

Product Range Catalogue

Switching and Installation System Rapid Link

xStart

The complete range of contactors, efficient motor-starters and variable speed drives for the motor circuit. New simple to install solutions based on clever communication.

DIL contactors

PKZ motor-protective circuit-breakers

MSC motor-starters

DS 4 softstarters

DF & DV Drives

Rapid Link

Data

Energy



MOELLER

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The Rapid Link Family

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.



Notes

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

This manual is available online at <http://www.moeller.net/support>

The 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 units that are ready for connection.

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

Product information:

- Rapid Link → W2700-7528GB

Catalogues:

- Frequency Inverters DF5, DF6, Vector Frequency Inverters DV5, DV6 → HPL0211-2004/2005GB-INT

Manuals:

- Rapid Link Switching and Installation System → AWB2190-1430GB
- DF5 Frequency Inverters → AWB8230-1412GB
- DF5 Frequency Inverter Training Guide → AWB8230-1447GB
- AS-Interface/PROFIBUS Gateways → AWB2700-1409GB

Technical Guides:

- AS-Interface, Networking Inputs/Outputs on the Field Level → TB27-013GB
- Electromagnetic Compatibility of Machines and Systems → TB02-022GB
- Safety Manual → TB0-009GB

System overview

Interface Control Unit

- Interface to open fieldbus
- Fast data transmission up to 12 MBaud
- 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

- Activation of the power line
- Lockable with 3 padlocks
- Overload or short-circuit protection
- Small tripping currents enable long cable lengths
- Remote status indication for rapid diagnostics in the field

Motor Control Unit

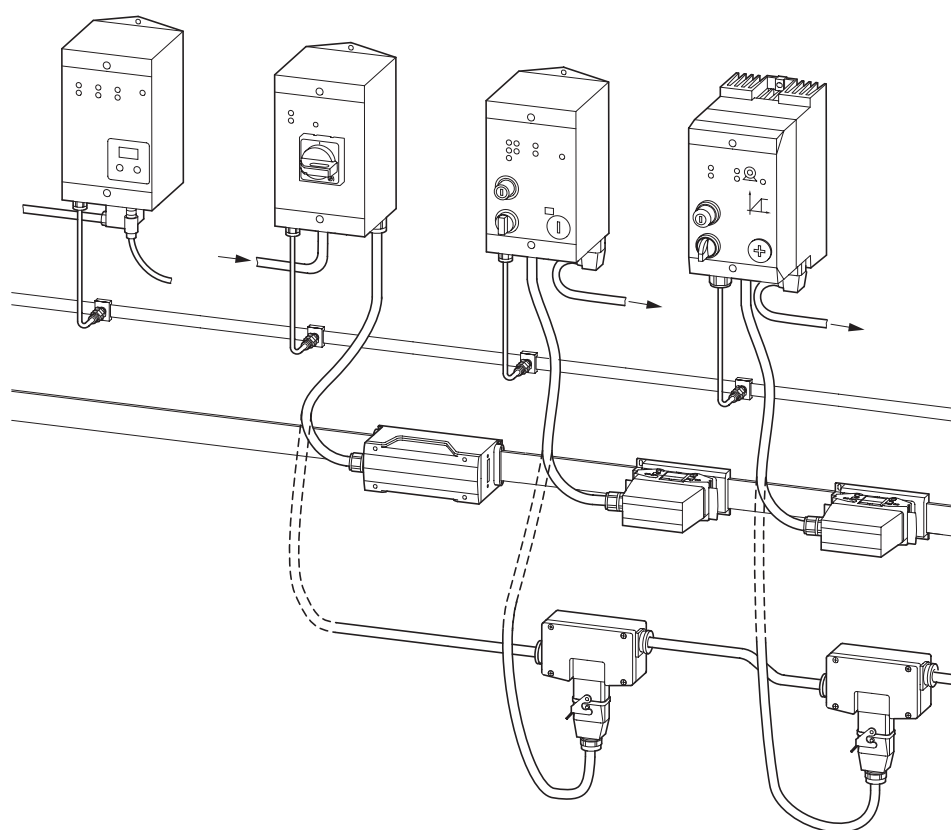
- 3-phase electronic motor protection with range from 0.09 to 3 kW (400 V) reduces the number of variants required
- Integrated thermistor monitoring for full motor protection
- Available as DOL or reversing starter
- Manual operation enables commissioning without PLC
- Two integrated sensor inputs reduce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

Speed Control Unit

- Control of motors up to 2.2 kW at 400 V with up to 4 fixed speeds and 2 rotation 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
- Thermistor protection, overload and earth fault monitoring ensure safety
- UL/CSA approval for worldwide use
- IP65 plug connector for rapid connection and exchange

Moeller SK2190-1063D

Rapid Link

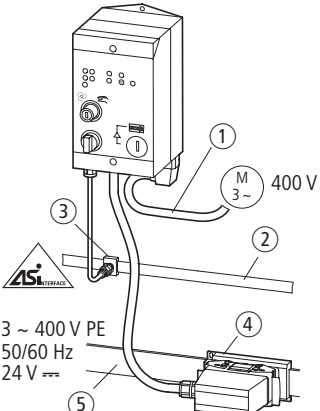
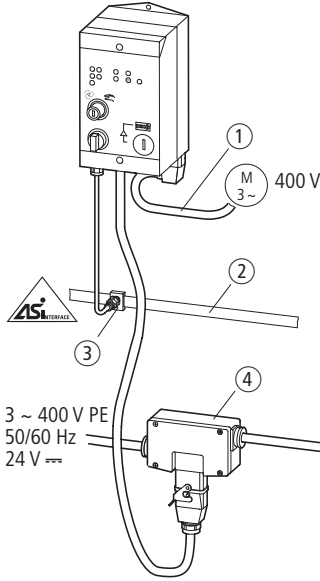


Rapid Link
switching and installation system

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AS-Interface® is a registered trademark and is protected worldwide

	External I/Os via M12 socket Amount	Type Article no.	Price see price list	Std. pack
Motor Control Unit				
• Motor starter with electronic motor protection from 0.09 – 3 kW/400 V AC • 24 V DC control circuit • Integrated PTC and PTC and Thermoclick thermistor monitoring with safe isolation • 2 external inputs up to 70 mA via M12 socket with quick stop and interlocked manual mode • Optional 1 external 24 V output via M12 socket • Control of brake motors • AS-Interface Slave Spec. 2.1 for 62 stations • Diagnostics and reset on device and via AS-Interface				
Connection to flexible busbar junction				
DOL starter, with AUTO - OFF/RESET - HAND keyswitch	2/–	RA-MO2.1-D4/C1 254668		1 off
	2/1	RA-MO2.1-D4A/C1 272022		
Reversing starter with AUTO – OFF/RESET – HAND keyswitch and REV – OFF – FWD selector switch	2/–	RA-MO2.1-W4/C1 254670		
	2/1	RA-MO2.1-W4A/C1 272026		
				
Accessories				
1 Motor cable/Motor plugs → 9				
2 AS-Interface flat cable → 12				
3 M12 branch → 12				
4 Flexible busbar junction → 11				
5 Flexible busbar → 11				
Connection to round cable junction				
DOL starter, with AUTO - OFF/RESET - HAND keyswitch	2/–	RA-MO2.1-D4/C2 254669		1 off
	2/1	RA-MO2.1-D4A/C2 272023		
Reversing starter with AUTO – OFF/RESET – HAND keyswitch and REV – OFF – FWD selector switch	2/–	RA-MO2.1-W4/C2 254671		
	2/1	RA-MO2.1-W4A/C2 272027		
				
Accessories				
1 Motor cable/Motor plug → 9				
2 AS-Interface flat cable → 12				
3 M12 branch → 12				
4 Round cable junction → 11				

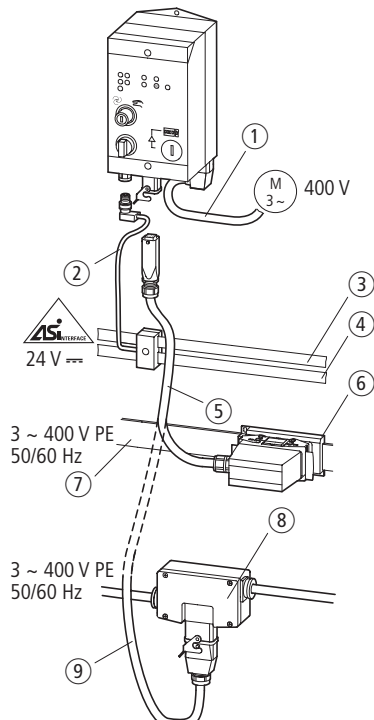
Notes

Supplied:

- Motor feeder socket to DESINA Standard
- AS-Interface supply cable, approx. 0.5 m incl. M12 plug
- Power cable, approx. 1.5 m incl. plug for line junction

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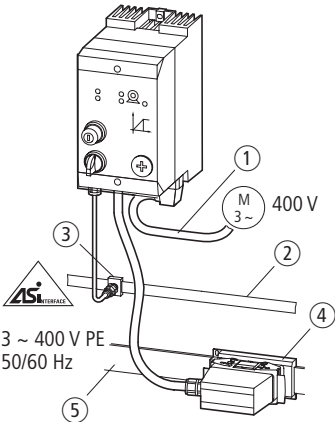
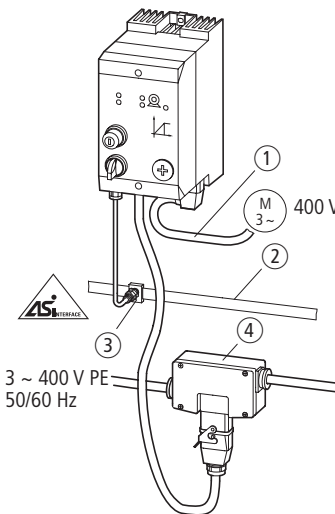
Moeller SK2190-1063GB

	External I/Os via M12 socket Amount	Type Article no.	Price see price list	Std. pack																														
Motor Control Unit • Motor starter with electronic motor protection from 0.09 – 3 kW/400 V AC • 24 V DC control circuit • Integrated PTC and PTC and Thermoclick thermistor monitoring with safe isolation • 2 external inputs up to 150 mA via M12 socket with quick stop and interlocked manual mode • Optional 1 external 24 V output via M12 socket • Control of brake motors • AS-Interface Slave Spec. 2.1 for 62 stations • Diagnostics and reset on device and via AS-Interface • With UL/CSA approval 480 V AC/3HP																																		
Connection via adapter cable to round cable or flexible busbar junction																																		
DOL starter, with AUTO - OFF/RESET - HAND keyswitch	2/–	RA-MO2.1-D4/C3A 290400		1 off																														
	2/1	RA-MO2.1-D4A/C3A 290403																																
Reversing starter with AUTO – OFF/RESET – HAND keyswitch and REV – OFF – FWD selector switch	2/–	RA-MO2.1-W4/C3A 290402																																
	2/1	RA-MO2.1-W4A/C3A 290404																																
																																		
<table><tr><th colspan="2">Accessories</th><th>Page</th></tr><tr><td>1</td><td>Motor cable/Motor plug</td><td>→ 9</td></tr><tr><td>2</td><td>M12 double branch</td><td>→ 12</td></tr><tr><td>3</td><td>AS-Interface flat cable</td><td>→ 12</td></tr><tr><td>4</td><td>External auxiliary voltage 24 V DC</td><td>→ 12</td></tr><tr><td>5</td><td>Power adapter cable to flexible busbar</td><td>→ 9</td></tr><tr><td>6</td><td>Flexible busbar junction</td><td>→ 11</td></tr><tr><td>7</td><td>Flat cable</td><td>→ 11</td></tr><tr><td>8</td><td>Round cable junction</td><td>→ 11</td></tr><tr><td>9</td><td>Power adapter cable to round cable</td><td>→ 9</td></tr></table>					Accessories		Page	1	Motor cable/Motor plug	→ 9	2	M12 double branch	→ 12	3	AS-Interface flat cable	→ 12	4	External auxiliary voltage 24 V DC	→ 12	5	Power adapter cable to flexible busbar	→ 9	6	Flexible busbar junction	→ 11	7	Flat cable	→ 11	8	Round cable junction	→ 11	9	Power adapter cable to round cable	→ 9
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Notes

Supplied:

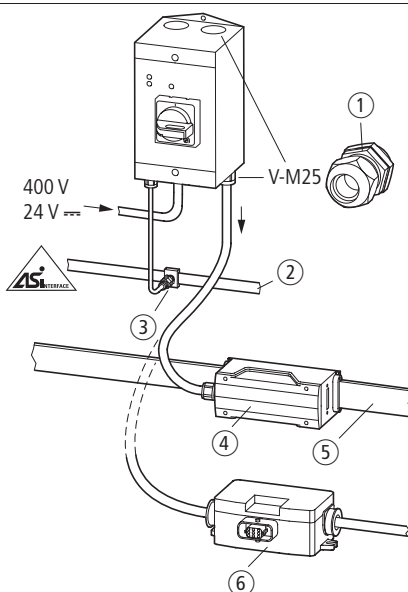
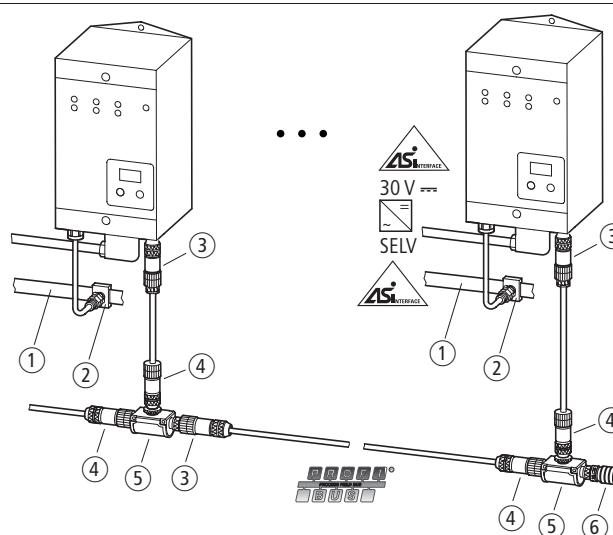
- Motor feeder socket to DESINA Standard
- With AS-Interface/24 V plug on the unit
- With power plug on the unit

Rated operational current I_e A	Assigned motor rating P kW	Brake control voltage V AC	Type Article no.	Price see price list	Std. pack	Notes												
Speed control unit																		
• Speed control unit for controlling motors rated from 0.37 – 2.2 kW/400 V AC • 3 fixed speeds and 1 potentiometer speed • Integrated PTC and PTC and Thermoclick thermistor monitoring with safe isolation • 2 external inputs up to 70 mA via M12 sockets • Optional control of brake motors • AS-Interface Slave Spec. 2.1 for 31 stations • Diagnostics and reset on the device • With AUTO – OFF/RESET – HAND keyswitch and REV – OFF – FWD selector switch																		
Connection to flexible busbar junction																		
2.5	0.75	–	RA-SP2-342-075/C1 272063		1 off	 3 ~ 400 V PE 50/60 Hz <table><tr><th>Accessories</th><th>Page</th></tr><tr><td>1 Motor cable/Motor plug</td><td>→ 10</td></tr><tr><td>2 AS-Interface flat cable</td><td>→ 12</td></tr><tr><td>3 M12 branch</td><td>→ 12</td></tr><tr><td>4 Flexible busbar junction</td><td>→ 11</td></tr><tr><td>5 Flexible busbar</td><td>→ 11</td></tr></table>	Accessories	Page	1 Motor cable/Motor plug	→ 10	2 AS-Interface flat cable	→ 12	3 M12 branch	→ 12	4 Flexible busbar junction	→ 11	5 Flexible busbar	→ 11
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2.5	0.75	400	RA-SP2-343-075/C1 272065															
2.5	0.75	230	RA-SP2-343(230)-075/C1 272067															
2.8	1.1	–	RA-SP2-342-1K1/C1 272071															
2.8	1.1	400	RA-SP2-343-1K1/C1 272073															
2.8	1.1	230	RA-SP2-343(230)-1K1/C1 272075															
5	2.2	–	RA-SP2-342-2K2/C1 272079															
5	2.2	400	RA-SP2-343-2K2/C1 272081															
5	2.2	230	RA-SP2-343(230)-2K2/C1 272083															
Connection to round cable junction																		
2.5	0.75	–	RA-SP2-342-075/C2 272064		1 off	 3 ~ 400 V PE 50/60 Hz <table><tr><th>Accessories</th><th>Page</th></tr><tr><td>1 Motor cable/Motor plug</td><td>→ 10</td></tr><tr><td>2 AS-Interface flat cable</td><td>→ 12</td></tr><tr><td>3 M12 branch</td><td>→ 12</td></tr><tr><td>4 Round cable junction</td><td>→ 11</td></tr></table>	Accessories	Page	1 Motor cable/Motor plug	→ 10	2 AS-Interface flat cable	→ 12	3 M12 branch	→ 12	4 Round cable junction	→ 11		
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2.5	0.75	230	RA-SP2-343(230)-075/C2 272068															
2.8	1.1	–	RA-SP2-342-1K1/C2 272072															
2.8	1.1	400	RA-SP2-343-1K1/C2 272074															
2.8	1.1	230	RA-SP2-343(230)-1K1/C2 272076															
5	2.2	–	RA-SP2-342-2K2/C2 272080															
5	2.2	400	RA-SP2-343-2K2/C2 272082															
5	2.2	230	RA-SP2-343(230)-2K2/C2 272084															

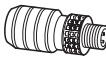
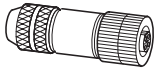
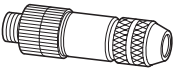
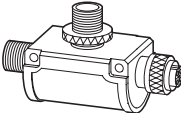
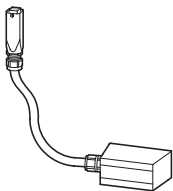
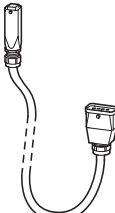
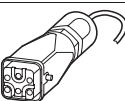
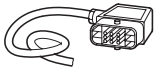
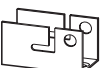
Notes

Supplied:

- Motor feeder socket to DESINA Standard
- AS-Interface supply cable, approx. 0.5 m incl. M12 plug
- Power cable, approx. 1.5 m incl. plug for line junction

	Type 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	 Accessories <table><tr><td>1</td><td>Cable gland</td><td>→ 9</td></tr><tr><td>2</td><td>AS-Interface flat cable</td><td>→ 12</td></tr><tr><td>3</td><td>M12 branch</td><td>→ 12</td></tr><tr><td>4</td><td>Flexible busbar feeder and distributor module</td><td>→ 11</td></tr><tr><td>5</td><td>Flexible busbar</td><td>→ 11</td></tr><tr><td>6</td><td>Round cable junction</td><td>→ 11</td></tr></table>	1	Cable gland	→ 9	2	AS-Interface flat cable	→ 12	3	M12 branch	→ 12	4	Flexible busbar feeder and distributor module	→ 11	5	Flexible busbar	→ 11	6	Round cable junction	→ 11
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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	 Accessories <table><tr><td>1</td><td>AS-Interface flat cable</td><td>→ 12</td></tr><tr><td>2</td><td>M12 branch</td><td>→ 12</td></tr><tr><td>3</td><td>M12 plug connector, plug</td><td>→ 9</td></tr><tr><td>4</td><td>M12 plug connector, coupling</td><td>→ 9</td></tr><tr><td>5</td><td>M12 T connector</td><td>→ 9</td></tr><tr><td>6</td><td>M12 terminating resistor</td><td>→ 9</td></tr></table>	1	AS-Interface flat cable	→ 12	2	M12 branch	→ 12	3	M12 plug connector, plug	→ 9	4	M12 plug connector, coupling	→ 9	5	M12 T connector	→ 9	6	M12 terminating resistor	→ 9
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3	M12 plug connector, plug	→ 9																				
4	M12 plug connector, coupling	→ 9																				
5	M12 T connector	→ 9																				
6	M12 terminating resistor	→ 9																				
Notes	Supplied: • With AS-Interface supply cable, approx. 0.5 m incl. M12 plug • M12 socket for PROFIBUS-DP, B-coded • Cable socket to DIN 43 650-A/ISO 4400 for 30 V DC supply, 2 poles + earth, for 2.5 mm² round cables, external diameter 6 – 9 mm.																					

Moeller SK2190-1063GB

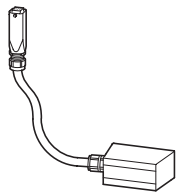
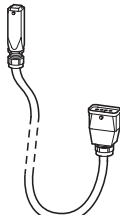
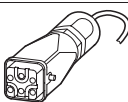
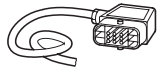
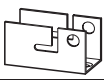
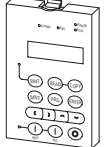
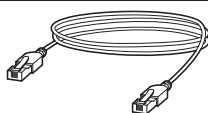
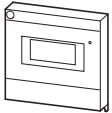
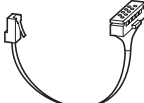
				For use with	Type Article no.	Price see price list	Std. pack
Accessories							
RA-IN accessories							
	Terminating resistor M12	For PROFIBUS-DP, B-coded	RA-IN-XT-DP	RA-IN-XTR-DP 254674		1 off	
	M12 plug connector for assembly by user	For PROFIBUS-DP, B-coded, straight coupling	RA-IN-XT-DP	RA-IN-XF-DP 263852			
		For PROFIBUS-DP, B-coded, straight plug	RA-IN-XT-DP RA-IN2.1-DP	RA-IN-XM-DP 263853			
	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			
RA-DI accessories							
	Cable gland	For cables with external diameter 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	For cables with external 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			
	Power plug	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, 8 × 1.5 mm ² plastic plug	RA-MO	SET-M3/2-HF 230914			
	Motor cable	3 m, halogen free, 8 × 1.5 mm ² plastic plug	RA-MO	SET-M3/3HF 272198			
	Motor cable	5 m, halogen free, 8 × 1.5 mm ² plastic plug	RA-MO	SET-M3/5-HF 265558			
	Motor cable	10 m, halogen free, 8 × 1.5 mm ² plastic plug	RA-MO	SET-M3/10-HF 272257			
	Motor feeder plug	For assembly by user, crimp contacts 8 × 1.5 mm ² , for 9 – 13 mm external cable diameter	RA-MO	SET-M3-A 231640			
	Lock shackle	For motor cables and motor plugs, disconnection device to EN 60204-1	RA-MO RA-SP	SET-M-LOCK 272085			

¹⁾ Metric to EN 50262²⁾ Minimum order quantity: 10 off

Tools required:

Crimping tool for HAN E contacts from Messrs. Harting

³⁾ For padlocks with hasp thickness up to 8 mm

			For use with	Type Article no.	Price see price list	Std. pack
Accessories						
RA-SP accessories						
	Power adapter cable to flexible busbar	1.5 m, halogen free, $5 \times 1.5 \text{ mm}^2$	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, $5 \times 1.5 \text{ mm}^2$	RA-MO.../C3A RA-SP.../C3A RA-C2-S1-4	RA-C3/C2-1,5HF 290211		
	Power plug	For assembly by user, crimp contacts $5 \times 1.5 \text{ mm}^2$, for 6 – 12 mm external cable diameter	RA-MO.../C3A RA-SP.../C3A	RA-C3-PLF 290423		
	Motor cable	2 m, halogen free, $4 \times 1.5 \text{ mm}^2 + 2 \times (2 \times 0.75) \text{ mm}^2$, metal plug	RA-SP	SET-M4/2-HF 254485		
	Motor cable	3 m, halogen free, $4 \times 1.5 \text{ mm}^2 + 2 \times (2 \times 0.75) \text{ mm}^2$, metal plug	RA-SP	SET-M4/3HF 272199		
	Motor cable	5 m, halogen free, $4 \times 1.5 \text{ mm}^2 + 2 \times (2 \times 0.75) \text{ mm}^2$, metal plug	RA-SP	SET-M4/5-HF 265622		
	Motor cable	10 m, halogen free, $4 \times 1.5 \text{ mm}^2 + 2 \times (2 \times 0.75) \text{ mm}^2$, metal plug	RA-SP	SET-M4/10-HF 276251		
	Motor feeder plug	For assembly by user, crimp contacts $4 \times 1.5 \text{ mm}^2 + 4 \times (2 \times 0.75) \text{ mm}^2$, for 9 to 13 mm external cable diameter	RA-SP	SET-M4-A 254686		
	Lock shackle	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 remote siting, a connection cable (DEX-CBL-...ICS) is required.	With memory	DF5-... DF51-... DF6-... DV5-... DV51-... DV6-... 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		
	External display	–	DF5-.../DV5-... RA-SP	DE5-KEY-R03 232372		
	Connection cable	0.5 m	DE5-KEY-R03	DE5-CBL-0M5-ICL 232373		
	Connection cable	1.0 m	DE5-KEY-R03	DE5-CBL-1M0-ICL 232374		
	Connecting cable (2 m) with RJ 45 plug and an RS 232 converter (9-pin SUB-D plug)	With converter, RS 232/422	PC connection	DEX-CBL-2M0-PC 233184		

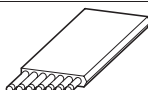
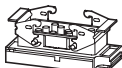
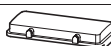
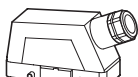
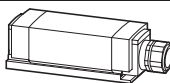
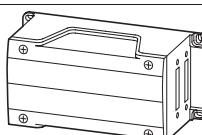
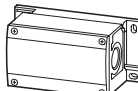
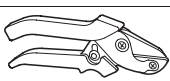
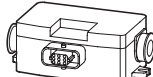
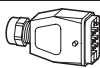
¹⁾ Minimum order quantity: 10 off

Tools required:

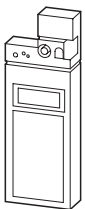
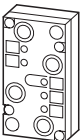
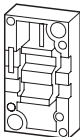
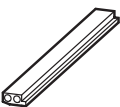
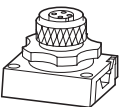
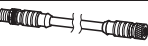
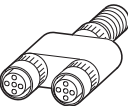
Crimping tool for HAN E contacts from Messrs. Harting

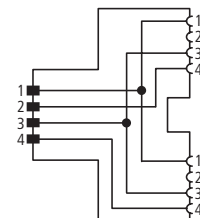
²⁾ Order gland V-M25/V-M20 and bushing RA-C1-DF separately. Connection of round cables 4 mm².

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			For use with	Type Article no.	Price see price list	Std. pack	
Accessories							
Remote power supply via flexible busbar RA-C1							
	Flexible busbar	Halogen free, 7 × 4 mm ²	RA-.../C1 Rapid Link Units	RA-C1-7X4HF 230860		1 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 unit 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 .
	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		1 off	–
	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 casing at the ends of the 7 × 4 mm ² flexible busbar	RA-C1-7X4HF RA-.../C1	RA-C1-AZ-4 272087		1 off	A standard engineer's pliers is required.
Remote power supply via RA-C2 round connector							
	Round cable junction	For 7 × 2.5/4 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 × 1.5 mm ² crimp contacts	RA-C2-S1-4	RA-C2-PLM 272089		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		One set with 10 filler plugs.	

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				For use with	Type Article no.	Price see price list	Std. pack	
Accessories								
AS-Interface								
	Addressing unit	–	RA-DI RA-MO RA-SP AS2-74...	PG2-105-AD2 222172		1 off	–	
	Input module	4 Inputs 24 V DC, PNP	–	AS2-740-DX 229474		1 off	Requires FK coupling module	
	Input/output module	4 inputs/4 outputs, 24 V DC inputs, PNP, 24 V DC outputs, 1 A each, PNP transistor.	–	AS2-744-DD 229476		1 off	The external auxiliary supply of the outputs is fed via the coupling module. Requires FK-E coupling module	
	FK coupling module	Base for I/O modules	AS2-740-DX	AS2-700-UT1 229472		1 off	Connection of 2 AS-Interface cables.	
	FK-E coupling module	Base for I/O modules	AS2-744-DD	AS2-700-UT2 229473		1 off	Connection of an AS-Interface cable (yellow) and an AS-Interface power cable 24 V DC (black).	
	AS-Interface flat cable	100 m, yellow, profiled, 2 × 1.5 mm ²	RA-IN RA-DI RA-MO RA-SP AS2-7...	ZB2-155-KB1 031920		1 off	–	
	For external auxiliary voltage 24 V DC	Black, profiled, 2 × 1.5 mm ² , 1 reel = 100 m	AS2-744-DD	ZB2-105-KB1 031919		1 off	–	
	M12 branch	IDC termination	RA-IN RA-DI RA-MO RA-SP ZB2-155-KB1	ZB2-100-AZ1 082667		5 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	
	M12 cap for unused branches	–	RA-MO RA-SP ZB2-100-AZ1 AS2-74...	AS2-600-ZB1 222484		10 off	–	
Other accessories								
	Spare key	For AUTO - OFF/RESET - HAND keyswitch	RA-MO RA-SP RA-OP	M22-ES-MS1 216416		5 off	–	



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			Flat cable RA-C1-7X4HF	Power supply for flexible busbar RA-C1-AM-7	Power supply for flexible busbar RA-C1-VM-7	Flexible busbar junction RA-C1-PLF	Round cable junction RA-C2-S...-4
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	IEC/EN 68000-2-27 IEC/EN 60998-3 DIN VDE 0660 Part 1535	EN 61684 DIN VDE 0110 DESINA
Degree of protection (IEC/EN 60529)			IP65	IP65	IP65	IP65	IP65
Ambient temperature	°C		-15 – 50	-15 – 40	-15 – 50	-15 – 50	-15 – 50
Ambient temperature, Mounting	°C		-5 – 70	-5 – 50	-5 – 50	-5 – 50	-5 – 50
Mounting position			As required	As required	As required	As required	As required
Flame retardance, fire resistance			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	119 × 57.5 × H	158 × 112.5 × 55
Overvoltage category/pollution degree			–	III/3	III/3	III/3	III/3
Termination			–	Springloaded terminals 1.5 – 4 mm ²	Twin-level terminal block, 1.5 to 4 mm ²	IDC termination	Piercing/screw terminals
External diameter of cable	mm		–	V-M25: 9 – 17 V-M20: 6 – 13	9 – 17	–	10 – 13 13 – 16
Main circuit							
Rated operational voltage	U_e	V AC	500	500	500	500	500
Rated operational current	I_e	A	25	25	25	–	20/25 (2.5 mm ² /4 mm ²)
Rated current per junction		A	–	–	–	16	16
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	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	24	24
Rated operational current	I_e	A	25	10	25	–	20/25 (2.5 mm ² /4 mm ²)

			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	mm ²		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 resistance			EN 50265-2-1	IEC 60332-2
Plug connector				
Conductor cross-section of contact pins	mm ²		8 × 1.5	4 × 1.5 + 4 × 0.75
Material				
Contact inserts			Polycarbonate	Polycarbonate
Contact material			Cu silver-plated	Cu silver-plated
Housing			Polycarbonate	Metal
Lock mechanism			Polyamide	Metal

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			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}	–	–
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	–	–

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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			
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 or FAZ-3-C20	RA-DI PKZ2/ZM25-8 FAZ-3-B20 or FAZ-3-C20	RA-DI PKZ2/ZM25-8 FAZ-3-B20 or FAZ-3-C20	RA-DI PKZ2/ZM25-8 FAZ-3-B20 or FAZ-3-C20	
–	–	–	–	
–	< 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	
ADR ...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 (right)	Enable rotation FWD (right)	Enable rotation FWD (right)	
Reversing contactor	Enable rotation REV (left)	Enable rotation REV (left)	Enable rotation REV (left)	
LED O3 and external output RA-MO-4A(O3)	Setpoints	Setpoints	Setpoints	
–	Setpoints	Setpoints	Setpoints	
1.5	1.5	1.5	1.5	

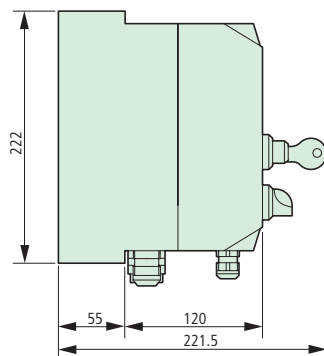
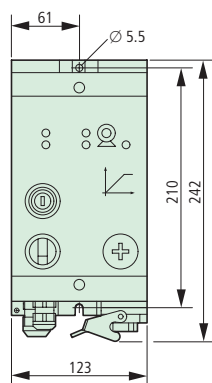
		ASI flat cable ZB2-155-KB1	ASI power cable ZB2-105-KB1
General			
Sheathing		EM3 rubber mixture to VDE 0207 Part 21, yellow (similar to RAL 1012) sheathing colour	EM3 rubber mixture to VDE 0207 Part 21, black (similar to RAL 9005) sheathing colour
Limit temperatures			
Fixed installation on the surface	°C	-40 – 85	-40 – 85
Flexing during installation	°C	-20 – 85	-20 – 85
Max. tensile stress		To VDE 0298 Part 3: when laying 50 N/mm ² cable cross section	To VDE 0298 Part 3: when laying 50 N/mm ² cable cross section
Min. permissible bending radius		To VDE 0298 Part 3, Table 2: Bending only on broad side (cable side) permissible	To VDE 0298 Part 3, Table 2: Bending only on broad side (cable side) permissible
Note on use		The cable with the yellow sheath is designed for use as a flat cable for data and voltage. For outdoor use, only cables with a black sheath may be used.	The cable with a black sheath is designed for the 24 V DC auxiliary supply for actuators. For outdoor use, only cables with a black sheath may be used.
		FK AS2-700-UT1 coupling module	FKAS2-700-UT2 coupling module
General			
Type		FK coupling module/base EMS specification 3 sealing caps, 4 captive FK profile seals in the module 2 parallel cable pits for any T and cross branches	FK-E coupling module/base with external power supply EMS specification 3 sealing caps, 4 captive FK profile seals in the module 1 cable entry for AS-Interface 1 cable entry for external 24 V supply
Interfaces		AS-Interface/AS-Interface Connection via IDC termination to AS-Interface flat cable via contact sockets Connection to module upper section	AS-Interface/24 V DC Connection via IDC termination to AS-Interface flat cable via contact sockets Connection to module upper section
Rated voltage to AS-Interface Specification	V DC	26.5 – 31.6	26.5 – 31.6
Contact rating	mA	> 2000	> 2000
AS-Interface connection, protection against polarity reversal		Mechanical	Mechanical
Ambient temperature	°C	-25 – 85	-25 – 85
Housing material		PBTP	PBTP
		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		IP20	
Operating temperature	°C	0 / 50	
Ambient temperature, storage	°C	-20/55	
Weight	kg	0.55	

Moeller SK2190-1063GB

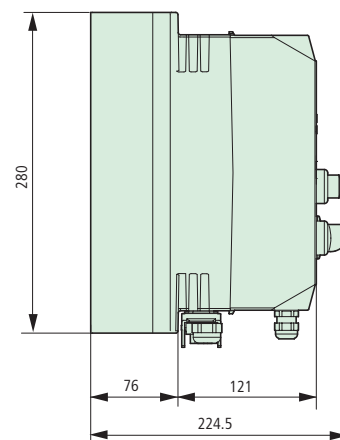
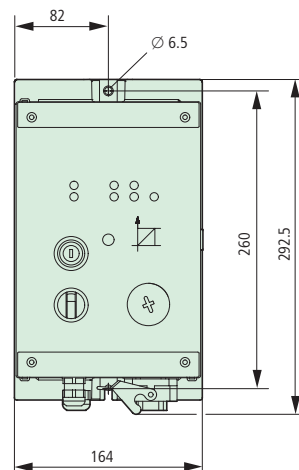
		IP 67 input/output modules	
		AS2-740-DX	AS2-744-DD
General			
Design, output stage		4 inputs	4 input/4 outputs, transistor
Emitted interference		EN 50081-1	EN 50081-1
Interference immunity		EN 50081-2	EN 50081-2
Protection type		IP67	IP67
Ambient temperature	°C	-25 – 70	-25 – 70
Housing material		PBTP	PBTP
Rated voltage to AS-Interface Specification	V DC	26.5 – 31.6	26.5 – 31.6
Total current consumption	mA	max. 230	max. 250
Current carrying capacity	mA	12	12
Sensor supply		AS-Interface, max. 200 mA	AS-Interface, max. 200 mA
Voltage range	V DC	20 – 30	20 – 30
Connections		via M12 plug connector	via M12 plug connector
Profile		S-0.0.E	S-7.0.E
Inputs			
Input circuit		PNP	PNP
Short-circuit proof		Yes	Yes
High signal level	V	11	11
Total current carrying capacity for all inputs	mA	12	12
Input current			
Low signal	mA	2	2
High signal	mA	6	6
Outputs			
Output circuit		–	PNP
Short-circuit proof		–	Yes
Watch-dog		–	Yes
Current carrying capacity per output		–	Normally 1 A; 2 A per module
External power supply		–	10 – 30 V DC (PELV)
LEDs			
AS-Interface voltage		Green	Green
Communication/peripheral error		Red	Red
24 V supply		Green	Green
Input/output signals		Yellow	Yellow
Notes		None of the I-, I+, I1, I2, I3, I4 connections must be connected with an external potential since they are connected with the AS-Interface cable.	

Rapid Link Units

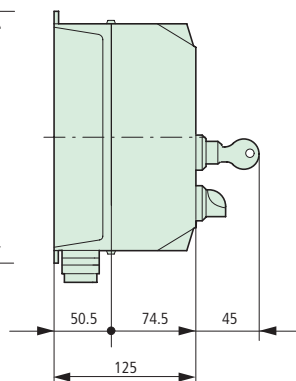
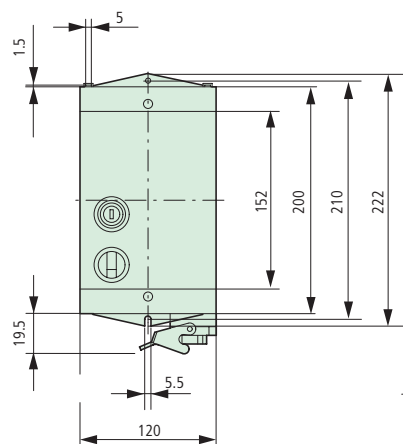
RA-SP 0.75 to 1.1 kW



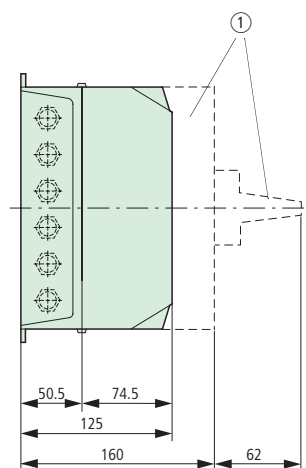
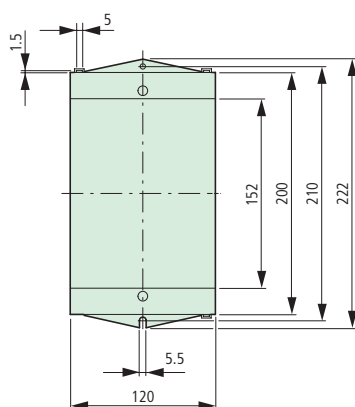
RA-SP to 2.2 kW



RA-MO



RA-DI RA-IN

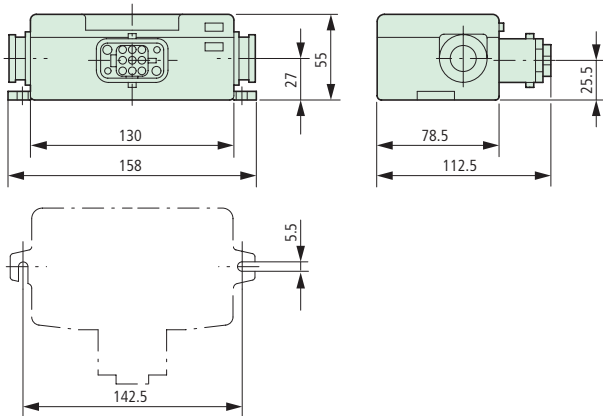


- ① Wider housing depth and rotary handle with RA-DI
RA-DI knockout plate: top 2 × M20/M25,
bottom 2 × M20/M25 and 1 × M20

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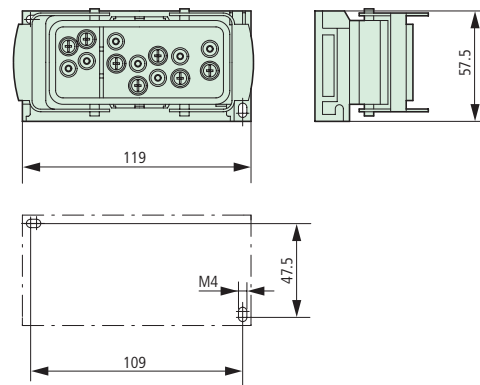
Round cable junction

RA-C2-S1-4



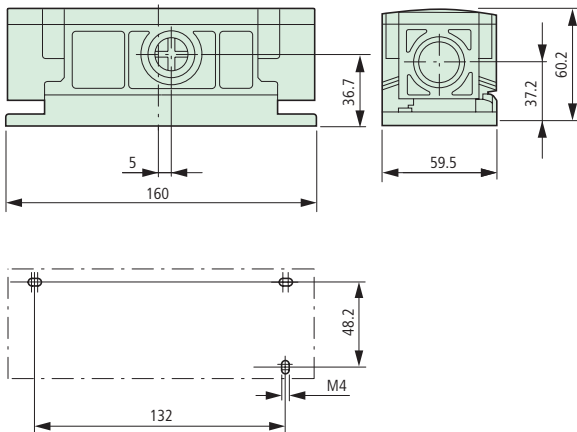
Flexible busbar junction

RA-C1-PLF



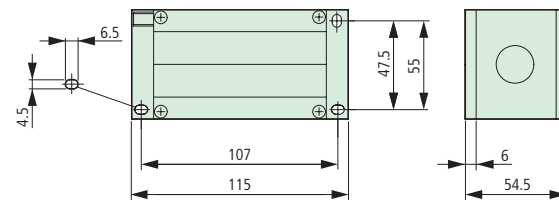
Terminal module with spring loaded terminals for 24 V und 400 V

RA-C1-AM-7



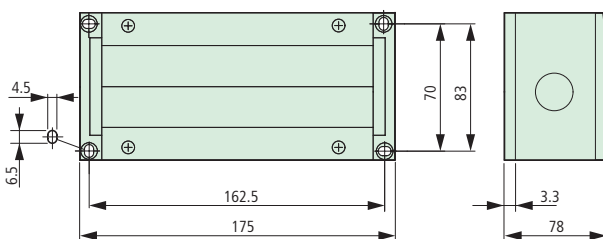
Terminal module with screw terminals for 24 V

RA-C1-VP-AM-2



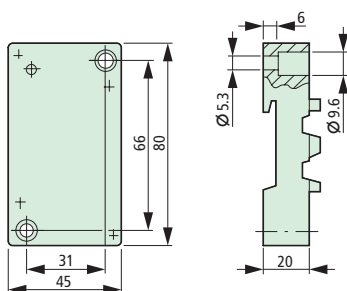
Distributor module

RA-C1-VM-7



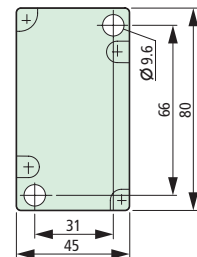
AS-Interface coupling module

AS2-700-UT1, AS2-700-UT2

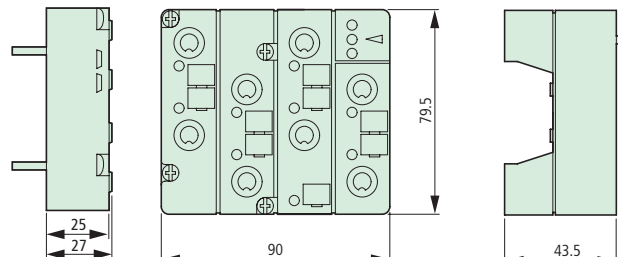


AS-Interface I/O modules (IP67)

AS2-740-DX



AS-744-DD



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