


**STX M12x1 IP67**

	Passenger Information Systems (PIS)
	Production Monitoring
	Monitoring in Railway Vehicles
	Security and Video Surveillance
	Baggage Inspection

ROUND.
SAFE.
ROBUST.

Designed for Transmitting Maximum Data Rates
in Industrial Applications:
the STX M12x1 Connector Series.

HIGHEST DATA RATES.

Whether for baggage inspection at airports, passenger information systems (PIS) or automation systems in process monitoring, the STX M12×1 IP67 connector series is the ideal solution wherever continuous cabling of industrial communication networks with the transmission of maximum data rates is required.



Passenger Information
Systems (PIS)



Production Monitoring with
High-Resolution Cameras



Monitoring in Railway
Vehicles



Security and Video
Surveillance (CCTV)



Baggage Inspection at
Airports



THE SOLUTION FOR INDUSTRIAL COMMUNICATION NETWORKS.

Designed for transmitting maximum data rates in industrial applications

- 4-pole D-coded connectors in Cat.5
- Designed for data rates up to 100 Mbit/s for PROFINET applications
- 8-pole X-coded connectors in Cat.6_A
- Designed for data rates up to 10 Gbit/s
- Additional power supply for connected terminating equipment possible (PoE, PoE+)



M12x1 cable plug



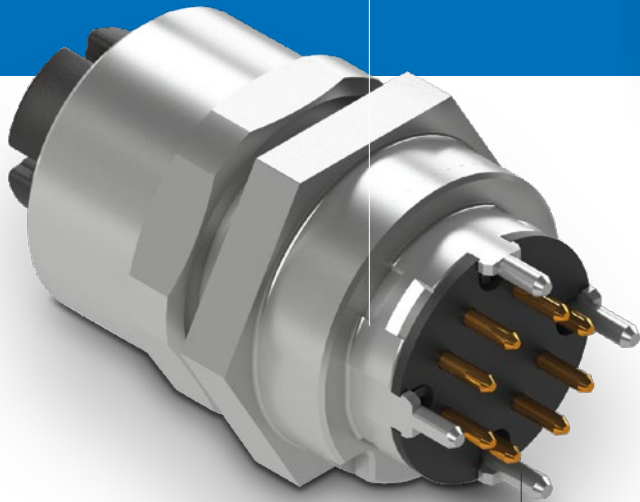
- M12 connectors meet the requirements of a continuous cabling of industrial communication networks according to IEC 61918
- Extensive and versatile product portfolio
 - Field assembly connectors which are suitable for connecting to both solid and stranded wire cables
 - Circuit board bulkhead sockets for various mounting possibilities
 - Pre-assembled connecting cables in different configurations

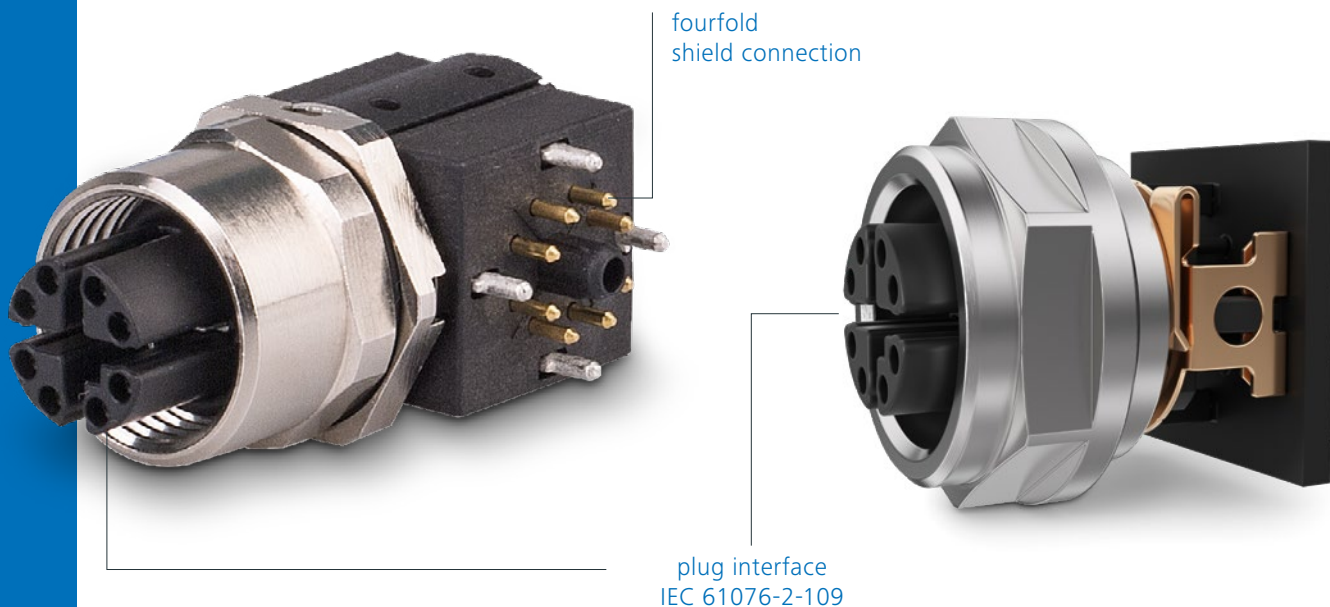
VERSATILE POSSIBILITIES.

one foot print for all
bulkhead socket designs

fourfold
shield connection

full metal shielding
between contact pairs





plug interface
IEC 61076-2-109

M12x1 X-coded Bulkhead Sockets Cat.6_A

An important part of the STX M12x1 connector series are the bulkhead sockets in Cat.6_A. They are available as THR or SMD versions. Likewise, the bulkhead sockets are available with housings for front or back mounting and feature versatile mounting possibilities.

Characteristics of THR / SMD Products

Mechanical Characteristics

Connectors	IEC 61076-2-109
Insertion force	≤ 30 N
Durability (mating cycles)	≥ 100
Material: housing	zinc diecast nickel plated / brass nickel plated
Material: contact body	PA
Material: contacts	CuSn
Material: contact finish	Au
Material: gaskets	FKM; NBR

Environmental Requirements

Shock	50 g
Protection against particulate ingress	IP6X
Protection against water / immersion	IPX7
Ambient temperature	-40 °C to +85 °C

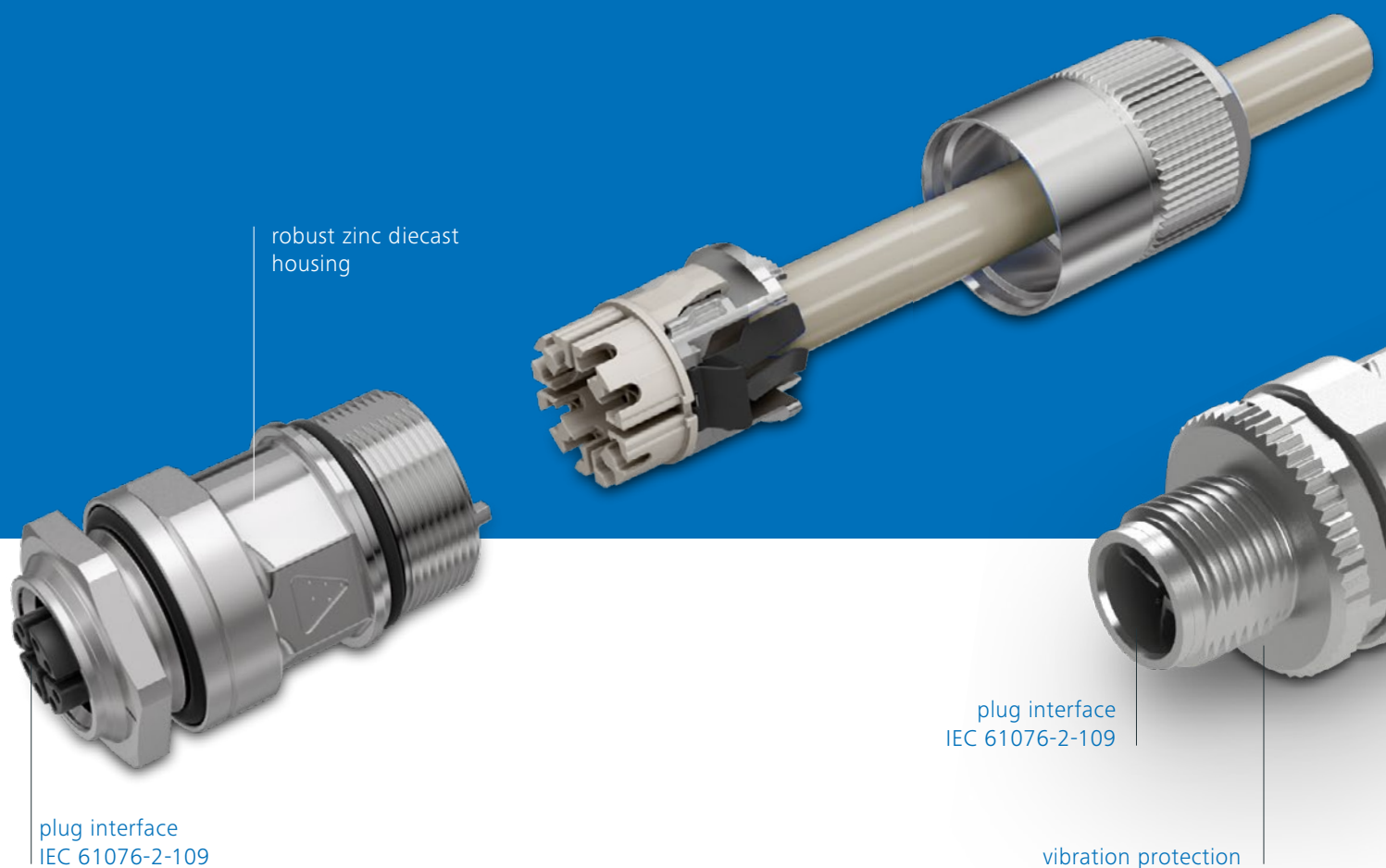
Electrical Characteristics

Contact resistance	≤ 5 mΩ
Insulation resistance	≥ 100 MΩ
Voltage proof: contact-contact	≥ 500 V, DC
Voltage proof: contact-shield	≥ 500 V, DC
PoE+ acc. to IEEE 802.3at	Adequate for Power over Ethernet+

Transmission Characteristics

10 Gigabit Ethernet acc. to IEEE 802.3an	Adequate for 10 Gigabit Ethernet
Category 6 _A	ISO/IEC 11801; DIN EN 50173-1
Class E _A	ISO/IEC 11801; DIN EN 50173-1

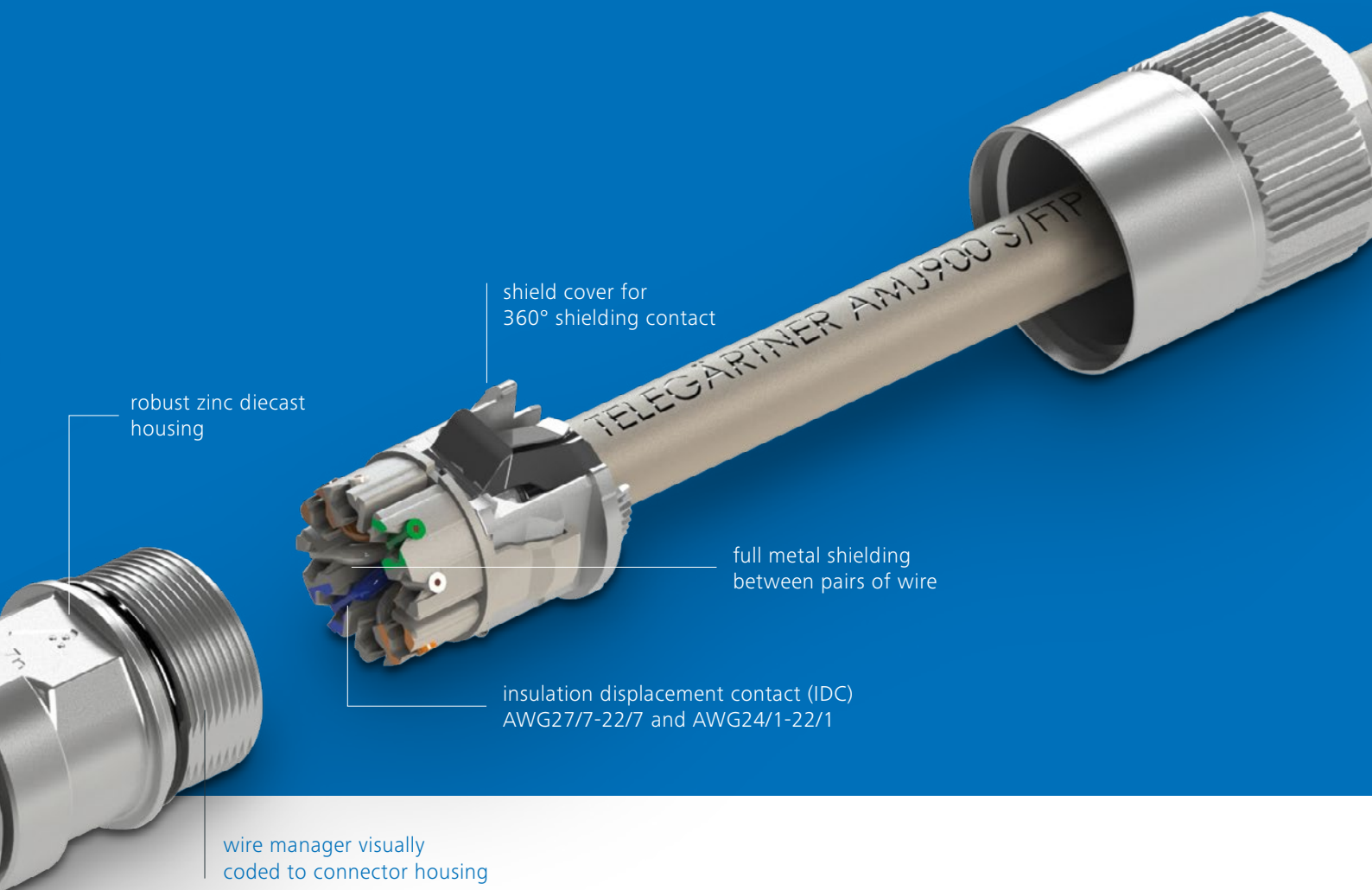
FOR EXTREME REQUIREMENTS.



STX M12x1 Cable Plug and Cable Socket X-coded IP67

The basic structure of the Telegärtner connector with X-coding corresponds to the M12 system in worldwide use that has found its way into applications in many different branches with extreme conditions thanks to its compact design and industrial compatibility. The extremely robust M12x1 connector in Cat.6_A from the STX programme can be fitted on site without any special tools. The STX M12x1 cable plug and cable socket feature 360° shielding and cover a wide range of wire diameters (0.9–1.6 mm) and cable diameters (5.5–9 mm).

X-coded IP67



Mechanical Characteristics

Connectors	IEC 61076-2-109
Insertion force	≤ 30 N
Durability (mating cycles)	≥ 100
Material: housing	zinc diecast nickel plated / brass nickel plated
Material: wire pair presorting	PA UL94 V0
Material: shield	German silver
Material: pressure screw	brass nickel plated
Material: contacts	brass
Material: contact finish	Au over Ni
Wire diameter	0.9 – 1.6 mm
Cu-Conductor diameter: stranded	0.46 – 0.76 mm (AWG27 – 22/7)
Cu-Conductor diameter: solid	0.51 – 0.64 mm (AWG24 – 22/1)
Cable diameter	5.5 – 9.0 mm

Environmental Requirements

Shock	50 g
Protection against particulate ingress	IP6X
Protection against water / immersion	IPX7
Ambient temperature	-40 °C to +85 °C

Electrical Characteristics

Contact resistance	≤ 10 mΩ
Insulation resistance	≥ 100 MΩ
Voltage proof: contact-contact	≥ 500 V, DC
Voltage proof: contact-shield	≥ 500 V, DC
PoE+ acc.to IEEE 802.3at	Adequate for Power over Ethernet+

Transmission Characteristics

10 GB Ethernet acc. to IEEE 802.3an	Adequate for 10 Gigabit Ethernet
Category 6 _A	ISO/IEC 11801; DIN EN 50173-1
Class E _A	ISO/IEC 11801; DIN EN 50173-1

TOTALLY ROBUST.



- Short and slim design
- High packing density

STX M12×1 Connecting Cable X-coded

For the connection between machines or other terminating equipment as well as connection of the machine or terminating equipment to the control cabinet, Telegärtner also offers preassembled connecting cables in Cat.6_A. The connecting cables M12×1 with X-coding have a S/FTP 4×2×AWG26/7 structure, a PUR jacket and are suitable for an increased temperature range of -40 °C to +85 °C.

-40°C
TO
+85°C

X-coded

**Connecting Cable
S/FTP Cat.7 PUR**

Mechanical Characteristics

Durability (mating cycles) M12	≥ 100
Durability (mating cycles) RJ45	≥ 750
Cable structure	LI02YSC11Y PUR 4×2×AWG 26/7 PiMF
Stranded wire	AWG 26 (7 × 0.16 mm)
Wire insulation	Foam PE, Ø 1.04 mm
Pair shielding	Al-foil, outside conducting
Overall shielding	tin plated copper braid
Outer jacket	Ø 6.2 ±0.2 mm
Colour	RAL 6018

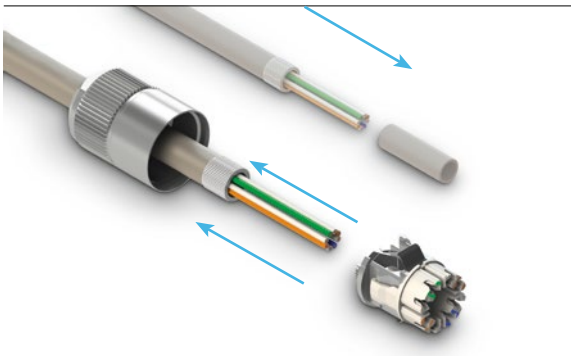
Thermal and Climatic Characteristics

UL	E344985
Flame-retardant test	IEC 60332-1
Operating temperature in °C	-40 °C to 85 °C

SIMPLE. RELIABLE.

Fast, easy and without special tools:
Assembly of the STX M12×1

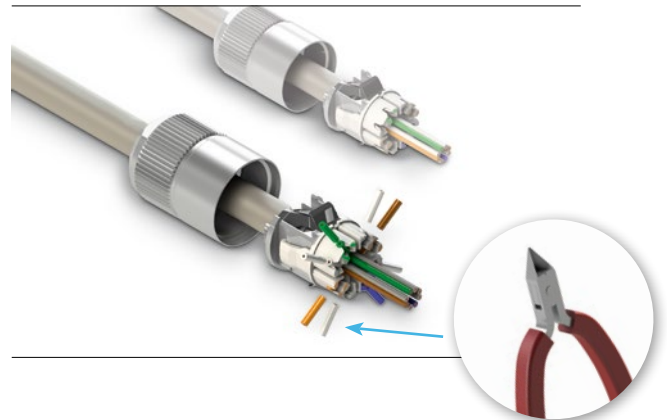
01



Prepare cables

- Slide over cable gland and seal at least 40 mm
- Remove outer jacket, fold braid shield backwards
- Pre-sort pairs of wire

02

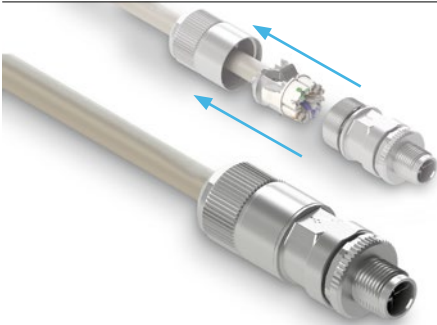


Insert cables

- Insert pairs of wire into the wire manager
- Actuate the shield spring
- Untwist pairs of wire, insert the individual wires into the wire manager
- Cut off protruding wire flush



03



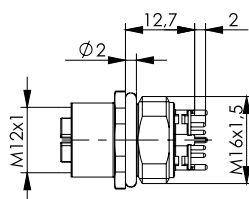
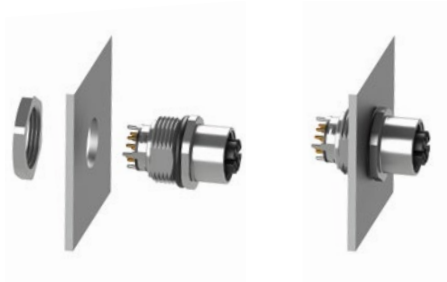
Screw on connector

- Insert wire manager into plug body (pay attention to position)
- Tighten the cable gland with an open-ended wrench
- Use an additional seal for cable diameters between 5.5 and 7.5 mm

Thanks to an intelligent wire management and a simple screw connection system, the individual components of the STX M12x1 cable plug can be assembled quickly and easily on site completely without the use of special tools.

ALWAYS THE OPTIMAL INSTALLA- TION POSSIBILITY.

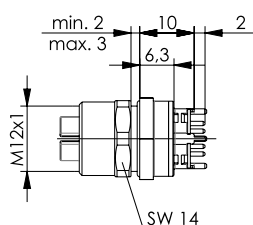
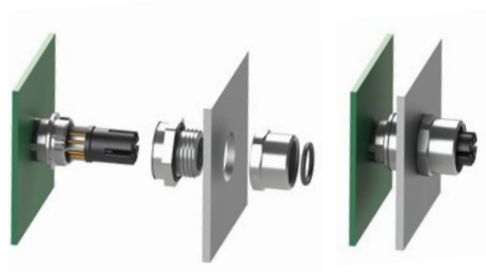
Front mounting



- M12 bulkhead socket
- X-coded
- 1 piece design
- Distance from PCB to housing 12.7 mm

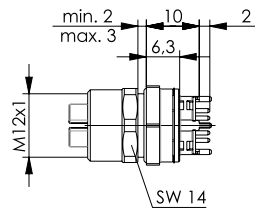
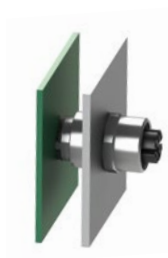
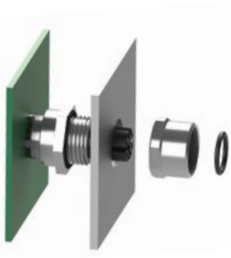
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Back mounting



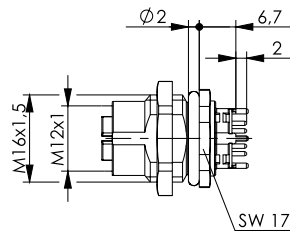
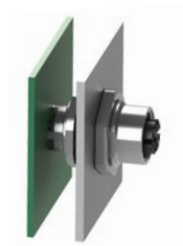
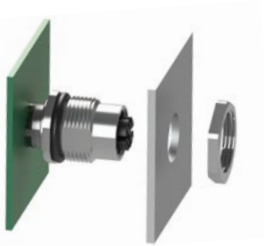
- M12 bulkhead socket
- X-coded
- 2 piece design
- Distance from PCB to housing 10 mm

Order no.: [100007548](#)



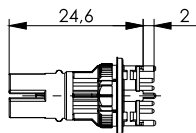
- M12 bulkhead socket
- X-coded
- 1 piece design
- Distance from PCB to housing 10 mm

Order no.: 100007427



- M12 bulkhead socket
- X-coded
- 1 piece design
- Distance from PCB to housing 6.7 mm

Order no.: 100007428



- M12 bulkhead socket
- X-coded
- Without housing
- Distance from PCB customer specific

Order no.: 100007550

Front or back mounting:
Telegärtner always offers component manufacturers the right solution for integration into their products.

PRESCRIPTION ONLY.

**Fail-safe system cabling that can withstand the greatest loads and the most adverse operating conditions:
igus® chainflex Profinet and Telegärtner M12.**

Reliable automation of production and logistics is absolutely essential for efficient processes. For example, the mechanical stresses of moving applications, such as in a fully automated high-bay warehouse or an industrial robot, place tremendous demands on system cabling. If just one component fails, work and production disruptions can quickly result in considerable costs. A tailor-made solution "on prescription" counters this problem.

From practice.

Background and symptoms

The fully automated storage system of a large German pharmaceutical mail-order company kept failing. This resulted in huge costs due to:

- Time-consuming repairs
- Additional work
- Delivery delays
- Customer complaints

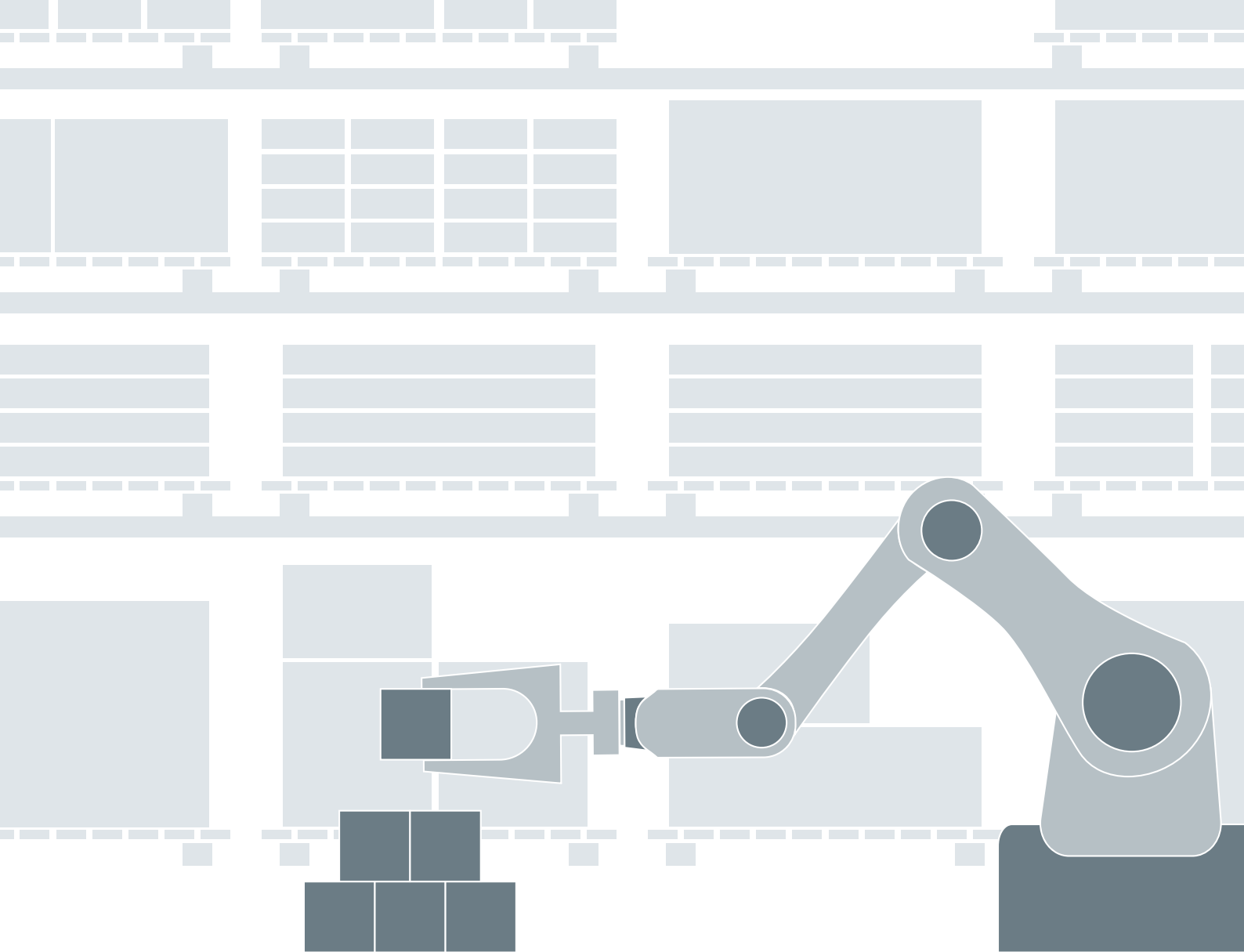
The analysis conducted by the igus® and Telegärtner test laboratories revealed:

- The installed cables could not cope with the mechanical stresses and were quick to fail.
- The insulation piercing terminals of the existing plugs were not optimised for the large wire diameter, which resulted in contact problems.

igus®CFBUS.LB.060

M12x1 cable plug





Holistic approach leads to combined solution

The combination of the igus® Profinet cable CFBUS.LB.060 and the Telegärtner M12x1 D-coded connector, which can be assembled in the field, will ensure improved operational reliability in future.

The igus® CFBUS.LB.060 Profinet cable

- Guaranteed stable electrical readings, even with constant movement
- Minimum bending radius of 7.5 x diameter (d) of the e-chain
- The pressure-extruded inner sheath ensures maximum dynamic range
- Extremely bend-resistant braided shield with around 90 % optical coverage

The Telegärtner M12 connector





- Optimal design. Sufficient assembly space protects against short circuits
- The IDC insulation piercing terminals are not only designed for one- and seven-wire conductors, as is customary, but also for fine-wire 19-strand conductors
- Universal wire manager for wire diameters of 0.9 to 1.6 millimetres to ensure the safe connection of a wide variety of wire and cable types





Reliability and durability are essential for critical applications within companies. And they are often the number one priority for system builders and users.





The prescription for safeguarding against failure for the pharmaceutical wholesale trade: Optimally compatible, high-quality components, such as the high-performance and linkable chainflex cables from igus®, in combination with the D-coded M12 connectors from Telegärtner.




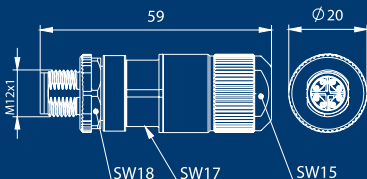

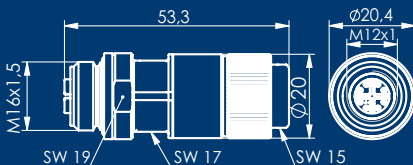

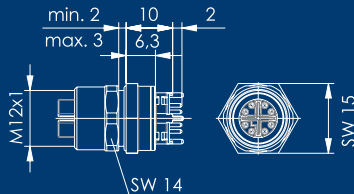

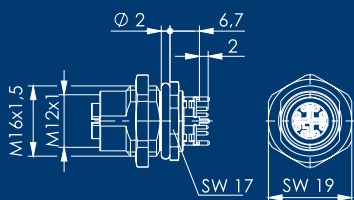

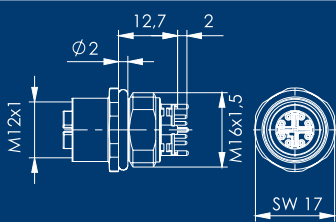

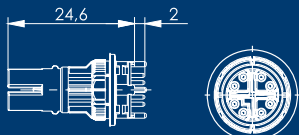

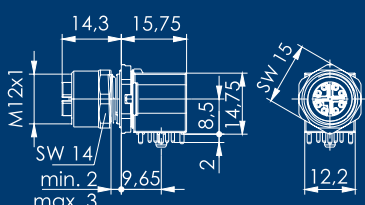
Connecting Cables

M12×1 D-coded	2× M12×1 Cable Plug black overmoulded IP67	M12×1 Cable Plug black overmoulded IP67 to RJ45 Plug Crimp IP20	M12×1 Cable Plug black overmoulded IP67 to free cable end	M12×1 Cable Socket black overmoulded IP67 to free cable end
				
Length 0.5 m	100017256	100017277	100017424	100017438
Length 1.0 m	100017257	100017278	100017425	100017439
Length 2.0 m	100017261	100017283	100017426	100017440
Length 3.0 m	100017263	100017287	100017427	100017441
Length 5.0 m	100017265	100017290	100017428	100017442
Length 7.5 m	100017268	100017294	100017429	100017443
Length 10.0 m	100017270	100017297	100017430	100017444


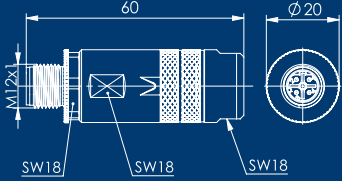


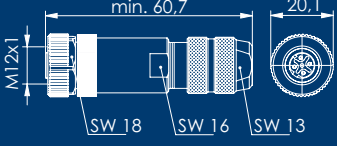

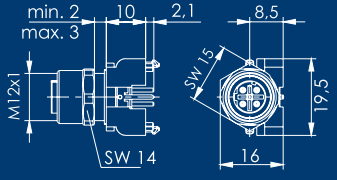

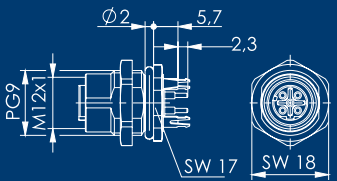

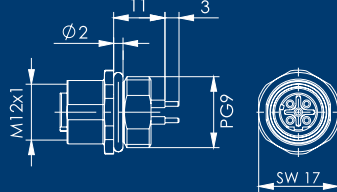

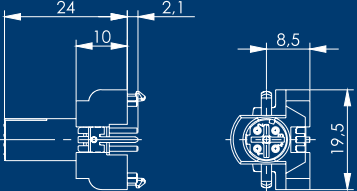
M12×1 X-coded	2× M12×1 Cable Plug black overmoulded IP67	M12×1 Cable Plug black overmoulded IP67 to RJ45 Plug Crimp IP20	M12×1 Cable Plug black overmoulded IP67 to free cable end	M12×1 Cable Plug black overmoulded IP67 to M12×1 Cable Socket black overmoulded IP67
				
Length 0.5 m	100017138	100017233	100017403	100017372
Length 1.0 m	100017139	100017234	100017404	100017373
Length 2.0 m	100017159	100017240	100017410	100017377
Length 3.0 m	100017177	100017242	100017412	100017379
Length 5.0 m	100017181	100017246	100017415	100017381
Length 7.5 m	100017190	100017248	100017417	100017383
Length 10.0 m	100017197	100017250	100017419	100017385

M12×1 X-coded	M12×1 Cable Socket IP20 to RJ45 Plug Crimp IP20	M12×1 Cable Socket black overmoulded IP67 to free cable end	M12×1 Cable Plug black overmoulded IP67 to M12×1 Cable Plug 90° black overmoulded IP67	M12×1 Cable Plug 90° black overmoulded IP67 to free cable end
				
Length 0.5 m	100017390	100017431	100017157	100017405
Length 1.0 m	100017391	100017432	100017158	100017406
Length 2.0 m	100017393	100017433	100017172	100017411
Length 3.0 m	100017394	100017434	100017180	100017413
Length 5.0 m	100017395	100017435	100017189	100017416
Length 7.5 m		100017436	100017195	100017418
Length 10.0 m		100017437	100017201	100017420

Order Information

M12x1 Cable Plug		Order no.	Description	Coding
		100007499	STX M12x1 CP Cat.6_A 8 pole, straight, plug set, 360° shielding, IDC, length of connector: 59 mm, field assembly	X-coded
M12x1 Cable Socket		Order no.	Description	Coding
		100007546	STX M12x1 CS Cat.6_A 8 pole, straight, socket set, 360° shielding, IDC, length of connector: 53 mm, field assembly	X-coded
M12x1 Bulkhead Socket		Order no.	Description	Coding
		100007427	STX M12x1 BS Cat.6_A 8 pole, straight, 1 pc. (J80020A0120) resp. 2 pc. (J80120A0120) design, screen connection quad, solder connection THR, gap to PCB 10 mm, back mounting	X-coded
		100007428	STX M12x1 BS Cat.6_A 8 pole, straight, 1 pc. design, screen connection quad, solder connection THR, gap to PCB 6.7 mm, back mounting	X-coded
		100007429	STX M12x1 BS Cat.6_A 8 pole, straight, 1 pc. design, screen connection quad, solder connection THR, gap to PCB 12.7 mm, front mounting	X-coded
		100007550	STX M12x1 BS Cat.6_A 8 pole, straight, without housing, screen connection quad, solder connection THR, gap to PCB customized, back mounting	X-coded
		100007554	STX M12x1 BS Cat.6_A 8 pole, angled, with and without housing, screen connection quad, solder connection THR, gap to PCB 8.5 mm, back mounting	X-coded
		100007555		
		100007556		

Order Information

M12x1 Cable Plug		Order no.	Description	Coding
		100007501	STX M12x1 CP Cat.5 4 pole, straight, plug set, 360° shielding, IDC, length of connector: 60 mm, field assembly	D-coded
		100007500	STX M12x1 CP Cat.5 4 pole, straight, plug set, 360° shielding, screw termination, length of connector: 70 mm, field assembly	D-coded
M12x1 Cable Socket		100007542	STX M12x1 CS Cat.5 4 pole, straight, socket set, 360° shielding, screw termination, length of connector: 61 mm, field assembly	D-coded
				
M12x1 Bulkhead Socket		100007549	STX M12x1 BS Cat.5 4 pole, straight, 2 pc. design, screen connection single, solder connection THR, gap to PCB 10 mm, back mounting	D-coded
				
		100007432	STX M12x1 BS Cat.5 4 pole, straight, 1 pc. design, screen connection quad, solder connection THR, gap to PCB 5.7 mm, back mounting	D-coded
		100007433	STX M12x1 BS Cat.5 4 pole, straight, 1 pc. design, screen connection 360°, solder connection THR, gap to PCB 11 mm, front mounting	D-coded
		100007553	STX M12x1 BS Cat.5 4 pole, straight, without housing, screen connection single, solder connection THR, back mounting	D-coded

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