SEW EURODRIVE

MOVITRAC® 07

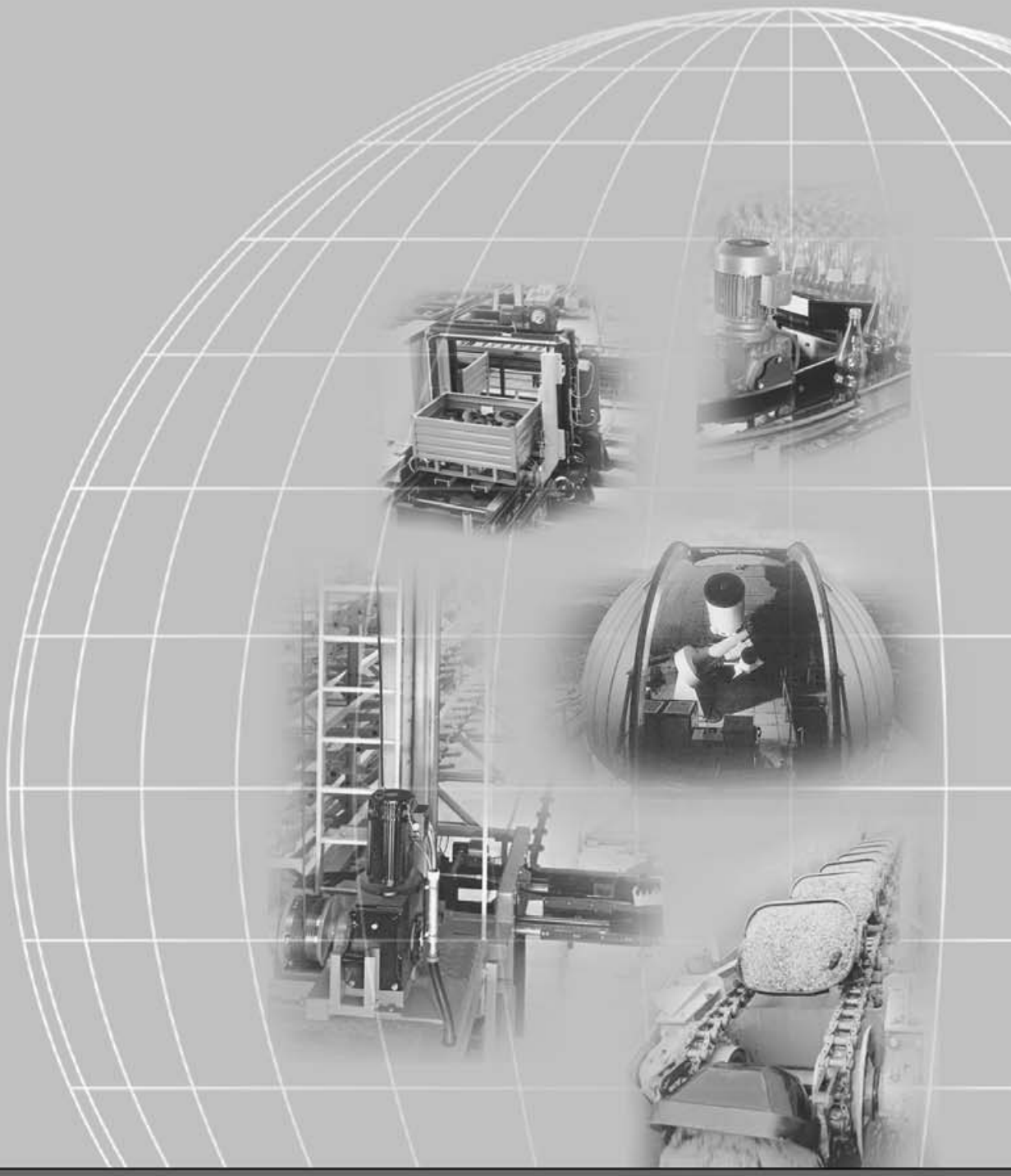
Edition

02/2003

Catalog

1056 4314 / EN

SEW
EURODRIVE



SEW-EURODRIVE

1 System Description

1.1 Overview of the system

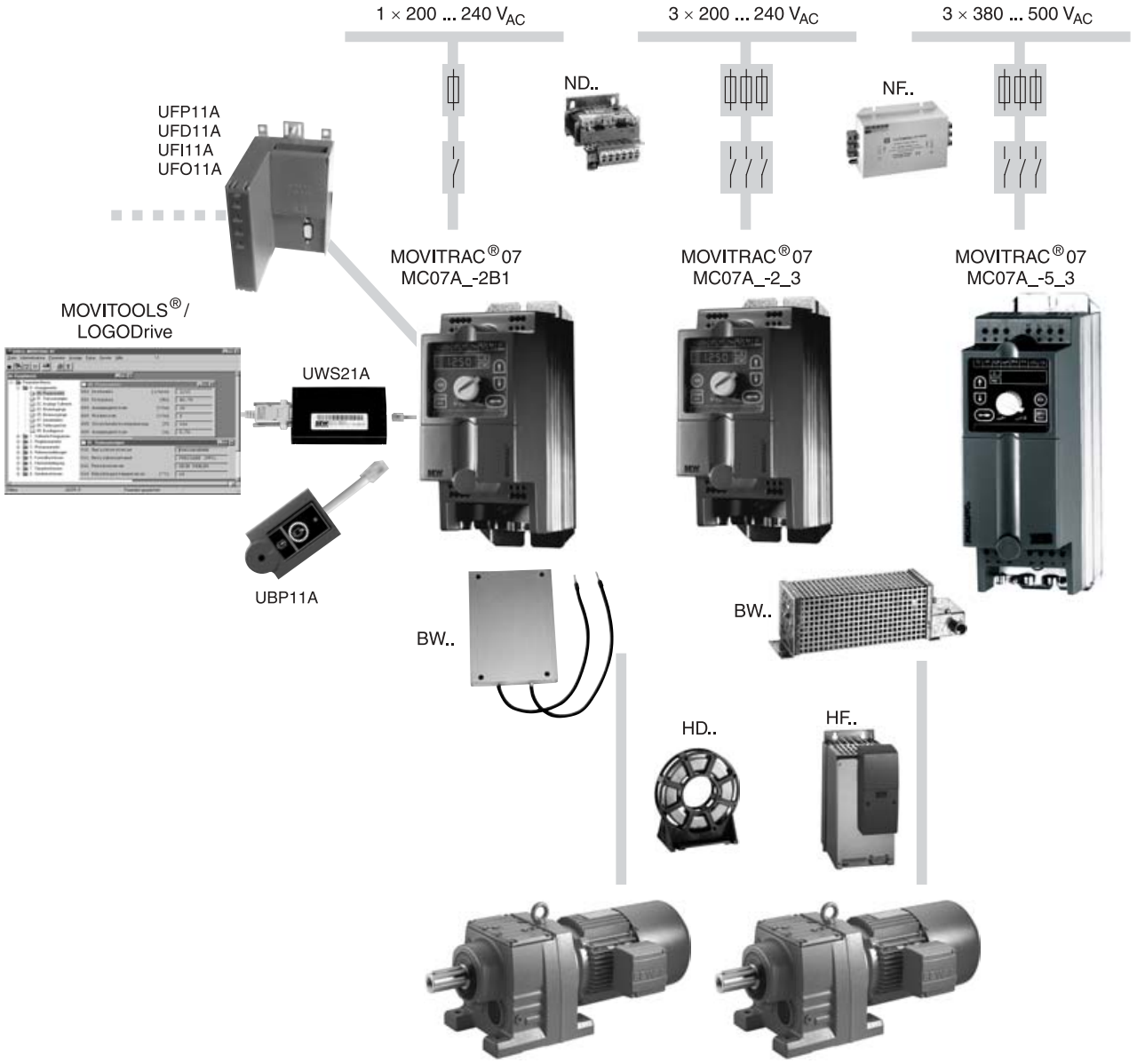


Figure 1: MOVITRAC® 07 system overview

MOVITOOLS® software
LOGODrive programming interface
UWS21A interface adapter
Gateways for
- PROFIBUS UFP11A
- DeviceNet UFD11A
- INTERBUS UFI11A
- CANopen UFO11A

ND line choke
NF line filter
BW braking resistor
HD output choke
HF output filter
UBP11A parameter module

Overview of properties

Compact

The unit has a very compact structure

- Integrated brake chopper
- Integrated EMC line filter:
  - Class **B**: 1-phase connection
  - Class **A**: 3-phase connection
    - 230 V: 0.37 ... 7.5 kW
    - 400/500 V: 0.55 ... 11 kW
- Braking resistor can be integrated (optional for sizes 0S, 0M, 0L)
- Book-shaped design with IP20 enclosure / NEMA1 (size 4: IP00, with touch guard IP10)

Straightforward

Startup and operation are very straightforward

- Automatic motor adaptation
- Integrated operating panel with menu structure
- Startup based on the "plug and play" principle
- Integrated setpoint potentiometer
- Easy parameter setting and diagnosis using MOVITOOLS® PC software

Right for the job

The unit has the right function for every application

- Standard V/f control process or field-oriented VFC control mode as an option
- High overload capacity
  - 125 % I_N continuous duty (fan/pump operation)
  - 150 % I_N for maximum 60 seconds
  - Maximum 180 % breakaway torque
- Integrated PI-controller
- Extended temperature range
  - –10 °C ... +50 °C
    - 230 V: 0.37 ... 2.2 kW
    - 400/500 V: 0.55 ... 4.0 kW
  - 0 °C ... +50 °C
    - 230 V: 3.7 ... 30 kW
    - 400/500 V: 5.5 ... 30 kW
- Integrated protection and monitoring functions
  - Short circuit
  - Ground fault
  - Motor temperature sensor

System bus

With the **system bus (SBus)** fitted as standard, you can network up to 64 MOVITRAC® 07 frequency inverters as slaves. A PC, a PLC or a MOVIDRIVE® can be the SBus master.

The MOVITRAC® 07 Communication manual describes the functions of the system bus.

Extended functions:

230 V units from 3.7 kW onwards and 500 V units from 5.5 kW onwards offer an extended range of functions including:

- Flying restart circuit
- Hoisting function
- Setpoint stop function
- Master frequency
- Standstill current function
- SCOPE oscilloscope program for MOVITOOLS®

LOGODrive units

There is the LOGODrive series of units as well as the standard series. These differ from the standard series in the following respects:

- The optional LOGODrive graphical programming interface is integrated in the MOVITOOLS® software from version 2.6 onwards. You can add and link function blocks into a sequential function chart graphically using LOGODrive.
- LOGODrive units also have the **extended functions**.

There is a separate manual for the LOGODrive graphical programming interface.

1.2 The units at a glance

Mains connection	Motor power	Continuous output current 100 % / 125 %	Integrated line filter class	MOVITRAC® 07 type	Size
230 V 1-phase	0.37 kW / 0.5 HP	2.5 / 3.1 A_{AC}	B	MC07A**004**-2B1-4-00	0S
	0.55 kW / 0.75 HP	3.3 / 4.1 A_{AC}		MC07A**005**-2B1-4-00	
	0.75 kW / 1.0 HP	4.2 / 5.3 A_{AC}		MC07A**008**-2B1-4-00	
	1.1 kW / 1.5 HP	5.7 / 7.1 A_{AC}		MC07A**011**-2B1-4-00	0L
	1.5 kW / 2.0 HP	7.3 / 9.1 A_{AC}		MC07A**015**-2B1-4-00	
	2.2 kW / 3.0 HP	8.6 / 10.8 A_{AC}		MC07A**022**-2B1-4-00	
230 V 3-phase	0.37 kW / 0.5 HP	2.5 / 3.1 A_{AC}	A	MC07A**004**-2A3-4-00	0S
	0.55 kW / 0.75 HP	3.3 / 4.1 A_{AC}		MC07A**005**-2A3-4-00	
	0.75 kW / 1.0 HP	4.2 / 5.3 A_{AC}		MC07A**008**-2A3-4-00	
	1.1 kW / 1.5 HP	5.7 / 7.1 A_{AC}		MC07A**011**-2A3-4-00	0L
	1.5 kW / 2.0 HP	7.3 / 9.1 A_{AC}		MC07A**015**-2A3-4-00	
	2.2 kW / 3.0 HP	8.6 / 10.8 A_{AC}		MC07A**022**-2A3-4-00	
	3.7 kW / 5 HP	14.5 / 18.1 A_{AC}		MC07A**037**-2A3-4-00	1
	5.5 kW / 7.5 HP	22.0 / 27.5 A_{AC}		MC07A**055**-2A3-4-00	2
	7.5 kW / 10 HP	29.0 / 36.3 A_{AC}		MC07A**075**-2A3-4-00	
	11 kW / 15 HP	42.0 / 52.5 A_{AC}	–	MC07A**110**-203-4-00	3
	15 kW / 20 HP	54.0 / 67.5 A_{AC}		MC07A**150**-203-4-00	
	22 kW / 30 HP	80.0 / 100.0 A_{AC}		MC07A**220**-203-4-00	4
	30 kW / 40 HP	95.0 / 118.8 A_{AC}		MC07A**300**-203-4-00	
400 V 3-phase	0.55 kW / 0.75 HP	2.0 / 1.25 A_{AC}	A	MC07A**005**-5A3-4-00	0M
	0.75 kW / 1.0 HP	2.4 / 3.0 A_{AC}		MC07A**008**-5A3-4-00	
	1.1 kW / 1.5 HP	3.1 / 3.9 A_{AC}		MC07A**011**-5A3-4-00	
	1.5 kW / 2.0 HP	4.0 / 5.0 A_{AC}		MC07A**015**-5A3-4-00	0L
	2.2 kW / 3.0 HP	5.5 / 6.9 A_{AC}		MC07A**022**-5A3-4-00	
	3.0 kW / 4.0 HP	7.0 / 8.8 A_{AC}		MC07A**030**-5A3-4-00	
	4.0 kW / 5.0 HP	9.5 / 11.9 A_{AC}		MC07A**040**-5A3-4-00	
	5.5 kW / 7.5 HP	12.5 / 15.6 A_{AC}		MC07A**055**-5A3-4-00	2S
	7.5 kW / 10 HP	16.0 / 20.0 A_{AC}		MC07A**075**-5A3-4-00	
	11 kW / 15 HP	24.0 / 30.0 A_{AC}		MC07A**110**-5A3-4-00	2
	15 kW / 20 HP	32.0 / 40.0 A_{AC}	–	MC07A**150**-503-4-00	3
	22 kW / 30 HP	46.0 / 57.5 A_{AC}		MC07A**220**-503-4-00	
	30 kW / 40 HP	60.0 / 75.0 A_{AC}		MC07A**300**-503-4-00	

Unit designation for LOGODrive MOVITRAC® 07 frequency inverters with LOGODrive have the unit designation MC07A...-...-4-**10**.

1.3 Functions / features

MOVITRAC® 07 frequency inverters are characterized by the following attributes:

Unit properties

- Wide voltage range:
  - 230 V units 1-phase and 3-phase for the voltage range 200 ... 240 V_{AC}, 50/60 Hz
  - 400/500 V units for the voltage range 3 x 380 ... 500 V_{AC}, 50/60 Hz
- Overload capacity: 150 % I_N for maximum 60 s
  125 % I_N continuous power (fan/pump operation)
  Maximum 180 % breakaway torque
- Rated operation (I_N = 100 %) up to ambient temperature ϑ = 50 °C.
- 4-quadrant capability due to the integrated brake chopper.
- Compact unit mounting position for minimum switch cabinet space requirement and optimum utilization of switch cabinet volume.
- Integrated EMC line filter to EN 55011 for compliance with limit value class:
  - Class **B**: 1-phase connection
  - Class **A**: 3-phase connection
    - 230 V: 0.37 ... 7.5 kW
    - 400/500 V: 0,55 ... 11 kW
- Inputs and outputs programmable
  - 1 analog input
  - 5 binary inputs
  - 2 binary outputs, 1 of which is a relay output
- Integrated voltage supply and evaluation for TF (PTC temperature sensor) for temperature monitoring of the motor.
- Integrated operating panel for displaying setpoints and setting parameters
  - 10 LEDs for displaying the selected symbols
  - 5 operation buttons
  - 1 setpoint potentiometer for specifying the speed
- Braking resistor can be integrated as an option in sizes 0S, 0M and 0L.

Control functions

- VFC control mode or V/f control.
- Automatic brake control by the inverter.
- DC braking to decelerate the motor even in 1-quadrant mode.
- Slip compensation for high static speed accuracy.
- Motor pull-out protection by sliding current limitation in the field weakening range.
- Factory settings can be reactivated.
- Parameter lock to protect against parameter changes.

- Protective features to protect against
  - Overcurrent
  - Ground fault
  - Overload
  - Overtemperature of the inverter
  - Overtemperature of the motor
- Speed monitoring and monitoring of the motor and regenerative limit power.
- Fault memory with all relevant operating data at the moment of the fault.
- Standardized operation, parameter setting and identical unit connection technology across all units in the MOVITRAC® 07 range.

Setpoint technology

- Motor potentiometer.
- External setpoint selections:
  - 0 ... +10 V
  - 0 ... 20 mA
  - 4 ... 20 mA
- 6 fixed setpoints.
- Frequency input (in preparation).

Communication / operation

- System bus for networking max. 64 MOVITRAC® 07 units.
- RS-485 interface for service purposes.
- Straightforward parameter setting and startup using integrated operating panel or MOVITOOLS® PC software.
- LOGODrive graphical programming interface for writing programs.
- Parameter module for saving and transferring inverter data including the LOGODrive program.
- Fieldbus interfaces for
  - PROFIBUS
  - DeviceNet
  - INTERBUS
  - CANopen

Extended functions:

230 V units from 3.7 kW onwards, 500 V units from 5.5 kW onwards and LOGODrive units offer an expanded range of functions including:

- Standstill current function for:
  - Rapid start
  - Heating current for avoiding condensation at low temperatures
- Flying restart circuit for flying restart of the inverter.
- Hoisting capability with all approved motor options.

2 Technical Data

2.1 CE-marking, UL approval and C-Tick

CE-marking

Low Voltage Directive

MOVITRAC® 07 frequency inverters comply with the regulations of the Low Voltage Directive 73/23/EEC.

Electromagnetic compatibility EMC

MOVITRAC® 07 frequency inverters are components of machines and systems. They comply with the EMC product standard EN 61800-3 *Variable-speed electrical drives*. If you want to apply the CE mark to the machine/system equipped with frequency inverters in accordance with the EMC Directive 89/336/EEC: Observe the instructions regarding EMC compliant installation.

MOVITRAC® 07 frequency inverters are equipped with a line filter as standard. They comply with the following limit value class to EN 55011 on the line side without further measures:

- **B**: 1-phase connection
- **A**: 3-phase connection
  - 230 V: 0.37 ... 7.5 kW
  - 400/500 V: 0.55 ... 11 kW

CE

The CE mark on the nameplate stands for conformity:

- With the Low Voltage Directive 73/23/EEC
- With the EMC Directive 89/336/EEC

SEW-EURODRIVE can issue a declaration of conformity to this effect on request.

UL approval

c UL us

UL and cUL approval has been granted for the entire MOVITRAC® 07 range of units. cUL is equivalent to CSA approval.

C-Tick

C-Tick approval has been granted for the entire MOVITRAC® 07 range of units. C-Tick certifies conformity with the requirements of the ACA (Australian Communications Authority).

2.2 General technical data

The following technical data applies to all MOVITRAC® 07 frequency inverters, regardless of size.

MOVITRAC® 07	All sizes
Interference immunity	To EN 61800-3
Interference emission with EMC-compliant installation	To limit value class • **B**: 1-phase connection • **A**: 3-phase connection – 230 V: 0.37 ... 7.5 kW – 400/500 V: 0.55 ... 11 kW To EN 55011 and EN 55014; complies with EN 61800-3
Discharge current	> 3.5 mA
Ambient temperature ϑ_{amb} at f_{PWM} = 4 kHz	230 V, 0.37 ... 2.2 kW 400/500 V, 0.55 ... 4.0 kW • –10 °C ... +50 °C at 100 % I_N • –10 °C ... +40 °C at 125 % I_N 230 V, 3.7 ... 30 kW 400/500 V, 5.5 ... 30 kW • 0 °C – +50 °C at 100 % I_N • 0 °C ... +40 °C at 125 % I_N
Power reduction	3.0 % I_N per K to max. 60 °C
Climate class	EN 60721-3-3, class 3K3
Storage temperature[1] Transport temperature	–25 °C ... +75 °C –25 °C ... +75 °C
Enclosure	IP20 Size 4 power connections: IP00, IP10 with Plexiglas cover mounted (supplied as standard)
Operating mode	Continuous duty (EN 60149-1-1 and 1-3)
Altitude	h ≤ 1000 m (3300 ft) • I_N reduction – 1 % per 100 m (330 ft) – From 1000 m to max. 4000 m (3300 ft to max. 13,200 ft) • V_N reduction – 3 V per 100 m (330 ft) – From 2000 m to max. 4000 m (6600 ft to max. 13,200 ft) Over 200 m (6600 ft) only overvoltage class 2, external measures are required for overvoltage class 3. Overvoltage classes to DIN VDE 0110-1.
Vibration-resistance	To EN 50 178 / VDE 0160

1 If the unit is being stored for a long time, connect it to the mains voltage for at least 5 minutes every 2 years. Otherwise, the service life of the unit will be reduced.

2.3 Technical data of MOVITRAC® 07

230 V

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Figure 2: MOVITRAC® 07 230 V units

Size	0S	0L	1	2	3	4
Power [kW / HP]	0.37 / 0.5 0.55 / 0.75 0.75 / 1.0	1.1 / 1.5 1.5 / 2.0 2.2 / 3.0	3.7 / 5	5.5 / 7.5 7.5 / 10	11 / 15 15 / 20	22 / 30 30 / 40
Mains connection	230 V / 1-phase 230 V / 3-phase		230 V / 3-phase			

400/500 V

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Figure 3: MOVITRAC® 07 400/500 V units

Size	0M	0L	2S	2	3
Power [kW / HP]	0.55 / 0.75 0.75 / 1.0 1.1 / 1.5	1.5 / 1.0 2.2 / 3.0 3.0 / 4.0 4.0 / 5.0	5.5 / 7.5 7.5 / 10	11 / 15	15 / 20 22 / 30 30 / 40
Mains connection	400/500 V / 3-phase				

230 V_{AC} / 1-phase / size 0S / 0.37 ... 0.75 kW / 0.5 ... 1.0 HP

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Figure 4: MOVITRAC® 07 / size 0S / 1-phase 230 V_{AC}

MOVITRAC® MC07A (1-phase supply system)		**004-2B1-4-..**	**005-2B1-4-..**	**008-2B1-4-..**
Part number		826 951 3	826 952 1	826 953 X
Part number with LOGODrive		827 185 2	827 186 0	827 187 9
INPUT				
Connection voltage Permitted range	V_{mains}	1 x 230 V_{AC} V_{mains} = 200 V_{AC} -10 % ... 240 V_{AC} +10 %		
Supply frequency	f_{mains}	50/60 Hz +/-5 %		
Rated system current, 1-phase at V_{mains} = 230 V_{AC}	100% I_{mains} 125% I_{mains}	6.1 A_{AC} 7.5 A_{AC}	8.5 A_{AC} 10.2 A_{AC}	9.9 A_{AC} 11.8 A_{AC}
OUTPUT				
Output voltage	V_N	3 x 0 ... V_{mains}		
Recommended motor power under constant load (with V_{mains} = 230 V_{AC})	P_{mot}	0.37 kW 0.5 HP	0.55 kW 0.75 HP	0.75 kW 1.0 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 230 V_{AC})	P_{mot}	0.55 kW 0.75 HP	0.75 kW 1.0 HP	1.1 kW 1.5 HP
Rated output current at V_{mains} = 230 V_{AC}	I_N	2.5 A_{AC}	3.3 A_{AC}	4.2 A_{AC}
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	72 Ω		

MOVITRAC® MC07A (1-phase supply system)		004-2B1-4-..	005-2B1-4-..	008-2B1-4-..
GENERAL				
Power loss at I_N	P_V	45 W	55 W	65 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds		
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz		
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm		
Connections		Terminals 2.5 mm²		
Dimensions	W x H x D	90 x 185 x 150 mm 3.5 x 7.2 x 5.9 in		
Weight	m	1.5 kg 3.3 lb		

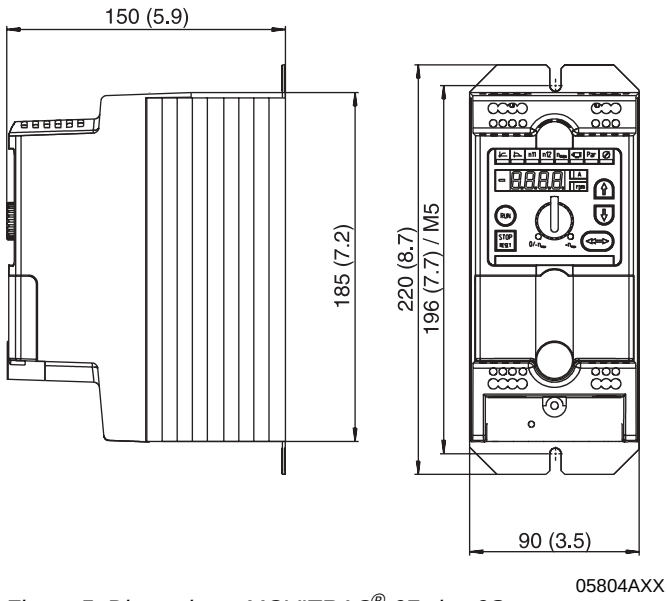

Figure 5: Dimensions, MOVITRAC® 07 size 0S

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

230 V_{AC} / 1-phase / size 0L / 1.1 ... 2.2 kW / 1.5 ... 3.0 HP

Figure 6: MOVITRAC® 07 / size 0L / 1-phase 230 V_{AC}

MOVITRAC® MC07A (1-phase supply system)		**011-2B1-4-..**	**015-2B1-4-..**	**022-2B1-4-..**
Part number		826 954 8	826 955 6	826 956 4
Part number with LOGODrive		827 188 7	827 189 5	827 190 9
INPUT				
Connection voltage Permitted range	V_{mains}	1 x 230 V_{AC} V_{mains} = 200 V_{AC} -10 % ... 240 V_{AC} +10 %		
Supply frequency	f_{mains}	50/60 Hz +/-5 %		
Rated system current, 1-phase at V_{mains} = 230 V_{AC}	100% I_{mains} 125% I_{mains}	13.4 A_{AC} 16.8 A_{AC}	16.7 A_{AC} 20.7 A_{AC}	19.7 A_{AC} 24.3 A_{AC}
OUTPUT				
Output voltage	V_N	3 x 0 ... V_{mains}		
Recommended motor power under constant load (with V_{mains} = 230 V_{AC})	P_{mot}	1.1 kW 1.5 HP	1.5 kW 2.0 HP	2.2 kW 3.0 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 230 V_{AC})	P_{mot}	1.5 kW 2.0 HP	2.2 kW 3.0 HP	3.0 kW 4.0 HP
Rated output current at V_{mains} = 230 V_{AC}	I_N	5.7 A_{AC}	7.3 A_{AC}	8.6 A_{AC}
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	27 Ω		

MOVITRAC® MC07A (1-phase supply system)		011-2B1-4-..	015-2B1-4-..	022-2B1-4-..
GENERAL				
Power loss at I_N	P_V	75 W	100 W	125 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds		
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz		
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm		
Connections		Terminals 4 mm²		
Dimensions	W x H x D	90 x 295 x 150 mm 3.5 x 9.5 x 5.9 in		
Weight	m	2.5 kg 5.5 lb		

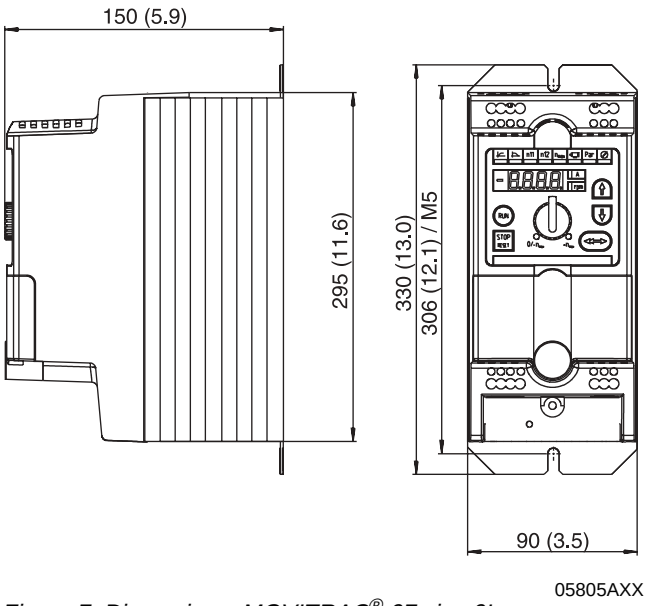

Figure 7: Dimensions, MOVITRAC® 07 size 0L

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

230 V_{AC} / 3-phase / size 0S / 0.37 ... 0.75 kW / 0.5 ... 1.0 HP

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Figure 8: MOVITRAC® 07 / size 0S / 3-phase 230 V_{AC}

MOVITRAC® 07A (3-phase supply system)		**004-2A3-4-..**	**005-2A3-4-..**	**008-2A3-4-..**
Part number		826 957 2	826 958 0	826 959 9
Part number with LOGODrive		827 191 7	827 192 5	827 193 3
INPUT				
Connection voltage Permitted range	V_{mains}	3 x 230 V_{AC} V_{mains} = 200 V_{AC} -10 % ... 240 V_{AC} +10 %		
Supply frequency	f_{supply}	50/60 Hz +/-5 %		
Rated system current, 3-phase at V_{mains} = 230 V_{AC}	100% I_{mains} 125% I_{mains}	2.0 A_{AC} 2.4 A_{AC}	2.8 A_{AC} 3.4 A_{AC}	3.3 A_{AC} 4.1 A_{AC}
OUTPUT				
Output voltage	V_N	3 x 0 ... V_{mains}		
Recommended motor power under constant load (with V_{mains} = 230 V_{AC})	P_{mot}	0.37 kW 0.5 HP	0.55 kW 0.75 HP	0.75 kW 1.0 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 230 V_{AC})	P_{mot}	0.55 kW 0.75 HP	0.75 kW 1.0 HP	1.1 kW 1.5 HP
Rated output current at V_{mains} = 230 V_{AC}	I_N	2.5 A_{AC}	3.3 A_{AC}	4.2 A_{AC}
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	72 Ω		

MOVITRAC® 07A (3-phase supply system)		004-2A3-4-..	005-2A3-4-..	008-2A3-4-..
GENERAL				
Power loss at I_N	P_V	45 W	55 W	65 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds		
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz		
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm		
Connections		Terminals 2.5 mm^2		
Dimensions	W x H x D	90 x 185 x 150 mm 3.5 x 7.2 x 5.9 in		
Weight	m	1.5 kg 3.3 lb		

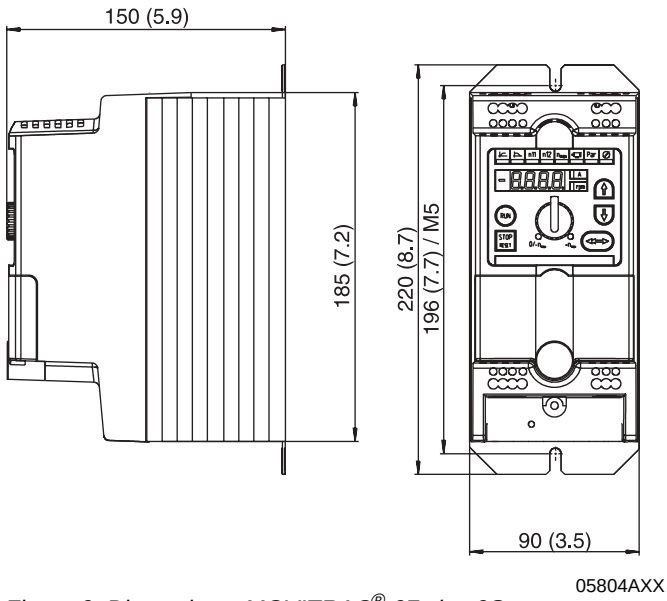

Figure 9: Dimensions, MOVITRAC® 07 size 0S

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

230 V_{AC} / 3-phase / size 0L / 1.1 ... 2.2 kW / 1.5 ... 3.0 HP

Figure 10: MOVITRAC® 07 / size 0L / 3-phase 230 V_{AC}

MOVITRAC® 07A (3-phase supply system)		**011-2A3-4-..**	**015-2A3-4-..**	**022-2A3-4-..**
Part number		826 960 2	826 961 0	826 962 9
Part number with LOGODrive		827 194 1	827 195 X	827 196 8
INPUT				
Connection voltage Permitted range	V_{mains}	3 x 230 V_{AC} V_{mains} = 200 V_{AC} -10 % ... 240 V_{AC} +10 %		
Supply frequency	f_{mains}	50/60 Hz +/-5 %		
Rated system current, 3-phase at V_{mains} = 230 V_{AC}	100% I_{mains} 125% I_{mains}	5.1 A_{AC} 6.3 A_{AC}	6.4 A_{AC} 7.9 A_{AC}	7.6 A_{AC} 9.5 A_{AC}
OUTPUT				
Output voltage	V_N	3 x 0 ... V_{mains}		
Recommended motor power under constant load (with V_{mains} = 230 V_{AC})	P_{mot}	1.1 kW 1.5 HP	1.5 kW 2.0 HP	2.2 kW 3.0 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 230 V_{AC})	P_{mot}	1.5 kW 2.0 HP	2.2 kW 3.0 HP	3.0 kW 4.0 HP
Rated output current at V_{mains} = 230 V_{AC}	I_N	5.7 A_{AC}	7.3 A_{AC}	8.6 A_{AC}
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	27 Ω		

MOVITRAC® 07A (3-phase supply system)		011-2A3-4-..	015-2A3-4-..	022-2A3-4-..
GENERAL				
Power loss at I_N	P_V	75 W	100 W	125 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds		
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz		
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm		
Connections		Terminals 4 mm^2		
Dimensions	W x H x D	90 x 295 x 150 mm 3.5 x 9.5 x 5.9 in		
Weight	m	2.5 kg 5.5 lb		

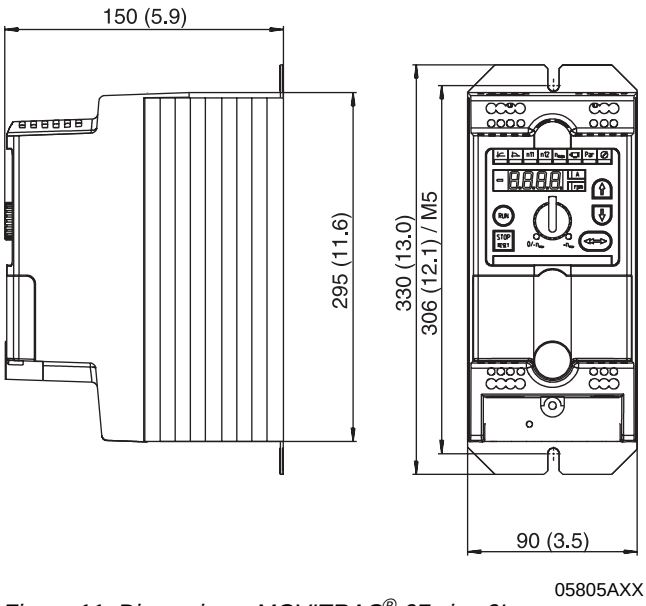

Figure 11: Dimensions, MOVITRAC® 07 size 0L

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

230 V_{AC} / 3-phase / size 1 / 3.7 kW / 5.0 HP

Figure 12: MOVITRAC® 07 / size 1 / 3-phase 230 V_{AC}

MOVITRAC® 07A (3-phase supply system)		**037-2A3-4-..**
Part number		827 278 6
Part number with LOGODrive		827 285 9
INPUT		
Connection voltage Permitted range	V_{mains}	3 x 230 V_{AC} V_{mains} = 200 V_{AC} -10 % ... 240 V_{AC} +10 %
Supply frequency	f_{supply}	50/60 Hz +/-5 %
Rated system current, 3-phase at V_{mains} = 230 V_{AC}	100% I_{mains} 125% I_{mains}	12.9 A_{AC} 16.1 A_{AC}
OUTPUT		
Output voltage	V_N	3 x 0 ... V_{mains}
Recommended motor power under constant load (with V_{mains} = 230 V_{AC})	P_{mot}	3.7 kW 5 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 230 V_{AC})	P_{mot}	5.5 kW 7.5 HP
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	27 Ω

MOVITRAC® 07A (3-phase supply system)		037-2A3-4-..
GENERAL		
Power loss at I_N	P_V	210 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm
Connections	Terminals	4 mm^2
Dimensions	W x H x D	105 x 315 x 144 mm 4.1 x 12.4 x 5.7 in
Weight	m	3.5 kg 7.7 lb

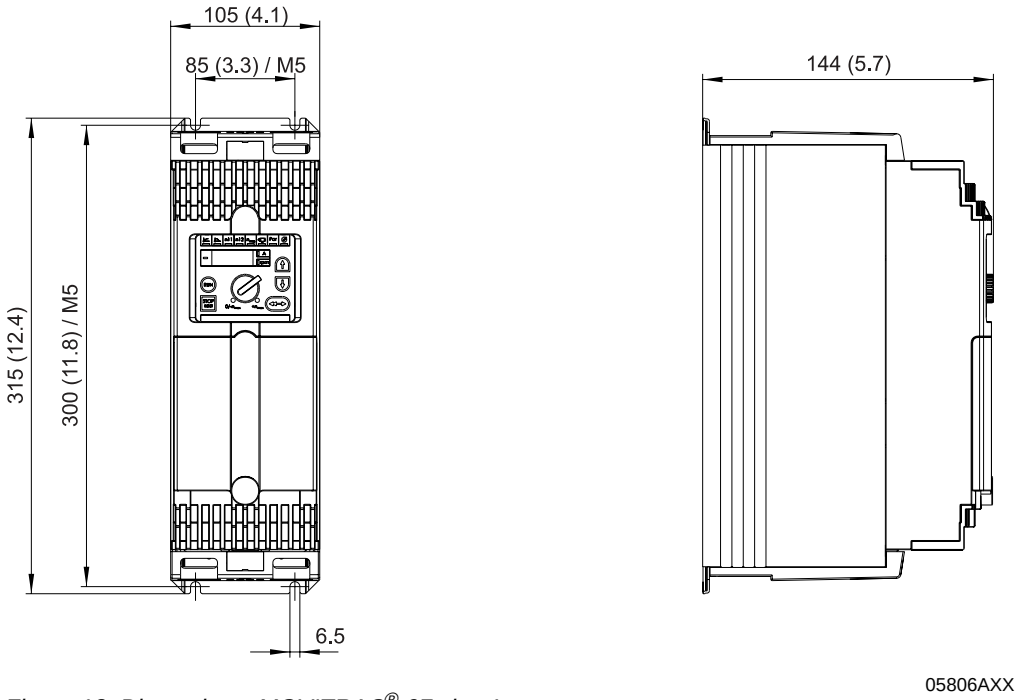

Figure 13: Dimensions, MOVITRAC® 07 size 1

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

230 V_{AC} / 3-phase / size 2 / 5.5 ... 7.5 kW / 7.5 ... 10 HP

Figure 14: MOVITRAC® 07 / size 2 / 3-phase 230 V_{AC}

MOVITRAC® 07A (3-phase supply system)		**055-2A3-4-..**	**075-2A3-4-..**
Part number		827 279 4	827 280 8
Part number with LOGODrive		827 286 7	827 287 5
INPUT			
Connection voltage Permitted range	V_{mains}	3 x 230 V_{AC} V_{mains} = 200 V_{AC} -10 % ... 240 V_{AC} +10 %	
Supply frequency	f_{mains}	50/60 Hz +/-5 %	
Rated system current, 3-phase at V_{mains} = 230 V_{AC}	100% I_{mains} 125% I_{mains}	19.5 A_{AC} 24.4 A_{AC}	27.4 A_{AC} 34.3 A_{AC}
OUTPUT			
Output voltage	V_N	3 x 0 ... V_{mains}	
Recommended motor power under constant load (with V_{mains} = 230 V_{AC})	P_{mot}	5.5 kW 7.5 HP	7.5 kW 10 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 230 V_{AC})	P_{mot}	7.5 kW 10 HP	11 kW 15 HP
Rated output current at V_{mains} = 230 V_{AC}	I_N	22 A_{AC}	29 A_{AC}
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	12 Ω	

MOVITRAC® 07A (3-phase supply system)		055-2A3-4-..	075-2A3-4-..
GENERAL			
Power loss at I_N	P_V	300 W	380 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds	
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz	
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm	
Connections	Terminals	4 mm^2	6 mm^2
Dimensions	W x H x D	130 x 335 x 196 mm 5.1 x 13.2 x 7.7 in	
Weight	m	6.6 kg 14.6 lb	

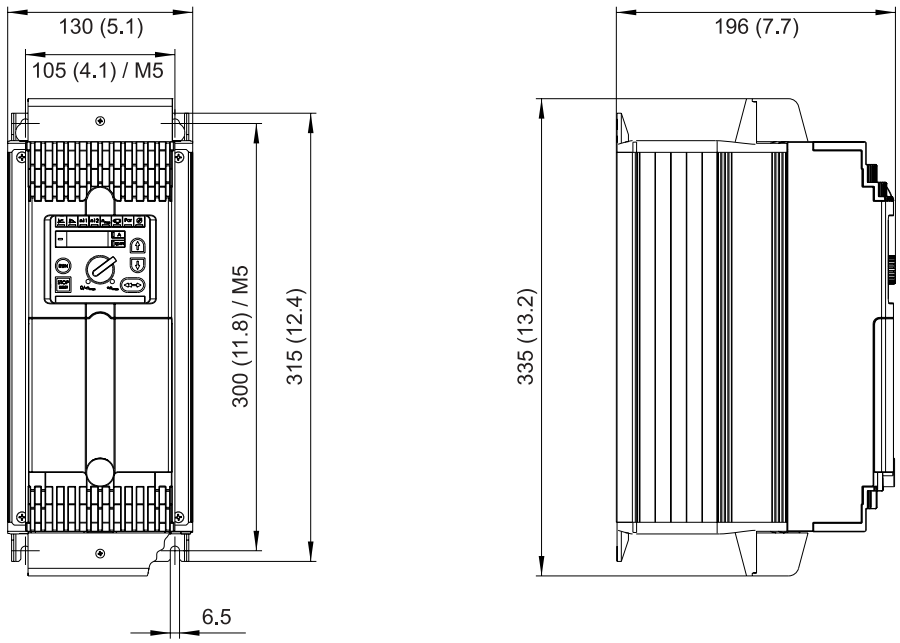

Figure 15: Dimensions, MOVITRAC® 07 size 2

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

230 V_{AC} / 3-phase / size 3 / 11 ... 15 kW / 15 ... 20 HP

Figure 16: MOVITRAC® 07 / size 3 / 3-phase 230 V_{AC}

MOVITRAC® 07A (3-phase supply system)		**110-203-4-..**	**150-203-4-..**
Part number		827 281 6	827 282 4
Part number with LOGODrive		827 288 3	827 289 1
INPUT			
Connection voltage Permitted range	V_{mains}	3 x 230 V_{AC} V_{mains} = 200 V_{AC} -10 % ... 240 V_{AC} +10 %	
Supply frequency	f_{supply}	50/60 Hz +/-5 %	
Rated system current, 3-phase at V_{mains} = 230 V_{AC}	100% I_{mains} 125% I_{mains}	40.0 A_{AC} 50.0 A_{AC}	48.6 A_{AC} 60.8 A_{AC}
OUTPUT			
Output voltage	V_N	3 x 0 ... V_{mains}	
Recommended motor power under constant load (with V_{mains} = 230 V_{AC})	P_{mot}	11 kW 15 HP	15 kW 20 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 230 V_{AC})	P_{mot}	15 kW 20 HP	22 kW 30 HP
Rated output rated current at V_{mains} = 230 V_{AC}	I_N	7.5 A_{AC}	5.6 A_{AC}
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	15 Ω	

MOVITRAC® 07A (3-phase supply system)		110-203-4-..	150-203-4-..
GENERAL			
Power loss at I_N	P_V	580 W	720 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds	
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz	
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm	
Connections	Terminals	10 mm^2	16 mm^2
Dimensions	W x H x D	200 x 465 x 218 mm 7.9 x 18.3 x 8.6 in	
Weight	m	15 kg 33.1 lb	

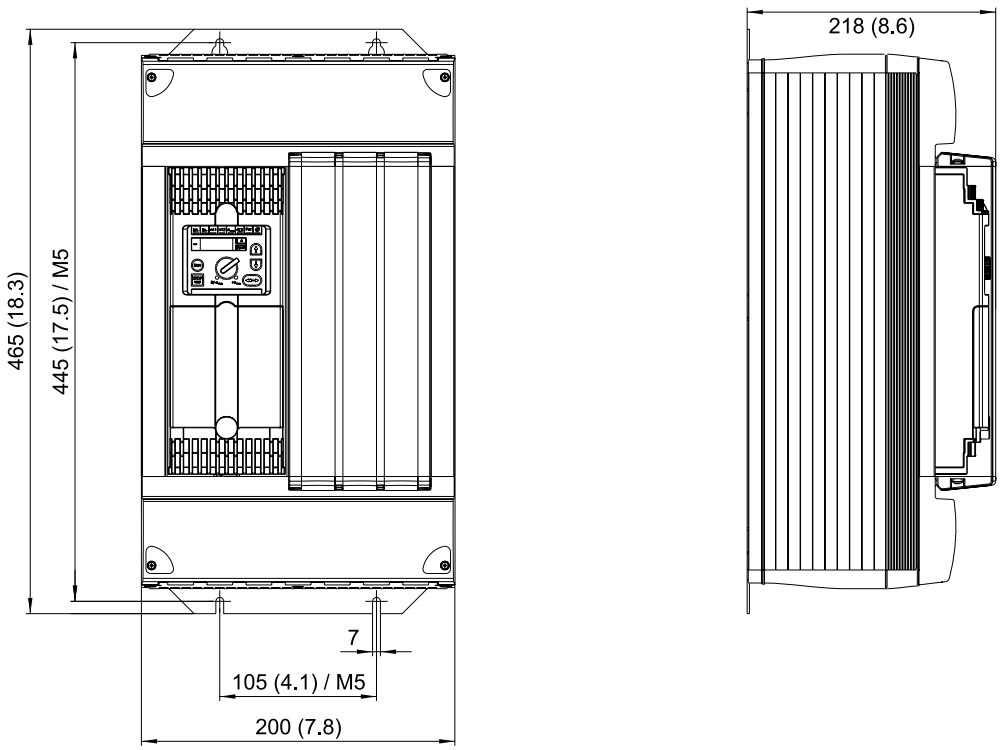

Figure 17: Dimensions, MOVITRAC® 07 size 3

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

230 V_{AC} / 3-phase / size 4 / 22 ... 30 kW / 30 ... 40 HP

Figure 18: MOVITRAC® 07 / size 4 / 3-phase 230 V_{AC}

MOVITRAC® 07A (3-phase supply system)		**220-203-4-..**	**300-203-4-..**
Part number		827 283 2	827 284 0
Part number with LOGODrive		827 290 5	827 291 3
INPUT			
Connection voltage Permitted range	V_{mains}	3 x 230 V_{AC} V_{mains} = 200 V_{AC} -10 % ... 240 V_{AC} +10 %	
Supply frequency	f_{mains}	50/60 Hz +/-5 %	
Rated system current, 3-phase at V_{mains} = 230 V_{AC}	100% I_{mains} 125% I_{mains}	72 A_{AC} 90 A_{AC}	86 A_{AC} 107 A_{AC}
OUTPUT			
Output voltage	V_N	3 x 0 ... V_{mains}	
Recommended motor power under constant load (with V_{mains} = 230 V_{AC})	P_{mot}	22 kW 30 HP	30 kW 40 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 230 V_{AC})	P_{mot}	30 kW 40 HP	37 kW 50 HP
Rated output current at V_{mains} = 230 V_{AC}	I_N	80 A_{AC}	95 A_{AC}
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	3 Ω	

MOVITRAC® 07A (3-phase supply system)		220-203-4-..	300-203-4-..
GENERAL			
Power loss at I_N	P_V	1100 W	1300 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds	
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz	
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm	
Connections	Terminals	25 mm^2	35 mm^2
Dimensions	W x H x D	280 x 522 x 222 mm 11.0 x 20.6 x 8.7 in	
Weight	m	27 kg 59.5 lb	

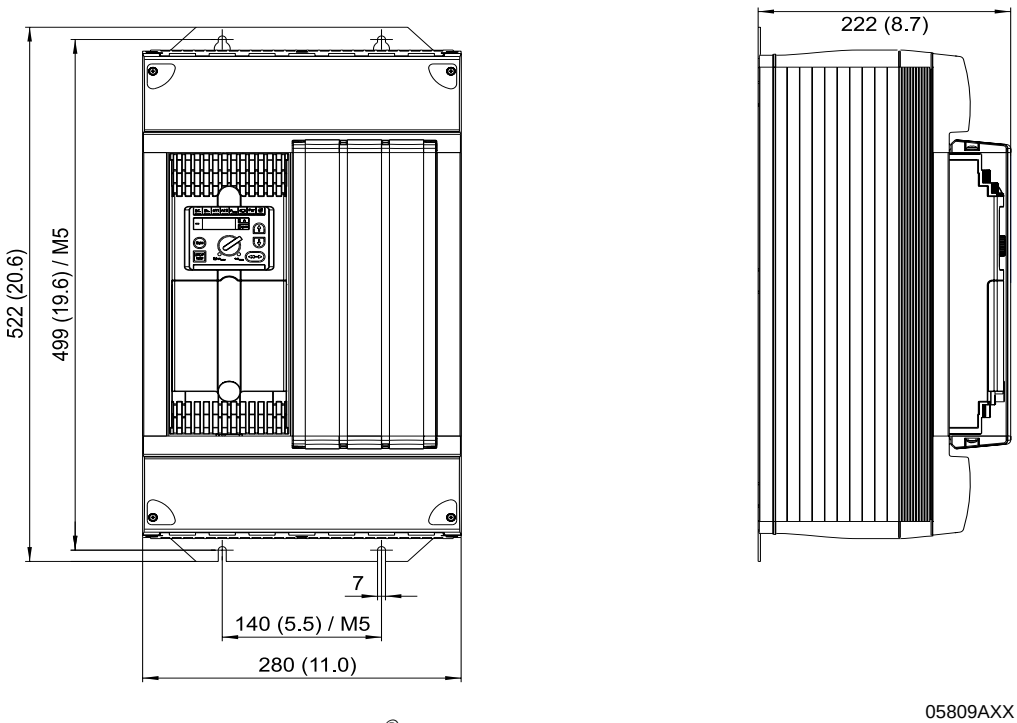

Figure 19: Dimensions, MOVITRAC® 07 size 4

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

400/500 V_{AC} / 3-phase / size 0M / 0.55 ... 1.1 kW / 0.75 ... 1.5 HP

Figure 20: MOVITRAC® 07 / size 0M / 3-phase 400/500 V_{AC}

MOVITRAC® 07A (3-phase supply system)		**005-5A3-4-..**	**008-5A3-4-..**	**011-5A3-4-..**
Part number		827 247 6	827 248 4	827 249 2
Part number with LOGODrive		827 292 1	827 293 x	827 294 8
INPUT				
Connection voltage Permitted range	V_{mains}	3 x 400 V_{AC} V_{mains} = 380 V_{AC} -10 % ... 500 V_{AC} +10 %		
Supply frequency	f_{mains}	50/60 Hz +/-5 %		
Rated system current, 3-phase at V_{mains} = 400 V_{AC}	100% I_{mains} 125% I_{mains}	1.8 A_{AC} 2.3 A_{AC}	2.2 A_{AC} 2.6 A_{AC}	2.8 A_{AC} 3.5 A_{AC}
OUTPUT				
Output voltage	V_N	3 x 0 ... V_{mains}		
Recommended motor power under constant load (with V_{mains} = 400 V_{AC})	P_{mot}	0.55 kW 0.75 HP	0.75 kW 1.0 HP	1.1 kW 1.5 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 400 V_{AC})	P_{mot}	0.75 kW 1.0 HP	1.1 kW 1.5 HP	1.5 kW 2.0 HP
Rated output current at V_{mains}= 400 V_{AC}	I_N	2.0 A_{AC}	2.4 A_{AC}	3.1 A_{AC}
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	68 Ω		

MOVITRAC® 07A (3-phase supply system)		005-5A3-4-..	008-5A3-4-..	011-5A3-4-..
GENERAL				
Power loss at I_N	P_V	42 W	48 W	58 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds		
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz		
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm		
Connections		Terminals 4 mm^2		
Dimensions	W x H x D	90 x 245 x 150 mm 3.5 x 9.6 x 5.9 in		
Weight	m	2.0 kg 4.4 lb		

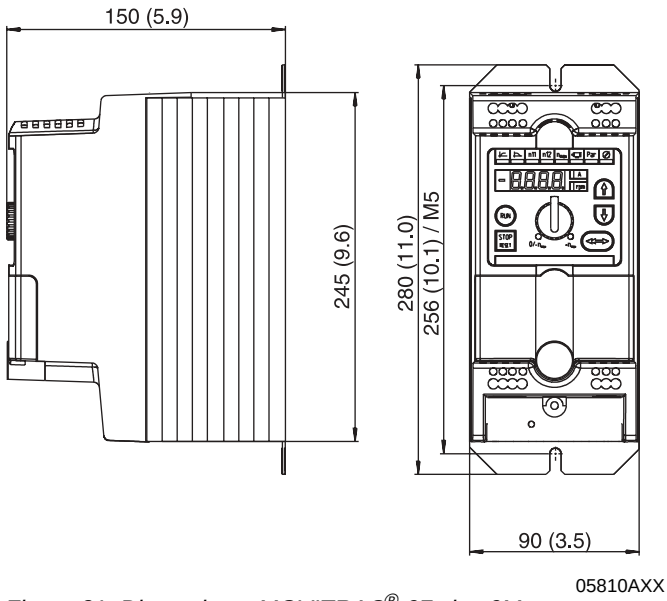

Figure 21: Dimensions, MOVITRAC® 07 size 0M

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

400/500 V_{AC} / 3-phase / size 0L / 1.5 ... 4.0 kW / 2.0 ... 5.0 HP

Figure 22: MOVITRAC® 07 / size 0L / 3-phase 400/500 V_{AC}

MOVITRAC® 07A (3-phase supply system)		**015-5A3-4-..**	**022-5A3-4-..**	**030-5A3-4-..**	**040-5A3-4-..**
Part number		827 250 6	827 251 4	827 252 2	827 253 0
Part number with LOGODrive		827 295 6	827 296 4	827 297 2	827 298 0
INPUT					
Connection voltage Permitted range	V_{mains}	3 x 400 V_{AC} V_{mains} = 380 V_{AC} -10 % ... 500 V_{AC} +10 %			
Supply frequency	f_{mains}	50/60 Hz +/-5 %			
Rated system current, 3-phase at V_{mains} = 400 V_{AC}	100% I_{mains} 125% I_{mains}	3.6 A_{AC} 4.5 A_{AC}	5.0 A_{AC} 6.2 A_{AC}	6.3 A_{AC} 7.9 A_{AC}	8.6 A_{AC} 10.7 A_{AC}
OUTPUT					
Output voltage	V_N	3 x 0 ... V_{mains}			
Recommended motor power under constant load (with V_{mains} = 400 V_{AC})	P_{mot}	1.5 kW 2.0 HP	2.2 kW 3.0 HP	3.0 kW 4.0 HP	4.0 kW 5.0 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 400 V_{AC})	P_{mot}	2.2 kW 3.0 HP	3.0 kW 4.0 HP	4.0 kW 5.0 HP	5.5 kW 7.5 HP
Rated output current at V_{mains} = 400 V_{AC}	I_N	4.0 A_{AC}	5.5 A_{AC}	7.0 A_{AC}	9.5 A_{AC}
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	68 Ω			

MOVITRAC® 07A (3-phase supply system)		015-5A3-4-..	022-5A3-4-..	030-5A3-4-..	040-5A3-4-..
GENERAL					
Power loss at I_N	P_V	74 W	97 W	123 W	155 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds			
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz			
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm			
Connections		Terminals 4 mm^2			
Dimensions	W x H x D	90 x 295 x 150 mm 3.5 x 11.6 x 5.9 in			
Weight	m	2.5 kg 5.5 lb			

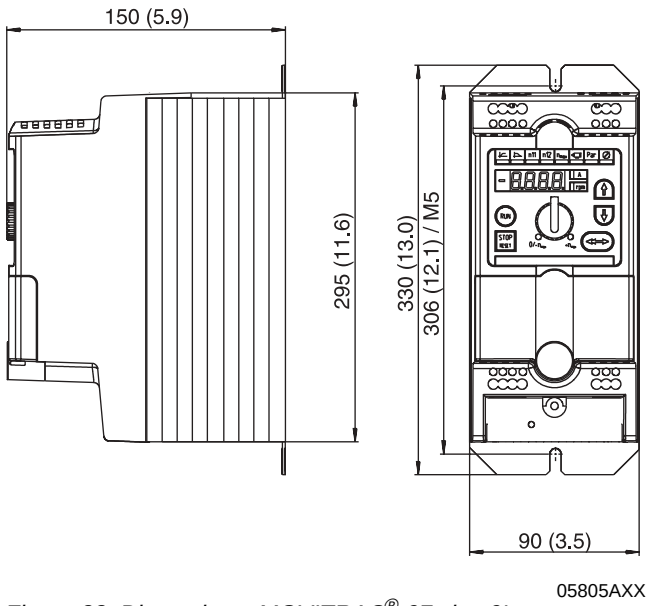

Figure 23: Dimensions, MOVITRAC® 07 size 0L

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

400/500 V_{AC} / 3-phase / size 2S / 5.5 ... 7.5 kW / 7.5 ... 10 HP

Figure 24: MOVITRAC® 07 / size 2S / 3-phase 400/500 V_{AC}

MOVITRAC® 07A (3-phase supply system)		**055-5A3-4-..**	**075-5A3-4-..**
Part number		827 254 9	827 255 7
Part number with LOGODrive		827 299 9	827 300 6
INPUT			
Connection voltage Permitted range	V_{mains}	3 x 400 V_{AC} V_{mains} = 380 V_{AC} -10 % ... 500 V_{AC} +10 %	
Supply frequency	f_{mains}	50/60 Hz +/-5 %	
Rated system current, 3-phase at V_{mains} = 400 V_{AC}	100% I_{mains} 125% I_{mains}	11.3 A_{AC} 14.1 A_{AC}	14.4 A_{AC} 18.0 A_{AC}
OUTPUT			
Output voltage	V_N	3 x 0 ... V_{mains}	
Recommended motor power under constant load (with V_{mains} = 400 V_{AC})	P_{mot}	5.5 kW 7.5 HP	7.5 kW 10 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 400 V_{AC})	P_{mot}	7.5 kW 10 HP	11 kW 15 HP
Rated output current at V_{mains} = 400 V_{AC}	I_N	12.5 A_{AC}	16 A_{AC}
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	47 Ω	

MOVITRAC® 07A (3-phase supply system)		055-5A3-4-..	075-5A3-4-..
GENERAL			
Power loss at I_N	P_V	220 W	290 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds	
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz	
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm	
Connections	Terminals	4 mm^2	
Dimensions	W x H x D	105 x 335 x 205 mm 4.1 x 13.2 x 8.1 in	
Weight	m	5.0 kg 11.0 lb	

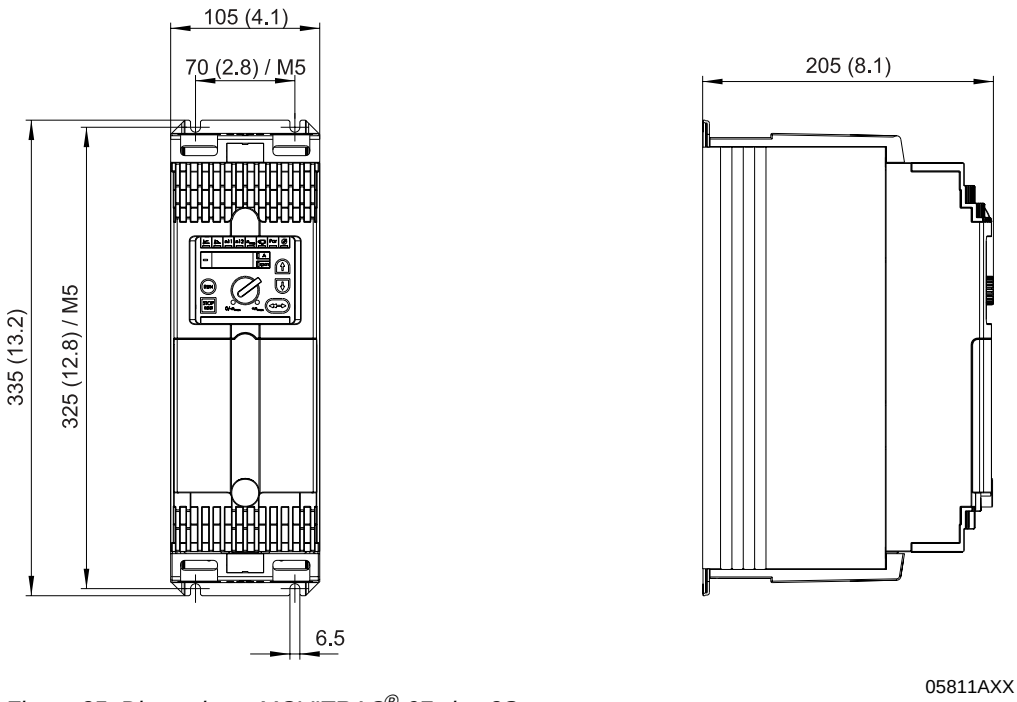

Figure 25: Dimensions, MOVITRAC® 07 size 2S

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

400/500 V_{AC} / 3-phase / size 2 / 11 kW / 15 HP

Figure 26: MOVITRAC® 07 / size 2 / 3-phase 400/500 V_{AC}

MOVITRAC® 07A (3-phase supply system)		**110-5A3-4-..**
Part number		827 256 5
Part number with LOGODrive		827 301 4
INPUT		
Connection voltage Permitted range	V_{mains}	3 x 400 V_{AC} V_{mains} = 380 V_{AC} -10 % ... 500 V_{AC} +10 %
Supply frequency	f_{mains}	50/60 Hz +/-5 %
Rated system current, 3-phase at V_{mains} = 400 V_{AC}	100% I_{mains} 125% I_{mains}	21.6 A_{AC} 27.0 A_{AC}
OUTPUT		
Output voltage	V_N	3 x 0 ... V_{mains}
Recommended motor power under constant load (with V_{mains} = 400 V_{AC})	P_{mot}	11 kW 15 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 400 V_{AC})	P_{mot}	15 kW 20 HP
Rated output current at V_{mains} = 400 V_{AC}	I_N	24 A_{AC}
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	47 Ω

MOVITRAC® 07A (3-phase supply system)		110-5A3-4-..
GENERAL		
Power loss at I_N	P_V	400 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm
Connections	Terminals	4 mm^2
Dimensions	W x H x D	130 x 335 x 196 mm 5.1 x 13.2 x 7.7 in
Weight	m	6.6 kg 14.6 lb

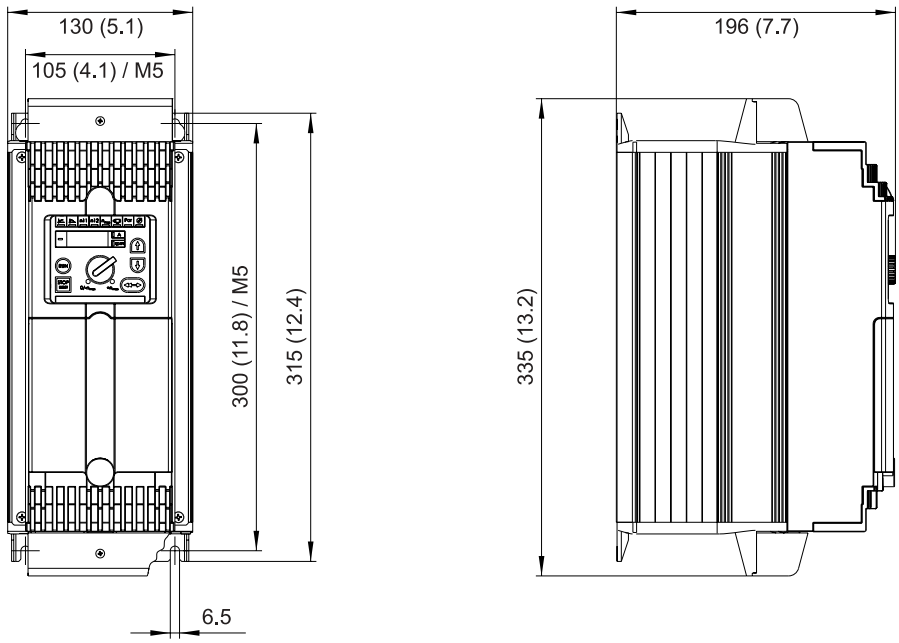

Figure 27: Dimensions, MOVITRAC® 07 size 2

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

400/500 V_{AC} / 3-phase / size 3 / 15 ... 30 kW / 20 ... 40 HP

Figure 28: MOVITRAC® 07 / size 3 / 3-phase 400/500 V_{AC}

MOVITRAC® 07 (3-phase supply system)		**150-503-4-..**	**220-503-4-..**	**300-503-4-..**
Part number		827 257 3	827 258 1	827 259 x
Part number with LOGODrive		827 302 2	827 303 0	827 304 9
INPUT				
Connection voltage Permitted range	V_{mains}	3 x 400 V_{AC} V_{mains} = 380 V_{AC} -10 % ... 500 V_{AC} +10 %		
Supply frequency	f_{mains}	50/60 Hz +/-5 %		
Rated system current, 3-phase at V_{mains} = 400 V_{AC}	100% I_{mains} 125% I_{mains}	28.8 A_{AC} 36.0 A_{AC}	41.4 A_{AC} 51.7 A_{AC}	54.0 A_{AC} 67.5 A_{AC}
OUTPUT				
Output voltage	V_N	3 x 0 ... V_{mains}		
Recommended motor power under constant load (with V_{mains} = 400 V_{AC})	P_{mot}	15 kW 20 HP	22 kW 30 HP	30 kW 40 HP
Recommended motor power under variable torque load or constant load without overload (with V_{mains} = 400 V_{AC})	P_{mot}	22 kW 30 HP	30 kW 40 HP	37 kW 50 HP
Rated output current at V_{mains} = 400 V_{AC}	I_N	32 A_{AC}	46 A_{AC}	60 A_{AC}
Minimum permitted braking resistor value (4-Q operation)	R_{BWmin}	15 Ω		12 Ω

MOVITRAC® 07 (3-phase supply system)		150-503-4-..	220-503-4-..	300-503-4-..
GENERAL				
Power loss at I_N	P_V	550 W	750 W	950 W
Current limitation		125 % I_N continuous duty (fan/pump operation) 150 % I_N for maximum 60 seconds		
PWM frequency	f_{PWM}	4 / 8 / 12 / 16 kHz		
Speed range Resolution	n_A Δn_A	0 ... 5500 rpm 1 rpm		
Connections	Terminals	6 mm^2	10 mm^2	16 mm^2
Dimensions	W x H x D	200 x 465 x 218 mm 7.9 x 18.3 x 8.6 in		
Weight	m	15 kg 33.1 lb		

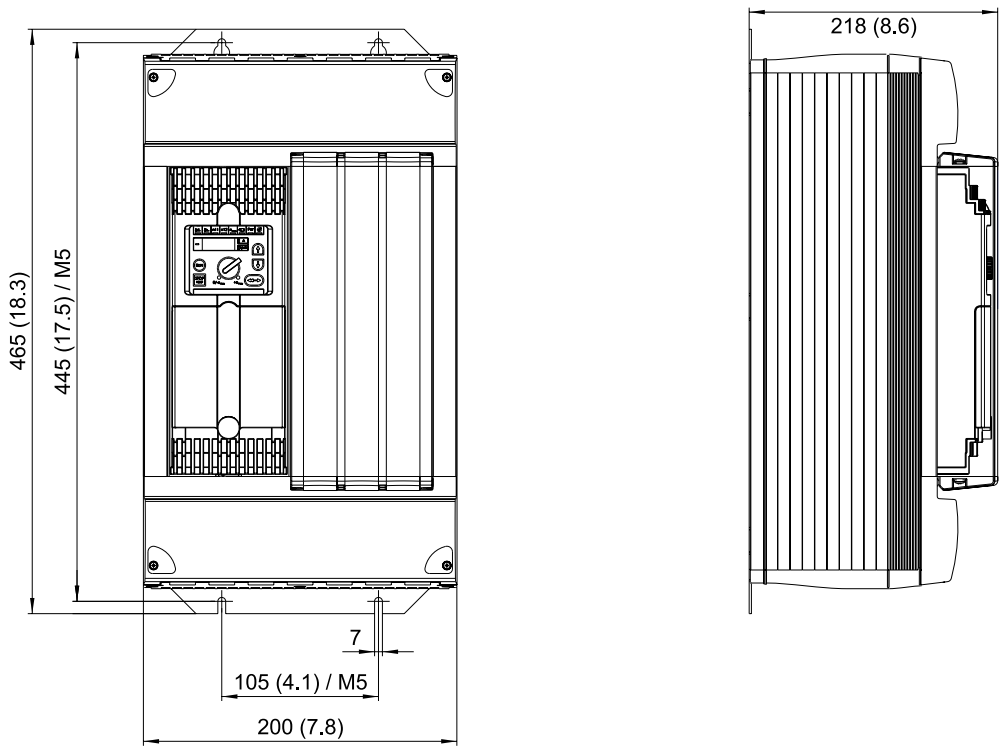

Figure 29: Dimensions, MOVITRAC® 07 size 3

Provide 100 mm (4 in) clearance above and below the unit to ensure adequate cooling! There is no need for clearance at the sides. You can line up the units directly next to one another. Make sure that the circulation of air is not disrupted by cables or other installation materials. Prevent the heated exhaust air from other units from blowing onto this unit.

MOVITRAC® 07 sizes 0S, 0M, 0L for DIN rail mounting (optional accessory)

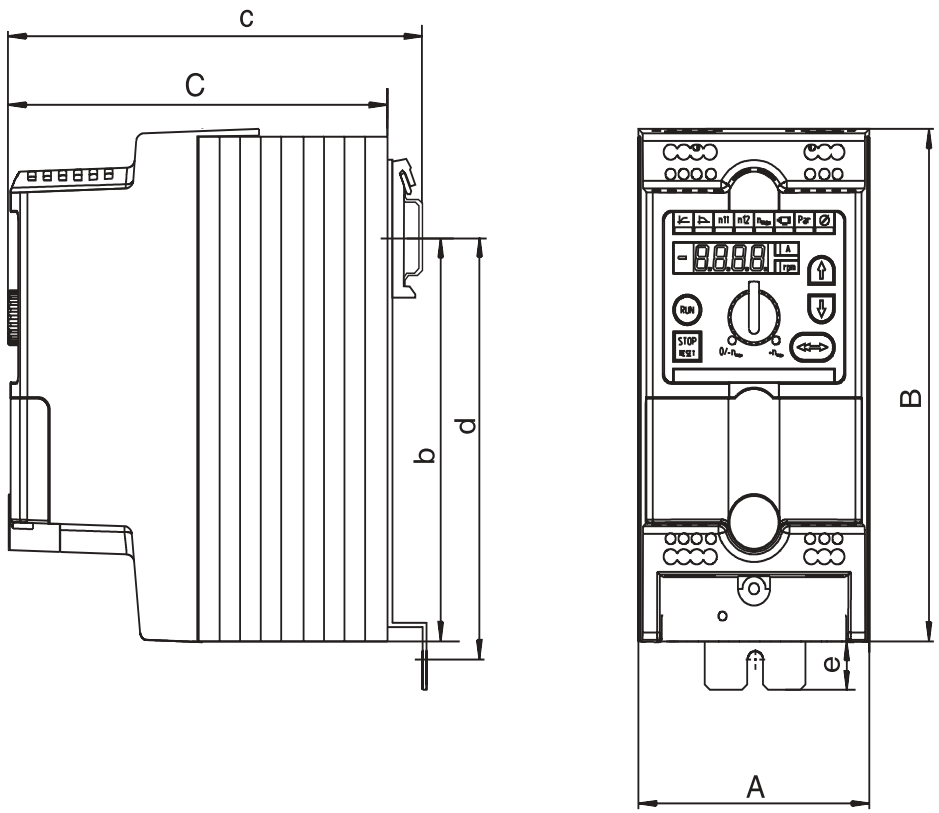

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Figure 30: MOVITRAC® 07 dimensions for DIN rail mounting (optional accessory)

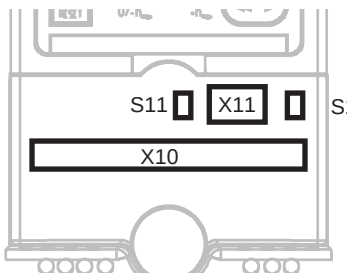
MOVITRAC® 07	230 V_{AC}	004	005	008	011	015	022
Dimensions	A x B x C	90 x 185 x 150 mm 3.5 x 7.2 x 5.9 in			90 x 295 x 150 mm 3.5 x 9.5 x 5.9 in		
Mounting	b / c / d / e	141 mm / 162 mm / 152 mm (M4) / 14.75 mm 5.6 in / 6.4 in / 6.0 in (M4) / 0.6 in			250 mm / 162 mm / 261 mm (M4) / 14.75 mm 9.8 in / 6.4 in / 10.3 in (M4) / 0.6 in		
Size		0S			0L		

MOVITRAC® 07	400/500 V_{AC}	005	008	011	015	022	030	040
Dimensions	A x B x C	90 x 245 x 150 mm 3.5 x 9.7 x 5.9 in			90 x 295 x 150 mm 3.5 x 9.5 x 5.9 in			
Mounting	b / c / d / e	200 mm / 162 mm / 211 mm (M4) / 14.75 mm 7.9 in / 8.7 in / 8.3 in (M4) / 0.6 in			250 mm / 162 mm / 261 mm (M4) / 14.75 mm 9.8 in / 6.4 in / 10.3 in (M4) / 0.6 in			
Size		0M			0L			

2.4 MOVITRAC® 07 electronics data

Function	Terminal	Name	Data
Setpoint input (differential input)	X10:13 X10:14	AI11 (+) AI12 (0)	0 ... +10 V (R_i > 200 kΩ) 0 ... 20 mA / 4 ... 20 mA (R_i = 250 Ω) Resolution 10 bit, sampling interval 1 ms
Internal setpoints			n11/n12/n13 and n21/n22/n23 = 0 ... +5000 rpm
Auxiliary supply output	X10:1	VO24	V = 24 V_{DC}, current carrying capacity I_{max} = 50 mA
Binary inputs	X10:2 ... X10.6	DI01 ... DI05	R_i = 3 kΩ, I_E = 10 mA, sampling interval 5 ms, PLC compatible Signal level to EN 61131-2 type 1: • +13 ... +30 V → 1 / contact made • –3 ... +5 V → 0 / contact not made Terminal assignment: • X10:2 / DI01 with fixed assignment CW/STOP • X10:5 / DI04 can be used as frequency input • X10:6 / DI05 can be used for TF (not at same time as frequency input)
Supply voltage for TF	X10:7	VOTF	
Relay output	X10:8 X10:9 X10:10	DO01-C DO01-NO DO01-NC	Shared relay contact NO contact NC contact Load capacity: V_{max} = 30 V, I_{max} = 800 mA
Binary output	X10:11	DO02	PLC compatible, response time 5 ms, I_{max} = 150 mA
Terminal response times	Binary input and output terminals are updated every 5 ms		
System bus[1]	X10:16 X10:17 X10:19 X10:20	SC11 SC12 SC21 SC22	Incoming, high Incoming, low Outgoing, high Outgoing, low CAN bus to CAN specification 2.0, parts A and B • Transmission system to ISO 11898 • Shielded 2-core twisted cable • max. 64 stations • Terminating resistor (120Ω) can be activated via DIP switch S12
Reference terminals	X10:12 X10:15 X10:18 X10:21	GND	Reference potential for binary and analog signals
Maximum line cross section			1.5 mm^2 (AWG15) without conductor end sleeves 1.0 mm^2 (AWG17) with conductor end sleeves
RS-485 interface (only for service purposes)	X11		Only for service purposes, exclusively for point-to-point connection Max. cable length 3 m (10 ft)

1 SC21 and SC22 are deactivated when S12 = ON. This is necessary in units at the end of the bus.



S11 = Switch mode analog input I-signal / V-signal
S12 = System bus terminating resistor

2.5 Interface converter UWS21A

UWS21A

Part number: 823 077 3

The UWS21A option converts RS-232 signals (e.g. from a PC) into RS-485 signals. The signals are then sent to the RS-485 interface of MOVITRAC® 07.

RS-232

Establish the connection between the UWS21A and the PC using a commercially available shielded serial interface cable.

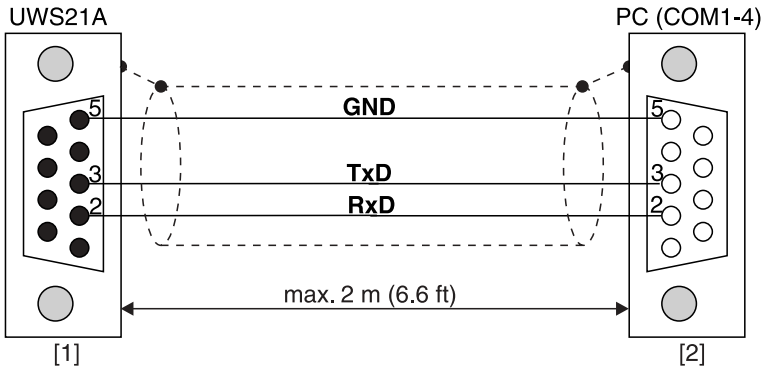


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Figure 31: Connection of 9-pin sub D plug [1] on UWS21A to 9-pin sub D socket [2] on PC (seen from the back of the plug)

The scope of delivery includes:

- Connection lead PC – UWS21A
- Connection lead MOVITRAC® 07 – UWS21A

MOVITOOLS® software is required for communication with the inverter.

2.6 MOVITOOLS

Part number: 918 505 4

The MOVITOOLS program package includes:

- SHELL
- SCOPE
- IPOS$^{plus®}$ Compiler
- LOGODrive

With MOVITOOLS, you can address the following three series of units:

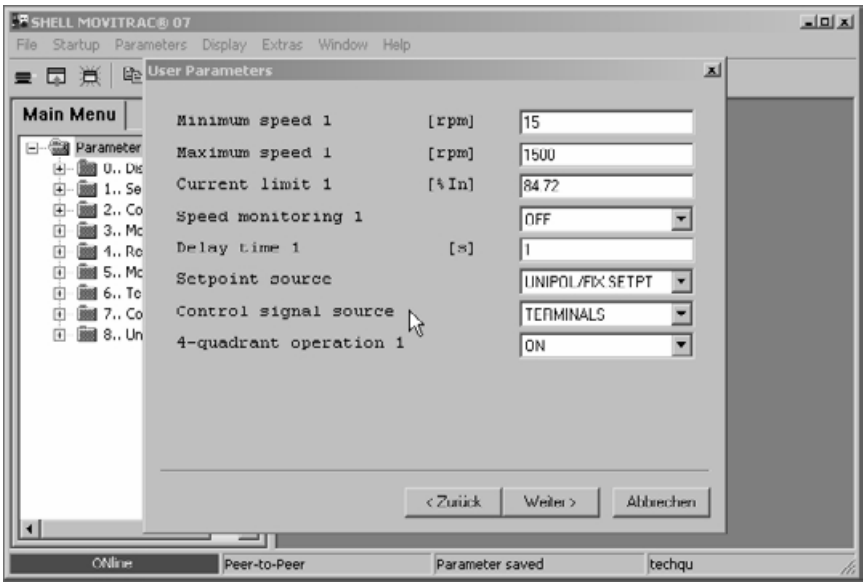
- MOVIDRIVE® MD_60A
- MOVIDRIVE® *compact*
- MOVITRAC® 07

You can use the following components with MOVITRAC® 07:

- SHELL can be used for starting up the drive and setting its parameters in a convenient fashion.
- SCOPE provides extensive oscilloscope functions for diagnosis of the drive.
- IPOS$^{plus®}$ Compiler provides a convenient way of writing programs for applications in a high-level language.
- The Assembler makes for simple programming of the frequency inverter.
- LOGODrive allows you to write applications with graphics support.
- Device status shows you the status of the connected unit.

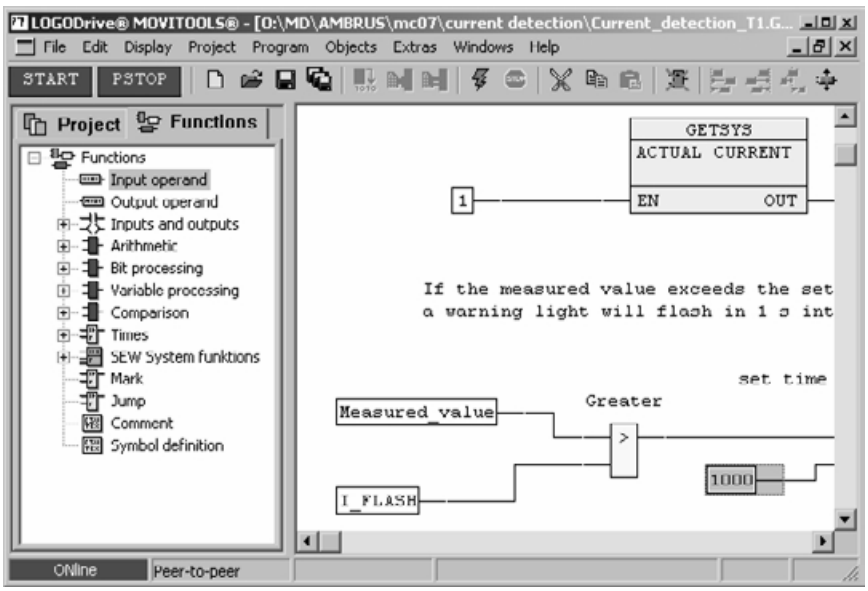
SEW-EURODRIVE supplies MOVITOOLS on a CD-ROM. It can also be downloaded from the SEW homepage (http://www.sew-eurodrive.com). You can use MOVITOOLS with the following operating systems:

- Windows® 95
- Windows® 98
- Windows NT® 4.0
- Windows® 2000 (from version 2.60)
- Windows® Me (from version 2.60)



LOGODrive series of units

The LOGODrive graphical programming interface is integrated in the MOVITOOLS software from version 2.6 onwards. You can add and link function blocks into a sequential function chart using LOGODrive.



SCOPE

SCOPE for MOVITOOLS® is an oscilloscope program for SEW inverters. You can optimize drives independently using SCOPE. The inverter records data such as its response functions to setpoint step changes in real time. You can transfer this information to the PC and display it there in graphical format. SCOPE displays up to four analog and digital measured quantities in the form of differently colored graph traces. You can stretch and squash both the vertical and the horizontal axes to meet your requirements.

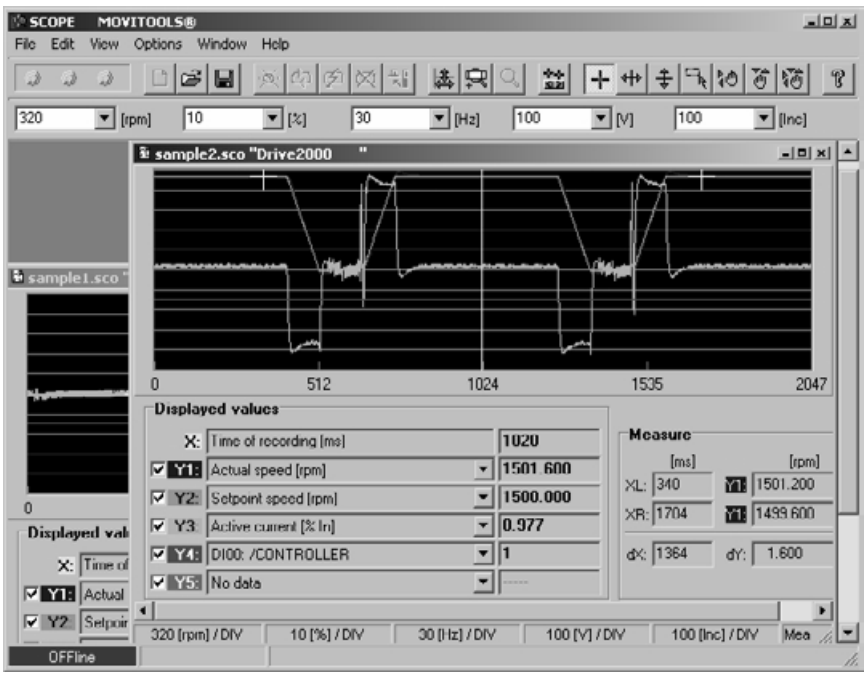
SCOPE also offers you the opportunity of recording digital input and output signals of the inverter. In this way, you can record complete program sequences of the machine control and then analyze them afterwards.

SCOPE supports straightforward documentation of the set parameters and the recorded measurement data with:

- Saving
- Meta data
- Printing

The online help functions make it easy for you to familiarize yourself with how SCOPE works.

SCOPE is a multi-document interface (MDI) application). Consequently, you can view and analyze several data records at the same time. SCOPE displays every new data record in a new window. All settings for viewing and editing the data record are only effective in the active window.



2.7 MOVITRAC® 07 for DIN rail mounting

Hardware kits for DIN rail mounting of MOVITRAC® 07 are available with the following part numbers:

Type	Part number	Size
FHS01	823 604 6	0S
FHS03	824 037 X	0M
FHS02	823 605 4	0L

2.8 Parameter module UBP11A

Part number: 823 933 9

05245AXX

Figure 32: Parameter module UBP11A

- Functionality:
  - Storing data from the inverter in the parameter module
  - Loading data back from the parameter module into the inverter
  - Displaying the operating status
- Supported unit types:
  - MOVITRAC® 07 LOGODrive from firmware .10
  - MOVITRAC® 07 standard version from firmware .13

2.9 Fieldbus interfaces

Gateways are available for the following bus systems for connecting fieldbuses:

- PROFIBUS UFP11A (part number: 823 896 0)
- DeviceNet UFD11A (part number: 823 897 9)
- INTERBUS UFI11A (part number: 823 898 7)
- CANopen UFO11A (part number: 824 096 5)

You can control 1 to 8 MOVITRAC® 07 units with the fieldbus gateways. The controller (PLC or PC) and the MOVITRAC® 07 frequency inverter exchange process data via the fieldbus. Process data include setpoints, for example.

Functional principle

The fieldbus gateways have standardized interfaces. Connect MOVITRAC® 07 units to the fieldbus gateway via the SBus unit system bus.

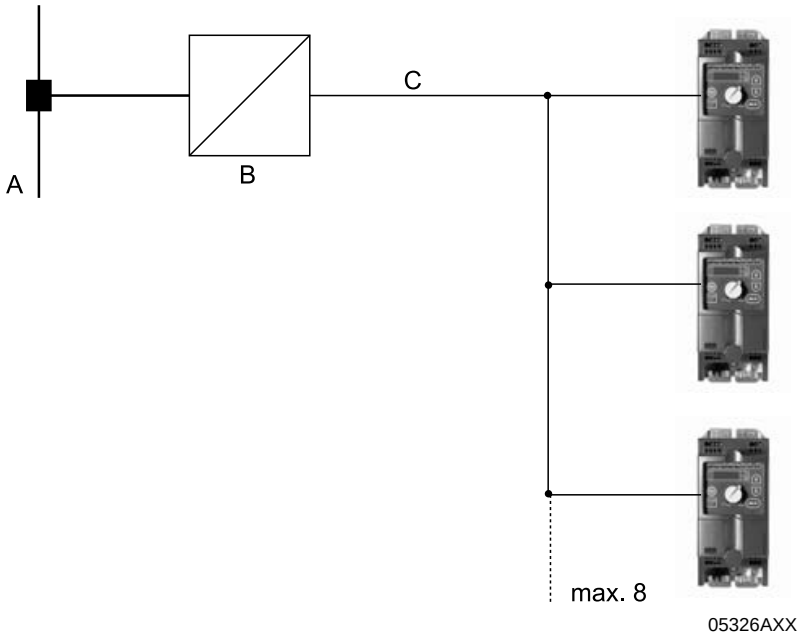


Figure 33: Functional principle

A = Fieldbus
B = Gateway
C = SBus

In principle, other SEW units (e.g. MOVIDRIVE® *compact*) can be connected to and operated with the fieldbus via the SBus.

2.10 BW series braking resistors

General information

BW series braking resistors are adapted to the MOVITRAC® 07 series of inverters. The braking resistors are convection-cooled. The permitted ambient temperature range is -20 °C ... +45 °C.

Flat type

The flat-type resistors have IP54 enclosure and are equipped with internal thermal overload protection. Once an overload has occurred, the resistor must be replaced. You can install the resistors as follows, depending on their type:

- Push into the heat sink of the inverter and screw tight (only size 0S / 0M / 0L). Resistors mounted in the heat sink do not achieve the specified cdf power.
- Attach to a DIN rail using a touch guard BS.

230 V

Braking resistor type		BW072-003	BW027-003	BW072-005	BW027-005
Part number		826 058 3	826 949 1	826 060 5	826 950 5
100 % cdf 50 % cdf 25 % cdf 12 % cdf 6 % cdf		230 W 310 W 420 W 580 W 1000 W	230 W 310 W 410 W 550 W 980 W	450 W 600 W 830 W 1110 W 2000 W	450 W 610 W 840 W 1200 W 2360 W
Resistance value R_{BW}		72 Ω ±10 %	27 Ω ±10 %	72 Ω ±10 %	27 Ω ±10 %
Trip current	230 V	0.7 A	1.0 A	1.2 A	1.4 A
Ambient temperature ϑ_{amb}		–20 °C ... +45 °C			
For MOVITRAC® 07 230 V		004 ... 008	011 ... 022	004 ... 008	011 ... 037
Braking resistor can be integrated into the heat sink		Yes		No	
Associated optional touch guard		BS-003		BS-005	
Touch guard part number		813 151 1		813 152 X	
DIN rail mounting		Order accessory S001 from SEW if you want to mount the touch guard on a DIN rail. Accessory S001 has part number 822 194 4 and is for a 35 mm C-section.			

400/500 V

Braking resistor type		BW072-003	BW072-005
Part number		826 058 3	826 060 5
100 % cdf 50 % cdf 25 % cdf 12 % cdf 6 % cdf		230 W 310 W 420 W 580 W 1000 W	450 W 600 W 830 W 1110 W 2000 W
Resistance value R_{BW}		72 Ω ±10 %	72 Ω ±10 %
Trip current	400/500 V	0.6 A	1.0 A
Ambient temperature ϑ_{amb}		–20 °C ... +45 °C	
For MOVITRAC® 07 400/500 V		005 ... 040	005 ... 040
Braking resistor can be integrated into the heat sink		Yes	No
Associated optional touch guard		BS-003	BS-005
Touch guard part number		813 151 1	813 152 X
DIN rail mounting		Order accessory S001 from SEW if you want to mount the touch guard on a DIN rail. Accessory S001 has part number 822 194 4 and is for a 35 mm C-section.	

Wire and grid resistors

- Perforated sheet cover (IP20) open towards the mounting surface.
- You can apply a higher load to wire and grid resistors for a short time than you can to flat-type braking resistors.

Install additional overload protection for the wire and grid resistors by means of a bimetallic relay in the –R line (X3). Set the trip current to the value I_F in the following tables. Do not use any electronic or electromagnetic fuses since the brief excess currents which are still permitted may cause them to trip.

If you operate the resistors at rated power, the surfaces of the resistors will get hot. Bear this aspect in mind when selecting the installation location. For example, a possible location is the switch cabinet roof.

The performance data listed in the following tables specify the **load capacity of the braking resistors**. The load capacity is dependent on the cyclic duration factor cdf [%] in relation to a cycle duration of ≤ 120 s.

Parallel connection

Two braking resistors must be connected in parallel in the case of some inverter/resistor combinations. Then set the trip current on the bimetallic relay to twice the I_F given in the table.

230 V

Type	BW027-006	BW027-012	BW018-015	BW018-035	BW018-075	BW012-025	BW012-050	BW012-100
Part number	822 422 6	822 423 4	821 684 3	821 685 1	821 686 X	821 680 0	821 681 9	821 682 7
100 % cdf	0.6 kW	1.2 kW	1.5 kW	3.5 kW	7.5 kW	2.5 kW	5.0 kW	10 kW
50 % cdf	1.2 kW	2.3 kW	2.5 kW	5.9 kW	12.7 kW	4.2 kW	8.5 kW	17 kW
25 % cdf	2.0 kW	5.0 kW	4.5 kW	10.5 kW	22.5 kW	7.5 kW	15.0 kW	19.2 kW[1]
12 % cdf	3.5 kW	7.5 kW	6.7 kW	15.7 kW	25.6 kW[1]	11.2 kW	19.2 kW[1]	19.2 kW[1]
6 % cdf	6.0 kW	8.5 kW[1]	11.4 kW	25.6 kW[1]	25.6 kW[1]	19.0 kW	19.2 kW[1]	19.2 kW[1]
Resistance	27 Ω ±10 %		18 Ω ±10 %			12 Ω ±10 %		
Trip current I_F	2.5 A_{RMS}	4.4 A_{RMS}	4.0 A_{RMS}	8.1 A_{RMS}	14 A_{RMS}	10 A_{RMS}	19 A_{RMS}	27 A_{RMS}
Connections	Ceramic terminals 2.5 mm^2 (AWG12)							
Type	Wire resistor		Grid resistor					
For MOVITRAC® 07	015 ... 037		2 x parallel with 110			055 / 075		

1 Physical power limit due to the DC link voltage and the resistance value.

Type	BW039-003	BW039-006	BW039-012	BW039-026	BW915	BW106	BW206
Part number	821 687 8	821 688 6	821 689 4	821 690 8	821 260 0	821 050 0	821 051 9
100 % cdf	0.3 kW	0.6 kW	1.2 kW	2.6 kW	16.0 kW	13 kW	18 kW
50 % cdf	0.5 kW	1.1 kW	2.1 kW	4.6 kW	27.0 kW	24 kW	32 kW
25 % cdf	1.0 kW	1.9 kW	3.8 kW	5.9 kW[1]	30.7 kW[1]	38.4 kW[1]	38.4 kW[1]
12 % cdf	1.7 kW	3.5 kW	5.9 kW[1]	5.9 kW[1]	30.7 kW[1]	38.4 kW[1]	38.4 kW[1]
6 % cdf	2.8 kW	5.7 kW	5.9 kW[1]	5.9 kW[1]	30.7 kW[1]	38.4 kW[1]	38.4 kW[1]
Resistance	39 Ω ±10 %				15 Ω ±10 %	6 Ω ±10 %	
Trip current I_F	2.0 A_{RMS}	3.2 A_{RMS}	4.2 A_{RMS}	7.8 A_{RMS}	28 A_{RMS}	38 A_{RMS}	42 A_{RMS}
Connections	Ceramic terminals 2.5 mm^2 (AWG12)				M8 stud		
Type	Wire resistor				Grid resistor		
For MOVITRAC® 07	015 ... 022				2 x parallel with 110	150 / 2 x parallel with 220/300	

1 Physical power limit due to the DC link voltage and the resistance value.

400 V

Type	BW100-006	BW168	BW268	BW147	BW247	BW347	BW039-012	BW039-026
Part number	821 701 7	820 604 X	820 715 1	820 713 5	820 714 3	820 798 4	821 689 4	821 690 8
100 % cdf	0.6 kW	0.8 kW	1.2 kW	1.2 kW	2.0 kW	4.0 kW	1.2 kW	2.6 kW
50 % cdf	1.1 kW	1.4 kW	2.2 kW	2.2 kW	3.8 kW	7.6 kW	2.1 kW	4.6 kW
25 % cdf	1.9 kW	2.6 kW	3.8 kW	3.8 kW	6.4 kW	12.8 kW	3.8 kW	8.3 kW
12 % cdf	3.5 kW	4.7 kW	6.7 kW	7.2 kW	12 kW	14.4 kW[1]	7.0 kW	15.3 kW
6 % cdf	5.7 kW	7.6 kW	10 kW[1]	11 kW	14.4 kW[1]	14.4 kW[1]	11.4 kW	17.3 kW[1]
Resistance	100 Ω ±10 %	68 Ω ±10 %		47 Ω ±10 %			39 Ω ±10 %	
Trip current I_F	1.8 A_{RMS}	2.5 A_{RMS}	3.4 A_{RMS}	3.5 A_{RMS}	4.9 A_{RMS}	7.8 A_{RMS}	4.2 A_{RMS}	7.8 A_{RMS}
Connections	Ceramic terminals 2.5 mm^2 (AWG12)							
Type	Wire resistor							
For MOVITRAC® 07	015 ... 040			055 / 075			110	

1 Physical power limit due to the DC link voltage and the resistance value.

Type	BW039-050	BW018-015	BW018-035	BW018-075	BW915	BW012-025	BW012-050	BW012-100
Part number	821 691 6	821 684 3	821 685 1	821 686 X	821 260 0	821 680 0	821 681 9	821 682 7
100 % cdf	5.0 kW	1.5 kW	3.5 kW	7.5 kW	16 kW	2.5 kW	5.0 kW	10 kW
50 % cdf	8.5 kW	2.5 kW	5.9 kW	12.7 kW	27 kW	4.2 kW	8.5 kW	17 kW
25 % cdf	15.0 kW	4.5 kW	10.5 kW	22.5 kW	45 kW[1]	7.5 kW	15.0 kW	30 kW
12 % cdf	17.3 kW[1]	6.7 kW	15.7 kW	33.7 kW	45 kW[1]	11.2 kW	22.5 kW	45 kW
6 % cdf	17.3 kW[1]	11.4 kW	26.6 kW	37.5 kW[1]	45 kW[1]	19.0 kW	38.0 kW	56 kW[1]
Resistance	39 Ω ±10 %	18 Ω ±10 %			15 Ω ±10 %	12 Ω ±10 %		
Trip current I_F	11 A_{RMS}	4.0 A_{RMS}	8.1 A_{RMS}	14 A_{RMS}	28 A_{RMS}	6.1 A_{RMS}	12 A_{RMS}	22 A_{RMS}
Connections	Ceramic terminals 2.5 mm^2 (AWG12)				M8 stud	Ceramic terminals 2.5 mm^2 (AWG12)		
Type	Grid resistor							
For MOVITRAC® 07	110	150 / 220			220	300		

1 Physical power limit due to the DC link voltage and the resistance value.

Dimensions of BW braking resistors

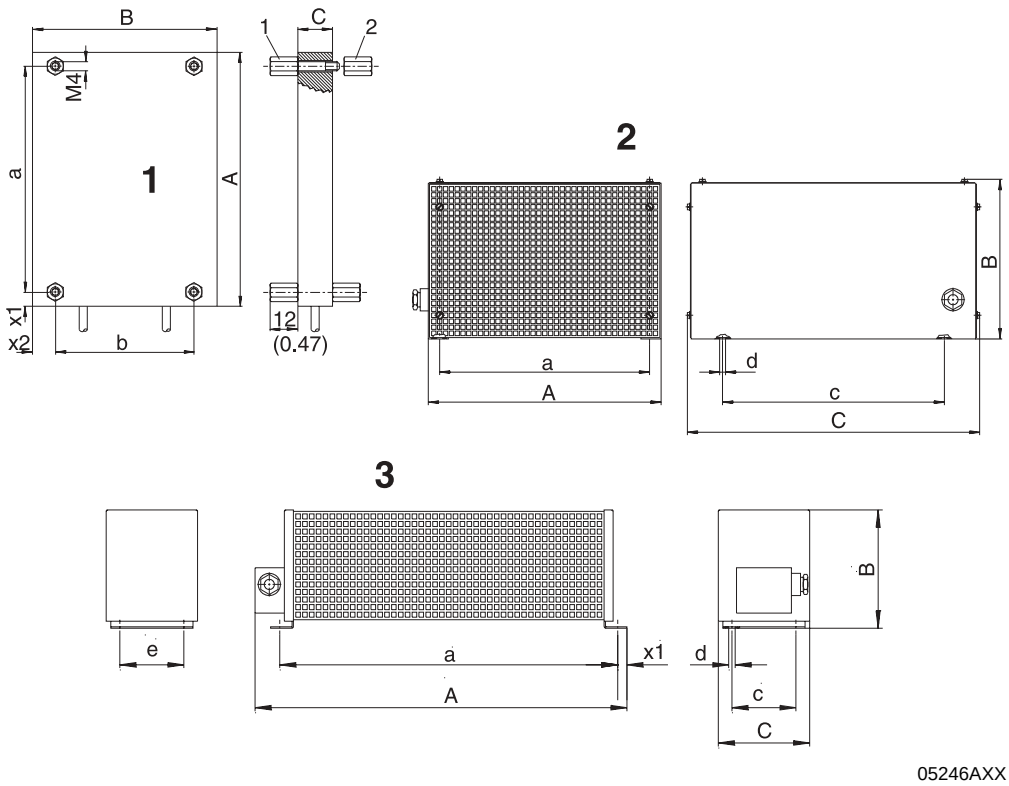


*Figure 34: Dimensions of BW braking resistors, **1** flat-type / **2** grid resistor / **3**wire resistor*

Flat-type resistors: The connecting lead is 500 mm (19.69 in) long. The scope of delivery includes four M4 threaded bushes, types 1 and 2.

Type	Mounting position	Main dimensions [mm (in)]			Fixing parts [mm (in)]					Weight [kg (lb)]
		A	B	C	a	b/c/e	x1	x2	d	
BW072-003 BW027-003	1	110 (4.3)	80 (3.2)	15 (0.6)	98 (3.9)	60 (2.4)	6 (0.2)	10 (0.4)	–	0.3 (0.7)
BW072-005 BW027-005		216 (8.5)	80 (3.2)	15 (0.6)	204 (8.0)	60 (2.4)	6 (0.2)	10 (0.4)	–	0.6 (1.3)
BW027-006	3	486 (19.1)	120 (4.7)	92 (3.6)	426 (16.8)	64 (2.5)	10 (0.4)	–	5.8 (0.2)	2.2 (4.9)
BW027-012		486 (19.1)	120 (4.7)	185 (7.3)	426 (16.8)	150 (5.9)	10 (0.4)	–	5.8 (0.2)	4.3 (9.5)
BW012-025	2	295 (11.6)	260 (10.2)	490 (19.3)	270 (10.6)	380 (15.0)	–	–	10.5 (0.4)	9.0 (19.8)
BW012-050		395 (15.6)	260 (10.2)	490 (19.3)	370 (14.6)	380 (15.0)	–	–	10.5 (0.4)	12 (26.5)
BW012-100		595 (23.4)	260 (10.2)	490 (19.3)	570 (22.4)	380 (15.0)	–	–	10.5 (0.4)	21 (46.3)
BW018-015		600 (23.6)	120 (4.7)	92 (3.6)	540 (21.3)	64 (2.5)	10 (0.4)	–	5.8 (0.2)	4.0 (8.8)
BW018-035		295 (11.6)	260 (10.2)	490 (19.3)	270 (10.6)	380 (15.0)	–	–	10.5 (0.4)	9.0 (19.8)
BW018-075		595 (23.4)	260 (10.2)	490 (19.3)	570 (22.4)	380 (15.0)	–	–	10.5 (0.4)	21 (46.3)
BW100-006	3	486 (19.1)	120 (4.7)	92 (3.6)	426 (16.8)	64 (2.5)	10 (0.4)	–	5.8 (0.2)	2.2 (4.9)
BW168		365 (14.4)	120 (4.7)	185 (7.3)	326 (12.8)	150 (5.9)	10 (0.4)	–	5.8 (0.2)	3.6 (8.0)
BW268		465 (18.3)	120 (4.7)	185 (7.3)	426 (16.8)	150 (5.9)	10 (0.4)	–	5.8 (0.2)	4.3 (9.5)
BW147		465 (18.3)	120 (4.7)	185 (7.3)	426 (16.8)	150 (5.9)	10 (0.4)	–	5.8 (0.2)	4.3 (9.5)
BW247		665 (16.2)	120 (4.7)	185 (7.3)	626 (24.7)	150 (5.9)	10 (0.4)	–	5.8 (0.2)	6.1 (13.5)
BW347		670 (26.4)	145 (5.7)	340 (13.4)	630 (24.8)	300 (11.8)	10 (0.4)	–	5.8 (0.2)	13.2 (29.1)
BW039-003		286 (11.3)	120 (4.7)	92 (3.6)	226 (8.9)	64 (2.5)	10 (0.4)	–	5.8 (0.2)	1.5 (3.3)
BW039-006		486 (23.1)	120 (4.7)	92 (3.6)	426 (16.8)	150 (5.9)	10 (0.4)	–	5.8 (0.2)	2.2 (4.9)
BW039-012		486 (19.1)	120 (4.7)	185 (7.3)	426 (16.8)	150 (5.9)	10 (0.4)	–	5.8 (0.2)	4.3 (9.5)
BW039-026		586 (23.1)	120 (4.7)	275 (10.8)	530 (20.9)	240 (9.5)	10 (0.4)	–	5.8 (0.2)	7.5 (16.6)
BW039-050	2	395 (15.6)	260 (10.2)	490 (19.3)	370 (14.6)	380 (15.0)	10 (0.4)	–	10.5 (0.4)	12 (26.5)
BW915		795 (31.3)	260 (10.2)	490 (19.3)	770 (30.3)	380 (15.0)	–	–	10.5 (0.4)	26 (57.3)

Dimensions of touch guard BS

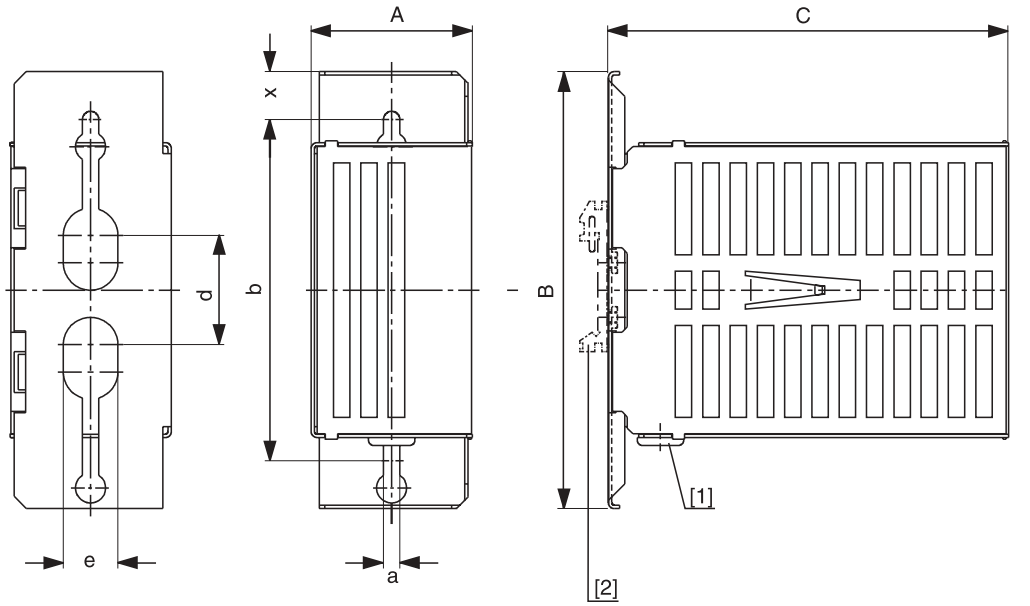


Figure 35: Dimensions, touch guard BS with grommet [1] and DIN rail mounting [2]

Type	Main dimensions [mm (in)]			Fixing dimensions [mm (in)]					Weight [kg (lb)]
	A	B	C	b	d	e	a	x	
BS-003	60 (2.4)	160 (6.3)	146 (5.8)	125 (4.9)	40 (1.6)	20 (0.8)	6 (0.2)	17.5 (0.7)	0.35 (0.8)
BS-005	60 (2.4)	160 (6.3)	252 (9.9)	125 (4.9)	40 (1.6)	20 (0.8)	6 (0.2)	17.5 (0.7)	0.5 (1.1)

2.11 Series HD output chokes

You can reduce the radiated interference of the unshielded motor cable by using an output choke.

Output choke type	HD001	HD002	HD003
Part number	813 325 5	813 557 6	813 558 4
Max. power loss P_{Vmax}	15 W	8 W	30 W
Weight	0.5 kg 1.1 lb	0.2 kg 0.44 lb	1.1 kg 2.4 lb
For cable cross sections	1.5 ... 16 mm^2 AWG16 ... 6	≤ 1.5 mm^2 ≤ AWG16	≥ 16 mm^2 ≥ AWG6

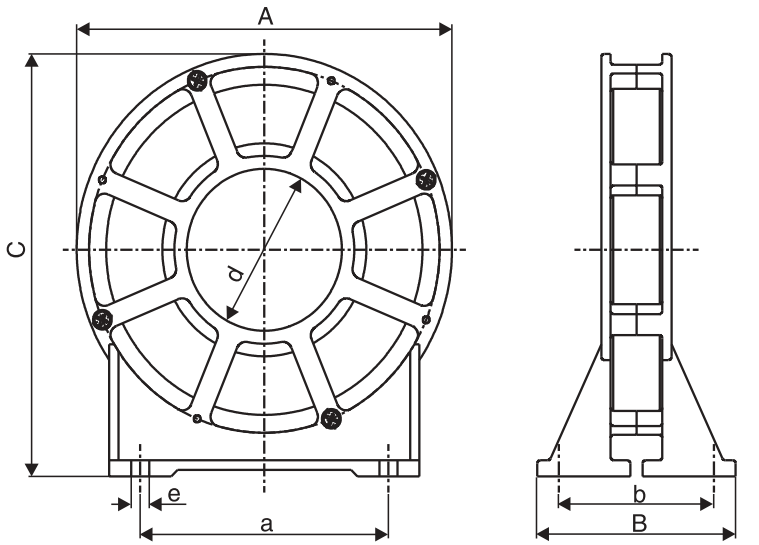


Figure 36: Dimensions, HD

Output choke type	Main dimensions			Fixing dimensions		Inside diameter	Hole dimension
	A	B	C	a	b	d	e
HD001	121 (4.8)	64 (2.5)	131 (5.2)	80 (3.2)	50 (2.0)	50 (2.0)	5.8 (0.2)
HD002	66 (2.6)	49 (1.9)	73 (2.9)	44 (1.7)	38 (1.5)	23 (0.9)	5.8 (0.2)
HD003	170 (6.7)	64 (2.5)	185 (7.3)	120 (4.7)	50 (2.0)	88 (3.5)	7.0 (0.3)

2.12 ND line chokes

The line choke assists in overvoltage protection. The line choke restricts the charging current when several inverters are connected in parallel on the input side. Application: see Sec. "Project Planning". The ambient temperature range is -25 °C ... +45 °C. The enclosure is IP 00 (EN60529).

Line choke type	ND 010-301	ND 020-151	ND 020-013	ND 027-123	ND 035-073	ND045-013	ND085-013	ND1503
Part number	826 972 6	826 973 4	826 012 5	825 771 X	825 772 8	826 013 3	826 014 1	825 548 2
Rated voltage V_N	1 x 230 V_{AC} ±10 %		3 x 230 V_{AC} ±10 % 3 x 380 ... 500 V_{AC} ±10 %	3 x 380 ... 500 V_{AC} ±10 %				
Rated current I_N	10 A_{AC}	20 A_{AC}	20 A_{AC}	27 A_{AC}	35 A_{AC}	45 A_{AC}	85 A_{AC}	150 A_{AC}
Power loss at I_N P_V	6 W	10 W	10 W	35 W	35 W	15 W	25 W	65 W
Inductance L_N	3 mH	1.5 mH	0.1 mH	1.2 mH	0.7 mH	0.1 mH		
Modular terminal block	4 mm^2 (AWG10)	10 mm^2 (AWG8)	4 mm^2 (AWG10)	10 mm^2 (AWG8)		10 mm^2 (AWG8)	35 mm^2 (AWG2)	M10 stud / PE: M8
Suitable for MOVITRAC® 07								
1-phase 230 V	004 ... 008	011 ... 022		004 ... 022[1]				
100 % I_N 3-phase 230 V			004 ... 055			075 ... 110	150 ... 220	300
125 % I_N 3-phase 230 V			004 ... 037			055 ... 075	110 ... 150	220 ... 300
100 % I_N 380 ... 500 V			005 ... 075			110 ... 220	300	–
125 % I_N 380 ... 500 V			005 ... 075			110 ... 150	220 ... 300	–

1 For connecting several single-phase inverters to one three-phase line choke.

Dimensions ND 010-301 / ND 020-151

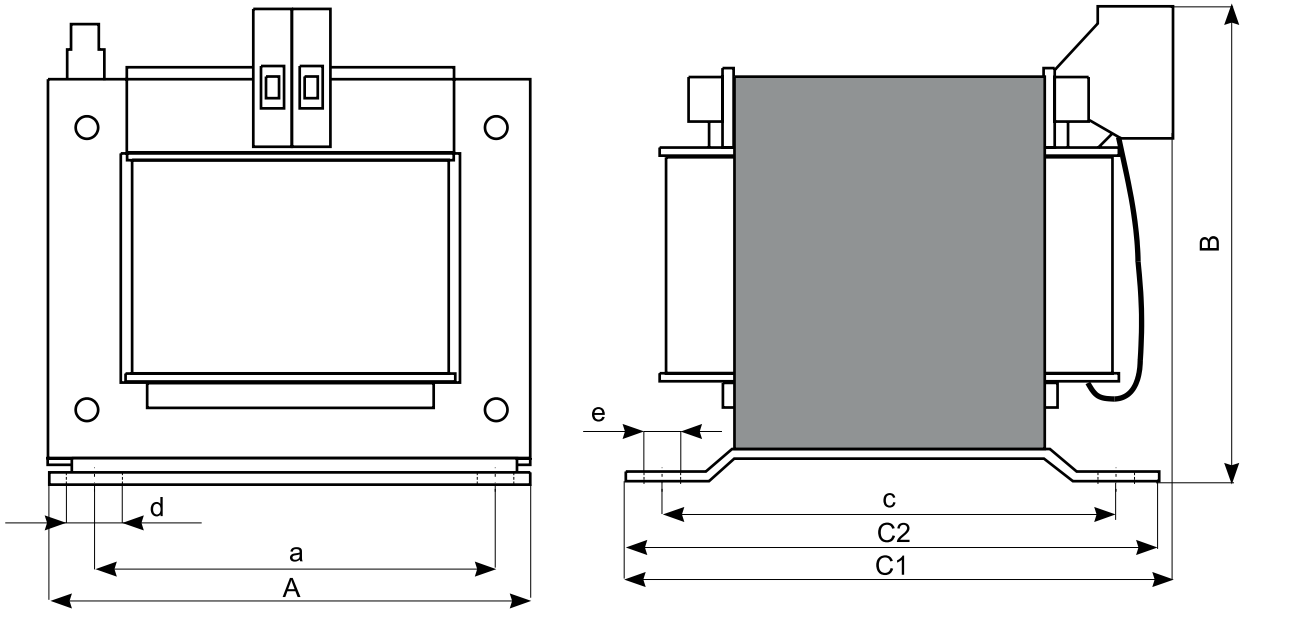


Figure 37: Dimensions ND 010-301 / ND 020-151

Type	Main dimensions [mm (in)]				Fixing dimensions [mm (in)]				Weight [kg (lb)]
	A	B	C1	C2	a	c	d	e	
ND 010-301	90 (3.5)	100 (3.9)	80 (3.2)	70 (2.8)	64 (2.5)	52 (2.1)	4.4 (0.2)	7.4 (0.3)	1.4 (3.1)
ND 020-151	90 (3.5)	100 (3.9)	90 (3.6)	70 (2.8)	64 (2.5)	52 (2.1)	4.4 (0.2)	7.4 (0.3)	1.4 (3.1)

Dimensions ND 020-013 / ND 027-123 / ND 035-073 / ND 085-013 / ND 1503

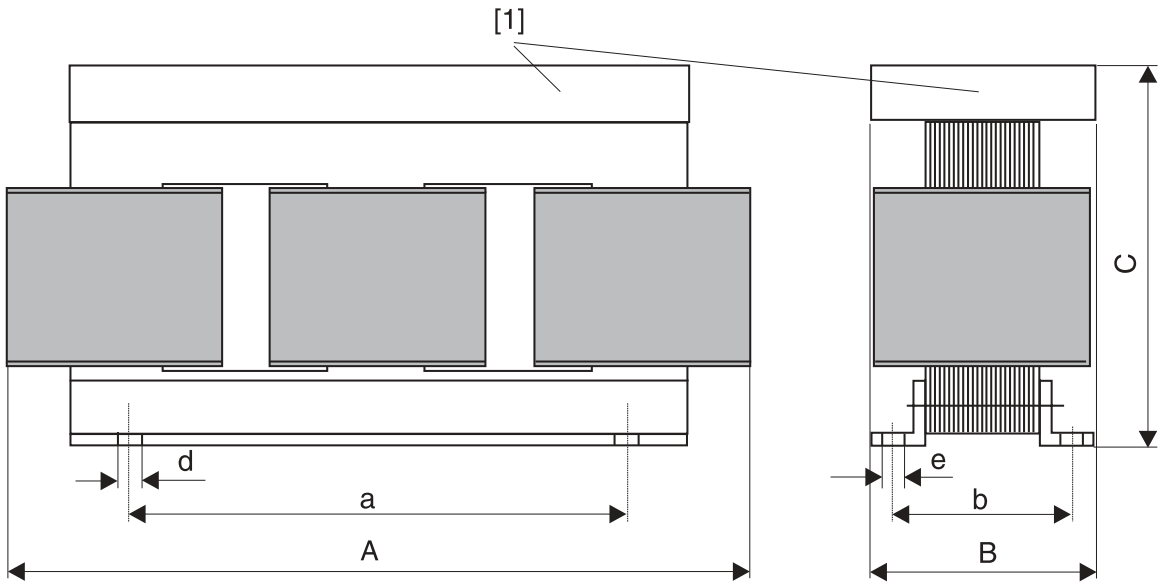


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Figure 38: Dimensions ND 020-013 / ND 027-123 / ND 035-073 / ND 085-013 / ND 1503 with [1] space for modular terminal blocks with touch guard

Type	Main dimensions [mm (in)]			Fixing dimensions [mm (in)]			Weight [kg (lb)]
	A	B	C	a	b	d/e	
ND 020-013	85 (3.4)	60 (2.4)	120 (4.7)	50 (2.0)	31 (1.2)	5 - 10 (0.2 - 0.4)	0.5 (1.1)
ND 027-123	185 (7.3)	175 (6.9)	120 (4.7)	136 (5.4)	87 (3.4)	5 - 10 (0.2 - 0.4)	6.0 (13.2)
ND 035-073	185 (7.3)	200 (7.9)	120 (4.7)	136 (5.4)	87 (3.4)	5 - 10 (0.2 - 0.4)	11 (24.2)
ND 045-013	125 (4.9)	95 (3.7)	170 (6.7)	84 (3.3)	55 ... 75 (2.2 ... 3.0)	6 (0.2)	2.5 (5.5)
ND 085-013	185 (7.3)	115 (4.5)	235 (9.3)	136 (5.4)	56 (2.2)	7 (0.3)	8 (17.6)
ND 1503	255 (10.0)	140 (5.5)	230 (9.1)	170 (6.7)	77 (3.0)	8 (0.3)	17 (37.5)

Several inverters on one line choke

- The supply system contactor must be designed for the total current.
- The fuse must correspond to the rated current value of the line choke.
- Connect MOVITRAC® 07 frequency inverters with identical configurations to the line chokes.

2.13 NF line filters

The line filter suppresses interference emissions on the line side of inverters. The ambient temperature range is -25 °C ... +45 °C. The enclosure is IP20 (EN 60529).

Type	NF009	NF014	NF018	NF035	NF048	NF063	NF085	NF115
Part number	827 412 6	827 116 X	827 413 4	827 128 3	827 117 8	827 414 2	827 415 0	827 416 9
Rated current	9 A_{AC}	14 A_{AC}	18 A_{AC}	35 A_{AC}	48 A_{AC}	63 A_{AC}	85 A_{AC}	115 A_{AC}
Power loss	6 W	9 W	12 W	15 W	22 W	30 W	35 W	60 W
Discharge current	≤ 25 mA	≤ 25 mA	≤ 25 mA	≤ 25 mA	≤ 40 mA	≤ 30 mA	≤ 30 mA	≤ 30 mA
Connections PE screw	4 mm^2 (AWG10) M6			10 mm^2 (AWG8) M6		16 mm^2 (AWG6) M6	35 mm^2 (AWG2) M8	50 mm^2 (AWG1/0) M10
Suitable for MOVITRAC® 07								
100 % I_N 3-phase 230 V	004 ... 022	037	–	055 ... 075	110	150	220	300
125 % I_N 3-phase 230 V	004 ... 015	022	037	055 ... 075	–	110 ... 150	–	220 ... 300
100 % I_N 380 ... 500 V	005 ... 040	055 ... 075	–	110 ... 150	220	300	–	–
125 % I_N 380 ... 500 V	005 ... 030	040 ... 055	075	110	150	220	300	–

MOVITRAC® 07 230 V 1-phase units have an line filter with class B limit installed.

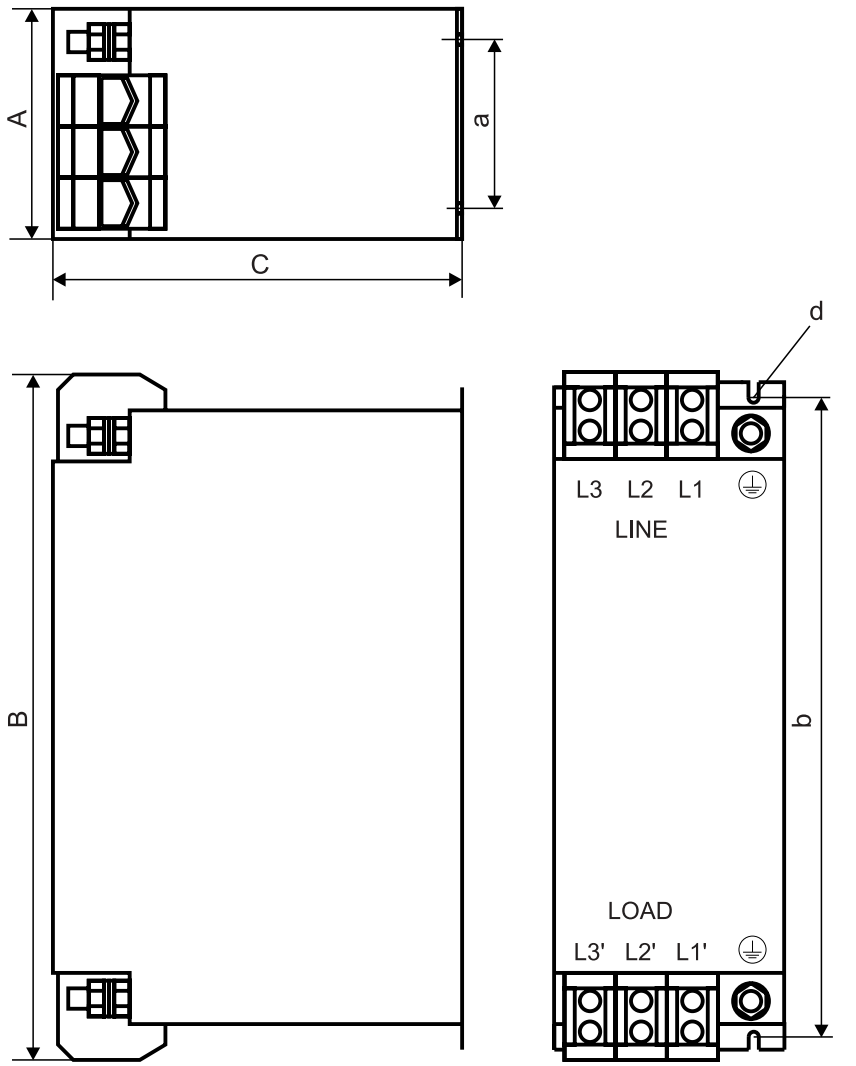

Figure 39: Dimensions, line filter

Line filter type	Main dimensions			Fixing dimensions		Hole dimension	PE connection	Weight kg (lb)
	A	B	C	a	b	d		
NF009	55 (2.2)	195 (7.7)	80 (3.2)	20 (0.8)	180 (7.1)	5.5 (0.2)	M5	0.8 (1.8)
NF014		225 (8.9)			210 (8.3)			0.9 (2.0)
NF018	50 (2.0)	255 (10.0)			240 (9.4)			1.1 (2.4)
NF035	60 (2.4)	275 (10.8)	100 (3.9)	30 (1.2)	255 (10.0)			1.7 (3.7)
NF048		315 (12.4)			295 (11.6)		M6	2.1 (4.6)
NF063	90 (3.5)	260 (10.2)		60 (2.4)	235 (9.3)	6.5 (0.3)		2.4 (5.3)
NF085		320 (12.6)	140 (5.5)		255 (10.0)		M8	3.5 (7.7)
NF115	100 (3.9)	330 (13.0)	155 (6.1)	65 (2.6)			M10	4.8 (10.6)

2.14 HF output filter

SEW HF output filters are sine filters. Sine filters smooth the output voltage of inverters. Use output filters in the following circumstances:

- In group drives (several motor feeders in parallel); the discharge currents in the motor cables are suppressed
- For protecting the motor winding insulation of non-SEW motors which are not suitable for PWM inverters
- For protection against voltage spikes in long motor cables (> 100 m)

Only use output filters with 400/500 V units, **not with 230 V units**!

Do not use any output filters in hoists due to the voltage drop in the filter!

Output filters attenuate the interference emissions from an unshielded motor cable:

- According to class B limit to EN 55011 and EN 55014
- They comply with EN 50081, parts 1 and 2

The ambient temperature is 0 ... +45 °C (reduction: 3 % per K up to max. 60 °C). The enclosure is IP20.

The voltage drop is:

- With 400 V / 50 Hz: < 6.5 %
- With 500 V / 50 Hz: < 4 %
- With 400 V / 60 Hz: < 7.5 %
- With 500 V / 60 Hz: < 5 %

Type		HF008-503	HF015-503	HF022-503	HF030-503	HF040-503
Part number		826 029 X	826 030 3	826 031 1	826 032 X	826 311 6
Rated throughput current	400 V	2.5 A_{AC}	4 A_{AC}	6 A_{AC}	8 A_{AC}	10 A_{AC}
	500 V	2 A_{AC}	3 A_{AC}	5 A_{AC}	6 A_{AC}	8 A_{AC}
Power loss		25 W	35 W	55 W	65 W	90 W
Connections		M4 connection studs: 0.5 ... 6 mm^2 (AWG20 ... 10)				
Weight		3.1 kg (6.8 lb)	4.4 kg (9.7 lb)			10.8 kg (23.8 lb)
Suitable for MOVITRAC® 07						
100 % I_N		005/008	011/015	022	030	040
125 % I_N		005	008/011	015	022	030

Type		HF055-503	HF075-503	HF023-403	HF033-403	HF047-403
Part number		826 312 4	826 313 2	825 784 1	825 785 X	825 786 8
Rated throughput current	400 V	12 A_{AC}	16 A_{AC}	23 A_{AC}	33 A_{AC}	47 A_{AC}
	500 V	10 A_{AC}	13 A_{AC}	19 A_{AC}	26 A_{AC}	38 A_{AC}
Power loss		115 W	135 W	90 W	120 W	200 W
Connections		10 mm^2 (AWG8)		25 mm^2 (AWG4)		
Weight		10.8 kg (23.8 lb)		15.9 kg (35.0 lb)	16.5 kg (36.3 lb)	23.0 kg (50.6 lb)
Suitable for MOVITRAC® 07						
100 % I_N		055	075	110	150 / 300[1]	220
125 % I_N		040	055	075	110 / 220[1]	150

1 Connect **two HF output filters together in parallel** for operation with these units!

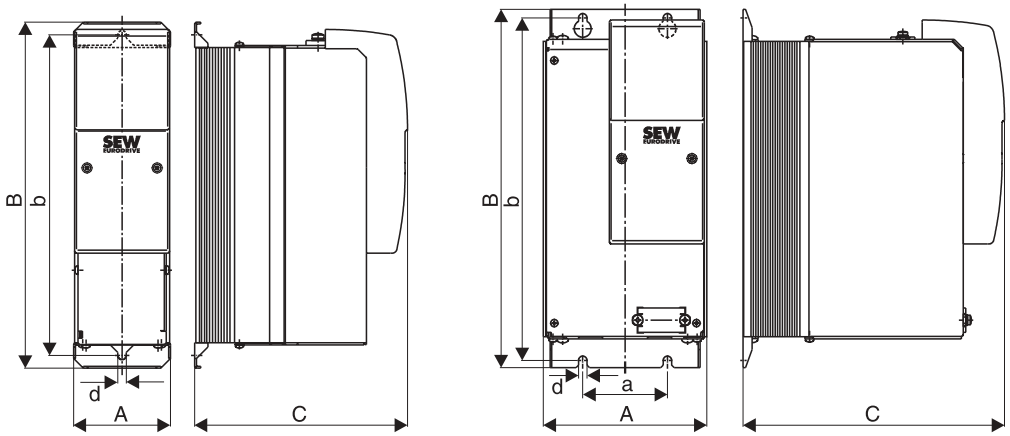

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Figure 40: Dimensions HF...-503

Type	Main dimensions			Fixing dimensions		Hole dimension	Ventilation clearance	
	A	B	C	a	b	d	Top	Bottom
HF008/015/022/030-503	80 (3.2)	286 (11.3)	176 (6.9)	–	265 (10.4)	7 (0.28)	100 (3.9)	100 (3.9)
HF040/055/075-503	135 (5.3)	296 (11.7)	216 (8.5)	70 (2.8)	283 (11.1)	7 (0.28)	100 (3.9)	100 (3.9)

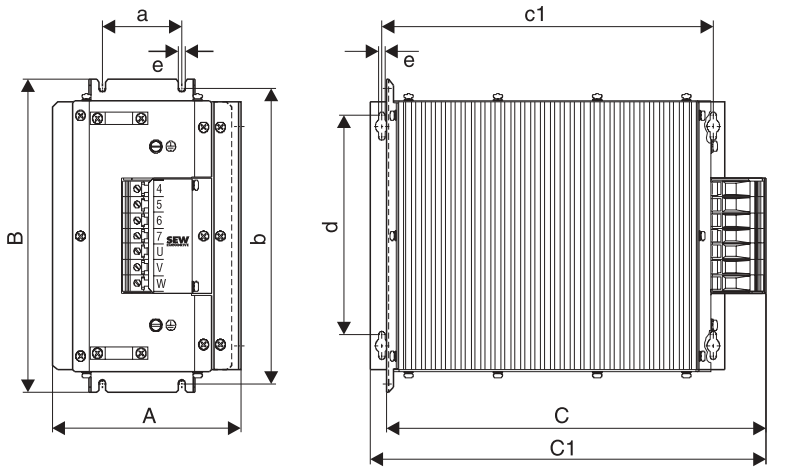

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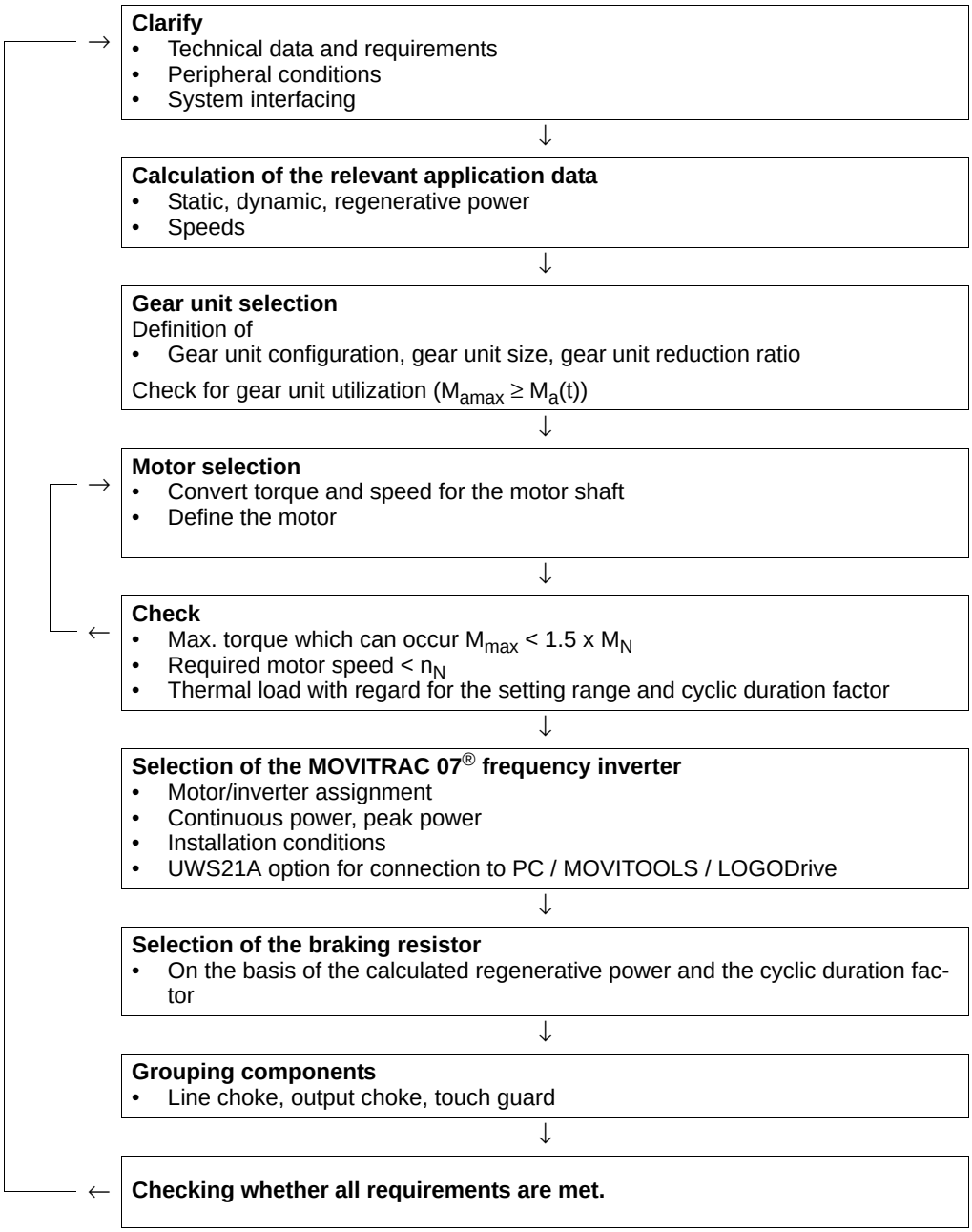
Figure 41: Dimensions HF...-403

Type	Main dimensions			Standard installation		Crossways mounting position		Hole dimension	Ventilation clearance		
	A	B	C/C1	b	a	d	c1	e	At side	Top	Bottom
HF023-403	145 (5.7)	284 (11.2)	365/390 (14.4/15.4)	268 (10.6)	60 (2.4)	210 (8.3)	334 (13.2)	6.5 (0.3)	30 (1.2)	150 (5.9)	150 (5.9)
HF033-403											
HF047-403	190 (7.5)	300 (11.8)	385/400 (15.2/15.6)	284 (11.2)	80 (3.2)						

With HF...-403 output filters, a crossways mounting position is also possible in addition to the standard mounting position (lower installation height). Reposition the mounting rails at the back for this. Then mounting dimensions c1/d and the main dimension C1 apply.

3 Project Planning

3.1 Schematic procedure



3.2 Options for standard applications

Refer to the following table for information about the options for straightforward applications. Conditions for straightforward applications are:

- Braking time is less than 25 % of cyclic duration factor cdf
- Braking time is not longer than 30 seconds

Type MC07A		Braking resistor		Output choke	Line filter
		Horizontal movement	Vertical movement		
230 V 1-phase	004	BW072-003	BW072-003	HD002	Integrated
	005	BW072-003	BW072-003	HD002	
	008	BW072-003	BW072-003	HD002	
	011	BW027-005	BW027-005	HD002	
	015	BW027-005	BW027-005	HD002	
	022	BW027-005	BW027-012	HD002	
230 V 3-phase	004	BW072-003	BW072-003	HD002	Integrated
	005	BW072-003	BW072-003	HD002	
	008	BW072-003	BW072-003	HD002	
	011	BW027-005	BW027-005	HD002	
	015	BW027-005	BW027-005	HD002	
	022	BW027-005	BW027-012	HD002	
	037	BW027-005	BW027-012	HD001	
	055	BW027-006	BW012-025	HD001	
	075	BW018-015	BW012-025	HD001	
	110	BW012-025	BW012-050	HD003	NF048
	150	2 x BW018-015	2 x BW012-025	HD003	NF063
	220	2 x BW012-025	BW106	HD003	NF085
	300	2 x BW106	2 x BW106	HD003	NF115
400 V 3-phase	005	BW072-003	BW072-003	HD002	Integrated
	008	BW072-003	BW072-003	HD002	
	011	BW072-003	BW072-005	HD002	
	015	BW072-003	BW072-005	HD002	
	022	BW072-003	BW168	HD002	
	030	BW072-005	BW268	HD001	
	040	BW072-005	BW268	HD001	
	055	BW168	BW247	HD001	
	075	BW147	BW347	HD001	
	110	BW039-012	BW039-050	HD001	
	150	BW018-050	BW018-075	HD003	NF035
	220	BW018-035	BW018-075	HD003	NF048
	300	BW012-050	BW012-100	HD003	NF063

3.3 Description of applications

Inverter selection

For MOVITRAC® 07, there are two applications relevant for project planning.

100 % rated current

These are applications with constant load, for example:

- Conveyor drives
- Trolleys
- Hoists

125 % rated current

These are applications with variable torque load, for example:

- Fans
- Pumps

Project planning for trolleys

The motor load in the dynamic sections determines the peak motor power according to which the dimensions are to be set. The thermal load determines the required continuous power of the motor. Refer to the travel cycle for determining the thermal load. The speed characteristic is a significant factor in determining the self-cooling of the motor.

Project planning for hoists

In practice, the question of setting the size of hoists is addressed with regard to special thermal and safety-critical criteria.

Thermal considerations

In contrast to trolleys, hoists require approx. 70 ... 90 % of the motor rated torque at constant speed.

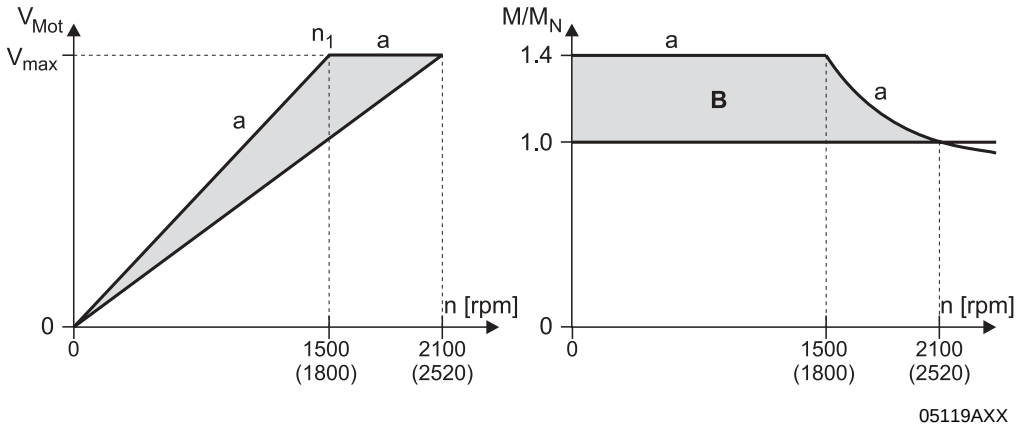
Starting torque

The motor requires the highest operating torque in the event of acceleration with maximum load and the **upwards** hoisting direction.

Always configure the 4-pole geared motor for a maximum speed of:

- 2100 rpm (70 Hz) with transition speed 1500 rpm (50 Hz)
- 2500 rpm (83 Hz) with transition speed 1800 rpm (60 Hz)

This means the gear unit input speed is increased by a factor of 1.4. Consequently, it is also necessary to choose a gear ratio which is higher by a factor of 1.4. This measure means the motor does not lose any torque at the input shaft in the field weakening range (50 ... 70 Hz or 60 ... 83 Hz). The drive compensates for the inversely proportionate fall in torque in relation to speed by means of the larger gear ratio. In addition, the motor gets a run-up torque which is 1.4 times greater. Other advantages are that the speed range is greater and the self-cooling of the motor more powerful.



a = Recommended voltage/speed characteristic curve and resultant torque characteristic
B = Torque reserve range

With hoists, select the motor power in accordance with the load type:

- S1 (100 % cdf.): Select the motor power 1 level higher than the selected inverter power, e.g. for lengthy upwards travel or continuous elevators.
- S3 (40 % cdf.): Select the motor power in accordance with the selected inverter power.

Regardless of the aforementioned guidelines, activate the hoisting function by selecting operating mode P700 = VFC & HOIST.

Variable torque load *(pumps, fans)*

In these applications, there is no chance of the motor suffering a thermal overload at low speeds. Maximum load occurs at maximum speed. There are no overload peaks. Consequently, select the size of MOVITRAC® 07 and the motor so the continuous motor current is less than or equal to the continuous output current of MOVITRAC® 07. This means MOVITRAC® 07 can operate a motor whose power is one level greater.

3.4 Speed-torque characteristic

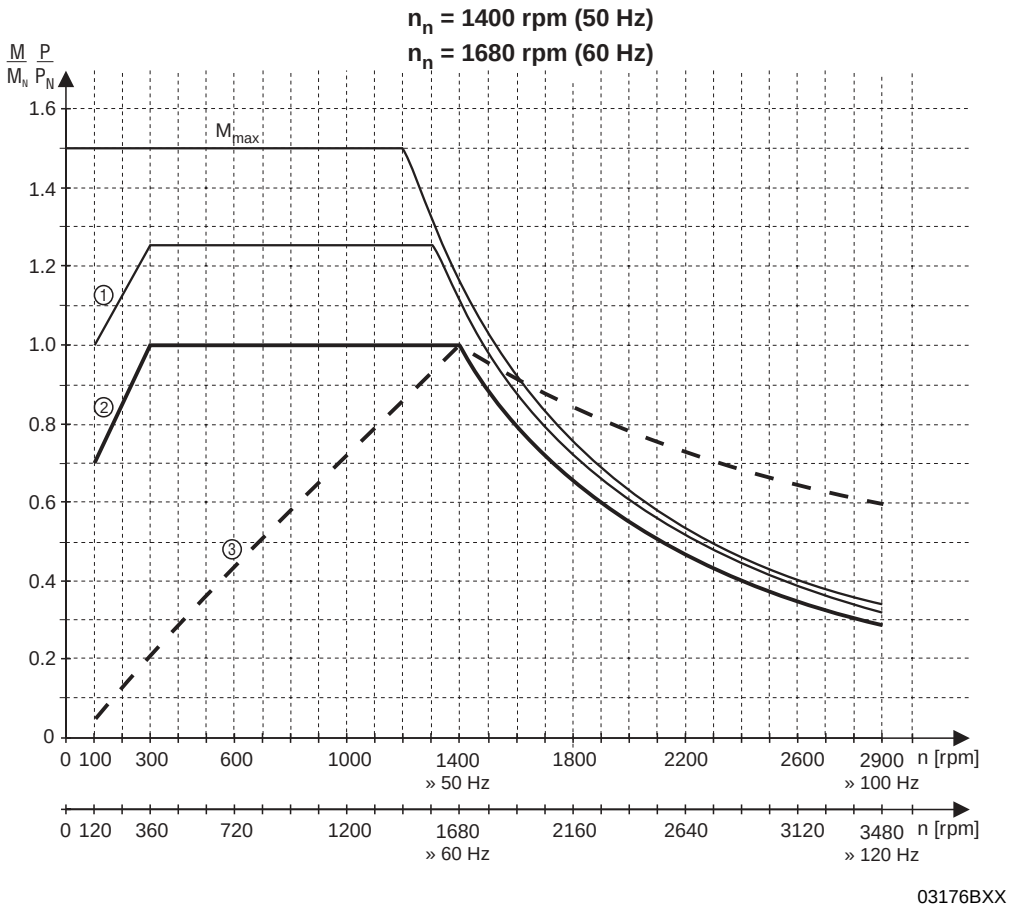


Figure 42: Speed-torque characteristic

1. M at S3 25 % cdf
2. M at S1 100 % cdf
3. P at S1 100 % cdf

3.5 Motor selection

Basic recommendations

- Only use motors with at least thermal classification F.
- Use TF thermistor sensors.
- Preferably use 4-pole motors. This applies particularly if you are operating geared motors with a high oil filling level as a result of their vertical mounting position. The churning losses are very great with 2-pole motors.
- For operating conditions other than S1 operation: Operate the motor at its listed power without forced cooling.

Voltage/frequency characteristic

The asynchronous motor follows a load-dependent voltage/frequency characteristic in V/f operating mode. The motor gets the full motor torque even at the slowest speeds. This is because the motor model is continuously calculated in VFC mode. Set the characteristic curve during startup with rated motor voltage and rated motor frequency. The setting determines the speed-dependent torque and power characteristics of the asynchronous motor.

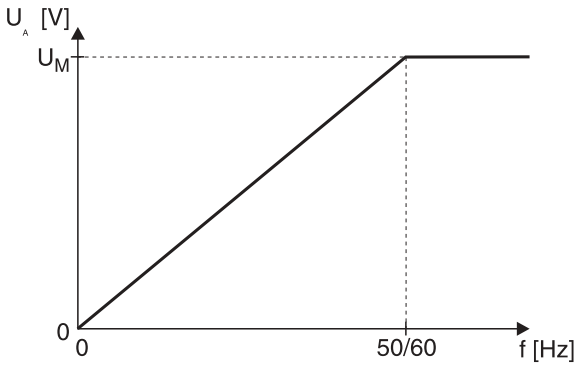


Figure 43: Voltage/frequency characteristic (U_M = motor voltage)

Characteristic curve of an asynchronous motor with rated voltage U_M and rated frequency 50 / 60 Hz.

The MOVITRAC® 07 output voltage is limited by the supply voltage which is connected.

Dynamic applications

For dynamic applications, it is necessary to have a drive with an inverter rated current greater than the motor rated current.

Set the following parameters so the motor can generate at most 150 % of the rated motor torque:

- *Current limit P303*
- *Slip compensation P324*

Increase these parameters manually by a factor of approx. 1.4 for dynamic applications.

Inverter/motor combinations

The following table shows the possible inverter/motor combinations. It is also possible to assign motors 1 frame size different to the inverters. The 4-pole motors (1500 rpm) are stored in the factory settings of MOVITRAC® 07. The control response may be impaired if smaller motors are used.

MOVITRAC® 07	Rated power P_N	SEW motor			
Speed [rpm] at 50 Hz		3000	1500	1000	750
Speed [rpm] at 60 Hz		3600	1800	1200	900
MC07A004-...-4-00	0.37 kW	DFR63L2	DT71D4	DT80K6	DT90S8
MC07A005-...-4-00	0.55 kW	DT71D2	DT80K4	DT80N6	DT90L8
MC07A008-...-4-00	0.75 kW	DT80K2	DT80N4	DT90S6	DV100M8
MC07A011-...-4-00	1.1 kW	DT80N2	DT90S4	DT90L6	DV100L8
MC07A015-...-4-00	1.5 kW	DT90S2	DT90L4	DV100M6	DV112M8
MC07A022-...-4-00	2.2 kW	DT90L2	DV100M4	DV112M6	DV132S8
MC07A030-...-4-00	3.0 kW	DV100M2	DV100L4	DV132S6	DV132M8
MC07A040-...-4-00	4.0 kW	DV112M2	DV112M4	DV132M6	DV132ML8
MC07A055-...-4-00	5.5 kW	DV132S2	DV132S4	DV132ML6	DV160M8
MC07A075-...-4-00	7.5 kW	DV132M2	DV132M4	DV160M6	DV160L8
MC07A110-...-4-00	11 kW	DV160M2	DV160M4	DV160L6	DV180L8
MC07A150-...-4-00	15 kW	DV160L2	DV160L4	DV180L6	DV200L8
MC07A220-...-4-00	22 kW	DV180L2	DV180L4	DV200L6	–
MC07A300-...-4-00	30 kW	–	DV200L4	–	–

3.6 Overload capacity

MOVITRAC® 07 frequency inverters permanently calculate the load on the inverter output stage (unit utilization). They can output the maximum possible power in any operating status. The permitted continuous output current depends on the ambient temperature, heat sink temperature, supply voltage and PWM frequency. The inverter reacts to a higher than permitted load by outputting the *F-44 Unit utilization* fault message and performing an immediate switch-off.

The following diagrams show the temperature/time characteristic of the units. The inverter automatically reduces its switching frequency if a certain switching frequency reaches the corresponding limit characteristic curve.

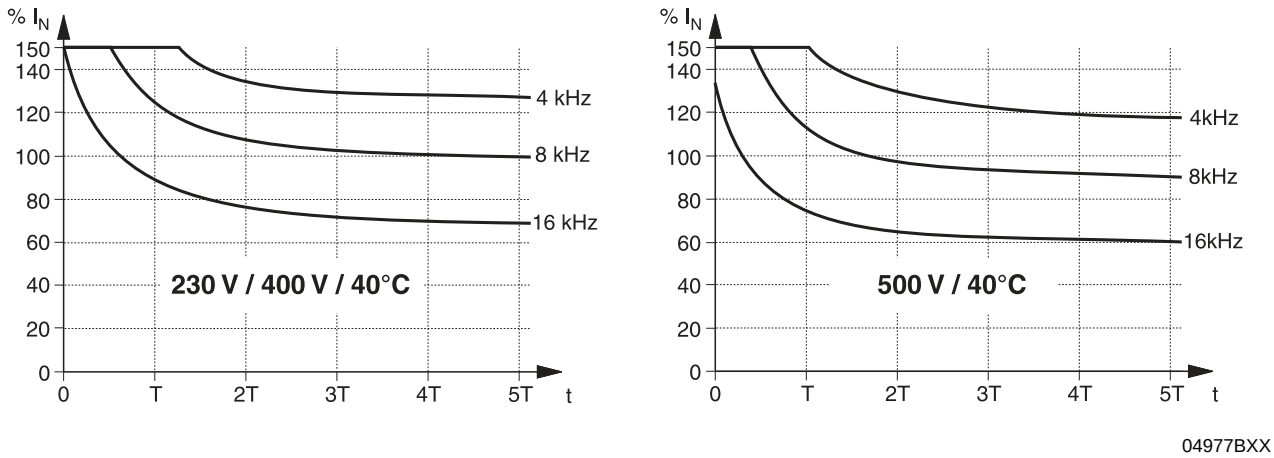


Figure 44: Overload capacity at 40 °C

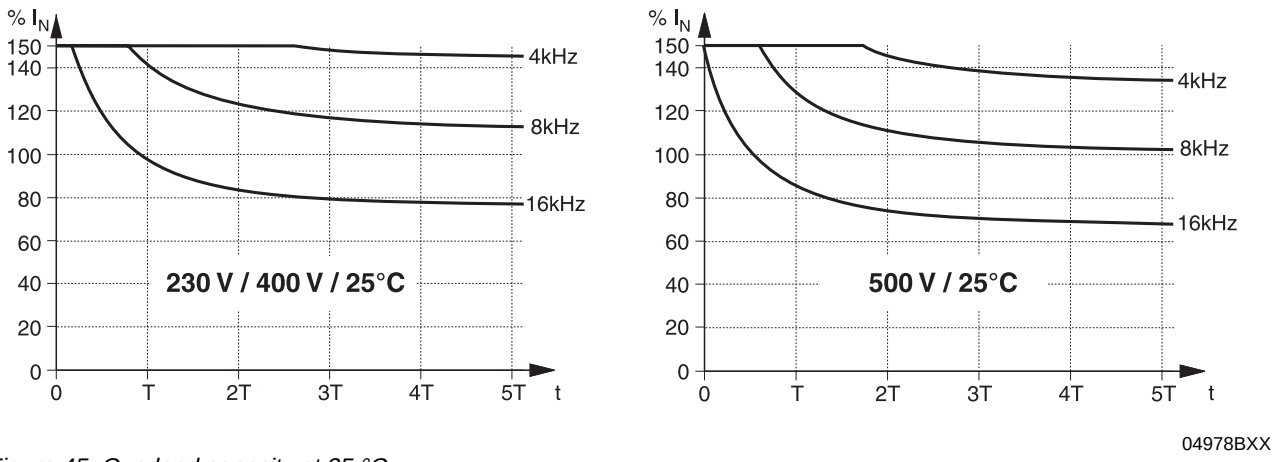


Figure 45: Overload capacity at 25 °C

Size	0S	0M	0L	1	2S	2	3	4
T (min)	10	23	3	3.5	4	5	4	9

3.7 Load capacity of the units at low output frequencies

The thermal model in MOVITRAC® 07 implements dynamic limiting of the maximum output current. Consequently, the thermal model only permits less than 100 % output current at output frequencies less than 2 Hz if the capacity utilization is high.

This can occur in the case of:

- Electrically stopping hoists
- Torque control at low speeds or when stopped

In such operating states, configure the average output current of the inverter to max. 70 % of the rated current of the inverter.

Guaranteed continuous currents depending on the output frequency

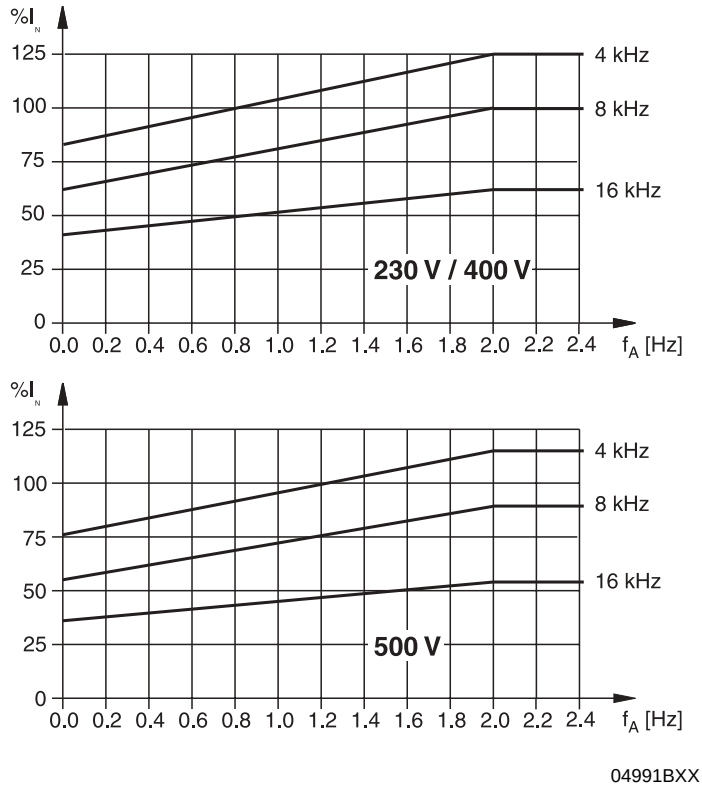


Figure 46: Continuous output currents at low output frequencies

3.8 Selection of the braking resistor

- **High voltage**

  The connection leads to the braking resistor carry a **high DC voltage (ca. 900 V)**. Select the braking resistor cables with regard to this high DC voltage.

- **Cable length**

  The maximum permitted line length between MOVITRAC® 07 and the braking resistor is 100 m (330 ft).

- **Parallel connection**

  Two braking resistors must be connected in parallel in the case of some inverter/resistor combinations. In this case, the trip current must be set on the bimetallic relay to twice the value of I_F entered in the table.

- **Peak braking power**

  The DC link voltage and the resistance value mean the peak braking power may be less than the load capacity of the braking resistor. The formula for calculating the peak braking power is:

  $P_{max} = V_{DC}^2/R$

  V_{DC} is the switch-in threshold of the brake chopper. Its value is

  - With 400/500 V units: 822 V_{DC}
  - With 230 V units: 480 V_{DC}

  The following table lists the peak braking power levels which are possible for the different resistance values.

Resistance [Ω]	Peak braking power [kW]	
	400/500 V units	230 V units
100	6.7	–
72	9.4	3.2
68	10.0	–
47	14.4	–
39	17.3	–
27	25	8.5
18	37.5	–
15	45	–
12	56	19.2
9 (2 x 18 Ω parallel)	–	25.6

Power diagrams

You can calculate the continuous resistor dissipation during braking procedures within the cycle duration T. The default value for T is 120 s. Calculate the continuous resistor dissipation with the cdf braking power and the following power diagrams. The right-hand axis displays the continuous resistor dissipation (100 % cdf power).

Flat-type 230 V

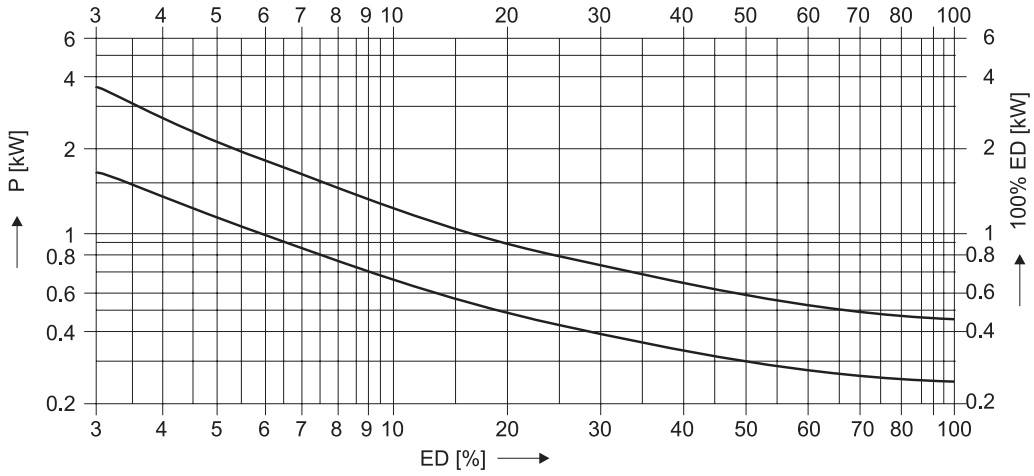


Figure 47: Flat-type 230 V

P = Intermittent power [kW]
cdf = Cyclic duration factor of the braking resistor [%]
100 % cdf = Continuous power [kW]

Wire resistor 230 V

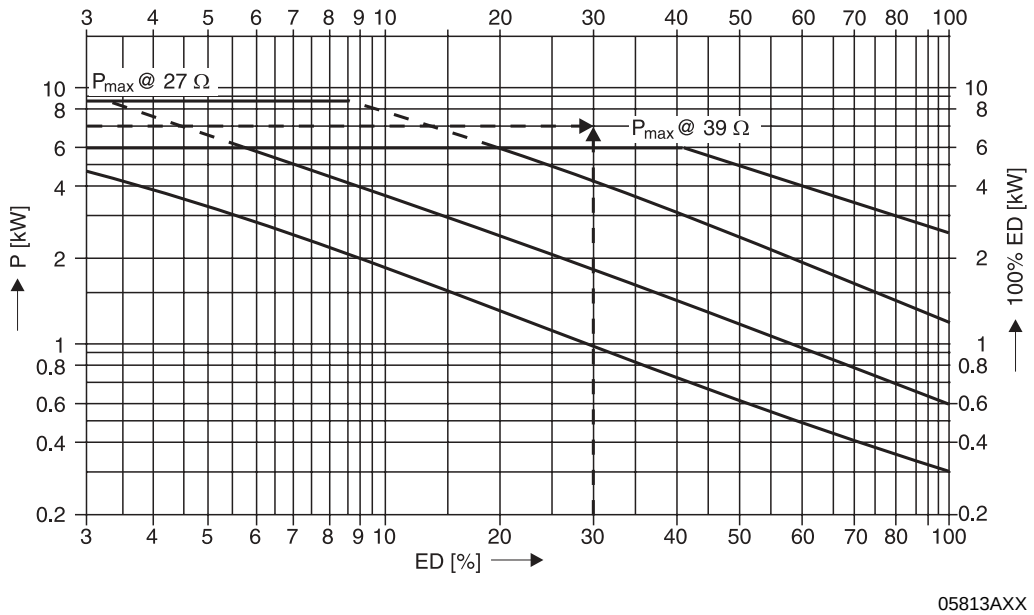


Figure 48: Wire resistor 230 V

P = Intermittent power [kW]
cdf = Cyclic duration factor of the braking resistor [%]
100 % cdf = Continuous power [kW]

Example

When an intermittent braking power of 7 kW is needed with a cyclic duration factor of 30 %, this requires a braking resistor with a continuous power of 2 kW, for example BW247.

Braking resistor type		BW039-003	BW039-006	BW039-012	BW039-026	BW027-006	BW027-012
Load capacity	**100 % cdf**	0.3 kW	0.6 kW	1.2 kW	2.6 kW	0.6 kW	1.2 kW
Resistance value	**R_{BW}**	39 Ω ±10 %				27 Ω ±10 %	
Trip current of F16	**I_F**	2.0 A_{RMS}	3.2 A_{RMS}	4.2 A_{RMS}	7.8 A_{RMS}	2.5 A_{RMS}	4.4 A_{RMS}
Enclosure		IP20 (when mounted)					
For MOVITRAC® 07A...-2..		015/022				015 ... 037	

Grid resistor 230 V

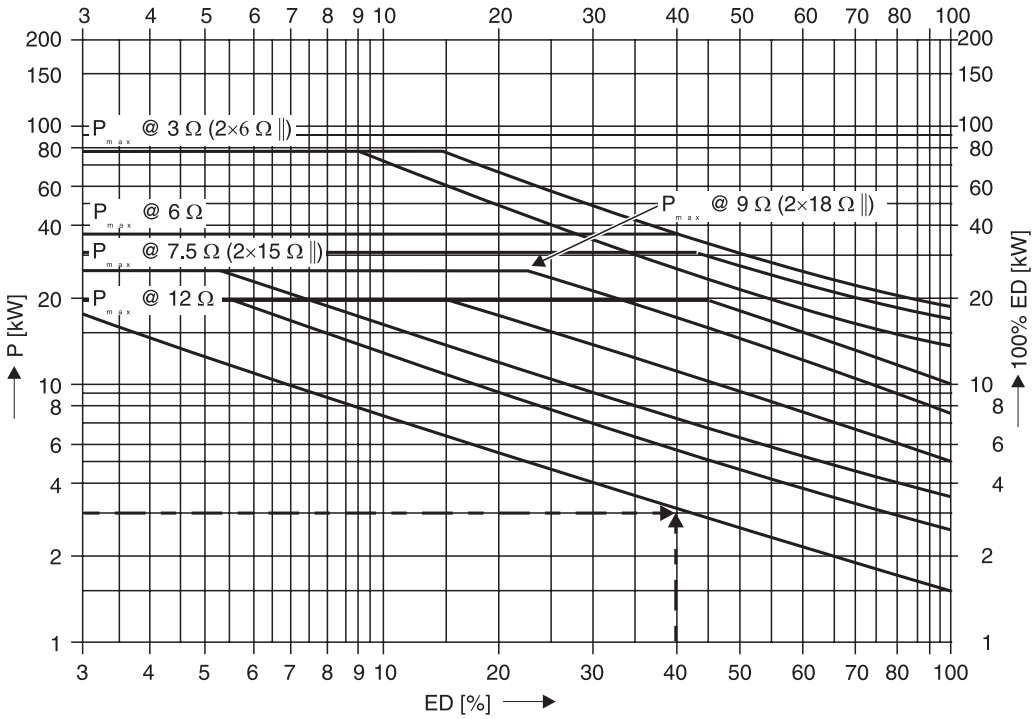


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Figure 49: Grid resistor 230 V

P = Intermittent power [kW]
cdf = Cyclic duration factor of the braking resistor [%]
100 % cdf = Continuous power [kW]

Example

When an intermittent braking power of 3 kW is needed with a cyclic duration factor of 40 %, this requires a braking resistor with a continuous power of 1.5 kW, for example BW018-015.

Braking resistor type		BW018-015	BW018-035	BW018-075	BW915
Load capacity	**100 % cdf**	1.5 kW	3.5 kW	7.5 kW	16 kW
Resistance value	**R_{BW}**	18 Ω ±10 %		18 Ω ±10 %	15 Ω ±10 %
Trip current of F16	**I_F**	4.0 A_{RMS}	8.1 A_{RMS}	14 A_{RMS}	28 A_{RMS}
Enclosure		IP20 (when mounted)			
For MOVITRAC® 07A...-2..		2 × parallel with 110			

Braking resistor type		BW012-025	BW012-050	BW012-100	BW106	BW206
Load capacity	**100 % cdf**	2.5 kW	5.0 kW	10 kW	13 kW	18 kW
Resistance value	**R_{BW}**	12 Ω ±10 %			6 Ω ±10 %	
Trip current of F16	**I_F**	10 A_{RMS}	19 A_{RMS}	27 A_{RMS}	38 A_{RMS}	42 A_{RMS}
Enclosure		IP20 (when mounted)				
For MOVITRAC® 07A...-2..		055/075			150 and 2 × parallel with 220/300	

Flat-type 400/500 V

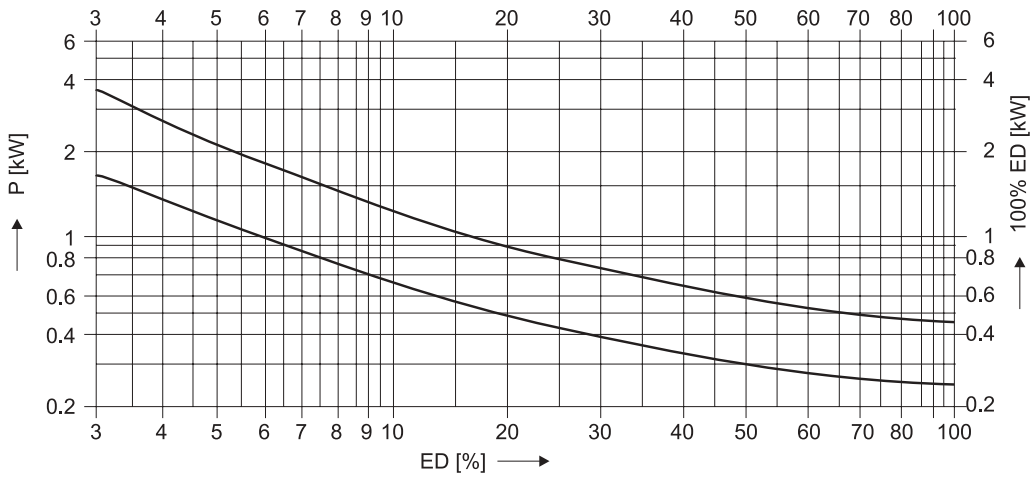

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Figure 50: Flat-type 230 V

P = Intermittent power [kW]
cdf = Cyclic duration factor of the braking resistor [%]
100 % cdf = Continuous power [kW]

Wire resistor 400/500 V

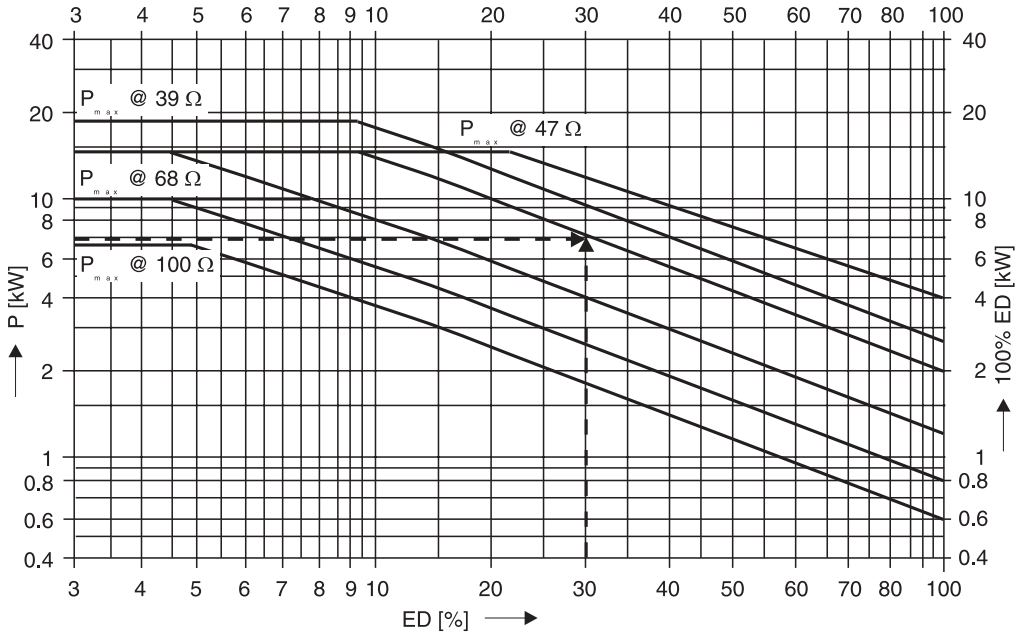

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Figure 51: Wire resistor 400/500 V

P = Intermittent power [kW]
cdf = Cyclic duration factor of the braking resistor [%]
100 % cdf = Continuous power [kW]

Example

For an intermittent braking power of 7 kW with a cyclic duration factor of 30%, you will have to use a braking resistor with a continuous power of 2 kW, such as the BW247.

Braking resistor type		**BW100-005**	**BW100-006**	**BW168**	**BW268**	**BW147**	**BW247**	**BW347**
Load capacity	**100 % cdf**	0.45 kW	0.6 kW	0.8 kW	1.2 kW	1.2 kW	2.0 kW	4.0 kW
Resistance value	**R_{BW}**	100 Ω ±10 %		68 Ω ±10 %		47 Ω ±10 %		
Trip current of F16	**I_F**	0.8 A_{RMS}	1.8 A_{RMS}	2.5 A_{RMS}	3.4 A_{RMS}	3.5 A_{RMS}	4.9 A_{RMS}	7.8 A_{RMS}
Enclosure		IP54	IP20 (when mounted)					
For MOVITRAC® 07A...-5..		015/022	015 ... 040			055/075		

Grid resistor 400/500 V

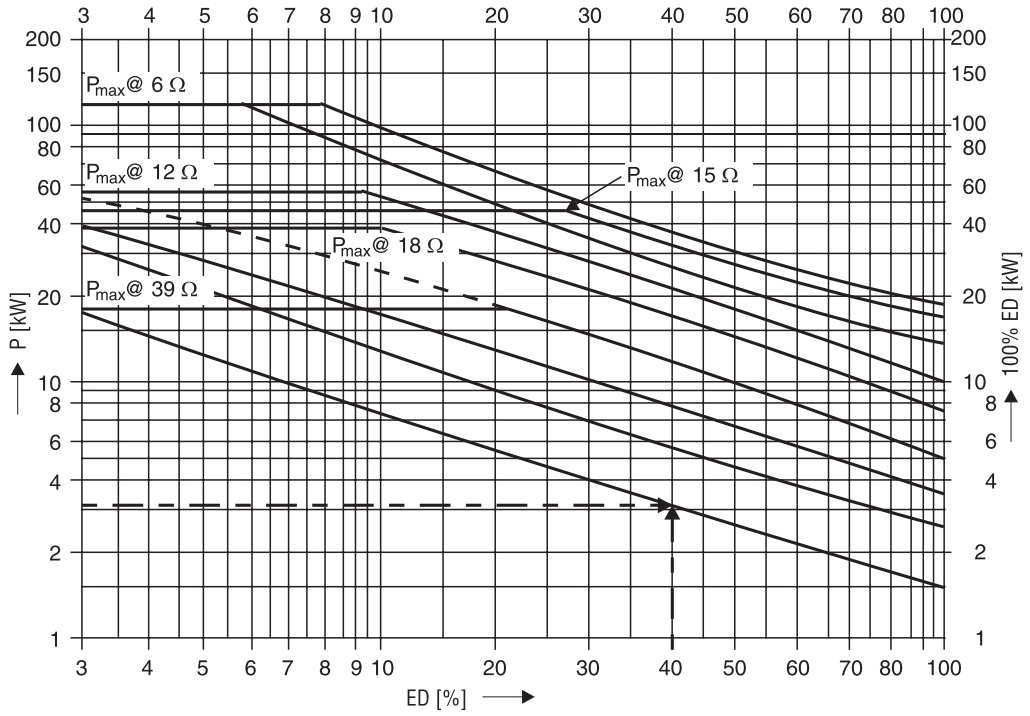

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Figure 52: Grid resistor 400/500 V

Example

For an intermittent braking power of 3 kW with a cyclic duration factor of 40 %, you will have to use a braking resistor with a continuous power of 1.5 kW, such as BW018-015.

Braking resistor type		BW039-012	BW039-026	BW039-050	BW018-015	BW018-035	BW018-075
Load capacity	**100 % cdf**	1.2 kW	2.6 kW	5.0 kW	1.5 kW	3.5 kW	7.5 kW
Resistance value	**R_{BW}**	39 Ω ±10 %			18 Ω ±10 %		
Trip current of F16	**I_F**	4.2 A_{RMS}	7.8 A_{RMS}	11 A_{RMS}	4.0 A_{RMS}	8.1 A_{RMS}	14 A_{RMS}
Enclosure		IP20 (when mounted)					
For MOVITRAC® 07A...-5..		110			150/220 and 2 × parallel with 370/450		

Braking resistor type		BW915	BW012-025	BW012-050	BW012-100	BW106	BW206
Load capacity	**100 % cdf**	16 kW	2.5 kW	5.0 kW	10 kW	13 kW	18 kW
Resistance value	**R_{BW}**	15 Ω ±10 %	12 Ω ±10 %			6 Ω ±10 %	
Trip current of F16	**I_F**	28 A_{RMS}	6.1 A_{RMS}	12 A_{RMS}	22 A_{RMS}	38 A_{RMS}	42 A_{RMS}
Enclosure		IP20 (when mounted)					
For MOVITRAC® 07A...-5..		110	300			370 ... 750	

3.9 Brake connection

For detailed information about the SEW brake system, refer to

- *Geared Motors* catalog
- *Drive Engineering – Practical Implementation, Vol. 4* manual

SEW brake systems are DC operated disc brakes which are released electromagnetically and applied by spring force. A brake rectifier supplies the brake with DC voltage.

Route a separate supply system lead for the brake rectifier when operating with an inverter. Powering it from the motor voltage is not permitted! See the wiring diagram!

The inverter switches the brake rectifier off in the AC circuit.

Always operate the brake via binary output DO02 of the inverter, not via the PLC!

Binary output DO02 is configured with a control voltage of +24 V / I_{max} = 150 mA / 3.6 W for operating a relay. This relay can directly control a power contactor. This power contactor engages and disengages the brake.

3.10 Supply system contactor and mains fuses

Supply system contactor

- Only use supply system contactors in utilization category AC-3 (IEC 158-1).
- Do not use the K11 supply system contactor for jog mode, but only for switching the inverter on and off. Use the following commands for jog mode:
  - Enable/stop
  - CW/STOP
  - CCW/STOP

Recommendation

Observe a minimum switch-off time of 10 s for the supply system contactor K11.

3.11 Supply system lead and motor cable

Permitted voltage systems

MOVITRAC® 07 is intended for operation on voltage systems with a directly grounded star point (TN and TT systems). Operation on voltage systems with a non-grounded star point (for example IT systems) is permitted. In such a case, SEW recommends using an earth-leakage monitor according to the PCM (pulse-code measurement) principle.

Fuse and core cross section

Comply with the regulations of the specific country and for the specific machine regarding fusing and selecting the line cross sections.

Select the line cross section of the motor lead so the voltage drop is as small as possible.

When several single-phase devices are used, the size of the shared neutral conductor must always be selected for the total current. Select with reference to the total current even if the unit connections are distributed over the three mains phases. This is because the 3rd supply system harmonic is always cumulative.

An excessively high voltage drop means that the motor does not achieve its full torque.

MOVITRAC® 07 230 V		004	005	008	011	015	022
1-phase	Fuses	C16 / gL16 / K16	C16 / gL16 / K16	C16 / gL16 / K16	C32 / gL25 / K25 / D20	C32 / gL25 / K25 / D20	C32 / gL25 / K25 / D20
	Supply system lead	1.5 mm^2	1.5 mm^2	1.5 mm^2	4 mm^2	4 mm^2	4 mm^2
	PE conductor	2 x 1.5 mm^2	2 x 1.5 mm^2	2 x 1.5 mm^2	2 x 4 mm^2	2 x 4 mm^2	2 x 4 mm^2
3-phase	Fuses	10 A	10 A	10 A	10 A	10 A	16 A
	Supply system lead	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2
	PE conductor	2 x 1.5 mm^2	2 x 1.5 mm^2	2 x 1.5 mm^2	2 x 1.5 mm^2	2 x 1.5 mm^2	2 x 1.5 mm^2
Motor lead		1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2

MOVITRAC® 07 230 V		037	055	075	110	150	220	300
3-phase	Fuses	25 A	25 A	35 A	50 A	63 A	80 A	100 A
	Supply system lead	4 mm^2	4 mm^2	6 mm^2	10 mm^2	16 mm^2	25 mm^2	35 mm^2
	PE conductor	2 x 4 mm^2 1 x 10 mm^2	2 x 4 mm^2 1 x 10 mm^2	2 x 6 mm^2 1 x 10 mm^2	1 x 10 mm^2	1 x 16 mm^2	1 x 16 mm^2	1 x 16 mm^2
Motor lead		Disconnectable terminal strip 4 mm^2 conductor end sleeve DIN 46228	Screw and washer assembly M4 with terminal clip 4 mm^2 conductor end sleeve DIN 46228 6 mm^2 crimp cable connector DIN 46234		Screw and washer assembly M6 with washer max. 25 mm^2 crimp cable connector DIN 46234		Bolt M10 with nut max. 70 mm^2 crimp cable connector DIN 46234	

MOVITRAC® 07 400/500 V		005	008	011	015	022	030	040
3-phase	Fuses	10 A	10 A	10 A	16 A	16 A	16 A	16 A
	Supply system lead	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2
	PE conductor	2 x 1.5 mm^2	2 x 1.5 mm^2	2 x 1.5 mm^2	2 x 1.5 mm^2 1 x 10 mm^2	2 x 1.5 mm^2 1 x 10 mm^2	2 x 1.5 mm^2 1 x 10 mm^2	2 x 1.5 mm^2 1 x 10 mm^2
Motor lead		1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2

MOVITRAC® 07 400/500 V		055	075	110	150	220	300
3-phase	Fuses	16 A	16 A	25 A	35 A	50 A	63 A
	Supply system lead	1.5 mm^2	1.5 mm^2	4 mm^2	6 mm^2	10 mm^2	16 mm^2
	PE conductor	2 x 1.5 mm^2 1 x 10 mm^2	2 x 1.5 mm^2 1 x 10 mm^2	2 x 4 mm^2 1 x 10 mm^2	2 x 6 mm^2 1 x 10 mm^2	1 x 10 mm^2	1 x 16 mm^2
Motor lead		1.5 mm^2	1.5 mm^2	Screw and washer assembly M4 with terminal clip 4 mm^2 conductor end sleeve DIN 46228 6 mm^2 crimp cable connector DIN 46234	Screw and washer assembly M6 with washer max. 25 mm^2 Crimp cable connector DIN 46234		

Motor feeder length

The maximum motor feeder length is dependent on:

- cable type,
- voltage drop in the cable,
- set PWM frequency.
- Use of an output filter (not permitted with 230 V units)[1]

MOVITRAC® 07	**Permitted maximum motor feeder length in m (ft)**
Size	**0S, 0M, 0L**
Shielded cable	25 m (82 ft) / regardless of the PWM frequency
Unshielded cable	50 m (165 ft) / regardless of the PWM frequency

MOVITRAC® 07 type		**Permitted maximum motor feeder length in m (ft)**					
Voltage		**230 V**				**400/500 V**	
Size		**1**	**2**		**3/4**	**2S**	**2/3**
Type		**037**	**055**	**075**	**110 ... 300**	**055**	**075 ... 300**
Shielded cable	4 kHz	250 (825)	300 (990)	300 (990)	400 (1320)	300 (990)	400 (1320)
	8 kHz	150 (495)	250 (825)	250 (825)	300 (990)	250 (825)	300 (990)
	12 kHz	120 (396)	200 (660)	200 (660)	250 (825)	200 (660)	250 (825)
	16 kHz	100 (330)	150 (495)	150 (495)	200 (660)	150 (495)	200 (660)
Unshielded cable	4 kHz	750 (2475)	900 (2970)	900 (2970)	1200 (3960)	900 (2970)	1200 (3960)
	8 kHz	450 (1485)	750 (2475)	750 (2475)	900 (2970)	750 (2475)	900 (2970)
	12 kHz	360 (1188)	600 (1980)	600 (1980)	750 (2475)	600 (1980)	750 (2475)
	16 kHz	300 (990)	450 (1485)	450 (1485)	600 (1980)	450 (1485)	600 (1980)

You should not use an earth-leakage circuit breaker with long motor leads. The earth-leakage currents caused by cable capacitance may cause mis-tripping.

1 The limit values in the tables do not apply if you are using an output filter. The motor feeder length is then solely limited by the voltage drop on the motor feeder.

Voltage drop

Select the line cross section of the motor lead so the **voltage drop is as small as possible**. An excessively high voltage drop means that the motor does not achieve its full torque.

You can refer to the following tables to find the expected voltage drop. For shorter lines, you can calculate the voltage drop by converting proportional to the length.

Line cross section	Load with I [A] =															
	4	6	8	10	13	16	20	25	30	40	50	63	80	100	125	150
Copper	Voltage drop ΔU [V] with length = 100 m (330 ft) and ϑ = 70 °C															
1.5 mm²	5.3	8	10.6	13.3	17.3	21.3	1	1	1	1	1	1	1	1	1	1
2.5 mm²	3.2	4.8	6.4	8.1	10.4	12.8	16	1	1	1	1	1	1	1	1	1
4 mm²	1.9	2.8	3.8	4.7	6.5	8.0	10	12.5	1	1	1	1	1	1	1	1
6 mm²					4.4	5.3	6.4	8.3	9.9	1	1	1	1	1	1	1
10 mm²						3.2	4.0	5.0	6.0	8.2	10.2	1	1	1	1	1
16 mm²								3.3	3.9	5.2	6.5	7.9	10.0	1	1	1
25 mm²									2.5	3.3	4.1	5.1	6.4	8.0	1	1
35 mm²											2.9	3.6	4.6	5.7	7.2	8.6
50 mm²														4.0	5.0	6.0

1 Loading not permitted, in accordance with VDE 0100 part 430

Line cross section	Load with I [A] =															
	4	6	8	10	13	16	20	25	30	40	50	63	80	100	125	150
Copper	Voltage drop ΔU [V] with length = 100 m (330 ft) and ϑ = 70 °C															
AWG16	7.0	10.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AWG14	4.2	6.3	8.4	10.5	13.6	1	1	1	1	1	1	1	1	1	1	1
AWG12	2.6	3.9	5.2	6.4	8.4	10.3	12.9	1	1	1	1	1	1	1	1	1
AWG10					5.6	6.9	8.7	10.8	13.0	1	1	1	1	1	1	1
AWG8						4.5	5.6	7.0	8.4	11.2	1	1	1	1	1	1
AWG6								4.3	5.1	6.9	8.6	10.8	13.7	1	1	1
AWG4									3.2	4.3	5.4	6.8	8.7	10.8	13.5	1
AWG3									2.6	3.4	4.3	5.1	6.9	8.6	10.7	12.8
AWG2											3.4	4.2	5.4	6.8	8.5	10.2
AWG1												3.4	4.3	5.4	6.8	8.1
AWG1/0												2.6	3.4	4.3	5.4	6.8
AWG2/0													2.7	3.4	4.3	5.1

1 More than 3 % voltage drop in relation to V_{in} = 460 V_{AC}.

3.12 Group drive

In V/f character. operating mode, a group of asynchronous motors can be operated on one inverter. Please note:

- Select V/f operating mode
- Set the power of the largest motor
- Switch off automatic adjustment P320
- Set IxR compensation P322 to zero
- Set slip compensation P324 to zero
- Set the current limitation to 1.5 times the total current of the motors

In this operating mode, the inverter operates without slip compensation and with a constant V/f ratio.

The parameter settings apply to all connected motors.

Motor currents

The total of the motor currents must not exceed the output rated current of the inverter.

Motor lead

You can calculate the permitted length of all motor leads connected in parallel as follows:

$$I_T \leq \frac{I_{max}}{n}$$

I_T = Total length of the motor leads connected in parallel

I_{max} = Recommended maximum motor lead length

n = Number of motors connected in parallel

Only use unshielded motor leads.

Motor size

The motors in a group must not be more than three levels apart.

Output filter

Usually, there is no need for an output filter with small groups of two to three motors. An output filter HF... is required if the maximum motor lead length (l_{max}) given in the table is not adequate. This may be the case in large groups (n) or when there are long motor lead lengths connected in parallel (l_{tot}). In this case, it is the voltage drop on the motor lead which restricts the maximum motor lead length, not the limit value in the table. The total value of the rated motor currents must not exceed the rated throughput current of the output filter.

Connection to the frequency inverter output is only permitted in size 0S, 0M and 0L when the output stage is inhibited.

3.13 Line chokes

1-phase

Use is optional under the following circumstances:

- Reduction in the supply system current harmonics
- Support for overvoltage protection

Use is required under the following circumstances:

- Supply system inductance values less than 100 µH per branch
- For limiting the inrush current when operating more than one unit on a shared supply system contactor

3-phase

Use is optional under the following circumstances:

- Support for overvoltage protection

Use is required under the following circumstances:

- For limiting the inrush current when operating more than four units on a supply system contactor

For connecting several single-phase inverters to one three-phase line choke

Example: Two single-phase inverters on one single-phase line choke

Prerequisites for connecting several single-phase inverters to one three-phase line choke are:

- The supply system contactor must be designed for the total current.
- The fuse must correspond to the rated current value of the line choke.
- Connect MOVITRAC® 07 frequency inverters to the line chokes symmetrically.

Two MOVITRAC® 07MC07A008-2B1 units (0.75 kW) are connected to one line choke ND 020-151. The rated current of the inverters is 9.9 A.

Make sure the line cross section corresponds to the selected fuse. In addition, you must configure the neutral conductor in accordance with the total current.

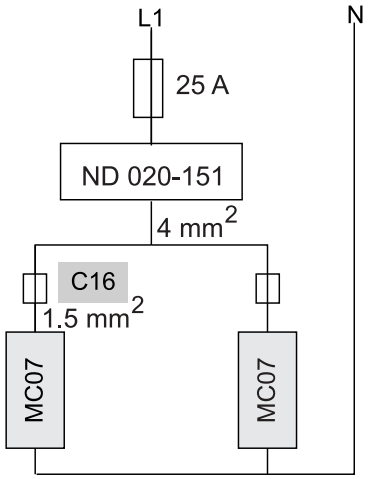

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Figure 53: Connecting two single-phase inverters to one single-phase line choke

Example: Nine single-phase inverters on one three-phase line choke

Nine MOVITRAC® 07 MC07A-008-2B1-00 units (0.75 kW) are to be connected to one three-phase line choke. The rated current of the inverters is 9.9 A.

Make sure the line cross section corresponds to the selected fuse. In addition, you must configure the neutral conductor in accordance with the total current.

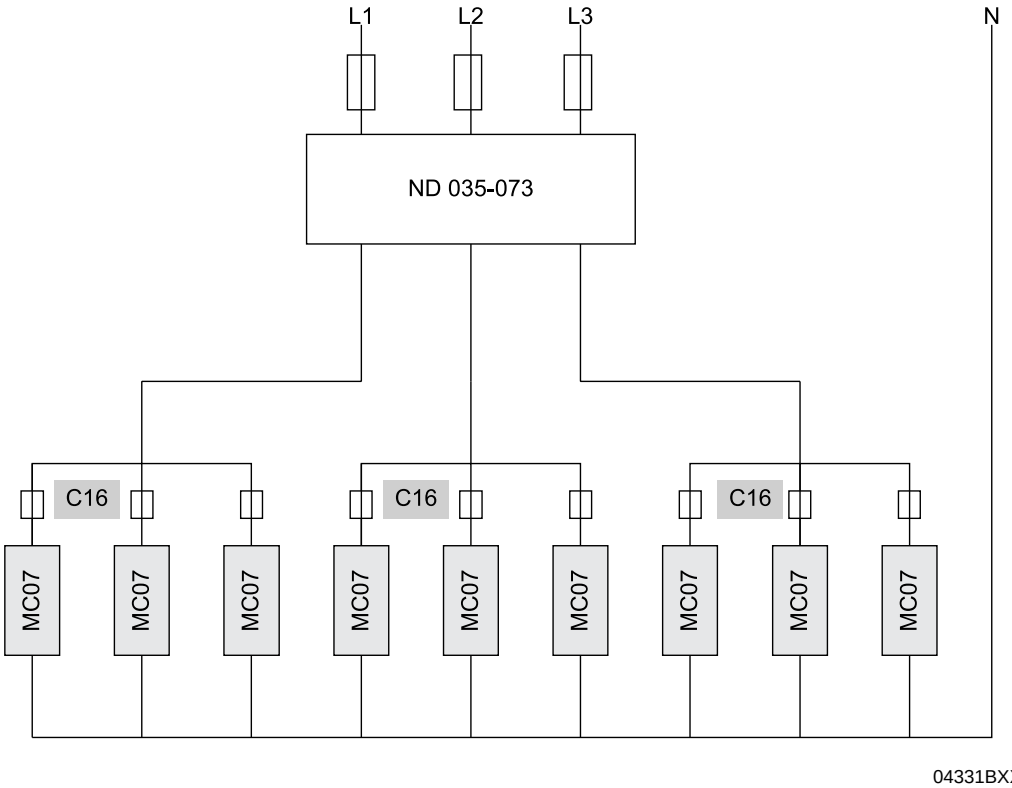

Figure 54: Connecting several inverters to one three-phase line choke

3.14 Installation notes

MOVITRAC® 07 frequency inverters are components of machines and systems. They comply with the EMC product standard EN 61800-3 **Variable-speed electrical drives**. If you want to provide the machine/system with frequency inverters in accordance with the EMC Directive 89/336/EEC: Observe the instructions regarding EMC compliant installation.

MOVITRAC® 07 frequency inverters are fitted with an line filter as standard. They comply with the following limit value class to EN 55011 on the line side without further measures:

- **B**: 1-phase connection
- **A**: 3-phase connection
  - 230 V: up to 7.5 kW
  - 400/500 V: up to 11 kW

Interference immunity

With regard to interference immunity, MOVITRAC® 07 meets all the requirements stipulated in EN 50082-2 and EN 61800-3.

Interference emission

Higher levels of interference are permitted in industries. In industrial environments, it may be possible to dispense with the measures listed below depending on the situation of the supply system and the machine configuration.

Limit value class

The following possible solutions exist for EMC-compliant installation, depending on the machine configuration. Perform EMC-compliant installation according to EN 55011.

Limit value class	Input side		Output side
	Size 0 ... 2	Size 3 ... 4	Size 0 ... 4
A	No action needed	NF line filters	HD output chokes or shielded motor cable

Limit value class	Input side		Output side
	Size 0 1-phase	Size 0 ... 4 3-phase	Size 0 ... 4
B	No action needed	NF line filters	HD output chokes or shielded motor cable

Units with class A limit attain the class B limit with an additional NF line filter.

IT systems

No EMC limits are specified for interference emission in voltage supply systems without an earthed star point (IT systems). The effectiveness of line filters is severely limited.

Connection

You will achieve EMC-compliant connection of the MOVITRAC® 07 frequency inverter by following the instructions in the Installation section.

Connect the output choke according to the Installation section.

Conductor end sleeves

Terminals for installation without conductor end sleeves are provided for size 0.

Block diagram for installation according to the class B limit

[1]: Alternative 1 with HD output chokes

[2]: Alternative 2 with shielded motor lead

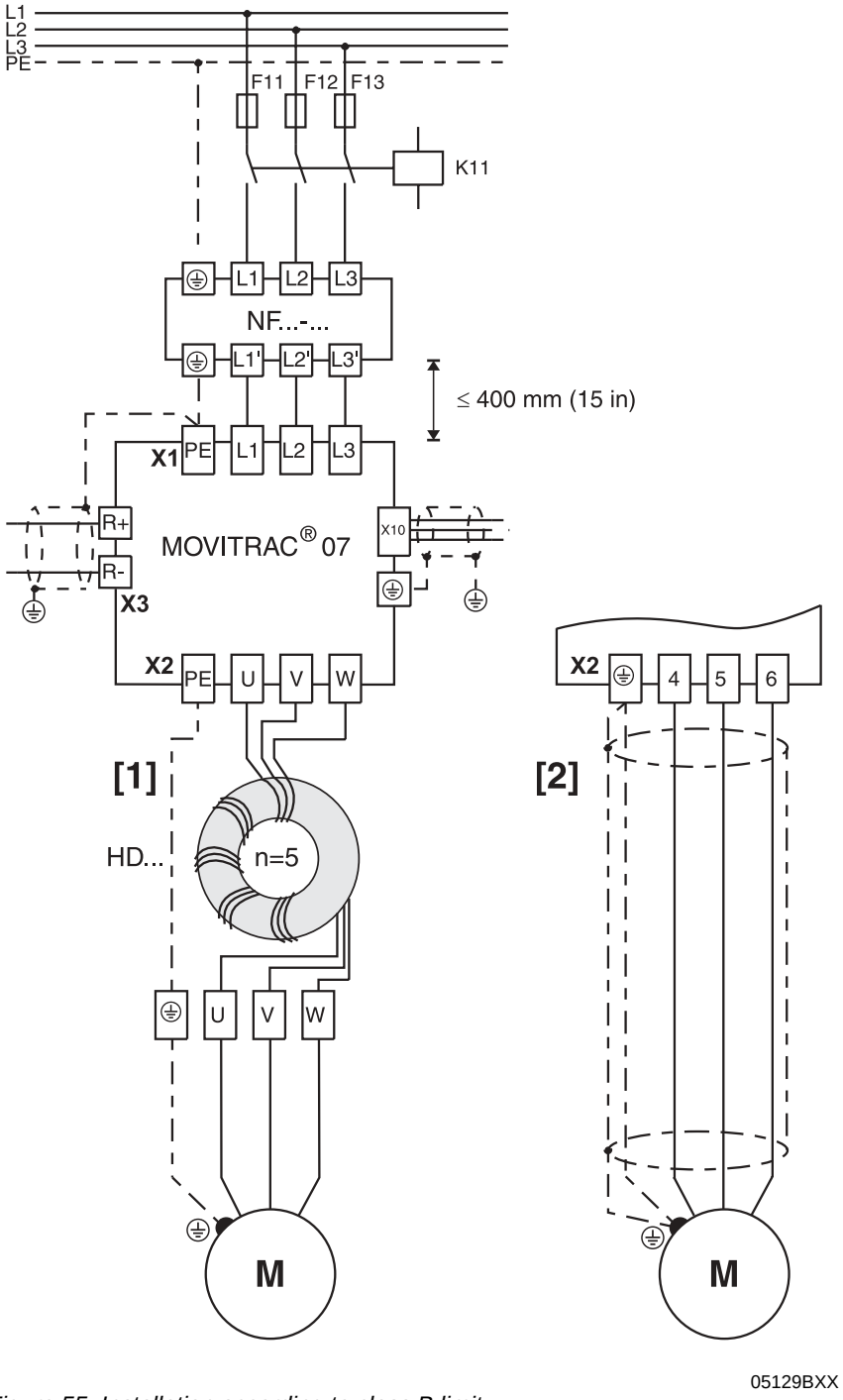

Figure 55: Installation according to class B limit

Please refer to the publication "Drive Engineering – Practical Implementation, Electromagnetic Compatibility (EMC) in Drive Engineering" for detailed information about the topic of "electromagnetic compatibility".

3.15 Connecting the optional power components

Series ND... line chokes

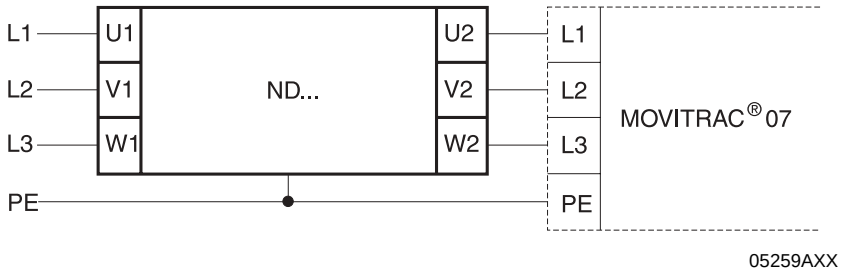

Figure 56: Connecting ND... line chokes

Series NF...-... line filters

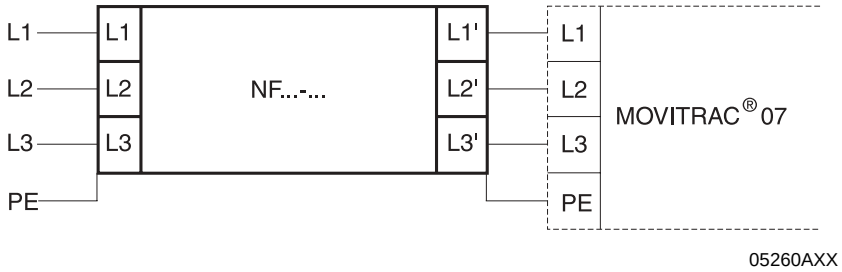

Figure 57: Connecting NF...-... line filters

Series HD... output chokes

Output choke type	HD001	HD002	HD003
For cable cross sections	1.5...16 mm^2 (AWG16...6)	≤ 1.5 mm^2 (≤ AWG16)	≥ 16 mm^2 (≥ AWG6)

Series HF... output filters

- Install output filters next to the corresponding inverter. Leave a ventilation space of at least 100 mm (4 in) below and above the output filter. No clearance is required to either side.
- Restrict the length of the cable between the inverter and the output filter to the absolute minimum needed. Maximum 1 m / 3.3 ft with an unshielded cable and 10 m / 33 ft for a shielded cable.

- You are only allowed to connect unshielded motor leads if using an output filter. A shielded motor lead leads to impermissibly high heating of the output filter.

- Several motors can be connected jointly to one output filter when multiple motors are operated on one inverter. The total value of the rated motor currents must not exceed the rated throughput current of the output filter.
- It is acceptable for two identical output filters to be connected in parallel to one inverter output in order to double the rated through current. To do this, connect all connections with the same name to the output filters in parallel.
- Output filter connection V5 (with HF...-503) or 7 (with HF...-403) must not be connected when the inverter is operated with f_{PWM} = 4 or 8 kHz.

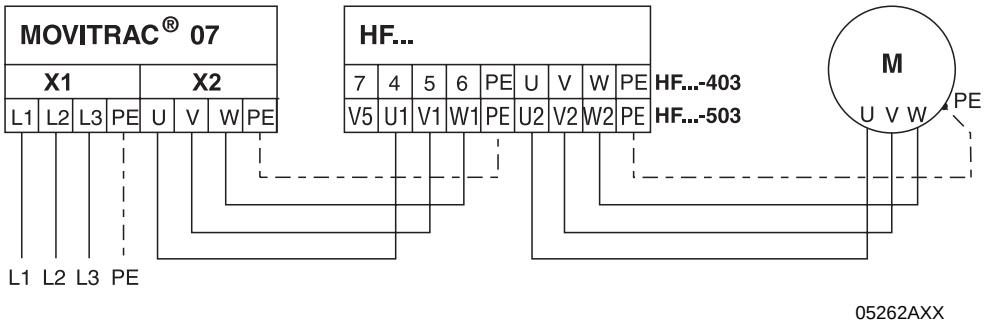

Figure 58: Connecting HF...-... output filters

3.16 Electronics cables and signal generation

Cable type

The electronics terminals are suitable for cross sections up to 1.5 mm^2 (AWG16) without conductor end sleeves and up to 1.0 mm^2 (AWG17) with conductor end sleeves.

Use shielded cables as standard. Ground the shield at both ends. Route electronics cables separately from power cables and contactor control cables or braking resistor cables.

0 V cables

Never connect 0 V cables GND for generating signals. The 0 V cables of several electrical units which are connected together should not be looped from unit to unit, but rather wired up in a star configuration. This means:

- Install the units in adjacent switch cabinet compartments rather than distributing them widely.
- Lay the 0 V cables with 1 mm^2 (AWG17) cross section from a central point to each individual unit by the shortest possible route.

Coupling relays

If you use coupling relays, then only use relays with encapsulated, dust-protected electronic contacts. The relays must be suitable for switching low voltages and currents (5 ... 30 V, 0.1 ... 20 mA).

Binary inputs / binary outputs

Binary input commands can also be issued directly as 0/1 commands from a PLC instead of using a coupling relay. Signal levelsee Sec. Technical Data.

The binary outputs are short-circuit proof and interference-voltage-proof up to 35 V against GND. Applying a higher external voltage may destroy them!

3.17 PI-controller

You can use the implemented PI-controller for temperature control, pressure control or other applications. The PI-controller can be switched on and off.

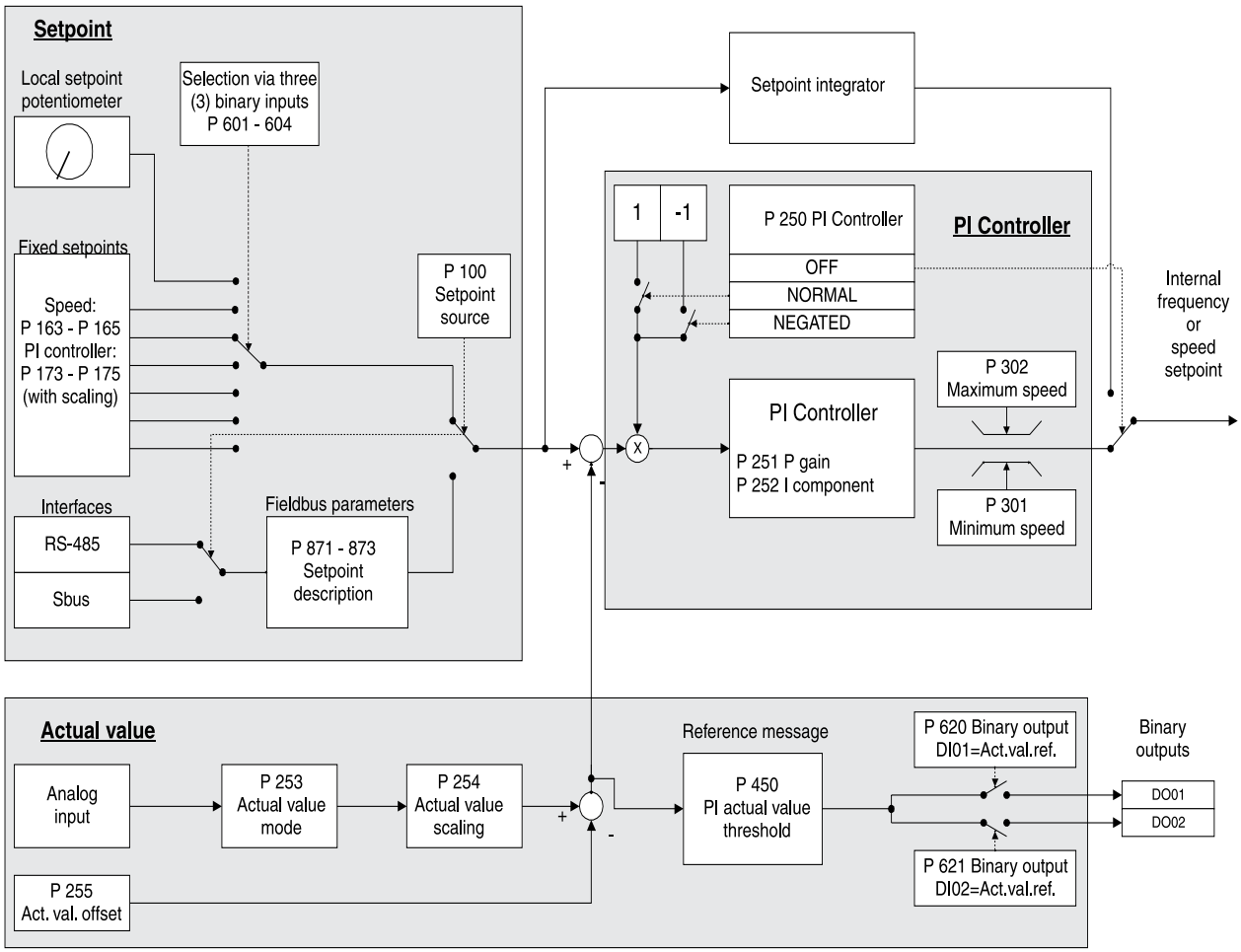

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Figure 59: Structural diagram showing the implementation of the PI-controller

Connect the actual value from the sensor (temperature, pressure, etc.) to analog input AI1. You can scale the actual value up or down and assign an offset value, thereby adapting it to the working range of the PI-controller.

You can set the PI-controller setpoint using one of the six programmed fixed setpoints or specify the setpoint using the RS-485 or fieldbus (SBus) interface (*P100 = Setpoint source*). Furthermore, it is possible to select the setpoint using the local setpoint potentiometer.

The correcting variable of the PI-controller is a speed setpoint limited to the minimum and maximum speed (*P301 = Minimum speed 1* and *P302 = Maximum speed 1*). The speed ramp time setting has no effect if the PI-controller is active.

Default parameter settings are shown in **bold** below.

Setting parameters

Activating the PI-controller

Switch the PI-controller off and on using parameter P250. The setpoint and actual value settings mentioned initially are active when you switch on the PI-controller.

The *NORMAL* setting increases the correcting variable if there is a positive system deviation; the correcting variable is reduced if there is a negative system deviation.

The *INVERTED* setting increases the correcting variable if there is a negative system deviation; the correcting variable is reduced if there is a positive system deviation.

P 250	PI-controller	**Off**
		Normal
		Inverted

Controller parameters

You can adapt the controller to the application using the following settings:

P 251	P-gain	0 ... **1** ... 64	Step width:	0.01
P 252	Time constant n-control.	0 ... **1** ... 2000 [s]	Range: 0 0.01 ... 0.99 1.0 ... 9.9 10 ... 99 100 ... 2000	Step width: Time constant n-control. OFF 0.01 0.1 1 10

Setpoint selection

The following settings are possible as the setpoint source. You can select the setpoint source with parameter P100.

- **UNIPOL/FIX.SETPT**: The setpoint set using the local setpoint potentiometer applies until one of the following fixed setpoints is selected:

  P163/164/165 Setpoint n11/12/13 scales PI-controller [0 ... 100 %] step width: 0.1 %

  P173/174/175 Setpoint n21/22/23 scales PI-controller [0 ... 100 %] step width: 0.1 %
- **RS-485** (only for service purposes)
- **SBus**: Specify the setpoint and set it using the following bus parameters:

  P870/871/872 Setpoint description PO1/PO2/PO3 [PI-controller setpoint [%]]

  PO1/PO2/PO3 = 0 ... 2^{14} = 0 ... 100 % PI-controller setpoint

The following settings do not have any effect: **MOTOR POT**, **FIX SETP+AI1** and **FIX SETP*AI1**. If you set these, the inverter always specifies the setpoint zero.

Setpoint selection is **always unipolar**. The inverter restricts negative setpoints (e.g. via RS-485 or SBus) to zero.

Actual value acquisition

Unipolar input AI1 is the actual value input.

You can acquire the actual value as follows using *P253 PI actual value mode*:

- **0 ... 10 V**: The following applies to operation as a voltage input:
  0 ... 10 V = 0 ... 100 % PI-controller actual value
- 0 ... 20 mA: The following applies to operation as a current input:
  0 ... 20 mA = 0 ... 100 % PI-controller actual value
- 4 ... 20 mA: The following applies to operation as a current input:
  4 ... 20 mA = 0 ... 100 % PI-controller actual value

You can scale the actual value acquired using P253 PI actual value mode with a factor between 0 and 10.

P254	PI actual value scaling	0.1 ... **1** ... 10	Step width:	0.01

This parameter allows you to assign an offset subsequently to the scaled actual value.

P255	PI sensor offset	**0** ... 100 [%]	Step width:	0.1 %

The scaled value with its offset is the actual value for the PI-controller.

You can read the actual value via RS-485 or SBus using the following bus parameters:

P873 Actual value description PI1 [PI-controller [%]]
P874 Actual value description PI2 [PI-controller [%]]
P875 Actual value description PI3 [PI-controller [%]]

PI1 = 0 ... 2^{14} = 0 ... 100 % PI-controller setpoint
PI2 = 0 ... 2^{14} = 0 ... 100 % PI-controller setpoint
PI3 = 0 ... 2^{14} = 0 ... 100 % PI-controller setpoint

Reference signal

With this parameter, you can program a reference signal with regard to the actual value of the PI-controller. By doing this, you can monitor the actual value for violation of a limit value, for example.

P450	PI actual value reference	**0** ... 100 [%]	Step width:	0.1 %
P451	Signal = "1" if:	PI actual value < PI reference PI actual value > PI reference		

A binary output terminal must be programmed to "PI ACTUAL VALUE REFERENCE" in order to output the reference signal. The reference signal operates with a hysteresis of 5 %. The reference signal does not have a delay time and signals ’1’ depending on P451.

Either binary output DO01 [list box] P620 or binary output DO02 [list box] P621 must be programmed to PI ACT.VALUE REF.

Inverter control

You can determine the direction of rotation using direction of rotation terminals "CW/STOP" and "CCW/STOP".

After the enable, the inverter increases the speed using speed ramp P130 until minimum speed P301 is reached. PI control takes effect once the minimum speed has been reached. The PI-controller correcting variable directly determines the speed setpoint.

If you revoke the CW/CCW terminal, the inverter deactivates PI control and stores the I component of the PI-controller. Speed is reduced with the speed ramp (P131). The PI-controller is reactivated with the current setpoint if an enable is issued before the drive has reached its stop speed.

If you stop the inverter with the "Enable/Stop" terminal, the drive decelerates with the rapid stop ramp. The inverter stores the I component of the controller.

With setpoint source RS485 or SBus, the inverter specifies the direction of rotation as follows: The terminal determines the setpoint direction of rotation if one of the two terminals CW or CCW is active. The value of the PO data item "PI CTRL %" acts as a setpoint for the PI-controller. If both terminals are active, the +/- sign of the PO data item "PI CTRL %" determines the setpoint direction of rotation. The value of the PO data item "PI CTRL %" acts as a setpoint for the PI-controller.

3.18 Application examples

All the following application examples assume that the unit has been started up correctly in accordance with Sec. "Startup".

External setpoint potentiometer

The external setpoint potentiometer is not in effect when manual mode is activated.

Parameter 121 *Addition Setpoint Potentiom.* on the operating panel must be set to ON.

Connect an external setpoint potentiometer as follows:

With dropping resistor

The resistance value of the external setpoint potentiometer R1 must be 10 kΩ. The dropping resistor R2 must have a resistance value of 12 kΩ.

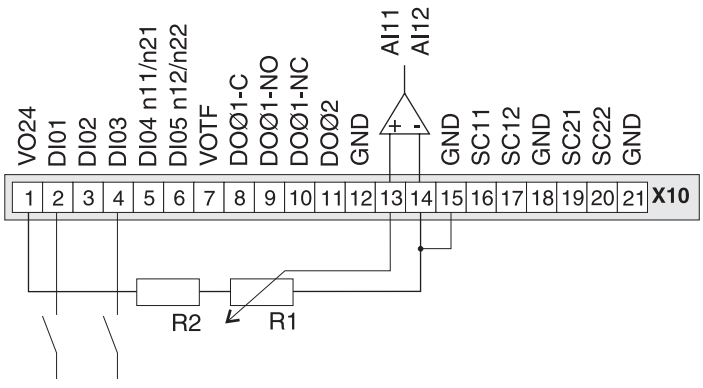

Figure 60: External setpoint potentiometer with DI01 = CW/STOP / DI02 = CCW/STOP / DI03 = Enable / DO02 = Brake

Without dropping resistor

The resistance value of the external setpoint potentiometer R1 must be approx. 47 kΩ. You are not allowed to connect a TF if the external setpoint potentiometer does not have a dropping resistor.

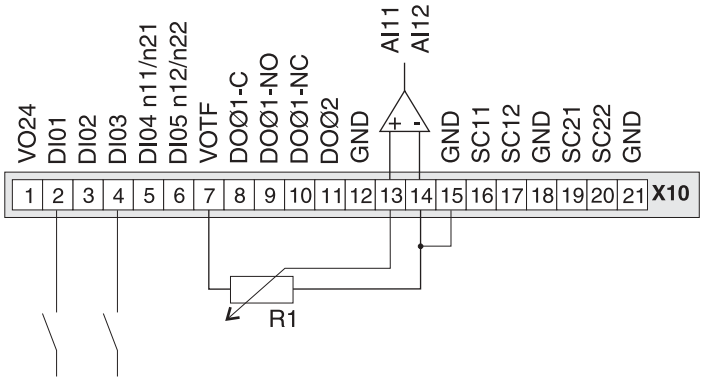

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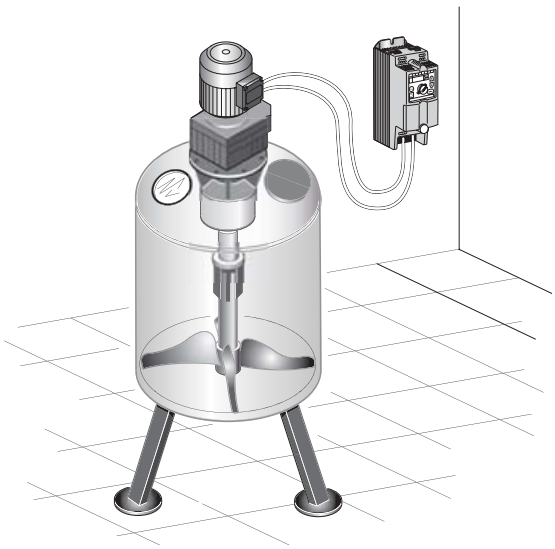
Figure 61: External setpoint potentiometer with DI01 = CW/STOP / DI02 = CCW/STOP / DI03 = Enable / DO02 = Brake

Speed-controlled agitator

In this application, you can control the speed with the potentiometer of the integrated operating panel.

Control the reset, start, stop and speed using the integrated operating panel. Select the ⌀ icon to operate the agitator (activation of the manual speed control module).



Parameters

Adapt the following parameters for the stirrer:

- Local Potentiometer Mode P122: Direction of rotation
- Ramp t11 UP (adjustment using the icon or parameter P130)
- Ramp t11 DOWN (adjustment using the icon or parameter P131)
- Minimum speed P301
- Maximum speed P302
- PWM frequency P860

Positioning of a trolley

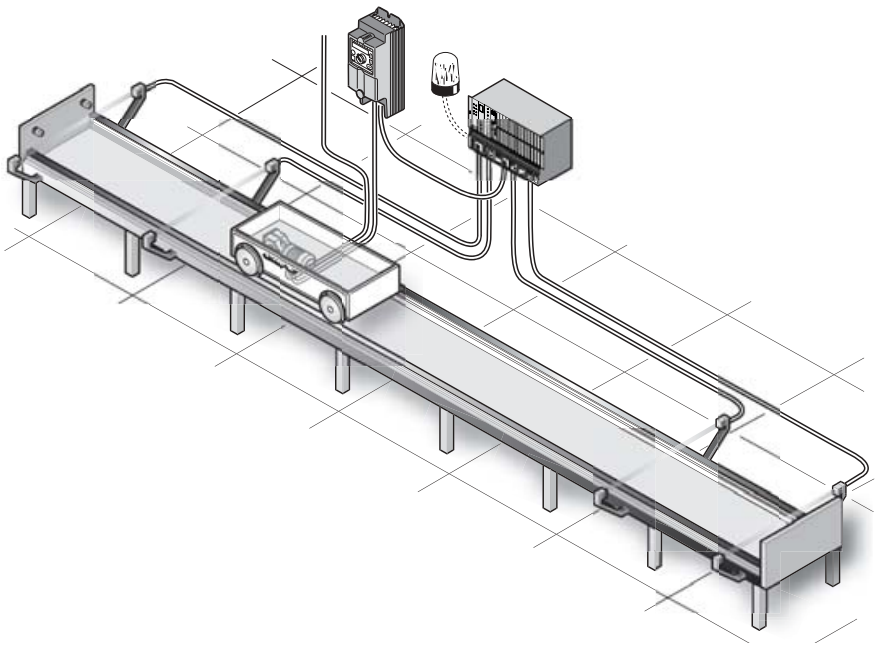
Principle

Positioning of a trolley with rapid traverse and crawl speed, position detection using proximity sensors.

You must guarantee the emergency off function using a separate safety circuit.

Install a braking resistor.

Perform startup for VFC mode.



Terminals

Rapid traverse: DI04 = 1 and DI05 = 1

Crawl speed: DI04 = 1 and DI05 = 0

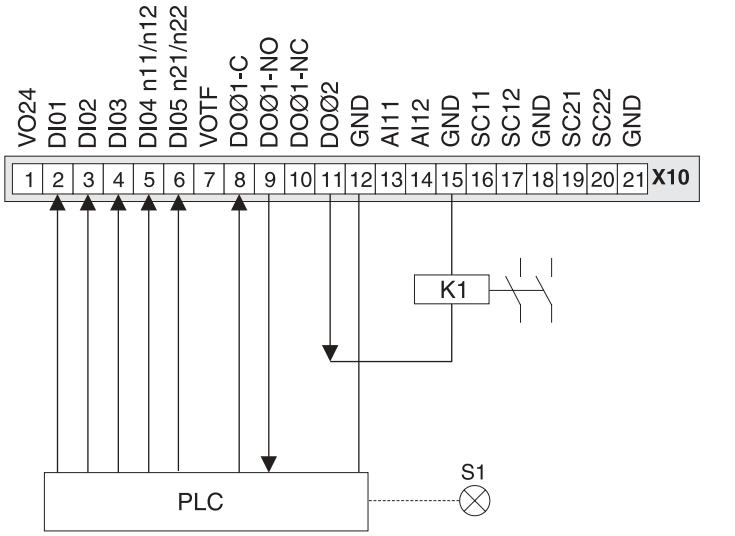


Figure 62: Wiring of electronics terminal strip with DI01 = CW/STOP/ DI02 = CCW/STOP / DI03 = Enable / DO01-C and DO01-NO = "Fault" / DO02 = Brake

K1 is the brake contactor, S1 the fault indicator lamp.

The following signals between the machine controller PLC and MOVITRAC® 07 are relevant:

- X10:2: CW direction of rotation
- X10:3: CCW direction of rotation
- X10:4: Start/stop
- X10:5: Rapid traverse
- X10:6: Crawl speed/rapid traverse
- X10:8: 24 V
- X10:9: No fault
- X10:11: Brake released

Parameters

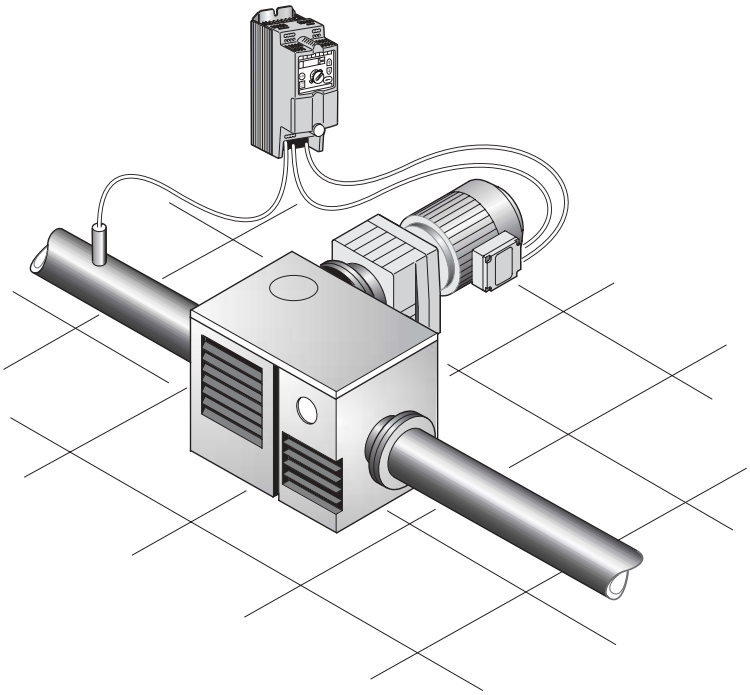
The following parameters are relevant for this application. Check whether you can adopt the factory setting values without changes.

- P130 Ramp t11 UP
- P131 Ramp t11 DOWN
- P136 Stop ramp t13
- P160 n11
- P162 n13
- P301 n_{min}
- P302 n_{max}
- P303 Current limit
- P320 Automatic adjustment: ON
- P323 Premagnetizing time
- P601 Binary input DI02: CCW/STOP
- P602 Binary input DI03: Enable
- P603 Binary input DI04: n11/n21
- P604 Binary input DI05: n12/n22
- P620 Binary output DO01: Fault
- P621 Binary output DO02: Brake released
- P736 Brake application time
- P820 4-quadrant operation: ON
- P830 Response EXT. FAULT: RAPID STOP/FAULT
- P860 PWM frequency

Pressure control

Principle

In this application, the inverter controls the water pressure in a piping system. The PI-controller implemented in MOVITRAC® 07 is used for this. P163 "n11 PI-controller internal setpoint" specifies the pressure setpoint.



Connection

Two indicator lamps, "Fault" and "Pressure reached"

Motor temperature monitored by TF

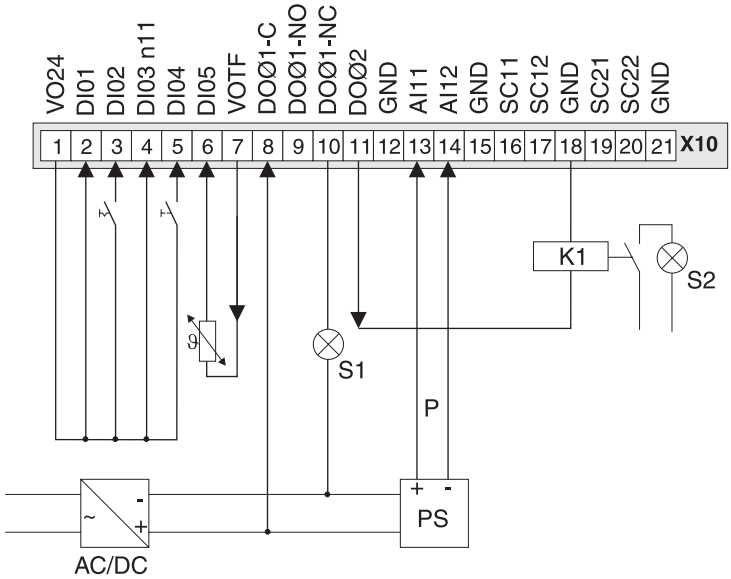


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Figure 63: Pressure control connection with DI01 = CCW/STOP / DI02 = Enable / DI04 = Fault reset / DI05 = TF fault / DO01-C and DO01-NO = "Fault" / DO02 = "Pressure reached"

Use the following signals and components for pressure control:

X10:2: Clockwise	S1: Fault
X10:3: Start/stop switch	S2: Pressure reached
X10:4: Set pressure	P: Actual pressure
X10:5: Reset button	PS: Pressure sensor
AC/DC: External power supply	

The pressure setpoint is set in the range 0 to 100 % using the n11 icon.

Use Reset and Enable for controlling the machine.

The controller must detect excess pressure in the piping system by means of an additional monitoring function and must respond by taking safety precautions.

Parameters

The following parameters are relevant for the aforementioned application. Check whether you can adopt the factory setting values without changes.

P163 n11 PI-controller internal setpoint	P450 PI actual value reference
P250 PI controller	P451 Signal = "1" if: PI actual value / PI reference
P251 P-gain speed controller	P601 Binary input DI02: Enable
P252 Time constant n-control.	P602 Binary input DI03: n11
P253 PI actual value mode	P603 Binary input DI04: Fault reset
P254 PI actual value scaling	P604 Binary input DI05: TF RESPONSE
P255 PI sensor offset	P620 Binary output DO01: Fault
P301 Minimum speed	P621 Binary output DO02: PI ACT.VALUE REF.
P302 Maximum speed	P830 Response EXT. FAULT: IMM. STOP/FAULT
P303 Current limit	P860 PWM frequency

PI-controller

This represents the basic structure of the control system with a PI-controller, taking the example of a pressure control system.

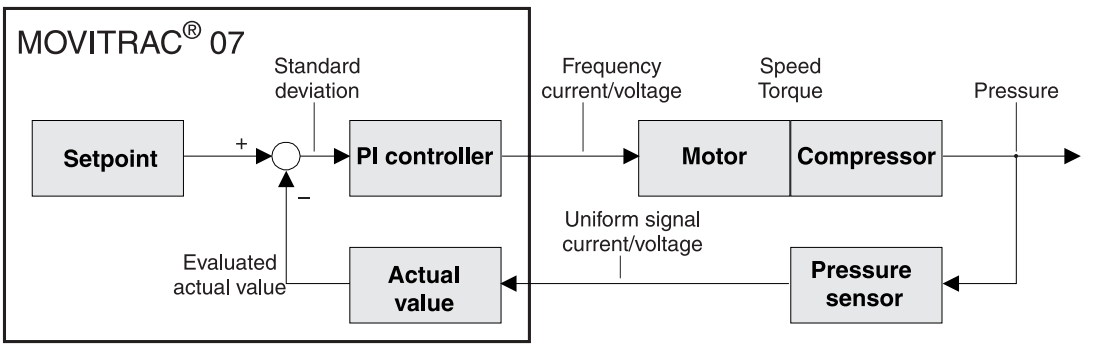

Figure 64: Use of the PI-controller

4 Change Index

The text has been completely revised. The layout was adapted. The following changes were implemented in the respective sections.

Technical Data

- Information on long-term storage.
- Overview of the different series.
- Assignment of dimension sheetes to data tables.
- Information on minimum permitted braking resistor.
- Information on air circulation.
- MWS21A has been deleted.
- MOVITOOLS® SCOPE has been added.
- Data for braking resistors in flat design are listed after the voltages and the ED values have been added.
- Dimensions for BW039-003 and BW039-006 have been added.
- Data for ND1503 have been added.
- Data for HF008-503 have been added.

Project Planning

- Motor cable length: Information on residual current protective device.
- Group drive: Expanded prerequisites.
- PI-controller actual value detection: Indication of bus parameters.

5 Index

Address list

Germany			
Headquarters **Production** **Sales** **Service**	**Bruchsal**	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 42 D-76646 Bruchsal P.O. Box Postfach 3023 · D-76642 Bruchsal	Tel. +49 7251 75-0 Fax +49 7251 75-1970 http://www.sew-eurodrive.de sew@sew-eurodrive.de Service Electronics: Tel. +49 171 7210791 Service Gear Units and Motors: Tel. +49 172 7601377
Production	**Graben**	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 1 D-76676 Graben-Neudorf P.O. Box Postfach 1220 · D-76671 Graben-Neudorf	Tel. +49 7251 75-0 Fax +49 7251 75-2970 Telex 7 822 276
Production	**Östringen**	SEW-EURODRIVE Östringen GmbH Dr.-Franz-Gurk-Straße 2 D-76684 Östringen P.O. Box Postfach 1174 · D-76677 Östringen	Tel. +49 7253 92540 Fax +49 7253 925490 oestringen@sew-eurodrive.de
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	Berlin	SEW-EURODRIVE GmbH & Co KG Lilienthalstraße 3a D-15732 Waltersdorf	Tel. +49 33762 2266-30 Fax +49 33762 2266-36 tb-berlin@sew-eurodrive.de
	Bodensee	SEW-EURODRIVE GmbH & Co KG Burgbergring 91 D-88662 Überlingen	Tel. +49 7551 9226-30 Fax +49 7551 9226-56 tb-bodensee@sew-eurodrive.de
	Bremen	SEW-EURODRIVE GmbH & Co KG Kohlhökerstr.48 D-28203 Bremen	Tel. +49 421 33918-0 Fax +49 421 33918-22 tb-bremen@sew-eurodrive.de
	Dortmund	SEW-EURODRIVE GmbH & Co KG Hildastraße 10 D-44145 Dortmund	Tel. +49 231 912050-10 Fax +49 231 912050-20 tb-dortmund@sew-eurodrive.de
	Dresden	SEW-EURODRIVE GmbH & Co KG Hauptstraße 32 D-01445 Radebeul	Tel. +49 351 26338-0 Fax +49 351 26338-38 tb-dresden@sew-eurodrive.de
	Erfurt	SEW-EURODRIVE GmbH & Co KG Blumenstraße 70 D-99092 Erfurt	Tel. +49 361 21709-70 Fax +49 361 21709-79 tb-erfurt@sew-eurodrive.de
	Güstrow	SEW-EURODRIVE GmbH & Co KG Thünenweg 19 D-18273 Güstrow P.O. Box Postfach 1216 · D-18262 Güstrow	Tel. +49 3843 8557-80 Fax +49 3843 8557-88 tb-guestrow@sew-eurodrive.de
	Hamburg	SEW-EURODRIVE GmbH & Co KG Wohldorfer Straße 5 D-22081 Hamburg P.O. Box Postfach 7610 07 · D-22060 Hamburg	Tel. +49 40 298109-60 Fax +49 40 298109-70 tb-hamburg@sew-eurodrive.de

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	Heilbronn	SEW-EURODRIVE GmbH & Co KG Zeppelinstraße 7 D-74357 Bönnigheim P.O. Box Postfach 68 · D-74355 Bönnigheim	Tel. +49 7143 8738-0 Fax +49 7143 8738-25 tb-heilbronn@sew-eurodrive.de
	Herford	SEW-EURODRIVE GmbH & Co KG Radewiger Straße 21 D-32052 Herford P.O. Box Postfach 4108 · D-32025 Herford	Tel. +49 5221 9141-0 Fax +49 5221 9141-20 tb-herford@sew-eurodrive.de
	Karlsruhe	SEW-EURODRIVE GmbH & Co KG Ettlinger Weg 2 D-76467 Bietigheim P.O. Box Postfach 43 · D-76463 Bietigheim	Tel. +49 7245 9190-10 Fax +49 7245 9190-20 tb-karlsruhe@sew-eurodrive.de
	Kassel	SEW-EURODRIVE GmbH & Co KG Waldauer Weg 80 D-34253 Lohfelden	Tel. +49 561 95144-80 Fax +49 561 95144-90 tb-kassel@sew-eurodrive.de
	Koblenz	SEW-EURODRIVE GmbH & Co KG Bahnstraße 17a D-56743 Mendig	Tel. +49 2652 9713-30 Fax +49 2652 9713-40 tb-koblenz@sew-eurodrive.de
	Lahr	SEW-EURODRIVE GmbH & Co KG Europastraße 3 D-77933 Lahr / Schwarzwald	Tel. +49 7821 90999-60 Fax +49 7821 90999-79 tb-lahr@sew-eurodrive.de
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	Mannheim	SEW-EURODRIVE GmbH & Co KG Radeberger Straße 2 D-68309 Mannheim	Tel. +49 621 71683-10 Fax +49 621 71683-22 tb-mannheim@sew-eurodrive.de
	München	SEW-EURODRIVE GmbH & Co KG Domagkstraße 5 D-85551 Kirchheim	Tel. +49 89 909551-10 Fax +49 89 909551-50 tb-muenchen@sew-eurodrive.de
	Münster	SEW-EURODRIVE GmbH & Co KG Von-Vincke-Straße 14 D-48143 Münster	Tel. +49 251 41475-11 Fax +49 251 41475-50 tb-muenster@sew-eurodrive.de
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	Rhein-Main	SEW-EURODRIVE GmbH & Co KG Niederstedter Weg 5 D-61348 Bad Homburg	Tel. +49 6172 9617-0 Fax +49 6172 9617-50 tb-rheinmain@sew-eurodrive.de
	Stuttgart	SEW-EURODRIVE GmbH & Co KG Friedrich-List-Straße 46 D-70771 Leinfelden-Echterdingen	Tel. +49 711 16072-0 Fax +49 711 16072-72 tb-stuttgart@sew-eurodrive.de
	Ulm	SEW-EURODRIVE GmbH & Co KG Dieselstraße 14 D-89160 Dornstadt	Tel. +49 7348 9885-0 Fax +49 7348 9885-90 tb-ulm@sew-eurodrive.de
	Würzburg	SEW-EURODRIVE GmbH & Co KG Werner-von-Siemens-Straße 55a D-97076 Würzburg-Lengfeld	Tel. +49 931 27886-60 Fax +49 931 27886-66 tb-wuerzburg@sew-eurodrive.de

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France			
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Assembly Sales Service	**Bordeaux**	SEW-USOCOME Parc d'activités de Magellan 62, avenue de Magellan - B. P. 182 F-33607 Pessac Cedex	Tel. +33 5 57 26 39 00 Fax +33 5 57 26 39 09
	Lyon	SEW-USOCOME Parc d'Affaires Roosevelt Rue Jacques Tati F-69120 Vaulx en Velin	Tel. +33 4 72 15 37 00 Fax +33 4 72 15 37 15
	Paris	SEW-USOCOME Zone industrielle 2, rue Denis Papin F-77390 Verneuil l'Etang	Tel. +33 1 64 42 40 80 Fax +33 1 64 42 40 88
Technical Offices	**Alsace Franche-Comté**	SEW-USOCOME 15, rue de Mambourg F-68240 Sigolsheim	Tel. +33 3 89 78 45 11 Fax +33 3 89 79 45 12
	Alsace Nord	SEW-USOCOME 32, rue Jeanne d'Arc F-67250 Surbourg	Tel. +33 3 88 54 74 44 Fax +33 3 88 80 47 62
	Aquitaine	SEW-USOCOME Parc d'activités de Magellan 62, avenue de Magellan B.P.182 F-33607 Pessac Cedex	Tel. +33 5 57 26 39 00 Fax +33 5 57 26 39 09
	Ardennes Lorraine	SEW-USOCOME 7, rue de Prény F-54000 Nancy	Tel. +33 3 83 96 28 04 Fax +33 3 83 96 28 07
	Bourgogne	SEW-USOCOME 10, rue de la Poste F-71350 St. Loup de la Salle	Tel. +33 3 85 49 92 18 Fax +33 3 85 49 92 19
	Bretagne Ouest	SEW-USOCOME 4, rue des Châtaigniers F-44830 Brains	Tel. +33 2 51 70 54 04 Fax +33 2 51 70 54 05
	Centre Pays de Loire	SEW-USOCOME 9, rue des Erables F-37540 Saint Cyr sur Loire	Tel. +33 2 47 41 33 23 Fax +33 2 47 41 34 03
	Centre Auvergne	SEW-USOCOME 17, boulevard de la liberté F-63200 Riom	Tel. +33 4 73 64 85 60 Fax +33 4 73 64 85 61
	Champagne	SEW-USOCOME 2, chemin des Suivots F-10120 Saint André les Vergers	Tel. +33 3 25 79 63 24 Fax +33 3 25 79 63 25
	Lyon Nord-Est	SEW-USOCOME Parc d'Affaires Roosevelt Rue Jacques Tati F-69120 Vaulx en Velin	Tel. +33 4 72 15 37 03 Fax +33 4 72 15 37 15
	Lyon Ouest	SEW-USOCOME Parc d'Affaires Roosevelt Rue Jacques Tati F-69120 Vaulx en Velin	Tel. +33 4 72 15 37 04 Fax +33 4 72 15 37 15
	Lyon Sud-Est	SEW-USOCOME 4, Montée du Pavé F-26750 Génissieux	Tel. +33 4 75 05 65 95 Fax +33 4 75 05 65 96
	Nord	SEW-USOCOME 348, rue du Calvaire F-59213 Bermerain Cidex 102	Tel. +33 3 27 27 07 88 Fax +33 3 27 27 24 41

France			
	Normandie	SEW-USOCOME Les Courtillages Hameau de Coupigny F-14370 Airan	Tel. +33 2 31 78 99 70 Fax +33 2 31 78 99 72
	Paris Est	SEW-USOCOME Résidence Le Bois de Grâce 2, allée des Souches Vertes F-77420 Champs sur Marne	Tel. +33 1 64 68 40 50 Fax +33 1 64 68 45 00
	Paris Ouest	SEW-USOCOME 1, rue Matisse F-78960 Voisins le Bretonneux	Tel. +33 1 30 64 46 33 Fax +33 1 30 57 54 86
	Paris Picardie	SEW-USOCOME 25 bis, rue Kléber F-92300 Levallois Perret	Tel. +33 1 41 05 92 74 Fax +33 1 41 05 92 75
	Paris Sud	SEW-USOCOME 6. chemin des Bergers Lieu-dit Marchais F-91410 Roinville sous Dourdan	Tel. +33 1 60 81 10 56 Fax +33 1 60 81 10 57
	Provence	SEW-USOCOME Résidence Les Hespérides Bât. B2 67, boulevard des Alpes F-13012 Marseille	Tel. +33 4 91 18 00 11 Fax +33 4 91 18 00 12
	Pyrénées	SEW-USOCOME 271, Lieu-dit Ninaut F-31190 Caujac	Tel. +33 5 61 08 15 85 Fax +33 5 61 08 16 44
	Sud-Atlantique	SEW-USOCOME 12, rue des Pinsons F-44120 Vertou	Tel. +33 2 40 80 32 23 Fax +33 2 40 80 32 13

Algeria			
Sales	**Alger**	Réducom 16, rue des Frères Zaghnoun Bellevue El-Harrach 16200 Alger	Tel. +213 21 8222-84 Fax +213 21 8222-84

Argentina			
Assembly **Sales** **Service**	**Buenos Aires**	SEW EURODRIVE ARGENTINA S.A. Centro Industrial Garin, Lote 35 Ruta Panamericana Km 37,5 1619 Garin	Tel. +54 3327 4572-84 Fax +54 3327 4572-21 sewar@sew-eurodrive.com.ar

Australia			
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	Sydney	SEW-EURODRIVE PTY. LTD. 9, Sleigh Place, Wetherill Park New South Wales, 2164	Tel. +61 2 9725-9900 Fax +61 2 9725-9905 enquires@sew-eurodrive.com.au
Technical Offices	**Adelaide**	SEW-EURODRIVE PTY. LTD. Unit 1/601 Anzac Highway Glenelg, S.A. 5045	Tel. +61 8 8294-8277 Fax +61 8 8294-2893 enquires@sew-eurodrive.com.au
	Perth	SEW-EURODRIVE PTY. LTD. 105 Robinson Avenue Belmont, W.A. 6104	Tel. +61 8 9478-2688 Fax +61 8 9277-7572 enquires@sew-eurodrive.com.au
	Brisbane	SEW-EURODRIVE PTY.LTD. 1 /34 Collinsvale St Rocklea, Queensland, 4106	Tel. +61 7 3272-7900 Fax +61 7 3272-7901 enquires@sew-eurodrive.com.au

Austria			
Assembly **Sales** **Service**	**Wien**	SEW-EURODRIVE Ges.m.b.H. Richard-Strauss-Strasse 24 A-1230 Wien	Tel. +43 1 617 55 00-0 Fax +43 1 617 55 00-30 http://sew-eurodrive.at sew@sew-eurodrive.at

Austria			
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	Graz	SEW-EURODRIVE Ges.m.b.H. Grabenstraße 231 A-8045 Graz	Tel. +43 316 685 756-0 Fax +43 316 685 755 sew@graz.sew-eurodrive.at
Bangladesh			
	Dhaka	Triangle Trade International Bldg-5, Road-2, Sec-3, Uttara Model Town Dhaka-1230 Bangladesh	Tel. +880 2 8912246 Fax +880 2 8913344
Belgium			
Assembly **Sales** **Service**	**Brüssel**	CARON-VECTOR S.A. Avenue Eiffel 5 B-1300 Wavre	Tel. +32 10 231-311 Fax +32 10 231-336 http://www.caron-vector.be info@caron-vector.be
Technical Office	**Vlaanderen**	CARON-VECTOR S.A. Industrieweg 112-114 B-9032 Gent (Wondelgem)	Tel. +32 92 273-452 Fax +32 92 274-155
Bolivia			
	La Paz	GRUPO LARCOS LTDA. Av. Jose Carrasco Not. 1398 Entre Hugo Estrada Y Av. Busch La Paz	Tel. +591 2 221808 Fax +591 2 220085 larcos@ceibo.entelnet.bo
Brazil			
Production **Sales** **Service**	**Sao Paulo**	SEW-EURODRIVE Brasil Ltda. Avenida Amâncio Gaiolli, 50 Caixa Postal: 201-07111-970 Guarulhos/SP - Cep.: 07251-250	Tel. +55 11 6489-9133 Fax +55 11 6480-3328 http://www.sew.com.br sew@sew.com.br
	Additional addresses for service in Brazil provided on request!		
Bulgaria			
Sales	**Sofia**	BEVER-DRIVE GMBH Bogdanovetz Str.1 BG-1606 Sofia	Tel. +359 (2) 9532565 Fax +359 (2) 9549345 bever@mbox.infotel.bg
Cameroon			
Sales	**Douala**	Electro-Services Rue Drouot Akwa B.P. 2024 Douala	Tel. +237 4322-99 Fax +237 4277-03
Canada			
Assembly **Sales** **Service**	**Toronto**	SEW-EURODRIVE CO. OF CANADA LTD. 210 Walker Drive Bramalea, Ontario L6T3W1	Tel. +1 905 791-1553 Fax +1 905 791-2999 http://www.sew-eurodrive.ca l.reynolds@sew-eurodrive.ca
	Vancouver	SEW-EURODRIVE CO. OF CANADA LTD. 7188 Honeyman Street Delta. B.C. V4G 1 E2	Tel. +1 604 946-5535 Fax +1 604 946-2513 b.wake@sew-eurodrive.ca
	Montreal	SEW-EURODRIVE CO. OF CANADA LTD. 2555 Rue Leger Street LaSalle, Quebec H8N 2V9	Tel. +1 514 367-1124 Fax +1 514 367-3677 a.peluso@sew-eurodrive.ca
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Chile			
Assembly **Sales** **Service**	**Santiago de Chile**	SEW-EURODRIVE CHILE LTDA. Las Encinas 1295 Parque Industrial Valle Grande LAMPA RCH-Santiago de Chile P.O. Box Casilla 23 Correo Quilicura - Santiago - Chile	Tel. +56 2 75770-00 Fax +56 2 75770-01 sewsales@entelchile.net

China			
Production **Assembly** **Sales** **Service**	**Tianjin**	SEW-EURODRIVE (Tianjin) Co., Ltd. No. 46, 7th Avenue, TEDA Tianjin 300457	Tel. +86 22 25322612 Fax +86 22 25322611 http://www.sew.com.cn
Assembly **Sales** **Service**	**Suzhou**	SEW-EURODRIVE (Suzhou) Co., Ltd. 333, Suhong Middle Road Suzhou Industrial Park Jiangsu Province, 215021 P. R. China	Tel. +86 512 62581781 Fax +86 512 62581783 suzhou@sew.com.cn
Technical Offices	**Beijing**	SEW-EURODRIVE (Tianjin) Co., LTD Room 1205/1206, Golden Corner Building, No. 129 Xuanwumen Xidajie, Xicheng District Beijing 100031	Tel. +86 10 66412026 Fax +86 10 66411017 beijing@sew.com.cn
	Chengdu	SEW-Eurodrive (Tianjin) Co. Ltd. Room 715, Sichuan International Building No. 206, Shun Cheng Avenue Chengdu 610015	Tel. +86 28 6521560 Fax +86 28 6521563 chengdu@sew.com.cn
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	Kunming	SEW-EURODRIVE (Tianjin) Co., Ltd Room 1401 Dong Yuan Business Building No. 464 Tuodong Road, Kunming Yunnan Province 650011	Tel. +86 871 3113677 Fax +86 871 3154454 kunming@sew.com.cn
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	Wuhan	SEW-Eurodrive (Tianjin) Co.Ltd. Room 911, Tai He Plaza Wusheng Road Wuhan 430033	Tel. +86 27 85712293 Fax +86 27 85712282 wuhan@sew.com.cn
	Xian	SEW-EURODRIVE (TIANJIN) Co., Ltd Rm 611, Fan Mei Building No. 1 Nan Guan Main Street Xian 710068, Shanxi Province	Tel. +86 29 7811327 Fax +86 29 7811327 xian@sew.com.cn

Colombia			
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Croatia			
Sales **Service**	**Zagreb**	KOMPEKS d. o. o. PIT Erdödy 4 II HR 10 000 Zagreb	Tel. +385 1 4613-158 Fax +385 1 4613-158 kompeks@net.hr

Czech Republic			
Sales	**Praha**	SEW-EURODRIVE CZ S.R.O. Business Centrum Praha Luná 591 CZ-16000 Praha 6 - Vokovice	Tel. +420 220121234 + 220121236 Fax +420 220121237 http://www.sew-eurodrive.cz sew@sew-eurodrive.cz
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	Hradec Kralove	SEW-EURODRIVE CZ S.R.O. Technicka Kancelar - vychodni Cechy Svermova CZ-53374 Horni Jeleni	Tel. +420 466673711 Fax +420 466673634
	Klatovy	SEW-EURODRIVE CZ S.R.O. Technical Office Klatovy Kollarova 528 CZ-33901 Klatovy 3	Tel. +420 376310729 Fax +420 376310725

Denmark			
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Technical Offices	**Aarhus**	SEW-EURODRIVEA/S Birkenhaven 45 DK-8520 Lystrup	Tel. +45 86 2283-44 Fax +45 86 2284-90
	Helsingør	SEW-EURODRIVEA/S Rømøvej 2 DK-3140 Ålsgårde	Tel. +45 49 7557-00 Fax +45 49 7558-00
	Odense	SEW-EURODRIVEA/S Lindelyvei 29, Nr. Søby DK-5792 Arslev	Tel. +45 65 9020-70 Fax +45 65 9023-09

Egypt			
	Cairo	Copam Egypt for Engineering & Agencies 33 El Hegaz ST, Heliopolis, Cairo	Tel. +20 2 2566-299 + 1 23143088 Fax +20 2 2594-757 copam@datum.com.eg

Estonia			
Sales	**Tallin**	ALAS-KUUL AS Paldiski mnt.125 EE 0006 Tallin	Tel. +372 6593230 Fax +372 6593231

Finland			
Assembly **Sales** **Service**	**Lahti**	SEW-EURODRIVE OY Vesimäentie 4 FIN-15860 Hollola 2	Tel. +358 3 589-300 Fax +358 3 7806-211 http://www.sew-eurodrive.fi sew@sew-eurodrive.fi
Technical Offices	**Helsinki**	SEW-EURODRIVE OY Luutnantinaukio 5C LT2 FIN-00410 Helsinki	Tel. +358 3 589-300 Fax + 358 9 5666-311
	Vaasa	SEW-EURODRIVE OY Kauppapuistikko 15 A FIN-65100 Vaasa	Tel. +358 3 589-300 Fax +358 6 3127-470

Gabon			
Sales	**Libreville**	Electro-Services B.P. 1889 Libreville	Tel. +241 7340-11 Fax +241 7340-12

Great Britain			
Assembly **Sales** **Service**	**Normanton**	SEW-EURODRIVE Ltd. Beckbridge Industrial Estate P.O. Box No.1 GB-Normanton, West- Yorkshire WF6 1QR	Tel. +44 1924 893-855 Fax +44 1924 893-702 http://www.sew-eurodrive.co.uk info@sew-eurodrive.co.uk
Technical Offices	**London**	SEW-EURODRIVE Ltd. 764 Finchely Road, Temple Fortune GB-London N.W.11 7TH	Tel. +44 20 8458-8949 Fax +44 20 8458-7417
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	Scotland	SEW-EURODRIVE Ltd. Scottish Office No 37 Enterprise House Springkerse Business Park GB-Stirling FK7 7UF Scotland	Tel. +44 17 8647-8730 Fax +44 17 8645-0223

Greece			
Sales **Service**	**Athen**	Christ. Boznos & Son S.A. 12, Mavromichali Street P.O. Box 80136, GR-18545 Piraeus	Tel. +30 2 1042 251-34 Fax +30 2 1042 251-59 http://www.boznos.gr Boznos@otenet.gr
Technical Office	**Thessaloniki**	Christ. Boznos & Son S.A. Maiandrou 15 562 24 Evosmos, Thessaloniki	Tel. +30 2 310 7054-00 Fax +30 2 310 7055-15

Hong Kong			
Assembly **Sales** **Service**	**Hong Kong**	SEW-EURODRIVE LTD. Unit No. 801-806, 8th Floor Hong Leong Industrial Complex No. 4, Wang Kwong Road Kowloon, Hong Kong	Tel. +852 2 7960477 + 79604654 Fax +852 2 7959129 sew@sewhk.com

Hungary			
Sales **Service**	**Budapest**	SEW-EURODRIVE Kft. H-1037 Budapest Kunigunda u. 18	Tel. +36 1 437 06-58 Fax +36 1 437 06-50 sew-eurodrive.voros@matarnet.hu

Iceland			
	Hafnarfirdi	VARMAVERK ehf Dalshrauni 5 IS - 220 Hafnarfirdi	Tel. +354 5 6517-50 Fax +354 5 6519-51 varmaverk@varmaverk.is

India			
Assembly **Sales** **Service**	**Baroda**	SEW-EURODRIVE India Pvt. Ltd. Plot No. 4, Gidc Por Ramangamdi · Baroda - 391 243 Gujarat	Tel. +91 265 2831021 Fax +91 265 2831087 sew.baroda@gecsl.com

India			
Technical Offices	**Bangalore**	SEW-EURODRIVE India Private Limited 308, Prestige Centre Point 7, Edward Road Bangalore	Tel. +91 80 22266565 Fax +91 80 22266569 sewbangalore@sify.com
	Calcutta	SEW EURODRIVE INDIA PVT. LTD. Juthika Apartment, Flat No. B1 11/1, Sunny Park Calcutta - 700 019	Tel. +91 33 24853920 Fax +91 33 24853826 sewcal@cal.vsnl.net.in
	Chennai	SEW-EURODRIVE India Private Limited 2nd Floor, Hariram Building 16, College Road Chennai - 600 006, Tamil Nadu	Tel. +91 44 28214471 Fax +91 44 28214473
	Mumbai	SEW-EURODRIVE India Private Limited 312 A, 3rd Floor, Acme Plaza Andheri Kurla Road, Andheri (E) Mumbai	Tel. +91 22 28348440 Fax +91 22 28217858 sewmumbai@vsnl.net
	New Delhi	SEW-EURODRIVE India Private Limited 303 Kirti Deep, 2-Nangal Raya Business Centre New Delhi 110 046	Tel. +91 11 25611566 Fax +91 11 25513494
	Pune	SEW-EURODRIVE India Private Limited 206, Metro House 7 Mangaldas Road Pune 411001, Maharashtra	Tel. +91 20 26111054 Fax +91 20 26132337 sewpun@pn2.vsnl.net.in

Indonesia			
Technical Office	**Jakarta**	SEW-EURODRIVE Pte Ltd. Jakarta Liaison Office, Menara Graha Kencana Jl. Perjuangan No. 88, LT 3 B, Kebun Jeruk, Jakarta 11530	Tel. +62 21 5359066 Fax +62 21 5363686

Ireland			
Sales **Service**	**Dublin**	Alperton Engineering Ltd. 48 Moyle Road Dublin Industrial Estate Glasnevin, Dublin 11	Tel. +353 1 830-6277 Fax +353 1 830-6458

Israel			
	Tel-Aviv	Liraz Handasa Ltd. Ahofer Str 34B / 228 58858 Holon	Tel. +972 3 5599511 Fax +972 3 5599512 lirazhandasa@barak-online.net

Italy			
Assembly **Sales** **Service**	**Milano**	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Via Bernini,14 I-20020 Solaro (Milano)	Tel. +39 2 96 9801 Fax +39 2 96 799781 sewit@sew-eurodrive.it

Italy			
Technical Offices	**Bologna**	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Via Emilia,172 I-40064 Ozzano dell'Emilia (Bo)	Tel. +39 51 796-660 Fax +39 51 796-595
	Caserta	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Viale Carlo III-Parco Matilde A I-81020 S. Nicola la Strada (Caserta)	Tel. +39 823 450611 Fax +39 823 421414
	Firenze	RIMA Via Einstein, 14 I-50013 Campi Bisenzio (Firenze)	Tel. +39 55 898 58-21 Fax +39 55 898 58-30
	Roma	Elettromec Via Castel Rosso, 10 I-00144 Roma	Tel. +39 6 592 45-30 Fax +39 6 592 45-30
	Torino	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Filiale Torino c.so Unione Sovietica 612/15 - int. C I-11035 Torino	Tel. +39 11 3473780 Fax +39 11 3473783
	Verona	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Via P. Sgulmero, 27/A I-37132 Verona	Tel. +39 45 97-7722 Fax +39 45 97-6079

Ivory Coast			
Sales	**Abidjan**	SICA Ste industrielle et commerciale pour l'Afrique 165, Bld de Marseille B.P. 2323, Abidjan 08	Tel. +225 2579-44 Fax +225 2584-36

Japan			
Assembly **Sales** **Service**	**Toyoda-cho**	SEW-EURODRIVE JAPAN CO., LTD 250-1, Shimoman-no, Toyoda-cho, Iwata gun Shizuoka prefecture, 438-0818	Tel. +81 538 373811 Fax +81 538 373814 sewjapan@sew-eurodrive.co.jp
Technical Offices	**Fukuoka**	SEW-EURODRIVE JAPAN CO., LTD. C-go, 5th-floor, Yakuin-Hiruzu-Bldg. 1-5-11, Yakuin, Chuo-ku Fukuoka, 810-0022	Tel. +81 92 713-6955 Fax +81 92 713-6860 sewkyushu@jasmine.ocn.ne.jp
	Osaka	SEW-EURODRIVE JAPAN CO., LTD. B-Space EIRAI Bldg., 3rd Floor 1-6-9 Kyoumachibori, Nishi-ku, Osaka, 550-0003	Tel. +81 6 6444--8330 Fax +81 6 6444--8338 sewosaka@crocus.ocn.ne.jp
	Tokyo	SEW-EURODRIVE JAPAN CO., LTD. Izumi-Bldg. 5 F 3-2-15 Misaki-cho Chiyoda-ku, Tokyo 101-0061	Tel. +81 3 3239-0469 Fax +81 3 3239-0943 sewtokyo@basil.ocn.ne.jp

Korea			
Assembly **Sales** **Service**	**Ansan-City**	SEW-EURODRIVE KOREA CO., LTD. B 601-4, Banweol Industrial Estate Unit 1048-4, Shingil-Dong Ansan 425-120	Tel. +82 31 492-8051 Fax +82 31 492-8056 master@sew-korea.co.kr
	Busan	SEW-EURODRIVE KOREA Co., Ltd. No. 1720 - 11, Songjeong - dong Gangseo-ku Busan 618-270	Tel. +82 51 832-0204 Fax +82 51 832-0230 master@sew-korea.co.kr

Korea			
Technical Offices	**Daegu**	SEW-EURODRIVE KOREA Co., Ltd. No.1108 Sungan officete l 87-36, Duryu 2-dong, Dalseo-ku Daegu 704-712	Tel. +82 53 650-7111 Fax +82 53 650-7112 sewdaegu@netsgo.com
	DaeJeon	SEW-EURODRIVE KOREA Co., Ltd. No. 2017, Hongin offictel 536-9, Bongmyung-dong, Yusung-ku Daejeon 305-301	Tel. +82 42 828-6461 Fax +82 42 828-6463 sewdaejeon@netsgo.com
	Kwangju	SEW-EURODRIVE KOREA Co., Ltd. 4fl., Shinhyun B/D 96-16 Unam-dong, Buk-ku Kwangju 500-170	Tel. +82 62 511-9172 Fax +82 62 511-9174 sewkwangju@netsgo.com
	Seoul	SEW-EURODRIVE KOREA Co., Ltd. No.1104 Sunkyung officetel 106-4 Kuro 6-dong, Kuro-ku Seoul 152-054	Tel. +82 2 862-8051 Fax +82 2 862-8199 sewseoul@netsgo.com

Lebanon			
Sales	**Beirut**	Gabriel Acar & Fils sarl B. P. 80484 Bourj Hammoud, Beirut	Tel. +961 1 4947-86 +961 1 4982-72 +961 3 2745-39 Fax +961 1 4949-71 gacar@beirut.com

Luxembourg			
Assembly **Sales** **Service**	**Brüssel**	CARON-VECTOR S.A. Avenue Eiffel 5 B-1300 Wavre	Tel. +32 10 231-311 Fax +32 10 231-336 http://www.caron-vector.be info@caron-vector.be

Macedonia			
Sales	**Skopje**	SGS-Skopje / Macedonia "Teodosij Sinactaski" 66 91000 Skopje / Macedonia	Tel. +389 2 385 466 Fax +389 2 384 390 sgs@mol.com.mk

Malaysia			
Assembly **Sales** **Service**	**Johore**	SEW-EURODRIVE SDN BHD No. 95, Jalan Seroja 39, Taman Johor Jaya 81000 Johor Bahru, Johor West Malaysia	Tel. +60 7 3549409 Fax +60 7 3541404 kchtan@pd.jaring.my
Technical Offices	**Kota Kinabalu**	SEW-EURODRIVE Sdn Bhd (Kota Kinabalu Branch) Lot No. 2,1st Floor, Inanam Baru Phase III, Miles 5.1 /2, Jalan Tuaran, Inanam 89350 Kota Kinabalu Sabah, Malaysia	Tel. +60 88 424792 Fax +60 88 424807
	Kuala Lumpur	SEW-EURODRIVE Sdn. Bhd. No. 2, Jalan Anggerik Mokara 31/46 Kota Kemuning Seksyen 31 40460 Shah Alam Selangor Darul Ehsan	Tel. +60 3 5229633 Fax +60 3 5229622 sewpjy@po.jaring.my
	Kuching	SEW-EURODRIVE Sdn. Bhd. Lot 268, Section 9 KTLD Lorong 9, Jalan Satok 93400 Kuching, Sarawak East Malaysia	Tel. +60 82 232380 Fax +60 82 242380
	Penang	SEW-EURODRIVE Sdn. Bhd. No. 38, Jalan Bawal Kimsar Garden 13700 Prai, Penang	Tel. +60 4 3999349 Fax +60 4 3999348 seweurodrive@po.jaring.my

Mexico			
	Tultitlan	SEW-EURODRIVE, Sales and Distribution, S.A.de C.V. Boulevard Tultitlan Oriente #2 "G" Bo. Santiaguito 54900Tultitlan, Estado de Mexico	Tel. +52 55 588829-76 Fax +52 55 588829-77 scmexico@seweurodrive.com.mx

Morocco			
Sales	**Casablanca**	S. R. M. Société de Réalisations Mécaniques 5, rue Emir Abdelkader 05 Casablanca	Tel. +212 2 6186-69 + 6186-70 + 6186-71 Fax +212 2 6215-88 srm@marocnet.net.ma

Netherlands			
Assembly **Sales** **Service**	**Rotterdam**	VECTOR Aandrijftechniek B.V. Industrieweg 175 NL-3044 AS Rotterdam Postbus 10085 NL-3004 AB Rotterdam	Tel. +31 10 4463-700 Fax +31 10 4155-552 http://www.vector.nu info@vector.nu

New Zealand			
Assembly **Sales** **Service**	**Auckland**	SEW-EURODRIVE NEW ZEALAND LTD. P.O. Box 58-428 82 Greenmount drive East Tamaki Auckland	Tel. +64 9 2745627 Fax +64 9 2740165 sales@sew-eurodrive.co.nz
	Christchurch	SEW-EURODRIVE NEW ZEALAND LTD. 10 Settlers Crescent, Ferrymead Christchurch	Tel. +64 3 384-6251 Fax +64 3 385-6455 sales@sew-eurodrive.co.nz
Technical Office	**Palmerston North**	SEW-EURODRIVE NEW ZEALAND LTD. C/-Grant Shearman, RD 5, Aronui Road Palmerston North	Tel. +64 6 355-2165 Fax +64 6 355-2316 sales@sew-eurodrive.co.nz

Norway			
Assembly **Sales** **Service**	**Moss**	SEW-EURODRIVE A/S Solgaard skog 71 N-1599 Moss	Tel. +47 69 241-020 Fax +47 69 241-040 sew@sew-eurodrive.no

Pakistan			
Technical Office	**Karachi**	SEW-EURODRIVE Pte. Ltd. Karachi Liaison Office A/3, 1st Floor, Central Commercial Area Sultan Ahmed Shah Road Block 7/8, K.C.H.S. Union Ltd., Karachi	Tel. +92 21 4529369 Fax +92 21 4547365 seweurodrive@cyber.net.pk

Paraguay			
	Asunción	EQUIS S. R. L. Avda. Madame Lynchy y Sucre Asunción	Tel. +595 21 6721-48 Fax +595 21 6721-50 equisa@uninet.com.py

Peru			
Assembly **Sales** **Service**	**Lima**	SEW DEL PERU MOTORES REDUCTORES S.A.C. Los Calderos # 120-124 Urbanizacion Industrial Vulcano, ATE, Lima	Tel. +51 1 3495280 Fax +51 1 3493002 sewperu@terra.com.pe

Philippines			
Technical Office	**Manila**	SEW-EURODRIVE Pte Ltd Manila Liaison Office Suite 110, Ground Floor Comfoods Building Senator Gil Puyat Avenue 1200 Makati City	Tel. +63 2 894275254 Fax +63 2 8942744 sewmla@i-next.net

Poland			
Assembly **Sales** **Service**	**Lodz**	SEW-EURODRIVE Polska Sp.z.o.o. ul. Techniczna 5 PL-92-518 Lodz	Tel. +48 42 67710-90 Fax +48 42 67710-99 http://www.sew-eurodrive.pl sew@sew-eurodrive.pl
Technical Office	**Katowice**	SEW-EURODRIVE Polska Sp.z.o.o. ul. Nad Jeziorem 87 PL-43-100 Tychy	Tel. +48 32 2175026 + 32 2175027 Fax +48 32 2277910
	Bydgoszcz	SEW-EURODRIVE Polska Sp.z.o.o. ul. Fordonska 246 PL-85-959 Bydgoszcz	Tel. +48 52 3606590 Fax +48 52 3606591
	Szczecinek	SEW-EURODRIVE Polska Sp.z.o.o. ul. Mickiewicza 2 pok. 36 PL-78-400 Szczecinek	Tel. +48 94 3728820 Fax +48 94 3728821

Portugal			
Assembly **Sales** **Service**	**Coimbra**	SEW-EURODRIVE, LDA. Apartado 15 P-3050-901 Mealhada	Tel. +351 231 20 9670 Fax +351 231 20 3685 http://www.sew-eurodrive.pt infosew@sew-eurodrive.pt
Technical Offices	**Lisboa**	Tertir Edificio Lisboa Gabinete 119 P-2615 Alverca do Ribatejo	Tel. +351 21 958-0198 Fax +351 21 958-0245 esc.lisboa@sew-eurodrive.pt
	Porto	AV. D. AFONSO HENRIQUES, 1196-9° Sala 909 - Edificio Acia P- 4450 Matosinhos	Tel. +351 22 935038-3 Fax +351 22 935038-4 MobilTel. +351 9 332559110 esc.porto@sew-eurodrive.pt

Romania			
Sales **Service**	**Bucuresti**	Sialco Trading SRL str. Madrid nr.4 71222 Bucuresti	Tel. +40 21 230-1328 Fax +40 21 230-7170 sialco@sialco.ro

Russia			
Sales	**St. Petersburg**	ZAO SEW-EURODRIVE P.O. Box 263 RUS-195220 St. Petersburg	Tel. +7 812 5357142 +812 5350430 Fax +7 812 5352287 sew@sew-eurodrive.ru
Technical Office	**Moskau**	ZAO SEW-EURODRIVE RUS-119180 Moskau	Tel. +7 95 9337090 Fax +7 95 9337094

Senegal			
Sales	**Dakar**	SENEMECA Mécanique Générale Km 8, Route de Rufisque B.P. 3251, Dakar	Tel. +221 849 47-70 Fax +221 849 47-71 senemeca@sentoo.sn

Singapore			
Assembly **Sales** **Service**	**Singapore**	SEW-EURODRIVE PTE. LTD. No 9, Tuas Drive 2 Jurong Industrial Estate Singapore 638644	Tel. +65 68621701 ... 1705 Fax +65 68612827 Telex 38 659 sales@sew-eurodrive.com.sg

Slovenia			
Sales **Service**	**Celje**	Pakman - Pogonska Tehnika d.o.o. UI. XIV. divizije 14 SLO – 3000 Celje	Tel. +386 3 490 83-20 Fax +386 3 490 83-21 pakman@siol.net

South Africa			
Assembly **Sales** **Service**	**Johannesburg**	SEW-EURODRIVE (PROPRIETARY) LIMITED Eurodrive House Cnr. Adcock Ingram and Aerodrome Roads Aeroton Ext. 2 Johannesburg 2013 P.O.Box 90004 Bertsham 2013	Tel. +27 11 248-7000 Fax +27 11 494-2311 ljansen@sew.co.za
	Capetown	SEW-EURODRIVE (PROPRIETARY) LIMITED Rainbow Park Cnr. Racecourse & Omuramba Road Montague Gardens Cape Town P.O.Box 36556 Chempet 7442 Cape Town	Tel. +27 21 552-9820 Fax +27 21 552-9830 Telex 576 062 dswanepoel@sew.co.za
	Durban	SEW-EURODRIVE (PROPRIETARY) LIMITED 2 Monaceo Place Pinetown Durban P.O. Box 10433, Ashwood 3605	Tel. +27 31 700-3451 Fax +27 31 700-3847 dtait@sew.co.za
	Nelspruit	SEW-EURODRIVE (PTY) LTD. 7 Christie Crescent Vintonia P.O.Box 1942 Nelspruit 1200	Tel. +27 13 752-8007 Fax +27 13 752-8008 robermeyer@sew.co.za
Technical Offices	**Port Elizabeth**	SEW-EURODRIVE PTY LTD. 5 b Linsay Road Neave Township 6000 Port Elizabeth	Tel. +27 41 453-0303 Fax +27 41 453-0305 dswanepoel@sew.co.za
	Richards Bay	SEW-EURODRIVE PTY LTD. 25 Eagle Industrial Park Alton Richards Bay P.O. Box 458 Richards Bay 3900	Tel. +27 35 797-3805 Fax +27 35 797-3819 dtait@sew.co.za

Spain			
Assembly **Sales** **Service**	**Bilbao**	SEW-EURODRIVE ESPAÑA, S.L. Parque Tecnológico, Edificio, 302 E-48170 Zamudio (Vizcaya)	Tel. +34 9 4431 84-70 Fax +34 9 4431 84-71 sew.spain@sew-eurodrive.es
Technical Offices	**Barcelona**	Delegación Barcelona Avenida Francesc Maciá 40-44 Oficina 3.1 E-08206 Sabadell (Barcelona)	Tel. +34 9 37 162200 Fax +34 9 37 233007
	Lugo	Delegación Noroeste Apartado, 1003 E-27080 Lugo	Tel. +34 6 3940 3348 Fax +34 9 8220 2934
	Madrid	Delegación Madrid Gran Via. 48-2° A-D E-28220 Majadahonda (Madrid)	Tel. +34 9 1634 2250 Fax +34 9 1634 0899

Sri Lanka			
	Colombo 4	SM International (Pte) Ltd 254, Galle Raod Colombo 4, Sri Lanka	Tel. +94 1 597949 Fax +94 1 582981

Sweden			
Assembly **Sales** **Service**	**Jönköping**	SEW-EURODRIVE AB Gnejsvägen 6-8 S-55303 Jönköping Box 3100 S-55003 Jönköping	Tel. +46 36 3442-00 Fax +46 36 3442-80 http://www.sew-eurodrive.se info@sew-eurodrive.se

Sweden			
Technical Offices	**Göteborg**	SEW-EURODRIVE AB Gustaf Werners gata 8 S-42131 Västra Frölunda	Tel. +46 31 70968-80 Fax +46 31 70968-93
	Malmö	SEW-EURODRIVE AB Borrgatan 5 S-21124 Malmö	Tel. +46 40 68064-80 Fax +46 40 68064-93
	Stockholm	SEW-EURODRIVE AB Björkholmsvägen 10 S-14125 Huddinge	Tel. +46 8 44986-80 Fax +46 8 44986-93
	Skellefteå	SEW-EURODRIVE AB Trädgårdsgatan 8 S-93131 Skellefteå	Tel. +46 910 7153-80 Fax +46 910 7153-93

Switzerland			
Assembly **Sales** **Service**	**Basel**	Alfred Imhof A.G. Jurastrasse 10 CH-4142 Münchenstein bei Basel	Tel. +41 61 41717-17 Fax +41 61 41717-00 http://www.imhof-sew.ch info@imhof-sew.ch
Technical Offices	**Suisse romande**	André Gerber Es Perreyres 1436 Chamblon	Tel. +41 2 444538-50 Fax +41 2 444548-87
	Bern	Rudolf Bühler Allerheiligenstraße 97d 2540 Grenchen	Tel. +41 3 265223-39 Fax +41 3 265223-31
	Luzern	Beat Lütolf Baumacher 11 6244 Nebikon	Tel. +41 6 275647-80 Fax +41 6 275647-86
	Zürich	René Rothenbühler Nörgelbach 7 8493 Saland	Tel. +41 5 238631-50 Fax +41 5 238632-13

Taiwan (R.O.C.)			
	Nan Tou	Ting Shou Trading Co., Ltd. No. 55 Kung Yeh N. Road Industrial District Nan Tou 540	Tel. +886 49 255353 Fax +886 49 257878
	Taipei	Ting Shou Trading Co., Ltd. 6F-3, No. 267, Sec. 2 Tung Hwa South Road, Taipei	Tel. +886 2 27383535 Fax +886 2 27368268 Telex 27 245 nestnet@ms6.hinet.net

Thailand			
Assembly **Sales** **Service**	**Chon Buri**	SEW-EURODRIVE (Thailand) Ltd. Bangpakong Industrial Park 2 700/456, Moo.7, Tambol Donhuaroh Muang District Chon Buri 20000	Tel. +66 38 454281 Fax +66 38 454288 sewthailand@sew-eurodrive.co.th
Technical Offices	**Bangkok**	SEW-EURODRIVE PTE LTD Bangkok Liaison Office 6th floor, TPS Building 1023, Phattanakarn Road Klongtan, Phrakanong, Bangkok,10110	Tel. +66 2 7178149 Fax +66 2 7178152 sewthailand@sew-eurodrive.co.th
	Hadyai	SEW-EURODRIVE (Thailand) Ltd. Hadyai Country Home Condominium 59/101 Soi.17/1 Rachas-Utid Road. Hadyai, Songkhla 90110	Tel. +66 74 359441 Fax +66 74 359442 sewhdy@ksc.th.com
	Khonkaen	SEW-EURODRIVE (Thailand) Ltd. 4th Floor, Kaow-U-HA MOTOR Bldg, 359/2, Mitraphab Road. Muang District Khonkaen 40000	Tel. +66 43 225745 Fax +66 43 324871 sewkk@cscoms.com
	Lampang	SEW-EURODRIVE (Thailand) Ltd. 264 Chatchai Road, sob-tuy, Muang, Lampang 52100	Tel. +66 54 310241 Fax +66 54 310242 sewthailand@sew-eurodrive.co.th

Tunisia			
Sales	**Tunis**	T. M.S. Technic Marketing Service 7, rue Ibn El Heithem Z.I. SMMT 2014 Mégrine Erriadh	Tel. +216 1 4340-64 + 1 4320-29 Fax +216 1 4329-76

Turkey			
Assembly **Sales** **Service**	**Istanbul**	SEW-EURODRIVE Hareket Sistemleri Sirketi Bagdat Cad. Koruma Cikmazi No. 3 TR-81540 Maltepe ISTANBUL	Tel. +90 216 4419163 + 216 4419164 + 216 3838014 Fax +90 216 3055867 sew@sew-eurodrive.com.tr
Technical Offices	**Ankara**	SEW-EURODRIVE Hareket Sistemleri Ticaret Ltd. Sirketi Özcelik Is Merkezi, 14. Sok, No. 4/42 TR-06370 Ostim/Ankara	Tel. +90 312 2868014 Fax +90 312 2868015
	Izmir	SEW-EURODRIVE Hareket Sistemleri Ticaret Ltd. Sirketi 1203/11 Sok. No. 4/613 Hasan Atli Is Merkezi TR-35110 Yenisehir-Izmir	Tel. +90 232 4696264 Fax +90 232 4336105

Uruguay			
	Montevideo	SEW-EURODRIVE Argentina S. A. Sucursal Uruguay German Barbato 1526 CP 11200 Montevideo	Tel. +598 2 90181-89 Fax +598 2 90181-88 sewuy@sew-eurodrive.com.uy

USA			
Production **Assembly** **Sales** **Service**	**Greenville**	SEW-EURODRIVE INC. 1295 Old Spartanburg Highway P.O. Box 518 Lyman, S.C. 29365	Tel. +1 864 439-7537 Fax Sales +1 864 439-7830 Fax Manuf. +1 864 439-9948 Fax Ass. +1 864 439-0566 Telex 805 550 http://www.seweurodrive.com cslyman@seweurodrive.com
Assembly **Sales** **Service**	**San Francisco**	SEW-EURODRIVE INC. 30599 San Antonio St. Hayward, California 94544-7101	Tel. +1 510 487-3560 Fax +1 510 487-6381 cshayward@seweurodrive.com
	Philadelphia/PA	SEW-EURODRIVE INC. Pureland Ind. Complex 2107 High Hill Road, P.O. Box 481 Bridgeport, New Jersey 08014	Tel. +1 856 467-2277 Fax +1 856 467-3792 csbridgeport@seweurodrive.com
	Dayton	SEW-EURODRIVE INC. 2001 West Main Street Troy, Ohio 45373	Tel. +1 937 335-0036 Fax +1 937 440-3799 cstroy@seweurodrive.com
	Dallas	SEW-EURODRIVE INC. 3950 Platinum Way Dallas, Texas 75237	Tel. +1 214 330-4824 Fax +1 214 330-4724 csdallas@seweurodrive.com
	Additional addresses for service in the USA provided on request!		

Venezuela			
Assembly **Sales** **Service**	**Valencia**	SEW-EURODRIVE Venezuela S.A. Av. Norte Sur No. 3, Galpon 84-319 Zona Industrial Municipal Norte Valencia, Estado Carabobo	Tel. +58 241 832-9804 Fax +58 241 838-6275 sewventas@cantv.net sewfinanzas@cantv.net

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