M8/M12

Circular Connectors 180°

Original Size M12 4pin

M8 / M12 Circular Connectors 180°

I/O CONNECTORS —

GENERAL

M12 Connectors with locking screw
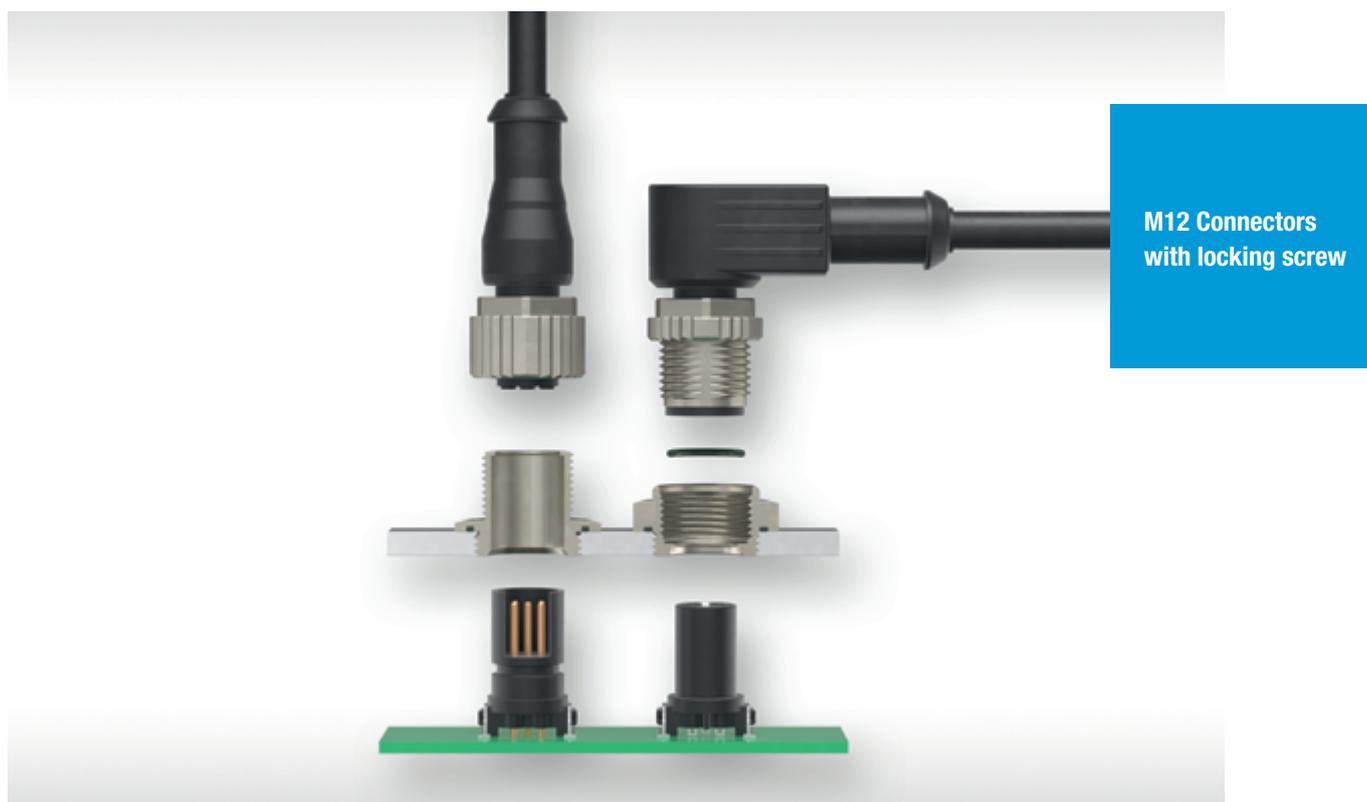
Since the 1980s, M8/M12 connectors have been used in sensor technology and industrial automation devices. The connectors were developed for higher protection classes such as IP65 or IP67. The mating face is coded and standardized so that end customers can use cables from different manufacturers.

Due to the high reliability and robustness, more and more applications and connector codings have been added over the years. The high degree of protection allows decentralized use of the devices and trends such as Industry 4.0 or IIoT are making these devices increasingly intelligent.

The communication of the devices is mostly done via serial systems such as fieldbuses or Industrial Ethernet. Parallel wiring is largely avoided.

Sensors or actors are mostly connected with an A-coded connector. Fieldbuses, for example, use the B coding.

The installation guidelines of the various bus interest groups also provide for the distribution of the connectors. The guidelines recommend certain connectors for the design, e.g. D and X coding for various Ethernet protocols or A coding for sensor bus applications. In order to ensure efficient processing of these connectors, ERNI developed a solution early on that is packaged in tape and reel and can be assembled automatically; the world's first M12 connector with SMT connections.

M8 / M12 Circular Connectors 180°

CONCEPT —

FEATURES

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Coding	A, B, D, X
No. of Pins	4 – 17 pin
Termination	SMT (Surface Mount Technology), THR (Through Hole Reflow)
Applications	Signal- and data transmission, Power supply
Connectors	Male and female connectors 180° Male connectors for direct integration
Extensions	Cable assemblies, Quick termination T-Coupler, Adapter Panel feed-through
Standards	IEC 61076-2-101 form factor M12, various codings for M12 IEC 61076-2-109 form factor M12, X-coded IEC 61076-2-104 form factor M8, various codings for M8 Profinet- and Profibus-Installation instructions Other Fieldbus- and Industrie Ethernet-Standards
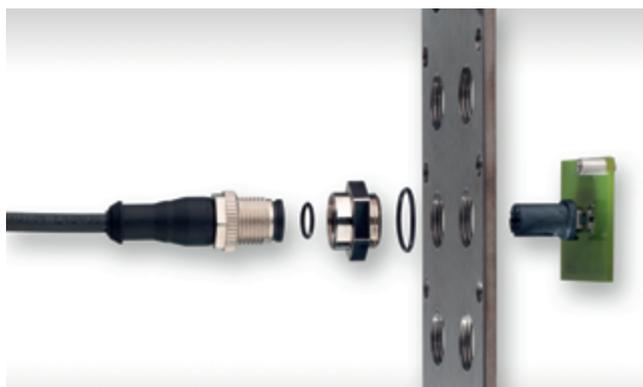
M8 / M12 Circular Connectors 180°

CONCEPT —

▪ **CAPABILITIES** ────────────────────────

9 and 13 mm Heights M12
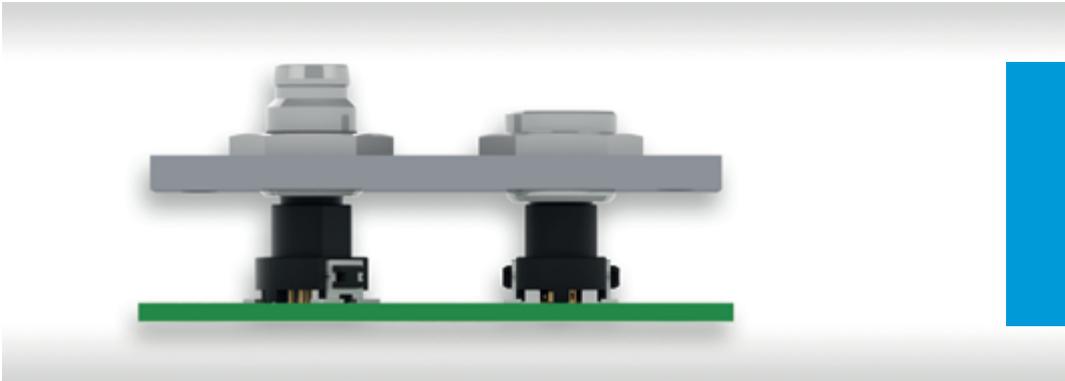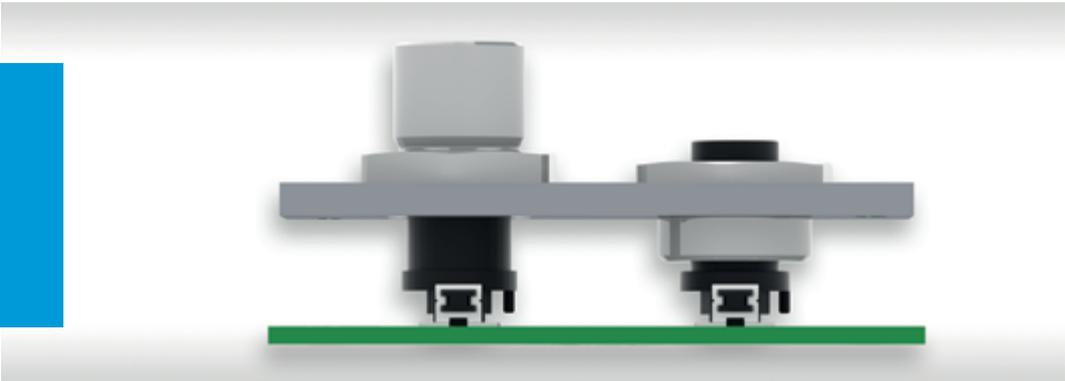
9 and 13 mm Heights M8

DI Applications
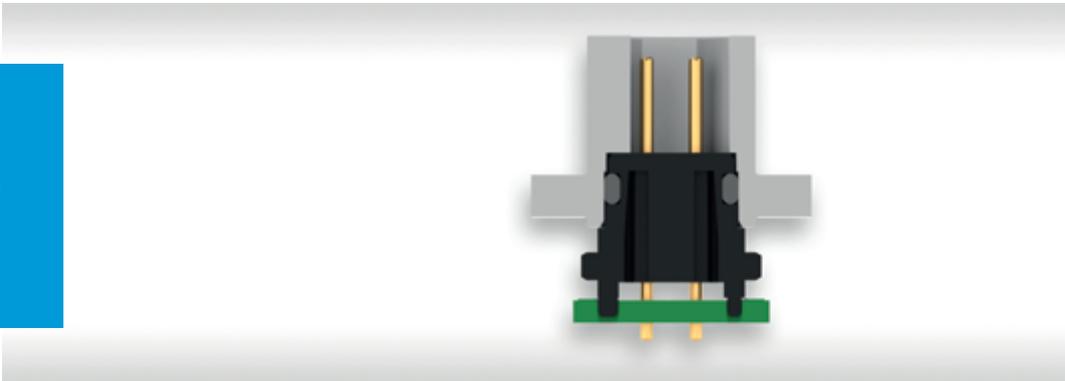
M8 / M12 Circular Connectors 180°

CONCEPT —

■ **CAPABILITIES**
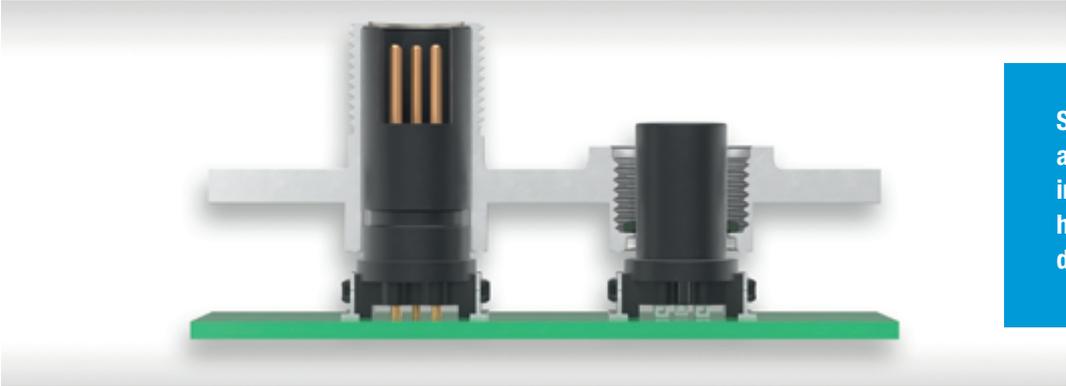
Standard variants integrated in customer housing 13 mm die-cast

Installation of the connectors with metal shells in a thin front panel

Cable outlet 90° and 180°

ADVANTAGES —

STAMPED FEMALE CONTACTS
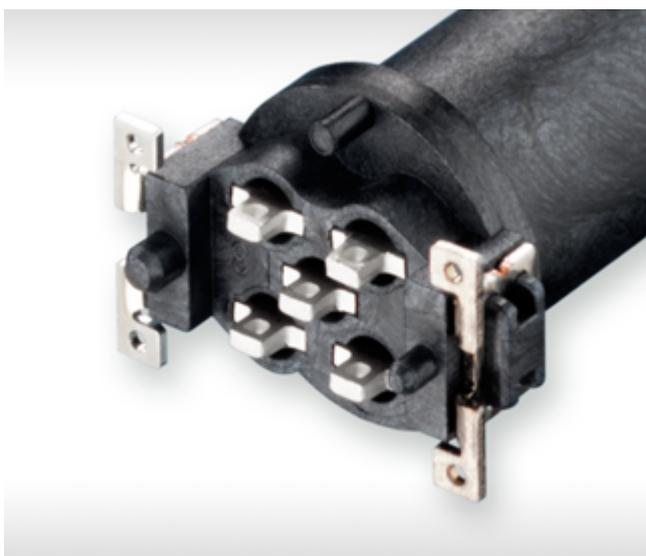
- economical stamped female contact
- reliable due to double-sided contacting
- rolled, homogeneous surface, guarantees secure contact mating
- gold plated mating area
- extremely low surface roughness minimizes abrasion
- low contact resistance
- SMT termination

MACHINED FEMALE CONTACTS
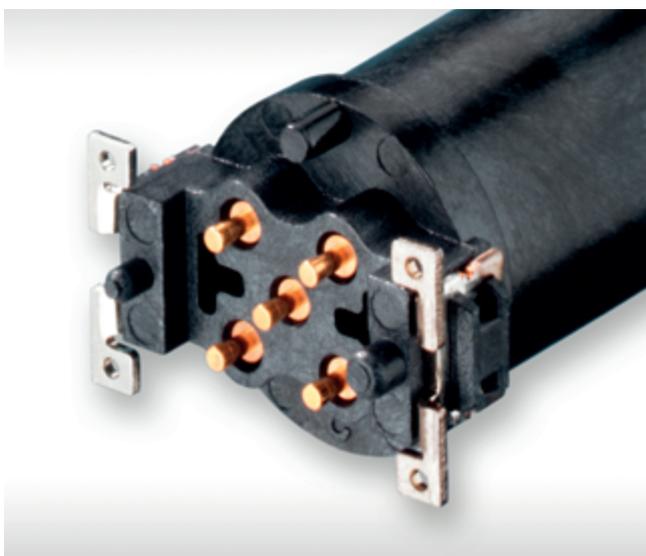
- reliable due to double-sided contacting
- gold plated mating area
- SMT- or THR-Termination depending on requirements for even more flexibility
- optimized THR solder joints due to short soldering length

ADVANTAGES

ROBUST SOLDER CLIPS
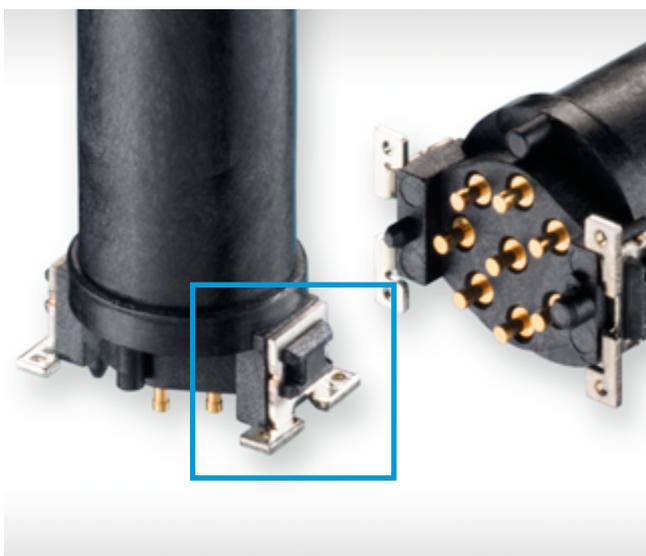
- outstanding retention forces on the circuit board
- soldering brackets absorb mechanical stress and are able to withstand high shock and vibration loads
- high shear and tear-off forces build trust in surface-mounted connectors

OPTIONAL PAD

- with pad for easy assembly with standard nozzles
- without pad cost-optimized for the assembly experts

M8 / M12 Circular Connectors 180°

ADVANTAGES —

■ **POTTING / ADDITIONAL SEALING FUNCTION** ————————————————
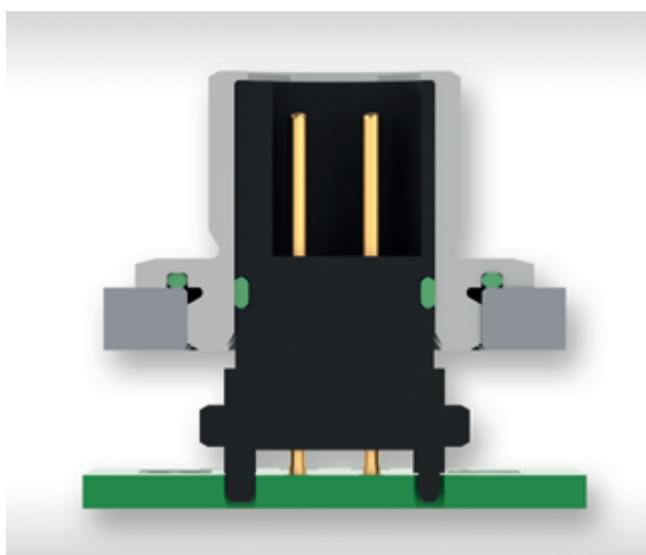
- additional sealing point for male connectors
- protection against liquids even when not plugged in
- prevents leakage of potting material when the electronics must be encapsulated

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■ **CODINGS** ————————————————————————————————

- coding of the mating face prevents mismating
- different codings enable different interface functions
- pre-alignment of the cable connectors prevents contact damage

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PROCESSING —

■ TAPE AND REEL PACKAGING

transport safe packaging and fully automatic assembly

■ FULLY AUTOMATIC ASSEMBLY AND REFLOW SOLDERING
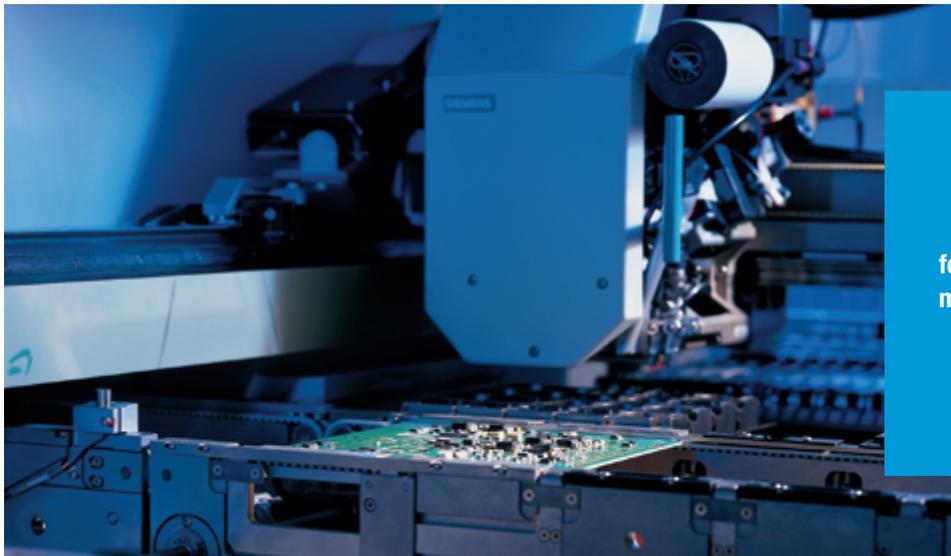
for efficient processing on modern assembly lines

INSTALLATION CONDITIONS —

MOUNTING OF THE SOLDERING BOARD

9 mm

13 mm

9 mm

13 mm
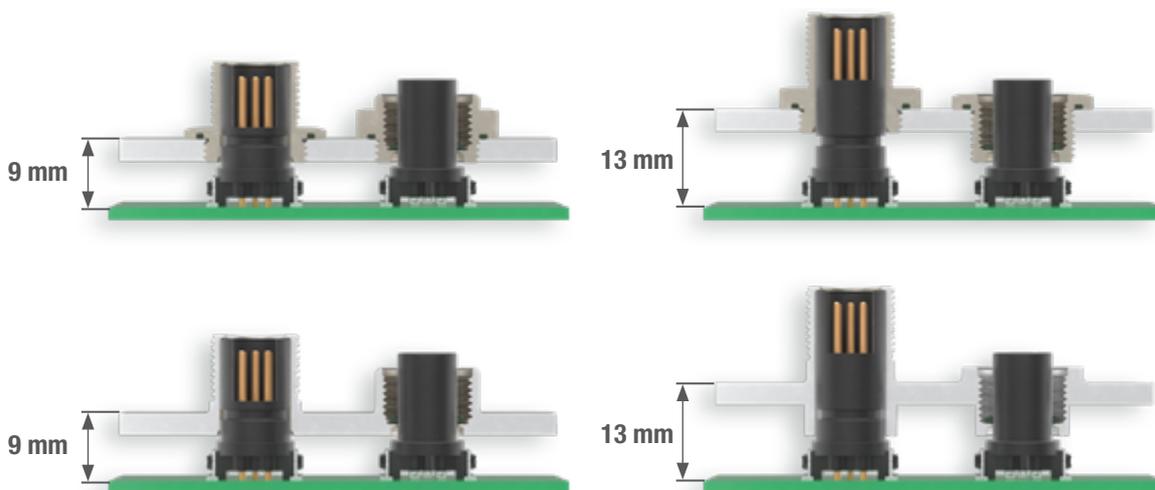
- Printed circuit board fixed in the customer housing by screws or equivalent fastening elements
- O-ring for sealing the connector after assembly pushed over each female connector

MOUNTING OF THE SHIELDED VERSION

9 mm
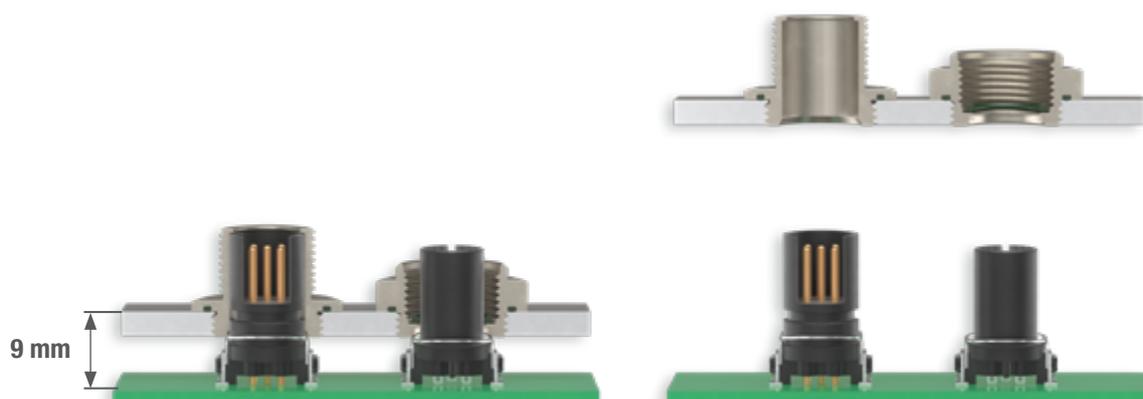
M8 / M12 Circular Connectors 180°

CHARACTERISTICS PCB CONNECTORS —

■ **TECHNICAL DATA**

Description	Standard	M8	M12
Temperature range		-25 / 85°C (derating curves available up to 125 °C)	
Current rating per contact	IEC60512 test 5b	3 A @ 40 °C (4 pin) see respective derating curve	4 A @ 40 °C (5 pin) see respective derating curve
Min. Air- and creepage distance		0,8 mm	1,1 mm (4-, 5 pin male) 1,0 mm (8 pin male) 0,4 mm (8 pin female)
Operating voltage	IEC 60664-1	The permissible operating voltages depend on the customer ap-plication and on the applicable or specified safety require-ments.Insulation coordination according to IEC 60664-1 has to be re-garded for the complete electrical device. There-fore, the maxi-mum creepage and clearance distances of the mated connec-tors are specified for consideration as a part of the whole current path. In practice, reductions in creepage or clearance distances may occur due to the conductive pattern of the printed board or the wiring used, and have to be taken into account separately.As a result the creepage and clearance dis-tances for the applica-tion may be reduced compared to those of the connector.	
Dielectric strength (contact-contact)	IEC 60512 test 4a	3 pin: 1000 V_{rms} 4-, 6 pin: 650 V_{rms}	4 pin: 1400 V_{rms} 5 pin: 1000 V_{rms} 8 pin: 650 V_{rms} 8 pin (X): 500 V_{rms} 12-, 17 pin: 500 V_{rms}
Contact resistance	IEC 60512 test 2a	< 10 mΩ	
Insulation resistance	IEC 60512 test 3a	> 10^8 Ω	
Vibration, sine	IEC 60512 test 6d	10 – 500 Hz 5 g	
Contact disturbance (while vibration test)	IEC 60512 test 2e	< 1 μs	
Shock halfsine	IEC 60512 test 6c	50 g 11 ms	
Contact disturbance (while shock test)	IEC 60512 test 2e	< 1 μs	

CHARACTERISTICS PCB CONNECTORS —

Description	Standard	M8	M12
Mechanical operation	IEC 60512 test 9a	> 100 mating cycles	
Insertion and withdrawal force max.	IEC 60512 test 13b	23 N (3-8 pin)	30 N (17-, 8(X)-pin)
Processing Conditions			
Hand soldering temperature max.	IEC 60068-2-20	3.5 s at 350 °C	
Dip soldering temperature max.	IEC 60068-2-20	10 s at 260 °C	
Reflow soldering temperature max.	JEDEC J-STD-020	20 - 40 s at 260 °C	
Coplanarity		< 0.1 mm	
Housing Material			
Insulation body		LCP / PA	
CTI value	IEC 112	min. 175	
UL flame rating		UL 94 V-0	
UL file plastic material		E83005 / E47960	
Contact Material			
Base material		Cu alloy	
Mating area		gold plated	
Termination area		Sn (stamped contact) Au (machined contact)	
Environment Compatibility			
Recycling		no flame-retardent additives, no toxic additives allow easy recycling	
Product Approval			
Protection degree		IP 65/67 (mated)	
UL/CSA		E84703	

M8 / M12 Circular Connectors 180°

M8 - FEMALE —

■ PRODUCT SPECIFICATION

■ ORDERING INFORMATION

No. of Pins	Assembly Height	Coding	Configuration	Termination	Packaging	Part Number
3	9/13 mm	A	M8, female, stamped contacts	SMT	Tape and reel	224150
3	9/13 mm	A	M8, female, stamped contacts	SMT	Tape and reel with pad	484599
3	9/13 mm	A	M8, female, machined contacts	SMT	Tape and reel	464431
4	9/13 mm	A	M8, female, stamped contacts	SMT	Tape and reel	224151
4	9/13 mm	A	M8, female, stamped contacts	SMT	Tape and reel with pad	494375
4	9/13 mm	A	M8, female, machined contacts	SMT	Tape and reel	464432
4	9/13 mm	A	M8, female, machined contacts	SMT	Tape and reel with pad	494606
6	9/13 mm	A	M8, female, machined contacts	SMT	Tape and reel	464561
6	9/13 mm	A	M8, female, machined contacts	SMT	Tape and reel with pad	515814

M8 / M12 Circular Connectors 180°

M8 - MALE —

◼ PRODUCT SPECIFICATION

◼ ORDERING INFORMATION

No. of Pins	Assembly Height	Coding	Configuration	Termination	Packaging	Part Number
4	9/13 mm	A	M8, male, machined contacts	SMT	Tape and reel with cap	224152
4	9/13 mm	A	M8, male, machined contacts, with o-ring	SMT	Tape and reel with cap	494007

M8 - ACCESSORIES —
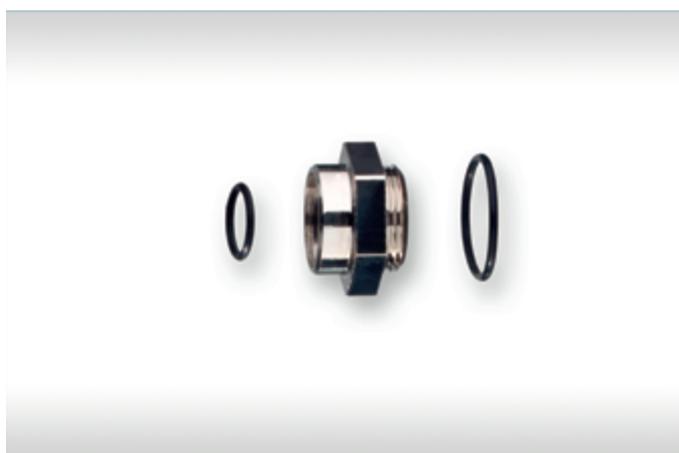
■ PRODUCT SPECIFICATION

■ ORDERING INFORMATION

Configuration	Material	Color	Assembly Height	Packaging	Part Number
Metal shell, for M8 female connectors	CuZn nickel plated	-	9 mm	Bulk	254154
Metal shell, for M8 female connectors	CuZn nickel plated	-	13 mm	Bulk	284067
Metal shell, for M8 male connectors	CuZn nickel plated	-	9 mm	Bulk	284409
Metal shell, for M8 male connectors	CuZn nickel plated	-	13 mm	Bulk	284074
Counternut, M10x1 SW14	Steel, tin plated	-	-	Bulk	394905
O-Ring, for M8 female connectors, 5x0.8	FKM	green	-	Bulk	494564
O-Ring, for M8 female connectors, 5x0.8	FKM	black	-	Bulk	835283
O-Ring, for M8 metal shell, 10x1	FKM	black	-	Bulk	835676
O-Ring, for M8 metal shell, 10x1	NBR	black	-	Bulk	834898

M8 / M12 Circular Connectors 180°

M8 - ASSEMBLY KIT —

■ **PRODUCT SPECIFICATION** —————————————————

■ **ORDERING INFORMATION** —————————————————

No. of Pins	Assembly Height	Coding	Configuration	Termination	Packaging	Part Number
4	13 mm	A	kit, male, metal shell, o-ring 10x1	SMT	Bag	294941
3	13 mm	A	kit, female, metal shell, o-ring 10x1, o-ring 5x0.8	SMT	Bag	294939
4	13 mm	A	kit, female, metal shell, o-ring 10x1, o-ring 5x0.8	SMT	Bag	294943

M8 / M12 Circular Connectors 180°

M8 - CABLE ASSEMBLIES —

■ **PRODUCT SPECIFICATION**

■ **ORDERING INFORMATION**

No. of Pins	Connector left	Connector right	Length (m)	Cable Type	Coding	Part Number
3	Female Straight	None	3	PVC	A	223764
3	Female Straight	None	3	PUR	A	223765
3	Female Angled	None	1.5	PUR	A	223711
3	Female Angled	None	3	PVC	A	223770
3	Female Angled	None	3	PVC	A	223766
3	Female Angled	None	3	PUR	A	223768
3	Male Straight	None	1.5	PUR	A	223710
3	Male Straight	Female Straight	1	PVC	A	223773
3	Male Straight	Female Straight	1	PUR	A	223774

M8 - CABLE ASSEMBLIES —

No. of Pins	Connector left	Connector right	Length (m)	Cable Type	Coding	Part Number
3	Male Straight	Female Angled	1	PVC	A	223775
3	Male Straight	Female Angled	1	PUR	A	223778
3	Male Straight	Female angled, with LED	0.3	PUR	A	223712
3	Male Straight	Female angled, with LED	1	PVC	A	223780
4	Female Straight	None	1.5	PVC	A	223933
4	Female Straight	None	3	PVC	A	223767
4	Female Straight	None	5	PVC	A	225463
4	Female Straight	None	3	PUR	A	223769
4	Female Angled	None	3	PVC	A	223771
4	Female Angled	None	3	PUR	A	223772
4	Male Straight	None	3	PUR	A	223762
4	Male Straight	None	5	PUR	A	225103
4	Male Straight	Female Straight	1	PVC	A	223776
4	Male Straight	Female Straight	1	PUR	A	223777
4	Male Straight	Female Angled	1	PUR	A	223763
4	Male Straight	Female Angled	1	PVC	A	223779

M8 - QUICK TERMINATION FOR ASSEMBLY ──

■ **PRODUCT SPECIFICATION** ─────────────────────

■ **ORDERING INFORMATION** ─────────────────────

No. of Pins	Coding	Configuration	Termination	Packaging	Part Number
3	A	M8, female	IDC	Bag	254760
3	A	M8, male	IDC	Bag	254758
4	A	M8, female	IDC	Bag	254764
4	A	M8, male	IDC	Bag	254762

M8 / M12 Circular Connectors 180°

M12 - FEMALE ——

PRODUCT SPECIFICATION

ORDERING INFORMATION

No. of Pins	Assembly Height	Coding	Configuration	Shield	Termination	Packaging	Part Number
4	9/13 mm	A	M12, female	no	SMT	Tape and reel	454003
4	9/13 mm	A	M12, female, machined contacts	no	SMT	Tape and reel	474053
4	9/13 mm	A	M12, female, machined contacts	no	THR	Tape and reel	515927
4	9/13 mm	A	M12, female, machined contacts	no	THR	Tape and reel with pad	515928
5	9/13 mm	A	M12, female	no	SMT	Tape and reel	224064
5	9/13 mm	A	M12, female	no	SMT	Tape and reel with pad	454950
5	9/13 mm	A	M12, female, machined contacts	no	SMT	Tape and reel	354702

M8 / M12 Circular Connectors 180°

M12 - FEMALE —

No. of Pins	Assembly Height	Coding	Configuration	Shield	Termination	Packaging	Part Number
5	9/13 mm	A	M12, female, machined contacts	no	SMT	Tape and reel with pad	484896
5	9/13 mm	A	M12, female, machined contacts	no	THR	Tape and reel with pad	494145
5	9/13 mm	A	M12, female, machined contacts	no	THR	Tape and reel	494023
5	9/13 mm	A	M12, female, machined contacts	yes	THR	Tape and reel with pad	484931
5	9/13 mm	A	M12, female, machined contacts	yes	THR	Tape and reel	484930
8	9/13 mm	A	M12, female	no	SMT	Tape and reel	354131
8	9/13 mm	A	M12, female	no	SMT	Tape and reel with pad	454952
8	9/13 mm	A	M12, female, machined contacts	no	SMT	Tape and reel	394305
8	9/13 mm	A	M12, female, machined contacts	no	SMT	Tape and reel with pad	494166
12	9/13 mm	A	M12, female, machined contacts	yes	SMT	Tape and reel	484069
12	9/13 mm	A	M12, female, machined contacts	no	SMT	Tape and reel with pad	484074
17	9/13 mm	A	M12, female, machined contacts	yes	SMT	Tape and reel	484071
17	9/13 mm	A	M12, female, machined contacts	no	SMT	Tape and reel with pad	484076
5	9/13 mm	B	M12, female	no	SMT	Tape and reel	254206
5	9/13 mm	B	M12, female	no	SMT	Tape and reel with pad	454951

M8 / M12 Circular Connectors 180°

M12 - FEMALE ──

No. of Pins	Assembly Height	Coding	Configuration	Shield	Termination	Packaging	Part Number
5	9/13 mm	B	M12, female, machined contacts	no	SMT	Tape and reel	384891
5	9/13 mm	B	M12, female, machined contacts	yes	SMT	Tape and reel	484933
5	9/13 mm	B	M12, female, machined contacts	yes	SMT	Tape and reel with pad	484934

M12 - MALE —

■ **PRODUCT SPECIFICATION** ————————————————————

■ **ORDERING INFORMATION** ————————————————————

No. of Pins	Assembly Height	Coding	Configuration	Shield	Termination	Packaging	Part Number
3	9 mm	A	M12, male	no	SMT	Tape and reel	454267
3	9 mm	A	M12, male	no	SMT	Tape and reel with pad	494927
4	9 mm	A	M12, male	no	SMT	Tape and reel	284809
4	9 mm	A	M12, male	no	SMT	Tape and reel with pad	484790
4	9 mm	A	M12, male, o-ring	no	SMT	Tape and reel	494167
4	9 mm	A	M12, male, o-ring	no	SMT	Tape and reel with pad	494013
4	13 mm	A	M12, male	no	SMT	Tape and reel	494020
5	9 mm	A	M12, male, o-ring	no	SMT	Tape and reel	284740

M8 / M12 Circular Connectors 180°

M12 - MALE —

No. of Pins	Assembly Height	Coding	Configuration	Shield	Termination	Packaging	Part Number
5	9 mm	A	M12, male	no	SMT	Tape and reel	494335
5	9 mm	A	M12, male	no	SMT	Tape and reel with pad	484924
5	9 mm	A	M12, male	yes	SMT	Tape and reel	464912
5	13 mm	A	M12, male	no	SMT	Tape and reel with pad	494068
8	9 mm	A	M12, male	no	SMT	Tape and reel	284810
8	9 mm	A	M12, male	no	SMT	Tape and reel with pad	464676
8	9 mm	A	M12, male, o-ring	no	SMT	Tape and reel	494168
8	9 mm	A	M12, male, o-ring	no	SMT	Tape and reel with pad	494015
8	9 mm	A	M12, male	yes	SMT	Tape and reel	464800
8	13 mm	A	M12, male	no	SMT	Tape and reel with pad	494376
8	13 mm	A	M12, male	no	THR	Tray	484156
5	9 mm	B	M12, male	no	SMT	Tape and reel	354130
5	9 mm	B	M12, ma, o-ringl	no	SMT	Tape and reel with pad	515129
5	13 mm	B	M12, male	no	SMT	Tape and reel with pad	515529
12	9 mm	A	M12, male	no	SMT	Tape and reel	484784
12	9 mm	A	M12, male	yes	SMT	Tape and reel	454643
12	9 mm	A	M12, male	yes	SMT	Tape and reel with pad	494518
17	9 mm	A	M12, male	no	SMT	Tape and reel	484786
17	9 mm	A	M12, male	yes	SMT	Tape and reel	454645

M12 - MALE FOR DIRECT INTEGRATION ——

ERNI

■ PRODUCT SPECIFICATION ——————————————

■ ORDERING INFORMATION ——————————————

No. of Pins	Assembly Height	Configuration	Shield	Termination	Packaging	Part Number
4	9 mm	M12, male	no	THR	Tray	364781
4	9 mm	M12, male	no	SMT	Tray	394339
4	9 mm	M12, male	no	SMT	Tape and reel with cap	474329
5	9 mm	M12, male	no	THR	Tray	364779
5	9 mm	M12, male	no	SMT	Tray	394337
5	9 mm	M12, male	no	SMT	Tape and reel with cap	484981
5	9 mm	M12, male	no	SMT	Tape and reel with cap	474331
8	9 mm	M12, male	no	SMT	Tray	364777
8	9 mm	M12, male	no	SMT	Tape and reel with cap	515632

M8 / M12 Circular Connectors 180°

M12 - ACCESSORIES —

■ PRODUCT SPECIFICATION ──────────────
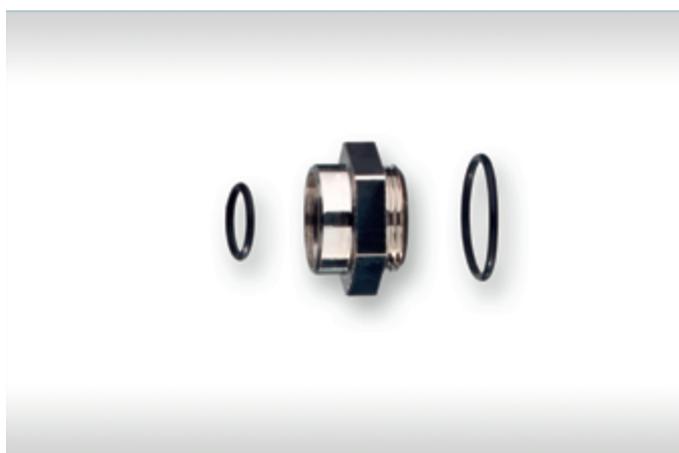
■ ORDERING INFORMATION ──────────────

Configuration	Material	Color	Assembly Height	Packaging	Part Number
Metal shell, for M12 female connectors	CuZn nickel plated	-	9 mm	Bulk	394828
Metal shell, for M12 female connectors	CuZn nickel plated	-	13 mm	Bulk	394847
Metal shell, for M12 male connectors	CuZn nickel plated	-	9 mm	Bulk	464272
Metal shell, for M12 male connectors	CuZn nickel plated	-	13 mm	Bulk	284377
Metal shell, for M12 male connectors, for counternut	CuZn nickel plated	-	13 mm	Bulk	394863
Counternut, M14x1	-	-	-	Bulk	354003
O-Ring, for M12 male connectors DI, 7x1.5	NBR	black	-	Bulk	835243

M12 - ACCESSORIES —

Configuration	Material	Color	Assembly Height	Packaging	Part Number
O-Ring, for M12 male connectors DI, 7x1.5	FKM	green	-	Bulk	835299
O-Ring, for M12 metall shell, 14x1	NBR	black	-	Bulk	834899
O-Ring, for M12 metall shell, 14x1	FKM	black	-	Bulk	835677
O-Ring, for M12 female connectors, 7x1	FKM	black	-	Bulk	835284
Protective cap, For female connectors, M12x1	PE-HD	yellow	-	Bulk	374343
Protective cap, For female connectors, M12x1	PE-HD	black	-	Bulk	225507
Protective cap, For male connectors, M12x1, incl. o-ring	PE-HD	yellow	-	Bulk	374342

M8 / M12 Circular Connectors 180°

M12 - ASSEMBLY KIT ——

■ **PRODUCT SPECIFICATION** ———————————————————

■ **ORDERING INFORMATION** ———————————————————

No. of Pins	Assembly Height	Coding	Configuration	Shield	Termination	Packaging	Part Number
4	13 mm	A	kit, male, metal shell, o-ring 14x1	no	SMT	Bag	225110
5	13 mm	A	kit, male, metal shell, o-ring 14x1	no	SMT	Bag	294933
4	13 mm	A	kit, female, metal shell, o-ring 14x1, o-ring 7x1	no	SMT	Bag	225112
4	13 mm	D	kit, female, metal shell, o-ring 14x1, o-ring 7x1	no	SMT	Bag	225114
5	13 mm	A	kit, female, metal shell, o-ring 14x1, o-ring 7x1	no	SMT	Bag	294935
8	13 mm	A	kit, female, metal shell, o-ring 14x1, o-ring 7x1	no	SMT	Bag	294937

M8 / M12 Circular Connectors 180°

M12 - CABLE ASSEMBLIES —

■ **PRODUCT SPECIFICATION** —

■ **ORDERING INFORMATION** —

No. of Pins	Connector left	Connector right	Length (m)	Cable Type	Shield	Coding	Part Number
4	Female Straight	None	2	PVC	no	A	223866
4	Female Straight	None	3	PVC	no	A	223783
4	Female Straight	None	3	PUR	no	A	223784
4	Female Angled	None	1.5	PUR	no	A	223714
4	Female Angled	None	3	PVC	no	A	223785
4	Female angled, with LED	None	3	PVC	no	A	223786
4	Female angled, with LED	None	3	PUR	no	A	223787
4	Male Straight	None	1.5	PUR	no	A	223713

M8 / M12 Circular Connectors 180°

M12 - CABLE ASSEMBLIES ——

No. of Pins	Connector left	Connector right	Length (m)	Cable Type	Shield	Coding	Part Number
4	Male Straight	None	3	PVC	no	A	223781
4	Male Straight	Female Straight	1	PVC	no	A	223788
4	Male Straight	Female Straight	1	PUR	no	A	223789
4	Male Straight	Female Angled	1	PVC	no	A	223790
4	Male Straight	Female Angled	1	PUR	no	A	223791
4	Male Straight	Female angled, with LED	0.3	PUR	no	A	223715
4	Male Angled	None	3	PVC	no	A	223782
4	Male Straight	None	6	PUR (CAN, DeviceNet)	yes	A	225100
4	Female Straight	Male Straight	10	PUR (CAN, DeviceNet)	yes	A	225101
5	Female Straight	None	1.5	PVC	no	A	223923
5	Female Straight	None	3	PVC	no	A	235041
5	Male Straight	Female Straight	1	PUR	no	A	223944
5	Male Straight	Female Straight	1	PUR (CAN, DeviceNet)	yes	A	354195
5	Male Straight	Female Straight	1.5	PUR (CAN, DeviceNet)	yes	A	364415
5	Male Straight	Female Straight	2	PUR (CAN, DeviceNet)	yes	A	225120
5	Male Straight	Female Straight	5	PUR (CAN, DeviceNet)	yes	A	225117

M12 - CABLE ASSEMBLIES —

No. of Pins	Connector left	Connector right	Length (m)	Cable Type	Shield	Coding	Part Number
5	Male Straight	Female Straight	7.5	PUR (CAN, DeviceNet)	yes	A	225119
5	Male Straight	Female Straight	10	PUR (CAN, DeviceNet)	yes	A	225118
5	Female Straight	Female Straight	2	PUR (CAN, DeviceNet)	yes	A	225121
8	Female Straight	None	3	PUR	no	A	225039
8	Male Straight	None		PUR	no	A	225040
8	Male Straight	Male Straight	0.5	PUR	yes	A	464933

M8 / M12 Circular Connectors 180°

M12 - QUICK TERMINATION —

■ PRODUCT SPECIFICATION

■ ORDERING INFORMATION

No. of Pins	Coding	Configuration	Termination	Packaging	Part Number
4	A	M12, female	IDC	Bag	254770
4	A	M12, male	IDC	Bag	254768

M8 / M12 Circular Connectors 180°

M12 ETHERNET-FEMALE ⸺

■ **PRODUCT SPECIFICATION** ⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺

■ **ORDERING INFORMATION** ⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺⸺

No. of Pins	Assembly Height	Coding	Configuration	Shield	Termination	Packaging	Part Number
4	9/13 mm	D	M12, female	no	SMT	Tape and reel	234041
4	9/13 mm	D	M12, female	no	SMT	Tape and reel with pad	454949
4	9/13 mm	D	M12, female, machined contacts	no	SMT	Tape and reel	364175
4	9/13 mm	D	M12, female, machined contacts	no	SMT	Tape and reel with pad	474665
4	9/13 mm	D	M12, female, machined contacts	no	THR	Tape and reel with pad	484944
4	9/13 mm	D	M12, female, machined contacts	yes	SMT	Tape and reel	484936
4	9/13 mm	D	M12, female, machined contacts	yes	SMT	Tape and reel with pad	484937

M8 / M12 Circular Connectors 180°

M12 ETHERNET-FEMALE, GIGABIT —

■ PRODUCT SPECIFICATION ─────────────────────────

■ ORDERING INFORMATION ─────────────────────────

No. of Pins	Assembly Height	Coding	Configuration	Shield	Termination	Packaging	Part Number
8	9/13 mm	X	M12, female	yes	SMT/THR	Tape and reel	474771
8	9/13 mm	X	M12, female	yes	SMT/THR	Tape and reel with pad	394811

M12 ETHERNET - CABLE ASSEMBLIES ——

■ **PRODUCT SPECIFICATION**

■ **ORDERING INFORMATION**

No. of Pins	Connector left	Connector right	Length (m)	Cable Type	Shield	Coding	Part Number
4	Male Straight	Male Straight	0.3	PUR (Ethernet)	yes	D	225445
4	Male Straight	Male Straight	0.6	PUR (Ethernet)	yes	D	225446
4	Male Straight	Male Straight	1	PUR (Ethernet)	yes	D	225447
4	Male Straight	Male Straight	1.5	PUR (Ethernet)	yes	D	225448
4	Male Straight	Male Straight	2	PUR (Ethernet)	yes	D	225153
4	Male Straight	Male Straight	3	PUR (Ethernet)	yes	D	225452
4	Male Straight	Male Straight	5	PUR (Ethernet)	yes	D	225154
4	Male Straight	Male Straight	7.5	PUR (Ethernet)	yes	D	225453
4	Male Straight	Male Straight	10	PUR (Ethernet)	yes	D	225155

M12 ETHERNET - CABLE ASSEMBLIES ——

No. of Pins	Connector left	Connector right	Length (m)	Cable Type	Shield	Coding	Part Number
4	Male Straight	Male Straight	20	PUR (Ethernet)	yes	D	225156
4	Male Straight	RJ45	0.3	PUR (Ethernet)	yes	D	225440
4	Male Straight	RJ45	0.6	PUR (Ethernet)	yes	D	225441
4	Male Straight	RJ45	1	PUR (Ethernet)	yes	D	225442
4	Male Straight	RJ45	1.5	PUR (Ethernet)	yes	D	225443
4	Male Straight	RJ45	2	PUR (Ethernet)	yes	D	394745
4	Male Straight	RJ45	3	PUR (Ethernet)	yes	D	225450
4	Male Straight	RJ45	5	PUR (Ethernet)	yes	D	394746
4	Male Straight	RJ45	7.5	PUR (Ethernet)	yes	D	225451
4	Male Straight	RJ45	10	PUR (Ethernet)	yes	D	394747
4	Male Straight	RJ45	20	PUR (Ethernet)	yes	D	225444
4	Male Angled	RJ45	2	PUR (Ethernet)	yes	D	225149
4	Male Angled	RJ45	5	PUR (Ethernet)	yes	D	225150
4	Male Angled	RJ45	10	PUR (Ethernet)	yes	D	225151

M8 / M12 Circular Connectors 180°

M8/M12 ADAPTER —

■ **PRODUCT SPECIFICATION** ————————————————

■ **ORDERING INFORMATION** ————————————————

No. of Pins	Coding	Configuration	Packaging	Part Number
3	A	M12, male - M8, female	Bag	254772
4	A	M12, male - M8, female	Bag	254774
3	A	M8, male - M12, female	Bag	254776
4	A	M8, male - M12, female	Bag	254778

M8 / M12 Circular Connectors 180°

M8/M12 T-COUPLER ———

■ PRODUCT SPECIFICATION ————————————————————

■ ORDERING INFORMATION ————————————————————

No. of Pins	Coding	Configuration	Packaging	Part Number
4/3/3	A	1 x M12, male, 4 pin - 2 x M8, female, 3 pin	Bag	254790
5/5/5	A	1 x M12, male, 5 pin - 2 x M12, female, 5 pin, CAN / DeviceNet	Bag	394890
5/5/5	A	1 x M12, male, 5 pin - 2 x M12, female, 5 pin, CAN / DeviceNet	Bag	394892

M8 / M12 Circular Connectors 180°

M12 PANEL FEED-THROUGH ——

■ PRODUCT SPECIFICATION

■ ORDERING INFORMATION

No. of Pins	Coding	Configuration	Packaging	Part Number
5	A	M12, male - M12, female	Bag	254780

M8 / M12 Circular Connectors 180°

M12 MALE WITH TERMINATING RESISTOR —

■ **PRODUCT SPECIFICATION**

■ **ORDERING INFORMATION**

No. of Pins	Coding	Configuration	Packaging	Part Number
5	A	M12, for CAN/DeviceNet	Bag	394888

ADDITIONAL VERSIONS FOR M12 RIGHT ANGLE CONNECTORS ——

■ STANDARD SOLUTIONS ————————————————

- extremely space saving due to be placed on PCB central axis
- identical Layout for male and female version
- IP 65/67 mated and locked condition
- optional 360° shield ring
- high CTI-value of 600 for rough environmental applications
- early mate last break option for pin 5
- UL E84703 listed
- Part numbers are included in the available catalog: M12 Right Angle Connectors

■ SENSOR PIPE SOLUTIONS ————————————————

- extremely short version 14 mm length
- specially designed for M12 sensor pipes
- front mounting of final assembled PCB into the sensor pipe
- sealing option with O-ring
- versions with anti twist protection
- Part numbers are included in the available catalog: M12 Right Angle Connectors

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