

WHAT'S THE EASIEST WAY TO GET THE APPLE INTO THE BOTTLE?

With the MASI68 I/O System!

- Quick Installation
- Flexible Applications
- Efficient Technology
- Rugged Design



APPLICATION VARIETY – FOR EFFICIENT AND DECENTRALIZED INSTALLATION

MASI, the sensor-actuator interface product series by Murrelektronik, is the simple solution for cost-efficient integration of I/O signals from machine tools or storage and logistics systems to superordinate control systems. MASI allows the user to build highly flexible I/O systems without being tied to rigid topologies.

TECHNICAL FEATURES

- Compact and expansion modules with 2, 4 or 8 I/Os
- Cycle time 150 us x (number of slaves +2)
- Supply voltage power supply 24 VDC or 30.5 VDC
- Up to 62 stations per gateway
- Extension up to 100 m / up to 500 m with repeater
- System Connection via M12 round cable, A-coded

APPLICATIONS

- Machine Building
- Packaging Industry
- Logistics and Material Handling Industry
- System Construction
- Assembly and Handling Technology

EASY IS SIMPLY BETTER: MASI68 OFFERS MANY BENEFITS

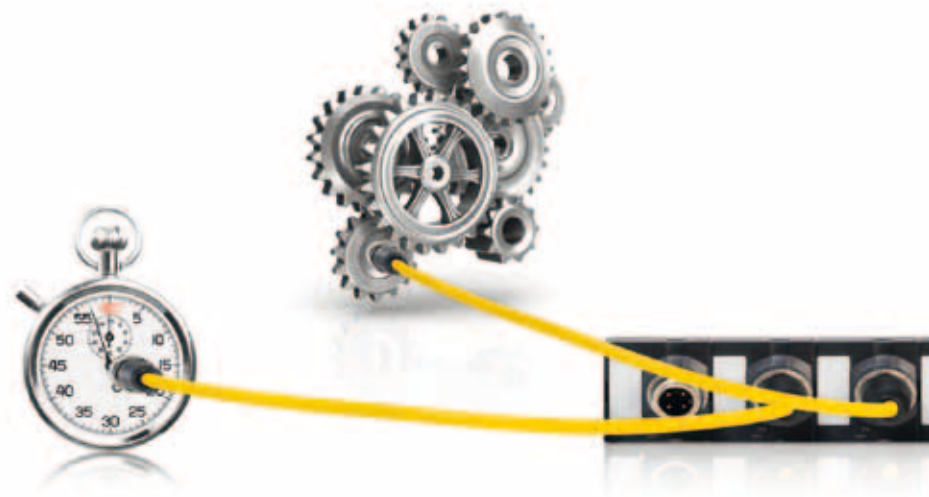
Who still wants to wire cabinets or implement time-consuming bus solutions when there are concepts that are quicker, more flexible and efficient, and even more rugged? With the MASI68 I/O system, all components can be installed in the field where they are needed. Good: your wiring points are well laid out and you reduce the wiring to a minimum. Better: MASI68 is based on the AS Interface standard and can be integrated into existing bus systems without any problems. The best: The modular system meets your requirements precisely, it is the right size and prevents unnecessary costs.

QUICK INSTALLATION

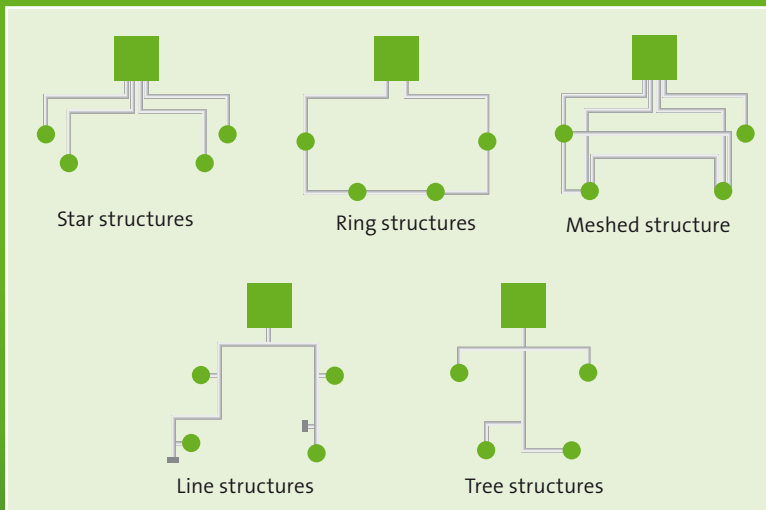
- Placement at the actuator or sensor
- Short M8 or M12 connection cables
- Easy parameter setting
- Quick commissioning
- Very easy integration into superordinate controls

FLEXIBLE APPLICATIONS

- Highly adjustable to the application's requirements
- Simple mapping of complex technologies
- Highly flexible installation
- Total freedom of topology
- Simple option and module management
- Maximum possible decentralization



MASI – LINKING SENSORS AND ACTUATORS THE EASY WAY



MASI 68 uses an unshielded 4-conductor round cable as system connection. This cable transfers both the required supply voltage and data. The system can be connected via a M12 plug (A-coded), easily preassembled in the field. The simple system connection requires half the space and is mounted within half the time compared to standard connections.

And there are virtually no limits in topology design. The MASI system can easily deal with tree, line, star, ring or meshed topologies.

EFFICIENT TECHNOLOGY

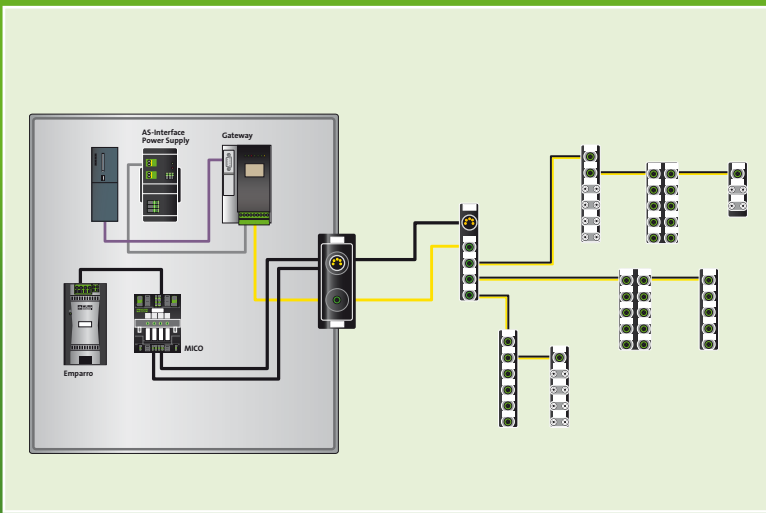
- Installation with 4-conductor, unshielded cable
- Easy Branching without expensive switches or routers
- Low system costs, even for large installations
- Highly cost-efficient compared to traditional bus systems
- Consistent decentralization with granular modules

RUGGED DESIGN

- For harsh conditions up to protection class IP68
- Fully cast modules
- High-quality workmanship
- Outstanding longevity
- High system availability



MASI STANDARD POWER 30.5 V – FOR LARGE SYSTEMS



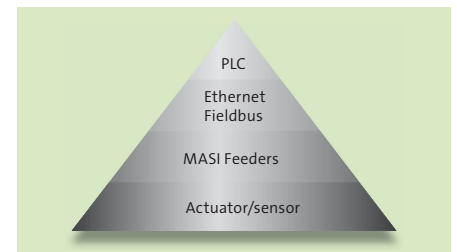
Utilize the full power of sensor-actuator interface with MASI Standard-Power 30.5 V.

- up to 62 slaves per gateway
- system length of up to 100m (up to 500m with repeater)



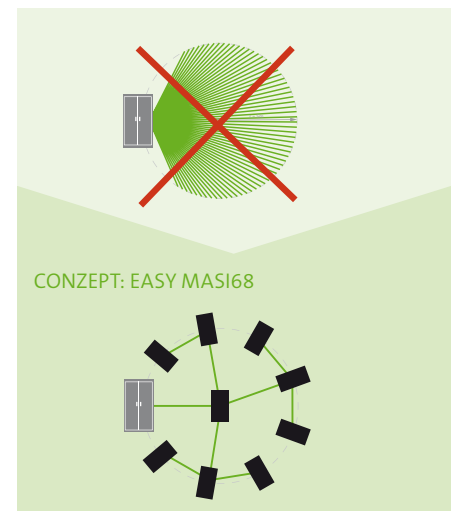
MASI68 – THE COST-EFFICIENT I/O DATA COLLECTOR

MASI the the powerful communication system for the lowest process level in automation engineering. MASI gathers all I/O signals – analog and digital – and establishes the connection to the superordinate fieldbus level. The MASI system lead provides both the data exchange between MASI68 I/O modules and the MASI gateway, and the power supply for the sensors and actuators.



MASI68 – THE EASY START INTO BUS TECHNOLOGY

The cable harnesses and direct wirings to the switch cabinet often seen at this level can now be replaced by a single system lead (M12 round cable). The MASI system lead and MASI gateway connect simple command devices, inductive proximity switches and even complex process valves via the MASI68 I/O modules to the PLC control system. The MASI68 bus-sharing units can be interconnected using any kind of topology layout. Such a one-cable-solution reduces the installation effort and in turn the probability of faulty wirings.

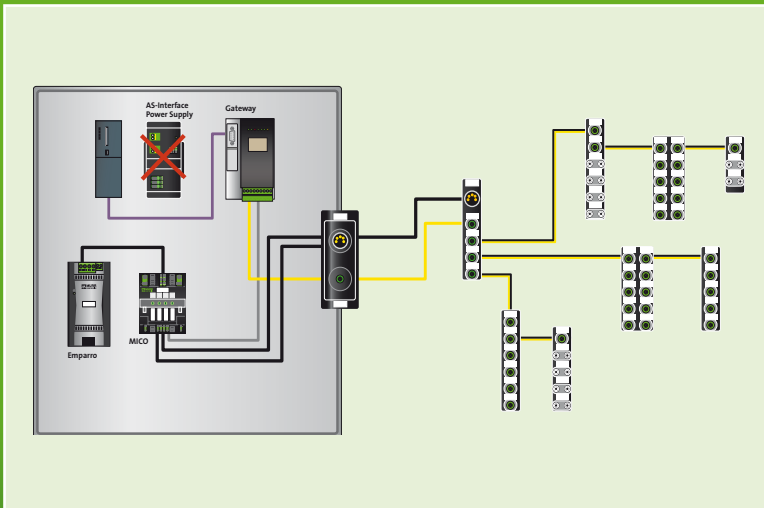


MASI68 – THE SYSTEM BENEFITS

- optimized for connection of digital and analog sensors/actuators
- up to 248 digital inputs and 248 outputs on a single gateway
- simple, fast and cost-effective installation using M12 technology
- a single cable for power supply and data transfer
- MASI is an interoperable I/O system, standardized according to DIN EN 62026-2
- the MASI68 I/O modules and MASI gateways have been designed to conform to this standard



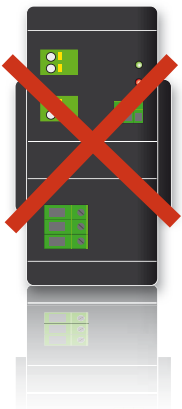
MASI POWER 24 V – FOR COST-SENSITIVE SMALL-SCALE-APPLICATIONS



Using the new MASI-Power24 solution by Murrelektronik you will be able to save the costs for the sensor-actuator interface power unit. With MASI Power24 Murrelektronik now offers the opportunity to cost-effectively retrofit compact machines with the MASI system.



AS-Interface
power supply 30,5 V



Emparro
power supply 24 VDC



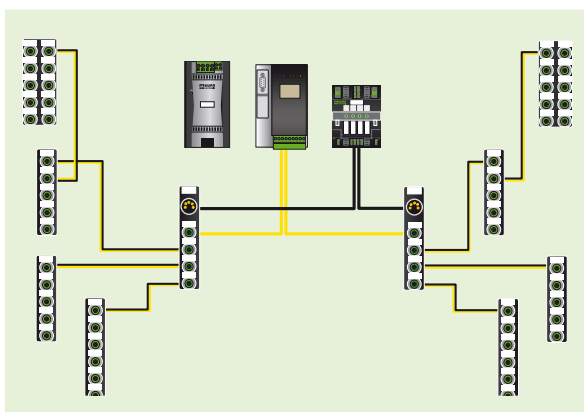
NO SENSOR-ACTUATOR INTERFACE POWER SUPPLY REQUIRED

sensor-actuator interface installations typically required a special power supply unit with 30.5 VDC. The need for such a unit increased the costs considerably, in particular for installation with only a few in- and outputs and installation lengths of less than 50m. The new Murrelektronik MASI Power24 gateways have been specifically designed with such small-scale-installations in mind.

They enable you to use standard power supply units with an output voltage of 24V. This could even be the pre-installed power unit in your switch cabinet supplying power to the electronic components. The 4A fuse in the gateway safeguards the MASI system. This is an excellent synergy effect and directly saves costs, space in the control cabinet and additional planning, assembly and installation effort.

MASI POWER24 PLANNING INFORMATION

- up to 6 segments per gateway
- 4 slaves per segment
- 24 slaves per gateway
- up to 25m cable length per segment
- max. cable length of 50m per gateway with Power24
- up to 80mA of sensor current per module
- for power sensors: use DI modules with sensor voltage from AUX



MASI GATEWAYS – THE EASY BRIDGE TO YOUR CONTROL SYSTEM

Whether you use MASI Standard 30.5 V or MASI Power24, Murrelektronik offers the right Gateway for any application. The Murrelektronik gateways support these fieldbus systems:



MASI GATEWAY OFFERS VARIOUS BENEFITS

- up to 62 slaves per sensor-actuator interface master
- gateway according to sensor-actuator interface 3.0 standard
- web server via Ethernet fieldbus connection
- chip card slot for saving the configuration
- display for parameterization and diagnostics
- comprehensive system diagnostics:
 - sensor-actuator interface double-addressing diagnostics
 - sensor-actuator interface EMC diagnostics
 - integrated sensor-actuator interface error counter
 - sensor-actuator interface earth fault monitoring

MASI GATEWAY POWER24 ALSO OFFERS

- sensor-actuator interface overload diagnostics (4 A) self-resetting fuse
- 24 V or alternatively 30.5 V power supply



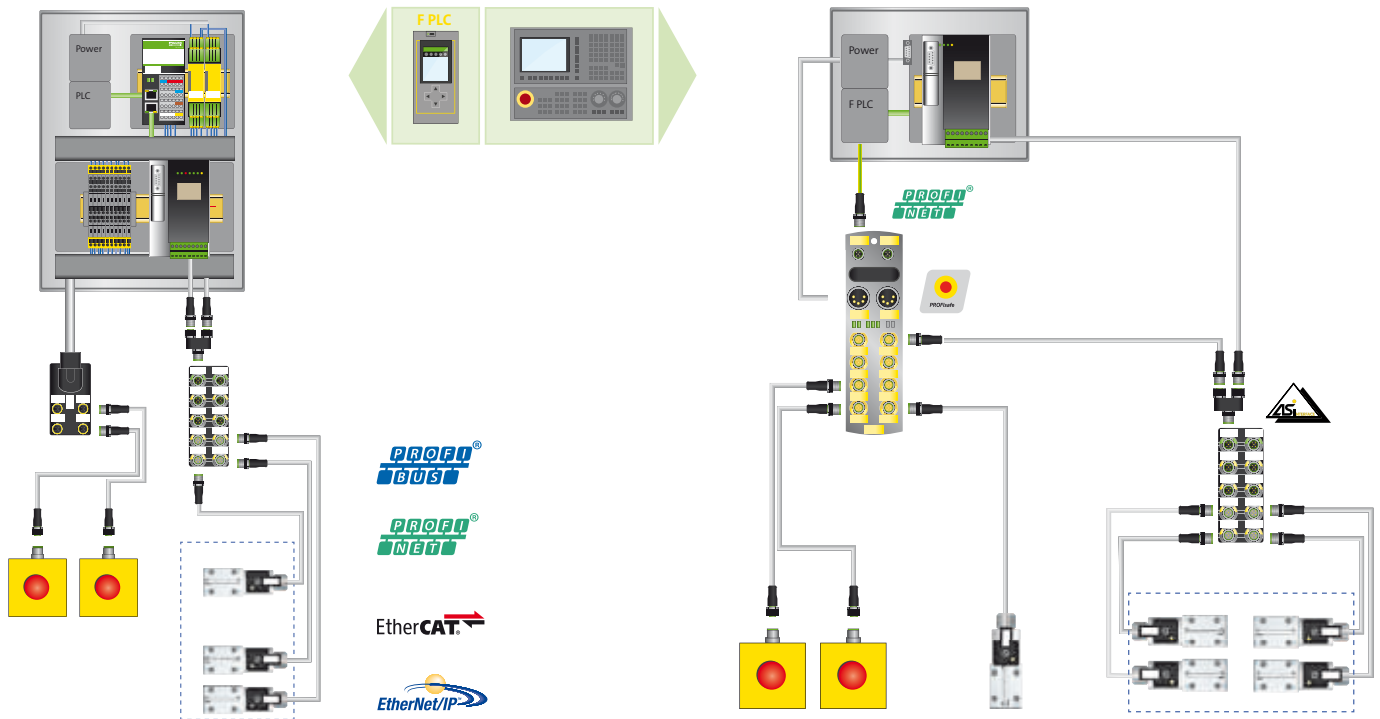
MASI GATEWAY POWER24 – EXTENDED WEB SERVER

The new web server enables users to access the gateway diagnostics and parameterization display using the laptop, smart-phone or tablet. The user can move freely within the machine and perform the necessary changes to parameterization or diagnostics directly at the MASI slaves. This simplifies commissioning and saves precious trouble-shooting time.

MASI SECURE BLOCK SWITCHING – SECURE DEACTIVATION OF ACTUATORS

In conjunction with safety relays in the switch cabinet or active safety field modules (such as MVK Safety by Murrelektronik) MASI provides the option to integrate safety technology with block switching of outputs into the MASI system without the need for a gateway with monitor feature.

MASI offers I/O modules with block-switchable secure outputs and non-secured inputs or modules with block-switchable secure outputs only. The outputs deliver an output current of up to 1.6 A and contain a short-circuit and overload protection. Combined with MVK Safety, Cube20S or safety relays MASI can achieve a performance level (acc. to EN ISO 13849-1) of up to PLd for the complete application.



SECURE BLOCK SWITCHING

With modular MASI168 fieldbus system
and safety relay

SECURE INPUT AND OUTPUT SWITCHING

via secure control with compact fieldbus
MVK-Safety and MASI168 block switching

SIMPLY VERSATILE – THE MASI 68 PRODUCT FAMILY

Picture	Article No.	Description	Inputs/outputs	Slave	I/O connection
	56434	MASI68 I / O module, 4 digital inputs, AB	4 × DI	AB	4 × M8
	56435	MASI68 E / A Modul, 4 digitale Eingänge	4 × DI		4 × M8
	56421	MASI68 I / O module, 4 digital inputs, Y, AB	4 × DI	AB	4 × M12
	56425	MASI68 I / O expansion module 4 digital inputs, Y, AB	4 × DI	AB	4 × M12
	56443	MASI68 I / O expansion module 4 digital inputs, Y, AB	4 × DI	AB	4 × M12
	56420	MASI68 I / O Module, 8 digital inputs, AB	8 × DI	AB	8 × M8
	564201	MASI68 I / O module, 8 digital inputs, (default address), AB	8 × DI	AB	8 × M8
	56436	MASI68 I / O expansion module 8 digital inputs, AB	8 × DI	AB	8 × M8
	56424	MASI68 I / O Module, 8 digital inputs, AB	8 × DI	AB	4 × M12
	56426	MASI68 I / O expansion module 8 digital inputs, AB	8 × DI	AB	4 × M12
	56444	MASI68 I / O expansion module 8 digital inputs, AUX, AB	8 × DI	AB	4 × M12
	56446	MASI68 I / O Module, 2 digital inputs, 2 digital outputs, AB	2 × DI / 2 × DO	AB	4 × M8
	56418	MASI68 I / O Module, 4 digital inputs, 3 digital outputs, AB	4 × DI / 3 × DO	AB	8 × M8
	56437	MASI68 I / O Module, 4 digital inputs, 3 digital outputs, AB	4 × DI / 3 × DO	AB	4 × M12
	56419	MASI68 I / O module, 4 digital inputs, 4 digital outputs	4 × DI / 4 × DO		8 × M8
	56462	MASI68 I / O Module, 4 digital inputs, 4 digital outputs, AB	4 × DI / 4 × DO	AB	8 × M8
	56439	MASI68 I / O expansion module, 4 digital inputs, 4 digital outputs, AB	4 × DI / 4 × DO	AB	4 × M12
	56422	MASI68 I / O module, 4 digital inputs Y, 4 digital outputs Y	4 × DI / 4 × DO		8 × M12
	56438	MASI68 I / O module, 4 digital inputs, 4 digital outputs	4 × DI / 4 × DO		8 × M12
	56427	MASI68 I / O expansion module, 4 digital inputs Y, 4 digital outputs Y	4 × DI / 4 × DO		8 × M12

Picture	Article No.	Description	Inputs/outputs	Slave	I/O connection
	56423	MASI68 I / O module K3, 4 digital inputs Y, 4 digital passive safety outputs Y	4 × DI / 4 × DO-K3	AB	8 × M12
	56428	MASI68 I / O module K3, 4 digital inputs Y, 4 digital passive safety outputs Y	4 × DI / 4 × DO-K3	AB	8 × M12
	56447	MASI68 I / O expansion module K3, 8 digital passive safety outputs, AB	8 × DO-K3	AB	4 × M12
	56441	MASI68 I / O expansion module, 2 analog inputs, RTD	2 × AI RTD		2 × M12
	56474	MASI68 E / A expansion module, 2 analog outputs, U / I	2 × AO U / I		3 × M12
	56442	MASI68 I / O expansion module, 4 analog inputs, RTD	4 × AI RTD		4 × M12
	56448	MASI68 I / O expansion module, 4 analog input, U / I	4 × AI U / I		4 × M12
	56458	Gateway EtherCAT / AS-i, 2 Master 3.0, IP20			
	56465	Gateway Profibus-DP / AS-i, 1 Master 3.0, IP20			
	56466	Gateway Profinet-IO / AS-i, 1 Master 3.0, IP20			
	56467	Gateway Ethernet-IP / AS-i, 1 Master 3.0, IP20			
	56469	Gateway Ethernet-IP / AS-i-24, 1 Master 3.0, IP20, Power24			
	56470	Gateway Profinet-IO / AS-i-24, 1 Master 3.0, IP20, Power24			
	56471	Gateway Profibus-DP / AS-i-24, 1 Master 3.0, IP20, Power24			
	85381	MCS-A ASI power supply 1-phase, IN:95-265VAC OUT: 30.5V / 4ADC			
	85382	MCS-A ASI power supply 1-phase, IN:95-265VAC OUT: 30.5V / 4ADC, signal contact			
	85440	Emparro power supply 1-phase, IN: 100-240VAC OUT: 24-28VDC / 5A			
	85690	Emparro power supply 3-phase, IN: 360-500VAC OUT: 24-28VDC / 5A			

Picture	Article No.	Description	Inputs/outputs	Slave	I/O connection
	56454	MASI68 passive distribution box AS-i + 2 x Pwr M12			M12
	55468	MASI accessories, blind plug for M12 ports 4 pcs.			M12
	3858627	Screw plug, M8 plastic, 10 pcs.			M8
	55779	MASI system accessories, AS Interface bus termination			M12
	55696	MASI system accessories, AS Interface programming device			
	55727	MASI system accessories, AS Interface addressing cable			
	4000-75070-1300004	Modlight70 connection module 4 pole M12 bottom exit, AS-i, 4 outputs max. 200mA			M12
	4000-75070-1300005	Modlight70 connection module 4 pole M12 bottom exit, AS-i, 4 outputs max. 200mA, buzzer function			M12
	4000-75070-1300008	Modlight70 connection module 4 pole M12 bottom exit, AS-i, 5 outputs 200mA each			M12
	4000-75070-1300009	Modlight70 connection module 4 pole M12 bottom exit, AS-i, 7 outputs 200mA each, buzzer function			M12
	4000-75070-1400004	Modlight70 connection module 4 pole M12 side exit, AS-i, 4 outputs max. 200mA			M12
	4000-75070-1400005	Modlight70 connection module 4 pole M12 side exit, AS-i, 4 outputs max. 200mA, buzzer function			M12
	4000-75070-1400006	Modlight70 connection module 4 pole M12 side exit, AS-i, 4 outputs 200mA each			M12
	4000-75070-1400007	Modlight70 connection module 4 pole M12 side exit, AS-i, 4 outputs 200mA each, buzzer function			M12
	7060-40005-588XXXX	M12 male straight to M12 female straight MASI, PUR-OB 2 x 1.5 gray UL, CSA			M12
	7060-40021-862XXXX	M12 male straight to M12 female straight MASI, PUR-OB 4 x 0.75 gray UL, CSA			M12
	7060-40245-588XXXX	M12 male 90° to M12 fem. 90° MASI, PUR-OB 2 x 1.5 gray UL, CSA			M12
	7060-40261-862XXXX	M12 male 90° to M12 fem.90°, PUR-OB 4 x 0.75 gray UL, CSA			M12
	7060-40485-542XXXX	M12 male straight to M12 fem.straight shielded MASI, PUR-OB 2 x 1.0 shielded gray Ctrack			M12
	7060-40505-494XXXX	M12 male straight to M12 fem.straight shielded MASI, PUR-OB 2 x 0.75) + 2 x 0.75 shielded gray			M12

Picture	Article No.	Description	Inputs/outputs	Slave	I/O connection
	7060-42701-0000000	T-coupler M12-MASI for actuator supply			M12
	7060-42703-0000000	T-coupler M12-MASI for actuator supply MVK Metal Safety			M12
	7000-41151-0000000	T-coupler SlimLine M12 mal.5pole / 2 x M12 fem 5pol			M12
	7000-C0201-5880000	Cable drum Ø 355mm, PUR-OB 2 x 1.5 gray UL, CSA 100m			M12
	7000-C0201-8620000	Cable drum Ø 355mm, PUR-OB 4 x 0.75 gray UL, CSA 100m			M12
	7000-12521-0000000	MOSA M12 male straight field wireable IDC, 4 pole 0.5 ... 1.0mm ²			M12
	7000-12641-0000000	MOSA M12 fem. straight field wireable IDC, 4 pole 0.5 ... 1.0mm ²			M12
	7000-12741-0000000	M12 male straight field wireable screw terminal, 4 pole max. 0.75mm ² 6-8mm			M12
	7000-12861-0000000	M12 male 90° field wireable screw terminal, 4 pole max. 0.75mm ² 6-8mm			M12
	7000-12941-0000000	M12 female straight field wireable screw terminal, 4 pole max. 0.75mm ² , for cable diameter 6-8mm			M12
	7000-13021-0000000	M12 female 90° field wireable screw terminal, 4 pole max. 0.75mm ² 6-8mm			M12
	7000-13321-0000000	M12 male straight shielded field wireable Screw terminal, 5 pole max. 0.75mm ² 6-8mm			M12
	7000-13361-0000000	M12 male 90° shielded field wireable Screw terminal, 5 pole max. 0.75mm ² 6-8mm			M12
	7000-13441-0000000	M12 female 90° shielded field wireable Screw terminal, 5 pole max. 0.75mm ² 6-8mm			M12



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