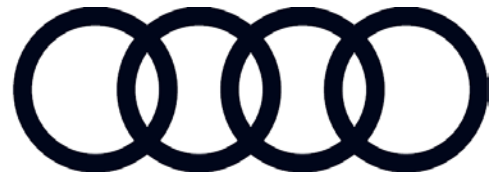


Audi
Kompetenzcenter
Anlagen- / Umformtechnik



**Project book center of excellence
Plants- / Forming V3.1, May 2017**

1. Change history

Version	Date	Type of change
3.1	08.05.2017	New Design

2. Contact Murrelektronik GmbH

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3. Note

Special Releases:

Please contact the responsible person of the relevant department when applying for a special release. (Please prepare the application with a proposed solution and details regarding the devices required; this will simplify processing for you and your contact person.)

Exclusion of Liability:

The data provided here is not exhaustive and is not continuously updated. **Murrelektronik GmbH** is not liable for the correctness of the data contained in this project manual. We reserve the right to change the data at any time without prior notice. Any changes or misuse of the information and data is prohibited.

The automotive manufactures' production facilities are highly automated. All processes have to be coordinated down to the detail. They require reliability and high availability in order to avoid expensive downtimes.

MARKET REQUIREMENTS:

- Process-Optimized System Solutions
- High Delivery Performance Worldwide
- Supports All Standard Fieldbus Systems
- High Machine Availability

MURRELEKTRONIK OFFERS:

- Consistent System Solutions
- Comprehensive Diagnostic Options
- Resistance to Vibration
- Excellent Logistics for Fast Deliveries

Murrelektronik offers strong products. They help to realize interesting solutions, both in technical and economical respects. Of course, this will involve questions. Murrelektronik's Customer Service Center knows the right answers. It is the contact for all technical questions about the products from Murrelektronik.



The Customer Service Center offers support to customers during all phases of the project. When planning and designing customer applications, during development, installation and start-up. With competent advise or – for more complicated problems – with on-site support.

The CSC provides support tools. It carries out measurements for fieldbus systems such as Profibus DP, Devicenet, CanOpen, and AS Interface, energy measurements, thermographic and thermal measurements as well as EMC measurements.

Our Customer Service Center staff have competence, know-how and a lot of experience. They are familiar with the interaction of products from different manufacturers, from hard- and software.

You can reach our CSC by phone +49 7191 47-2050 or by email csc@murrelektronik.de.

Murrelektronik products are subjected to a considerable amount of testing long before they reach the market. Legal requirements have to be complied with, and because the products have to meet the quality requirements of our customers and Murrelektronik itself. Murrelektronik has concentrated its test activities in a test center. *stay connected*



The Murrelektronik test center has its origins in the EMC laboratory, which is where proof of the electromagnetic compatibility of products is provided. Compliance with the EMC directive is an important prerequisite for being allowed to use the CE symbol. The Murrelektronik test center is accredited for the most frequently used EMC tests.

Product safety is the main focus of the low voltage directive: products must not be dangerous to users during normal use, should faults occur. The test center can perform most of the testing that is needed to adhere to these requirements such as leakage current measurements and high-voltage testing, and can determine whether any air gaps or leakage paths are present.

The technical properties of products are tested down to the last detail in the test and validation area, and proof of the industrial capability of each individual component is provided. The investigation of resistance to environmental effects and media reveals whether products can withstand adverse environmental effects. Products are subjected to extreme operating conditions for several weeks during endurance tests. The analysis of these long-term tests helps to raise the quality standard even higher.

The Murrelektronik test center is an important service provider and also allows other companies to use its testing facilities.

The test center can be contacted by telephone on +49 (71 91) 47-0 or by e-mail at pruefzentrum@murrelektronik.de

Murrelektronik has a systematic and consistent quality management system - for the customer's benefit. The objective is to make our customers successful by providing optimized processes, excellent products and top notch service. Our employees take to heart the principles of continuous improvement in all processes, products and service.



The quality management system at Murrelektronik GmbH complies with the requirements of the international DIN EN ISO 9001 standard. This has been certified by DQS (independent, accredited German company for the certification of management systems) under DQS certificate number 593.

The Murrelektronik subsidiaries in the Czech Republic and Brazil are also DIN EN ISO 9001 certified.

Murrelektronik has four manufacturing sites: Oppenweiler (headquarters), Stollberg (Ore Mountains region), Stod (Czech Republic) and Shanghai (China).



The state-of-the-art manufacturing facility for field bus systems and interface modules is based in **Oppenweiler**. Also manufactured here are the flat assemblies using THT and SMD technology in accordance with the ESD guidelines. Murrelektronik is continuously making investments in machinery, systems and quality assurance in order to develop and improve technical processes.

In **Stollberg** thousands of connectors are manufactured every day for use in switch cabinets and systems all over the world.

Murrelektronik is a market leader in the field of interference suppression modules. Modules for control technology, distribution systems, transformers and power supplies are manufactured at the state-of-the-art manufacturing facility in **Stod**.

The main focus of production in **Shanghai** is on connectors and power supplies.

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Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
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I/O-Systems

MVK Metal

Accessories

	55317	MVK METAL ACCESSORIES, Addressing lid metal	85389099		
	55390	MVK ACCESSORIES, Connector cap 7/8" outer thread with chain	74153300		
	55292	MVK I/O COMPACT MODULE, METAL, Profibus DP, 4 analog Out / 8 multif. channels	85389099		
	55293	MVK I/O COMPACT MODULE, METAL, Profibus DP, 4 analog In / 8 multif. channels	85389099		
	55307	MVK I/O COMPACT MODULE, METAL, Profibus DP, 16 dig In / Diag.	85389099		
	55308	MVK I/O COMPACT MODULE, METAL, Profibus DP, 8 multif.channels / 8 dig. In / Diag	85389099		
	55309	MVK I/O COMPACT MODULE, METAL, Profibus DP, 16 multifunction channels	85389099		
	55556	MVK-MPNIO F DI16/8 7/8" IRT, MVK ProfiNet/PROFIsafe Compact module, metal,	85389099		
	55557	MVK-MPNIO F DI8/4 F DO4 7/8" IRT, MVK ProfiNet/PROFIsafe Compact module, metal,	85389099		
	55287	MVK-MPNIO DI8 (DI8), MVK ProfiNet Compact module, metal	85176200		
	55288	MVK-MPNIO DIO8 (DI8), MVK ProfiNet Compact module, metal	85176200		

Accessories

	27681	POWER DISTRIBUTOR PD4 7/8" 5 POLE, 24+E male to 4 x 7/8" 5-pole female	85369010		
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M12 Distribution Systems












	8000-54520-0000000	MVP-METALL, 4XM12, 5POLE, M23 19POL. CON., Connector exit frontside	85369010		
	8000-58520-0000000	MVP-METALL, 8XM12, 5POLE, M23 19POL. CON., Connector exit frontside	85369010		

Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	58627	BLIND PLUG M12, PLASTIC, 10 PIECES,	39269097		
	996049	SCREW PLUG M12 METAL,	74153300		


Electronics in the Control Cabinet

EMC Suppressors





	26501	SIEMENS CONTACTOR SUPPRESSOR, Diode and LED, 24VDC	85363010		
	26520	SIEMENS CONTACTOR SUPPRESSOR, Diode, 0...240VDC	85363010		
	26521	SUPPRESSOR FOR SIEMENS CONTACTOR, Diode combination, 24 VDC, 10 W	85363010		
	2000-68400-2010000	SIEMENS CONTACTOR SUPPRESSOR, Diode and LED, 24VDC	85363010		
	2000-68400-4300000	SIEMENS CONTACTOR SUPPRESSOR, RC, 24-48VAC/DC	85363010		
	2000-68400-4400000	SIEMENS CONTACTOR SUPPRESSOR, Varistor, 24-48VAC/DC	85363010		
	2000-68400-4410000	SIEMENS CONTACTOR SUPPRESSOR, Varistor and LED, 24VAC/DC	85363010		
	2000-68500-4300000	SIEMENS CONTACTOR SUPPRESSOR, RC, 24-48VAC/DC	85363010		
	2000-68500-4400000	SIEMENS CONTACTOR SUPPRESSOR, Varistor, 24-48VAC/DC	85363010		
	2000-68500-4410000	SIEMENS CONTACTOR SUPPRESSOR, Varistor and LED, 24VAC/DC	85363010		
	21200	SIEMENS CONTACTOR SUPPRESSOR, RC, 24VDC	85363010		
	21210	SIEMENS CONTACTOR SUPPRESSOR, RC, 24VDC	85363010		

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Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	21215	SUPPRESSOR FOR SIEMENS CONTACTOR, VDR+RC, 2448 VAC/DC, 20 VA/W	85363010		
	26503	SIEMENS CONTACTOR SUPPRESSOR, Varistor, 24VAC/DC	85363010		
	26504	SIEMENS CONTACTOR SUPPRESSOR, Varistor and LED, 24VAC/DC	85363010		
	26524	SIEMENS CONTACTOR SUPPRESSOR, Varistor, 24VAC/DC	85363010		
	2000-68400-2420000	SIEMENS CONTACTOR SUPPRESSOR, Varistor, 230VAC/DC	85363010		
	2000-68500-1100000	SIEMENS CONTACTOR SUPPRESSOR, Diode, 0240VDC	85363010		
	2000-68500-2420000	SIEMENS CONTACTOR SUPPRESSOR, Varistor, 230VAC/DC	85363010		
	2000-68500-2470000	SIEMENS CONTACTOR SUPPRESSOR, Varistor and LED, 150250VDC	85363010		
	21202	SIEMENS CONTACTOR SUPPRESSOR, RC, 230VAC/DC	85363010		
	21212	SIEMENS CONTACTOR SUPPRESSOR, RC, 230VAC/DC	85363010		
	21217	SIEMENS CONTACTOR SUPPRESSOR, RC, 230VAC/DC	85363010		
	26500	SIEMENS CONTACTOR SUPPRESSOR, Diode, 0...240VDC	85363010		
	26502	SIEMENS CONTACTOR SUPPRESSOR, Zener diode, 24VDC	85363010		
	26507	SIEMENS CONTACTOR SUPPRESSOR, Varistor, 230VAC/DC	85363010		
	26508	SIEMENS CONTACTOR SUPPRESSOR, Varistor and LED, 230VAC/DC	85363010		
	26526	SIEMENS CONTACTOR SUPPRESSOR, Varistor, 230VAC/DC	85363010		

Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
Relays					
	6652000	MIRO 6.2 24VDC-1U OUTPUT RELAY, IN: 24 VDC - OUT: 250 VAC/DC / 6 A	85364900		

Optocouplers / Semiconductors



	6652500	MIRO TR 24VDC FK 4P OPTO-COUPLER MODULE, IN: 53 VDC - OUT: 48 VDC / 0,5 A	85414090		
	50085	AMMDU OPTO-COUPLER MODULE, IN: 53 VDC - OUT: 53 VDC / 1 A - 1 C/O contact <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85414090		
	6652501	MIRO TR 24VDC FK OPTO-COUPLER MODULE, IN: 48 VDC - OUT: 48 VDC / 2 A	85414090		
	50044	AMS 10-43/5 OPTO-COUPLER MODULE, N: 53 VDC - OUT: 53 VDC / 4 A	85414090		

Eurocard Holders / Control Modules

Accessories

	92260	CONTROL SYSTEMS MISC., Space-on board, AID, mounting	85389099		
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Control Cabinet Power Outlets

	67900	MSVD POWER SOCKET VDE, Mounting rail	85366990		
	67950	MSVD POWER SOCKET VDE YELLOW, Mounting rail	85366990		

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Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
Power Supply DC					
	85690	Emparro Power Supply 3-PHASE, IN: 360 - 500VAC OUT: 24-28V/5ADC	85044090		
	85691	Emparro Power Supply 3-PHASE, IN: 360 - 500VAC OUT: 24-28V/10ADC	85044090		
	85692	Emparro Power Supply 3-PHASE, IN: 360 - 500VAC OUT: 24-28V/20ADC	85044090		
	85693	Emparro Power Supply 3-PHASE, IN: 360 - 500VAC OUT: 24-28V/40ADC	85044090		
Intelligent Power Distribution					
	9000-41034-0401005	MICO 4.10 SPEED-START ELEC AUX CIRCUIT, 4 channels	85363010		
	9000-41084-0100400	MICO+ 4.4 ELEC AUX CIRCUIT, 4 CHANNELS, IN: 24VDC OUT: 24 V DC / 1-2-3-4 A	85363010		
	9000-41084-0100600	MICO+ 4.6 ELEC AUX CIRCUIT, 4 CHANNELS, IN: 24VDC OUT: 24V/1-2-4-6ADC	85363010		
	9000-41084-0401000	MICO+ 4.10 ELEC AUX CIRCUIT, 4 CHANNELS, IN: 24VDC OUT: 24V/4-6-8-10ADC	85363010		
	9000-41000-0000000	Mico Pro endless plug-in link 2x blue, max. 40A, 500mm length	85366990		
	9000-41000-0000001	Mico Pro endless plug-in link 2x red, max. 40A, 500mm length	85366990		
	9000-41000-0000002	Mico Pro endless plug-in link 1x blue 1x red, max. 40A, 500mm length	85366990		
	9000-41000-0000212	Mico Pro Potential distributor 2 x 12, 12 x 24 V DC + 12 x 0 V DC, max. 20 A	85369010		
	9000-41011-0200000	Mico Pro electronic auxiliary circuit, 1 channel, IN: 24 V DC OUT: 24 V DC / 2 A	85363010		
	9000-41011-0400000	Mico Pro electronic auxiliary circuit, 1 channel, IN: 24 V DC OUT: 24 V DC / 4 A	85363010		
	9000-41011-0600000	Mico Pro electronic auxiliary circuit, 1 channel, IN: 24 V DC OUT: 24 V DC / 6 A	85363010		
	9000-41011-0800000	Mico Pro electronic auxiliary circuit, 1 channel, IN: 24 V DC OUT: 24 V DC / 8 A	85363010		
	9000-41011-1000000	Mico Pro electronic auxiliary circuit, 1 channel, IN: 24 V DC OUT: 24 V DC / 10 A	85363010		

Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	9000-41011-1600000	Mico Pro electronic auxiliary circuit, 1 channel, IN: 24 V DC OUT: 24 V DC / 16 A	85363010		
	9000-41012-0200000	Mico Pro electronic auxiliary circuit, 2 channels, IN: 24 V DC OUT: 24 V DC / 2 A	85363010		
	9000-41012-0400000	Mico Pro electronic auxiliary circuit, 2 channels, IN: 24 V DC OUT: 24 V DC / 4 A	85363010		
	9000-41012-0600000	Mico Pro electronic auxiliary circuit, 2 channels, IN: 24 V DC OUT: 24 V DC / 6 A	85363010		
	9000-41014-0200000	Mico Pro electronic auxiliary circuit, 4 channels, IN: 24 V DC OUT: 24 V DC / 2 A	85363010		
	9000-41014-0400000	Mico Pro electronic auxiliary circuit, 4 channels, IN: 24 V DC OUT: 24 V DC / 4 A	85363010		
	9000-41014-0600000	Mico Pro electronic auxiliary circuit, 4 channels, IN: 24 V DC OUT: 24 V DC / 6 A	85363010		
	9000-41091-0101000	Mico Pro electronic auxiliary circuit, 1 channel, IN: 24 V DC OUT: 24 V DC / 1-2-3-4-5-6-7-8-9-10A	85363010		
	9000-41091-1102000	Mico Pro electronic auxiliary circuit, 1 channel, IN: 24 V DC OUT: 24 V DC / 11-12-13-14-15-16-17-18-19-20 A	85363030		
	9000-41092-0101000	Mico Pro electronic auxiliary circuit, 2 channels, IN: 24 V DC OUT: 24 V DC / 1-2-3-4-5-6-7-8-9-10A	85363010		
	9000-41094-0101000	Mico Pro electronic auxiliary circuit, 4 channels, IN: 24 V DC OUT: 24 V DC / 1-2-3-4-5-6-7-8-9-10A	85363010		
	9000-41190-0000000	Mico Pro Power module, IN: 24 V DC / 40A, 16mm	85363030		

Accessories




	9000-41034-0000001	MICO ACCESSOIRES, MICO bridging set (10 sets)	85366990		
	9000-41034-0000002	MICO ACCESSOIRES, MICO bridging set (1 set)	85366990		
	9000-41034-0000003	MICO ACCESSOIRES, MICO shortend switch (packaging unit = 4 pieces)	39269097		

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Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
Buffer modules / Redundancy Modules					
	85458	EMPARRO CAP BUFFER MODULE, IN: 24VDC OUT: 24VDC/20A for max. 1A/40s	85322900		
	85394	MB CAP BUFFER MODULE, IN:23-30 VDC OUT:22-28VDC/20A for 200ms	85322200		

Interfaces

Front Panel Interfaces

	4000-68123-0000000	MODLINK MSDD FRAME DBL METAL, Nicked	85389099		
	4000-68000-0020000	MODLINK MSDD SOCKET INSERT GERMANY, 250VAC/16A yellow	85366990		
	4000-68000-1430000	MODLINK MSDD DATA INSERT, 1SUB-D9 fem./male + 1RJ45 + 1xUSB-A fem./fem.	85366990		
	4000-68000-1440000	MODLINK MSDD DATA INSERT, 1SUB-D9 fem./fem. + 1RJ45 + 1xUSB-A fem./fem.	85366990		

Connection Technology

Valve Connectors

Field-wireable



	7000-29801-0000000	SVS VALVE PLUG FORM BI 11MM FIELD-WIREABLE, 24V LED+Z-Diode M16x1.5	85366990		
	7000-29001-0000000	SVS VALVE PLUG FORM A 18MM FIELD-WIREABLE, 24V LED+Z-Diode M16x1.5	85366990		

Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	7000-94021-6560150	MSUD VALVE PLUG FORM CI 9.4 MM, PUR 3X0.75 black ROBOT, drag ch 1.5m	85444290		
	7000-94021-6560300	MSUD VALVE PLUG FORM CI 9.4 MM, PUR 3X0.75 black ROBOT, drag ch 3m	85444290		
	7000-94021-6560500	MSUD VALVE PLUG FORM CI 9.4 MM, PUR 3X0.75 black ROBOT, drag ch 5m	85444290		
	7000-94021-6560750	MSUD VALVE PLUG FORM CI 9.4 MM, PUR 3X0.75 black ROBOT, drag ch 7.5m	85444290		
	7000-94021-6561000	MSUD VALVE PLUG FORM CI 9.4 MM, PUR 3X0.75 black ROBOT, drag ch 10m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-18001-6360150	MSUD VALVE PLUG FORM A 18MM, PUR 3X0.75 black UL/CSA, drag ch 1.5m	85444290		
	7000-18001-6360300	MSUD VALVE PLUG FORM A 18MM, PUR 3X0.75 black UL/CSA, drag ch 3m Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85444290		
	7000-18001-6360500	MSUD VALVE PLUG FORM A 18MM, PUR 3X0.75 black UL/CSA, drag ch 5m Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85444290		
	7000-18001-6360750	MSUD VALVE PLUG FORM A 18MM, PUR 3X0.75 black UL/CSA, drag ch 7.5m Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85444290		
	7000-18001-6361000	MSUD VALVE PLUG FORM A 18MM, PUR 3X0.75 black UL/CSA, drag ch 10m Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85444290		

Accessories


	7000-41301-0000000	M12 ADAPTOR ON TOP OF MSUD VALVE PLUG FORM A 18MM,	85369010		
	7000-41421-0000000	M12 ADAPTOR ON REAR OF MSUD VALVE PLUG FORM A 18MM,	85369010		
	7000-41561-6360000	M12 MALE ON REAR OF MSUD DOUBLE VALVE PLUG 18MM, PUR 3X0.75 black UL/CSA, drag ch 0m	85444290		
	7000-41581-6360000	M12 MALE ON REAR OF MSUD DOUBLE VALVE PLUG 18MM, PUR 3X0.75 black UL/CSA, drag ch 0m	85444290		
	7000-41601-6360000	M12 MALE ON REAR OF MSUD DOUBLE VALVE PLUG 18MM, PUR 3X0.75 black UL/CSA, drag ch 0m	85444290		

Connection cables


	7000-40881-6360030	M12 MALE O / MSUD VALVE PLUG FORM A 18MM, PUR 3X0.75 black UL/CSA, drag ch 0.3m	85444290		
	7000-40881-6360060	M12 MALE O / MSUD VALVE PLUG FORM A 18MM, PUR 3X0.75 black UL/CSA, drag ch 0.6m	85444290		
	7000-40881-6360100	M12 MALE O / MSUD VALVE PLUG FORM A 18MM, PUR 3X0.75 black UL/CSA, drag ch 1m	85444290		
	7000-40881-6360150	M12 MALE O / MSUD VALVE PLUG FORM A 18MM, PUR 3X0.75 black UL/CSA, drag ch 1.5m	85444290		
	7000-40881-6360200	M12 MALE O / MSUD VALVE PLUG FORM A 18MM, PUR 3X0.75 black UL/CSA, drag ch 2m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

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Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
M8					
<i>Open ended wires</i>					
	7000-08121-6300150	M8 female 90 with cable LED, PUR 3x0.25 bk UL/CSA+drag chain 1,5m	85444290		
	7000-08121-6300300	M8 female 90 with cable LED, PUR 3x0.25 bk UL/CSA+drag chain 3m	85444290		
	7000-08121-6300500	M8 female 90 with cable LED, PUR 3x0.25 bk UL/CSA+drag chain 5m	85444290		
	7000-08121-6300750	M8 female 90 with cable LED, PUR 3x0.25 bk UL/CSA+drag chain 7,5m	85444290		
	7000-08121-6301000	M8 female 90 with cable LED, PUR 3x0.25 bk UL/CSA+drag chain 10m	85444290		
	7000-08121-6500150	M8 female 90 with cable LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 1,5m	85444290		
	7000-08121-6500300	M8 female 90 with cable LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 3m	85444290		
	7000-08121-6500500	M8 female 90 with cable LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 5m	85444290		
	7000-08121-6500750	M8 female 90 with cable LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 7,5m	85444290		
	7000-08121-6501000	M8 female 90 with cable LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 10m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

Accessories					
	7000-99101-0000000	M8 TORQUE WRENCH SET AF 9, Torque: 0,4 Nm	82041100		



M12					
<i>Field-wireable</i>					
	7000-12481-0000000	MOSA M12 MALE 0 FIELD-WIREABLE (IDC), 4-pol. 0.250.5mm	85366990		
	7000-12515-0000000	MOSA M12 MALE 0 FIELD-WIREABLE (IDC), 4-pol. 0.51.0mm	85366990		
	7000-12561-0000000	MOSA M12 MALE 90 FIELD-WIREABLE (IDC), 4-pol. 0.250.5mm	85366990		
	7000-12601-0000000	MOSA M12 FEMALE 0 FIELD-WIREABLE (IDC), 4-pol. 0.250.5mm	85366990		
	7000-12641-0000000	MOSA M12 FEMALE 0 FIELD-WIREABLE (IDC), 4-pol. 0.51.0mm	85366990		
	7000-12671-0000000	MOSA M12 FEMALE 90 2LED FIELD-WIREABLE (IDC), 3-pol. 0.250.5mm	85366990		
	7000-12681-0000000	MOSA M12 FEMALE 90 FIELD-WIREABLE (IDC), 4-pol. 0.250.5mm	85366990		

Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	7000-12691-0000000	MOSA M12 FEMALE 90 3LED FIELD-WIREABLE (IDC), 4-pol. 0.250.5mm	85366990		

Open ended wires


	7000-12421-6340150	M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, drag ch 1.5m	85444290		
	7000-12421-6340300	M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, drag ch 3m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-12421-6340500	M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, drag ch 5m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-12421-6340750	M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, drag ch 7.5m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-12421-6540150	M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, ROBOT, drag ch 1.5m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-12421-6540300	M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, ROBOT, drag ch 3m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-12421-6540500	M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, ROBOT, drag ch 5m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-12421-6540750	M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, ROBOT, drag ch 7.5m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-13261-3310150	M12 FEMALE 90 SHIELDED, PUR 4X0.34 shielded GRAY, 1.5m	85444290		
	7000-13261-3310300	M12 FEMALE 90 SHIELDED, PUR 4X0.34 shielded GRAY, 3m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-13261-3310500	M12 FEMALE 90 SHIELDED, PUR 4X0.34 shielded GRAY, 5m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-13261-3310750	M12 FEMALE 90 SHIELDED, PUR 4X0.34 shielded GRAY, 7.5m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-13261-3311000	M12 FEMALE 90 SHIELDED, PUR 4X0.34 shielded GRAY, 10m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-13281-3490150	M12 FEMALE 90 SHIELDED, PUR 5X0.34 shielded GRAY, 1.5m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-13281-3490300	M12 FEMALE 90 SHIELDED, PUR 5X0.34 shielded GRAY, 3m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-13281-3490500	M12 FEMALE 90 SHIELDED, PUR 5X0.34 shielded GRAY, 5m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-13281-3490750	M12 FEMALE 90 SHIELDED, PUR 5X0.34 shielded GRAY, 7.5m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		
	7000-13281-3491000	M12 FEMALE 90 SHIELDED, PUR 5X0.34 shielded GRAY, 10m <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85444290		

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Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	7000-17061-2920150	M12 female 90 with cable, PUR 8x0.25 gy drag chain 1.5m	85444290		
	7000-17061-2920300	M12 female 90 with cable, PUR 8x0.25 gy drag chain 3m	85444290		
	7000-17061-2920500	M12 female 90 with cable, PUR 8x0.25 gy drag chain 5m	85444290		
	7000-17061-2920750	M12 female 90 with cable, PUR 8x0.25 gy drag chain 7.5m	85444290		
	7000-17061-2921000	M12 female 90 with cable, PUR 8x0.25 gy drag chain 10m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.


Connection cables

	7000-40021-6340030	M12 MALE 0 / M12 FEMALE 0, PUR 4X0.34 black UL/CSA, drag ch 0.3m	85444290		
	7000-40021-6340060	M12 MALE 0 / M12 FEMALE 0, PUR 4X0.34 black UL/CSA, drag ch 0.6m	85444290		
	7000-40021-6340100	M12 MALE 0 / M12 FEMALE 0, PUR 4X0.34 black UL/CSA, drag ch 1m	85444290		
	7000-40021-6340150	M12 MALE 0 / M12 FEMALE 0, PUR 4X0.34 black UL/CSA, drag ch 1.5m	85444290		
	7000-40021-6340200	M12 MALE 0 / M12 FEMALE 0, PUR 4X0.34 black UL/CSA, drag ch 2m	85444290		


Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-40341-6340030	M12 MALE 0 / M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, drag ch 0.3m	85444290		
	7000-40341-6340060	M12 MALE 0 / M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, drag ch 0.6m	85444290		
	7000-40341-6340100	M12 MALE 0 / M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, drag ch 1m	85444290		
	7000-40341-6340150	M12 MALE 0 / M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, drag ch 1.5m	85444290		
	7000-40341-6340200	M12 MALE 0 / M12 FEMALE 90 LED, PUR 4X0.34 black UL/CSA, drag ch 2m	85444290		
	7000-40341-6540030	M12 MALE 0 / M12 FEMALE 90 LED, PUR 4X0.34 black ROBOT, drag ch 0.3m	85444290		
	7000-40341-6540060	M12 MALE 0 / M12 FEMALE 90 LED, PUR 4X0.34 black ROBOT, drag ch 0.6m	85444290		
	7000-40341-6540100	M12 MALE 0 / M12 FEMALE 90 LED, PUR 4X0.34 black ROBOT, drag ch 1m	85444290		
	7000-40341-6540150	M12 MALE 0 / M12 FEMALE 90 LED, PUR 4X0.34 black ROBOT, drag ch 1.5m	85444290		
	7000-40341-6540200	M12 MALE 0 / M12 FEMALE 90 LED, PUR 4X0.34 black ROBOT, drag ch 2m	85444290		


Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7030-40021-6340030	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 4X0.34 bk UL/CSA, drag ch 0.3m	85444290		
	7030-40021-6340060	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 4X0.34 bk UL/CSA, drag ch 0.6m	85444290		
	7030-40021-6340100	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 4X0.34 bk UL/CSA, drag ch 1m	85444290		
	7030-40021-6340150	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 4X0.34 bk UL/CSA, drag ch 1.5m	85444290		
	7030-40021-6340200	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 4X0.34 bk UL/CSA, drag ch 2m	85444290		


Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7030-40021-6340300	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 4X0.34 bk UL/CSA, drag ch 3m	85444290		
	7030-40021-6340500	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 4X0.34 bk UL/CSA, drag ch 5m	85444290		


Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7030-40041-0350030	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 5X0.34 ye UL/CSA, drag ch 0.3m	85444290		
	7030-40041-0350060	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 5X0.34 ye UL/CSA, drag ch 0.6m	85444290		
	7030-40041-0350100	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 5X0.34 ye UL/CSA, drag ch 1m	85444290		
	7030-40041-0350150	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 5X0.34 ye UL/CSA, drag ch 1.5m	85444290		
	7030-40041-0350200	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 5X0.34 ye UL/CSA, drag ch 2m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7030-40041-0350300	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 5X0.34 ye UL/CSA, drag ch 3m	85444290		
	7030-40041-0350500	M12 MALE 0 / M12 FEMALE 0 AIDA, PUR 5X0.34 ye UL/CSA, drag ch 5m	85444290		


Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7999-40041-6380100	M12 MALE 0 / M12 FEMALE 0, PUR 5X0.75 black UL/CSA, drag ch 1m	85444290		
	7999-40041-6380200	M12 MALE 0 / M12 FEMALE 0, PUR 5X0.75 black UL/CSA, drag ch 2m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.


Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	7999-40041-6380500	M12 MALE 0 / M12 FEMALE 0, PUR 5X0.75 black UL/CSA, drag ch 5m	85444290		
	7999-40041-6380750	M12 MALE 0 / M12 FEMALE 0, PUR 5X0.75 black UL/CSA, drag ch 7.5m	85444290		
	7999-40041-6381000	M12 MALE 0 / M12 FEMALE 0, PUR 5X0.75 black UL/CSA, drag ch 10m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-40641-6300030	M12 male 0 / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+drag chain 0,3m	85444290		
	7000-40641-6300060	M12 male 0 / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+drag chain 0,6m	85444290		
	7000-40641-6300100	M12 male 0 / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+drag chain 1m	85444290		
	7000-40641-6300150	M12 male 0 / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+drag chain 1,5m	85444290		
	7000-40641-6300200	M12 male 0 / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+drag chain 2m	85444290		
	7000-40641-6500030	M12 male 0 / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 0,3m	85444290		
	7000-40641-6500060	M12 male 0 / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 0,6m	85444290		
	7000-40641-6500100	M12 male 0 / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 1m	85444290		
	7000-40641-6500150	M12 male 0 / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 1,5m	85444290		
	7000-40641-6500200	M12 male 0 / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 2m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

Accessories


	7000-99102-0000000	M12 TORQUE WRENCH SET AF 13, Torque: 0,6 Nm	82041100		
	7000-99801-0000000	modular universal holder for connectors, 9mm, Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	39269097		
	7000-99811-0000000	modular universal holder for connectors, 14mm,	39269097		

7/8"


Field-wireable

	7000-78091-0000000	MOSA 7/8" MALE 0 FIELD-WIREABLE (IDC), 5-pol., 0,75-1,50mm Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85366990		
	7000-78141-0000000	7/8" MALE 90 FIELD-WIREABLE SCREW, 5-pol. clamp section 6-8,7mm	85366990		
	7000-78211-0000000	MOSA 7/8" FEMALE 0 FIELD-WIREABLE (IDC), 5-pol., 0,75-1,50mm	85366990		
	7000-78261-0000000	7/8" FEMALE 90 FIELD-WIREABLE SCREW, 5-pol. clamp section 6-8,7mm	85366990		


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Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
Open ended wires					
	7000-78021-9610150	7/8" female 0 with cable, PUR 5x1.5 gy UL/CSA+drag chain 1,5m	85444290		
	7000-78021-9610300	7/8" female 0 with cable, PUR 5x1.5 gy UL/CSA+drag chain 3m	85444290		
	7000-78021-9610500	7/8" female 0 with cable, PUR 5x1.5 gy UL/CSA+drag chain 5m	85444290		
	7000-78021-9610750	7/8" female 0 with cable, PUR 5x1.5 gy UL/CSA+drag chain 7,5m	85444290		
	7000-78021-9611000	7/8" female 0 with cable, PUR 5x1.5 gy UL/CSA+drag chain 10m	85444290		


Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-78051-9610150	7/8" female 90 with cable, PUR 5x1.5 gy UL/CSA+drag chain 1,5m	85444290		
	7000-78051-9610300	7/8" female 90 with cable, PUR 5x1.5 gy UL/CSA+drag chain 3m	85444290		
	7000-78051-9610500	7/8" female 90 with cable, PUR 5x1.5 gy UL/CSA+drag chain 5m	85444290		
	7000-78051-9610750	7/8" female 90 with cable, PUR 5x1.5 gy UL/CSA+drag chain 7,5m	85444290		
	7000-78051-9611000	7/8" female 90 with cable, PUR 5x1.5 gy UL/CSA+drag chain 10m	85444290		


Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

Connection cables					
	7000-50021-9610150	7/8" male 0 / 7/8" female 0, PUR 5x1.5 gy UL/CSA+drag chain 1,5m	85444290		
	7000-50021-9610300	7/8" male 0 / 7/8" female 0, PUR 5x1.5 gy UL/CSA+drag chain 3m	85444290		
	7000-50021-9610500	7/8" male 0 / 7/8" female 0, PUR 5x1.5 gy UL/CSA+drag chain 5m	85444290		
	7000-50021-9610750	7/8" male 0 / 7/8" female 0, PUR 5x1.5 gy UL/CSA+drag chain 7,5m	85444290		
	7000-50021-9611000	7/8" male 0 / 7/8" female 0, PUR 5x1.5 gy UL/CSA+drag chain 10m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-50051-9610150	7/8" male 90 / 7/8" female 90, PUR 5x1.5 gy UL/CSA+drag chain 1,5m Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85444290		
	7000-50051-9610300	7/8" male 90 / 7/8" female 90, PUR 5x1.5 gy UL/CSA+drag chain 3m	85444290		
	7000-50051-9610500	7/8" male 90 / 7/8" female 90, PUR 5x1.5 gy UL/CSA+drag chain 5m	85444290		
	7000-50051-9610750	7/8" male 90 / 7/8" female 90, PUR 5x1.5 gy UL/CSA+drag chain 7,5m	85444290		
	7000-50051-9611000	7/8" male 90 / 7/8" female 90, PUR 5x1.5 gy UL/CSA+drag chain 10m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

Accessories					
	7000-99104-0000000	7/8" TORQUE WRENCH SET AF 22, Torque: 1,5 Nm	82041100		

Ethernet





Field-wireable					
	7000-14521-0000000	MOSA M12 MALE 0 FIELD-WIREABLE (IDC), D-cod., 4-pol., 0,25-0,34mm, shielded	85366990		
	7000-14621-0000000	MOSA M12 FEMALE 0 FIELD-WIREABLE (IDC), D-cod., 4-pol., 0,25-0,34mm, shielded	85366990		

Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	7000-74001-0000000	RJ45 PROFESSIONAL MALE 0 4 POL. SHIELDED, Ethernet <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85366990		
	7000-74011-0000000	RJ45 PROFESSIONAL MALE 0 8 POL. SHIELDED, Gigabit	85366990		
	7000-74021-0000000	RJ45 PROFESSIONAL MALE 90 4 POL. SHIELDED, Ethernet	85366990		
	7000-74031-0000000	RJ45 PROFESSIONAL MALE 90 8 POL. SHIELDED, Gigabit	85366990		
	7000-99051-0000000	RJ45 ETHERNET 0 4POL,SHIELDED, <i>Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.</i>	85366990		

Open ended wires


	7000-14541-7960150	M12 MALE,0 SHIELDED, D CODED, ETHERNET, PUR 2x2xAWG22 shielded green UL,CSA+dragchain 1.5m	85444290		
	7000-14541-7960300	M12 MALE,0 SHIELDED, D CODED, ETHERNET, PUR 2x2xAWG22 shielded green UL,CSA+dragchain 3m	85444290		
	7000-14541-7960500	M12 MALE,0 SHIELDED, D CODED, ETHERNET, PUR 2x2xAWG22 shielded green UL,CSA+dragchain 5m	85444290		
	7000-14541-7960750	M12 MALE,0 SHIELDED, D CODED, ETHERNET, PUR 2x2xAWG22 shielded green UL,CSA+dragchain 7.5m	85444290		
	7000-14541-7961000	M12 MALE,0 SHIELDED, D CODED, ETHERNET, PUR 2x2xAWG22 shielded green UL,CSA+dragchain 10m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-14561-7960150	M12 MALE,90 SHIELDED, D-COD, ETHERNET, PUR 2x2xAWG22 shielded green UL,CSA+dragchain 1.5m	85444290		
	7000-14561-7960300	M12 MALE,90 SHIELDED, D-COD, ETHERNET, PUR 2x2xAWG22 shielded green UL,CSA+dragchain 3m	85444290		
	7000-14561-7960500	M12 MALE,90 SHIELDED, D-COD, ETHERNET, PUR 2x2xAWG22 shielded green UL,CSA+dragchain 5m	85444290		
	7000-14561-7960750	M12 MALE,90 SHIELDED, D-COD, ETHERNET, PUR 2x2xAWG22 shielded green UL,CSA+dragchain 7.5m	85444290		
	7000-14561-7961000	M12 MALE,90 SHIELDED, D-COD, ETHERNET, PUR 2x2xAWG22 shielded green UL,CSA+dragchain 10m	85444290		


Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

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Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	7000-74101-7960150	RJ45 male 0 shield with cable, Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 1,5m	85444210		
	7000-74101-7960300	RJ45 male 0 shield with cable, Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 3m	85444210		
	7000-74101-7960500	RJ45 male 0 shield with cable, Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 5m	85444210		
	7000-74101-7960750	RJ45 male 0 shield with cable, Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 7,5m	85444210		
	7000-74101-7961000	RJ45 male 0 shield with cable, Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 10m	85444210		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.


Connection cables

	7000-44511-7960150	M12 male 0 / M12 male, 0, shielded, Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 1,5m	85444290		
	7000-44511-7960300	M12 male 0 / M12 male, 0, shielded, Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 3m	85444290		
	7000-44511-7960500	M12 male 0 / M12 male, 0, shielded, Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 5m	85444290		
	7000-44511-7960750	M12 male 0 / M12 male, 0, shielded, Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 7,5m	85444290		
	7000-44511-7961000	M12 male 0 / M12 male, 0, shielded, Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 10m	85444290		


Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-44561-7960150	M12 male 90 / M12 male, 90, shielded, Ethernet, PUR 2x2xAWG22 shielded gn UL/CSA+dragchain 1,5m	85444290		
	7000-44561-7960300	M12 male 90 / M12 male, 90, shielded, Ethernet, PUR 2x2xAWG22 shielded gn UL/CSA+dragchain 3m	85444290		
	7000-44561-7960500	M12 male 90 / M12 male, 90, shielded, Ethernet, PUR 2x2xAWG22 shielded gn UL/CSA+dragchain 5m	85444290		
	7000-44561-7960750	M12 male 90 / M12 male, 90, shielded, Ethernet, PUR 2x2xAWG22 shielded gn UL/CSA+dragchain 7,5m	85444290		
	7000-44561-7961000	M12 male 90 / M12 male, 90, shielded, Ethernet, PUR 2x2xAWG22 shielded gn UL/CSA+dragchain 10m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-44621-7960150	M12 female 0 / RJ45 male 0 shielded Ethernet, PUR 2x2xAWG22 shielded gn UL/CSA+dragchain 1.5m	85444210		
	7000-44621-7960300	M12 female 0 / RJ45 male 0 shielded Ethernet, PUR 2x2xAWG22 shielded gn UL/CSA+dragchain 3m	85444210		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-44621-7960500	M12 female 0 / RJ45 male 0 shielded Ethernet, PUR 2x2xAWG22 shielded gn UL/CSA+dragchain 5m Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85444210		
	7000-44621-7960750	M12 female 0 / RJ45 male 0 shielded Ethernet, PUR 2x2xAWG22 shielded gn UL/CSA+dragchain 7,5m	85444210		
	7000-44621-7960750	M12 female 0 / RJ45 male 0 shielded Ethernet, PUR 2x2xAWG22 shielded gn UL/CSA+dragchain 7,5m	85444210		
	7000-44621-7961000	M12 female 0 / RJ45 male 0 shielded Ethernet, PUR 2x2xAWG22 shielded gn UL/CSA+dragchain 10m	85444210		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	7000-74301-7960150	RJ45 male 0 / RJ45 male 0 shield Ethernet, PUR 2x2xAWG22/7 shielded gn UL,CSA+dragchain 1,5m	85444210		
	7000-74301-7960300	RJ45 male 0 / RJ45 male 0 shield Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 3m	85444210		
	7000-74301-7960500	RJ45 male 0 / RJ45 male 0 shield Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 5m	85444210		
	7000-74301-7960750	RJ45 male 0 / RJ45 male 0 shield Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 7,5m	85444210		
	7000-74301-7961000	RJ45 male 0 / RJ45 male 0 shield Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 10m	85444210		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-74341-7960150	RJ45 male 0 / RJ45 male 45 down, shield Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 1,5m	85444210		
	7000-74341-7960300	RJ45 male 0 / RJ45 male 45 down, shield Ethernet, PUR 2x2xAWG22 shielded gn UL, CSA+dragchain 3m	85444210		
	7000-74341-7960500	RJ45 male 0 / RJ45 male 45 down, shield Ethernet, PUR 2x2xAWG22 shielded gn UL, CSA+dragchain 5m	85444210		
	7000-74341-7960750	RJ45 male 0 / RJ45 male 45 down, shield Ethernet, PUR 2x2xAWG22 shielded gn UL, CSA+dragchain 7.5m	85444210		
	7000-74341-7961000	RJ45 male 0 / RJ45 male 45 down, shield Ethernet, PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 10m	85444210		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.


	7000-74481-7960150	RJ45 male 45down/RJ45 male 45down shield Ethern., PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 1.5m	85444210		
	7000-74481-7960300	RJ45 male 45down/RJ45 male 45down shield Ethern., PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 3m	85444210		
	7000-74481-7960500	RJ45 male 45down/RJ45 male 45down shield Ethern., PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 5m	85444210		
	7000-74481-7960750	RJ45 male 45down/RJ45 male 45down shield Ethern., PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 7.5m	85444210		
	7000-74481-7961000	RJ45 male 45down/RJ45 male 45down shield Ethern., PUR 2x2xAWG22 shielded gn UL,CSA+dragchain 10m	85444210		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.



	7000-74701-7770150	RJ45 male 0 / RJ45 male 0 Cabinet-Line, Ethernet, FRNC/LSOH 2x2xAWG26 shielded gr 1,5m	85444210		
	7000-74701-7770300	RJ45 male 0 / RJ45 male 0 Cabinet-Line, Ethernet, FRNC/LSOH 2x2xAWG26 shielded gr 3m	85444210		
	7000-74701-7770500	RJ45 male 0 / RJ45 male 0 Cabinet-Line, Ethernet, FRNC/LSOH 2x2xAWG26 shielded gr 5m	85444210		
	7000-74701-7770750	RJ45 male 0 / RJ45 male 0 Cabinet-Line, Ethernet, FRNC/LSOH 2x2xAWG26 shielded gr 7,5m	85444210		
	7000-74701-7771000	RJ45 male 0 / RJ45 male 0 Cabinet-Line, Ethernet, FRNC/LSOH 2x2xAWG26 shielded gr 10m	85444210		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.



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Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	7000-74711-7780150	RJ45 male 0 / RJ45 male 0 Cabinet-Line, Gigabit, FRNC/LSOH 4x2xAWG26 shielded gr 1,5m	85444210		
	7000-74711-7780300	RJ45 male 0 / RJ45 male 0 Cabinet-Line, Gigabit, FRNC/LSOH 4x2xAWG26 shielded gr 3m	85444210		
	7000-74711-7780500	RJ45 male 0 / RJ45 male 0 Cabinet-Line, Gigabit, FRNC/LSOH 4x2xAWG26 shielded gr 5m	85444210		
	7000-74711-7780750	RJ45 male 0 / RJ45 male 0 Cabinet-Line, Gigabit, FRNC/LSOH 4x2xAWG26 shielded gr 7,5m	85444210		
	7000-74711-7781000	RJ45 male 0 / RJ45 male 0 Cabinet-Line, Gigabit, FRNC/LSOH 4x2xAWG26 shielded gr 10m	85444210		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.


Accessories					
	7000-44671-0000000	M12 Bu. D-cod. / RJ45 Ethernet adapter 0 4-pol.,	85366990		
	7000-44681-0000000	M12 Bu. D-cod. / RJ45 Ethernet adapter 90 4-pol.,	85366990		

Fieldbus

Field-wireable					
	7000-14201-0000000	MOSA M12 MALE 0 FIELD-WIREABLE (IDC), B-cod., 3-pol., 0,25-0,34mm, shielded	85366990		
	7000-14221-0000000	MOSA M12 FEMALE 0 FIELD-WIREABLE (IDC), B-cod., 3-pol., 0,25-0,34mm, shielded	85366990		


Open ended wires					
	7000-14051-8400150	M12 male 0 shielded B-cod. with cable, Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 1.5m	85444290		
	7000-14051-8400300	M12 male 0 shielded B-cod. with cable, Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 3m	85444290		
	7000-14051-8400500	M12 male 0 shielded B-cod. with cable, Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 5m	85444290		
	7000-14051-8400750	M12 male 0 shielded B-cod. with cable, Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 7.5m	85444290		
	7000-14051-8401000	M12 male 0 shielded B-cod. with cable, Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 10m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.


Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	7000-14061-8400150	M12 female 0 shielded B-cod. with cable, Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 1.5m	85444290		
	7000-14061-8400300	M12 female 0 shielded B-cod. with cable, Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 3m	85444290		
	7000-14061-8400500	M12 female 0 shielded B-cod. with cable, Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 5m	85444290		
	7000-14061-8400750	M12 female 0 shielded B-cod. with cable, Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 7.5m	85444290		
	7000-14061-8401000	M12 female 0 shielded B-cod. with cable, Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 10m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.



Connection cables

	7000-44001-8400030	M12 male 0/M12 female 0 shielded B-cod.Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 0,3m	85444290		
	7000-44001-8400060	M12 male 0/M12 female 0 shielded B-cod.Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 0,6m	85444290		
	7000-44001-8400100	M12 male 0/M12 female 0 shielded B-cod.Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 1m	85444290		


Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-44001-8400150	M12 male 0/M12 female 0 shielded B-cod.Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 1,5m Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85444290		
	7000-44001-8400200	M12 male 0/M12 female 0 shielded B-cod.Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 2m	85444290		
	7000-44021-8400030	M12 male 90/M12 female 90shielded B-cod.Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 0.3m	85444290		
	7000-44021-8400060	M12 male 90/M12 female 90shielded B-cod.Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 0.6m	85444290		
	7000-44021-8400100	M12 male 90/M12 female 90shielded B-cod.Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 1m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-44021-8400150	M12 male 90/M12 female 90shielded B-cod.Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 1.5m Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85444290		
	7000-44021-8400200	M12 male 90/M12 female 90shielded B-cod.Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 2m Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85444290		
	7000-44021-8400500	M12 male 90/M12 female 90shielded B-cod.Profibus, PUR 1x2xAWG24 shielded vt UL/CSA+dragchain 5m Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85444290		

Accessories

	55585	PROFIBUS-PLUG-MALE (SUB-D) 90, Cut clamp for rigid wire	85389091		
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Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
	55586	PROFIBUS-PLUG-MALE (SUB-D) 90 WITH PG, Cut clamp for rigid wire	85389091		
	55587	PROFIBUS-PLUG-MALE (SUB-D) 90, Cut clamp for flexible wire	85389091		
	55588	PROFIBUS-PLUG-MALE (SUB-D) 90 WITH PG, Cut clamp for flexible wire	85389091		
	7000-14041-0000000	M12 BUS TERMINATING PLUG FOR PROFIBUS,	85331000		
	7000-42111-0000000	M12-PANEL FEED THROUGH A-CODED, Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85369010		
	7000-44111-0000000	M12-PANEL FEED THROUGH 5 POLE B-CODED,	85369010		
	7000-99441-0000000	M12/D-SUB PROFIBUS ADAPTER MINI 90, M12 male B-cod./M12 female B-cod. Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.	85366990		

Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
Y connector					
M8/M12					
	7000-40861-6300030	M12 Y-distributor / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+drag chain 0,3m	85444290		
	7000-40861-6300060	M12 Y-distributor / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+drag chain 0,6m	85444290		
	7000-40861-6300100	M12 Y-distributor / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+drag chain 1m	85444290		
	7000-40861-6300150	M12 Y-distributor / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+drag chain 1,5m	85444290		
	7000-40861-6300200	M12 Y-distributor / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+drag chain 2m	85444290		
	7000-40861-6500030	M12 Y-distributor / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 0,3m	85444290		
	7000-40861-6500060	M12 Y-distributor / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 0,6m	85444290		
	7000-40861-6500100	M12 Y-distributor / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 1m	85444290		
	7000-40861-6500150	M12 Y-distributor / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 1,5m	85444290		
	7000-40861-6500200	M12 Y-distributor / M8 female 90 LED, PUR 3x0.25 bk UL/CSA+robot+drag chain 2m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.



M12					
	7000-40701-6330030	M12 Y-DISTRIBUTOR / M12 FEMALE 0, PUR 3X0.34 black UL/CSA, drag ch 0.3m	85444290		
	7000-40701-6330060	M12 Y-DISTRIBUTOR / M12 FEMALE 0, PUR 3X0.34 black UL/CSA, drag ch 0.6m	85444290		
	7000-40701-6330100	M12 Y-DISTRIBUTOR / M12 FEMALE 0, PUR 3X0.34 black UL/CSA, drag ch 1m	85444290		
	7000-40701-6330150	M12 Y-DISTRIBUTOR / M12 FEMALE 0, PUR 3X0.34 black UL/CSA, drag ch 1.5m	85444290		
	7000-40701-6330200	M12 Y-DISTRIBUTOR / M12 FEMALE 0, PUR 3X0.34 black UL/CSA, drag ch 2m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-40801-6330030	M12 Y-DISTRIBUTOR / M12 FEMALE 90 LED, PUR 3X0.34 black UL/CSA, drag ch 0.3m	85444290		
	7000-40801-6330060	M12 Y-DISTRIBUTOR / M12 FEMALE 90 LED, PUR 3X0.34 black UL/CSA, drag ch 0.6m	85444290		
	7000-40801-6330100	M12 Y-DISTRIBUTOR / M12 FEMALE 90 LED, PUR 3X0.34 black UL/CSA, drag ch 1m	85444290		
	7000-40801-6330150	M12 Y-DISTRIBUTOR / M12 FEMALE 90 LED, PUR 3X0.34 black UL/CSA, drag ch 1.5m	85444290		
	7000-40801-6330200	M12 Y-DISTRIBUTOR / M12 FEMALE 90 LED, PUR 3X0.34 black UL/CSA, drag ch 2m	85444290		
	7000-40801-6530030	M12 Y-DISTRIBUTOR / M12 FEMALE 90 LED, PUR 3X0.34 black UL/CSA + ROBOT, drag ch 0.3m	85444290		
	7000-40801-6530060	M12 Y-DISTRIBUTOR / M12 FEMALE 90 LED, PUR 3X0.34 black UL/CSA + ROBOT, drag ch 0.6m	85444290		
	7000-40801-6530100	M12 Y-DISTRIBUTOR / M12 FEMALE 90 LED, PUR 3X0.34 black UL/CSA + ROBOT, drag ch 1m	85444290		
	7000-40801-6530150	M12 Y-DISTRIBUTOR / M12 FEMALE 90 LED, PUR 3X0.34 black UL/CSA + ROBOT, drag ch 1.5m	85444290		
	7000-40801-6530200	M12 Y-DISTRIBUTOR / M12 FEMALE 90 LED, PUR 3X0.34 black UL/CSA + ROBOT, drag ch 2m	85444290		


Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

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Image	Article No.	Description	Customs tariff no	Customer art. no	Notes
T-couplers M8, M12, 7/8"					
	7000-41131-0000000	T-COUPLER SLIMLINE M12 MALE / 2X M12 FEMALE,	85366990		
	7000-41135-0000000	T-COUPLER SLIMLINE(LED)M12-MALE 5P/2XM12-FEMALE 4P,	85366990		
	7000-41171-0000000	T-COUPLER SLIMLINE M12 MALE / 2X M12 FEMALE,	85366990		
	7000-41191-0000000	T-COUPLER SLIMLINE M12-MALE 5P/ 2X M12-FEMALE 5P,	85366990		
	7000-41211-0000000	T-COUPLER SLIMLINE M12 MALE / 2X M8 FEMALE,	85366990		
	7000-99061-0000000	HOLDER FOR M12-T-COUPLER (SLIMLINE),	39269097		
	7000-99062-0000000	HOLDER FOR M12-T-COUPLER (SLIMLINE) + FIXING SET,	39269097		

Distribution Systems

M23

	7000-23211-4480500	M23 female 0 with cable, PUR 8x0.5+3x1.0 gy UL/CSA+drag chain 5m	85444290		
	7000-23211-4481000	M23 female 0 with cable, PUR 8x0.5+3x1.0 gy UL/CSA+drag chain 10m	85444290		
	7000-23251-4520500	M23 FEMALE 19 POLE 0, PUR 16x0,5+3x1,0 GRAY, 5m	85444290		
	7000-23251-4521000	M23 FEMALE 19 POLE 0, PUR 16x0,5+3x1,0 GRAY, 10m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

	7000-23311-4480500	M23 female 90 with cable, PUR 8x0.5+3x1.0 gy UL/CSA+drag chain 5m	85444290		
	7000-23311-4481000	M23 female 90 with cable, PUR 8x0.5+3x1.0 gy UL/CSA+drag chain 10m	85444290		
	7000-23351-4520500	M23 FEMALE 19 POLE 90, PUR 16x0,5+3x1,0 GRAY, 5m	85444290		
	7000-23351-4521000	M23 FEMALE 19 POLE 90, PUR 16x0,5+3x1,0 GRAY, 10m	85444290		

Differing cable lengths up to 2 m can be ordered in 0.2 m steps, from 2 m on in 0.5 m steps.

EMC SUPPRESSORS

Suppression modules for inductive loads simplify the fulfilment of the EMC law!

Old laws have not lost their validity now. The Ohm's law is still valid everywhere, as well as the Lenz's rule. This states that when an inductive load is switched off, current has the desire to continue flowing in the same direction and strength as before. A voltage source is created from the inductive load, which can be many times higher than the nominal voltage. This voltage spike is the cause of many EMC problems.

What does the EMC law achieve?

From the 1st January 1996 only products which fulfil the requirements of § 4 of the EMC guidelines, can be brought into the European market.

That means:

Products cannot send out interference nor be influenced by it. Suppression components do not fall under the EMC guidelines.

Reasons for interferences

-High inductive voltage spikes at inductive loads:

The high voltage spikes when switching off exceed the normal supply voltage many times and overload the electronics. The voltage can in some cases be so high, that the windings are shorted and the inductive component is destroyed.

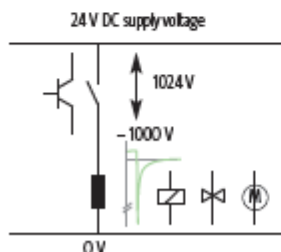
-High inductive voltage spikes in the automated system:

The voltage spikes climb at a very high speed. These very high climb rates contain high frequencies. Every cable and wire in the control system acts as a transmitter or receiver for these high frequencies.

These high frequency interferences can therefore move unhindered from cable to neighboring cable.

-High inductive voltage spikes in the controller:

The present voltage spike at the moment of switching off adds itself in opposite polarity to the supply voltage and affects the controller i.e. PLC.



These high voltages in the controller cause energy rich arcs, due to the current flowing on in the same strength and direction at the moment that the contact is opened.

The arcs cause material deformation and reduce the life expectancy of the switching elements.

Murrelektronik solves your interference problems:

- faults in the control process
- defective control system
- defective coil on the motor, contactor, valve or transformer
- interference emissions causing a reduction in functionality
- EMC problems

Suppression modules for control systems

Murrelektronik supply suppressors for all standard inductive loads.

For contactors

- Integrated system solutions for all common protectors
- Contactors or relays for universal suppressors can be snapped onto DIN-rail

For motors

- Direct suppression inside the motor terminal box
- Motor connection socket 10 + E with integrated suppression and manufactured cable
- Integrated system solutions for direct mounting
- The universal suppressors should be mounted near the source of interference (motor)

For valves

- Easy mounting of suppressor

Advantage:

- Optimum interference through individual adaption
- Easy mounting through prefabricated modules – always the perfect solution
- Less breakdowns increase availability and reduce downtime
- High life span of contacts and control units reduces maintenance cost

EMC SUPPRESSORS

An overview of different types of suppressors

Circuit	Characteristics of load current and voltages	Incorrect polarity protection and also suitable for AC	Additional switch-off delay	Back e.m.f. limitation	Damping also occurs below U_{lim}	Remarks
		no	very large	1 V	no	Advantages: <ul style="list-style-type: none"> matches wide range of loads best possible damping simple construction Disadvantages: <ul style="list-style-type: none"> long delay time
		yes	small	U_{lim}	yes	Advantages: <ul style="list-style-type: none"> HF-damping due to RC-network high energy absorption short delay time Disadvantages: <ul style="list-style-type: none"> must be matched to the load limited lifespan
		yes	small	U_{lim}	no	Advantages: <ul style="list-style-type: none"> limits positive and negative voltages suitable for AC and DC matches wide range of loads Disadvantages: <ul style="list-style-type: none"> no damping below U_{lim}
		yes	small	U_{lim}	no	Advantages: <ul style="list-style-type: none"> matches wide range of loads high energy absorption very simple construction Disadvantages: <ul style="list-style-type: none"> no damping below U_{lim} limited lifespan
		yes	small	$1.5 \times U_{lim}$	yes	Advantages: <ul style="list-style-type: none"> HF-damping due to RC-network immediate de-energization excellent results with AC Disadvantages: <ul style="list-style-type: none"> must be matched to the load limited lifespan

EMC suppressors

EMC suppressors for contactors

For all common manufacturers the integrated system solution.

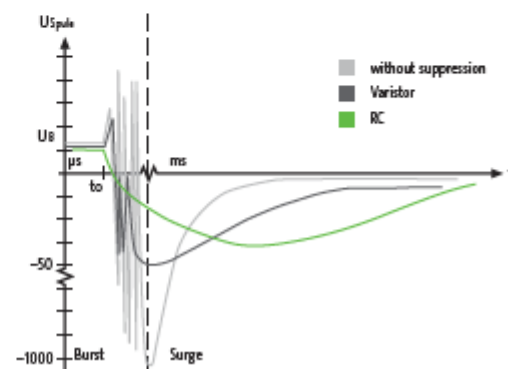


To attenuate high voltage switch off overloads, which lead to contact burn out and destruction of the neighboring electronic control systems, contactors should be suppressed.

Murrelektronik has for years developed and produced suppression modules, which are carefully designed together with the contactor manufacturers, to work with specific contactors.

The mechanical mounting of the modules is therefore exact and simple as well as guaranteeing the optimum suppression characteristics.

Connection is via flexible wires or direct contacts.



EMC SUPPRESSORS

Standardized motor suppression from Murrelektronik

We offer a suitable motor suppressor for every application. The suppressor should, if at all possible be mounted very close to the source of interference (motor). The European norm (EN 50262) has been valid since 31st December 1999 for metric threads and replaces the DIN 46320 for PG threads. There are also modules available which can be snapped onto DIN-rail.

The use of motor suppression equipment protects the motor from high inductive voltage spikes when switching off. At the same time, it increases the contact life span of the control unit.

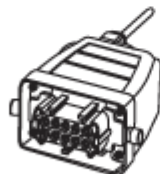
With the optimum suppression modules from Murrelektronik, you receive the highest level of operational safety. The machine or control panel will function within the EMC regulations, without affecting other electrical equipment in the surrounding area.

Suppression at the motor terminal box



Suppression, where the interference arises!

Mounts directly on the motor



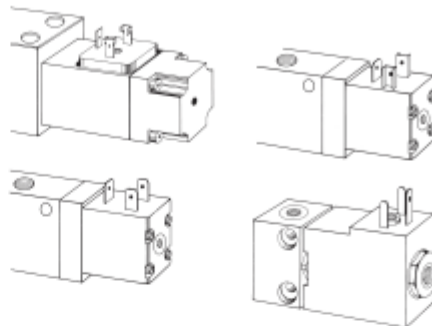
"Plugged in - what else."

Snap-on under the contactor



Space savings.

Suppression modules for valves



For every form a suitable suppression

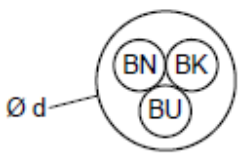
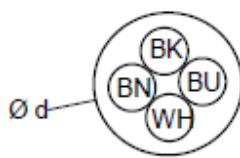
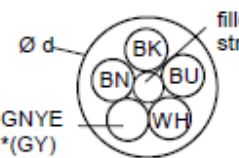
Hydraulic and pneumatic systems are an integral part of most machines. The plug supplied is often not enough to meet the standards many applications require. Suppression is necessary for the machines functionality and a LED vital for fault-finding and maintenance.

Advantages:

- Simple plug-on mounting without any wiring
- Suitable adapter for all standard valves
- Protects the control system using the optimal network
- LED in yellow
- Adapter polarity safe for all voltages


Field wireable and pre-wired valve connector with LED and suppression see chapter 3.9

Cable specification – Cable Type 3

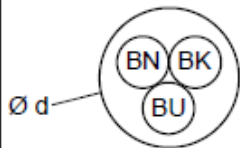
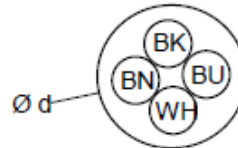
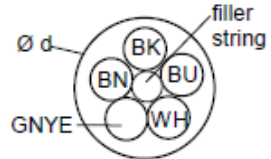
			
cable diameter 0,25 mm ² 0,34 mm ² 0,75 mm ²	4,3mm ± 5% 4,3mm ± 5% 5,9mm ± 5%	4,7mm ± 5% 4,7mm ± 5% 6,5mm ± 5%	5,0mm ± 5% 7,0mm ± 5%
conductor colors	brown, black, blue	brown, black, blue, white	brown, black, blue, white, greenyellow *(alternative grey)
conductor construction DIN VDE 0295 (IEC 60228)	from 0,75 mm ² the single conductors are black numbered as well as 1 x greenyellow (if existing)		
conductor isolation DIN VDE 0207-7	PP CFC-, halogen-, cadmium-, silicon- and lead free		
outer jacket DIN EN 50363-10-2 (VDE 0207 part 363-10)	PUR CFC-, halogen-, cadmium-, silicon- and lead free, dim, low adhesion, by machine well processable, abrasion resistant, hydrolysis and microbe resistant, flame retardant (VW1, FT1, IEC 60332)		
resistance DIN VDE 0472 part 803	good oil, petrol and chemical resistance according to VDE 0472, if the cable is black, the outer jacket is UV-resistant		
electrical data nominal voltage testing voltage	300 V 2.500 V (1 min)		
temperature range fixed laying flexible laying	-40°C bis +80°C (90°C bei max. 10.000 operating hours) -25°C bis +80°C (90°C bei max. 10.000 operating hours)		
drag chain data bending radius path feet range number of bending cycle	10 x Ø d (flexible use) / 5 x Ø d (stationary use) max. 3,3m/s at 5m horizontal path and max. acceleration 5m/s ² max. 5 Mio.		
robotic data torsion range	± 180° /m (max. 2 Mio. cycle, 35 cycle/min)		
permission	UL (AWM style 20233), CSA, CE-conform, NFPA 79 (Edition 2012) conform		

TYPE OF CABLE
jacket color

Wire diameter	yellow	grey	black
	3 x 0,25	030	230
3 x 0,34	033	233	633
3 x 0,75	036	236	636
4 x 0,25	031	231	631
4 x 0,34	034	234	634
4 x 0,75	037	237	637
5 x 0,34	035 *(126)	235	635 *(732)
5 x 0,75	038	238	638 *(774)

f	techn. überarb.	15.11.10	Ke		Datum	Name	Kundendatenblatt <i>Customer data sheet</i>
e	Schlepp-wert geä.	19.04.10	SRi	Bearb.	09.05.16	MS	
				Gepr.	09.05.16	MS	
g	774	09.05.16	MS				Kabeltyp3 (PUR – UL/CSA) <i>Type of cable 3 (PUR – UL/CSA)</i>
Zust.	Änderung	Datum	Nam.				
a	Erstausgabe	02.05.05	Ri	09.05.2016	CS3_Customer_DataSheet.doc		Blatt 2 von 2

Cable specification – Cable Type 5

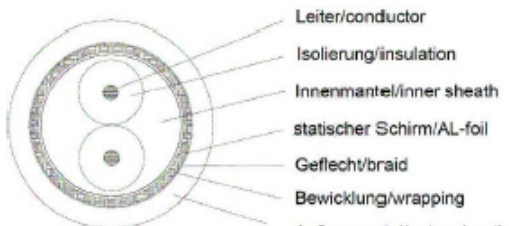
			
cable diameter 0,25 mm ² 0,34 mm ² 0,75 mm ²	4,3mm ± 5% 4,3mm ± 5% 5,2mm ± 5%	4,4mm ± 5% 4,7mm ± 5% -	- 5,0mm ± 5% -
conductor colors	brown, black, blue	brown, black, blue, white	brown, black, blue, white, green-yellow
	from 0,75 mm ² the single conductors are black numbered as well as 1 x green-yellow (if existing)		
conductor construction DIN VDE 0295 (IEC 60228)	0,25 mm ² (32 x 0,1 mm) → conductor class 6 0,34 mm ² (42 x 0,1 mm) → conductor class 6 0,75 mm ² (42 x 0,15mm) → conductor class 6		
conductor isolation DIN VDE 0207-7	PP CFC-, halogen-, cadmium-, silicon and lead free		
outer jacket	PUR (welding spark resistant) CFC, halogen, silicon, cadmium and lead free, dim, low adhesion, by machine well processable, abrasion-resistant		
resistance DIN VDE 0472 part 803 IEC 60 332-2 (DIN VDE 0472 part 804 A)	good oil, petrol and chemical resistance, flame retardant, welding spark resistant, microbe and hydrolysis resistant, if the cable is black, the outer jacket is UV resistant		
electrical data nominal voltage testing voltage	300 V 2.500 V		
temperature range fixed laying flexible laying	-40°C to +90°C -25°C to +90°C		
drag chain data bending radius path feet range number of bending cycle	10 x Ø d max. 3,3m/s at 5m horizontal path and max. acceleration of 5m/s ² max. 10 Mio.		
robotic data torsion range	± 360°/ m (1 Mio. cycle)		
permission	UL, CSA, CE-conform		


TYPE OF CABLE
jacket color

Wire diameter	yellow	grey	black	orange
	3 x 0,25	050	250	650
3 x 0,34	053	253	653	845
3 x 0,75	056	256	656	
4 x 0,25	051	251	651	
4 x 0,34	054	254	654	846
5 x 0,34	055	255	655	847
4 x 0,34 + 1 x 0,5				852

f	Kabel Ø	13.05.15	MS		Datum	Name	Kundendatenblatt <i>Customer data sheet</i>
e	KT5 orange hinzu	06.02.13	SRi	Bearb.	13.05.15	SRi	
d	Schlepp.-wert geä.	19.04.10	SRi	Gepr.	13.05.15	Ke	
c	Normen hinzu	11.12.08	SR				Kabeltyp5 (PUR – schweißfunkenbeständig) Type of cable 5 (PUR – welding spark resistant)
b	Schweißfunkenbest.	21.02.07	Ri				
Zust.	Änderung	Datum	Nam.				
a	Erstausgabe	02.05.05	Ri	29.10.2015	CS5_Customer_DataSheet.doc		Blatt 2 von 2

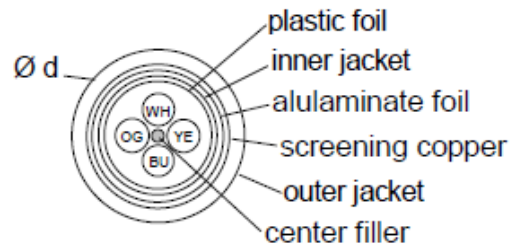
Cable specification – Profibus 840


<p><u>1. Outside diameter</u></p> <p>Ød = 7.8 mm ± 5%</p>		
<p><u>2. Construction</u></p> <p>Conductor construction: Fine wire conductors 1*2*0.64 mm Ø, Class 5 (19*0.13 mm)</p> <p>Conductor insulation: PE Cadmium and CFC free Conductor diameter: approx. 2.55 mm Conductor color: red, green</p> <p>Conductor arrangement: 2 cores twisted</p> <p>Banding: Polyester fleece, aluminium foil, shielding with tin-coated copper-wires</p> <p>Inner Jacket: Pendentive filled</p>		
<p><u>3. Outer jacket</u></p> <p>PUR Cadmium and CFC free, halogen free Jacket diameter: 7.8 mm ± 5% Jacket color: violet</p>		
<p><u>4. Resistance</u></p> <p>good oil, petrol and chemical resistance according to VDE 0472 part 803 flame retardant according to CSA FT1</p>		
<p><u>5. Electrical specification</u> (at 20°C)</p>		<p>Nominal voltage: 60 V (30 V UL) Testing voltage: 500 V (core/screen) conductor resistance: ≤ 84 Ohm/ km</p> <p>Insulation resistance: ≥ 1 GOhm*km</p> <p>Characteristic Impedance: 3-20 MHz 150 Ohm±15 38,4 kHz 185 Ohm±20 9,6 kHz 300 Ohm±10</p> <p>Attenuation: 16 MHz < 55 dB/ km 4 MHz < 26 dB/ km 38,4 kHz < 5 dB/ km 9,6 kHz < 3 dB/ km</p> <p>Capacitance: 800 kHz 35 nF/km</p>
<p><u>6. Temperature range</u></p> <p>Fixed installation: -40°C to +80°C Flexible installation: -20°C to +70°C</p>		
<p><u>7. Drag chain data</u></p> <p>Bending radius</p>		<p>Flexible installation: 15 x d Fixed installation: 7,5 x d</p> <p>max. 10 Mio.</p>
<p><u>8. Approvals</u></p> <p>UL AWM Style 20236, CSA, CE-conform</p>		
<p><u>9. Special features</u></p> <p>Cable is compliant to the Profibus specification according to DIN 19245 T3 and EN 50170. Fast Connect suitable! Product complies to the ME-dangerous substance directive.</p>		

				Datum	Name	Kundendatenblatt / customer datasheet PUR-OB Kabel/cable 1*2*0,64 Ø	
f	Fast Connect hinzu	14.10.13	SRI	Bearb.	11.3.08		HR
e	Überarbeitung	21.02.13	SRI	Gepr.	14.10.13		MS
d	aktualisiert	15.09.11	SRI				
c	Engl. Version	05.08.09	CS			Kabelkennung / Type of cable: 840 Fast Connect	
b	aktualisiert	12.03.09	Ke				Blatt 2 von 2
Zust.	Änderung	Datum	Nam.				
a	Erstausgabe	11.3.08	HR	13.01.2014			

Cable specification – ProfiNet 796, TYP C Trailing

<u>1. outside diameter:</u>		
	Ød = 6,7mm ± 5%	
<u>2. construction</u>		
central intake:	center filler	
conductor construction:	bare copper, 7 strands, 2x2xAWG 22/7 (2x2x0,34 mm ²)	
conductor insulation:	polyolefin	halogen, cadmium and CFC free
	conductor diameter:	max. 1,6 mm
	conductor color:	white, yellow, blue, orange
conductor arrangement:	4 cores over center filler twisted (spiral – four twisting)	
banding:	plastic foil, overlapped	
inner jacket:	thermoplastic polymer	
shielding:	alulminate foil, overlapped screening copper, optical coverage > 85%	
<u>3. outer jacket:</u>		
	PUR halogen, cadmium, silicon and CFC free	
	jacket diameter:	6,7mm ± 5%
	jacket color:	green similar RAL 6018
<u>4. resistance:</u>		
	good oil, petrol and chemical resistance according VDE 0472 part 803 and VDE 0249 flame retardant	
<u>5. electrical specification:</u> (at 20°C)		
	nominal voltage:	60 V AC, 300 V AC (UL)
	testing voltage:	2.000 V wire/wire, 2.000 V wire/sreen
	impedance:	100 ± 5 Ω at 100 MHz
	working capacitance:	category 5, ISO/IEC 11801 and EN 50173 class D (up to 100 Mbit/ s)
<u>6. temperature range:</u>		
	fixed installation:	-20°C to +60°C
	transport temperature:	-40°C to +80°C
<u>7. drag chain data:</u>		
	bending radius:	repeated 12x cable diameter singular 5x cable diameter
	suitable for drag chains	max. 3 Mio. bending cycles max. 5 Mio. bending cycles (radius 32xØd)
	acceleration:	max. 2,0m/s ²
	speed:	max. 3,3m/s
	distance:	max. 5,0m
<u>8. approvals:</u>		UL 300V, CSA, CE-conform




h	Schleppdaten	10.0317	MS		Datum	Name	Kundendatenblatt/ customer data sheet ProfiNet / Industrial Ethernet TYPE C drag chain
g	300V	21.03.16	MS	Bearb.	21.03.16	MS	
f	Schleppdaten	23.07.14	MS	Gep.	21.03.16	SRi	
e	Biegeradius	21.10.13	MS	Ges.			
d	Class D	25.04.13	MS				
C	Überarbeitung	26.07.12	MS				Art.No.: 796
b	Überarbeitung	15.03.12	SRi				
Zust.	Änderung	Datum	Nam.				
a	Erstausgabe	25.06.08	SE	10.03.2017			Kennung: - 796

Cable specification – ProfiNet 796, TYP C Trailing

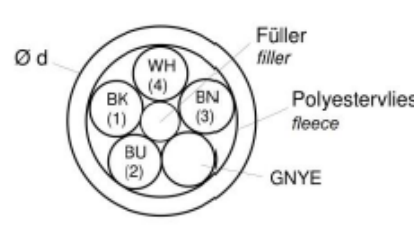
Übertragungseigenschaften/ transmission characteristics:


Electrical and transmission Erogstries @ 20°C	
DC conductor resistance, max	55,0 Ω/km
Resistance unbalance, max	3%
Mutual capadtance@ 1 kHz	50 pF/m
Capacitance unbalance, max	1600pF/Km
Velocity of propagation	1MHz≤f≤100MHz
Characteristic impedance (1 + 100 MHz)	100Ω(±15Ω)
Delay skew@ 100 MHz, max	45 nsec/100m
Voltage test (cond / cond. - cond./shield)	2kVac / 1 min
Insulation resistance, min	≥ 500MΩ x km
Transfer impedance@10 MHz	≤ 50mΩ/m
Screening artenuation (30 + 100 MHz)	≥40dB
Coupling anenuallon (30 + 100 MHz)	≥55dB

FREQUENCY (MHz)	ATTENUATION (dB/100m)		NEXT (dB)		EL-FEXT (db/100m)		ACR (dB/100m)		RETURN LOSS (dB)	
	Standard max	typical	Standard min	typical	Standard min	typical	min	typical	Standard min	typical
1	2,04	1,70	65,3	85	63,8	85	63,2	83,3	-	30
4	4,05	3,40	56,3	75	51,8	77	52,3	71,6	23	32
10	6,50	5,50	50,3	68	43,8	66	44	62,5	25	36
16	8,25	7,20	47,2	64	39,7	59	39,2	56,8	25	36
20	9,27	8,20	45,8	62	37,8	56	36,8	53,8	25	36
31,25	11,70	10,5	42,9	60	33,9	48	31,5	49,5	23,6	34
62,5	17,00	15,4	38,4	52	27,9	40	21,9	36,6	21,5	30
100	22,00	20	35,3	48	23,8	36	14	28	20,1	26

h	Schleppdaten	10.0317	MS		Datum	Name	Kundendatenblatt/ customer data sheet ProfiNet / Industrial Ethernet TYPE C drag chain
g	300V	21.03.16	MS	Bearb.	21.03.16	MS	
f	Schleppdaten	23.07.14	MS	Gep.	21.03.16	SRI	
e	Biegeradius	21.10.13	MS	Ges.			
d	Class D	25.04.13	MS				
C	Überarbeitung	26.07.12	MS				Art.No.: 796
b	Überarbeitung	15.03.12	SRI				
Zust.	Änderung	Datum	Nam.	10.03.2017			Blatt 3 von 3
a	Erstausgabe	25.06.08	SE				

Cable specification – Power 961

<u>1. Outer diameter</u>		
Ød = 8,7mm ±5%		
<u>2. Construction</u>		
Conductor construction:	5x1,5 mm ² , finest stranded, class 6 according to VDE 0295 (IEC 60228),	
Conductor insulation:	PP CFC-, halogen- and leadfree	
Conductor color / numbering:	white (4), brown (3), blue (2), black (1), greenyellow	
Conductor arrangement:	5 wires around central filler	
Banding:	fleece	
Jacket:	PUR CFC-, halogen-, cadmium-, silicon- and leadfree, matt, low adhesion, by machine well processable, abrasion resistant, hydrolysis- and microbe resistant	
jacket diameter:	8,7mm ±5%	
color:	grey similar RAL 7040	
<u>3. Resistance</u>		
good oil-, petrol- and chemical resistance according to VDE 0472 flame retardant according to UL VW1, CSA FT1, IEC 60332-1, IEC 60332-2-2		
<u>4. Electrical specification</u>		
nominal voltage:	600 V	
testing voltage:	3300 V	
<u>5. Temperature Range</u>		
fixed installation:	-50°C up to +80°C	
flexible installation:	-20°C up to +80°C	
<u>6. Bending Radius</u>		
fixed installation:	min. 7,5 x Ød	
flexible installation:	min. 10,0 x Ød	
<u>7. Drag Chain Data (at 25°C)</u>		
travel velocity:	max. 3,3m/s at 5m horizontal travel distance	
acceleration:	max. 5m/s ²	
bending cycles:	max. 5 Mio.	
<u>8. Robot Data</u>		
Torsions stress:	± 180°/m (max. 2 Mio. cycles, with 35 cycles / min)	
<u>9. Approvals</u>		
CE-conform UL (Style 21223 / 11172) CSA		

				Datum	Name	Kundendatenblatt PUR-JBZ Kabel 5x1,5mm²
			Bea	05.11.16	MS	
			Gep	05.11.16	SRi	
						Kabel / cable 961 Blatt 2 von 2
Zust.	Änderung	Datum	Nam.			
«Ind	Erstausgabe	05.11.16	MS	05.11.2016		



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