

Product Range Catalogue 2009

Rapid Link Switching and Installation System



Rapid Link Switching and Installation System		Page
	The Rapid Link series	3
	System overview	4
	Motor Starters	5
	Speed Control Units	7
	Incoming circuit-breaker, interface	8
	Accessories	9
	Technical Data	14
	Dimensions	18

The Rapid Link system is designed for use in small and large plants for materials handling applications, particularly for distribution and production logistics as well as baggage handling systems in airports. Rapid Link offers all the functions required in IP65 for remotely controlling, switching and protecting spatially distributed drives via PROFIBUS-DP and AS-Interface networks.

Rapid Link is quick to install and easy to commission – around 50 drives per day are normally possible. The modular Rapid Link system comprises different functionally tested and prefabricated units.



System features

- Fast installation and simple commissioning
- Mounting near the drive
- Manual device operation in the field
- Diagnostics and status messages in the field
- Phase reversal switch
- Safe isolation between power and data bus
- EMC design
- Compatible with all drives and motors
- Few spare parts

System overview

Interface control unit

- Interface to open field bus.
- Fast data transfer of up to 12 MBaud as PROFIBUS-DP-Slave.
- Head end for up to 62 slaves, can be ideally combined with the commonly available sensors and actuators of different manufacturers.
- IP65 plug connector for rapid connection and exchange.

Disconnect control unit

- Isolation of the power line.
- Lockable with 3 padlocks.
- Protection against short-circuit and overload
- Small tripping currents enable long cable lengths.
- Remote status display for rapid diagnostics in the field.

Motor control unit

- 3-phase electronic motor protection with range from 0.09 to 3 kW (400 V) reduces the number of variants required.
- Integrated thermistor monitoring for full motor protection.
- Available as DOL or reversing starter.
- Manual operation enables commissioning without PLC..
- Two integrated sensor inputs reduce costs.
- Interlocked manual mode ensures safety.
- IP65 plug connector for rapid connection and exchange.

Speed control unit

- Actuation of motors up to 2.2 kW at 400 V with up to 4 fixed speeds and 2 operating directions.
- The soft start reduces mechanical wear and offers the maximum torque.
- Speeds, acceleration and deceleration times can be set as required and are infinitely variable.
- Manual operation and the speed potentiometer enable commissioning to be carried out without a PLC.
- Sensorless vector control with high starting torque (RA-SPV).
- Integrated brake chopper with braking resistance for dynamic braking (RA-SPV).
- Thermistor protection, overload and earth fault monitoring ensure safety.
- IP65 plug connector for rapid connection and exchange.

Notes

The Rapid Link system must not be commissioned without referring to the manual AWB2190-1430.

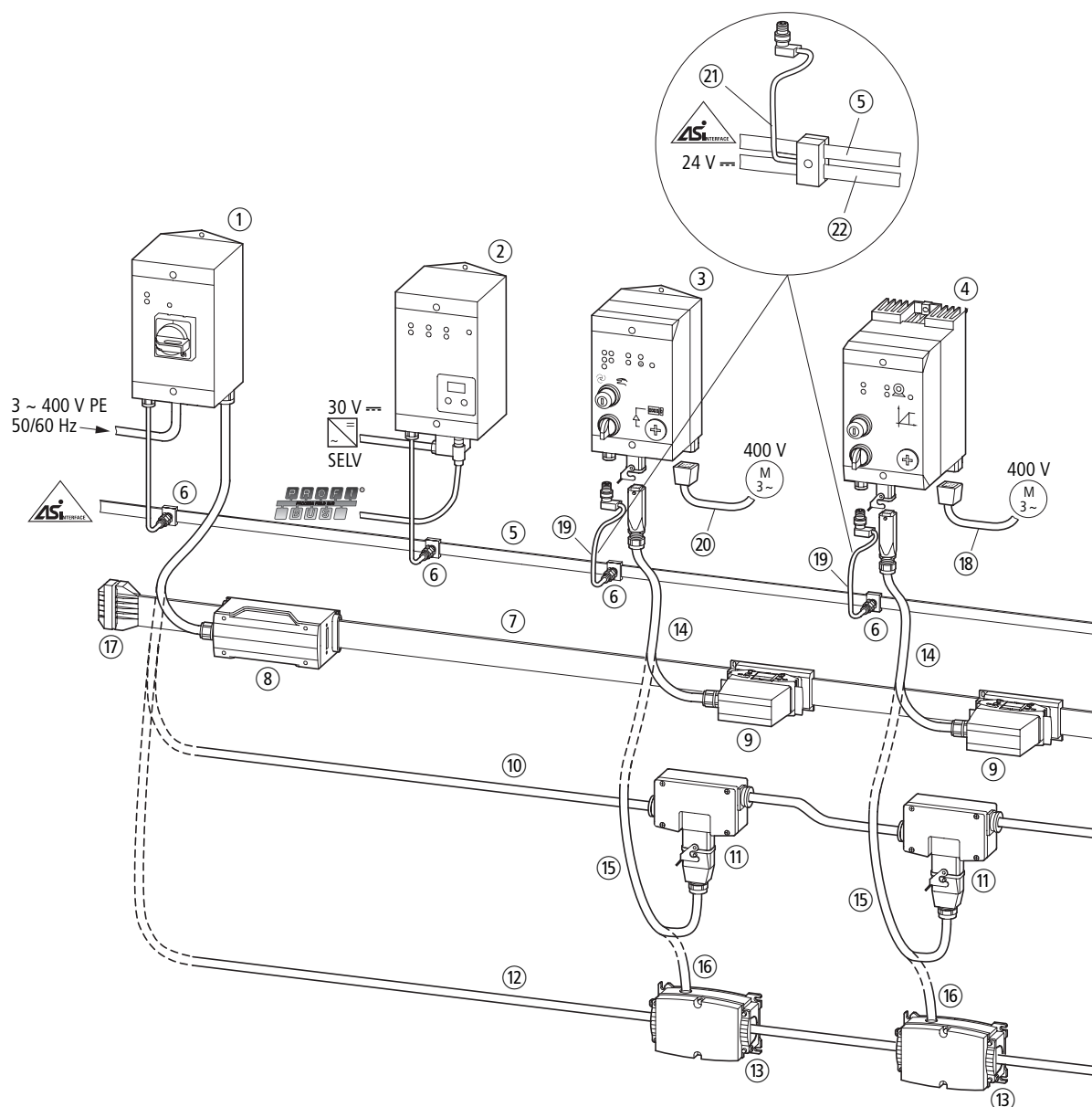
This manual is available online at

ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/h1430gb.pdf

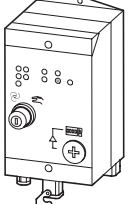
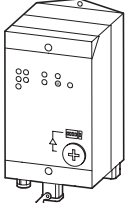
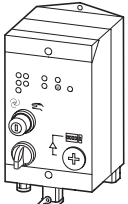
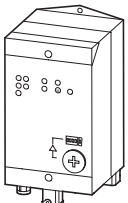
Product information

Manuals

- Rapid Link Switching and Installation System → AWB2190-1430GB
- DF5 Frequency Inverters → AWB8230-1412GB
- DF5 Frequency Inverter Training Guide → AWB8230-1447GB
- DV5 frequency inverters → AWB8230-1414GB
- Vector Frequency Inverter Training Guide DV5 → AWB8230-1448B
- AS-Interface/PROFIBUS Gateways → AWB2700-1409GB

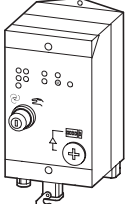
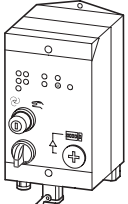
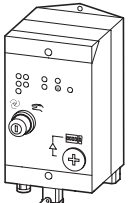
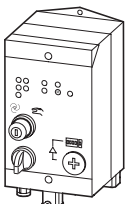


- ① Disconnect control unit with lockable rotary handle; circuit-breaker to protect from overload and short-circuits: → Page 8
- ② Interface control unit → interface to the open field bus: → Page 8
- ③ Motor control unit → 3-phase electronic motor protection with additional use as DOL starter or reversing starter: → Page 5
- ④ Speed control unit → Actuation of three-phase asynchronous motors with four fixed speeds, bidirectional operation and soft starting: → Page 7
- ⑤ AS-Interface®-ribbon cable
- ⑥ Link for M12 connector cables: → Page 13
- ⑦ Ribbon cable for 400 V ~ and 24 V or AS-Interface: → Page 11
- ⑧ Incoming supply for ribbon cable: → Page 11
- ⑨ Flexible busbar junction: → Page 11
- ⑩ Round cable for 400 V ~ and 24 V
- ⑪ Plug-in link for round cable (7 pole): → Page 12
- ⑫ Round cable for 400 V
- ⑬ Plug-in link for round cable (5 pole): → Page 12
- ⑭ Power adapter cable to ribbon cable: → Page 10
- ⑮ Power adapter cable to round cable (7 pole): → Page 10
- ⑯ Power adapter cable to round cable (5 pole): → Page 12
- ⑰ Ribbon cable end-piece: → Page 11
- ⑱ Motor cable (shielded): → Page 10
- ⑲ M12 Extension cable: → Page 13
- ⑳ Motor cable (unshielded): → Page 9
- ㉑ M12 double branch: → Page 13
- ㉒ External auxiliary voltage 24 V DC

	External I/Os via M12 socket Number	Brake control voltage V AC	Part no. Article no.	Price see price list	Std. pack
Motor control unit • Motor starters with electronic motor protection from 0.09 to 3 kW/400 V AC • Integrated PTC thermistor monitoring (Thermoclick) with safe isolation. • 2 external inputs up to 150 mA via M12 socket with quick stop and interlocked manual mode. • All terminals pluggable. • Connection via adapter cable to round cable or flexible busbar junction. • 24 V DC auxiliary circuit only required for devices with external 24 V output. • Optionally one external 24 V output via M12 socket. • Actuation of brake motors. • AS-Interface Slave Spec. 2.1 for 62 stations. • Diagnostics and reset on device and via AS-Interface.					
Operation without auxiliary circuit					
	DOL starter with keyswitch AUTO - OFF/RESET - MANUAL	2/-	400	RA-MO-D/C3A 113881	1 off
	DOL starter with keyswitch AUTO - OFF/RESET - MANUAL	2/-	230	RA-MO-D(230)/C3A 122063	
	DOL starter without manual operation and without thermistor monitoring	2/-	400	RA-MOL-D/C3A 116856	
	Reversing starter with keyswitch AUTO - OFF/RESET - MANUAL and selector switch REV - OFF - FWD	2/-	400	RA-MO-W/C3A 113883	
	Reversing starter with keyswitch AUTO - OFF/RESET - MANUAL and selector switch REV - OFF - FWD	2/-	230	RA-MO-W(230)/C3A 122064	
	Reversing starter without manual operation and without thermistor monitoring	2/-	400	RA-MOL-W/C3A 116857	

Notes

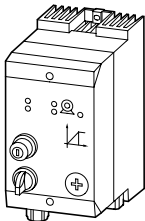
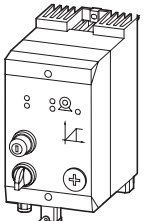
- Equipment supplied:
- Motor feeder socket to DESINA Standard
 - With AS-Interface/M12 plug on the unit
 - With power plug on the unit

		External I/Os via M12 socket Number	Brake control voltage V AC	Part no. Article no.	Price see price list	Std. pack
Operation without 24 V DC auxiliary circuit						
	DOL starter with keyswitch AUTO - OFF/RESET - MANUAL	2/1	400	RA-MO-DA/C3A 113882		1 off
	Reversing starter with keyswitch AUTO - OFF/RESET - MANUAL and selector switch REV - OFF - FWD	2/1	400	RA-MO-WA/C3A 113884		
	DOL starter with keyswitch AUTO - OFF/RESET - MANUAL	2/-	400	RA-MO24V-D/C3A 113885		
	Reversing starter with keyswitch AUTO - OFF/RESET - MANUAL and selector switch REV - OFF - FWD	2/-	400	RA-MO24V-W/C3A 113886		

Notes

Equipment supplied:

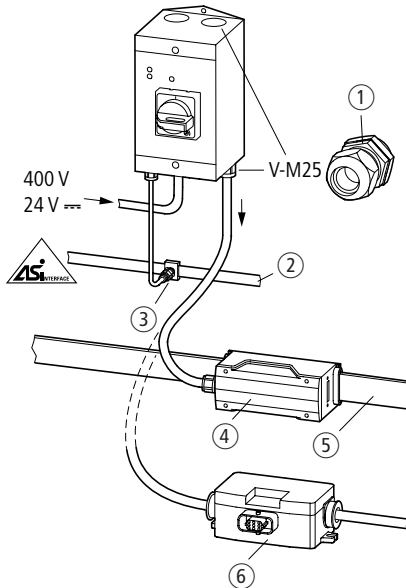
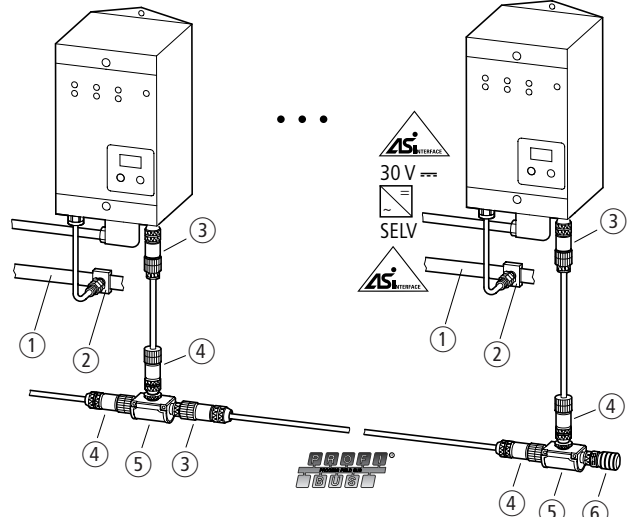
- Motor feeder socket to DESINA Standard
- With AS-Interface/M12 plug on the unit
- With power plug on the unit

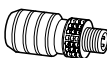
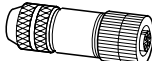
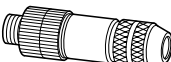
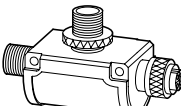
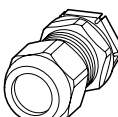
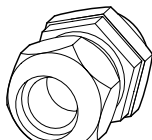
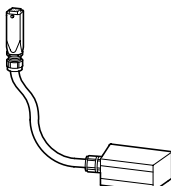
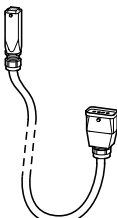
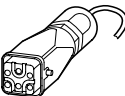
	Max. rated operation- al current I_e A	Assigned motor rating P kW	Brake control voltage V AC	UL/CSA HP at 480 V AC	Part no. Article no.	Price see price list	Std. pack
 Speed control unit - Speed control unit for controlling motors rated from 0.37 to 2.2 kW/400 V AC 3 fixed speeds and 1 potentiometer speed - Integrated PTC thermistor monitoring (Thermoclick) with safe isolation. - Optional control of brake motors - AS-Interface-Slave-Spec. 2.1 for 31 stations - Connection via adapter cable on round or flat cable junction - With AUTO – OFF/RESET – HAND key-switches and REV – OFF – FWD selector switches							
2 external inputs up to 70 mA via M12 sockets - Diagnostics and reset on the device	2.5	0.75	–	1	RA-SP2-342-075/C3A 290405		1 off
	2.5	0.75	400	–	RA-SP2-343-075/C3A 290406		
	2.5	0.75	230	1	RA-SP2-343(230)-075/C3A 290407		
	2.8	1.1	–	1	RA-SP2-342-1K1/C3A 290408		
	2.8	1.1	400	–	RA-SP2-343-1K1/C3A 290409		
	2.8	1.1	230	1	RA-SP2-343(230)-1K1/C3A 290410		
	5	2.2	–	3	RA-SP2-342-2K2/C3A 290411		
	5	2.2	400	–	RA-SP2-343-2K2/C3A 290412		
	5	2.2	230	3	RA-SP2-343(230)-2K2/C3A 290413		
2 external inputs up to 70 mA via M12 sockets - With quick stop and interlocked manual mode - With 2 additional inputs for creep speed - Power supply for the sensor inputs: total 150 mA - Diagnostics and reset on device and via AS-Interface - Selectable: with quick stop on failure of the external 24 V (Stop category 1 to EN60204-1)	2.5	0.75	–	1	RA-SP2-HE-342-075/C3A 290414		1 off
	2.5	0.75	400	–	RA-SP2-HE-343-075/C3A 290415		
	2.5	0.75	230	1	RA-SP2-HE-343(230)-075/C3A 290416		
	2.8	1.1	–	1	RA-SP2-HE-342-1K1/C3A 290417		
	2.8	1.1	400	–	RA-SP2-HE-343-1K1/C3A 290418		
	2.8	1.1	230	1	RA-SP2-HE-343(230)-1K1/C3A 290419		
	5	2.2	–	3	RA-SP2-HE-342-2K2/C3A 290420		
	5	2.2	400	–	RA-SP2-HE-343-2K2/C3A 290344		
	5	2.2	230	3	RA-SP2-HE-343(230)-2K2/C3A 290343		
Sensorless vector control							
 - Sensorless vector control with high starting torque - Integrated brake chopper with braking resistance for dynamic braking 2 external inputs up to 150 mA via M12 sockets - With quick stop and interlocked manual mode - With 2 additional inputs for creep speed - Diagnostics and reset on device and via AS-Interface - Selectable: with quick stop on failure of the external 24 V (Stop category 1 to EN60204-1)	2.5	0.75	400	1	RA-SPV-HE-343-075/C3A 105014	New	1 off
	2.5	0.75	230	1	RA-SPV-HE-343(230)-075/C3A 106496	New	
	2.8	1.1	400	1	RA-SPV-HE-343-1K1/C3A 105015	New	
	2.8	1.1	230	1	RA-SPV-HE-343(230)-1K1/C3A 106497	New	
	5	2.2	400	3	RA-SPV-HE-343-2K2/C3A 290345	New	
	5	2.2	230	3	RA-SPV-HE-343(230)-2K2/C3A 290341	New	

Notes

Equipment supplied:

- Motor feeder socket to DESINA Standard
- With AS-Interface/M 12 plug on the unit
- With power plug on the unit

	Part no. Article no.	Price see price list	Std. pack	Notes														
Disconnect control unit The disconnect control unit is the feeder for the decentralised power supply. • 24 V DC control circuit • Main switch with lockable rotary handle • Group protective device up to 25 A/400 V AC • AS-Interface Slave Spec. 2.1 for 31 stations	RA-DI2-PKZ2 254676		1 off	 <table><tr><th>Accessories</th><th>Page</th></tr><tr><td>1 Cable gland</td><td>→ 9</td></tr><tr><td>2 AS-Interface flat cable</td><td>→ 13</td></tr><tr><td>3 M12 branch</td><td>→ 13</td></tr><tr><td>4 Flexible busbar feeder or distributor module</td><td>→ 11</td></tr><tr><td>5 Flexible busbar</td><td>→ 11</td></tr><tr><td>6 Round cable junction</td><td>→ 12</td></tr></table>	Accessories	Page	1 Cable gland	→ 9	2 AS-Interface flat cable	→ 13	3 M12 branch	→ 13	4 Flexible busbar feeder or distributor module	→ 11	5 Flexible busbar	→ 11	6 Round cable junction	→ 12
Accessories	Page																	
1 Cable gland	→ 9																	
2 AS-Interface flat cable	→ 13																	
3 M12 branch	→ 13																	
4 Flexible busbar feeder or distributor module	→ 11																	
5 Flexible busbar	→ 11																	
6 Round cable junction	→ 12																	
Notes	Supplied: • With AS-Interface supply cable, approx. 0.5 m incl. M12 plug • M20/M25 knockout plate for glands • 4 pin-end connectors for connecting 4 mm² and 6 mm² cross-sections to NHI11 standard auxiliary contact																	
Interface control unit The interface control unit is supplied via an external 30 V DC AS-Interface power supply unit. The integrated data decoupling allows several interface control units to be supplied with only one power supply unit. The power supply unit and the PROFIBUS-DP cabling must be ordered separately (e.g. from German suppliers Turck). • Interface to the open fieldbus incl. power extender • Up to 62 slaves per AS-Interface line, up to 2.8 A • Integrated data decoupling with power extender	RA-IN2.1-DP 254672		1 off	 <table><tr><th>Accessories</th><th>Page</th></tr><tr><td>1 AS-Interface flat cable</td><td>→ 13</td></tr><tr><td>2 M12 branch</td><td>→ 13</td></tr><tr><td>3 M12 plug connector, plug</td><td>→ 9</td></tr><tr><td>4 M12 plug connector, coupling</td><td>→ 9</td></tr><tr><td>5 M12 T connector</td><td>→ 9</td></tr><tr><td>6 M12 terminating resistor</td><td>→ 9</td></tr></table>	Accessories	Page	1 AS-Interface flat cable	→ 13	2 M12 branch	→ 13	3 M12 plug connector, plug	→ 9	4 M12 plug connector, coupling	→ 9	5 M12 T connector	→ 9	6 M12 terminating resistor	→ 9
Accessories	Page																	
1 AS-Interface flat cable	→ 13																	
2 M12 branch	→ 13																	
3 M12 plug connector, plug	→ 9																	
4 M12 plug connector, coupling	→ 9																	
5 M12 T connector	→ 9																	
6 M12 terminating resistor	→ 9																	

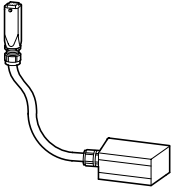
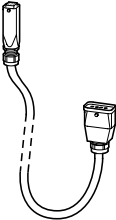
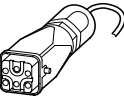
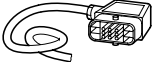
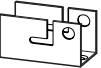
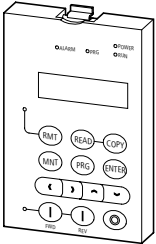
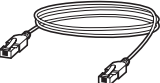
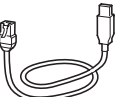
				For use with	Part no. Article no.	Price see price list	Std. pack
Accessories							
RA-IN accessories							
	Terminating resistor M12	For PROFIBUS-DP, B-coded	RA-IN-XT-DP	RA-IN-XTR-DP 254674		1 off	
	M12 plug connector for assembly by user	For PROFIBUS-DP, B-coded, straight coupling	RA-IN-XT-DP	RA-IN-XF-DP 263852		1 off	
	M12 plug connector for assembly by user	For PROFIBUS-DP, B-coded, straight plug	RA-IN-XT-DP RA-IN2.1-DP	RA-IN-XM-DP 263853		1 off	
	M12 T connector	For PROFIBUS-DP, B-coded	RA-IN2.1-DP RA-IN-XM-DP RA-IN-XF-DP	RA-IN-XT-DP 263854		1 off	
RA-DI accessories							
	Cable gland ¹⁾	For cables with outer diameters of 6 – 13 mm	H05VV-F 4 x 2,5/3 x 4 mm ² NYM 5 x 1,5/5 x 2,5 mm ²	V-M20 206910		20 off	
	Cable gland ¹⁾	For cables with outer diameter of 9 – 17 mm	H05VV-F 5 x 2,5/5 x 4 mm ² NYM 5 x 2,5/5 x 6 mm ²	V-M25 206911		20 off	
RA-MO accessories							
	Power adapter cable to flexible busbar	1.5 m, halogen free, 5 × 1.5 mm ²	RA-MO.../C3A RA-SP.../C3A RA-C1-PLF	RA-C3/C1-1,5HF 290210		1 off	
	Power adapter cable to round cable	1.5 m, halogen free, 5 × 1.5 mm ²	RA-MO.../C3A RA-SP.../C3A RA-C2-S1-4	RA-C3/C2-1,5HF 290211		1 off	
	Power plug ²⁾	For assembly by user, crimp contacts 5 × 1.5 mm ² , for 6 – 12 mm external cable diameter	RA-MO.../C3A RA-SP.../C3A	RA-C3-PLF 290423		1 off	
	Motor cable	2 m, halogen free, 8 × 1.5 mm ² plastic plug	RA-MO	SET-M3/2-HF 230914		1 off	
	Motor cable	3 m, halogen free, 8 × 1.5 mm ² plastic plug	RA-MO	SET-M3/3HF 272198		1 off	
	Motor cable	5 m, halogen free, 8 × 1.5 mm ² plastic plug	RA-MO	SET-M3/5-HF 265558		1 off	
	Motor cable	10 m, halogen free, 8 × 1.5 mm ² plastic plug	RA-MO	SET-M3/10-HF 272257		1 off	
	Motor feeder plug ²⁾	For assembly by user, crimp contacts 8 × 1.5 mm ² , for 9 – 13 mm external cable diameter	RA-MO	SET-M3-A 231640		1 off	
	Lock shackle ³⁾	For motor cables and motor plugs, disconnection device to EN 60204-1	RA-MO RA-SP	SET-M-LOCK 272085		1 off	

Notes¹⁾ Metric to EN 50262²⁾ Minimum order quantity: 10 off

Tools required:

Crimping tool for HAN E contacts from Harting

³⁾ For padlocks with hasp thickness up to 8 mm

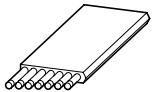
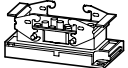
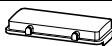
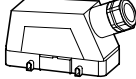
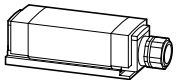
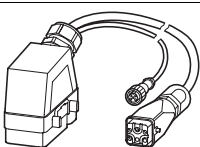
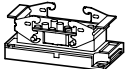
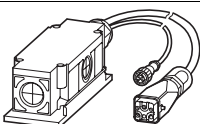
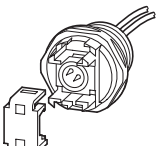
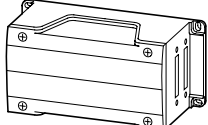
			For use with	Part no. Article no.	Price see price list	Std. pack
Accessories						
RA-SP accessories						
	Power adapter cable to flexible busbar	1.5 m, halogen free, 5 × 1.5 mm ²	RA-MO.../C3A RA-SP.../C3A RA-C1-PLF	RA-C3/C1-1,5HF 290210		1 off
	Power adapter cable to round cable	1.5 m, halogen free, 5 × 1.5 mm ²	RA-MO.../C3A RA-SP.../C3A RA-C2-S1-4	RA-C3/C2-1,5HF 290211		
	Power plug ¹⁾	For assembly by user, crimp contacts 5 × 1.5 mm ² , for 6 – 12 mm external cable diameter	RA-MO.../C3A RA-SP.../C3A	RA-C3-PLF 290423		
	Motor cable	2 m, halogen free, 4 × 1.5 mm ² + 2 × (2 × 0.75) mm ² , metal plug	RA-SP	SET-M4/2-HF 254485		
	Motor cable	3 m, halogen free, 4 × 1.5 mm ² + 2 × (2 × 0.75) mm ² , metal plug	RA-SP	SET-M4/3HF 272199		
	Motor cable	5 m, halogen free, 4 × 1.5 mm ² + 2 × (2 × 0.75) mm ² , metal plug	RA-SP	SET-M4/5-HF 265622		
	Motor cable	10 m, halogen free, 4 × 1.5 mm ² + 2 × (2 × 0.75) mm ² , metal plug	RA-SP	SET-M4/10-HF 276251		
	Motor feeder plug ¹⁾	For assembly by user, crimp contacts 4 × 1.5 mm ² + 4 × (2 × 0.75) mm ² , for 9 to 13 mm external cable diameter	RA-SP	SET-M4-A 254686		
	Lock shackle ²⁾	For motor cables and motor plugs, disconnection device to EN 60204-1	RA-MO RA-SP	SET-M-LOCK 272085		
	LCD keypad with non-volatile memory. Flush mounting in DF6 and DV6 frequency inverters possible. For detached mounting, a connection cable (DEX-CBL-...ICS, DNW-PC...) is required.	With memory	RA-SP	DEX-KEY-10 231421		
	Connection cable (1.0 m) with RJ-45 plugs	1.0 m	DEX-KEY-10	DEX-CBL-1M0-ICS 232375		
	Connection cable (3.0 m) with RJ-45 plugs	3.0 m	DEX-KEY-10	DEX-CBL-3M0-ICS 232376		
	Interface converter	Connection cable (2 m) with RS 45 plug and USB plug	RA-SP-PC interface	DEX-CBL-2M0-USB 119721		

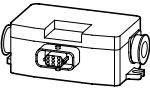
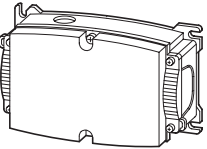
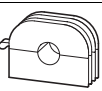
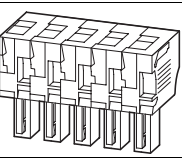
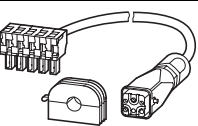
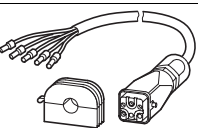
Notes¹⁾ Minimum order quantity: 10 off

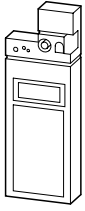
Tools required:

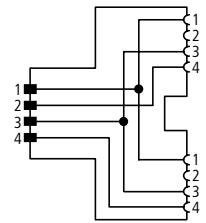
Crimping tool for HAN E contacts from Harting

²⁾ For padlocks with hasp thickness up to 8 mm

			For use with	Part no. Article no.	Price see price list	Std. pack	Notes
Accessories							
Remote power supply via flexible busbar RA-C1							
	Flexible busbar	Halogen free, 7 × 4 mm ²	RA-.../C1	RA-C1-7X4HF 230860		100 runn. m	Paint film contaminant/ silicon-free
	Flexible busbar junction for 400 V AC and 24 V DC	Insulation piercing terminals, terminal socket with lock mechanism	RA-C1-7X4HF RA-.../C1	RA-C1-PLF 290188		5 off	–
	Protective cover for flexible busbar junction		RA-C1-PLF	RA-C1-COV 254693		10 off	–
	Plug insert with hood	For 400 and 24 V	RA-C1-PLF	RA-C1-VP-PLM 231574		5 off	Order gland V-M25 separately. Connection of 1.5/2.5 mm ² round cables.
	Flexible busbar power supply and junction	Junction for 400 V AC and 24 V DC, insulation piercing terminals, 2 × V-M25 and 2 × V-M20, 2 knockout plates, connection module with spring-loaded terminals	RA-C1-7X4HF RA-.../C1	RA-C1-AM-7 290214		5 off	Order gland V-M25 and V-M20 separately. Connection of round cables 4 mm ² .
	Feeder plug with cables 400 V + AS-Interface	400 V AC and AS-Interface, cable length 1.5 m each, M12 plug and RA-C3-PLF	RA-MO-D... RA-MO-W... RA-MOL... RA-SP.../C3A RA-C1-PLF1	RA-C1-PLM/C3-1M5 112624	New	1 off	Can be used when AS-Interface implemented in flat cable.
	Flexible busbar junction for 400 V + AS-Interface	Termination with piercing screws, terminal socket with lock mechanism	RA-C1-PLM/ C3-1M5 RA-C1-7X4HF	RA-C1-PLF1 116904	New	1 off	Can be used when AS-Interface implemented in flat cable.
	Connection module with cables 400 V + AS-Interface	400 V AC and AS-Interface, cable length 1.5 m each, M12 plug and RA-C3-PLF, termination with piercing screws, knockouts	RA-MO-D... RA-MO-W... RA-MOL... RA-SP.../C3A RA-C1-7X4HF	RA-C1-AM/C3-1M5 112625	New	1 off	Can be used when AS-Interface implemented in flat cable.
	Connection clip for ASI flat cable	AS-Interface incomer/outgoer for connection modules, termination via insulation piercing technology	RA-C1-AM-7 RA-C1-AM/ C3-1M5 RA-C1-VP-AM-2	RA-C1-AZPG 112978	New	1 off	With integrated AS- Interface overvoltage protection; protection against interference on switch operations or short-circuit.
	Flexible busbar power supply and distributor module	With 3 flexible busbar inputs and 2 round cable inputs	RA-C1-7X4HF RA-.../C1	RA-C1-VM-7 264244		2 off	Order gland V-M25/ V-M20 and bushing RA-C1-DF separately. Connection of round cables 4 mm ² .
	Bushing for flexible busbar	In distributor module or control panel	RA-C1-VM-7	RA-C1-DF 264243		10 off	–
	Flexible busbar junction for 24 V DC	Termination with piercing screws, connection sockets with screw contacts	RA-C1-7X4HF RA-.../C1	RA-C1-VP-AM-2 264315		5 off	–
	Flexible busbar fixing clips	–	RA-C1-7X4HF RA-.../C1	RA-C1-FIX 272086		100 off	One set with 100 clips.
	Flexible busbar end-piece	–	RA-C1-7X4HF RA-.../C1	RA-C1-END1 290189		10 off	–
	Tool	For cutting busbar	RA-C1-7X4HF RA-.../C1	RA-C1-CUT 254690		1 off	–
	Tool	For removing cable sheath at the ends of the 7 × 4 mm ² flexible busbar	RA-C1-7X4HF RA-.../C1	RA-C1-AZ-4 272087		1 off	Standard engineer's pliers are required.

			For use with	Part no. Article no.	Price see price list	Std. pack	Notes
Accessories							
Remote power supply via RA-C2 round connector							
	Round cable junction	For $7 \times 2.5/4 \text{ mm}^2$ cable, 400 V AC and 24 V DC, insulation piercing terminals, cable fixing with metal screws, prewired socket inserts		RA-C2-S1-4 257830		1 off	Suitable for cable external diameters 10 – 13/13 – 16 mm. Supplied: 2 pairs of seals for these cable diameters, 1 lock mechanism.
	Prefabricated plug for round cable junction	With $8 \times 1.5 \text{ mm}^2$ crimp contacts	RA-C2-S1-4	RA-C2-PLM 272089		1 off	Tools required: Crimping tool for HAN E contacts from Messrs. Harting Minimum order quantity: 10 off
	End piece for the last round cable junction in the power line	–	RA-C2-S1-4	RA-C2-SBL 265357		10 off	One set with 10 filler plugs.
Remote power supply via RA-C4 round cable							
	Power box in IP 65	Contact unit for uncut power cables from 2.5 to 6 mm^2 , T-junction via push-in terminal 1.5 to 6 mm^2 and/or plug terminal from 0.5 to 4 mm^2 , enclosure IP65, supplied without seals		RA-C4-PB65 116905	New	1 off	Enclosure continuous seals must be ordered separately. Tools required: Stripping tool AM16 from Weidmüller or similar.
	Seal 11 - 13 mm	Enclosure bushing seal, slotted, for $\varnothing 11 - 13 \text{ mm}$ EPDM round cable, silicon free and halogen free, IP65	RA-C4-PB65	RA-C4-D13 116907	New	10 off	–
	Seal 13 - 15 mm	Enclosure bushing seal, slotted, for $\varnothing 13 - 15 \text{ mm}$ EPDM round cable, silicon free and halogen free, IP65	RA-C4-PB65	RA-C4-D15 116908	New	10 off	–
	Seal 15 - 17 mm	Enclosure bushing seal, slotted, for $\varnothing 15 - 17 \text{ mm}$ EPDM round cable, silicon free and halogen free, IP65	RA-C4-PB65	RA-C4-D17 116909	New	10 off	–
	Blanking plugs	Enclosure seal, closed, EPDM, silicon free and halogen free, IP65	RA-C4-PB65	RA-C4-D0 116960	New	10 off	–
	Plug for power box	Plug with $0.5 - 4 \text{ mm}^2$ push-in terminal, printed with 1; N/4; 2; h; 3.	RA-C4-PB65	RA-C4-PPB 116906	New	10 off	–
	Power adapter cable with plug for power box	Premanufactured $5 \times 1.5 \text{ mm}^2$ cable, halogen-free, with RA-C4-PPB and power plug with IP65 seal, length 1.5 m	RA-C4-PB65 RA-MO.../C3A RA-SP.../C3A	RA-C4-PPB/C3-1M5 116962	New	1 off	–
	Power adapter cable, for user assembly	Premanufactured $5 \times 1.5 \text{ mm}^2$ cable, halogen-free, with ferrules and power plug with IP65 seal, length 1.5 m	RA-C4-PB65 RA-MO.../C3A RA-SP.../C3A	RA-C4-X/C3-1M5 116961	New	1 off	–

For use with				Part no. Article no.	Price see price list	Std. pack	Notes
Accessories							
AS interface							
	Addressing unit	–	RA-DI RA-MO RA-SP AS2-74...	PG2-105-AD2 222172		1 off	–
	M12 branch	IDC termination	RA-IN RA-DI RA-MO RA-SP ZB2-155-KB1	ZB2-100-AZ1 082667		1 off	–
	M12 double branch	IDC cable termination	RA-MO.../C3A RA-SP.../C3A ZB2-155-KB1 ZB2-105-KB1	RA-XAZ2-1M 292253		1 off	For supply with AS-Interface and 24 V, 1 m cable with M12 socket
	Extension cable with M12 socket and M12 plug	3-pole, 1 m	RA-MO.. RA-SP.. RA-DI..	RA-XM12-1M 272057		1 off	For extending the AS-Interface M12 cables, if required. Pins 1, 3, 4 are assigned.
	Y connector	–	RA-SP-HE...	RA-XM12-Y 290424		1 off	For connecting up to 4 sensors
Other accessories							
	Spare key	For AUTO - OFF/RESET - HAND key-switches	RA-MO RA-SP	M22-ES-MS1 216416		5 off	–





			Flat cable RA-C1-7X4HF	Power supply for flexible busbar RA-C1-AM-7	Power supply for flexible busbar RA-C1-VM-7
General					
Standards			IEC 60332-1 DIN VDE 0295 Class 6 DIN VDE 0281 Part 404	DIN/EN 60664-1 DIN/EN 60529 DIN/EN 60999 DIN VDE 0470 Part 1	IEC/EN 60047-7-1 DIN VDE 0470 Part 1
Degree of protection (IEC/EN 60529)			IP65	IP65	IP65
Ambient temperature	°C		-15... 50	-15... 40	-15... 50
Ambient temperature, Mounting	°C		-5...70	-5...50	-5...50
Mounting position			As required	As required	As required
Flame retardance, fire propagation			Self-extinguishing to IEC 60332-1	–	–
Resistance to oils and acids			To VDE 0473, Part 811-2-1		
Sheathing			Material according to DIN VDE 0282, EVA mixture EM4, black		
Minimum bending radius	mm		18		
Cable weight	kg/km		440		
Outer dimensions L × W × H	mm		L × 34.8 × 6.0	160 × 60.2 × 59.5	175 × 83 × 78
Overvoltage category/pollution degree				III/3	III/3
Termination				Springloaded terminals 1.5 to 4 mm²	Twin-level terminal block, 1.5 to 4 mm²
External diameter of cable	mm			V-M25: 9 – 17 V-M20: 6 – 13	9 – 17
Main circuit					
Rated operational voltage	U_e	V AC	500	500	500
Rated operational current	I_e	A	25	25	25
Rated current per junction		A			
Line protection		Type	RA-DI PKZ2/ZM25-8 FAZ-3-B20 FAZ-3-C20	RA-DI PKZ2/ZM25-8 FAZ-3-B20 FAZ-3-C20	RA-DI PKZ2/ZM25-8 FAZ-3-B20 FAZ-3-C20
Control circuit					
Rated voltage	U_e	V DC	24	24	24
Rated operational current	I_e	A	25	10	25

			SET-M3... Motor cable and motor feeder plug	SET-M4... Motor cable and motor feeder plug
General				
Standards			EN 61 684 DIN VDE 0110	EN 61 684 DIN VDE 0110
Degree of protection (IEC/EN 60529)			IP65	IP65
Operation	°C		-30... 70	-30... 70
Rated operational voltage	U_e	V AC	300/500	500 (Signal wires: 300)
Connection cable				
Terminal capacities	mm²		8 × 1.5	4 × 1.5 + 2 × (2 × 0.75) shielded
External diameter of cable	mm		9 – 13	9 – 13
Minimum bending radius	mm		6 × external diameter of cable	10 × external diameter of cable
Conductor material			Cu flexible to VDE 0295 Class 5	Cu highly flexible to VDE 0295 Class 6
Material of outer casing			Halogen free	Halogen free
Colour			Silver grey (RAL 7001)	Orange (RAL 2003)
Resistance to oils and acids			VDE 0472 Part 803 B	VDE 0472 Part 803 A/B
Flame retardance, fire propagation			EN 50265-2-1	IEC 60332-2
Plug connector				
Conductor cross-section of contact pins	mm²		8 × 1.5	4 × 1.5 + 4 × 0.75
Material				
Contact inserts			Polycarbonate	Polycarbonate
Contact material			Silver-plated copper	Silver-plated copper
Housing			Polycarbonate	Metal
Lock mechanism			Polyamide	Metal



Flexible busbar junction RA-C1-PLF	Round cable junction RA-C2-S...-4	Round cable junction RA-C4-PB65
IEC/EN 68000-2-27 IEC/EN 60998-3 DIN VDE 0660 Part 1535	EN 61684 DIN VDE 0110 DESINA	
IP65	IP65	IP65
-15... 50	-15... 50	-40... 55
-5...50	-5...50	10...40
As required	As required	As required
119 × 57.5 × H	158 × 112.5 × 55	181 × 104 × 67
III/3	III/3	III/3
IDC termination	Piercing/screw terminals	Insulation piercing terminals
	10 – 13 13 – 16	11 – 13 13 – 15 15 – 17
500	500	690
	20/25 (2.5 mm²/4 mm²)	25 (4 mm²)
16	16	16
RA-DI PKZ2/ZM25-8 FAZ-3-B20 FAZ-3-C20	RA-DI PKZ2/ZM25-8 FAZ-3-B20 FAZ-3-C20	RA-DI PKZ2/ZM25-8 FAZ-3-B20 FAZ-3-C20
24	24	
	20/25 (2.5 mm²/4 mm²)	

		Addressing unit PG2-105-AD2
General		
Interface		AS-Interface, short-circuit and overload protected
Power supply		Accumulator
Charger		115/230 V AC plug-in charger
Service life		8 h (read/write operations with a fully charged accumulator)
Protection type		IP 20
Operating temperature	°C	0 / 50
Ambient temperature, storage	°C	-20...55
Weight	kg	0,55



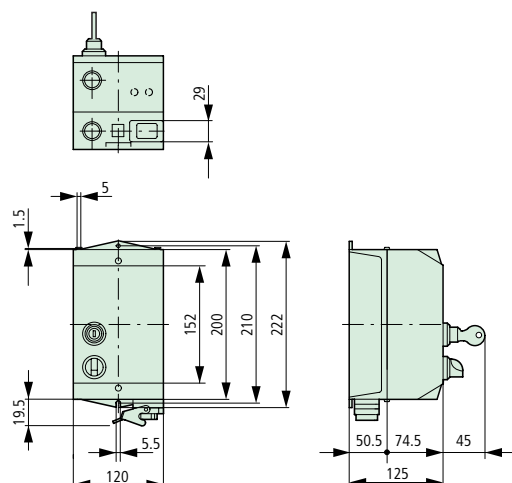
			RA-IN	RA-DI
General				
Standards			EN 50081 EN 50082	IEC/EN 60947
Degree of protection (IEC/EN 60529)			IP65	IP65
Operation		°C	-0 - 40	-0 - 40
Ambient temperature, Storage		°C	-25 - 70	-25 - 70
Vibration resistance (IEC/EN 60068-2-6, const. amplitude 0.15 mm/const. acceleration 2 g)		Hz		
Mechanical shock resistance (IEC/EN 60068-2-27)				
Mounting position			Vertical	Vertical
Weight		kg	0,8	2
Indication elements			7-Segment/LED	LED
Main circuit				
Supply				
Rated operational voltage	U_e	V AC	–	400
Mains current	I	A	–	20
Rated operational current	I_e	A	–	20
Rated uninterrupted current	I_u	A	–	20
Rated impulse withstand voltage	U_{imp}	kV	–	6
Overvoltage category/pollution degree			–	III/3
Frequency range		Hz		50 - 60
Short-circuit protective device, type “1” coordination		Type	–	–
Rated conditional short-circuit current AC		kA_{rms}	–	10
Discharge current to PE		mA	–	–
Heat dissipation		W	–	–
Motor circuit				
Assigned motor rating		kW	–	–
Setting range, motor protection		A	–	–
Tripping class		A	–	–
Output voltage	U_L	V AC	–	–
Frequency range, motor output		Hz	–	–
Control circuit				
24 V DC				
Rated voltage	U_e	V DC	30	–
Tolerance		%	–	–
Typical current consumption at 24 V DC		mA	–	–
AS-Interface				
Max. total power consumption from AS-Interface (30 V DC power supply unit)		mA	200	90
Max. current supply in AS-Interface		mA	2800	–
AS-Interface Specification			2.1	2.1
Slave addresses		Number	62	31
IO code (Hex)			–	7
ID code (Hex)			–	F
ID1-Code (Hex)			–	0
ID2-Code (Hex)			–	E
Inputs				
Data input 0		DI0	–	Switch position (I1)
Data input 1		DI1	–	–
Data input 2		DI2	–	–
Data input 3		DI3	–	–
Outputs				
Data output 0		DO0	–	LED O1
Data output 1		DO1	–	–
Data output 2		DO2	–	–
Data output 3		DO3	–	–
Mains connection cable				
Terminal capacities		mm²	–	–
Material of outer casing			–	–



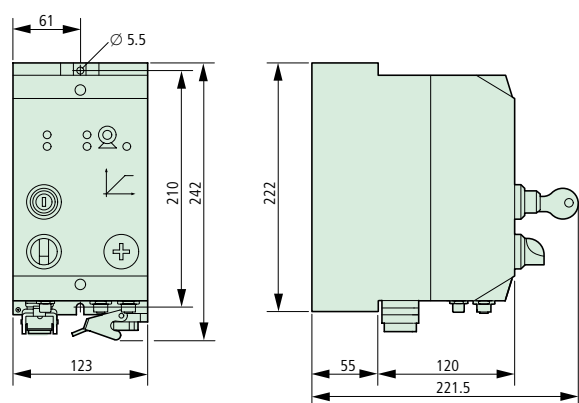
RA-MO	RA-SP..075..	RA-SP..1K1..	RA-SP..2K2..
EN 50081-1 EN 50082-2 IEC/EN 55011/A1 Class A IEC/EN 55022 Class A IEC/EN 60947 DIN VDE 0660 Part 303	EN 50178 IEC/EN 55011/A1 Class A IEC/EN 55022 Class A IEC/EN 61800-3 incl. A11	EN 50178 IEC/EN 55011/A1 Class A IEC/EN 55022 Class A IEC/EN 61800-3 incl. A11	EN 50178 IEC/EN 55011/A1 Class A IEC/EN 55022 Class A IEC/EN 61800-3 incl. A11
IP65	IP65	IP65	IP65
-25 - 40	-10 - 40	-10 - 40	-10 - 40
-25 - 70	-25 - 70	-25 - 70	-25 - 70
	10 – 57/57 – 150	10 – 57/57 – 150	10 – 57/57 – 150
6 shocks/axis	6 shocks/axis	6 shocks/axis	6 shocks/axis
Vertical	Vertical	Vertical	Vertical
2,7	4,3	4,3	5
LED	LED	LED	LED
400	400	400	400
6,6	3,3	3,6	6,4
6.6	2.5	2.8	5
–	–	–	–
4	–	–	–
III/2	III (to DIN VDE 0110)	III (to DIN VDE 0110)	III (to DIN VDE 0110)
50 - 60	50 - 60	50 - 60	50 - 60
RA-DI PKZ2/ZM25-8 FAZ-3-B20, FAZ-3-C20	RA-DI PKZ2/ZM25-8 FAZ-3-B20, FAZ-3-C20	RA-DI PKZ2/ZM25-8 FAZ-3-B20, FAZ-3-C20	RA-DI PKZ2/ZM25-8 FAZ-3-B20, FAZ-3-C20
10	10	10	10
–	< 3.5 mA (to EN 50178)	< 3.5 mA (to EN 50178)	< 3.5 mA (to EN 50178)
–	44	65	92
0.09 – 3	0.37 – 0.75	0.75 – 1.1	1.1 – 2.2
0.3 – 6.6	(0.5 – 1.2) × I_e electronic	(0.5 – 1.2) × I_e electronic	(0.5 – 1.2) × I_e electronic
10	–	–	–
U_e	0 ... U_e	0 ... U_e	0 ... U_e
50 – 60	0.5 – 360	0.5 – 360	0.5 – 360
24	24 (internal)	24 (internal)	24 (internal)
–15...20	–	–	–
200	–	–	–
50...220	25...220	25...220	25...220
–	–	–	–
2.1	2.1	2.1	2.1
62	31	31	31
7	7	7	7
A	E	E	E
Address ...A = 0, address ...B = F	0	0	0
D	0	0	0
Automatic	Automatic	Automatic	Automatic
Group fault	Group fault	Group fault	Group fault
External input (I3)	–	–	–
External input (I4)	–	–	–
Main contactor	Enable rotation FWD (CW)	Enable rotation FWD (CW)	Enable rotation FWD (CW)
Reversing contactor	Enable rotation REV (CCW)	Enable rotation REV (CCW)	Enable rotation REV (CCW)
LED O3 and external output RA-MO-4A(O3)	Setpoints	Setpoints	Setpoints
–	Setpoints	Setpoints	Setpoints
1.5	1.5	1.5	1.5
Halogen free	Halogen free	Halogen free	Halogen free

Motor control unit

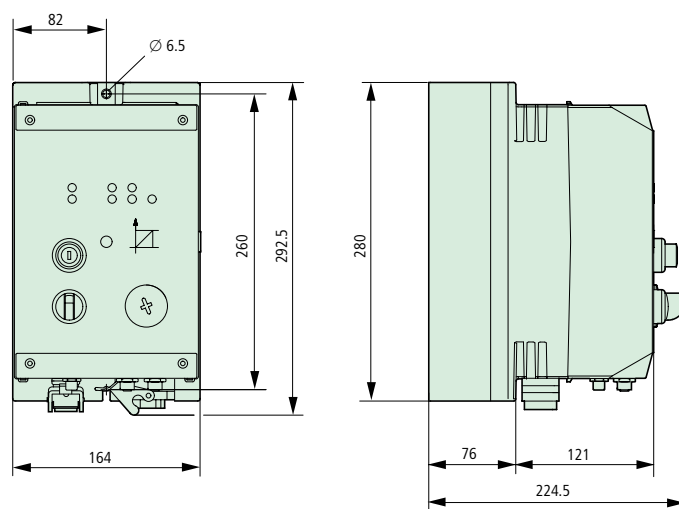
RA-MO

**Speed control unit**

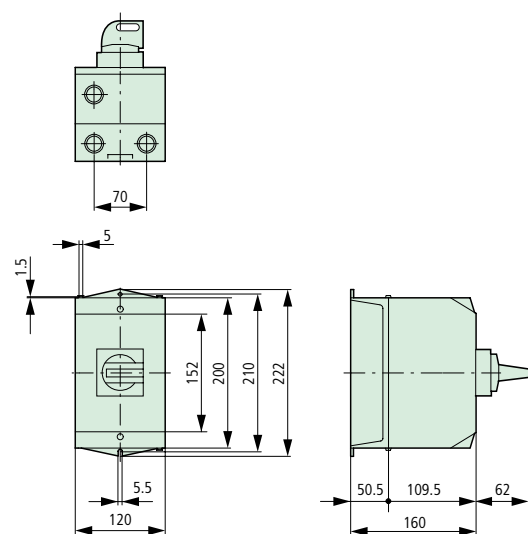
RA-SP ... to 1.1 kW



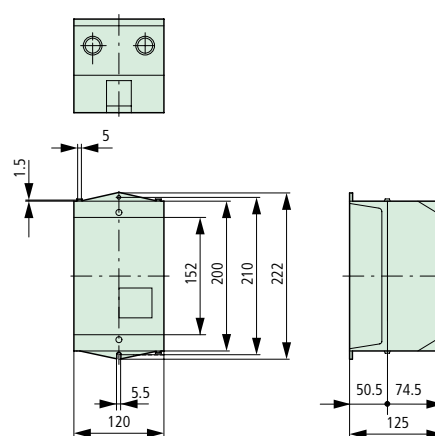
RA-SP ... to 2.2 kW

**Disconnect control unit**

RA-DI

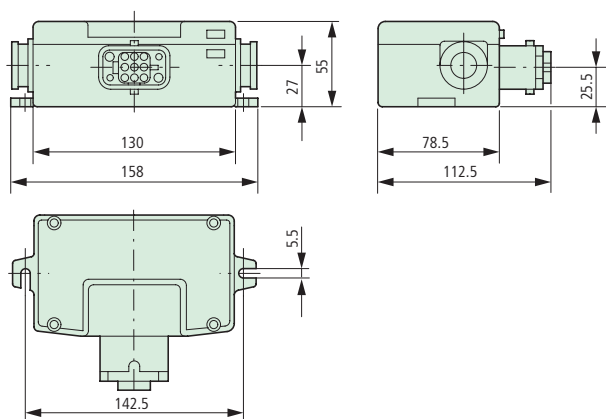
**Interface control unit**

RA-IN



Round cable junction

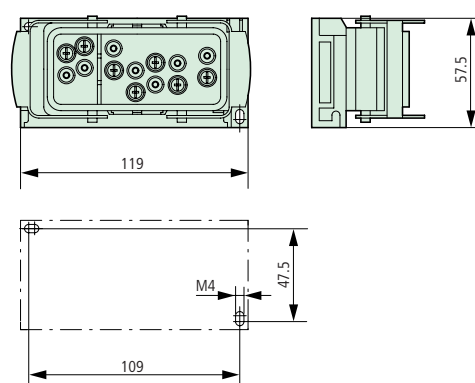
RA-C2-S1-4



Flexible busbar junction

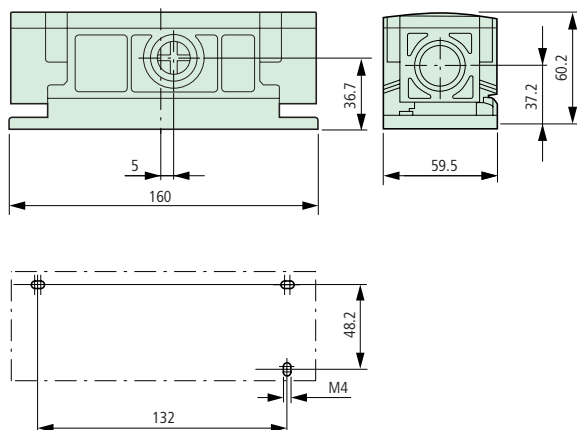
RA-C1-PLF

RA-C1-PLF1



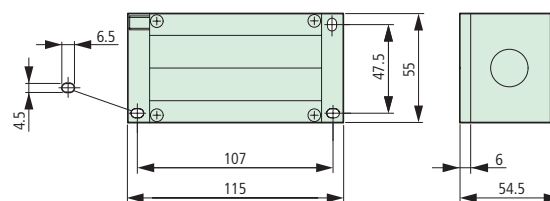
Terminal module with spring-loaded terminal for 24 V and 400 V

RA-C1-AM-7



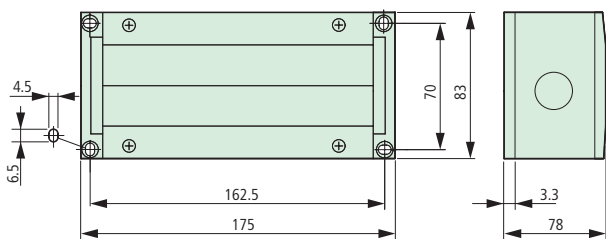
Terminal module with screw terminals for 24 V

RA-C1-VP-AM-2

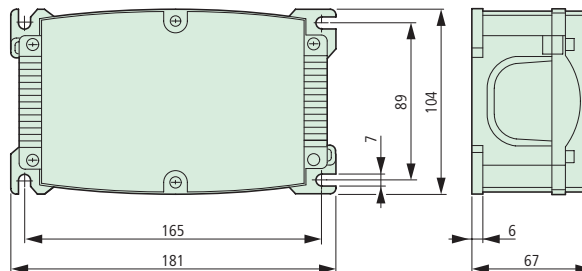


Distributor module

RA-C1-VM-7



RA-C4-PB65



For service issues please contact
your Moeller representative or
the Moeller Field Service.

Hotline (24/7/365)
+49 (0) 180 5 223822 (de, en)
Phone (Mo–Fr, 8 a.m.–4 p.m.)
+49 (0) 228 6 02-3640
Fax
+49 (0) 228 6 02-1789
Mail:
fieldservice@moeller.net
Internet:
www.moeller.net/fieldservice

Moeller addresses worldwide:
www.moeller.net/address

E-Mail: info@moeller.net
Internet: www.moeller.net
www.eaton.com

Issued by Moeller GmbH
Hein-Moeller-Str. 7-11
D-53115 Bonn

© 2009 by Moeller GmbH
Subject to alterations
SK2190-1063 GB DHW/ip/Doku 05/09



Powering Business Worldwide

Eaton's electrical business is a global leader
in electrical control, power distribution,
uninterruptible power supply and industrial
automation products and services.

Eaton's global electrical brands, including
Cutler-Hammer®, MGE Office Protection
Systems™, Powerware®, Holec®, MEM®,
Santak and Moeller, provide customer-driven
PowerChain Management® solutions to serve
the power system needs of the industrial,
institutional, government, utility, commercial,
residential, IT, mission critical and OEM
markets worldwide.

www.eaton.com

