options

#### Overview (continued)

Kurzangabe	Option description	Remark
	<b>Extension of liability for defects</b>	
<b>Q80</b>	Extension of liability for defects, by 12 months to a total of 24 months (2 years) from delivery	
<b>Q81</b>	Extension of liability for defects, by 18 months to a total of 30 months (2.5 years) from delivery	
<b>Q82</b>	Extension of liability for defects, by 24 months to a total of 36 months (3 years) from delivery	
<b>Q83</b>	Extension of liability for defects, by 30 months to a total of 42 months (3.5 years) from delivery	
<b>Q84</b>	Extension of liability for defects, by 36 months to a total of 48 months (4 years) from delivery	
<b>Q85</b>	Extension of liability for defects, by 48 months to a total of 60 months (5 years) from delivery	

#### Conditions for an extension of liability for defects

- For the duration of the extended liability for defects in the case of a new order and reordering after delivery, the final destination of the product must be specified. The process EUNA is available at [www.siemens.com/euna](http://www.siemens.com/euna) for the purpose of this notification process, which must be performed by your Siemens sales contact.
  - For all durations of the extension of liability for defects of 4 and 5 years (Q84, Q85) this can only be agreed in conjunction with a corresponding service contract including regular inspection. This maintenance contract must be agreed via the responsible service center. The process EUNA is available at [www.siemens.com/euna](http://www.siemens.com/euna) for the purpose of documenting this, which must be performed by your Siemens sales contact.
  - The general storage conditions described in the operating instructions must be adhered to, especially the specifications for long-term storage.
  - Commissioning must be performed by appropriately qualified personnel. When claiming under liability for defects, it is necessary under certain circumstances to supply the corresponding commissioning.
- Periodic maintenance must be performed in accordance with the specifications in the operating instructions. When claiming under liability for defects, it is necessary under certain circumstances to supply the corresponding maintenance records.
  - The operating conditions must correspond to the specifications in the operating instructions, configuration manual, or special conditions specified in the contract.
  - The extension of liability for defects excludes wear parts, such as carbon brushes or rolling-contact bearings. An exception applies if irrefutable evidence of their premature failure is provided.
- Otherwise the general liability for defects conditions apply.

# Options for marine and offshore applications

# 5



5/2	Orientation
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5/9	Options

# Options for marine and offshore applications

## Orientation

### Overview



H-compact and H-compact PLUS (high voltage and low voltage versions) in a marine design have been designed for below-deck operation on ships. If the motors are intended for on deck operation or for offshore applications, then these must be explicitly ordered using an additional order code. The reason for this is that in these cases special measures are required. The thermal utilization of the motors is adapted to the generally higher ambient temperatures onboard ships. If the application demands compliance with additional regulations, such as explosion protection, the appropriate motor series must be chosen.

The motors onboard ships are subdivided into three importance categories by the marine classification societies in collaboration with customers, depending on the field of application:

- **Essential Service for Propulsion** or also Primary Essential Service
- **Essential Service** or also Secondary Essential Service or Important Service
- **Non-Essential Service** or also Non-Important Service

As the assignment of a drive to one of the importance categories has a direct impact on the scope of the marine options, this must be known when ordering the motor.

The following services of the motor manufacturer are associated with the categories:

	Importance category		
	<b>Essential Service for Propulsion</b>	<b>Essential Service</b>	<b>Non-Essential Service</b>
Typical applications	Propeller drive, thruster (if used as main drive/declared as propulsion)	Thrusters, lateral thrust units, anchor winches, bilge and ballast pumps, fire-fighting pumps	Pumps for service water
Version	In accordance with the regulations of the classification society		In accordance with ambient conditions of the classification society
Acceptance test certificate	Acceptance test certificate 3.2 according to EN10204		Acceptance test certificate 3.1 according to EN 10204 <sup>1)</sup>
Individual acceptance by classification society	Will be performed. Motor is assigned an individual certificate of the classification society.		Not necessary
Ordering several identical motors	Differentiation between the first motor and additional ones must be realized when ordering using an order code.		No distinction
Rating plate data	Information about ambient conditions of the classification society		
Stamp of the classification society	Stamp on the shaft <sup>2)</sup> and enclosure		No stamp

### Classification authorities

Society	Abbreviation	Location
American Bureau Of Shipping	ABS	USA
Bureau Veritas	BV	France
China Classification Society	CCS	China
Det Norske Veritas	DNV	Norway
Germanischer Lloyd	GL	Germany
Korean Register	KR	Korea
Lloyds Register	LR	UK

<sup>1)</sup> Certificate is not stipulated by the classification society but it is issued according to the internal quality standards within the scope of a routine test.

<sup>2)</sup> Provided that it is specified that the classification society supervises construction.

## Benefits

The marine motors offer the user a number of advantages and benefits:

- Cast iron and steel versions can be supplied for corrosive atmospheres especially for high humidity levels and salt laden air
- Increased corrosion protection using specially designed paint finishes is available

- Certified marine motors can be supplied for use in areas to be protected against explosion
- In depth know-how regarding customer requirements
- Worldwide service network with 24-hour service hotline for motors and converters

## Application

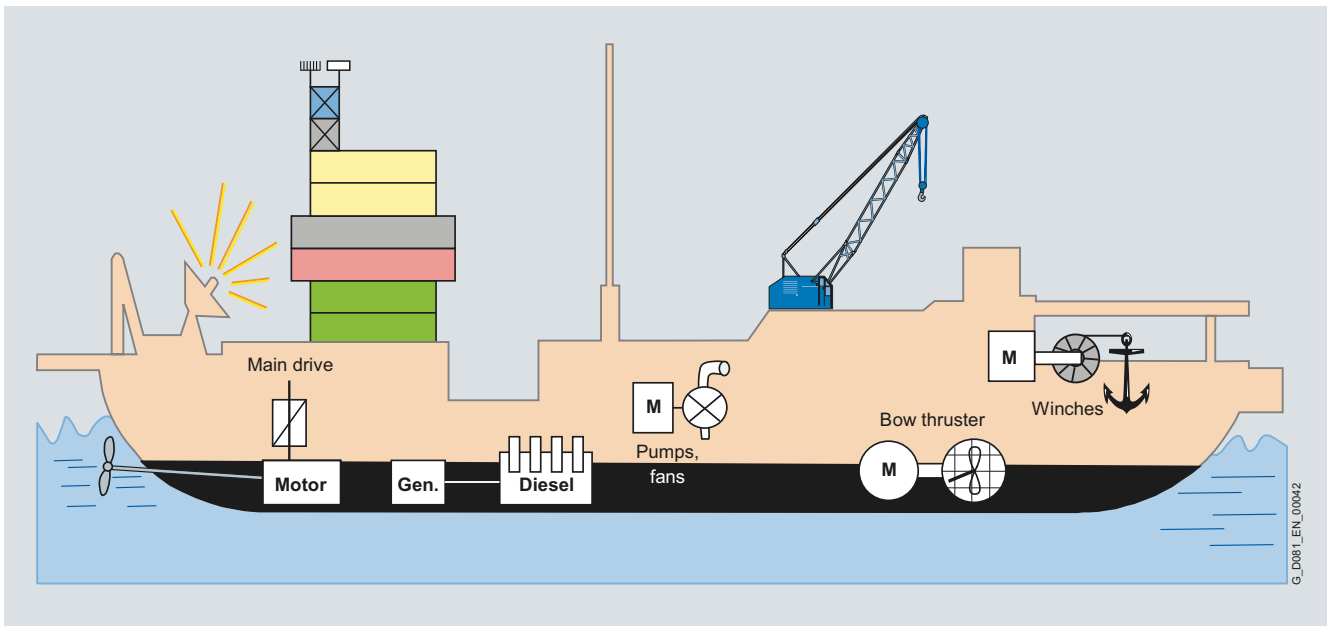
Our marine motors are designed for use onboard ships (installed below deck or on deck under a protective canopy):

- Applications onboard ships as main and auxiliary drives below deck, e.g.:
  - Fans (air conditioning, refrigeration plants)
  - Pumps (for fire-extinguishing water, fuels, oils)
  - Winches (anchor winches, warping winches, lifting gear)
  - Compressors
  - Bow thruster drives
  - Main propulsion drives
  - Ex motors for hazardous zones

If marine motors are to be used on deck in especially corrosive atmospheres or in offshore applications, then they must be additionally upgraded to meet these more stringent conditions.

- Typical applications are:
  - Coastal areas, e.g. oil rigs, drilling ships
  - Dynamic positioning drives for platforms
  - Pumps

Offshore versions must be specifically ordered, as they require special measures.



Typical areas of application

# Options for marine and offshore applications

## Orientation

### Technical data

#### Enclosure version

Depending on the motor series, motors are available in a corrosion-resistant steel enclosure or in a rugged low-vibration cast-iron version.

#### Motor connection

Cable glands are not included in the scope of delivery.

All marine motors generally have an external grounding terminal.

Regulations of the individual classifications societies for motors:

Classification society	Coolant temperature CT		Admissible temperature rise limit according to the classification society			Rated power limit for individual acceptance test kW	Construction supervision mandatory
	Water cooling °C	Air cooling °C	Temperature class 130 (B) K	155 (F), $P_{\text{rated}} < 5000 \text{ kW}$ K	155 (F), $P_{\text{rated}} \geq 5000 \text{ kW}$ K		
<b>GL</b>	32	45	75	100	100	≥ 50	All propulsions
<b>LR</b>	32	45	70	95	90	≥ 100	≥ 100 kW
<b>BV</b>	32	45	75	100	95	≥ 100	≥ 500 kW
<b>DNV</b>	32	45	75	100	100	≥ 300	–
<b>ABS</b>	32	50	70	95	90	≥ 100	–
<b>KR</b>	32	45	75	100	95	≥ 7.5	–
<b>CCS</b>	32	45	75	100	95	All power ratings	All power ratings

**Technical data** (continued)

Regulations of the individual classification societies with order codes when ordering H-compact and H-compact PLUS motors (low and high voltage versions) in a marine design

**H-compact and H-compact PLUS in a marine design**

	Motor type H-compact	Motor type H-compact PLUS
Water-cooled motors for line and converter operation	1LH4	1RN4, 1RN6
Air-cooled motors for line and converter operation (self-ventilated)	1LA4	1RQ4, 1RQ6
Air-cooled motors with externally mounted fan for converter operation	1PQ4	1RQ4, 1RQ6
Self-ventilated motors with open-circuit air cooling for line and converter operation	–	1RA4, 1RP6
Motors with the cooling types listed above with type of protection "nA" or "tD" (Zone 2 or Zone 22)	1MS4	1SL4, 1SL6 1SG4, 1SG6
Motors with the cooling types listed above with type of protection "e" (Zone 1)	1MA4	1SN4, 1SN6 1SJ4, 1SJ6
Motors with the cooling types listed above with type of protection "px" (Zone 1)	1MG4	1SQ4, 1SQ6 1SB4, 1SB6

H-compact and H-compact PLUS motors for marine applications must be ordered with the classification-specific options. This ensures that both the mechanical design of the motor, and the tests are performed exactly in accordance with the instructions provided by the respective classification society.

There are four categories of classification-specific options:

- 1) *Design options* define the marine-compatible technical design in accordance with the definitions of the classification society
- 2) *Certification options* define the scope of the test certificates
- 3) *Test options* define the scope of the individual tests
- 4) *Additional options* for deviations and special conditions: specify the customer's request for participation in the tests at the factory, or define coolant temperatures that differ from the requirements of the classification society (additional plain text required)

The options of the importance categories listed above are combined with each other depending on the class of importance, classification society and other conditions.

If motors are to be designed according to the specifications of several classification societies, a special inquiry is necessary.

**Motors for Non-Essential Services**

The technical design is in accordance with the ambient operating conditions specified by the classification society. One of the marine design options X00, X01, X12<sup>1)</sup>, X03, X04, X05 or X06 must be specified depending on the classification society. Acceptance inspections are not required. There is no distinction between ordering an individual motor or several ones.

Non-Essential Service	Options according to the classification society						
	ABS	BV	CCS	DNV	GL	KR	LR
Technical version	X00	X01	<sup>1)</sup>	X03	X04	X05	X06

**Motors for Essential Services**

The technical design is in accordance with regulations with regulations of the classification society: Options X10 to X16. An acceptance test certificate 3.2 according to EN 10204 and a product certificate of the classification society is provided with each motor. Depending on the classification society, the test steps are defined by options X30 to X42 for the first motor (even numbers) and X31 to X43 for the additional motors (uneven numbers). Options J70 to J82 or J71 to J83 define the expenditure for certifying the motor.

Essential Service	Options according to the classification society						
	ABS	BV	CCS	DNV	GL	KR	LR
Technical version	X10	X11	X12	X13	X14	X15	X16
Certification							
• First motor	J70	J72	J74	J76	J78	J80	J82
• Additional motors	J71	J73	J75	J77	J79	J81	J83
Scope of the tests and presence of representatives of the classification society							
• First motor	X30	X32	X34	X36	X38	X40	X42
• Additional motors	X31	X33	X35	X37	X39	X41	X43
Tests in presence of representatives of the customer (in addition to the inspector of the classification society)	X99						
Conditions deviating from classification requirements must be fulfilled	E80						

**Motors for Essential Services for Propulsion**

The technical design is in accordance with regulations of the classification society: Options X20 to X26. An acceptance test certificate 3.2 according to EN 10204 and a product certificate of the classification society is provided with each motor. Depending on the classification society, the test steps are defined by options X60 to X72 for the first motor (even numbers) and X61 to X73 for the additional motors (uneven numbers). Options N40 to N52, or N41 to N53 define the expenditure for certifying the motor.

Essential Service for Propulsion	Options according to the classification society						
	ABS	BV	CCS	DNV	GL	KR	LR
Technical version	X20	X21	X22	X23	X24	X25	X26
Certification							
• First motor	N40	N42	N44	N46	N48	N50	N52
• Additional motors	N41	N43	N45	N47	N49	N51	N53
Scope of the tests and presence of representatives of the classification society							
• First motor	X60	X62	X64	X66	X68	X70	X72
• Additional motors	X61	X63	X65	X67	X69	X71	X73
Tests in presence of representatives of the customer (in addition to the inspector of the classification society)	X99						
Conditions deviating from classification requirements must be fulfilled	E80						

**Option E80 is used if a different coolant temperature CT is required. The CT must also be specified in plain text, e.g. CT55.**

<sup>1)</sup> Non-Essential Service must be handled by CCS just like an Essential Service.

# Options for marine and offshore applications

## Orientation

### Technical data (continued)

#### Scope of design options X00 to X26

All classification-specific technical measures are contained in the design options.

#### Temperature class and coolant temperature

Standard motors and explosion-protected motors up to shaft height 710 mm

In general, marine motors are designed for a coolant temperature CT 45 °C in temperature class 155 (F), used according to 155 (F). Motors according to the ABS classification that specify CT 50 °C are an exception. When motors are used according to temperature class 130 (B) derating is required.

Coolant temperatures that exceed CT 45 °C require derating in accordance with the following table:

	Coolant temperature CT			
	45 °C	50 °C	55 °C	60 °C
<b>Temperature class 155 (F) according to 155 (F)</b>				
Derating factor for line operation	1.00	0.95	0.90	0.85

More detailed information is available on request.

#### Rating plate and acceptance test certificate

The metal rating plate includes the data of the relevant classification society (exception: Non-Essential Services) and the associated coolant temperature.

SIEMENS										
3~ MOT. 1LA4 452-4CN16-Z NoN- X71267756010001 / 2009 IMB35 Th.Cl.155(F)										
V	Hz		A	kW	cosφ	1/min	I <sub>a</sub> /I <sub>N</sub>	T <sub>E</sub> s	Certif.No.	IP
6600	60		93	880	0.86	1792				55
										← VUW
Rotor SQU.CAGE KL IEC/EN 60034-1								Gew/Wt 5.4 t		
MARINE EQUIPMENT / CLASSIFICATION SOCIETY: ABS										
Ta: -20...+50°C										
MADE IN GERMANY D-90441 Nürnberg										

#### Degree of protection

The degrees of protection as specified in Catalog D 84.1 apply. For IP56 (non-heavy sea, order code K52) the formation of ice must be avoided.

#### Winding and motor protection

To monitor the winding – and if specified by the classification society – to monitor the bearings, the motors are equipped with PTC thermistors, temperature sensors and resistance thermometers. Marine motors are equipped with anti-condensation heating in order to prevent possible condensation forming on the windings.

#### Paint finish

The paint finish has an increased coating thickness (order code K26). This is suitable for indoor installations and outdoors under a roof or canopy.

A paint finish according to DIN EN ISO 12944-5 C5-M is used for unprotected installation on deck, especially aggressive atmospheres or offshore applications. This is part of order code E81, which upgrades a standard marine motor for these special ambient conditions.

Special paint colors and increased layer thicknesses are available on request.

#### Recommended special versions:

- Installation of 2 screw-in PT100 resistance thermometers in basic circuit for roller bearings – Order code A40
- IP56 degree of protection (non-heavy-sea) for protection against harmful dust deposits, protection against water jets from any direction – Order code K52
- Degree of protection IP65 on request.
- External screws and bolts manufactured out of stainless steel – Order code P45
- Upgrading a marine motor for unprotected installation on deck, use in especially aggressive atmospheres or offshore applications – Order code E81

### Additional information

#### Order information

The fees of the classification societies for individual acceptance inspections are included in the order code.

**Selection and ordering data**

For selection and ordering data, see Catalog D 84.1.

Ordering examples:

Selection criteria	Requirement	Structure of the Order No.
<b>1st ordering example: 5 motors for Non-Essential Service according to GL (Germanischer Lloyd), Germany</b>		
Motor type	Rib-cooled H-compact high voltage motor, low voltage version, self-ventilated, cooling type IC411, degree of protection IP55	1LA4■■■■-■■■■■
Shaft height	560 mm	1LA4560-6■■■■■
No. of poles/synchronous speed	6-pole/1000 rpm	
Type rating	1750 kW	
Rotor cage material	Copper	1LA4560-6C■■■■■
Voltage and frequency	690 V, 50 Hz	1LA4560-6CM0■
Operating mode	Converter operation	
Type of construction	IM B3	1LA4560-6CM00
Special versions	Technical design in accordance with GL (Germanischer Lloyd), Germany	1LA4560-6CM00-Z X04
	Order No. for all 5 motors	1LA4560-6CM00-Z X04
<b>2nd ordering example: 7 motors for Essential Service according to BV (Bureau Veritas), France</b>		
Motor type	Water-cooled high voltage H-compact PLUS motor, cooling type IC81W, degree of protection IP55, type of protection Ex px	1SQ4■■■■-■■■■■
Shaft height	630 mm	1SQ4632-4■■■■■
No. of poles/synchronous speed	4-pole/1500 rpm	
Type rating	6000 kW	
Ventilation	Shaft-mounted fan (basic version)	1SQ4632-4H■■■■■
Rotor version and operating mode	Copper (standard), line operation	1SQ4632-4HE■■■■■
Voltage and frequency	6 kV, 50 Hz	1SQ4632-4HE6■
Type of construction	IM V10 with canopy	1SQ4632-4HE64
Special versions		
<b>1st motor</b>	Technical design in accordance with BV (Bureau Veritas), France	1SQ4632-4HE64-Z X11
	Necessary certification for first motor ordered in accordance with BV (Bureau Veritas), France	1SQ4632-4HE64-Z X11+J72
	Necessary tests for first motor ordered in accordance with BV (Bureau Veritas), France	1SQ4632-4HE64-Z X11+J72+X32
	Order No. for 1st motor	1SQ4632-4HE64-Z X11+J72+X32
<b>Additional 6 motors</b> (additional motors)	Technical design in accordance with BV (Bureau Veritas), France	1SQ4632-4HE64-Z X11
	Necessary certification for additional motors ordered in accordance with BV (Bureau Veritas), France	1SQ4632-4HE64-Z X11+J73
	Necessary tests for additional motors ordered in accordance with BV (Bureau Veritas), France	1SQ4632-2HE64-Z X11+J73+X33
	Order No. for the additional 6 motors	1SQ4632-2HE64-Z X11+J73+X33

# Options for marine and offshore applications

## Ordering examples

Selection criteria	Requirement	Structure of the Order No.
<b>3rd ordering example: 2 motors for Essential Service according to DNV (Det Norske Veritas), Norway (continued)</b>		
Motor type	The same as for the 1st ordering example	<b>1LA4560-6CM00</b>
Special versions		
<b>1st motor</b>	Technical design in accordance with DNV (Det Norske Veritas), Norway	<b>1LA4560-6CM00-Z X13</b>
	Necessary certification for first motor ordered according to DNV (Det Norske Veritas), Norway	<b>1LA4560-6CM00-Z X13+J76</b>
	Necessary tests for first motor ordered according to DNV (Det Norske Veritas), Norway	<b>1LA4560-6CM00-Z X13+X36</b>
	Tests in presence of representatives of the customer (in addition to the inspector of the classification society)	<b>1LA4560-6CM00-Z X13+J76+X36+X99</b>
	Order No. for 1st motor	<b>1LA4560-6CM00-Z X13+J76+X36+X99</b>
<b>Additional motor (additional motors)</b>	Technical design in accordance with BV (Bureau Veritas), France	<b>1LA4560-6CM00-Z X13</b>
	Necessary certification for additional motors ordered according to DNV (Det Norske Veritas), Norway	<b>1LA4560-6CM00-Z X13+J77</b>
	Necessary tests for additional motors ordered according to DNV (Det Norske Veritas), Norway	<b>1LA4560-6CM00-Z X13+J77+X37</b>
	Order No. for additional motor	<b>1LA4560-6CM00-Z X13+J77+X37</b>
<b>4th ordering example: 3 motors for Essential Service Propulsion according to ABS (American Bureau of Shipping), USA</b>		
Motor type	The same as for the 2nd ordering example	<b>1SQ4632-4HE64</b>
Special versions		
<b>1st motor</b>	Technical design in accordance with ABS (American Bureau of Shipping), USA	<b>1SQ4632-4HE64-Z X20</b>
	Necessary certification for first motor ordered according to ABS (American Bureau of Shipping), USA	<b>1SQ4632-4HE64-Z X20+N40</b>
	Necessary tests for first motor ordered according to ABS (American Bureau of Shipping), USA	<b>1SQ4632-4HE64-Z X20+N40+X60</b>
	Order No. for 1st motor	<b>1SQ4632-4HE64-Z X20+N40+X60</b>
<b>Additional 2 motors (additional motors)</b>	Technical design in accordance with ABS (American Bureau of Shipping), USA	<b>1SQ4632-4HE64-Z X20</b>
	Necessary certification for additional motors ordered according to ABS (American Bureau of Shipping), USA	<b>1SQ4632-4HE64-Z X20+N41</b>
	Necessary tests for additional motors ordered according to ABS (American Bureau of Shipping), USA	<b>1SQ4632-4HE64-Z X20+N41+X61</b>
	Order No. for the additional 2 motors	<b>1SQ4632-4HE64-Z X20+N41+X61</b>
<b>5th ordering example: 1 motor for Essential Service according to ABS (American Bureau of Shipping), USA, coolant temperature 60 °C:</b>		
Motor type	The same as for the 1st ordering example	<b>1LA4560-6CM00</b>
Special versions		
	Technical design in accordance with ABS (American Bureau of Shipping), USA	<b>1LA4560-6CM00-Z X10</b>
	Necessary certification for first motor ordered according to ABS (American Bureau of Shipping), USA	<b>1LA4560-6CM00-Z X10+J70</b>
	Necessary tests for first motor ordered according to ABS (American Bureau of Shipping), USA	<b>1LA4560-6CM00-Z X10+J70+X30</b>
	Motor for marine application, higher ambient temperature and/or utilization to temperature class 155 (F) according to 130 (B) – Coolant temperature 60 °C	<b>1LA4560-6CM00-Z X10+J70+X30+E80</b> <b>Plain text: COOLANT TEMP CT60</b>
	Order No. for the motor	<b>1LA4560-6CM00-Z X10+J70+X30+E80</b> <b>Plain text: COOLANT TEMP CT60</b>

## Options

*Options for marine motors*

Order code	Option description
<b>Non-Essential Service</b>	
<i>Technical version</i>	
<b>X00</b>	Version according to ABS for Non-Essential Service
<b>X01</b>	Version according to BV for Non-Essential Service
<b>X12<sup>1)</sup></b>	Version according to CCS for Essential Service
<b>X03</b>	Version according to DNV for Non-Essential Service
<b>X04</b>	Version according to GL for Non-Essential Service
<b>X05</b>	Version according to KR for Non-Essential Service
<b>X06</b>	Version according to LR for Non-Essential Service
<b>Essential Service</b>	
<i>Technical version</i>	
<b>X10</b>	Version according to ABS for Essential Service
<b>X11</b>	Version according to BV for Essential Service
<b>X12</b>	Version according to CCS for Essential Service
<b>X13</b>	Version according to DNV for Essential Service
<b>X14</b>	Version according to GL for Essential Service
<b>X15</b>	Version according to KR for Essential Service
<b>X16</b>	Version according to LR for Essential Service
<i>Certification</i>	
<b>for the first motor ordered</b>	
<b>J70</b>	Certification for the first motor ordered according to ABS for Essential Service
<b>J72</b>	Certification for the first motor ordered according to BV for Essential Service
<b>J74</b>	Certification for the first motor ordered according to CCS for Essential Service
<b>J76</b>	Certification for the first motor ordered according to DNV for Essential Service
<b>J78</b>	Certification for the first motor ordered according to GL for Essential Service
<b>J80</b>	Certification for the first motor ordered according to KR for Essential Service
<b>J82</b>	Certification for the first motor ordered according to LR for Essential Service
<b>for the second and additional motors ordered</b>	
<b>J71</b>	Certification for the second and additional motors ordered according to ABS for Essential Service
<b>J73</b>	Certification for the second and additional motors ordered according to BV for Essential Service
<b>J75</b>	Certification for the second and additional motors ordered according to CCS for Essential Service
<b>J77</b>	Certification for the second and additional motors ordered according to DNV for Essential Service
<b>J79</b>	Certification for the second and additional motors ordered according to GL for Essential Service
<b>J81</b>	Certification for the second and additional motors ordered according to KR for Essential Service
<b>J83</b>	Certification for the second and additional motors ordered according to LR for Essential Service
<i>Tests</i>	
<b>for the first motor ordered</b>	
<b>X30</b>	Tests for the first motor ordered according to ABS for Essential Service
<b>X32</b>	Tests for the first motor ordered according to BV for Essential Service
<b>X34</b>	Tests for the first motor ordered according to CCS for Essential Service
<b>X36</b>	Tests for the first motor ordered according to DNV for Essential Service
<b>X38</b>	Tests for the first motor ordered according to GL for Essential Service
<b>X40</b>	Tests for the first motor ordered according to KR for Essential Service
<b>X42</b>	Tests for the first motor ordered according to LR for Essential Service
<b>for the second and additional motors ordered</b>	
<b>X31</b>	Tests for the second and additional motors ordered according to ABS for Essential Service
<b>X33</b>	Tests for the second and additional motors ordered according to BV for Essential Service
<b>X35</b>	Tests for the second and additional motors ordered according to CCS for Essential Service
<b>X37</b>	Tests for the second and additional motors ordered according to DNV for Essential Service
<b>X39</b>	Tests for the second and additional motors ordered according to GL for Essential Service
<b>X41</b>	Tests for the second and additional motors ordered according to KR for Essential Service
<b>X43</b>	Tests for the second and additional motors ordered according to LR for Essential Service

1) CCS handles Non-Essential Service just the same as Essential Service

# Options for marine and offshore applications

## Options

### Options (continued)

Order code	Option description
<b>Essential Service Propulsion</b>	
<i>Technical version</i>	
<b>X20</b>	Version according to ABS for Essential Service Propulsion
<b>X21</b>	Version according to BV for Essential Service Propulsion
<b>X22</b>	Version according to CCS for Essential Service Propulsion
<b>X23</b>	Version according to DNV for Essential Service Propulsion
<b>X24</b>	Version according to GL for Essential Service Propulsion
<b>X25</b>	Version according to KR for Essential Service Propulsion
<b>X26</b>	Version according to LR for Essential Service Propulsion
<i>Certification</i>	
<b>for the first motor ordered for essential service propulsion</b>	
<b>N40</b>	Certification for the first motor ordered according to ABS for Essential Service Propulsion
<b>N42</b>	Certification for the first motor ordered according to BV for Essential Service Propulsion
<b>N44</b>	Certification for the first motor ordered according to CCS for Essential Service Propulsion
<b>N46</b>	Certification for the first motor ordered according to DN for Essential Service Propulsion
<b>N48</b>	Certification for the first motor ordered according to GL for Essential Service Propulsion
<b>N50</b>	Certification for the first motor ordered according to KR for Essential Service Propulsion
<b>N52</b>	Certification for the first motor ordered according to LR for Essential Service Propulsion
<i>Certification</i>	
<b>for the second and additional motors ordered</b>	
<b>N41</b>	Certification for the second and additional motors ordered according to ABS for Essential Service Propulsion
<b>N43</b>	Certification for the second and additional motors ordered according to BV for Essential Service Propulsion
<b>N45</b>	Certification for the second and additional motors ordered according to CCS for Essential Service Propulsion
<b>N47</b>	Certification for the second and additional motors ordered according to DNV for Essential Service Propulsion
<b>N49</b>	Certification for the second and additional motors ordered according to GL for Essential Service Propulsion
<b>N51</b>	Certification for the second and additional motors ordered according to KR for Essential Service Propulsion
<b>N53</b>	Certification for the second and additional motors ordered according to LR for Essential Service Propulsion
<i>Tests</i>	
<b>for the first motor ordered</b>	
<b>X60</b>	Tests for the first motor ordered according to ABS for Essential Service Propulsion
<b>X62</b>	Tests for the first motor ordered according to BV for Essential Service Propulsion
<b>X64</b>	Tests for the first motor ordered according to CCS for Essential Service Propulsion
<b>X66</b>	Tests for the first motor ordered according to DNV for Essential Service Propulsion
<b>X68</b>	Tests for the first motor ordered according to GL for Essential Service Propulsion
<b>X70</b>	Tests for the first motor ordered according to KR for Essential Service Propulsion
<b>X72</b>	Tests for the first motor ordered according to LR for Essential Service Propulsion
<b>for the second and additional motors ordered</b>	
<b>X61</b>	Tests for the second and additional motors ordered according to ABS for Essential Service Propulsion
<b>X63</b>	Tests for the second and additional motors ordered according to BV for Essential Service Propulsion
<b>X65</b>	Tests for the second and additional motors ordered according to CCS for Essential Service Propulsion
<b>X67</b>	Tests for the second and additional motors ordered according to DNV for Essential Service Propulsion
<b>X69</b>	Tests for the second and additional motors ordered according to GL for Essential Service Propulsion
<b>X71</b>	Tests for the second and additional motors ordered according to KR for Essential Service Propulsion
<b>X73</b>	Tests for the second and additional motors ordered according to LR for Essential Service Propulsion

### Supplementary options

Order code	Option description
<b>X99<sup>1)</sup></b>	Tests in the presence of representatives of the customer (together with the inspector of the classification society)
<b>E80<sup>2)</sup></b>	Conditions deviating from the classification requirements
<b>E81</b>	Upgrading a marine motor for unprotected installation on deck, use in especially aggressive atmospheres or offshore applications

<sup>1)</sup> Only for Essential Service and Essential Service Propulsion.

<sup>2)</sup> Additional plain text data explaining the deviation required.

## Appendix



<b>6/2</b>	<b>Partner at Industry Automation and Drive Technologies</b>
<b>6/3</b> 6/3	<b>Online Services</b> Information and Ordering in the Internet and on DVD
<b>6/4</b> 6/4	<b>Service &amp; Support</b> The unmatched complete service for the entire life cycle
<b>6/7</b>	<b>Conditions of sale and delivery</b> <b>Export regulations</b>

# Appendix

## Partner at Industry Automation and Drive Technologies



At Siemens Industry Automation and Drive Technologies, more than 85 000 people are resolutely pursuing the same goal: long-term improvement of your competitive ability. We are committed to this goal. Thanks to our commitment, we continue to set new standards in automation and drive technology. In all industries – worldwide.

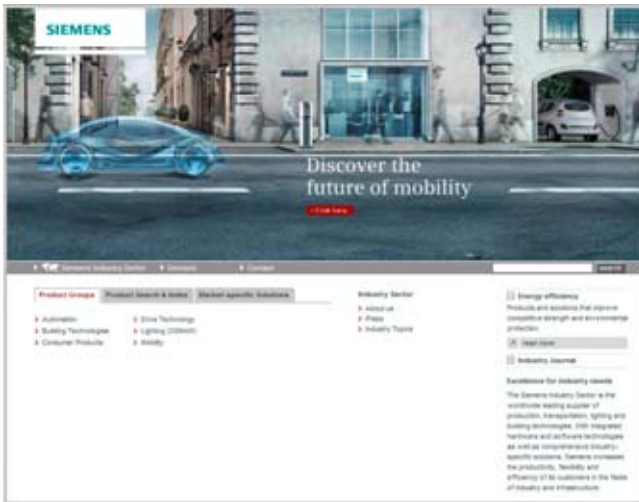
At your service locally, around the globe for consulting, sales, training, service, support, spare parts ... on the entire Industry Automation and Drive Technologies range.

Your personal contact can be found in our Contacts Database at: [www.siemens.com/automation/partner](http://www.siemens.com/automation/partner)

You start by selecting a

- Product group,
- Country,
- City,
- Service.



**Siemens Industry Automation and Drive Technologies in the WWW**

A detailed knowledge of the range of products and services available is essential when planning and configuring automation systems. It goes without saying that this information must always be fully up-to-date.

Siemens Industry Automation and Drive Technologies has therefore built up a comprehensive range of information in the World Wide Web, which offers quick and easy access to all data required.

Under the address

[www.siemens.com/industry](http://www.siemens.com/industry)

you will find everything you need to know about products, systems and services.

**Product Selection Using the Interactive Catalog CA 01 of Industry**

Detailed information together with convenient interactive functions:

The interactive catalog CA 01 covers more than 80 000 products and thus provides a full summary of the Siemens Industry Automation and Drive Technologies product base.

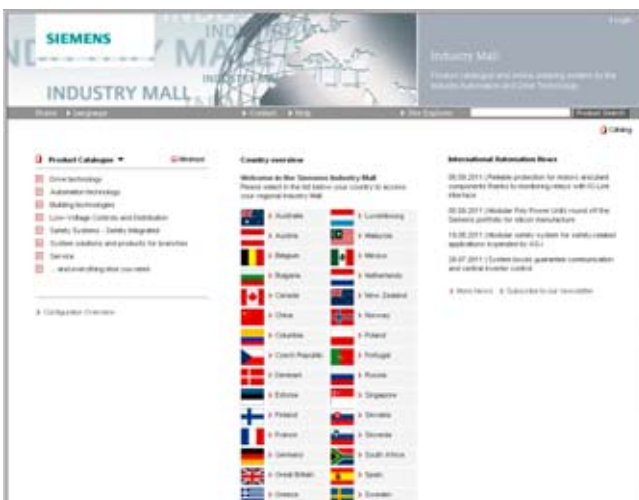
Here you will find everything that you need to solve tasks in the fields of automation, switchgear, installation and drives. All information is linked into a user interface which is easy to work with and intuitive.

After selecting the product of your choice you can order at the press of a button, by fax or by online link.

Information on the interactive catalog CA 01 can be found in the Internet under

[www.siemens.com/automation/ca01](http://www.siemens.com/automation/ca01)

or on DVD.

**Easy Shopping with the Industry Mall**

The Industry Mall is the virtual department store of Siemens AG in the Internet. Here you have access to a huge range of products presented in electronic catalogs in an informative and attractive way.

Data transfer via EDIFACT allows the whole procedure from selection through ordering to tracking of the order to be carried out online via the Internet.

Numerous functions are available to support you.

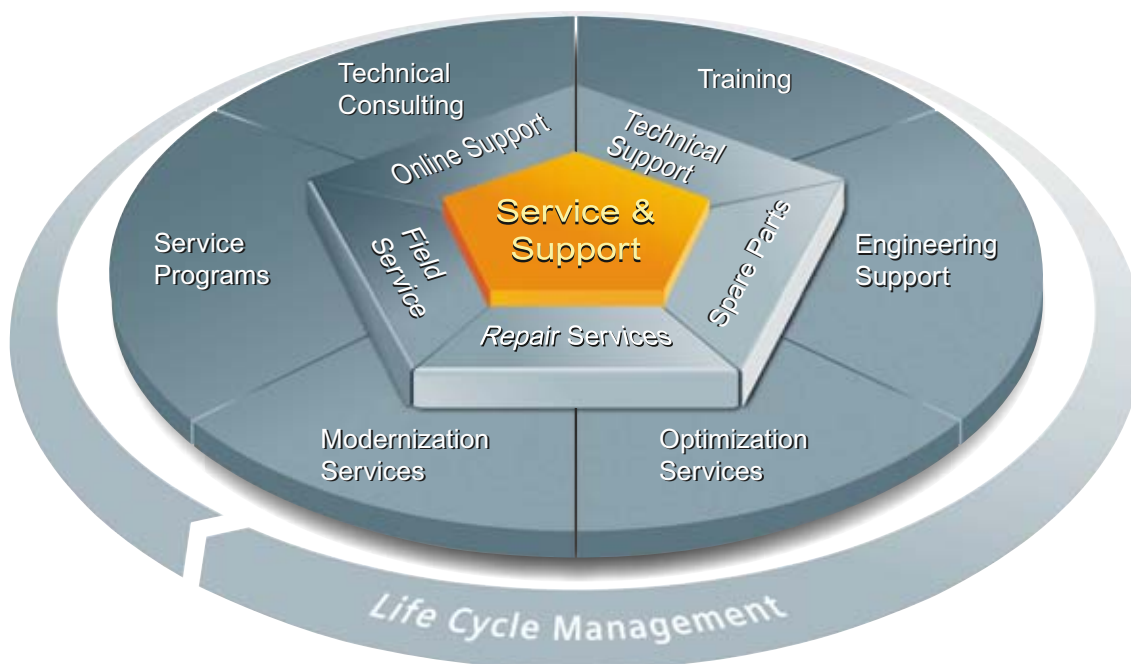
For example, powerful search functions make it easy to find the required products, which can be immediately checked for availability. Customer-specific discounts and preparation of quotes can be carried out online as well as order tracking and tracing.

Please visit the Industry Mall on the Internet under:

[www.siemens.com/industrymall](http://www.siemens.com/industrymall)

# Appendix Service & Support

The unmatched complete service for the entire life cycle



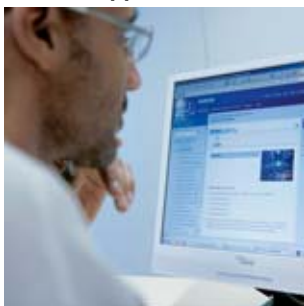
For machine constructors, solution providers and plant operators: The service offering from Siemens Industry, Automation and Drive Technologies includes comprehensive services for a wide range of different users in all sectors of the manufacturing and process industry

To accompany our products and systems, we offer integrated and structured services that provide valuable support in every phase of the life cycle of your machine or plant – from planning and implementation through commissioning as far as maintenance and modernization.

Our Service & Support accompanies you worldwide in all matters concerning automation and drives from Siemens. We provide direct on-site support in more than 100 countries through all phases of the life cycle of your machines and plants.

You have an experienced team of specialists at your side to provide active support and bundled know-how. Regular training courses and intensive contact among our employees – even across continents – ensure reliable service in the most diverse areas.

## Online Support



The comprehensive online information platform supports you in all aspects of our Service & Support at any time and from any location in the world.

[www.siemens.com/automation/service&support](http://www.siemens.com/automation/service&support)

## Technical Consulting



Support in planning and designing your project: From detailed actual-state analysis, definition of the goal and consulting on product and system questions right through to the creation of the automation solution.

## Technical Support



Expert advice on technical questions with a wide range of demand-optimized services for all our products and systems.

[www.siemens.com/automation/support-request](http://www.siemens.com/automation/support-request)

## Training



Extend your competitive edge – through practical know-how directly from the manufacturer.

[www.siemens.com/sitrain](http://www.siemens.com/sitrain)

The unmatched complete service  
for the entire life cycle

### Engineering Support



Support during project engineering and development with services fine-tuned to your requirements, from configuration through to implementation of an automation project.

### Modernization



You can also rely on our support when it comes to modernization – with comprehensive services from the planning phase all the way to commissioning.

### Field Service



Our Field Service offers you services for commissioning and maintenance – to ensure that your machines and plants are always available.

### Service programs



Our service programs are selected service packages for an automation and drives system or product group. The individual services are coordinated with each other to ensure smooth coverage of the entire life cycle and support optimum use of your products and systems.

The services of a Service Program can be flexibly adapted at any time and used separately.

### Spare parts



In every sector worldwide, plants and systems are required to operate with constantly increasing reliability. We will provide you with the support you need to prevent a standstill from occurring in the first place: with a worldwide network and optimum logistics chains.

Examples of service programs:

- Service contracts
- Plant IT Security Services
- Life Cycle Services for Drive Engineering
- SIMATIC PCS 7 Life Cycle Services
- SINUMERIK Manufacturing Excellence
- SIMATIC Remote Support Services

Advantages at a glance:

- Reduced downtimes for increased productivity
- Optimized maintenance costs due to a tailored scope of services
- Costs that can be calculated and therefore planned
- Service reliability due to guaranteed response times and spare part delivery times
- Customer service personnel will be supported and relieved of additional tasks
- Comprehensive service from a single source, fewer interfaces and greater expertise

### Repairs



Downtimes cause problems in the plant as well as unnecessary costs. We can help you to reduce both to a minimum – with our worldwide repair facilities.

### Optimization



During the service life of machines and plants, there is often a great potential for increasing productivity or reducing costs. To help you achieve this potential, we are offering a complete range of optimization services.

Contact information is available in the Internet at:  
[www.siemens.com/automation/partner](http://www.siemens.com/automation/partner)

# Appendix

## Service & Support

### Knowledge Base on DVD



For locations without online connections to the Internet there are excerpts of the free part of the information sources available on DVD (Service & Support Knowledge Base). This DVD contains all the latest product information at the time of production (FAQs, Downloads, Tips and Tricks, Updates) as well as general information on Service & Support.

The DVD also includes a full-text search and our Knowledge Manager for targeted searches for solutions. The DVD will be updated every 4 months.

Just the same as our online offer in the Internet, the Service & Support Knowledge Base on DVD comes complete in 5 languages (German, English, French, Italian, Spanish).

You can order the **Service & Support Knowledge Base DVD** from your Siemens contact.

Order no. **6ZB5310-0EP30-0BA2**

### Automation Value Card



#### Small card – great support

The Automation Value Card is an integral component of the comprehensive service concept with which Siemens Drive Automation and Drive Technologies will accompany you in each phase of your automation project.

It doesn't matter whether you want just specific services from our Technical Support or want to purchase something on our Online portal, you can always pay with your Automation Value Card. No invoicing, transparent and safe. With your personal card number and associated PIN you can view the state of your account and all transactions at any time.

Services on card. This is how it's done.

Card number and PIN are on the back of the Automation Value Card. When delivered, the PIN is covered by a scratch field, guaranteeing that the full credit is on the card.

By entering the card number and PIN you have full access to the Service & Support services being offered. The charge for the services procured is debited from the credits on your Automation Value Card.

All the services offered are marked in currency-neutral credits, so you can use the Automation Value Card worldwide.

Order your Automation and Value Card easily and comfortably like a product with your sales contact.

Automation Value Card order numbers	
Credits	Order no.
200	<b>6ES7 997-0BA00-0XA0</b>
500	<b>6ES7 997-0BB00-0XA0</b>
1 000	<b>6ES7 997-0BC00-0XA0</b>
10 000	<b>6ES7 997-0BG00-0XA0</b>

Detailed information on the services offered is available on our Internet site at:

[www.siemens.com/automation/service&support](http://www.siemens.com/automation/service&support)

Service & Support à la Card: Examples

Technical Support	
"Priority"	Priority processing for urgent cases
"24 h"	Availability round the clock
"Extended"	Technical consulting for complex questions
"Mature Products"	Consulting service for products that are not available any more
Support Tools in the Support Shop	
	Tools that can be used directly for configuration, analysis and testing

# Conditions of sale and delivery, Export regulations

## 1. General Provisions

By using this catalog you can acquire hardware and software products described therein from Siemens AG subject to the following Terms and Conditions of Sale and Delivery (hereinafter referred to as "T&C"). Please note! The scope, the quality and the conditions for supplies and services, including software products, by any Siemens entity having a registered office outside of Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity. The following T&C apply exclusively for orders placed with Siemens Aktiengesellschaft, Germany.

### 1.1 For customers with a seat or registered office in Germany

For customers with a seat or registered office in Germany the following applies subordinate to T&C

- the "General Terms of Payment"<sup>1)</sup> and
- for software products the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or registered Office in Germany"<sup>1)</sup> and
- for other supplies and/or services the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"<sup>1)</sup>.

### 1.2 For customers with a seat or registered office outside of Germany

For customers with a seat or registered office outside Germany the following applies subordinate to T&C

- the "General Terms of Payment"<sup>1)</sup> and
- for software products the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or registered Office outside of Germany"<sup>1)</sup> and
- for other supplies and/or services the "General Conditions for Supplies of Siemens, Automation and Drives for Customers with a Seat or registered Office outside of Germany"<sup>1)</sup>.

## 2. Prices

The prices are in € (Euro) ex works, exclusive packaging.

The sales tax (value added tax) is not included in the prices.

It shall be debited separately at the respective rate according to the applicable legal regulations.

Prices are subject to change without prior notice. We will debit the prices valid at the time of delivery.

Surcharges will be added to the prices of products that contain silver, copper, aluminium, lead and/or gold, if the respective basic official prices for these metals are exceeded. These surcharges will be determined based on the official price and the metal factor of the respective product.

The surcharge will be calculated on the basis of the official price on the day prior to receipt of the order or prior to the release order.

The metal factor determines the official price as of which the metal surcharges are charged and the calculation method used. The metal factor, provided it is relevant, is included with the price information of the respective products. An exact explanation of the metal factor can be downloaded at:

[www.siemens.com/automation/salesmaterial-as/catalog/en/terms\\_of\\_trade\\_en.pdf](http://www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf)

## 3. Additional Terms and Conditions

The dimensions are in mm. In Germany, according to the German law on units in measuring technology, data in inches only apply to devices for export.

Illustrations are not binding.

Insofar as there are no remarks on the corresponding pages, – especially with regard to data, dimensions and weights given – these are subject to change without prior notice.

## 4. Export regulations

We shall not be obligated to fulfill this agreement if such fulfillment is prevented by any impediments arising out of national or international foreign trade or customs requirements or any embargoes or other sanctions.

Export of goods listed in this catalog may be subject to license. We shall indicate in the delivery details whether licenses are required under German, European and US export lists. Goods labeled with "AL" not equal to "N" are subject to European or German export authorization when being exported out of the EU. Goods labeled with "ECCN" not equal to "N" are subject to US reexport authorization.

The export label is made available with the information of the respective goods on Industry Mall, our online-catalog-system, additionally. The deciding factors are the export label "AL" or "ECCN" indicated on order confirmations, delivery notes and invoices.

Even without a label, or with label "AL:N" or "ECCN:N", authorization may be required due to the final whereabouts and purpose for which the goods are to be used.

If you transfer goods (hardware and/or software and/or technology as well as corresponding documentation, regardless of the mode of provision) delivered by us or works and services (including all kinds of technical support) performed by us to a third party worldwide, you shall comply with all applicable national and international (re-) export control regulations.

If required to conduct export control checks, you, upon request by us, shall promptly provide us with all information pertaining to particular end customer, destination and intended use of goods, works and services provided by us, as well as any export control restrictions existing.

Errors excepted and subject to change without prior notice.

1) The text of the Comprehensive Terms and Conditions of Sale and Delivery can be downloaded at:  
[www.siemens.com/automation/salesmaterial-as/catalog/en/terms\\_of\\_trade\\_en.pdf](http://www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf)

# Appendix

Notes

## Industry Automation, Drive Technologies and Low-Voltage Power Distribution

Further information can be obtained from our branch offices listed in the appendix or at [www.siemens.com/automation/partner](http://www.siemens.com/automation/partner)

<b>Interactive Catalog on DVD</b>	<i>Catalog</i>	<b>Motion Control</b>	<i>Catalog</i>
for Industry Automation, Drive Technologies and Low Voltage Distribution	<b>CA 01</b>	SINAMICS and Motors for Single-Axis Drives	D 31
		SINUMERIK & SIMODRIVE	NC 60
		Automation Systems for Machine Tools	
		SINUMERIK & SINAMICS	NC 61
		Equipment for Machine Tools	
		SINUMERIK 828D BASIC T/BASIC M, SINAMICS S120 Combi and 1FK7/1PH8 motors	NC 82
		SIMOTION, SINAMICS S120 and Motors for Production Machines	PM 21
		Drive and Control Components for Cranes	CR 1
<b>Drive Systems</b>		<b>Power Supply and System Cabling</b>	
<u>Variable-Speed Drives</u>		Power supply SITOP	KT 10.1
SINAMICS G130 Drive Converter Chassis Units	D 11	System cabling SIMATIC TOP connect	KT 10.2
SINAMICS G150 Drive Converter Cabinet Units			
SINAMICS GM150, SINAMICS SM150	D 12		
Medium-Voltage Converters			
SINAMICS S120 Chassis Format Units and Cabinet Modules	D 21.3		
SINAMICS S150 Converter Cabinet Units			
SINAMICS DCM Converter Units	D 23.1		
SINAMICS and Motors for Single-Axis Drives	D 31		
<u>Three-phase Induction Motors</u>	D 84.1		
• H-compact		<b>Process Instrumentation and Analytics</b>	
• H-compact PLUS		Field Instruments for Process Automation	FI 01
Asynchronous Motors Standardline	D 86.1	SIREC Recorders and Accessories	MP 20
Synchronous Motors with Permanent-Magnet Technology, HT-direct	D 86.2	SIPART, Controllers and Software	MP 31
DC Motors	DA 12	Products for Weighing Technology	WT 10
SIMOREG DC MASTER 6RA70 Digital Chassis Converters	DA 21.1	<i>PDF: Process Analytical Instruments</i>	PA 01
SIMOREG K 6RA22 Analog Chassis Converters	DA 21.2	<i>PDF: Process Analytics, Components for the System Integration</i>	PA 11
<i>PDF: SIMOREG DC MASTER 6RM70 Digital Converter Cabinet Units</i>	DA 22		
SIMOVERT PM Modular Converter Systems	DA 45	<b>Safety Integrated</b>	
SIEMOSYN Motors	DA 48	Safety Technology for Factory Automation	SI 10
MICROMASTER 420/430/440 Inverters	DA 51.2		
MICROMASTER 411/COMBIMASTER 411	DA 51.3	<b>SIMATIC HMI/PC-based Automation</b>	
SIMOVERT MASTERDRIVES Vector Control	DA 65.10	Human Machine Interface Systems/ PC-based Automation	ST 80/ ST PC
SIMOVERT MASTERDRIVES Motion Control	DA 65.11		
Synchronous and asynchronous servomotors for SIMOVERT MASTERDRIVES	DA 65.3	<b>SIMATIC Ident</b>	
SIMODRIVE 611 universal and POSMO	DA 65.4	Industrial Identification Systems	ID 10
SIMOTION, SINAMICS S120 and Motors for Production Machines	PM 21	<b>SIMATIC Industrial Automation Systems</b>	
SINUMERIK, SIMODRIVE and Motors for Machine Tools	NC 60	Products for Totally Integrated Automation and Micro Automation	ST 70
SINUMERIK, SINAMICS S120 and Motors for Machine Tools	NC 61	SIMATIC PCS 7 Process Control System	ST PCS 7
<u>Low-Voltage Three-Phase-Motors</u>		Add-ons for the SIMATIC PCS 7 Process Control System	ST PCS 7.1
IEC Squirrel-Cage Motors	D 81.1	<i>PDF: Migration solutions with the SIMATIC PCS 7 Process Control System</i>	ST PCS 7.2
MOTOX Geared Motors	D 87.1		
<u>Mechanical Driving Machines</u>		<b>SIMATIC NET</b>	
FLENDER Standard Couplings	MD 10.1	Industrial Communication	IK PI
FLENDER SIG Standard industrial gear unit	MD 30.1		
		<b>SINVERT Photovoltaics</b>	
		Inverters and Components for Photovoltaic Installations	RE 10
<b>Low-Voltage Power Distribution and Electrical Installation Technology</b>		<b>SIRIUS Industrial Controls</b>	
Protection, Switching, Measuring & Monitoring Devices	LV 10.1	SIRIUS Industrial Controls	IC 10
Switchboards and Distribution Systems	LV 10.2	SIRIUS Industrial Controls (selected content from catalog IC 10)	IC 90
GAMMA Building Management Systems	ET G1		
<i>PDF: DELTA Switches and Socket Outlets</i>	ET D1	<b>System Solutions</b>	
SICUBE System Cubicles and Cubicle Air-Conditioning	LV 50	Applications and Products for Industry are part of the interactive catalog CA 01	
SIVACON 8PS Busbar Trunking Systems	LV 70		

*PDF: These catalogs are only available as pdf files.*

#### Download-Center

PDF versions of the catalogs are available on the Internet at:  
[www.siemens.com/automation/infocenter](http://www.siemens.com/automation/infocenter)

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[www.siemens.com/motors](http://www.siemens.com/motors)

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Catalog D 84.1 · 2011

Three-Phase Induction Motors