

North American cabling solutions

Connecting field devices to the cabinet

PHOENIX CONTACT

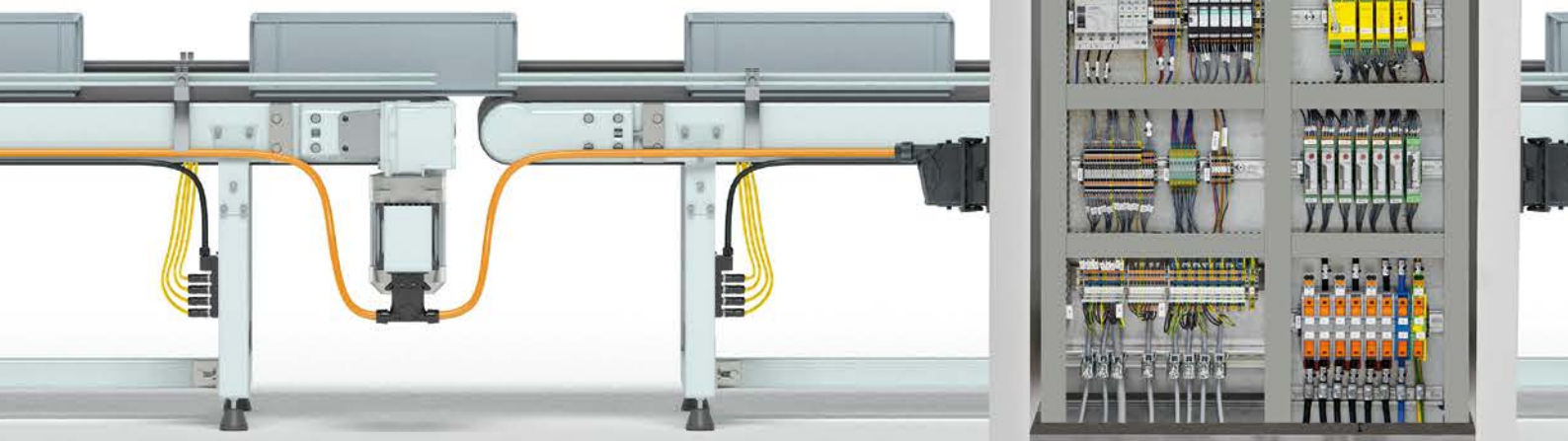
Connectivity – Cabinet Confidence

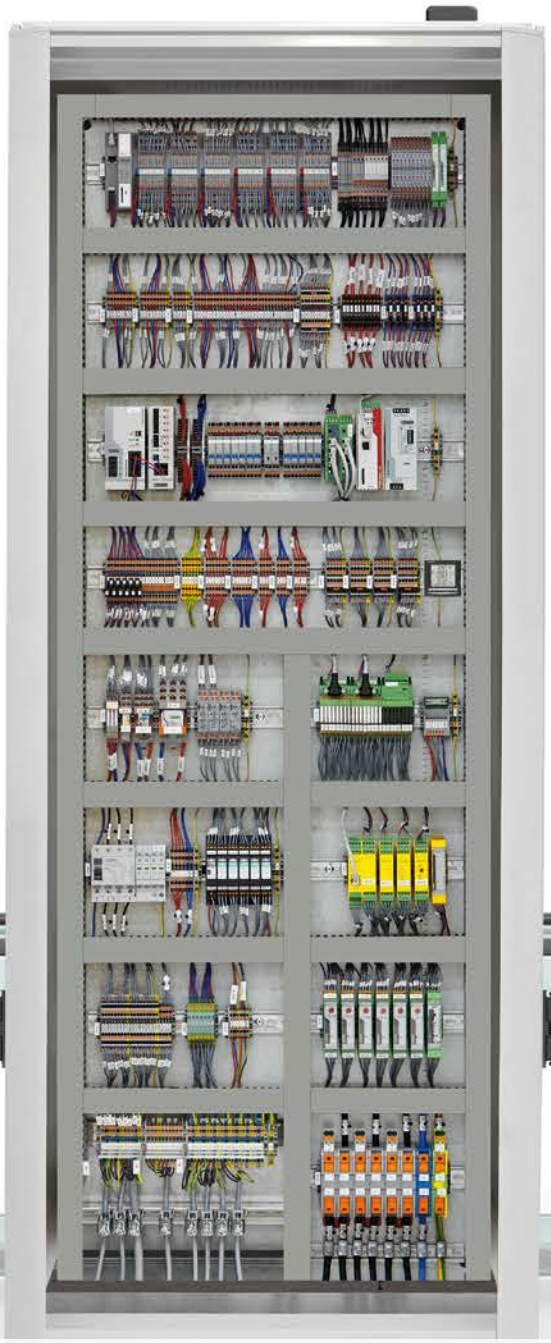
Your trusted partner from the control cabinet to the field device

Every wire in your system is there for a reason, and your system is only as reliable as the integrity of the cable and connector terminations. For over a century, Phoenix Contact has been the trusted partner for reliable connections.

In 2013, we extended our commitment to the North American market by establishing a local program and service model that addresses the requirements of our domestic market. Our North American product offering has since grown to approximately 2,000 standard items, with the ability to customize made-to-order cables by length and cable jacket, or discuss a brand new combination with our solution center. We have on-site manufacturing, engineering, value-add and laboratory services, as well as a world-class automated warehouse.

North American cabling solutions are an integral part in addressing the connectivity requirements for the entire system and carry a limited LIFETIME warranty. They are complimented by our circular field-wired connectors, sensor boxes, IP67 I/O and Ethernet switches, as well as rectangular panel feed-through and DIN rail mount products.

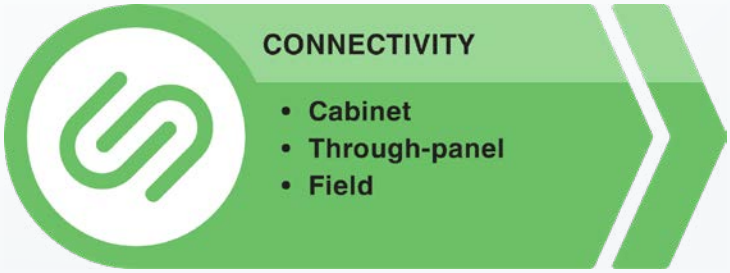




LIMITED LIFETIME WARRANTY
BUILD WITH CONFIDENCE

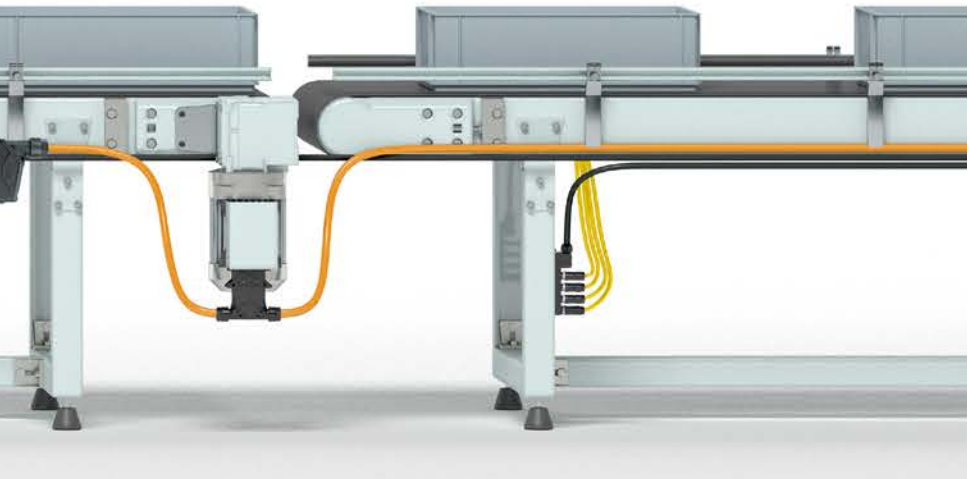
The seven areas of functional design

Each area of functional design is organized and illustrated in an individual brochure to explain the basic concepts and product offerings of Phoenix Contact, your trusted control cabinet partner.



Speedy TranSACtion

Fast delivery with our factory inventory of catalog products. Just look for the Speedy Transaction logo on the following product pages to identify which items are factory stocked in the USA. These items can be shipped from our logistics center in Harrisburg, Pennsylvania within 1-15 days days and there are no minimum order requirements.



Automation and Control

Power Reliability

Safety

Networking

Signal Switching and Conditioning

Shop Floor Productivity

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Application-focused cabling

Circular M8, M12, and MINI 7/8" form factors have become an industry standard for robust and watertight quick-connect applications. Used primarily on sensors, actuators, instruments, and devices, these circulars are now an essential component on most industrial machines.

While the mating face and thread size are constant across all markets, material designs must be adapted to perform for life in different installations. Examples are changes in cable jacket resistances, flex ratings, shielding methods, coupling nut materials, wire gauges, and approvals. Our standard catalog is developed around six core industries:

- Machine building
- Machine tooling
- Robotic welding
- Industrial vehicles
- Transportation
- Hazardous areas

The greatest benefit a customer can receive from a cordset manufacturer is fast delivery of quality products. Phoenix Contact is proud to offer molded M8, M12, and MINI 7/8" products – made in North America for fast delivery!





Machine building

- Indoor, moderate temperatures
- Light-to-medium wear and abrasion
- Static
- Polyvinyl chloride cables (PVC)



Machine tooling

- Cutting fluids, oil, and grease
- Abrasion, flexing/bending
- Flammability, free of halogens
- Polyurethane cables (PUR)



Robotic welding

- High temperatures
- Welding spark-resistant
- Repetitive torsional flexing
- High-flex polyurethane (PUR) or thermoplastic elastomer (TPE)



Industrial vehicles

- Extreme temperatures
- Outdoor use
- Oil and chemical resistance
- UV resistance
- PVC cables
- PUR cables
- Cross-linked polyethylene cables



Transportation

- Oil, gasoline, and ozone resistance
- Low smoke, zero halogen, and flame resistant
- Certifications for fire protection in rail vehicles, including NFPA 130
- PUR cables
- Cross-linked polyethylene cables



Hazardous areas

- Flammable gases, vapors, and liquids
- Exposed runs outside of cable tray
- UL Class I, Zone 2, and Division 2 certifications
- PLTC/ITC-rated cables
- PVC cables

Customer-oriented product offering

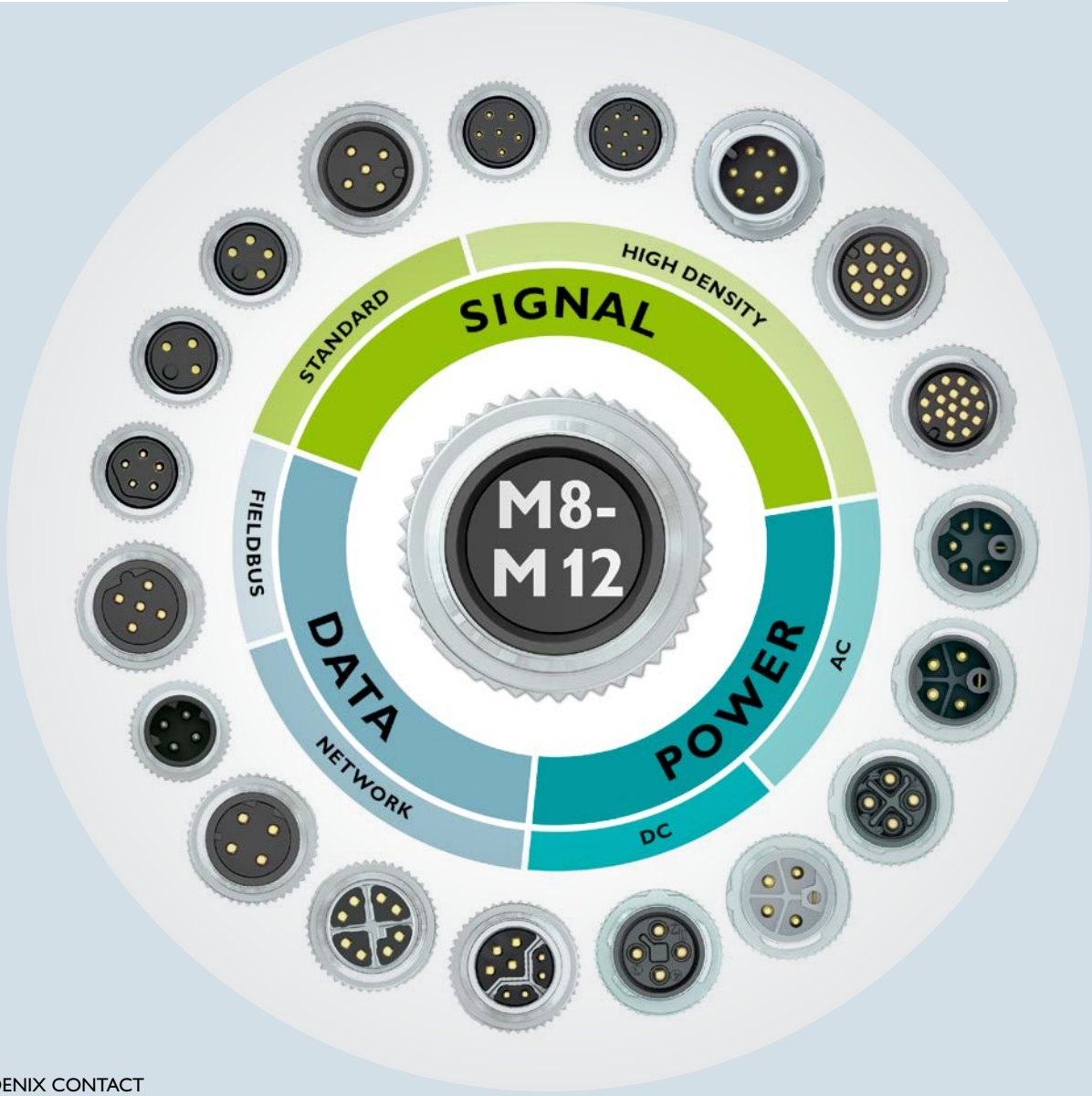
The standard North American product offering is strongly positioned for fast service with our many pre-configured and stocked cables. There are also three additional services that allow greater flexibility for your specific installation. With on-site manufacturing, engineering, test laboratories, and logistics, we can handle simple to complex cabling requirements.

Catalog standard – With over 2,000 pre-made stock items, you are likely to find a cable right off the shelf.

CMAT – Defines the cable assembly but allows configuration from a pre-qualified list of cable types, colors, and lengths.

Sweet Spot – Simple value-add or new configuration of in-stock components with limited engineering.

Custom design – Application-specific cables or components with expert engineering and appropriate qualifications.



LEVEL OF COMPLEXITY

North American cordsets

- Standard configurations and lengths available
- Parts stocked in North America distribution center
- Shortest lead time



Catalog standard

CMAT

- Existing part numbers – connector heads defined
- Configure to length or cable type
- Made-to-order
- 15-day lead time



CMAT configurable material

Solution Center Sweet Spot

- Extension of North American catalog
- Uses stocked components or cables
- Value-added service to existing catalog parts
- New 7-digit part number
- Lead time – 3-4 weeks



Sweet Spot custom

Solution Center custom design

- Application-specific design
- Custom cable material
- New 7-digit customer-specific part number
- Value-added service



Customer-specific

Solution Center Sweet Spot

Our Sweet Spot model offers an extension of our catalog with customized power, signal, and data assemblies produced from in-stock cables and connectors. All Sweet Spot assemblies are produced in our United States manufacturing facility.



Your advantages

- ☑ Speed-to-market: A quote within 2-3 days and production completed in 3-4 weeks
- ☑ Customized cable lengths
- ☑ Customer-specific value-add services such as labeling, bagging, custom wiring, etc.

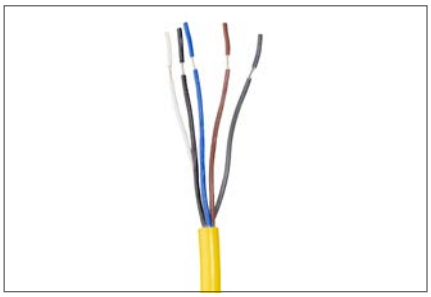
Main features

- ☑ Overmolded solutions for M8 and M12
- ☑ Reliable 360°-shielding technologies
- ☑ IP65/IP67 degree of protection

Sweet Spot product	Cable types					
			M8	M12	1/2-inch Micro	RJ45
			Number of conductors (by thread size)			
	PVC – competitively priced for fixed applications, industry standard for North America	Shielded	3, 4	3, 4, 5, 8		
		Unshielded	3, 4	3, 4, 5, 8	2, 3, 4, 5, 6	
	PVC – UV-resistant, -30 to 105° C temperature range	Shielded	3, 4	3, 4, 5, 8		
		Unshielded	3, 4	3, 4, 5, 8	2, 3, 4, 5, 6	
	PUR – halogen-free, resistant to various chemicals, oils, and abrasives	Shielded	3, 4	3, 4, 5, 8		
		Unshielded	3, 4	3, 4, 5, 8	2, 3, 4, 5, 6	
	PUR – irradiated, weld-spark-resistant	Unshielded	3, 4	3, 4, 5		
	TPE – high flex, up to 10 million cycles, suitable for torsional stress and robotics applications	Unshielded	3, 4	3, 4, 5, 8		4, 8 RJ45 = TPE
	Data cable – PUR or PVC meeting industry-standard specifications (DeviceNet™, Ethernet, Cat 5e, etc.)	Shielded	3, 4	4, 5, 8		4, 8

LSZH railway cable – meets NFPA 130 requirements for Low Smoke Zero Halogen

Value-added service model



Custom lengths

Overall lengths, jacket strip lengths, and wire strip lengths



Custom overmold color

Red, yellow, gray, green, and black for easy identification



Custom packaging

Place articles in a bag or box with custom labels and quantities



Wire preparation

Ferrules, cable lugs, slugs, blunt cuts, and tin dipping



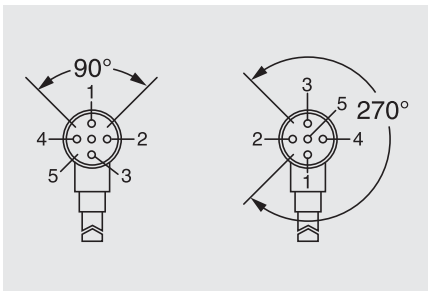
Custom marking and labeling

Wrap-around labels, flag labels, aluminum tags, inline jacket printing



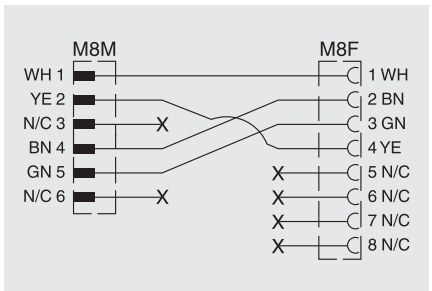
Coupling nuts

Nickel-plated zinc, stainless steel, high-temp Teflon coat, plastic



Custom key locations*

Rotation of key location in 45-degree increments



Custom pin assignments*

Custom wiring and adapter cables



Coiled cables*

Configurable M12 PUR jacketed cable with or without shielding

**Extended LT dependent on value-add service and project complexity*

Process overview:

(1) Select a standard article that most closely meets the requirements of the application.

(2) Identify the value-added services Phoenix Contact offers that will fill the gaps in the functional requirements (wiring, jacket material, wire prep, length) and visual requirements (overmold color, marking, labeling, and packaging).

(3) Work with our sales team to submit a Request for Quote (RFQ) to the Phoenix Contact engineering team.

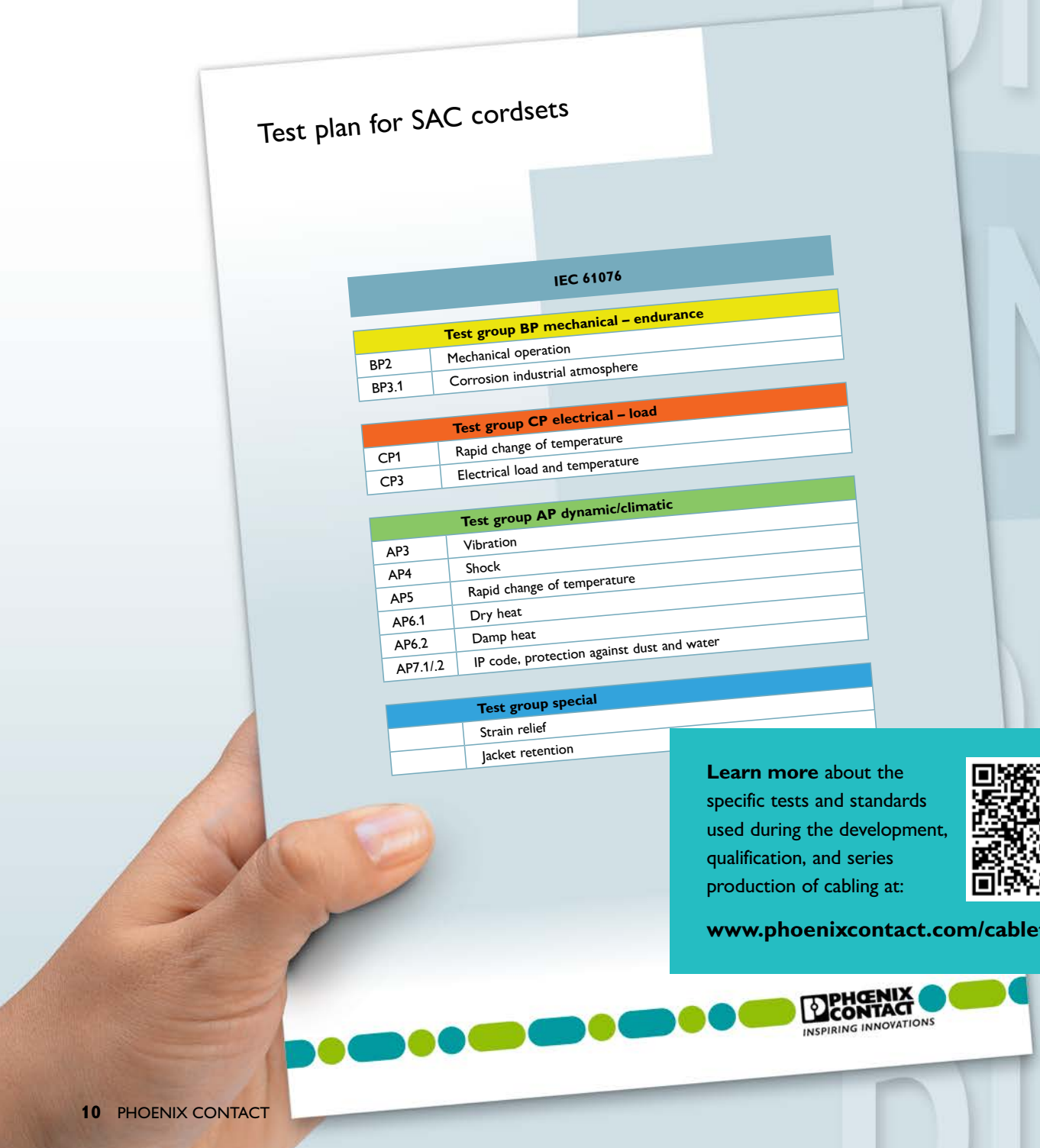
(4) Phoenix Contact provides engineering drawings and a quote for the custom article for review and approval.

(5) Phoenix Contact establishes a new 7-digit part number that distributors can reference, and that can be placed on an into-stock quote for purchase.

Quality – built into every cable

Continuous testing for 100 percent quality

From product development to production, the highest Phoenix Contact quality is secured by consistent testing in accordance with uniform guidelines and in-house standards.



Learn more about the specific tests and standards used during the development, qualification, and series production of cabling at:

www.phoenixcontact.com/cabletesting

Mechanical tests

- Flexion test and bending test
- Detent of electrical contacts
- Insertion and withdrawal force
- Bending test
- Insertion/withdrawal cycles
- Shock protection
- Polarization/coding
- Shock test
- Polished sections

Electrical tests

- Cyclic overload test (heat cycling test according to UL 1059)
- Cyclic aging test
- Thermostability
- Insulation resistance
- Contact resistance
- High voltage test
- Surge voltage test
- Air and creepage distances

Environmental and durability tests

- Vibration tests
  - Sinusoidal vibrations
  - Resonance search
  - Mechanical shock
  - Broadband noise
- Corrosion conditioning:
  - Salt spray test
  - Kesternich test (SO2)
  - Condensation climate
  - Flowing mixed gas
- Climate conditioning:
  - Heat
  - Cold
  - Humidity
  - Temperature shock
- Tests for degree of protection (IP classification)

Certification and special tests

- Relaxation
- Bending value
- Stress corrosion cracking
- Inflammability classification
- Glow-wire test
- RoHS conformity
- Industry and country-specific certifications
- Strain relief
- Jacket retention

Sensor connectivity

Sensor/actuator cabling for digital or analog signals

Due to their reliability and increased international standardization, M8 and M12 connectors are synonymous with industrial field cabling world-wide. Continuous development with international standards has been the basis for the successful spread of the M12 standard in the market. Initially, the IEC 61076-2-101 design standard applied to sensor and actuator connectors only, but increased development with new designs and pin assignments influenced the international standard to be subdivided into individual standards:

IEC 61076-2-101 M12 connector

IEC 61076-2-104 M8 connector

IEC 61076-2-109 M12 connector for data transfer

IEC 61076-2-010 M12 push-pull

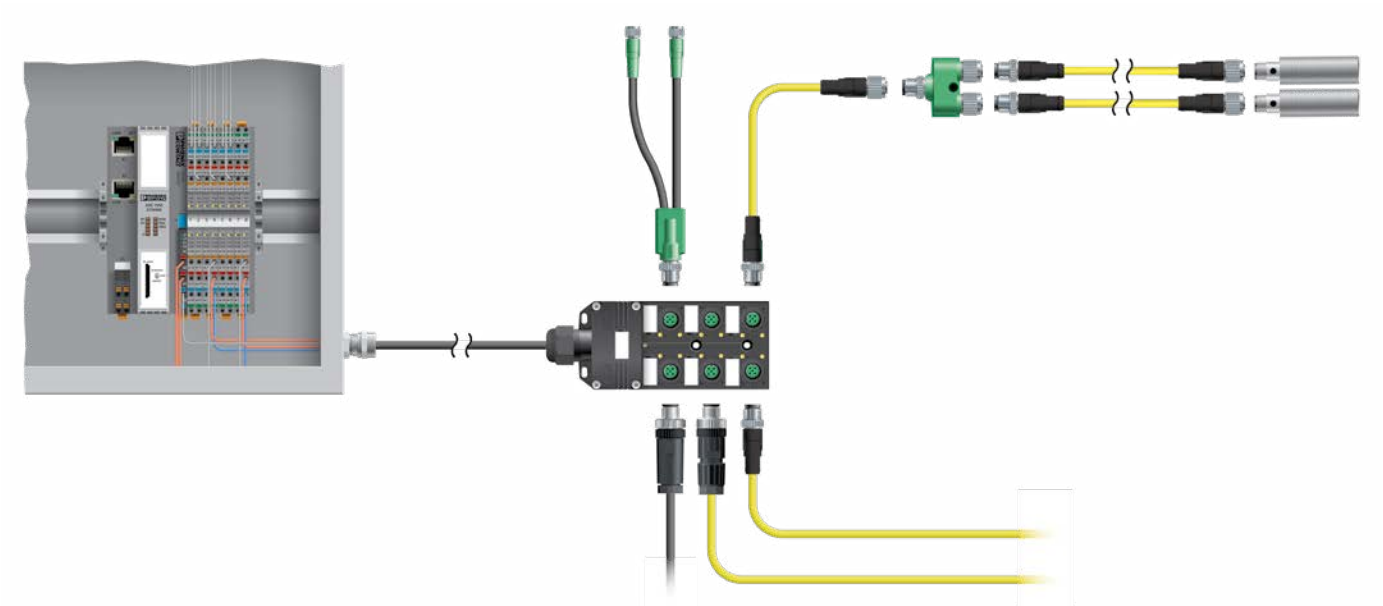
IEC 61076-2-111 M12 connector for power transmission

IEC 61076-2-114 M8 connector for power and data transmission

Products for M8 (IEC-61076-2-104) and M12 (IEC 61076-2-101) sensor connectivity are shown in the following sections.

North American cables are just one part of the overall collection strategy for field I/O.

Our experience in discrete wiring, marshalling with passive sensor boxes, and bringing active boxes with your preferred protocol straight to the machine make Phoenix Contact a clear partner for connectivity needs.



The standard North American product has the following design considerations:

- Cost-effective PVC cable material for static applications, rated up to 105°C
- AWM 2517 – Individual wires measured in AWG, UL-listed
- ITC/PLTC-rated cable (22 AWG or larger)
  - PLTC-listed cables easily comply with NEC article 725 when installing cable in trays and raceway
  - ITC-listed cables are perfect for installing cables under 150V, according to NEC article 727
- Sunlight-resistant cable jacket
- Flame resistance: FT4
- Shielding options with either braided shield or foil + drain

Cable jacket



- PVC – For static (non-moving) applications, wide temperature range, sunlight resistant
  - Stocked product in standard lengths (pages 15-24)
- PUR – For lateral flex (C-track) applications, halogen-free, abrasion and oil resistant
  - Available through our made-to-order CMAT program or in standard lengths from the global catalog
- TPE – For robotic flex (torsional or lateral) applications, highest temperature range, weld-spark resistant
  - Available through our made-to-order CMAT program or automotive-specific series.

Cable shielding

When selecting cable shielding for your application, the following guidelines will clarify the intended use:



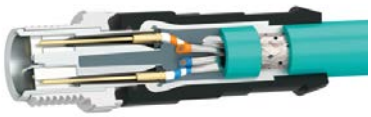
Unshielded

For low EMI or RFI exposure, or where the signal integrity is not impacted easily by noise.



Foil + drain (connected to pin)

The aluminum foil provides 100% coverage under the cable jacket and is ideal for RFI. Pin-to-drain design allows noise to be carried through the connector via a pin at the mating side.



Advanced Shielding Technology (AST)

The tinned copper 85% braided shield is connected to the coupling nut using a 4-step liquid metal mold, eliminating the need for a mechanical crimp.



Braided shield

The tinned copper 85% braided shield coverage is ideal for high EMI environments. Shield is tied to the coupling nut, allowing direct grounding of shield to receptacles on metal enclosures.



Foil + drain (not connected)

Not-connected drain design allows easy termination of shield on the open end of the cable.

Cable design

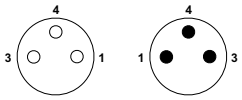
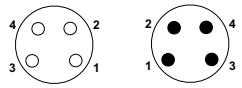
When selecting a cable design for your application, the following guidelines will clarify intended use:

- Single- or double-ended – provides a quick-disconnect at either one or both sides of the cable
  - Single-ended (i.e., pigtail, whip): common for direct runs between a sensor and a control cabinet
  - Double-ended (i.e., extension cable, cordset): common for connecting two devices or sensors to box
- Gender – Both male (pin) and female (socket) connector heads are available
  - Female side should be used if the circuit can be powered while disconnected (touch-proof)
  - Extension cables are offered from stock only in male-to-female orientation for safety
- Head orientation – Either straight or right-angle connector heads are available
  - Straight heads are in-line with the cable and are easy to route any direction off a sensor
  - Angled heads range from 80 to 90 degrees and are used when space off a device is at a premium

M8 sensor cordsets

Our M8 stocked product is made with 105°C yellow PVC. Our M8 products are ideal for areas with space constraints or for devices with the smaller M8 interconnect. The cable is sunlight resistant and is offered in both shielded and unshielded variants. Additionally, our special design on the male connector allows connection to both threaded and snap-in receptacles.



M8 connectors	Cable design	Pos. 1	Pos. 2	Pos. 3	Pos. 4	N.C.	Cable shield
	Unshielded	Brown	-	Blue	Black		-
	Foil + drain (connected to pin)	Brown	-	Blue	Drain		Blunt cut
	Foil + drain (not connected)	Brown	-	Blue	Black	Drain	Blunt cut
	Braided shield	Brown	-	Blue	Black		To coupling nut
	Unshielded	Brown	White	Blue	Black		-
	Foil + drain (connected to pin)	Brown	Drain	Blue	Black		Blunt cut
	Foil + drain (not connected)	Brown	White	Blue	Black	Drain	Blunt cut
	Braided shield	Brown	White	Blue	Black		To coupling nut

M8 sensor cordsets (unshielded)

Cable jacket: Yellow PVC, 105°C
Wire Gauge: 24 AWG
Properties: Sunlight resistant



# Wires	Configuration	0.5 M	1.5 M	2 M	5 M	10 M	CMAT
3-pos. A-code	Female Straight / Open End	-	-	1406318	1406317	1406316	1405956/…/...
	Female 90° / Open End	-	-	1406321	1406320	1406319	1405957/…/…
	Male Straight / Open End	-	-	1406281	1406280	1406279	1405939/…/…
	Male 90° / Open End	-	-	1406293	1406292	1406291	1405944/…/…
	Male Straight / Female Straight	1406272	1406271	1257087	1257088	1257089	1405935/…/…
	Male Straight / Female 90°	1406274	1406273	-	-	-	1405936/…/…
	Male 90° / Female Straight	1406283	1406282	-	-	-	1405940/…/…
	Male 90° / Female 90°	1406285	1406284	-	-	-	1405941/…/…
4-pos.	Female Straight / Open End	-	-	1406240	1406239	1406238	1405923/…/…
	Female 90° / Open End	-	-	1406243	1406242	1406241	1405924/…/…
	Male Straight / Open End	-	-	1406203	1406202	1406201	1405906/…/…
	Male 90° / Open End	-	-	1406214	1406213	1406212	1405911/…/…
	Male Straight / Female Straight	1406194	1406193	-	-	-	1405902/…/…
	Male Straight / Female 90°	1406196	1406195	-	-	-	1405903/…/…
	Male 90° / Female Straight	1406205	1406204	-	-	-	1405907/…/…
	Male 90° / Female 90°	1406207	1406206	-	-	-	1405908/…/…

M8 foil + drain (connected to pin) cordsets

Cable jacket: Gray PVC, 105°C
Wire Gauge: 24 AWG
Properties: Sunlight resistant



# Wires	Configuration	0.5 M	1.5 M	2 M	3M	5 M	10 M	15 M	20 M	40 M
3-pos. A-code	Female Straight / Open End	-	-	1095989	-	1096052	1095988	1095997	1096047	1096045
	Female 90° / Open End	-	-	1096051	-	1096082	1095987	1095996	1096046	1096050
	Male Straight / Open End	-	-	1095986	-	1095995	1096081	1095924	1096044	1096049
	Male 90° / Open End	-	-	1095985	-	1095994	1096080	1095923	1096043	1096048
	Male Straight / Female Straight	1095993	1095984	-	1095922	1096042	1095938	1096079	1095992	1095983
	Female Straight / Open End	-	-	1096068	-	1096067	1096066	1096065	1096064	1096063
	Female 90° / Open End	-	-	1096062	-	1096061	1096060	1096059	1096058	1096057
	Male Straight / Open End	-	-	1096056	-	1096055	1096054	1096053	1096011	1096010
	Male 90° / Open End	-	-	1096009	-	1096008	1096007	1096006	1096005	1096004
	Male Straight / Female Straight	1096003	1096002	-	1096001	1096000	1095898	1095999	1095934	1096038

M8 foil + drain (not connected) cordsets



Cable jacket: Gray PVC, 105°C
Wire Gauge: 24 AWG
Properties: Sunlight resistant

# Wires	Configuration	2 M	5 M	10 M	15 M	20 M	40 M
3-pos. A-code 	Female Straight / Open End	1095921	1096041	1095937	1096078	1095991	1095982
	Female 90° / Open End	1096040	1095936	1096077	1095990	1095981	1095920
	Male Straight / Open End	1096039	1095935	1096076	1095980	1095919	1096075
	Male 90° / Open End	1096074	1096073	1096072	1096071	1096070	1096069
4-pos. A-code 	Female Straight / Open End	1095897	1095979	1095918	1095998	1095933	1096037
	Female 90° / Open End	1095896	1095917	1095978	1095932	1096036	1095895
	Male Straight / Open End	1095916	1095872	1095931	1096035	1095915	1095977
	Male 90° / Open End	1095871	1095930	1095894	1096034	1095976	1095870

M8 sensor cordsets
(braided shield tied to coupling nut)



Cable jacket: Yellow PVC, 105°C
Wire Gauge: 24 AWG
Properties: Sunlight resistant

# Wires	Configuration	0.5 M	1.5 M	2 M	5 M	10 M	CMAT
3-pos. A-code 	Female Straight / Open End	-	-	1406063	1406062	1406061	1405834/.../...
	Female 90° / Open End	-	-	1406066	1406065	1406064	1405835/.../...
	Male Straight / Open End	-	-	1406048	1406047	1406046	1405830/.../...
	Male 90° / Open End	-	-	1406060	1406059	1406058	1405833/.../...
	Male Straight / Female Straight	1406043	1406042	-	-	-	1405828/.../...
	Male Straight / Female 90°	1406045	1406044	-	-	-	1405829/.../...
	Male 90° / Female Straight	1406054	1406049	-	-	-	1405831/.../...
	Male 90° / Female 90°	1406057	1406055	-	-	-	1405832/.../...
4-pos. A-code 	Female Straight / Open End	-	-	1406018	1406017	1406016	1405822/.../...
	Female 90° / Open End	-	-	1406021	1406020	1406019	1405823/.../...
	Male Straight / Open End	-	-	1406007	1406006	1406005	1405818/.../...
	Male 90° / Open End	-	-	1406015	1406013	1406012	1405821/.../...
	Male Straight / Female Straight	1406002	1406001	-	-	-	1405810/.../...
	Male Straight / Female 90°	1406004	1406003	-	-	-	1405817/.../...
	Male 90° / Female Straight	1406009	1406008	-	-	-	1405819/.../...
	Male 90° / Female 90°	1406011	1406010	-	-	-	1405820/.../...



CMAT cable options

COLOR	CABLE TYPE	MATERIAL	SHIELD	TEMP
Yellow	542	PVC	Braided shield/unshielded	105° C
Black	535	PVC	Braided shield/unshielded	105° C
Gray	544	PVC	Braided shield/unshielded	105° C
Gray	800	PUR-High Flex	Unshielded ONLY	80° C
Black	PUR	PUR	Braided shield/unshielded	80° C

EXAMPLE – ORDER KEY

1406283/535/11.0

"535" designates black PVC cable
"11.0" represents 11m in length

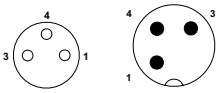
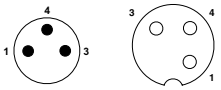
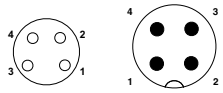
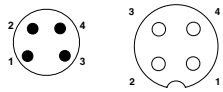
Configurable parts allow for the selection of cable type and length (of cable only/no connectors) from 0.2m to 85m.

M8 to M12 adapter cordsets

Our M8 to M12 adapter cordsets make it easy to standardize your connector system to sensor boxes or receptacles. For example, if most of your sensors are M12, but the thread type used on a handful of sensors is M8, use these adapter cables to step up the non-sensor connector to the unified M12. These standard products are made with 105°C yellow PVC. The cable is sunlight resistant and is offered in both shielded and unshielded variants.



M8-M12 pinout and color chart

M8 and M12 connectors	Cable design	Pos. 1	Pos. 2	Pos. 3	Pos. 4	Cable shield
	Unshielded	Brown	-	Blue	Black	-
	Braided shield	Brown	-	Blue	Black	To coupling nut
	Unshielded	Brown	White	Blue	Black	-
	Braided shield	Brown	White	Blue	Black	To coupling nut

M8-M12 adapter cordsets (unshielded)

Cable jacket: Yellow PVC, 105°C
Wire Gauge: 24 AWG
Properties: Sunlight resistant



# Wires	M12	M8	0.5 M	1.5 M	CMAT
3-pos. A-code  	Female Straight	Male Straight	1406276	1406275	1405937/.../...
	Female Straight	Male 90°	1406287	1406286	1405942/.../...
	Female 90°	Male Straight	1406278	1406277	1405938/.../...
	Female 90°	Male 90°	1406290	1406288	1405943/.../...
	Male Straight	Female Straight	1406295	1406294	1405945/.../...
	Male Straight	Female 90°	1406297	1406296	1405946/.../...
	Male 90°	Female Straight	1406306	1406305	1405951/.../...
	Male 90°	Female 90°	1406308	1406307	1405952/.../...
4-pos. A-code  	Female Straight	Male Straight	1406198	1406197	1405904/.../...
	Female Straight	Male 90°	1406209	1406208	1405909/.../...
	Female 90°	Male Straight	1406200	1406199	1405905/.../...
	Female 90°	Male 90°	1406211	1406210	1405910/.../...
	Male Straight	Female Straight	1406216	1406215	1405912/.../...
	Male Straight	Female 90°	1406219	1406217	1405913/.../...
	Male 90°	Female Straight	1406228	1406227	1405917/.../...
	Male 90°	Female 90°	1406230	1406229	1405918/.../...

M8-M12 adapter cordsets (braided shield tied to coupling nut)

Cable jacket: Yellow PVC, 105°C
Wire Gauge: 24 AWG
Properties: Sunlight resistant

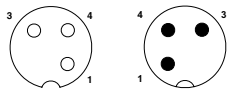
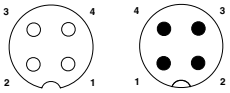
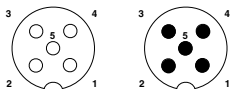
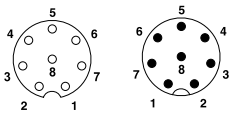


# Wires	M12	M8	0.5 M	1.5 M	CMAT
3-pos. A-code  	Male Straight	Female Straight	1406023	1406022	1405824/.../...
	Male Straight	Female 90°	1406025	1406024	1405825/.../...
	Male 90°	Female Straight	1406027	1406026	1405826/.../...
	Male 90°	Female 90°	1406029	1406028	1405827/.../...
4-pos. A-code  	Male Straight	Female Straight	1405994	1405993	1405800/.../...
	Male Straight	Female 90°	1405996	1405995	1405805/.../...
	Male 90°	Female Straight	1405998	1405997	1405806/.../...
	Male 90°	Female 90°	1406000	1405999	1405809/.../...

M12 sensor cordsets

Our M12 stocked product is made with 105°C yellow PVC. The cable is sunlight resistant and is offered in both shielded and unshielded variants. M12s with 18 or 22 AWG wires are PLTC-rated (Power Limited Tray Cable), which allows easier cable routing according to NEC guidelines.



M12 connectors	Series	Pos. 1	Pos. 2	Pos. 3	Pos. 4	Pos. 5	Pos. 6	Pos. 7	Pos. 8	N.C.	Cable shield
	Unshielded	Brown	-	Blue	Black	-	-	-	-	-	-
	Foil + drain (not connected)	Brown	-	Blue	Black	-	-	-	-	Drain	Blunt cut
	Braided shield	Brown	-	Blue	Black	-	-	-	-	-	To coupling nut
	Unshielded	Brown	White	Blue	Black	-	-	-	-	-	-
	Foil + drain (connected to pin)	Brown	Drain	Blue	Black	-	-	-	-	-	Blunt cut
	Foil + drain (not connected)	Brown	White	Blue	Black	-	-	-	-	Drain	Blunt cut
	Braided shield	Brown	White	Blue	Black	-	-	-	-	-	To coupling nut
	Unshielded	Brown	White	Blue	Black	Gray	-	-	-	-	-
	Foil + drain (connected to pin)	Brown	White	Blue	Black	Drain	-	-	-	-	Blunt cut
	Foil + drain (not connected)	Brown	White	Blue	Black	Gray	-	-	-	Drain	Blunt cut
	Braided shield	Brown	White	Blue	Black	Gray	-	-	-	-	To coupling nut
	Unshielded	White	Brown	Green	Yellow	Gray	Pink	Blue	Red	-	-
	Foil + drain (connected to pin)	White	Brown	Green	Yellow	Gray	Pink	Blue	Drain	-	Blunt cut
	Foil + drain (not connected)	White	Brown	Green	Yellow	Gray	Pink	Blue	Red	Drain	Blunt cut
	Braided shield	White	Brown	Green	Yellow	Gray	Pink	Blue	Red	-	To coupling nut

M12 sensor cordsets (unshielded)

Cable jacket: Yellow PVC, 105°C
Wire Gauge: 22 AWG (3-, 4-, 5-pos.), 24 AWG (8-pos.)
Properties: PLTC/ITC rated (3-, 4-, 5-pos.), sunlight resistant



# Wires	Configuration	0.5 M	1 M	1.5 M	2 M	3 M	5 M	10 M	15 M	20 M	CMAT
3-pos. A-code	Female Straight / Open End	-	-	-	1406324	-	1406323	1406322	1417956	1417957	1405958/.../...
	Female 90° / Open End	-	-	-	1406327	-	1406326	1406325	1417927	1417928	1405959/.../...
	Male Straight / Open End	-	-	-	1406304	-	1406303	1406302	-	-	1405949/.../...
	Male 90° / Open End	-	-	-	1406315	-	1406314	1406313	-	-	1405955/.../...
	Male Straight / Female Straight	1406299	-	1406298	-	1417879	1417880	1417881	1417882	1417884	1405947/.../...
	Male Straight / Female 90°	1406301	-	1406300	-	-	-	-	-	-	1405948/.../...
	Male 90° / Female Straight	1406310	-	1406309	-	-	-	-	-	-	1405953/.../...
	Male 90° / Female 90°	1406312	-	1406311	-	-	-	-	-	-	1405954/.../...
4-pos. A-code	Female Straight / Open End	-	-	-	1406246	-	1406245	1406244	1417966	1417967	1405925/.../...
	Female 90° / Open End	-	-	-	1406250	-	1406249	1406248	1417963	1417965	1405926/.../...
	Male Straight / Open End	-	-	-	1406226	-	1406225	1406224	-	1180371	1405916/.../...
	Male 90° / Open End	-	-	-	1406237	-	1406236	1406235	-	-	1405922/.../...
	Male Straight / Female Straight	1406221	-	1406220	1150038	1417890	1417891	1417892	1417893	1417894	1405914/.../...
	Male Straight / Female 90°	1406223	-	1406222	-	-	-	-	-	-	1405915/.../...
	Male 90° / Female Straight	1406232	-	1406231	-	-	-	-	-	-	1405919/.../...
	Male 90° / Female 90°	1406234	-	1406233	-	-	-	-	-	-	1405920/.../...
5-pos. A-code	Female Straight / Open End	-	-	-	1406169	-	1406168	1406167	1417974	1417975	1405892/.../...
	Female 90° / Open End	-	-	-	1406172	-	1406171	1406170	1417972	1417973	1405893/.../...
	Male Straight / Open End	-	-	-	1406159	-	1406158	1406157	-	-	1405888/.../...
	Male 90° / Open End	-	-	-	1406166	-	1406165	1406164	-	-	1405891/.../...
	Male Straight / Female Straight	1406154	1340829	1406153	1303889	1417901	1417902	1417903	1417904	1417905	1405886/.../...
	Male Straight / Female 90°	1406156	-	1406155	-	-	1417521	-	-	-	1405887/.../...
	Male 90° / Female Straight	1406161	-	1406160	-	-	-	-	-	-	1405889/.../...
	Male 90° / Female 90°	1406163	-	1406162	-	-	-	-	-	-	1405890/.../...
8-pos. A-code	Female Straight / Open End	-	-	-	1406105	-	1406104	1406103	1418058	1418059	1405851/.../...
	Female 90° / Open End	-	-	-	1406108	-	1406107	1406106	1418055	1418056	1405852/.../...
	Male Straight / Open End	-	-	-	1406094	-	1406093	1406092	-	-	1405847/.../...
	Male 90° / Open End	-	-	-	1406102	-	1406101	1406100	-	-	1405850/.../...
	Male Straight / Female Straight	1406089	-	1406088	-	1417912	1417913	1417914	1417915	1417916	1405845/.../...
	Male Straight / Female 90°	1406091	-	1406090	-	-	-	-	-	-	1405846/.../...
	Male 90° / Female Straight	1406096	-	1406095	-	-	-	-	-	-	1405848/.../...
	Male 90° / Female 90°	1406099	-	1406097	-	-	-	-	-	-	1405849/.../...

CMAT cable options

COLOR	CABLE TYPE	MATERIAL	SHIELD	TEMP
Yellow	542	PVC	Braided shield/unshielded	105° C
Black	535	PVC	Braided shield/unshielded	105° C
Gray	544	PVC	Braided shield/unshielded	105° C
Gray	800	PUR-High Flex	Unshielded ONLY	80° C
Black	PUR	PUR	Braided shield/unshielded	80° C
Yellow	547 (18AWG)	PVC	Unshielded	105° C

EXAMPLE – ORDER KEY

1406283/535/11.0

"535" designates black PVC cable
"11.0" represents 11m in length

Configurable parts allow for the selection of cable type and length (of cable only/no connectors) from 0.2m to 85m.

M12 sensor cordsets (unshielded), 18 AWG



Cable jacket: Yellow PVC, 105°C
Wire Gauge: 18 AWG
Properties: PLTC/ITC rated, sunlight resistant

# Wires	Configuration	0.5 M	1.5 M	1.5 M	2 M	3 M	5 M	10 M	15 M	20 M
3-pos. A-code	Female Straight / Open End	-	-	-	1424926	-	1424925	1424924	1425108	1425110
	Female 90° / Open End	-	-	-	1424954	-	1424953	1424952	1425107	1425109
	Male Straight / Open End	-	-	-	1424916	-	1424915	1424914	-	-
	Male 90° / Open End	-	-	-	1424923	-	1424922	1424921	-	-
	Male Straight / Female Straight	1424911	-	1424910	-	1424970	1424971	1425111	1425112	1425113
	Male Straight / Female 90°	1424913	-	1424912	-	1424968	1424969	-	-	-
	Male 90° / Female Straight	1424918	-	1424917	-	1424966	1424967	-	-	-
	Male 90° / Female 90°	1424920	-	1424919	-	1424964	1424965	-	-	-
4-pos. A-code	Female Straight / Open End	-	-	-	1424906	-	1424905	1424904	1425115	1425117
	Female 90° / Open End	-	-	-	1424909	-	1424908	1424907	1425114	1425116
	Male Straight / Open End	-	-	-	1424897	-	1424896	1424895	-	-
	Male 90° / Open End	-	-	-	1424903	-	1424902	1424955	-	-
	Male Straight / Female Straight	1424892	1249567	1424891	1249568	1424978	1424979	1425118	1425120	1425121
	Male Straight / Female 90°	1424894	-	1424893	-	1424976	1424977	-	-	-
	Male 90° / Female Straight	1424899	-	1424898	-	1424974	1424975	-	-	-
	Male 90° / Female 90°	1424901	-	1424900	-	1424972	1424973	-	-	-
5-pos. A-code	Female Straight / Open End	-	-	-	1424957	-	1424888	1424958	1425123	1425125
	Female 90° / Open End	-	-	-	1424956	-	1424890	1424889	1425122	1425124
	Male Straight / Open End	-	-	-	1424959	-	1424960	1424880	-	-
	Male 90° / Open End	-	-	-	1424887	-	1424886	1424885	-	-
	Male Straight / Female Straight	1424961	-	1424879	-	1424986	1424987	1425126	1425127	1425128
	Male Straight / Female 90°	1424962	-	1424963	-	1424984	1424985	-	-	-
	Male 90° / Female Straight	1424882	-	1424881	-	1424982	1424983	-	-	-
	Male 90° / Female 90°	1424884	-	1424883	-	1424980	1424981	-	-	-

Application note: In many cases where voltage drop is a concern, customers prefer to specify a wire larger than the traditional 22 AWG used in M12 assemblies

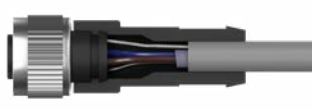
M12 sensor cordsets (unshielded), 18 AWG



Cable jacket: Black PUR, 80° C
Wire Gauge: .75mm2
Properties: 10 million bend cycles

# Wires	Configuration	0.5 M	1 M	2 M	3 M	5 M	10 M	15 M	20 M
4-pos. A-code	Female Straight / Open End	-	1657558	1657560	-	1657561	1657563	1657564	1657565
	Female 90° / Open End	-	1657566	1657567	-	1657568	1657569	1657570	1657571
	Male Straight / Open End	-	1656845	1656846	-	1656847	1656849	1656850	1656851
	Male 90° / Open End	-	1657548	1657550	-	1657551	1657553	1657555	1657557
	Male Straight / Female Straight	-	-	-	-	-	-	-	-
	Male Straight / Female 90°	-	-	-	-	-	-	-	-
	Male 90° / Female Straight	-	-	-	-	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-

M12 foil + drain (connected to pin) cordsets



Cable jacket: Gray PVC, 105°C
Wire Gauge: 22 AWG (4-, 5-pos.), 24 AWG (8-pos.)
Properties: PLTC/ITC rated (4-, 5-pos.), sunlight resistant

# Wires	Configuration	0.5 M	1.5 M	2 M	3 M	5 M	10 M	15 M	20 M	40 M
4-pos. A-code	Female Straight / Open End	-	-	1096028	-	1096027	1096026	1096025	1096024	1096023
	Female 90° / Open End	-	-	1096022	-	1096021	1096020	1096019	1096018	1096017
	Male Straight / Open End	-	-	1096016	-	1096015	1096014	1096013	1096012	1095911
	Male 90° / Open End	-	-	1095910	-	1095909	1095908	1095907	1095906	1095905
	Male Straight / Female Straight	1095904	1095903	-	1095902	1095901	1095900	1095899	1095893	1095832
5-pos. A-code	Female Straight / Open End	-	-	1095886	-	1095862	1095968	1095824	1095816	1095854
	Female 90° / Open End	-	-	1095840	-	1095967	1095823	1095815	1095853	1095861
	Male Straight / Open End	-	-	1095839	-	1095966	1095822	1095814	1095852	1095860
	Male 90° / Open End	-	-	1095838	-	1095965	1095813	1095851	1095859	1095837
	Male Straight / Female Straight	1095964	1095812	-	1095850	1095806	1095836	1095821	1095963	1095849
8-pos. A-code	Female Straight / Open End	-	-	1095939	-	1095885	1095884	1095883	1095882	1095881
	Female 90° / Open End	-	-	1095880	-	1095879	1095878	1095877	1095876	1095875
	Male Straight / Open End	-	-	1095874	-	1095873	1095811	1095819	1095810	1095835
	Male 90° / Open End	-	-	1095805	-	1095820	1095847	1095818	1095834	1095804
	Male Straight / Female Straight	1095846	1095807	-	1095809	1095817	1095833	1095803	1095845	1095808

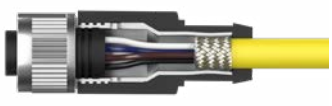
M12 foil + drain (not connected) cordsets



Cable jacket: Gray PVC, 105°C
Wire Gauge: 22 AWG (3-, 4-, 5-pos.), 24 AWG (8-pos.)
Properties: PLTC/ITC rated (3-, 4-, 5-pos.), sunlight resistant

# Wires	Configuration	2 M	5 M	10 M	15 M	20 M	40 M
3-pos. A-code	Female Straight / Open End	1095929	1096033	1095914	1095975	1095869	1095928
	Female 90° / Open End	1096032	1095974	1095913	1095868	1095927	1096031
	Male Straight / Open End	1095912	1095867	1095926	1096030	1095973	1095844
	Male 90° / Open End	1095866	1095925	1096029	1095972	1095843	1095858
4-pos. A-code	Female Straight / Open End	1095831	1095892	1095830	1095891	1095829	1095890
	Female 90° / Open End	1095828	1095865	1095889	1095842	1095971	1095827
	Male Straight / Open End	1095857	1095888	1095864	1095970	1095826	1095856
	Male 90° / Open End	1095887	1095863	1095841	1095969	1095825	1095855
5-pos. A-code	Female Straight / Open End	1095962	1095848	1095961	1095960	1095959	1095958
	Female 90° / Open End	1095957	1095956	1095955	1095954	1095953	1095952
	Male Straight / Open End	1095951	1095950	1095949	1095948	1095947	1095946
	Male 90° / Open End	1095945	1095944	1095943	1095942	1095941	1095940
8-pos. A-code	Female Straight / Open End	1095802	1095801	1095800	1095799	1095798	1095797
	Female 90° / Open End	1095796	1095795	1095794	1095793	1095792	1095791
	Male Straight / Open End	1095790	1095789	1095788	1095787	1095786	1095785
	Male 90° / Open End	1095784	1095783	1095782	1095781	1095780	1095779

M12 sensor cordsets (braided shield tied to coupling nut)



Cable jacket: Yellow PVC, 105°C
Wire Gauge: 22 AWG (3-, 4-, 5-pos.), 24 AWG (8-pos.)
Properties: PLTC/ITC rated (3-, 4-, 5-pos.), sunlight resistant

# Wires	Configuration	0.5 M	1.5 M	2 M	3 M	5 M	10 M	15 M	20 M	CMAT
3-pos. A-code	Female Straight / Open End	-	-	1406267	-	1406266	1406265	1417961	1417962	1405933/.../...
	Female 90° / Open End	-	-	1406270	-	1406269	1406268	1417958	1417959	1405934/.../...
	Male Straight / Open End	-	-	1406257	-	1406256	1406255	-	-	1405929/.../...
	Male 90° / Open End	-	-	1406264	-	1406263	1406262	-	-	1405932/.../...
	Male Straight / Female Straight	1406252	1406251	-	1417885	1417886	1417887	1417888	1417889	1405927/.../...
	Male Straight / Female 90°	1406254	1406253	-	-	-	-	-	-	1405928/.../...
	Male 90° / Female Straight	1406259	1406258	-	-	-	-	-	-	1405930/.../...
	Male 90° / Female 90°	1406261	1406260	-	-	-	-	-	-	1405931/.../...
4-pos. A-code	Female Straight / Open End	-	-	1406189	-	1406188	1406187	1417970	1417971	1405900/.../...
	Female 90° / Open End	-	-	1406192	-	1406191	1406190	1417968	1417969	1405901/.../...
	Male Straight / Open End	-	-	1406179	-	1406178	1406177	-	-	1405896/.../...
	Male 90° / Open End	-	-	1406186	-	1406185	1406184	-	-	1405899/.../...
	Male Straight / Female Straight	1406174	1406173	-	1417895	1417897	1417898	1417899	1417900	1405894/.../...
	Male Straight / Female 90°	1406176	1406175	-	-	-	-	-	-	1405895/.../...
	Male 90° / Female Straight	1406181	1406180	-	-	-	-	-	-	1405897/.../...
	Male 90° / Female 90°	1406183	1406182	-	-	-	-	-	-	1405898/.../...
5-pos. A-code	Female Straight / Open End	-	-	1406149	-	1406148	1406147	1418053	1418054	1405884/.../...
	Female 90° / Open End	-	-	1406152	-	1406151	1406150	1417976	1417977	1405885/.../...
	Male Straight / Open End	-	-	1406139	-	1406138	1406136	-	-	1405879/.../...
	Male 90° / Open End	-	-	1406146	-	1406145	1406144	-	-	1405883/.../...
	Male Straight / Female Straight	1406133	1406132	-	1417907	1417908	1417909	1417910	1417911	1405877/.../...
	Male Straight / Female 90°	1406135	1406134	-	-	-	-	-	-	1405878/.../...
	Male 90° / Female Straight	1406141	1406140	-	-	-	-	-	-	1405880/.../...
	Male 90° / Female 90°	1406143	1406142	-	-	-	-	-	-	1405881/.../...
8-pos. A-code	Female Straight / Open End	-	-	1406083	-	1406082	1406081	1418063	1418064	1405843/.../...
	Female 90° / Open End	-	-	1406087	-	1406086	1406084	1418061	1418062	1405844/.../...
	Male Straight / Open End	-	-	1406073	-	1406072	1406071	-	-	1405839/.../...
	Male 90° / Open End	-	-	1406080	-	1406079	1406078	-	-	1405842/.../...
	Male Straight / Female Straight	1406068	1406067	-	1417921	1417923	1417924	1417925	1417926	1405836/.../...
	Male Straight / Female 90°	1406070	1406069	-	-	-	-	-	-	1405838/.../...
	Male 90° / Female Straight	1406075	1406074	-	-	-	-	-	-	1405840/.../...
	Male 90° / Female 90°	1406077	1406076	-	-	-	-	-	-	1405841/.../...

CMAT cable options

COLOR	CABLE TYPE	MATERIAL	SHIELD	TEMP
Yellow	542	PVC	Braided shield/unshielded	105° C
Black	535	PVC	Braided shield/unshielded	105° C
Gray	544	PVC	Braided shield/unshielded	105° C
Black	PUR	PUR	Braided shield/unshielded	80° C
Yellow	547 (18AWG)	PVC	Unshielded	105° C

EXAMPLE – ORDER KEY

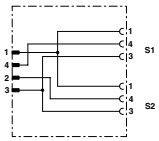
1406283/535/11.0

"535" designates black PVC cable
"11.0" represents 11m in length

Configurable parts allow for selection of cable type and length (of cable only/no connectors) from 0.2m to 85m.

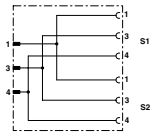
Distributors and adapters

Our Y- and T-distributors allow you to combine signals. Adapters allow another option for converting between M8 and M12 thread sizes.



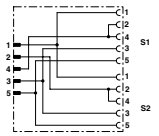
Distributors for use with sensor boxes

These articles bring in two signals, S1 and S2. The circuitry provides common power, then keeps S1 signal wire (pos. 4) on pin 4 while tracing S2 signal wire (pos. 4) onto pin 2.



Distributors with parallel wiring

These articles maintain 1:1 signal distribution between every position. For example, pos. 4 on all connectors is common.



Bridged wiring pins 2+4

These articles bring in two signals, S1 and S2. The circuitry provides common power, then connects either S1 signal wire (pos. 4 and pos. 2) on pin 4 while tracing S2 signal wires (pos. 4 and pos. 2) onto pin 2.

	Primary use	Configuration	Center distance	Standard	Bridged pins 2+4
	**Y-distributor**, for double-occupied sensor boxes (S1 to pin 4) (S2 to pin 2)	2 x M8 3-pos. female to M8 4-pos. male	12 mm	1696183	-
		2 x M8 3-pos. female to M12 4-pos. male	12 mm	1683471	-
		2 x M8 3-pos. female to M12 4-pos. SPEEDCON male	12 mm	1523984	-
		2 x M12 3-pos. female to M12 4-pos. male, SPEEDCON, LED	18 mm	1403627	-
		2 x M12 3+PE female to M12 5-pos. male	18 mm	1683455	1683413
		2 x M12 3+PE female to M12 5-pos. male	21 mm*	1511789	1514016
	**T-distributor**, (S1 to pin 4) (S2 to pin 2)	2 x M12 3+PE female to M12 5-pos. male	-	-	1519723
	**Y-distributor**, parallel wired	2 x M8 3-pos. female to M8 3-pos. male	12 mm	1696222	-
		2 x M8 3-pos. female to M12 3-pos. male	18 mm	1683549	-
		2 x M8 4-pos. female to M8 4-pos male (green)	18 mm	1572443	-
		2 x M8 4-pos. female to M8 4-pos male (black)	18 mm	1279341	-
		2 x M12 5-pos. female to M12 5-pos. male	18 mm	1683468	-
		2 x M12 5-pos. female to M12 5-pos. male, SPEEDCON	18 mm	1546068	-
		2 x M12 5-pos. female to M12 5-pos. male	21 mm*	1514029	-
		2 x M12 8-pos. female to M12 8-pos. male, SPEEDCON	21 mm*	1454972	-
	**T-distributor**, parallel wired	2 x M12 5-pos. female to M12 5-pos. male	-	1541186	-
		2 x M12 5-pos. female to M12 5-pos. male, mounting holes	-	1424712	-
	**Y-distributor**, parallel wired, Shielded	2 x M12 5-pos. female to M12 5-pos. male, SPEEDCON	21 mm*	1419920	-
		M12 5-pos. female/male to M12 5-pos. male, SPEEDCON	21 mm*	1438079	-
		2 x M12 5-pos. male to M12 5-pos. female, SPEEDCON	21 mm*	1419946	-
		M12 5-pos. male/female to M12 5-pos. female, SPEEDCON	21 mm*	1419933	-
		2 x M12 8-pos. female to M12 8-pos. male, SPEEDCON	21 mm*	1454969	-
	**Thread adapter**, M8 to M12	M8 3-pos. female to M12 3-pos male	-	1519752	-
		M8 snap-in 3-pos. female to M12 3-pos male	-	1519781	-
		M8 3-pos. male to M12 3-pos female	-	1519749	-
		M8 4-pos. female to M12 4-pos male	-	1519765	-
		M8 snap-in 4-pos. female to M12 4-pos male	-	1519778	-
		M8 4-pos. male to M12 4-pos female	-	1519736	-

*Application note: *21 mm center distance allows space for Push-in and screw field-wired connectors. 18 mm spacing is intended for molded assemblies.*

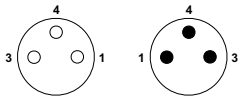
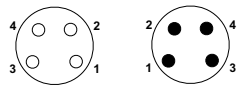
M8/M12 sensor cordsets



Our global product line is produced on an 80C black PUR jacket. The cable has a 10 million cycle flex rating and is offered in both shielded and unshielded variants. Shielded M12 in 3, 4, and 5 position are produced using AST (Advanced Shield Technology). Products that have changed to an AST design will have black connector heads, unshielded and traditional braided shield products will have green connector heads.

Standard lengths are stocked in our US logistics center.

*See website data sheet for most current information.

M8 connectors	Cable design	Pos. 1	Pos. 2	Pos. 3	Pos. 4	N.C.	Cable shield
	Unshielded	Brown	-	Blue	Black		-
	Braided shield	Brown	-	Blue	Black		To coupling nut
	Unshielded	Brown	White	Blue	Black		-
	Braided shield	Brown	White	Blue	Black		To coupling nut

M8 sensor cordsets (unshielded)

Cable jacket: Black PUR 80°C
Wire Gauge 0.25mm²
Properties: 10 million bend cycles



# Wires	Configuration	0.3 M	0.6 M	1 M	1.5 M	2 M	3 M	5 M	10 M	15 M	20 M
M8 3-pos. A-code	Female Straight / Open End	-	-	-	1669712	1504822	1669725	1669628	1694101	1425245	1405489
	Female 90° / Open End	-	-	-	1669738	1504835	1669741	1669631	1694169	-	-
	Male Straight / Open End	-	-	1500198	1681664	-	1681677	1681680	1693584	-	-
	Male 90° / Open End	-	-	-	1681693	-	1681703	1681716	1694114	-	-
	Male Straight / Female Straight	1681907	1681910	1696978	1681923	1500237	1681936	1693319	1693322	-	-
	Male Straight / Female 90°	1681949	1681952	1696581	1681965	1501317	1681978	1693270	-	-	-
	Male 90° / Female Straight	1682029	1682032	-	1682045	-	1682058	-	-	-	-
	Male 90° / Female 90°	1682061	1682074	-	1682087	-	1682090	-	-	-	-
M8 4-pos. A-code	Female Straight / Open End	-	-	-	1681842	-	1681855	1681868	1683484	1578780	1683507
	Female 90° / Open End	-	-	-	1681871	-	1681884	1681897	1694172	-	1405487
	Male Straight / Open End	-	-	-	1681787	-	1681790	1681800	1694143	-	-
	Male 90° / Open End	-	-	-	1681813	-	1681826	1681839	1694156	-	-
	Male Straight / Female Straight	1682142	1682155	-	1682168	1420545	1682171	-	-	-	-
	Male Straight / Female 90°	1682184	1682197	-	1682207	-	1682210	-	-	-	-
	Male 90° / Female Straight	1682223	1682236	-	1682249	-	1682252	-	-	-	-
	Male 90° / Female 90°	1682265	1682278	-	1682281	-	1682294	-	-	-	-

M8 sensor cordsets (braided shield tied to coupling nut)



Cable jacket: Black PUR 80°C
Wire Gauge 0.25mm²
Properties: 10 million bend cycles

# Wires	Configuration	0.3 M	0.6 M	1 M	1.5 M	2 M	3 M	5 M	10 M	15 M	20 M
M8 3-pos. A-code	Female Straight / Open End	-	-	-	1521711	-	1521724	1521737	1521740	-	-
	Female 90° / Open End	-	-	-	1521766	-	1521779	1521782	1521795	-	-
	Male Straight / Open End	-	-	-	1521614	-	1521527	1521630	1521643	-	-
	Male 90° / Open End	-	-	-	1521669	-	1521672	1521685	1521698	-	-
	Male Straight / Female Straight	1456310	1456323	-	1455285	-	1455298	-	1455308	1455311	-
	Male Straight / Female 90°	-	-	-	-	-	-	-	-	-	-
	Male 90° / Female Straight	-	-	-	-	-	-	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-	-	-
M8 4-pos. A-code	Female Straight / Open End	-	-	-	1521915	-	1521928	1521931	1521944	1400362	-
	Female 90° / Open End	-	-	-	1521960	-	1521973	1521986	1521999	-	-
	Male Straight / Open End	-	-	-	1521818	-	1521821	1521834	1521847	-	-
	Male 90° / Open End	-	-	-	1521863	-	1521876	1521889	1521892	-	-
	Male Straight / Female Straight	1574580	1455722	1574593	1455735	-	1574603	1571525	1571538	1574632	1401312
	Male Straight / Female 90°	-	-	-	-	-	-	-	-	-	-
	Male 90° / Female Straight	-	-	-	-	-	-	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-	-	-

M12 sensor cordsets (unshielded)

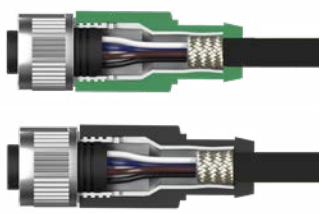


Cable Jacket: Black PUR 80°C
Wire Gauge: 0.34mm² (22AWG) 3-, 4-, 5pos.; 0.25mm² (24AWG) 8-pos.
Properties: 10 million bend cycles

# Wires	Configuration	0.3 M	0.6 M	1 M	1.5 M	2 M	3 M	5 M	10 M	15 M	20 M
M12 3-pos. A-code 	Female Straight / Open End	-	-	-	1694486	-	1694499	1683510	1693034	1694088	1693982
	Female 90° / Open End	-	-	-	1694509	-	1694512	1694525	1694538	1501980	1570173
	Male Straight / Open End	-	-	-	1668014	-	1668027	1668030	1682566	-	1683581
	Male 90° / Open End	-	-	-	1668137	-	1668140	1668153	1694444	-	-
	Male Straight / Female Straight	1681509	1681512	1698084	1681525	1694033	1681538	1693021	1694091	1501977	-
	Male Straight / Female 90°	1681541	1681554	1502374	1681567	1502387	1681570	1694253	-	-	-
	Male 90° / Female Straight	1071521	1071558	-	1071561	-	1071562	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-	-	-
M12 4-pos. A-code 	Female Straight / Open End	-	-	1400420	1668108	1533576	1668111	1668124	1683002	1502730	1500224
	Female 90° / Open End	-	-	1400422	1668221	1400423	1668234	1668247	1681389	1502743	1545001
	Male Straight / Open End	1530142	-	1500499	1668043	1693801	1668056	1668069	1682993	-	-
	Male 90° / Open End	-	-	-	1668166	-	1668179	1668182	1694457	-	-
	Male Straight / Female Straight	1668357	1668360	1699850	1668373	1693571	1668386	1694075	1500402	1696332	-
	Male Straight / Female 90°	1668470	1668483	1550070	1668496	-	1668506	1696400	1696442	-	-
	Male 90° / Female Straight	1668593	1668603	-	1668616	1544947	1668629	1544950	-	-	-
	Male 90° / Female 90°	1668713	1668726	-	1668739	1504589	1668742	-	-	-	-
M12 5-pos. A-code 	Female Straight / Open End	-	-		1669822	1504848	1669835	1669848	1683374	1693597	1500376
	Female 90° / Open End	-	-		1669851	-	1669864	1669877	1694541	1402146	-
	Male Straight / Open End	-	-	1564354	1669767	1554474	1669770	1669783	1683361	-	-
	Male 90° / Open End	-	-	-	1669796	-	1669806	1669819	1694460	-	-
	Male Straight / Female Straight	1681583	1681596	-	1681606	1694758	1681619	1533615	1403889	1534724	-
	Male Straight / Female 90°	1681622	1681635	-	1681648	-	1681651	-	1416448	-	-
	Male 90° / Female Straight	-	-	-	-	-	-	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-	-	-
M12 8-pos. A-code 	Female Straight / Open End	-	-	-	1522590	1520356	1522600	1520369	1520372	1528879	1520385
	Female 90° / Open End	-	-	-	1522626	-	1522639	1522642	1522655	-	-
	Male Straight / Open End	-	-	-	1522493	1401348	1522503	1522516	1522529	-	-
	Male 90° / Open End	-	-	-	1522545	-	1522558	1522561	1522574	-	-
	Male Straight / Female Straight	1522671	1522684	-	1522697	-	1522707	1529166	1529179	-	-
	Male Straight / Female 90°	1522723	1522736	-	1522749	-	1522752	-	-	-	-
	Male 90° / Female Straight	-	-	-	-	-	-	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-	1539376	-

M12 sensor cordsets (braided shield tied to coupling nut)

Cable Jacket: Black PUR 80°C
Wire Gauge: 0.34mm² (22AWG) 3-, 4-, 5pos.; 0.25mm² (24AWG) 8-pos.
Properties: 10 million bend cycles



# Wires	Configuration	0.3 M	0.6 M	1 M	1.5 M	2 M	3 M	5 M	10 M	15 M	20 M
M12 3-pos. A-code 	Female Straight / Open End	-	-	-	1682786	-	1682799	1682809	1500680	1529124	1405512
	Female 90° / Open End	-	-	-	1682812	-	1682825	1682838	1500693	-	-
	Male Straight / Open End	-	-	-	1682650	-	1682663	1682676	1500664	-	-
	Male 90° / Open End	-	-	-	1682689	-	1682692	1682702	1500677	-	-
	Male Straight / Female Straight	1500800	1500813	-	1500826	-	1500839	-	-	-	-
	Male Straight / Female 90°	1500923	1500936	-	1500949	-	1500952	-	-	-	-
	Male 90° / Female Straight	-	-	-	-	1528688	-	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-	-	-
M12 4-pos. A-code 	Female Straight / Open End	-	-	-	1682841	-	1682854	1682867	1500716	1515109	1515112
	Female 90° / Open End	-	-	-	1682906	-	1682919	1682922	1500729	1529014	1514511
	Male Straight / Open End	-	-	-	1682715	-	1682618	1682647	1694389	1519286	-
	Male 90° / Open End	-	-	-	1682870	-	1682883	1682896	1500703	-	-
	Male Straight / Female Straight	1500842	1500855	-	1500868	-	1500871	1507049	1508132	-	-
	Male Straight / Female 90°	1500965	1500978	-	1500981	-	1500994	-	-	-	-
	Male 90° / Female Straight	-	-	-	-	-	-	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-	-	-
M12 5-pos. A-code 	Female Straight / Open End	1531073	-	-	1682935	-	1682948	1682951	1500758	1402998	1528701
	Female 90° / Open End	-	1012022	-	1682964	-	1682977	1682980	1500761	-	-
	Male Straight / Open End	-	-	-	1682728	1525814	1682744	1682731	1500732	-	1424081
	Male 90° / Open End	-	-	-	1682757	-	1682760	1682773	1500745	-	-
	Male Straight / Female Straight	1500884	1500897	-	1500907	1513910	1500910	1693092	1529661	1530841	1535668
	Male Straight / Female 90°	1501003	1501029	-	1501045	-	1501058	-	-	-	-
	Male 90° / Female Straight	-	-	-	-	-	-	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-	-	-
M12 8-pos. A-code 	Female Straight / Open End	-	-	-	1522862	-	1522875	1522888	1522891	-	1569113
	Female 90° / Open End	-	-	-	1522914	-	1522927	1522930	1522943	-	-
	Male Straight / Open End	-	-	-	1522778	-	1522781	1526981	1522794	-	1570157
	Male 90° / Open End	-	-	-	1522817	-	1522820	1522833	1522846	-	-
	Male Straight / Female Straight	1522969	1522972	-	1522985	-	1522998	-	1425237	-	-
	Male Straight / Female 90°	1523010	1523023	-	1523036	-	1523049	-	-	-	-
	Male 90° / Female Straight	-	-	-	-	-	-	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-	-	-

**3, 4, 5 position cables with Advanced Shield Technology have changed to black molded heads.*
8 position cables remain with green molded heads. All shielded CMAT parts currently remain with green.

M8 and M12 sensor/actuator boxes

Machine mounted sensor boxes replace the time-consuming and error-prone marshalling cabinet for field I/O. IP65/67 boxes can be mounted directly on the machine, offering the fastest connection for sensor wires. The use of a sensor box eliminates many of the issues with marshalling cabinets, i.e., wiring errors, high installation costs, and long downtimes to replace failed sensor wiring. The PLC is connected to the sensor box via a master cable that is supplied either pre-molded or for field wiring to length.



Single-occupied boxes allow one point of I/O to be connected to each M8/M12 slot, while double-occupied boxes allow two points of I/O to be connected to each M8/M12 slot when used in conjunction with a Y-distributor or Y-cable.

If the demands of the application call for a heavy-duty box, specialty sensor boxes are also available. Our IP69K-rated outdoor box is available as a part of the M12 outdoor line. A food and beverage version is available in an all-stainless design for hygienic areas. For high-flex areas, a version with a high flex master cable is available for c-track or robotics applications.

PNP vs. NPN vs. Universal

Sensor boxes are designed for both NPN or "sinking sensors," and PNP or "sourcing sensors." PNP sensors typically produce a positive output to your industrial controls input, while NPN sensors produce a negative. PNP sensors are the most common application in North America. A Universal box can accommodate either signal type and will not include LEDs. Universal will be rated to 120v versus the 24v configuration for both PNP/NPN.

Master cable options



Pre-molded

Configurations have a defined length master cable molded directly into the box, allowing one cable run for the bundled signals and common power.



Top hat

A connector hood consists of a pluggable connection block and cable gland for easy field wiring of a master cable, as well as a disconnect point.



Circular

A quick disconnect circular receptacle is mounted on the box, allowing the fast connection of a pre-molded master cable in M12 or M23 thread size, depending on the sensor box.

M8 configurations

M8 sensor boxes come in 4, 6, 8, or 10 slot single occupied configurations.

M12 configurations

4, 6, or 8 slot boxes available for M12, allowing you to bring in 4, 6, or 8 field signals (single occupied) or 8, 12, or 16 signals (double occupied).





Molded master cable



Top hat – field-wired



Quick disconnect



Connector hood

M8 sensor/actuator boxes

PNP with LEDs		4 slot	6 slot	8 slot		10 slot
		Single (3-pos.)	Single (3-pos.)	Single (3-pos.)	Double (4-pos.)	Single (3-pos.)
Molded master cable	5 m	1197207	1197216	1197232	1197314	1197325
	10 m	1197212	1197231	1197236	1197319	1197328
Top hat	-	1197589	1197608	1197611	1197617	1197621
M12 quick disconnect	Straight	1197405	1197408	1197575	-	1197576
Connector hood	-	1197637	1197641	1197643	-	1197646

M8 accessories

Bulk cable 	50m	1517576	1517589	1517592	1539350	1517602
Connector hood 	-	1197637	1197641	1197643	-	1197646

M12 sensor actuator boxes

PNP with LEDs		4 slot		6 slot		8 slot	
		Single (4 pos.)	Double (5 pos.)	Single (4 pos.)	Double (5 pos.)	Single (4 pos.)	Double (5 pos.)
Molded master cable 	5 M	1452576	1452602	1452631	1452660	1452699	1452725
	10 M	1452589	1452615	1452644	1452673	1452709	1452738
Top hat 	-	1452806	1452819	1452822	1452835	1452848	1452851
Header for plug-in (Connector hood separate part) 	-	1452864	1452877	1452880	1452893	1452903	1452916
Socket - M23 	Straight	1692404	1692417	1692420	1692433	1692446	1692459
	180°	-	1692682	-	1692705	1692718	1692721
	M23 Straight - M12 Metal Thread	-	-	-	-	-	1526859

NPN with LEDs		4 slot		6 slot		8 slot	
		Single (4 pos.)	Double (5 pos.)	Single (4 pos.)	Double (5 pos.)	Single (4 pos.)	Double (5 pos.)
Molded master cable 	5 M	-	-	-	-	1405737	1405739
	10 M	-	-	-	-	1405738	1405740

Universal without LEDs		4 slot		6 slot		8 slot	
		Single (4 pos.)	Double (5 pos.)	Single (4 pos.)	Double (5 pos.)	Single (4 pos.)	Double (5 pos.)
Molded master cable 	5 M	1452398	1452424	-	1452482	1452518	1452547
	10 M	1452408	1452437	1452466	1452495	1452521	1452550
Top hat 	-	1452741	1452754	1452767	1452770	1452783	1452796
Socket - M23 	Straight	-	1692802	-	1692828	1692831	1692844
	180°	-	1692747	-	1692763	1692776	1692789

M12 accessories

		4 slot		6 slot		8 slot	
		Single (4 pos.)	Double (5 pos.)	Single (4 pos.)	Double (5 pos.)	Single (4 pos.)	Double (5 pos.)
Connector hood with cable 	5 M	-	1453083	-	1453148	1453177	1453203
	10 M	-	1453096	-	-	1453180	1453216
	15 M	-	1422784	-	-	-	1422787
	25 M	-	-	-	-	-	1097661
	50 M	-	-	-	-	-	1097669
Connector hood only 	Black (for M12 plastic thread box)	-	1453229	-	1453229	-	1453229
Bulk cable 	50 M	1503328	1503357	1503331	1503360	1503344	1503373

M23 master cables		5 M	10 M	15 M	20 M	30 M
12-position 	Female straight	1684014	1684027	1508310	1514469	1508268
	Female angled	1684030	1684043	-	-	-
19-position 	Female straight	1684056	1684069	1529522	1506998	1507007
	Female angled	1684072	1684085	-	1609039	1616475



M12 select box

Flexible, distributed bundling of signals into one master cable. The select box uses a pluggable screw connection, which allows customized wiring of each M12 slot in the field. Ideal for parallel wiring where you define the pin out.

1437258	SACB-4/8-C SCO SELECT



M12 junction box

Looking for a junction block for all of your M12 field signals, but with parallel wiring throughout?

Our stainless steel, shielded 8-slot M12 junction box is the perfect solution. No master cable, no unique pin outs or wiring diagrams. Simply bring signal from a 5 pin M12 and have it common to 7 separate slots.

1407295	SACB-SH-8 PARA VA MOUNT P-PROT



M12 parallel wired box

Our M12 parallel wired box is ideal for distributing the same signal to multiple devices.

1321430	SACB-8/8-C SCO PARA US

Push-Pull: The new M12 standard in automation technology

Phoenix Contact has a history of innovation when it comes to the IEC standard for M12 connections. The newest innovation, M12 Push-Pull, offers a new industry standard for "quick connections."

Fast, secure connections can be made with no tools, and a time savings of up to 80 percent!

"Duo" port receptacles allow for cable connections with push-pull, or backwards compatibility to full thread.

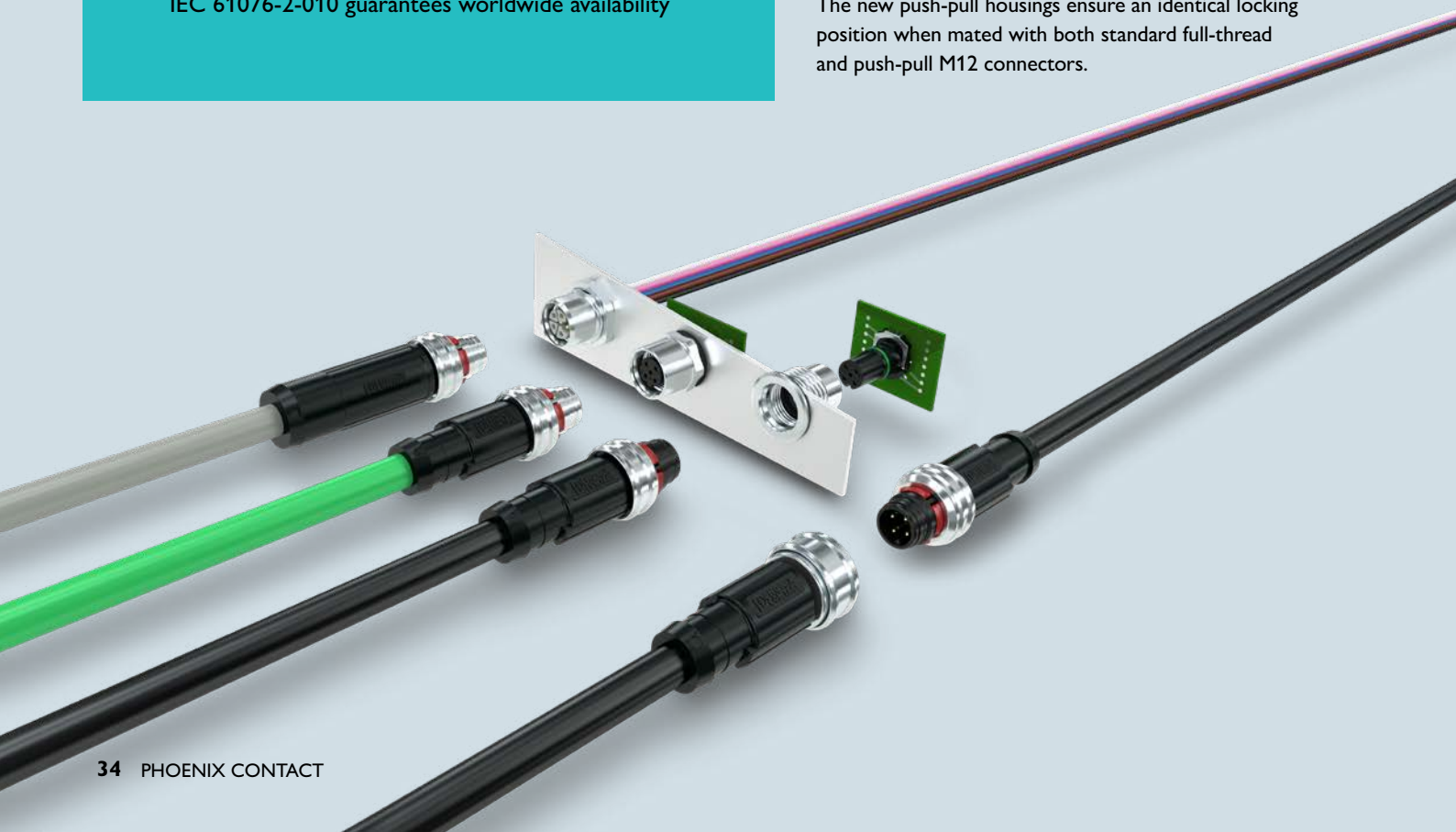
Your advantages

- ☑ **Reliable and convenient plugging –** 80% reduction in installation time compared to screw connections
- ☑ **Greater flexibility –** Push-pull-compatible housings are backward compatible with M12 standard screw connectors
- ☑ **Tool Free –** Ensure an IP-rated connection without the need for threading, or a torque specification
- ☑ **Compact design –** Countersunk M12 housings allow flush integration into the device
- ☑ **Future-proof –** Standardized push-pull system through IEC 61076-2-010 guarantees worldwide availability

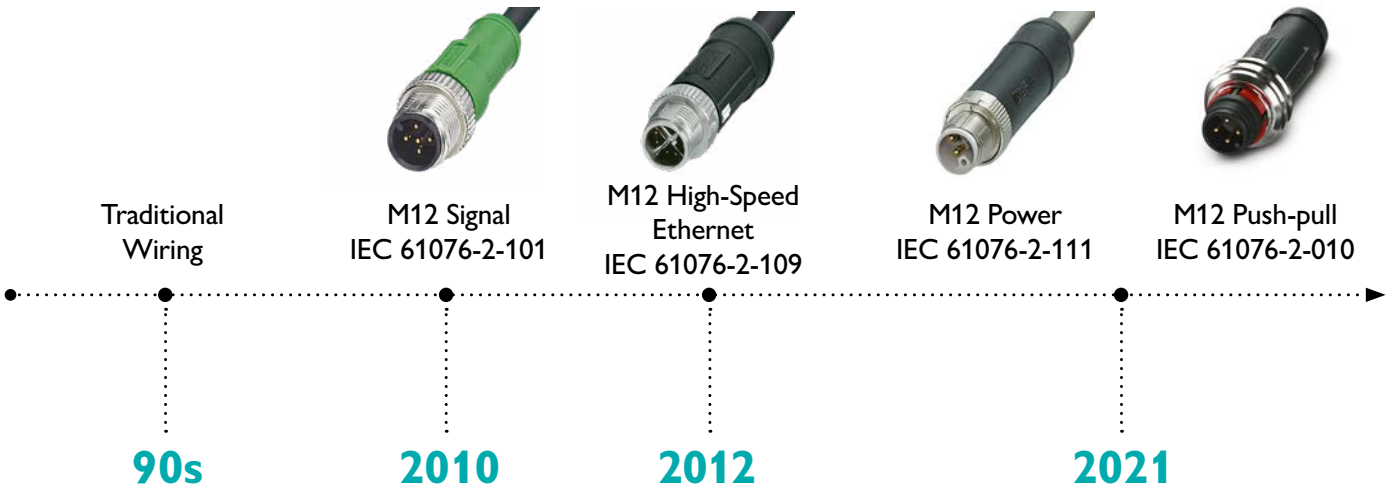


Push-Pull receptacles (device side) allow backwards compatibility to full thread cables.

The new push-pull housings ensure an identical locking position when mated with both standard full-thread and push-pull M12 connectors.



M12 Push-Pull: The future of M12



M12 push-pull sensor cordsets (unshielded)

Cable jacket: Black PUR 80°C
Wire Gauge 0.34mm² (22AWG)
Properties: 10 million bend cycles

# Wires	Configuration	0.3 M	0.6 M	1 M	1.5 M	2 M	3 M	5 M	10 M
M12 3-pos. A-code 	Female Straight / Open End	-	-	-	1385782	-	1385791	1385792	1385968
	Female 90° / Open End	-	-	-	1386380	-	1386394	1386513	1386514
	Male Straight / Open End	-	-	-	1384594	-	1385536	1385538	1385625
	Male 90° / Open End	-	-	-	1385626	-	1385643	1385646	1385647
	Male Straight / Female Straight	1386723	1386786	-	1223960	-	1386788	-	-
	Male Straight / Female 90°	1386796	1392195	-	1224008	-	1392208	-	-
	Male 90° / Female Straight	1392235	1392254	-	1224009	-	1392255	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-
M12 4-pos. A-code 	Female Straight / Open End	-	-	-	1392839	-	1393005	1393026	1393032
	Female 90° / Open End	-	-	-	1393038	-	1393047	1393072	1393169
	Male Straight / Open End	-	-	-	1392638	-	1392698	1392709	1392713
	Male 90° / Open End	-	-	-	1392735	-	1392755	1392829	1392834
	Male Straight / Female Straight	1393188	1393219	-	1224019	-	1393228	-	-
	Male Straight / Female 90°	1393235	1393272	-	1224166	-	1393555	-	-
	Male 90° / Female Straight	1393583	1393590	-	1224169	-	1393595	-	-
	Male 90° / Female 90°	-	-	-		-	-	-	-
M12 5-pos. A-code 	Female Straight / Open End	-	-	-	1395814	-	1395817	1395822	1395827
	Female 90° / Open End	-	-	-	1395830	-	1395831	1395834	1395835
	Male Straight / Open End	-	-	-	1393925	-	1395703	1395709	1395710
	Male 90° / Open End	-	-	-	1395742	-	1395750	1395803	1395805
	Male Straight / Female Straight	1395841	1395969	-	1224208	-	1396099	-	-
	Male Straight / Female 90°	1396479	1396489	-	1224223	-	1396496	-	-
	Male 90° / Female Straight	1396499	1396511	-	1224229	-	1396517	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-

M12 push-pull sensor cordsets (braided shield tied to coupling nut)



Cable jacket: Black PUR 80°C
Wire Gauge 0.34mm2 (22AWG
Properties: 10 million bend cycles

# Wires	Configuration	0.3 M	0.6 M	1 M	1.5 M	2 M	3 M	5 M	10 M
M12 3-pos. A-code 	Female Straight / Open End	-	-	-	1476794	-	1476792	1476791	1476788
	Female 90° / Open End	-	-	-	1476786	-	1476785	1476784	1476782
	Male Straight / Open End	-	-	-	1476550	-	1476806	1476805	1476803
	Male 90° / Open End	-	-	-	1476802	-	1476800	1476798	1476796
	Male Straight / Female Straight	1476834	1476832	-	1224012	-	1476831	-	-
	Male Straight / Female 90°	1476829	1476828	-	1224014	-	1476826	-	-
	Male 90° / Female Straight	-	-	-	1224018	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-
M12 4-pos. A-code 	Female Straight / Open End	-	-	-	1476844	-	1476843	1476842	1476841
	Female 90° / Open End	-	-	-	1476840	-	1476839	1476838	1476837
	Male Straight / Open End	-	-	-	1476855	-	1476854	1476853	1476851
	Male 90° / Open End	-	-	-	1476850	-	1476848	1476846	1476845
	Male Straight / Female Straight	1476881	1476878	-	1224173	-	1476877	-	-
	Male Straight / Female 90°	1476875	1476873	-	1224179	-	1476872	-	-
	Male 90° / Female Straight	-	-	-	1224204	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-
M12 5-pos. A-code 	Female Straight / Open End	-	-	-	1476893	-	1476892	1476890	1476889
	Female 90° / Open End	-	-	-	1476888	-	1476886	1476885	1476884
	Male Straight / Open End	-	-	-	1476903	-	1476902	1476901	1476900
	Male 90° / Open End	-	-	-	1476899	-	1476898	1476897	1476895
	Male Straight / Female Straight	1476912	1476911	-	1224249	-	1476910	-	-
	Male Straight / Female 90°	1476909	1476908	-	1224252	-	1476907	-	-
	Male 90° / Female Straight			-	1224256	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-

M12 push-pull to full-thread sensor cordsets (unshielded)



Cable jacket: Black PUR 80°C
Wire Gauge 0.34mm2 (22AWG)
Properties: 10 million bend cycles

# Wires	Configuration	0.3 M	0.6 M	1 M	1.5 M	2 M	3 M
M12 3-pos. A-code 	Male Push-Pull Straight / Female Full Thread Straight	1392395	1392562	-	1392625	-	1392628
M12 4-pos. A-code 	Male Push-Pull Straight / Female Full Thread Straight	1393615	1393900	-	1393907	-	1393910
M12 5-pos. A-code 	Male Push-Pull Straight / Female Full Thread Straight	1396523	1396533	-	1396546	-	1396550

M12 push-pull Ethernet cordsets (braided shield tied to coupling nut)



Cable jacket: Teal PUR 80°C
Wire Gauge: .14mm² (26AWG)
Properties: Halogen-free

# Wires	Configuration	0.3 M	1 M	2 M	3 M	5 M	10 M
4-pos. D-code	M12 Male Straight / Open End	-	1476008	1476012	-	1476013	1476014
	M12 Male 90° / Open End	-	-	-	-	-	-
	M12 Female Straight / Open End	-	1476016	1476018	-	1476019	1476020
	M12 Female 90° / Open End	-	-	-	-	-	-
	M12 Male Straight / M12 Male Straight	-	1476055	1476054	1554011	1476051	1476048
	M12 Male Straight / M12 Female Straight	1224258	1476045	1476046	-	1476058	1476056
	M12 Male 90° / M12 Male 90°	-	-	-	-	-	-
	M12 Male 90° / M12 Female 90°	1224273	-	-	-	-	-
	M12 Male Straight / RJ45 Straight	-	1476023	1476024	-	1476025	1476027
	M12 Female Straight / RJ45 Straight	1224266	1476029	1476030	-	1476031	1476032
	Male Straight / Open End	-	1584465	1584464	-	1584463	1584462
	Male 90° / Open End	-	-	-	-	-	-
	Female Straight / Open End	-	1584461	1584459	-	1584457	1584456
	Female 90° / Open End	-	-	-	-	-	-
	Male Straight / Male Straight	-	1584440	1584439	-	1584437	1584432
	Male Straight / Female Straight	-	1584446	1584445	-	1584442	1584441
	Male 90° / Male 90°	-	-	-	-	-	-
	Male 90° / Male Straight	-	-	-	-	-	-
	Male Straight / Female 90°	-	-	-	-	-	-
	Male Straight / RJ45 Straight	-	1584454	1584453	-	1584452	1584451
	Female Straight / RJ45 Straight	-	1584450	1584449	-	1584448	1584447

Push-pull, two-piece housings

*Housings required for push-pull compatibility (click here for product list). Standard M12 inserts available for A, D and X code.





Push-pull two-piece housings (THR) – Signal/data			
Part number	**Description**	**Notes**	**Comparable standard article**
1249211	SACC-DSIV-M12-NUT-9 THR PPI	M14 x 1 screw fastening, front-mounting	1417989, 1239181
1249212	SACC-BP-F-M12/M16-6-THR-PPI	M16 x 1 screw fastening, rear-mounting, DU = 6 mm	1414004, 1239056, 1414020, 1239057
1233777	SACC-FPF-F-M12/M16 THR PPI	M16 x 1 screw fastening, front-mounting, countersunk for flush integration	-
1233779	SACC-M12-PPI NUT L 90	M12 x 1 screw fastening, front-mounting	1432460, 1237409
1233780	SACC-BP-F-M12/M16-7-THR-PPI	M16 x 1 screw fastening, rear-mounting, DU = 6.8 mm	1414003, 1239055, 1414005, 1237398



Push-pull two-piece housings (SMD) – Signal/data			
Part number	**Description**	**Notes**	**Comparable standard article**
1454492	SACC-BP-F-M12/M16-6-SMD PPI	M16 x 1 screw fastening, rear-mounting	1414021, 1239058, 1414023, 1239059
1454494	SACC-FP-F-M12/M16 SMD PPI	M16 x 1 screw fastening, front-mounting	1412079
1454495	SACC-FPF-F-M12/M16 THR PPI	Press-in version, front-mounting	1412081, 1238973
1454497	SACC-FPF-F-M12/M16 SMD PPI	M16 x 1 screw fastening, front-mounting, countersunk for flush integration	-

M8 and M12 field-wired connectors

With our field-wired connectors, we provide all connection technologies suitable for your application in an M8 or M12 design. Choose between time-saving Push-in (Push-Lock) or QUICKON fast connection technologies or a crimp, pierce, or screw connection.

While great engineering effort is spent planning the mechanical structure and electrical system of a machine, the connection of each end device tends to be more of an art than a science. While it is known that each signal needs to go from point A (i.e., sensor) to B (i.e., enclosure), engineering and purchasing often struggle with the following questions:

- Can the exact length of cable be predicted in advance, or only once everything is mounted?
- What if the cabling must be routed through a different path than originally intended?
- What if the cable must be pulled through conduit or tight spaces where a connector can't fit?

The variances in the above "science" of collection can result in expensive machines unable to be tested or shipped until a correct length pre-molded cable can be re-ordered, built, and delivered. Furthermore, these challenges are universal across small, midsized, and large machine designs. Many builders lean towards molded cable assemblies because they are factory tested for proper electrical and environmental performance. They are hesitant to entertain making a cable to length on-site because:

- They are concerned their technicians will miswire the cable
- They will have to factor in high labor costs to wire the connector
- They are afraid the connector won't be properly sized to the cable

These are all very valid concerns and are some of the factors that led Phoenix Contact to develop a complete connector portfolio that addresses these challenges.

- "Fast" connection technologies (such as IDC and Push-in) were incorporated to minimize labor by as much as 80%
- Each wire terminal is color-coded to match the standard wire colors of the signal or data type being collected
- A larger range of acceptable wire sizes and cable diameter sealing is built into the design

Couple these design advantages with readily available bulk cable in various colors, shield designs, and wire counts, and you can reliably build cables to length on-site with 100% accuracy. This design flexibility with Phoenix Contact's expertise in connection technology has allowed our customers to build millions of cables with our connectors in the past decade.



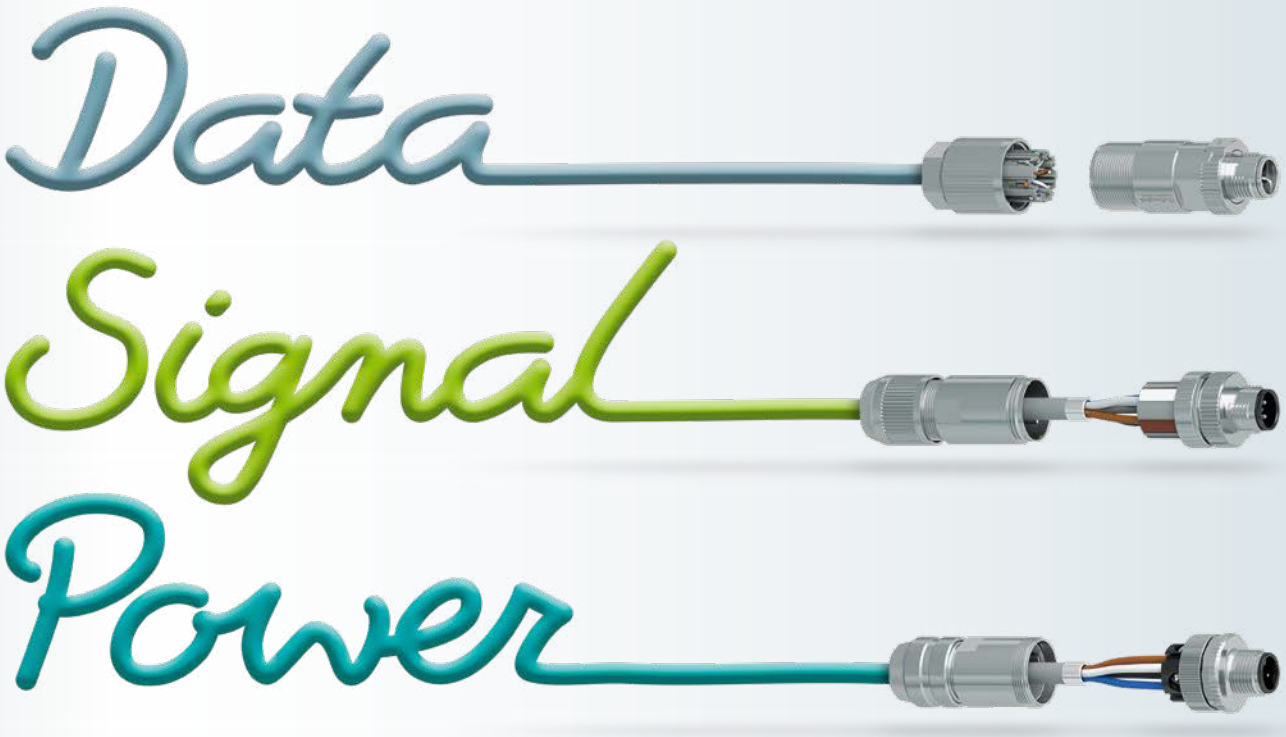
Push-lock

Push-lock connectors provide easy and reliable connections for a wide-range of M12 applications. Ferruled and solid wires can be terminated using the push-in principle, and the easy-to-open lever allows flexible, stranded wires to be connected with no tools needed.



QUICKON-IDC

QUICKON provides the fastest connection for M8 and M12 connectors. Individual wires do not need to be stripped or prepared. In the termination area, an insulation displacement contact cuts through the wire insulation and makes a vibration-resistant, gas-tight connection.





Crimp

Crimp connection enables fast, automated connection wherever cables have to be assembled in large volumes. The extremely compact connector is perfect for railway applications.



Piercecon

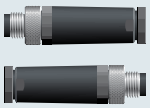
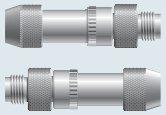
The Piercecon connection system enables simple and reliable assembly of M8 and M12 connectors. The electrical connection is made by axial piercing of a contact pin into the individual wires, making Piercecon an ideal solution for high density pin configurations.



Screw

M8 and M12 connectors with screw termination are considered as the classic connection technology. A variety of wire sizes and cable materials can be assembled on the job site safely and without errors.

M8 field-wired connectors for sensor applications

M8 connectors			Wire size range		Cable OD		 Unshielded (plastic body)		 Shielded (metal body)	
Connection technology	Gender	Orientation	Max	Min	Min	Max	 3-pos.	 4-pos.	 3-pos.	 4-pos.
QUICKON (IDC) 	Male	Straight	24 AWG	28 AWG	2.5 mm	5 mm	1441008	1441011	-	-
	Female	Straight	24 AWG	28 AWG	2.5 mm	5 mm	1441040	1441053	-	-
	Male	Straight	20 AWG	24 AWG	2.5 mm	5 mm	1441024	1441037	-	-
	Female	Straight	20 AWG	24 AWG	2.5 mm	5 mm	1441066	1441079	-	-
PIERCECON (Axial) 	Male	Straight	22 AWG	26 AWG	3 mm	5 mm	1506752	1506765	-	-
	Female	Straight	22 AWG	26 AWG	3 mm	5 mm	1506778	1506781	-	-
Screw 	Male	Straight	20 AWG	26 AWG	3.5 mm	5 mm	1501252	1501265	-	-
	Male	Angled	20 AWG	26 AWG	3.5 mm	5 mm	1407583	1407585	-	-
	Female	Straight	20 AWG	26 AWG	3.5 mm	5 mm	1506888	1506891	-	-
	Female	Angled	20 AWG	26 AWG	3.5 mm	5 mm	1407582	1407584	-	-
	Male	Straight	20 AWG	26 AWG	3.5 mm	5.5 mm	-	-	1542884	1542897
	Female	Straight	20 AWG	26 AWG	3.5 mm	5.5 mm	-	-	1542907	1542910
Solder 	Male	Straight	24 AWG	28 AWG	3.5 mm	5 mm	1681156	1681169	1506901	1506914
	Male	Angled	24 AWG	28 AWG	3.5 mm	5 mm	1699902	1554209	1436453	1436466
	Female	Straight	24 AWG	28 AWG	3.5 mm	5 mm	1681172	1681185	1506927	1506930
	Female	Angled	24 AWG	28 AWG	3.5 mm	5 mm	1529399	1513444	1436479	1436482

Bulk cable reels

Cables reels in 100- and 300-meter spools for complete in-house custom cable assemblies can be found on pages 76-77.

M12 Receptacles push-lock

	Male	Female	Male	Female
				
4-pos A-code 	1139802	1139803	-	-
5-pos A-code 	1139804	1139805	-	-
4-pos D-code 	-	-	1139796	1139800

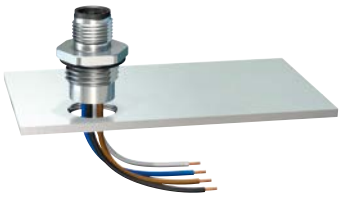
M12 field-wired connectors for sensor applications

M12 connectors			Wire size range		Cable OD		Unshielded (plastic body)			Shielded (metal body)		
Connection technology	Gender	Orientation	Max	Min	Min	Max	4-pos.	5-pos.	8-pos.	4-pos.	5-pos.	8-pos.
Push-in 	Male	Straight	18 AWG	26 AWG	4 mm	8 mm	1424657	1424649	-	1424666	1424658	-
	Male	Angled	18 AWG	26 AWG	4 mm	8 mm	1424654	1424651	-	1424667	1424659	-
	Female	Straight	18 AWG	26 AWG	4 mm	8 mm	1424655	1424652	-	1424668	1424660	-
	Female	Angled	18 AWG	26 AWG	4 mm	8 mm	1424656	1424653	-	1424669	1424661	-
QUICKON (IDC) 	Male	Straight	22 AWG	26 AWG	3.5 mm	6 mm	1641691	-	-	-	-	-
	Female	Straight	22 AWG	26 AWG	3.5 mm	6 mm	1641688	-	-	-	-	-
	Coupler	Straight	22 AWG	26 AWG	3.5 mm	6 mm	1641879	-	-	-	-	-
	Male	Straight	18 AWG	22 AWG	4 mm	8 mm	1641785	-	-	-	-	-
	Female	Straight	18 AWG	22 AWG	4 mm	8 mm	1641772	-	-	-	-	-
	Coupler	Straight	18 AWG	22 AWG	4 mm	8 mm	1642140	-	-	-	-	-
	Male	Straight	18 AWG	26 AWG	5 mm	9.7 mm	-	-	-	1413993	1413991	-
	Female	Straight	18 AWG	26 AWG	5 mm	9.7 mm	-	-	-	1413994	1413992	-
	Coupler	Straight	18 AWG	26 AWG	5 mm	9.7 mm	-	-	-	1414418	1414417	-
	Male	Straight	20 AWG	26 AWG	5 mm	9.7 mm	-	-	-	-	-	1414610
	Female	Straight	20 AWG	26 AWG	5 mm	9.7 mm	-	-	-	-	-	1414611
	Coupler	Straight	20 AWG	26 AWG	5 mm	9.7 mm	-	-	-	-	-	1414612
Crimp 	Male	Straight	18 AWG	22 AWG	4.5 mm	7.5 mm	-	-	-	-	1422850	-
	Male	Angled	18 AWG	22 AWG	4.5 mm	7.5 mm	-	-	-	-	1422851	-
	Female	Straight	18 AWG	22 AWG	4.5 mm	7.5 mm	-	-	-	-	1422852	-
	Female	Angled	18 AWG	22 AWG	4.5 mm	7.5 mm	-	-	-	-	1422853	-
Screw 	Male	Straight	18 AWG	24 AWG	4 mm	6 mm	1662528	1663116	-	1693830	1693416	-
	Male	Angled	18 AWG	24 AWG	4 mm	6 mm	1681101	1663129	-	1694279	1693429	-
	Female	Straight	18 AWG	24 AWG	4 mm	6 mm	1681127	1662968	-	1694295	1694305	-
	Female	Angled	18 AWG	24 AWG	4 mm	6 mm	1681143	1662984	-	-	-	-
	Male	Straight	18 AWG	24 AWG	6 mm	8 mm	1523230	1681460	-	1501540	1694266	-
	Male	Angled	18 AWG	24 AWG	6 mm	8 mm	-	1681473	-	-	1694282	-
	Female	Straight	18 AWG	24 AWG	6 mm	8 mm	1696439	1681486	-	1515170	1694318	-
	Female	Angled	18 AWG	24 AWG	6 mm	8 mm	-	1694282	-	-	1430433	-
	Male	Straight	20 AWG	24 AWG	6 mm	8 mm	-	-	1513334	-	-	1511857
	Female	Straight	20 AWG	24 AWG	6 mm	8 mm	-	-	1513347	-	-	1511860
	Male	Straight	20 AWG	24 AWG	8 mm	10 mm	-	-	1410666	-	1403854	-
	Female	Straight	20 AWG	24 AWG	8 mm	10 mm	-	-	1410665	-	1417877	-
	Male	Straight	16 AWG	18 AWG	8 mm	10 mm	1404415	1404417	-	-	-	-
	Male	Angled	16 AWG	18 AWG	8 mm	10 mm	1408990	1408992	-	-	-	-
	Female	Straight	16 AWG	18 AWG	8 mm	10 mm	1404416	1404418	-	-	-	-
	Female	Angled	16 AWG	18 AWG	8 mm	10 mm	1408991	1408993	-	-	-	-

Panel-mount sensor receptacles with leads

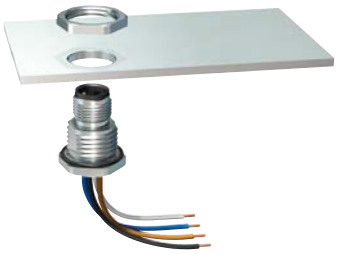
Panel-mount receptacles allow for a waterproof quick-disconnect into a cabinet or device. There are various options for mounting direction, panel cutout size, lead length, or number of positions.





Front mount

The receptacle threads or pushes through into the enclosure from the front, and is secured with a locknut in the rear (inside) of the enclosure. This provides the most security against tampering, but does not allow pre-wiring of leads until after the product is mounted. Since the enclosure could be either tapped and threaded or punched, the locknut is ordered separately.



Rear mount

The receptacle pushes through the enclosure from the rear and is secured with a locknut on the front (outside) of the enclosure. This allows leads to be pre-terminated to terminals, then pushed into the cutout during final installation. A locknut is included since the enclosure is never threaded for a rear-mount receptacle. A full range for direct PCB mount is also available, see the website for details.



Rotatable

Some front-mount receptacles indicate they “can be positioned”. This means there is a secondary nut for orienting the M12 keyway to a desired position. Ideal for use with right-angle cables to ensure proper routing. Alternatively, all receptacles have a “flat” portion for anti-rotation, given a D-cutout. This D-cutout can also be used for alignment rather than a round hole.

XL design

This new design provides a mechanical stop when securing the locknut. It prevents an installer from over-tightening the receptacle to the enclosure. Over-tightening could damage the O-ring, compromising the enclosure seal.

M8 panel-mount receptacles



M8 3-pos. sensor receptacles with pre-terminated leads

Design	# Wires	Configuration	Style	Panel mount thread	AWG	0.5 M	1 M	1.5 M	2 M	Locknut
M8 3-pos. A-code 	3-pos.	Female	Front mount	8 mm	24 AWG	1500350	1541733*	-	1081551*	1504071
	3-pos.	Male		8 mm	24 AWG	1500334	-	-	-	1504071
	3-pos.	Female	Rear mount	10 mm	24 AWG	1456080	1421124*	1425818*	-	Included
	3-pos.	Female		12 mm	24 AWG	1453449	1408209*	-	-	Included
	3-pos.	Male		8 mm	24 AWG	1453478	-	-	-	Included



M8 4-pos. sensor receptacles with pre-terminated leads

Design	# Wires	Configuration	Style	Panel mount thread	AWG	0.5 M	1 M	1.5 M	2 M	Locknut
M8 4-pos. A-code 	4-pos.	Female	Front mount	8 mm	24 AWG	1500363	-	-	-	1504071
	4-pos.	Male		8 mm	24 AWG	1500347	-	-	-	1504071
	4-pos.	Female	Rear mount	10 mm	24 AWG	1456093	-	-	-	Included
	4-pos.	Female		12 mm	24 AWG	1453452	1408208*	1416338*	-	Included
	4-pos.	Male		8 mm	24 AWG	1453481	-	-	-	Included

Availability note:

*These longer lengths are made-to-order (MOQ may apply) and are shown where available. Additional lengths can be requested.

M12 panel-mount receptacles



M12 3-pos. sensor receptacles with pre-terminated leads

Design	# Wires	Configuration	Style	Design	Panel mount thread	AWG	0.5 M	1 M	1.5 M	2 M	Locknut
M12 3-pos. A-code 	3-pos.	Female	Front mount	Standard	1/2" NPT	22 AWG	-	1421080	-	-	Included
	3-pos.	Female		Standard	16 mm	18 AWG	1020174	-	-	-	1504097
	3-pos.	Male		Standard	1/2" NPT	22 AWG	-	1421079	-	-	Included
	3-pos.	Male		Standard	16 mm	18 AWG	1019750	-	-	-	1504097



M12 4-pos. sensor receptacles with pre-terminated leads

Design	# Wires	Configuration	Style	Design	Panel mount thread	AWG	0.5 M	1 M	1.5 M	2 M	Locknut
M12 4-pos. A-code 	4-pos.	Female	Front mount	Standard	Pg9	22 AWG	1693788	1503276*	-	1406413*	1504084
	4-pos.	Female		Rotatable	Pg9	22 AWG	1693791	-	1508349*	-	1504084
	4-pos.	Female		Standard	16 mm	22 AWG	1523434	-	1403364*	1408308*	1504097
	4-pos.	Female		Rotatable	16 mm	22 AWG	1523447	1565874*	-	1446359*	1504097
	4-pos.	Female		XL	16 mm	22 AWG	1411568	-	1020772*	-	1504097
	4-pos.	Female		Standard	20 mm	22 AWG	1408436	-	-	-	-
	4-pos.	Female		Standard	1/2" NPT	22 AWG	-	1421082	-	-	Included
	4-pos.	Female		Standard	16 mm	18 AWG	1020171	-	-	-	1504097
	4-pos.	Male	Front mount	Standard	Pg9	22 AWG	1693762	-	-	1406414*	1504084
	4-pos.	Male		Rotatable	Pg9	22 AWG	1693775	-	-	-	1504084
	4-pos.	Male		Standard	16 mm	22 AWG	1523450	-	-	-	1504097
	4-pos.	Male		Rotatable	16 mm	22 AWG	1523463	-	-	1446346*	1504097
	4-pos.	Male		XL	16 mm	22 AWG	1411577	-	-	-	1504097
	4-pos.	Male		Standard	20 mm	22 AWG	1408451	-	-	-	-
	4-pos.	Male		Standard	1/2" NPT	22 AWG	-	1421081	-	-	Included
	4-pos.	Male		Standard	16 mm	18 AWG	1019517	-	-	-	1504097
	4-pos.	Female	Rear mount	Standard	Pg9	22 AWG	1556621	-	-	-	Included
	4-pos.	Female		Standard	16 mm	22 AWG	1419632	-	-	-	Included
	4-pos.	Female		XL	16 mm	22 AWG	1411584	-	-	-	Included
	4-pos.	Female		Standard	16 mm	18 AWG	1020175	-	-	-	Included
	4-pos.	Male	Rear mount	Standard	Pg9	22 AWG	1556618	1408880*	-	-	Included
	4-pos.	Male		Standard	12 mm	22 AWG	1551875	1417580*	-	-	Included
	4-pos.	Male		Standard	16 mm	22 AWG	1419629	-	-	-	Included
	4-pos.	Male		XL	16 mm	22 AWG	1411591	-	-	-	Included
	4-pos.	Male		Standard	16 mm	18 AWG	1019777	-	-	-	Included

Availability note:

*These longer lengths are made-to-order (MOQ may apply) and are shown where available. Additional lengths can be requested.



M12 5-pos. sensor receptacles with pre-terminated leads

Design	# Wires	Configuration	Style	Design	Panel mount thread	AWG	0.5 M	1 M	1.5 M	2 M	Locknut
M12 5-pos. A-code 	5-pos.	Female	Front mount	Standard	Pg9	22 AWG	1671098	1548024*	-	-	1504084
	5-pos.	Female		Rotatable	Pg9	22 AWG	1671108	-	-	-	1504084
	5-pos.	Female		Standard	16 mm	22 AWG	1520039	1401110*	-	1416280*	1504097
	5-pos.	Female		Rotatable	16 mm	22 AWG	1520042	1567791*	-	1446375*	1504097
	5-pos.	Female		XL	16 mm	22 AWG	1411571	-	-	-	1504097
	5-pos.	Female		Standard	20 mm	22 AWG	1408454	-	-	-	-
	5-pos.	Female		Standard	1/2" NPT	22 AWG	-	1421084	-	-	Included
	5-pos.	Female		Standard	16 mm	18 AWG	1020172	-	-	-	1504097
	5-pos.	Male	Front mount	Standard	Pg9	22 AWG	1671111	1578599*	-	-	1504084
	5-pos.	Male		Rotatable	Pg9	22 AWG	1671124	-	1683756*	-	1504084
	5-pos.	Male		Standard	16 mm	22 AWG	1520055	-	-	1416285*	1504097
	5-pos.	Male		Rotatable	16 mm	22 AWG	1520068	-	-	1446362*	1504097
	5-pos.	Male		XL	16 mm	22 AWG	1411579	-	-	-	1504097
	5-pos.	Male		Standard	20 mm	22 AWG	1408446	-	-	-	-
	5-pos.	Male		Standard	1/2" NPT	22 AWG	-	1421083	-	-	Included
	5-pos.	Male		Standard	16 mm	18 AWG	1019518	-	-	-	1504097
	5-pos.	Female	Rear mount	Standard	Pg9	22 AWG	1542729	-	1577053*	1421708*	Include
	5-pos.	Female		Standard	16 mm	22 AWG	1419658	1419530*	1425826*	-	Include
	5-pos.	Female		XL	16 mm	22 AWG	1411586	-	1416341*	-	Include
	5-pos.	Female		Standard	16 mm	18 AWG	1020176	-	-	-	Included
	5-pos.	Male	Rear mount	Standard	Pg9	22 AWG	1542703	-	-	-	Included
	5-pos.	Male		Standard	12 mm	22 AWG	1551888	-	-	-	Included
	5-pos.	Male		Standard	16 mm	22 AWG	1419645	1414421*	-	-	Included
	5-pos.	Male		XL	16 mm	22 AWG	1411593	-	-	-	Included
	5-pos.	Male		Standard	16 mm	18 AWG	1019781	-	-	-	Included

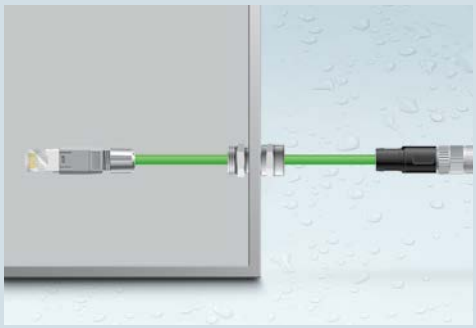
M12 8-pos. sensor receptacles with pre-terminated leads

Design	# Wires	Configuration	Style	Design	Panel mount thread	AWG	0.5 M	1 M	1.5 M	2 M	Locknut
M12 8-pos. A-code 	8-pos.	Female	Front mount	Standard	Pg9	24 AWG	1513758	-	-	1401846*	1504084
	8-pos.	Female		Rotatable	Pg9	24 AWG	1513761	-	-	-	1504084
	8-pos.	Female		Standard	16 mm	24 AWG	1523476	-	-	1416277*	1504097
	8-pos.	Female		Rotatable	16 mm	24 AWG	1523489	1567801*	-	1446391*	1504097
	8-pos.	Female		XL	16 mm	24 AWG	1411573	-	-	-	1504097
	8-pos.	Female		Standard	20 mm	24 AWG	1408453	-	-	-	-
	8-pos.	Male	Front mount	Standard	Pg9	24 AWG	1513774	-	-	-	1504084
	8-pos.	Male		Rotatable	Pg9	24 AWG	1513787	-	-	-	1504084
	8-pos.	Male		Standard	16 mm	24 AWG	1523492	-	1070948*	1416283*	1504097
	8-pos.	Male		Rotatable	16 mm	24 AWG	1523502	-	-	1446388	1504097
	8-pos.	Male		XL	16 mm	24 AWG	1411581	-	-	-	1504097
	8-pos.	Male		Standard	20 mm	24 AWG	1408442	-	-	-	-
	8-pos.	Female	Rear mount	Standard	Pg9	24 AWG	1542732	-	-	1424030*	Included
	8-pos.	Female		Standard	16 mm	24 AWG	1419690	1410520*	1416340*	-	Included
	8-pos.	Female		XL	16 mm	24 AWG	1411588	-	-	-	Included
	8-pos.	Male	Rear mount	Standard	Pg9	24 AWG	1542716	1408879*	-	-	Included
	8-pos.	Male		Standard	12 mm	24 AWG	1551914	1417853*	1416339*	-	Included
	8-pos.	Male		Standard	16 mm	24 AWG	1419687	-	-	-	Included
	8-pos.	Male		XL	16 mm	24 AWG	1411595	-	-	-	Included

Data connectivity

Network cabling for data transmission

Complex automation processes call for high volumes of data at ever-increasing transmission speeds. Benefit from high-performance connectors and cables for on-site assembly. The North American program for data cordsets is a focused offering of Ethernet and DeviceNet™ configurations, with support for a wide range of industrial protocols available in the global catalog.



From the IP67 world to the IP20 world

You can link the shielded IP20 world with the robust IP67 world using assembled RJ45 to M12 Ethernet cables. Patch cables simplify installation.



Reliable shielding concept

Our data connector housings are 360° shielded. Furthermore, X-coded components also have pair shielding right through to the pin connector pattern.



For all common networks and fieldbuses

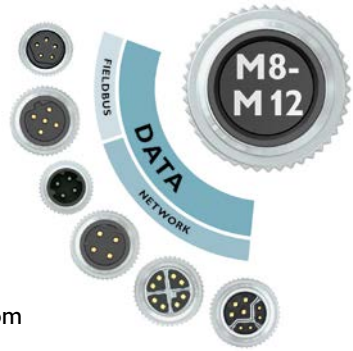
Connecting the field level with the control level: for bus applications, we offer A- and B-coded M12 connectors specially designed for fieldbus technology. Assembled network cables and network connectors ensure effective communication in machines and systems.



High speed up to 10 Gbps

With our X-coded connectors, we offer future-oriented data transmission that can already be integrated into your infrastructure, networks, and end devices. Smooth communication is therefore possible across the entire company network – from the office right up to the machine.

Selection guidelines



Cable jacket

When selecting cable jacket materials for your application, the following guidelines will clarify intended use:

- PUR – Halogen-free, abrasion and oil resistant.
  - Available in standard lengths of A- and D-code Ethernet, our made-to-order CMAT, or from the global catalog of X-code Ethernet and euro-style DeviceNet™ (Purple)
  - Stocked product available in standard lengths from the following pages
- PVC – Wide temperature range, sunlight resistant.
  - Available in standard lengths of DeviceNet™ (Gray) or through our made-to-order CMAT program

Cable shielding

- Data cable shielding is identified by the shielding of the overall cable/shielding of each wire or pair of wires:

	Cable shield	Wire shield
F/UTP	F – Foil Shield	UTP – Unshielded Twisted Pair
S/UTP	S – Braided Shield	UTP – Unshielded Twisted Pair
SF/UTP	SF – Braided and Foil Shield	UTP – Unshielded Twisted Pair
S/FTP	S – Braided Shield	FTP – Foil Shielded Twisted Pair
F/FTP	F – Foil Shield	FTP – Foil Shielded Twisted Pair
U/FTP	No Cable Shield	FTP – Foil Shielded Twisted Pair
UTP	No Cable Shield	UTP – Unshielded Twisted Pair
SF/TQ	SF – Braided and Foil Shield	TQ – Twisted Quad (Star Quad)
S/TQ	S – Braided Shield	TQ – Twisted Quad (Star Quad)

DeviceNet™ cables use foil + drain shielding.

Cable design

When selecting a cable design for your application, the following guidelines will clarify intended use:

- Gender – Both male (pin) and female (socket) connector heads are available for most protocols, as well as RJ45
  - RJ45 connector heads are available for 4 and 8 pin wires, following Ethernet standard pin assignments
  - Double-ended cables are typically male to RJ45 or male-to-male
  - RJ45-RJ45 patch cables are available for connectivity inside the cabinet
- Head orientation – Either straight or right-angle connector heads are available
  - Straight heads are in-line with the cable and are easy to route in any direction of a sensor
  - Angled heads range from 80 to 90 degrees and are used when space off a device is at a premium

M12 Ethernet coding

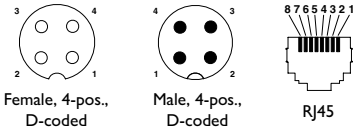
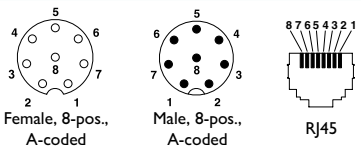
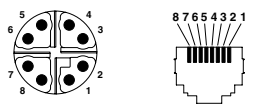
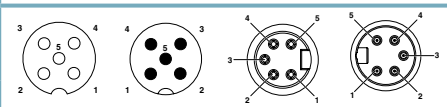
Code	Connector face	Transmission	Positions
D-code		CAT5 (100 Mbps)	4 (2x2)
A-code		CAT5 (1 Gbps)	8 (4x2)
X-code		$CAT6_A$ (10 Gbps)	8 (4x2)

M12 data cordsets



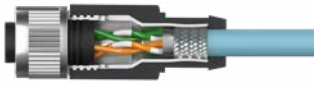
The use of Ethernet-based networks for machine communication is increasing greatly. To support the connection of devices to the network, Phoenix Contact offers three groups of M12 products. North American production offers D-code, A-code, and X-code variants.

DeviceNet™ is ideally suited for clear automation tasks thanks to the ultra-compact SMS format of the CIP protocol (Common Industrial Protocol). DeviceNet™ is standardized in European standard EN 50325 and is maintained by the ODVA (Open DeviceNet™ Vendor Association). It is one of the main fieldbuses used for material handling and industrial vehicle applications. Both M12 and MINI 7/8" products via trunk and drops support the physical layer of this protocol.

Protocol	Connector	Type	Pos. 1	Pos. 2	Pos. 3	Pos. 4	Pos. 5	Pos. 6	Pos. 7	Pos. 8
Ethernet		M12	White Orange	White Green	Orange	Green	-	-	-	-
		RJ45	White Orange	Orange	White Green	-	-	Green	-	-
		M12	White Blue	White Brown	Brown	Orange	White Green	White Orange	Blue	Green
		RJ45	White Orange	Orange	White Green	Blue	White Blue	Green	White Brown	Brown
		M12	White Orange	Orange	White Green	Green	White Brown	Brown	White Blue	Blue
		RJ45	White Orange	Orange	White Green	Blue	White Blue	Green	White Brown	Brown
DeviceNet™		M12	Drain	Red	Black	White	Blue	-	-	-
		MINI 7/8"	Drain	Red	Black	White	Blue	-	-	-

M12 Ethernet cordsets (braided shield tied to the coupling nut)

Cable jacket: Teal PUR 80°C
Wire Gauge: 26 AWG
Properties: Halogen-free



Design	Configuration	0.5 M	1.0 M	2 M	5 M	10 M	15 M	20 M	30 M	40 M	CMAT
4-pos. D-Code	Male Straight / Open End	-	-	1406131	1408727	1408728	1418065	1418066	1418067	1418068	1405876/.../...
	Male 90° / Open End	-	-	1406126	1408734	1408735	-	-	-	-	1405871/.../...
	Female Straight / Open End	-	-	1406130	1408729	1408730	-	-	-	-	1405875/.../...
	Female 90° / Open End	-	-	1406125	1408736	1408738	-	-	-	-	1405870/.../...
	Male Straight / Male Straight	1408732	-	1406128	1418076	1418077	1418078	1418079	-	-	1405873/.../...
	Male Straight / Female Straight	1408731	-	1406129	-	-	-	-	-	-	1405874/.../...
	Male 90° / Male 90°	1408741	-	1406123	-	-	-	-	-	-	1405868/.../...
	Male 90° / Female 90°	1408739	-	1406124	-	-	-	-	-	-	1405869/.../...
	Male Straight / RJ45 Straight	1408733	-	1406127	1409860	1409861	1409862	1418087	-	-	1405872/.../...
	Male 90° / RJ45 Straight	1408742	-	1406122	-	-	-	-	-	-	1405867/.../...
8-pos. A-Code	Male Straight / Open End	-	-	1406121	1408743	1408744	1418069	1418071	1418072	1418075	1405865/.../...
	Male 90° / Open End	-	-	1406116	1408751	1408752	-	-	-	-	1405860/.../...
	Female Straight / Open End	-	-	1406120	1408745	1408746	-	-	-	-	1405864/.../...
	Female 90° / Open End	-	-	1406115	1408754	1408755	-	-	-	-	1405859/.../...
	Male Straight / Male Straight	1408748	-	1406118	1418080	1418081	1418082	1418083	-	-	1405862/.../...
	Male Straight / Female Straight	1408747	-	1406119	-	-	-	-	-	-	1405863/.../...
	Male 90° / Male 90°	1408757	-	1406113	-	-	-	-	-	-	1405857/.../...
	Male 90° / Female 90°	1408756	-	1406114	-	-	-	-	-	-	1405858/.../...
	Male Straight / RJ45 Straight	1408749	-	1406117	1409863	1409864	1409865	1417873	-	-	1405861/.../...
	Male 90° / RJ45 Straight	1408758	-	1406112	-	-	-	-	-	-	1405856/.../...
8-pos. X-Code	Male Straight / Open End	-	1407467	1407468	1407469	1407470	1440575	1440588	-	-	1408648/.../...
	Male 90 / Open End	-	1080716	1080717	1080718	1080719	-	-	-	-	1295150/.../...
	Famale Straight / Open End	-	1080728	1080729	1080731	1080732	-	-	-	-	1295156/.../...
	Female 90 / Open End	-	1080746	1080747	1080748	1080750	-	-	-	-	1295162/.../...
	Male Straight / Male Straight	1440465	1407483	1407484	1407485	1407486	1440517	1440520	-	-	1408644/.../...
	Male Straight / Male 90	-	1080724	1080725	1080726	1080727	-	-	-	-	1295152/.../...
	Male Straight / Female Straight	-	1080742	1080743	1080744	1080745	-	-	-	-	1295161/.../...
	Male Straight / Female 90	-	1080751	1080752	1080753	1080754	-	-	-	-	1295164/.../...
	Male 90 / Male 90	-	1080720	1080721	1080722	1080723	-	-	-	-	1295153/.../...
	Male Straight / Rj45 Straignt	1440591	1407471	1407472	1407473	1407474	1440643	1440656	-	-	1408647/.../...
	Female Straight / Rj45 Straignt	-	1080733	1080734	1080736	1080737	-	-	-	-	1295157/.../...

M12 High-flex 600v Ethernet cordsets

Cable jacket: Teal TPE 80° C
Wire Gauge: 24AWG
Properties: 10 million / 20 million lateral bend cycles, 3 million torsional bend cycles,

Configuration		0.3 M	0.5 M	1 M	2 M	3 M	5 M	10 M	15 M	20 M	30 M	40 M	Configurable
M12 D-Code 	M12 Male Straight / Open End	-	-	-	1192174	-	1192173	1192172	1192171	1192170	1192169	1192168	1201754/.../...
	M12 Male 90° / Open End	-	-	-	1192167	-	1192166	1192165	-	-	-	-	1201755/.../...
	M12 Female Straight / Open End	-	-	-	1192164	-	1192161	1192159	-	-	-	-	1201757/.../...
	M12 Female 90° / Open End	-	-	-	1192158	-	1192157	1192156	-	-	-	-	1201753/.../...
	M12 Male Straight / M12 Male Straight	-	1192155	-	1192154	-	1192152	1192151	1192150	1192149	1192148	1192147	1201758/.../...
RJ45 	M12 Male Straight / M12 Female Straight	-	1192146	-	1192145	-	-	-	-	-	-	-	1201759/.../...
	M12 Male 90° / M12 Male 90°	-	1192144	-	1192143	-	-	-	-	-	-	-	1201760/.../...
	M12 Male 90° / M12 Female 90°	-	1192142	-	1192141	-	-	-	-	-	-	-	1201761/.../...
	M12 Male Straight / RJ45 Straight	-	1192140	-	1192139	-	1192138	1192137	1192136	1192135	1192134	1192133	1201762/.../...
	M12 Male 90° / RJ45 Straight	-	1192132	-	1192131	-	-	-	-	-	-	-	1201763/.../...
	RJ45 Straight / RJ45 Straight	1199417	1199415	1199413	1199412	1199411	1199410	1199408	1199405	1199404	-	-	-
M12 A-Code 	M12 Male Straight / Open End	-	-	-	1192130	-	1192129	1192128	1192126	1192124	1192123	1192122	1201764/.../...
	M12 Male 90° / Open End	-	-	-	1192121	-	1192120	1192119	-	-	-	-	1201765/.../...
	M12 Female Straight / Open End	-	-	-	1192118	-	1192117	1192116	-	-	-	-	1201766/.../...
	M12 Female 90° / Open End	-	-	-	1192115	-	1192114	1192113	-	-	-	-	1201767/.../...
	M12 Male Straight / M12 Male Straight	-	1192112	-	1192111	-	1192110	1192109	1192108	1192107	1192106	1192105	1201768/.../...
RJ45 	M12 Male Straight / M12 Female Straight	-	1192104	-	1192103	-	-	-	-	-	-	-	1201770/.../...
	M12 Male 90° / M12 Male 90°	-	1192102	-	1192101	-	-	-	-	-	-	-	1201771/.../...
	M12 Male 90° / M12 Female 90°	-	1192100	-	1192098	-	-	-	-	-	-	-	1201773/.../...
	M12 Male Straight / RJ45 Straight	-	1192096	-	1192095	-	1192094	1192093	1192092	1192091	1192090	1192089	1201774/.../...
	M12 Male 90° / RJ45 Straight	-	1192088	-	1192087	-	-	-	-	-	-	-	1201775/.../...
	RJ45 Straight / RJ45 Straight	1199422	1199427	1199426	1199425	1199424	1199423	1199421	1199420	1199418	-	-	-

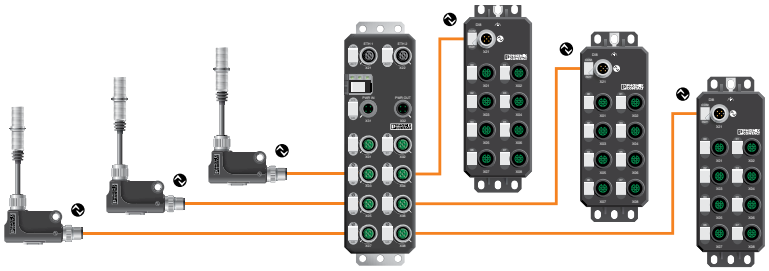
RJ45 Ethernet patch cables

		0.3m	0.5m	1m	1.5m	2m	3m	5m	7.5m	10m	12.5m	15m	20m
Teal PUR 	**CAT6**	1413158	1413159	1413160	-	1413161	1413162	1413163	-	1413164	-	1413165	1413166
	CAT5	1423032	1403926	1403927	-	1403929	1403930	1403933	-	1403934	-	1410797	1423033
White LSFROH 	**CAT6**	2891181	2891288	2891385	2891482	2891589	2891686	2891783	2891880	2891877	2891369	2891372	2891576
	CAT5	2832250	2832263	2832276	2832221	2832289	2832292	2832580	2832616	2832629	-	-	-

Ethernet panel feed-through solutions

	M12 to RJ45		M12 to M12		M12 with shielded cable			Cable gland
	Straight 	Angled 	Female to female 	Male to female 		Front mount 	Rear mount 	Plastic 
4-pos. D-Code 	1414398	1414397	1424326	-	2m	1405837	1405866	1076600
8-pos. A-Code 	1414396	1414393	-	1551697	2m	-	1412820	
					5m	-	1407877	
8-pos. X-Code 	1404549	1404548	-	-	0.5m	-	1424135	
					1m	-	1424148	
					2m	-	1424151	
					5m	-	1424164	

IP67 networking infrastructure



Axioline E provides an alternative to discrete wiring, or I/O collection using passive sensor boxes. The IP67 on-machine active network boxes collect I/O right at the device and put these signals onto the network (no need for each individual signal wire to run back to the controller). The bottom 8 ports are for plugging in your A-code sensor cables. The top two connections are for M12 D-code network connection. Finally, the middle set of connectors for T-code Power provide DC power to the device. Furthermore, installers can easily scale their system as I/O count increases using IO-Link devices for Axioline E. Extend the Axioline E IO-Link master with up to eight IO-Link devices to create an I/O station that supports modular extension, thereby enabling you to acquire or output distributed signals in your system or machine. This means that system planning is practically independent of the network. Axioline E offers an IO-Link master for all common networks – both in plastic and metal housing.

Unmanaged Ethernet switch

# Ports	Coding	Part #
5-Port 	M12 D-code	2700200

Axioline E I/O systems for EtherNet/IP™

Housing Material	16 digital inputs	16 digital configurable inputs/outputs 500mA	8 digital inputs 8 digital outputs 500 mA	8 digital inputs 4 digital outputs 2 A	8 IO-Link ports 4 digital inputs
Plastic 	-	2701494	2701492	-	2701496

Axioline E with IO-Link for I/O collection

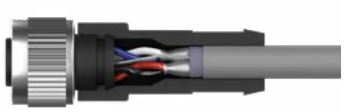
Purpose	IO-Link Master	16 digitial inputs	8 digital inputs	8 digital outputs
Master 	2701496	-	-	-
Slave 	-	2702660	2702658	2702659

Axioline E IO-Link/analog converters

Orientation	Analog input 4-20mA	Analog output 4-20mA	Analog input 0-10 V	Analog output 0-10 V	Analog input RTD
Straight 	2700338	2700351	2700336	2700350	2700352
Angled 	2700275	2700282	2700273	2700278	2700305

M12 DeviceNet™ cordsets (foil + drain)

Cable jacket: Gray PVC, 90°C
Wire Gauge: 22 AWG
Properties: PLTC/ITC rated, sunlight resistant



Design	Configuration	0.5 M	1.5 M	2 M	3 M	5 M	10 M	15 M	20 M	CMAT
5-pos. A-Code  	Female Straight / Open End	-	-	1405986	-	1405985	1405987	-	-	1405796/.../...
	Female 90° / Open End	-	-	1405983	-	1405982	1405984	-	-	1405795/.../...
	Male Straight / Open End	-	-	1405981	-	1405980	1405979	-	-	1405794/.../...
	Male 90° / Open End	-	-	1405978	-	1405977	1405976	-	-	1405793/.../...
	Male Straight / Female Straight	1405989	1405988	-	-	-	-	-	-	1405797/.../...
	Male Straight / Female 90°	1405991	1405990	-	-	-	-	-	-	1405799/.../...
	Male 90° / Female Straight	1405973	1405972	-	-	-	-	-	-	1405791/.../...
	Male 90° / Female 90°	1405975	1405974	-	-	-	-	-	-	1405792/.../...

M12 DeviceNet™ T-Distributors

	T-distributor, parallel wired	2 x M12 5-pos. female to M12 5-pos. male, mounting holes	1424712
		2 x M12 5-pos. female to M12 5-pos. male	1541186
		1 x M12 B-code 5-pos. female to M12 B-code 5-pos. male	1424713

	Terminating Resistors	Terminating resistor canopen/DeviceNet M12 A-code male	1507816
		Terminating resistor canopen/DeviceNet M12 A-code female	1529344
		Terminating resistor canopen/Devicenet M12 A-code male 150 ohm, pins 2 & 4	1536162

MINI 7/8" DeviceNet™ cordsets (foil + drain)

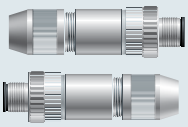
Cable jacket: Gray PVC, 90°C
Wire Gauge: Thick [U40] – 2x18 AWG (Data), 2x15AWG (Power), 1x18AWG (Drain)
Thin [U30] – 2x24 AWG (Data), 2x22 AWG (Power), 1x24AWG (Drain)
Properties: Sunlight resistant

# Wires	Shielding	Configuration	2 M	5 M	10 M	15 M	20 M
5-pos. A-Stand. 	DeviceNet™ Thick [U40] PVC	Female Straight / Open End	1416669	1416883	1416885	1416886	1416887
		Female 90° / Open End	1416668	1416879	1416880	1416881	1416882
		Male Straight / Open End	1416681	1416903	1416904	1416905	1416906
		Male 90° / Open End	1416675	1416896	1416898	1416899	1416902
		Male Straight / Female Straight	1416682	1416908	1416909	1416926	1416927
		Male 90° / Female Straight	1416673	1416892	1416893	1416894	1416895
		Male 90° / Female 90°	1416670	1416888	1416889	1416890	1416891
5-pos. A-Stand. 	DeviceNet™ Thin [U30] PVC	Female Straight / Open End	1416684	1416928	1416929	1416935	1416942
		Female 90° / Open End	1416683	1416875	1416876	1416877	1416878
		Male Straight / Open End	1416688	1416957	1416958	1416959	1416960
		Male 90° / Open End	1416687	1416953	1416954	1416955	1416956
		Male Straight / Female Straight	1416689	1416961	1416962	1416963	1416964
		Male 90° / Female Straight	1416686	1416947	1416948	1416950	1416951
		Male 90° / Female 90°	1416685	1416943	1416944	1416945	1416946

MINI 7/8" DeviceNet™ receptacles

# Wires	Configuration	Thick [U40]	Thin [U30]
5-pos A-code 	Male	1420959	1417776
	Female	1420961	1420960

M12 field-wired connectors for data applications

M12 connectors			Wire size range		Cable OD		Shielded (metal body) 				
Connection technology	Gender	Orientation	Max	Min	Min	Max	Ethernet 4-pos. D-Code	PROFINET 4-pos. D-Code	DeviceNet 5-pos. A-Code	Ethernet 8-pos. A-Code	CAT6A 8-pos. X-Code
Push-in 	Male	Straight	18 AWG	26 AWG	4 mm	8 mm	1726483	1424682	1424670 1072543*"	-	-
	Male	Angled	18 AWG	26 AWG	4 mm	8 mm	1726484	1424684	1424671 1072544*	-	-
	Female	Straight	18 AWG	26 AWG	4 mm	8 mm	1726485	1424683	1424672 1072545*	-	-
	Female	Angled	18 AWG	26 AWG	4 mm	8 mm	1726487	1424685	1424673 1072547*	-	-
QUICKON (IDC) 	Male	Straight	22 AWG	26 AWG	5 mm	9.7 mm	1411066	-	-	1421679	1411043
	Female	Straight	22 AWG	26 AWG	5 mm	9.7 mm	1411069	-	-	1421680	1414586
	Male	Straight	20 AWG	24 AWG	5 mm	9.7 mm	-	1411068	-	-	-
	Female	Straight	20 AWG	24 AWG	5 mm	9.7 mm	-	1411071	-	-	-
QUICKON (Door) 	Male	Straight	22 AWG	26 AWG	4 mm	8 mm	1543223	1554513	-	1543236	-
	Male	Angled	22 AWG	26 AWG	4 mm	8 mm	1553624	1554526	-	1553640	-
	Female	Straight	22 AWG	26 AWG	4 mm	8 mm	1553611	1554539	-	1553653	-
	Female	Angled	22 AWG	26 AWG	4 mm	8 mm	1553637	1554542	-	1553666	-
Crimp 	Male	Straight	22 AWG	26 AWG	6.5 mm	10 mm	-	-	-	-	1422844
	Male	Angled	22 AWG	26 AWG	6.5 mm	10 mm	-	-	-	-	1422845
	Male	Straight	18 AWG	22 AWG	4.5 mm	7.5 mm	-	1422846	-	-	-
	Male	Angled	18 AWG	22 AWG	4.5 mm	7.5 mm	-	1422847	-	-	-
	Female	Straight	18 AWG	22 AWG	4.5 mm	7.5 mm	-	1422848	-	-	-
	Female	Angled	18 AWG	22 AWG	4.5 mm	7.5 mm	-	1422849	-	-	-
Screw 	Male	Straight	18 AWG	24 AWG	4 mm	6 mm	1521258	-	-	-	-
	Male	Straight	18 AWG	24 AWG	6 mm	8 mm	1521261	-	1508352	-	-
	Female	Straight	18 AWG	24 AWG	6 mm	8 mm	-	-	1508365	-	-

* DeviceNet™ connectors 1012966-1012969 are unshielded, plastic body, metal coupling nut

** DeviceNet connector 1072543-1072547 are unshielded, plastic body, plastic coupling nut

Power connectivity



Connecting devices in the field involves a significant amount of signal or data transmission, but it all starts with power.

For many devices, space will be at a premium. With our MINI 7/8" and new M12 Power cordsets and connectors, it's easy to supply that power in compact and convenient packages. For power trunk lines, 1 3/8" and M23 cabling and T's are compatible with both MINI 7/8" and M12 Power for on-machine distribution.

Whether the need is for a legacy connection with traditional Inch connectors or if maximizing power while minimizing space is required using M12 Power, large, bulky power connectors are a thing of the past.



MINI 7/8"

An integral part of Phoenix Contact's mini power offering

If you are already using legacy MINI 7/8" type connectors, Phoenix Contact has you covered. Cordsets and connectors are UL Listed under E221474 and offered in several sizes:

- 14 AWG - STOOW TC-ER rated black PVC jacket for 600V power
- 16 AWG - STOOW rated yellow PVC jacket for 600 V signals
- 18 AWG - PLTC rated yellow PVC jacket for 300 V signals
- 15/18 AWG and 22/24 AWG – PLTC-ER gray PVC jacket for DeviceNet™

MINI 7/8" connectors supply power up to 15A and are available in three color coded schemes: IEC, US, and Automotive. While power transfer is in no small part the reason for using MINI 7/8" connectors, it's clear that it supports a range of signal and data transmissions as well.



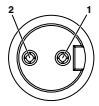
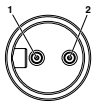
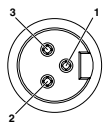
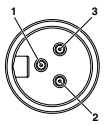
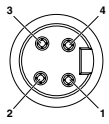
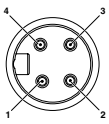
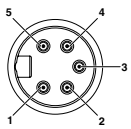
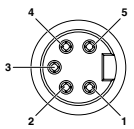
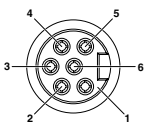
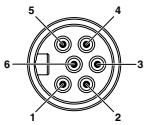
MINI 7/8" – 16 UNF cordsets and connectors

Our industry-compatible MINI 7/8" 16 UNF screw threaded connectors and cordset product range allows you to quickly connect sensors and switches as well as other devices in the field.



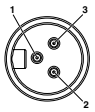
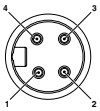
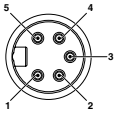
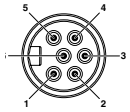
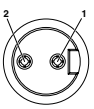
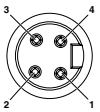
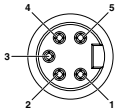
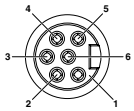


MINI 7/8"–16 UNF pinout and color chart

Connector		Series	Pos. 1	Pos. 2	Pos. 3	Pos. 4	Pos. 5	Pos. 6
		16 AWG signal	White	Black				
		18 AWG signal	Brown	Blue				
		14 AWG power	Green	Black	White			
		16 AWG signal	Green	Black	White			
		18 AWG signal	Black	Brown	Blue			
		14 AWG power	Black	White	Red	Green		
		16 AWG signal	Black	White	Red	Green		
		18 AWG signal	Brown	White	Blue	Black		
		16 AWG signal	White	Red	Green	Orange	Black	
		18 AWG signal	Black	Blue	Gray	Brown	White	
		16 AWG signal	White	Red	Green	Orange	Black	Blue
		18 AWG signal	Green	White	Blue	Gray	Yellow	Brown



MINI 7/8"–16 UNF technical information

		2P	3P		4P		5P	6P
	Male pinout							
	Female pinout							
UL Approval	Test Standard	UL2238	UL2238	UL2237	UL2238	UL2237	UL2238	UL2238
	File	E221474	E221474	E468743	E221474	E468743	E221474	E221474
18AWG	Cable OD	5.33mm	5.7mm	-	6.0mm	-	6.6mm	7.29mm
Cable Type 547	Current	13A	13A	-	10A	-	8A	8A
Yellow PVC, ITC/PLTC	Voltage	300V	300V	-	300V	-	300V	300V
16AWG	Cable OD	9.4mm	10.4mm	-	10.7mm	-	12.7mm	13.7mm
Cable Type U20	Current	13A	13A	-	10A	-	8A	8A
Yellow PVC, STOOW	Voltage	600V	600V	-	600V	-	600V	600V
14AWG	Cable OD	-	14.53mm	-	15.7mm	-	-	-
Cable Type U50	Current	-	23.5A	7A	24A	7A	-	-
Black PVC, TC-ER, STOOW	Voltage	-	600V	600V	600V	600V	-	-

MINI 7/8"-16UNF cordsets

Cable jacket: Yellow PVC
Wire Gauge: 18 AWG and 16 AWG
Properties: IP68, UL Listed under E221474 per UL2238



		18 AWG, [547] PVC				16 AWG, [U20] PVC			
# Wires	Configuration	1 m	2 m	5 m	10 m	1 m	2 m	5 m	10 m
2-pos. 	Female Straight / Open End	1416456	1416520	1416521	1416522	1416495	1416755	1416756	1416757
	Female 90° / Open End	1416455	1416516	1416518	1416519	1416494	1416752	1416753	1416754
	Male Straight / Open End	1416462	1416536	1416537	1416539	1416500	1416767	1416768	1416769
	Male 90° / Open End	1416461	1416532	1416533	1416535	1416498	1416764	1416765	1416766
	Male Straight / Female Straight	1416463	1416542	1416544	1416545	1416501	1416770	1416771	1416772
	Male 90° / Female Straight	1416459	1416528	1416529	1416531	1416497	1416761	1416762	1416763
	Male 90° / Female 90°	1416458	1416523	1416524	1416526	1416496	1416758	1416759	1416760
3-pos. 	Female Straight / Open End	1416465	1416549	1416550	1416552	1416508	1416776	1416777	1416778
	Female 90° / Open End	1416464	1416546	1416547	1416548	1416507	1416773	1416774	1416775
	Male Straight / Open End	1416469	1416572	1416573	1416577	1416514	1416788	1416789	1416791
	Male 90° / Open End	1416468	1416564	1416566	1416568	1416513	1416785	1416786	1416787
	Male Straight / Female Straight	1416470	1416581	1416587	1416588	1416517	1416792	1416793	1416794
	Male 90° / Female Straight	1416467	1416560	1416561	1416563	1416511	1416782	1416783	1416784
	Male 90° / Female 90°	1416466	1416555	1416557	1416558	1416510	1416779	1416780	1416781
4-pos. 	Female Straight / Open End	1416472	1416601	1416603	1416604	1416530	1416798	1416799	1416800
	Female 90° / Open End	1416471	1416589	1416590	1416600	1416527	1416795	1416796	1416797
	Male Straight / Open End	1416477	1416618	1416621	1416623	1416551	1416810	1416811	1416812
	Male 90° / Open End	1416476	1416614	1416616	1416617	1416543	1416809	1416807	1416808
	Male Straight / Female Straight	1416478	1416625	1416626	1416627	1416553	1416814	1416815	1416816
	Male 90° / Female Straight	1416475	1416610	1416612	1416613	1416540	1416804	1416805	1416806
	Male 90° / Female 90°	1416474	1416605	1416608	1416609	1416534	1416801	1416802	1416803
5-pos. 	Female Straight / Open End	1416480	1416631	1416632	1416633	1416559	1416820	1416821	1416822
	Female 90° / Open End	1416479	1416628	1416629	1416630	1416556	1416817	1416818	1416819
	Male Straight / Open End	1416484	1416644	1416645	1416646	1416580	1416833	1416834	1416835
	Male 90° / Open End	1416483	1416641	1416642	1416643	1416569	1416830	1416831	1416832
	Male Straight / Female Straight	1416485	1416647	1416649	1416650	1416586	1416836	1416837	1416838
	Male 90° / Female Straight	1416482	1416638	1416639	1416640	1416565	1416827	1416828	1416829
	Male 90° / Female 90°	1416481	1416634	1416636	1416637	1416562	1416823	1416824	1416825
6-pos. 	Female Straight / Open End	1416488	1416655	1416656	1416657	1416602	1416844	1416845	1416846
	Female 90° / Open End	1416487	1416652	1416653	1416654	1416591	1416840	1416841	1416843
	Male Straight / Open End	1416492	1416671	1416672	1416674	1416620	1416857	1416858	1416859
	Male 90° / Open End	1416491	1416665	1416666	1416667	1416615	1416853	1416854	1416856
	Male Straight / Female Straight	1416493	1416678	1416676	1416679	1416624	1416860	1416861	1416862
	Male 90° / Female Straight	1416490	1416661	1416662	1416663	1416611	1416850	1416851	1416852
	Male 90° / Female 90°	1416489	1416658	1416659	1416660	1416607	1416847	1416848	1416849

MINI 7/8"-16UNF cordsets

Cable jacket: Gray PVC
Wire Gauge: 14 AWG
Properties: IP68, UL Listed under E468743 per UL2237



		14 AWG, PVC [U50]			
# Wires	Configuration	1 m	2 m	5 m	10 m
3-pos. 	Female Straight / Open End	1417097	1417098	1417099	1417101
	Female 90° / Open End	1417093	1417094	1417095	1417096
	Male Straight / Open End	1417115	1417116	1417117	1417118
	Male 90° / Open End	1417110	1417111	1417112	1417114
	Male Straight / Female Straight	1417119	1417120	1417121	1417122
	Male 90° / Female Straight	1417106	1417107	1417108	1417109
	Male 90° / Female 90°	1417102	1417103	1417104	1417105
4-pos. 	Female Straight / Open End	1417127	1417128	1417129	1417130
	Female 90° / Open End	1417123	1417124	1417125	1417126
	Male Straight / Open End	1417145	1417146	1417147	1417148
	Male 90° / Open End	1417140	1417141	1417143	1417144
	Male Straight / Female Straight	1417149	1417150	1417151	1417152
	Male 90° / Female Straight	1417135	1417136	1417137	1417138
	Male 90° / Female 90°	1417131	1417132	1417133	1417134

1/2" NPT MINI 7/8" receptacles

Cable: PVC Litz Wires, 1 meter
Wire Gauge: 18 AWG and 16 AWG
Properties: IP68, UL Listed under E221474 per UL2238



# Wires	Image	Configuration	18 AWG [547]	16 AWG [U20]
2-pos.		Male	1417763	1417768
		Female	1420947	1420952
3-pos.		Male	1417764	1417769
		Female	1420948	1420953
4-pos.		Male	1417765	1417770
		Female	1420949	1420954
5-pos.		Male	1417766	1417771
		Female	1420950	1420955
6-pos.		Male	1417767	1417772
		Female	1420951	1420956

1/2" NPT MINI 7/8" receptacles

Cable: PVC Litz Wires, 1 meter
Wire Gauge: 14 AWG
Properties: IP68, UL Listed under E468743 per UL2237



# Wires	Image	Configuration	14 AWG [U50]
3-pos. A-code		Male	1417774
		Female	1420957
4-pos. A-code		Male	1417775
		Female	1420958

Accessories for NPT receptacles

O-ring		Not required for NPT thread sealing. Add if using with panel cutout.	1020363
Locknut		Not required for NPT thread mounting. Add if using with panel cutout.	1020362

7/8" field-wired connectors

	Configuration	Termination	Positions	Shielded	Order No.	Descriptor	Cable OD	Wire	Current	Voltage
	Pin Straight	Screw	3	No	1559240	PDCC-MINMS-3CON	8-17mm	14 AWG	18 A	600 V
								16 AWG	13 A	
								18 AWG	10 A	
								20-22 AWG	4 A	
	Socket Straight	Screw	3	No	1559241	PDCC-MINFS-3CON	8-17mm	14 AWG	18 A	600 V
								16 AWG	13 A	
								18 AWG	10 A	
								20-22 AWG	4 A	
	Pin Straight	Screw	4	No	1559242	PDCC-MINMS-4CON	8-17mm	14 AWG	15 A	600 V
								16 AWG	10 A	
								18 AWG	8 A	
								20-22 AWG	4 A	
	Socket Straight	Screw	4	No	1559243	PDCC-MINFS-4CON	8-17mm	14 AWG	15 A	600 V
								16 AWG	10 A	
								18 AWG	8 A	
								20-22 AWG	4 A	
	Pin Straight	Screw	5	No	1559244	PDCC-MINMS-5CON	8-17mm	14 AWG	12 A	600 V
								16 AWG	8 A	
								18 AWG	5.5 A	
								20-22 AWG	4 A	
	Socket Straight	Screw	5	No	1559245	PDCC-MINFS-5CON	8-17mm	14 AWG	12 A	600 V
								16 AWG	8 A	
								18 AWG	5.5 A	
								20-22 AWG	4 A	
	Pin Straight	Screw	6	No	1559247	PDCC-MINMS-6CON	8-17mm	16 AWG	8 A	600 V
								18 AWG	5.5 A	
								20-22 AWG	4 A	
	Socket Straight	Screw	6	No	1559248	PDCC-MINFS-6CON	8-17mm	16 AWG	8 A	600 V
								18 AWG	5.5 A	
								20-22 AWG	4 A	

7/8" T-distributors

	PN	Descriptor	Positions	Trunk				Tap		
				Pin	Socket	Current	Voltage	Socket	Current	Voltage
	1351104	SAC-3P-MINT/2XMIN VP US	3	7/8"	7/8"	13 A	600 V	7/8"	13A	600 V
	1351105	SAC-4P-MINT/2XMIN VP US	4	7/8"	7/8"	10 A	600 V	7/8"	10A	600 V
	1351106	SAC-5P-MINT/2XMIN VP US	5	7/8"	7/8"	8 A	600 V	7/8"	8A	600 V

7/8" accessories

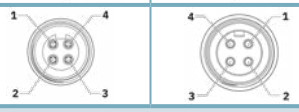
	Order No.	Type	Item Description
	1410604	PROT-MINMS-PA	Screw plug for socket connectors - loose
	1410605	PROT-MINFS-PA	Sealing cap for pin connectors - loose
	1430912	PROT-MINFS-PA-CHAIN	Screw plug for socket connectors - with lanyard
	1430925	PROT-MINMS-PA-CHAIN	Sealing cap for pin connectors - with lanyard
	1020363	SACC-MIN-SEAL	Sealing O-ring for panel receptacles
	1020362	SACC-1/2 NPT-LOCKNUT	Locknut for panel receptacles

1-3/8" power distribution

Our 1/3-8" cordsets, connectors and receptacles allow for industry standard power distribution trunk lines. When paired with the T-distributors up to 30A trunk lines can drop to 15A taps with our MINI 7/8" products.



1-3/8" Pinout and color chart

Connector	Series	Pos. 1	Pos. 2	Pos. 3	Pos. 4
	10 AWG power	Black	Green	White	
	10 AWG power	Black	Green	Red	White

1-3/8" Cordsets technical specs

Positions		3P	4P
	Male pinout		
	Female pinout		
Power - 10 AWG	Cable OD	9.1mm	10.7mm
Cable Type U80	Current	30A	25A
Black TPE, TC-ER	Voltage	600V	600V

1-3/8" cordsets technical specs

	Black TPE, 10AWG					
	# Wires	Configuration	1 m	2 m	5 m	10 m
	3-pos. 	Female Straight / Open End	1423180	1423181	1423182	1423183
		Female 90° / Open End	1423188	1423189	1423190	1423191
		Male Straight / Open End	1423176	1423177	1423178	1423179
		Male 90° / Open End	1423184	1423185	1423186	1423187
		Male Straight / Female Straight	1423192	1423193	1423194	1423195
		Male Straight / Female 90°	1423200	1423201	1423202	1423203
		Male 90° / Female Straight	1423205	1423206	1423207	1423208
		Male 90° / Female 90°	1423196	1423197	1423198	1423199
	4-pos. 	Female Straight / Open End	1423271	1423272	1430393	1423273
		Female 90° / Open End	1423267	1423268	1423269	1423270
		Male Straight / Open End	1423286	1423287	1423288	1423289
		Male 90° / Open End	1423282	1423283	1423284	1423285
		Male Straight / Female Straight	1423290	1430392	1423291	1423292
		Male Straight / Female 90°	1423305	1423306	1423307	1423308
		Male 90° / Female Straight	1423278	1423279	1423280	1423281
		Male 90° / Female 90°	1423274	1423275	1423276	1423277

1-3/8" receptacles

Image	Mounting Thread			
	# Wires	Configuration	NPT 1/2"	NPT 3/4"
	3-pos. A-code	Male	1423150	1423151
		Female	1423152	1423153
	4-pos. A-code	Male	1423154	1423155
		Femaile	1423156	1423157

1-3/8" T-distributors

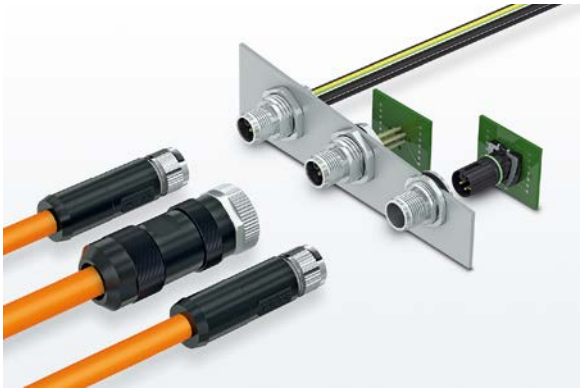
Image				Trunk				Drop		
	PN	Descriptor	Positions	Pin	Socket	Current	Voltage	Socket	Current	Voltage
	1527830	PDC-3PT-138MS-FS/MINFS	2+PE	1-3/8"	1-3/8"	15A	600 V	7/8"	15A	600 V
	1527831	PDC-4PT-138MS-FS/MINFS	3+PE	1-3/8"	1-3/8"	15A	600 V	7/8"	15A	600 V

1-3/8" field-wired connectors

Configuration		Termination	Positions	Shielded	Article No.	Descriptor	TC-ER Cable OD	Wire	Current	Voltage
	Male Straight	Screw	3	No	1559235	PDCC-138MS-3CON	12-13mm	10 AWG	45A	600 VAC
								12 AWG	35A	
								14 AWG	30A	
	Female Straight	Screw	3	No	1559236	PDCC-138FS-3CON	12-13mm	10 AWG	45A	600 VAC
								12 AWG	35A	
								14 AWG	30A	
	Male Straight	Screw	4	No	1559238	PDCC-138MS-4CON	12-13mm	10 AWG	40A	600 VAC
								12 AWG	30A	
								14 AWG	24A	
	Female Straight	Screw	4	No	1559239	PDCC-138FS-4CON	12-13mm	10 AWG	40A	600 VAC
								12 AWG	30A	
								14 AWG	24A	

M12 Power cordsets and connectors

There has been a push for new power solutions in a more compact design, and Phoenix Contact has answered this call with M12 Power. As part of the overall MINI Power offering, higher power requirements can now be delivered in a compact size under a global standard form factor. It wasn't easy, but Phoenix Contact has blazed the path forward in a multitude of ways:



- Phoenix Contact has been the driving force behind the creation of IEC 61076-2-111, a sub-section of the IEC standard devoted to M12 Power connections.
- UL Listed (E468743) and first to test under UL2237 for power connections. All others began with testing under UL1977 or UL2238, both primarily written for testing signal and data transmissions.
- Responsible for the development of new Advanced Shielding Technology (AST). This is not only the innovation that led to passing UL2237, but it also provides a true 360° shielding to protect nearby signal and data transmissions.



Advanced Shielding Technology

Advanced Shielding Technology (AST) from Phoenix Contact is an innovative shielding concept for sensor/actuator cabling. The comprehensive, positive 360° shield connection is unique on the market and optimizes the current design of M8 and M12 connectors.

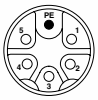
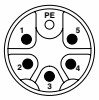
Totally protected – even under extreme environmental influences
Liquid metal that completely encloses the cable shielding during the manufacturing process guarantees a totally protected shield connection and thus enables the reliable and interference-free transmission of data, signals, and power in future factory automation.

By opting for Advanced Shielding Technology, you are investing in future-proof cabling.

Advanced Shielding Technology
Designed by PHOENIX CONTACT

- Reliable at high mechanical loads such as shock and vibration
- Resistant to transient overvoltages caused by the switching processes of inductive loads
- Minimal generation of heat and secure current flow in the event of a short circuit
- Future-proof transmission of high data volumes and continuously increasing transmission rates in an environment subject to high electromagnetic loads
- Robust even when exposed to extreme environmental influences such as lightning strike

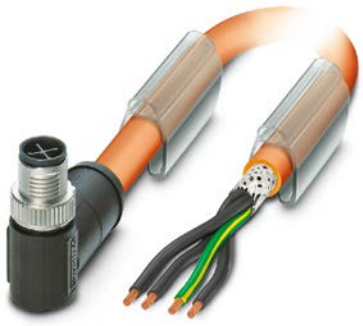
M12 Power technical information

Connector		M12-coding	Positions	Wire gauge	UL rated current	UL rated voltage
 Female	 Male	S	2+PE	16 AWG	12A	300VAC
				14 AWG	16A	600VAC
 Female	 Male	S	3+PE	16 AWG	12A	600VAC
				14 AWG	16A	600VAC
 Female	 Male	K	4+PE	14 AWG	16A	600VAC
 Female	 Male	M	5+PE	16 AWG	10A	600VAC
 Female	 Male	T	4	16 AWG	12A	60VDC
				14 AWG	16A	63VDC
 Female 4-pos.	 Male 4 pos.	L	4	16 AWG	12A	63VDC
				14 AWG	16A	63VDC
 Female 4+FE	 Male 4+FE	L	4+FE	16 AWG	12A	63VDC
				14 AWG	16A	63VDC



M12 Power cordsets and connectors – AC power

AC power can be connected under any of three different codings: S, K, or M. S-coding has two variations, one allowing for positive and negative lines, plus a PE (Protected Earth) contact. The version with 3pos plus PE contact is for wiring a 3-Phase device (like a Delta system), and can carry 12A/600V.



K-code adds an additional neutral line over top of S-code to allow for wiring Wye systems. At the same time, the wire gauge has been increased from 16AWG to 14AWG to realize a 16A and 600VAC capacity.



M-code adds yet one more line over K-code for the additional of a brake or auxiliary line for motors. With the additional lines, this coding is rated for 8A and 600VAC.

M12 Power – AC power pinout and color chart

Connector		Series	Pos. 1	Pos. 2	Pos. 3	Pos. 4	Pos. 5	Pos. 6	Cable shield
 Female, 3-pos, S-coded	 Male, 3-pos, S-coded	Unshielded	Black (1)	Black (2)	Green / Yellow	-	-	-	-
		TC-ER Unshielded	Black (1)	White	Green / Yellow	-	-	-	-
 Female, 4-pos, S-coded	 Male, 4-pos, S-coded	Unshielded	Black (1)	Black (2)	Black (3)	Green / Yellow	-	-	-
		TC-ER Unshielded	Black (1)	White	Red	Green / Yellow	-	-	-
		Braided Shield with AST	Black (1)	Black (2)	Black (2)	Green / Yellow	-	-	AST to Coupling Nut and PE pin
		TC-ER Braided Shield with AST	Black (1)	White	Red	Green / Yellow	-	-	AST to Coupling Nut and PE pin
 Female, 5-pos, K-coded	 Male, 5-pos, K-coded	Unshielded	Black (1)	Black (2)	Black (2)		Green / Yellow	-	-
		TC-ER Unshielded	Black (1)	White	Red		Green / Yellow	-	-
		Braided Shield with AST	Black (1)	Black (2)	Black (2)		Green / Yellow	-	AST to Coupling Nut and PE pin
		TC-ER Braided Shield with AST	Black (1)	White	Red		Green / Yellow	-	AST to Coupling Nut and PE pin
 Female, 6-pos, M-coded	 Male, 6-pos, M-coded	Unshielded	Black (1)	Black (2)	Black (3)	Black (4)	Black (5)	Green / Yellow	-
		Braided Shield with AST	Black (1)	Black (2)	Black (3)	Black (4)	Black (5)	Green / Yellow	AST to Coupling Nut and PE pin

*Note: Cables with multiple black wires are continuously marked with the appropriate number (i.e., BK1 is coninually marked "1" in white print, BK2 with "2", etc.)

M12 Power cordsets – S-code

Properties: IP67, UL2237 rated

S-Code: 3pos (2+PE) Non-shielded													
Configuration		TC-ER Rated	Wire	0.5 m	1.0 m	1.5 m	2.0 m	3.0 m	5.0 m	10.0 m	20.0 m	CMAT	
												Base Article	Cable
	Socket Straight / Open End	No	16 AWG	-	-	-	-	-	-	-	-	1276645/…/…	PUR
				-	1411644	-	1411645	-	-	1411646	1411647		PVC
		Yes	14 AWG	-	-	-	-	-	-	1291425	-	1290804/…/…	U60
	Socket 90° / Open End	No	16 AWG	-	-	-	-	-	-	-	-	1276644/…/…	PUR
				-	1411648	-	1411649	-	-	1411650	1411651		PVC
		Yes	14 AWG	-	-	-	-	-	-	1291421	-	1290810/…/…	U60
	Pin Straight / Open End	No	16 AWG	-	-	-	-	-	-	-	-	1276647/…/…	PUR
				-	1411636	-	1411637	-	-	1411638	1411639		PVC
		Yes	14 AWG	-	-	-	-	-	-	1291427	-	1290796/…/…	U60
	Pin 90° / Open End	No	16 AWG	-	-	-	-	-	-	-	-	1276646/…/…	PUR
				-	1411640	-	1411641	-	-	1411642	1411643		PVC
		Yes	14 AWG	-	-	-	-	-	-	1291423	-	1290808/…/…	U60
	Pin Straight / Socket Straight	No	16 AWG	-	-	-	-	-	-	-	-	1276643/…/…	PUR
				-	-	-	-	-	-	-	1014534		PVC
		Yes	14 AWG	1291419	1291418	1291417	1291416	1291415	1291414	1291413	1291412	1290812/…/…	U60
	Pin Straight / Socket 90°	No	16 AWG	-	-	-	-	-	-	-	-	1276642/…/…	PUR
				-	-	-	-	-	-	-	-		PVC
	Pin 90° / Socket Straight	No	16 AWG	-	-	-	-	-	-	-	-	1276641/…/…	PUR
				-	-	-	-	-	-	-	-		PVC
	Pin 90° / Socket 90°	No	16 AWG	-	-	-	-	-	-	-	-	1276640/…/…	PUR
				-	-	-	-	-	-	-	-		PVC
		Yes	14 AWG	-	1291410	-	1291409	-	1291408	-	-	1290813/…/…	U60

Highlighted green indicates U.S. Production – Speedy Transaction
U60 TC-ER cable assemblies are part of the North American Speedy Transaction

M12 Power cordsets – S-code

Properties: IP67, UL2237 rated

S-Code: 4pos (3+PE)														
Configuration	Shielded	Cable	TC-ER Rated	Wire	0.5 m	1.0 m	1.5 m	2.0 m	2.5 m	3.0 m	5.0 m	10.0 m	CMAT	
													Base Article	Cable Code
Socket Straight / Open End 	No	Black PUR	No	16 AWG	-	1408843	-	1408844	-	-	1408845	1408846	1276637/.../...	PUR
				14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	Yes	14 AWG	-	-	-	-	-	-	1291404	-	1292074/.../...	U60
	Yes	Orange PUR	No	16 AWG	-	-	1424096	-	-	1424097	1424098	1424099	1276629/.../...	PUR
		Black PVC	Yes	14 AWG	-	-	-	-	-	-	1291383	-	1292086/.../...	U60
Socket 90° / Open End  	No	Black PUR	No	16 AWG	-	1408848	-	1408852	-	-	1408853	1408854	1276635/.../...	PUR
				14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	Yes	14 AWG	-	-	-	-	-	-	1291400	-	1292077/.../...	U60
	Yes	Orange PUR	No	16 AWG	-	-	1424100	-	-	1424101	1424102	1424103	1276628/.../...	PUR
		Black PVC	Yes	14 AWG	-	-	-	-	-	-	1291379	-	1292089/.../...	U60
Pin Straight / Open End  	No	Black PUR	No	16 AWG	-	1408835	-	1408836	-	-	1408837	1408838	1276639/.../...	PUR
				14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	Yes		-	-	-	-	-	-	1291406	-	1292073/.../...	U60
	Yes	Orange PUR	No	16 AWG	-	-	1424104	-	-	1424105	1424245	1424107	1276631/.../...	PUR
		Black PVC	Yes	14 AWG	-	-	-	-	-	-	1291385	-	1292085/.../...	U60
Pin 90° / Open End  	No	Black PUR	No	16 AWG	-	1408839	-	1408840	-	-	1408841	1408842	1276638/.../...	PUR
				14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	Yes	14 AWG	-	-	-	-	-	-	1291402	-	1292075/.../...	U60
	Yes	Orange PUR	No	16 AWG	-	-	1424108	-	-	1424109	1424110	1424111	1276630/.../...	PUR
		Black PVC	Yes	14 AWG	-	-	-	-	-	-	1291381	-	1292087/.../...	U60
Pin Straight / Socket Straight 	No	Black PUR	No	16 AWG	-	-	-	-	-	1417581	-	-	1276636/.../...	PUR
				14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	Yes	14 AWG	1291398	1291397	1291396	1291395	1291394	1291393	1291392	1291391	1292079/.../...	U60
	Yes	Orange PUR	No	16 AWG	-	-	-	-	-	1423650	-	1423664	1276627/.../...	PUR
		Black PVC	Yes	14 AWG	-	-	-	1291377	-	-	1291376	1291375	1292090/.../...	U60
Pin Straight / Socket 90° 	No	Black PUR	No	16 AWG	-	-	-	-	-	-	-	-	1276634/.../...	PUR
				14 AWG	-	-	-	-	-	-	-	-		125
	Yes	Orange PUR	No	16 AWG	-	-	-	-	-	-	-	-	1276626/.../...	PUR
Pin 90° / Socket Straight 	No	Black PUR	No	16 AWG	-	-	-	-	-	-	-	-	1276633/.../...	PUR
				14 AWG	-	-	-	-	-	-	-	-		125
	Yes	Orange PUR	No	16 AWG	-	-	-	-	-	-	-	-	1276625/.../...	PUR
Pin 90° / Socket 90° 	No	Black PUR	No	16 AWG	-	-	-	-	-	-	-	-	1276632/.../...	PUR
				14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	Yes	14 AWG	-	1291389	-	1291388	-	1291387	-	-	1292081/.../...	U60
	Yes	Orange PUR	No	16 AWG	-	-	-	-	-	-	-	-	1276624/.../...	PUR
		Black PVC	Yes	14 AWG	-	-	-	-	-	-	-	-	1292092/.../...	U60

Highlighted green indicates U.S. Production – Speedy Transaction

U60 TC-ER cable assemblies are part of the North American Speedy Transaction

M12 Power cordsets – K-code

Properties: IP67, UL2237 rated

K-Code: 5pos (4+PE)												
Configuration		Shielded	Cable	TC-ER Rated	Wire	1.5 m	2.0 m	3.0 m	5.0 m	10.0 m	CMAT	
											Base Article	Cable Code
	Socket Straight / Open End	No	Black PUR	No	14 AWG	1414770	-	1414788	1414804	1414821	1276603/…/…	PUR
			Black PVC		14 AWG	1414780	-	1414796	1414812	1414829		PVC
				Yes	14 AWG	-	-	-	1291370	-	1292098/…/…	U60
		Yes	Orange PUR	No	14 AWG	1414771	-	1414789	1414805	1414822	1276595/…/…	PUR
			Black PVC	Yes	14 AWG	-	-	-	1291356	-	1292105/…/…	U60
	Socket 90° / Open End	No	Black PUR	No	14 AWG	1414766	-	1414784	1414800	1414817	1276602/…/…	PUR
			Black PVC		14 AWG	1414774	-	1414792	1414808	1414825		PVC
				Yes	14 AWG	-	-	-	1291366	-	1292100/…/…	U60
		Yes	Orange PUR	No	14 AWG	1414767	-	1414785	1414801	1414818	1276593/…/…	PUR
			Black PVC	Yes	14 AWG	-	-	-	1291352	-	1292110/…/…	U60
	Pin Straight / Open End	No	Black PUR	No	14 AWG	1414866	-	1414870	1414875	1414879	1276606/…/…	PUR
			Black PVC		14 AWG	1414868	-	1414872	1414877	1414881		PVC
				Yes	14 AWG	-	-	-	1291372	-	1292096/…/…	U60
		Yes	Orange PUR	No	14 AWG	1414867	-	1414871	1414876	1414880	1276597/…/…	PUR
			Black PVC	Yes	14 AWG	-	-	-	1291359	-	1292104/…/…	U60
	Pin 90° / Open End	No	Black PUR	No	14 AWG	1414833	-	1414837	1414841	1414846	1276604/…/…	PUR
			Black PVC		14 AWG	1414835	-	1414839	1414843	1414848		PVC
				Yes	14 AWG	-	-	-	1291368	-	1292099/…/…	U60
		Yes	Orange PUR	No	14 AWG	1414834	-	1414838	1414842	1414847	1276596/…/…	PUR
			Black PVC	Yes	14 AWG	-	-	-	1291354	-	1292106/…/…	U60
	Pin Straight / Socket Straight	No	Black PUR	No	14 AWG	-	-	-	-	-	1276601/…/…	PUR
			Black PVC		14 AWG	-	-	-	-	-		PVC
				Yes	14 AWG	-	1291364	-	1291363	1291362	1292101/…/…	U60
		Yes	Orange PUR	No	14 AWG	-	-	-	-	-	1276592/…/…	PUR
			Black PVC	Yes	14 AWG	-	1291350	-	1291349	1291348	1292111/…/…	U60
	Pin Straight / Socket 90°	No	Black PUR	No	14 AWG	-	-	-	-	-	1276600/…/…	PUR
			Black PVC		14 AWG	-	-	-	-	-		PVC
		Yes	Orange PUR	No	14 AWG	-	-	-	-	-	1276591/…/…	PUR
	Pin 90° / Socket Straight	No	Black PUR	No	14 AWG	-	-	-	-	-	1276599/…/…	PUR
			Black PVC		14 AWG	-	-	-	-	-		PVC
		Yes	Orange PUR	No	14 AWG	-	-	-	-	-	1276590/…/…	PUR
	Pin 90° / Socket 90°	No	Black PUR	No	14 AWG	-	-	-	-	-	1276598/…/…	PUR
			Black PVC		14 AWG	-	-	-	-	-		PVC
				Yes	14 AWG	-	-	-	-	-	1292102/…/…	U60
		Yes	Orange PUR	No	14 AWG	-	-	-	-	-	1276589/…/…	PUR
			Black PVC	Yes	14 AWG	-	-	-	-	-	1292112/…/…	U60

Highlighted green indicates U.S. Production – Speedy Transaction

U60 TC-ER cable assemblies are part of the North American Speedy Transaction

M12 Power cordsets – M-code

Properties: IP67, UL2237 rated

M-Code: 6pos (5+PE)											
Configuration		Shielded	Cable	TC-ER Rated	Wire	1.5 m	3.0 m	5.0 m	10.0 m	CMAT	
										Base Article	Cable Code
	Socket Straight / Open End	No	Black PUR	No	16 AWG	1414901	1414910	1414918	1414926	1276553/.../...	PUR
			Black PVC		16 AWG	1414905	1414914	1414922	1414930		PVC
		Yes	Orange PUR	No	16 AWG	1414902	1414911	1414919	1414927	1276545/.../...	PUR
			Orange PVC		16 AWG	1414906	1414915	1414923	1414931		PVC
	Socket 90° / Open End	No	Black PUR	No	16 AWG	1414899	1414907	1414916	1414924	1276552/.../...	PUR
			Black PVC		16 AWG	1414903	1414912	1414920	1414928		PVC
		Yes	Orange PUR	No	16 AWG	1414900	1414908	1414917	1414925	1276544/.../...	PUR
			Orange PVC		16 AWG	1414904	1414913	1414921	1414929		PVC
	Pin Straight / Open End	No	Black PUR	No	16 AWG	1414949	1414953	1414957	1414961	1276555/.../...	PUR
			Black PVC		16 AWG	1414951	1414955	1414959	1414963		PVC
		Yes	Orange PUR	No	16 AWG	1414950	1414954	1414958	1414962	1276547/.../...	PUR
			Orange PVC		16 AWG	1414952	1414956	1414960	1414964		PVC
	Pin 90° / Open End	No	Black PUR	No	16 AWG	1414932	1414936	1414941	1414945	1276554/.../...	PUR
			Black PVC		16 AWG	1414934	1414939	1414943	1414947		PVC
		Yes	Orange PUR	No	16 AWG	1414933	1414937	1414942	1414946	1276546/.../...	PUR
			Orange PVC		16 AWG	1414935	1414940	1414944	1414948		PVC
	Pin Straight / Socket Straight	No	Black PUR	No	16 AWG	-	-	-	-	1276551/.../...	PUR
			Black PVC		16 AWG	-	-	-	-		PVC
		Yes	Orange PUR	No	16 AWG	-	-	-	-	1276541/.../...	PUR
			Orange PVC		16 AWG	-	-	-	-		PVC
	Pin Straight / Socket 90°	No	Black PUR	No	16 AWG	-	-	-	-	1276550/.../...	PUR
			Black PVC		16 AWG	-	-	-	-		PVC
		Yes	Orange PUR	No	16 AWG	-	-	-	-	1276542/.../...	PUR
			Orange PVC		16 AWG	-	-	-	-		PVC
	Pin 90° / Socket Straight	No	Black PUR	No	16 AWG	-	-	-	-	1276549/.../...	PUR
			Black PVC		16 AWG	-	-	-	-		PVC
		Yes	Orange PUR	No	16 AWG	-	-	-	-	1266798/.../...	PUR
			Orange PVC		16 AWG	-	-	-	-		PVC
	Pin 90° / Socket 90°	No	Black PUR	No	16 AWG	-	-	-	-	1276548/.../...	PUR
			Black PVC		16 AWG	-	-	-	-		PVC
		Yes Yes	Orange PUR	No	16 AWG	-	-	-	-	1265022/.../...	PUR
			Orange PVC		16 AWG	-	-	-	-		PVC

M12 Power receptacles – S-code

Panel Mount Thread = 16 mm



Configuration		Design	Mounting	AWG	0.5 m	1.0 m	1.5 m	2.0 m	2.5 m	3.0 m	Locknut
2+PE S-code 	Male	XL	Front	14 AWG	1322567	1329910	-	1329912	-	-	1504097
		Standard	Front	16 AWG	1411655	-	1068167	-	-	-	1504097
			Rear	16 AWG	1411653	1162589	1162590	-	1051347	-	-
	Female	XL	Front	14 AWG	1329908	1329911	-	1329913	-	-	1504097
		Standard	Front	16 AWG	1411654	-	-	-	-	1056209	1504097
			Rear	16 AWG	1411652	1162597	1162598	-	-	-	-
3+PE S-code 	Male	XL	Front	14 AWG	1329914	1329918	-	1329920	-	-	1504097
				16 AWG	1411607	-	-	-	-	-	1504097
			Rear	16 AWG	1411603	1108623	1162623	-	-	-	Included
		Standard	Front	16 AWG	1424139	1037070	-	-	-	-	1504097
			Rear	16 AWG	1424132	-	-	-	-	-	Included
	Female	XL	Front	14 AWG	1329917	1329919		1329923	-	-	1504097
				16 AWG	1411605	1036790	-	-	-	-	1504097
			Rear	16 AWG	1411598	1162635	1162636	-	-	-	Included
		Standard	Front	16 AWG	1424137	-	-	-	-	-	1504097
			Rear	16 AWG	1424133	1178143	-	-	-	-	Included

M12 Power receptacles – K-code

Panel Mount Thread = 16 mm



Configuration		Design	Mounting	AWG	0.2 m	0.5 m	1.0 m	1.5 m	2.0 m	Locknut
4+PE K-code 	Male	XL	Front	14 AWG	1415291	1329938	1329940	-	1329943	1504097
				16 AWG	1425635	-	-	-	-	1504097
			Rear	14 AWG	1415293	1097959	1162234	1162243	-	Included
				16 AWG	1425637	-	-	-	-	Included
	Female	XL	Front	14 AWG	1415292	1329939	1329942	-	1329944	1504097
				16 AWG	1425636	-	-	-	-	1504097
			Rear	14 AWG	1415294	1162464	1162474	1162476	-	Included
				16 AWG	1425638	-	1178140	-	-	Included

M12 Power receptacles – M-code

Panel Mount Thread = 16 mm



Configuration		Design	Mounting	AWG	0.2 m	0.5 m	1.0 m	1.5 m	Locknut
5+PE M-code 	Male	XL	Front	16 AWG	1415300	-	-	-	1504097
			Rear	16 AWG	1415302	1162502	1162503	1162505	Included
	Female	XL	Front	16 AWG	1415301	-	-	-	1504097
			Rear	16 AWG	1415303	1162517	1162519	1162524	Included

M12 Power cordsets and connectors – DC power

DC power is supported by two coding variants, T and L. T-coding simply provides 12A and 60 V DC over two pairs of DC lines.



L-coding contact carriers support 5 positions, but for the version recommended for powering PROFINET devices, the fifth FE (Functional Earth) pin is not installed. The fully loaded 5-pos. L-coding (differentiated by the use of a gray contact carrier) does carry the FE contact. FE, unlike PE (Protected Earth) is not directly connected to ground through the connector housing, but must be run to another component that is connected to ground.



M12 power – DC power pinout and color chart

Connector		Series	Pos. 1	Pos. 2	Pos. 3	Pos. 4	Pos. 5	Cable shield
 Female, 4-pos, T-coded	 Male, 4-pos, T-coded	Unshielded	Brown	White	Blue	Black	-	-
		Braided shield with AST	Brown	White	Blue	Black	-	AST to coupling nut
 Female, 5-pos, L-coded	 Male, 5-pos, L-coded	Unshielded	Brown	White	Blue	Black	-	-
 Female, 5-pos, L-coded	 Male, 5-pos, L-coded	Unshielded	Brown	White	Blue	Black	Pink	-
		Braided shield with AST	Brown	White	Blue	Black	Pink	AST to coupling nut

M12 Power cordsets – T-code

T-Code: 4pos (non-TC-ER rated)													
Configuration	Shielded	Cable	Wire	0.5 m	1.0 m	1.5 m	2.0 m	3.0 m	5.0 m	10.0 m	20.0 m	CMAT	
												Base Article	Cable Code
Socket Straight / Open End 	No	Black PUR	16 AWG	-	1408823	-	1408824	-	1408825	1408826	1421305	1276621/.../...	PUR
			14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	16 AWG	-	1089970	-	1089971	-	1089972	1089973	-		110
	Yes	Black PUR	16 AWG	-	-	1424112	-	1424113	1424114	1424115	-	1276612/.../...	PUR
Socket 90° / Open End 	No	Black PUR	16 AWG	-	1408827	-	1408828	-	1408829	1408830	1420494	1276620/.../...	PUR
			14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	16 AWG	-	1089977	-	1089981	-	1089984	1089987	-		110
	Yes	Black PUR	16 AWG	-	-	1424116	-	1424117	1424118	1424128	-	1276611/.../...	PUR
Pin Straight / Open End 	No	Black PUR	16 AWG	-	1408812	-	1408813	-	1408814	1408815	-	1276623/.../...	PUR
			14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	16 AWG	-	1089952	-	1089953	-	1089955	1089956	-		110
	Yes	Black PUR	16 AWG	-	-	1424120	-	1424121	1424122	1424123	-	1276614/.../...	PUR
Pin 90° / Open End 	No	Black PUR	16 AWG	-	1408816	-	1408819	-	1408820	1408822	-	1276622/.../...	PUR
			14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	16 AWG	-	1089958	-	1089961	-	1089965	1089968	-		110
	Yes	Black PUR	16 AWG	-	-	1424124	-	1424125	1424126	1424127	-	1276613/.../...	PUR
Pin Straight / Socket Straight 	No	Black PUR	16 AWG	1413210	1408808	-	1408809	-	1408810	1408811	1411366	1276619/.../...	PUR
			14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	16 AWG	-	1089988	-	1089997	-	1089998	1089999	-		110
	Yes	Black PUR	16 AWG	-	-	-	-	1416447	1417687	1421788	-	1276610/.../...	PUR
Pin Straight / Socket 90° 	No	Black PUR	16 AWG	-	-	-	-	-	-	-	-	1276618/.../...	PUR
			14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	16 AWG	-	-	-	-	-	-	-	-		110
	Yes	Black PUR	16 AWG	-	-	-	-	-	-	-	-	1276609/.../...	PUR
Pin 90° / Socket Straight 	No	Black PUR	16 AWG	-	-	-	-	-	-	-	-	1276616/.../...	PUR
			14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	16 AWG	-	-	-	-	-	-	-	-		110
	Yes	Black PUR	16 AWG	-	-	-	-	-	-	-	-	1276608/.../...	PUR
Pin 90° / Socket 90° 	No	Black PUR	16 AWG	1007367	1415196	-	1415197	-	1415198	1415199	-	1276615/.../...	PUR
			14 AWG	-	-	-	-	-	-	-	-		125
		Black PVC	16 AWG	-	-	-	-	-	-	-	-		110
	Yes	Black PUR	16 AWG	1102085	1102081	1415202	-	1415203	1415204	1415205	-	1276607/.../...	PUR

M12 Power cordsets – L-code

L-Code: 4pos										
Configuration	**Cable**	**TC-ER Rated**	**Wire**	**0.3 m**	**0.5 m**	**0.6 m**	**1.0 m**	**1.5 m**	**2.0 m**	**2.5 m**
Socket Straight / Open End 	Black PUR	No	14 AWG	-	-	-	-	1425073	-	-
			16 AWG	-	-	-	-	1425033	-	-
	Black PVC	No	14 AWG	-	-	-	-	1425093	-	-
			16 AWG	-	-	-	-	1425053	-	-
		Yes	14 AWG	-	-	-	-	-	-	-
Socket 90° / Open End 	Black PUR	No	14 AWG	-	-	-	-	1425077	-	-
			16 AWG	-	-	-	-	1425037	-	-
	Black PVC	No	14 AWG	-	-	-	-	1425097	-	-
			16 AWG	-	-	-	-	1425057	-	-
		Yes	14 AWG	-	-	-	-	-	-	-
Pin Straight / Open End 	Black PUR	No	14 AWG	-	-	-	-	1425065	-	-
			16 AWG	-	-	-	-	1425025	-	-
	Black PVC	No	14 AWG	-	-	-	-	1425085	-	-
			16 AWG	-	-	-	-	1425045	-	-
		Yes	14 AWG	-	-	-	-	-	-	-
Pin 90° / Open End 	Black PUR	No	14 AWG	-	-	-	-	1425069	-	-
			16 AWG	-	-	-	-	1425029	-	-
	Black PVC	No	14 AWG	-	-	-	-	1425089	-	-
			16 AWG	-	-	-	-	1425049	-	-
		Yes	14 AWG	-	-	-	-	-	-	-
Pin Straight / Socket Straight 	Black PUR	No	14 AWG	1425081	-	1425082	-	1425083	-	-
			16 AWG	1425041	-	1425042	-	1425043	-	-
	Black PVC	No	14 AWG	1425101	-	1425102	-	1425103	-	-
			16 AWG	1425061	-	1425062	-	1425063	-	-
		Yes	14 AWG	-	1291306	-	1291305	1291304	1291303	1291302
Pin Straight / Socket 90° 	Black PUR	No	14 AWG	-	-	-	-	-	-	-
			16 AWG	-	-	-	-	-	-	-
	Black PVC	No	14 AWG	-	-	-	-	-	-	-
			16 AWG	-	-	-	-	-	-	-
Pin 90° / Socket Straight 	Black PUR	No	14 AWG	-	-	-	-	-	-	-
			16 AWG	-	-	-	-	-	-	-
	Black PVC	No	14 AWG	-	-	-	-	-	-	-
			16 AWG	-	-	-	-	-	-	-
Pin 90° / Socket 90° 	Black PUR	No	14 AWG	-	-	-	-	-	-	-
			16 AWG	-	-	-	-	-	-	-
	Black PVC	No	14 AWG	-	-	-	-	-	-	-
			16 AWG	-	-	-	-	-	-	-
		Yes	14 AWG	1291295	-	-	1291294	-	1291293	-

Highlighted green indicates U.S. Production – Speedy Transaction
U60 TC-ER cable assemblies are part of the North American Speedy Transaction

M12 Power cordsets – L-code

L-Code: 4pos (continued)										
Configuration	Cable	TC-ER Rated	Wire	3.0 m	5.0 m	10.0 m	20.0 m	40.0 m	CMAT	
									Base Article	Cable Code
Socket Straight / Open End 	Black PUR	No	14 AWG	1425074	1425075	1425076	-	-	1276563/…/…	PUR
			16 AWG	1425034	1425035	1425036	-	-		105
	Black PVC	No	14 AWG	1425094	1425095	1425096	-	-		PVC
			16 AWG	1425054	1425055	1425056	-	-		110
		Yes	14 AWG	-	1291312	-	-	-	1292197/…/…	U60
Socket 90° / Open End 	Black PUR	No	14 AWG	1425078	1425079	1425080	-	-	1276561/…/…	PUR
			16 AWG	1425038	1425039	1425040	-	-		105
	Black PVC	No	14 AWG	1425098	1425099	1425100	-	-		PVC
			16 AWG	1425058	1425059	1425060	-	-		110
		Yes	14 AWG	-	1291308	-	-	-	1292199/…/…	U60
Pin Straight / Open End 	Black PUR	No	14 AWG	1425066	1425067	1425068	-	-	1276568/…/…	PUR
			16 AWG	1425026	1425027	1425028	-	-		105
	Black PVC	No	14 AWG	1425086	1425087	1425088	-	-		PVC
			16 AWG	1425046	1425047	1425048	-	-		110
		Yes	14 AWG	-	1291315	-	-	-	1292196/…/…	U60
Pin 90° / Open End 	Black PUR	No	14 AWG	1425070	1425071	1425072	-	-	1276567/…/…	PUR
			16 AWG	1425030	1425031	1425032	-	-		105
	Black PVC	No	14 AWG	1425090	1425091	1425092	-	-		PVC
			16 AWG	1425050	1425051	1425052	-	-		110
		Yes	14 AWG	-	1291310	-	-	-	1292198/…/…	U60
Pin Straight / Socket Straight 	Black PUR	No	14 AWG	1425084	1261835	1261819	-	-	1276560/…/…	PUR
			16 AWG	1425044	-	-	-	-		105
	Black PVC	No	14 AWG	1425104	-	-	-	-		PVC
			16 AWG	1425064	-	-	-	-		110
		Yes	14 AWG	1291301	1291300	1291299	1291298	1291297	1292200/…/…	U60
Pin Straight / Socket 90° 	Black PUR	No	14 AWG	-	-	-	-	-	1276558/…/…	PUR
			16 AWG	-	-	-	-	-		105
	Black PVC	No	14 AWG	-	-	-	-	-		PVC
			16 AWG	-	-	-	-	-		110
Pin 90° / Socket Straight 	Black PUR	No	14 AWG	-	-	-	-	-	1276557/…/…	PUR
			16 AWG	-	-	-	-	-		105
	Black PVC	No	14 AWG	-	-	-	-	-		PVC
			16 AWG	-	-	-	-	-		110
Pin 90° / Socket 90° 	Black PUR	No	14 AWG	-	-	-	-	-	1276556/…/…	PUR
			16 AWG	-	-	-	-	-		105
	Black PVC	No	14 AWG	-	-	-	-	-		PVC
			16 AWG	-	-	-	-	-		110
		Yes	14 AWG	1291292	-	-	-	-	1292203/…/…	U60

Highlighted green indicates U.S. Production – Speedy Transaction
U60 TC-ER cable assemblies are part of the North American Speedy Transaction

M12 Power cordsets – L-code

L-Code: 5pos (4+FE)													
	Shielded	Cable	TC-ER Rated	Wire	0.3 m	0.6 m	1.5 m	2.0 m	3.0 m	5.0 m	10.0 m	CMAT	
												Base Article	Cable Code
Socket Straight / Open End 	No	Gray PUR	No	14 AWG	-	-	1414772	-	1414790	1414806	1414823	1276586/.../...	280
				16 AWG	-	-	1424601	-	1424602	1424603	1424604		290
		Gray PVC		14 AWG	-	-	1414782	-	1414798	1414814	1414831		500
				16 AWG	-	-	1424617	-	1424618	1424619	1424620		510
		Black PVC	Yes	14 AWG	-	-	-	-	-	1291288	-	1292207/.../...	U60
	Yes	Gray PUR	No	14 AWG	-	-	1414773	-	1414791	1414807	1414824	1276576/.../...	280
		Gray PVC			-	-	-	-	-	-	-		500
		Black PVC	Yes	14 AWG	-	-	-	-	-	1291275	-	1292216/.../...	U60
Socket 90° / Open End 	No	Gray PUR	No	14 AWG	-	-	1414768	-	1414786	1414802	1414819	1276584/.../...	280
				16 AWG	-	-	1424605	-	1424606	1424607	1424608		290
		Gray PVC		14 AWG	-	-	1414777	-	1414794	1414810	1414827		500
				16 AWG	-	-	1424621	-	1424622	1424623	1424624		510
		Black PVC	Yes	14 AWG	-	-	-	-	-	1291284	-	1292209/.../...	U60
	Yes	Gray PUR	No	14 AWG	-	-	1414769	-	1414787	1414803	1414820	1276575/.../...	280
		Gray PVC			-	-	1414778	-	1414795	1414811	1414828		500
		Black PVC	Yes	14 AWG	-	-	-	-	-	1291271	-	1292221/.../...	U60
Pin Straight / Open End 	No	Gray PUR	No	14 AWG	-	-	1414883	-	1414887	1414891	1414895	1276588/.../...	280
				16 AWG	-	-	1424593	-	1424594	1424595	1424596		290
		Gray PVC		14 AWG	-	-	1414885	-	1414889	1414893	1414897		500
				16 AWG	-	-	1424609	-	1424610	1424611	1424612		510
		Black PVC	Yes	14 AWG	-	-	-	-	-	1291290	-	1292204/.../...	U60
	Yes	Gray PUR	No	14 AWG	-	-	1414884	-	1414888	1414892	1414896	1276578/.../...	280
		Gray PVC			-	-	-	-	-	-	-		500
		Black PVC	Yes	14 AWG	-	-	-	-	-	1291277	-	1292215/.../...	U60
Pin 90° / Open End 	No	Gray PUR	No	14 AWG	-	-	1414850	-	1414854	1414858	1414862	1276587/.../...	280
				16 AWG	-	-	1424597	-	1424598	1424599	1424600		290
		Gray PVC		14 AWG	-	-	1414852	-	1414856	1414860	1414864		500
				16 AWG	-	-	1424613	-	1424614	1424615	1424616		510
		Black PVC	Yes	14 AWG	-	-	-	-	-	1291286	-	1292208/.../...	U60
	Yes	Gray PUR	No	14 AWG	-	-	1414851	-	1414855	1414859	1414863	1276577/.../...	280
		Gray PVC			-	-	1414853	-	1414857	1414861	1414865		500
		Black PVC	Yes	14 AWG	-	-	-	-	-	1291273	-	1292219/.../...	U60
Pin Straight / Socket Straight 	No	Gray PUR	No	14 AWG	1425009	1425010	1425011	-	1425012	-	-	1276583/.../...	280
				16 AWG	1425017	1425018	1425019	-	1425020	-	-		290
		Gray PVC		14 AWG	1425013	1425014	1425015	-	1425016	-	-		500
				16 AWG	1425021	1425022	1425023	-	1425024	-	-		510
		Black PVC	Yes	14 AWG	-	-	-	1291282	-	1291281	1291280	1292210/.../...	U60
	Yes	Gray PUR	No	14 AWG	-	-	-	-	-	-	-	1276573/.../...	280
		Gray PVC			-	-	-	-	-	-	-		500
		Black PVC	Yes	14 AWG	-	-	-	1291269	-	1291268	1291267	1292222/.../...	U60

Highlighted green indicates U.S. Production – Speedy Transaction
U60 TC-ER cable assemblies are part of the North American Speedy Transaction

M12 Power cordsets – L-code

L-Code: 5pos (4+FE, continued)														
	Shielded	Cable	TC-ER Rated	Wire	0.3 m	0.6 m	1.5 m	2.0 m	3.0 m	5.0 m	10.0 m	CMAT		
												Base Article	Cable Code	
Pin Straight / Socket 90° 	No	Gray PUR	No	14 AWG	-	-	-	-	-	-	-	1276582/…/…	280	
				16 AWG	-	-	-	-	-	-	-		290	
		Gray PVC		14 AWG	-	-	-	-	-	-	-		500	
				16 AWG	-	-	-	-	-	-	-		510	
	Yes	Gray PUR	No	14 AWG	-	-	-	-	-	-	-	1276572/…/…	280	
		Gray PVC			-	-	-	-	-	-	-		500	
Pin 90° / Socket Straight 	No	Gray PUR	No	14 AWG	-	-	-	-	-	-	-	1276581/…/…	280	
				16 AWG	-	-	-	-	-	-	-		290	
		Gray PVC		14 AWG	-	-	-	-	-	-	-		500	
				16 AWG	-	-	-	-	-	-	-		510	
	Yes	Gray PUR	No	14 AWG	-	-	-	-	-	-	-	1276571/…/…	280	
		Gray PVC			-	-	-	-	-	-	-		500	
Pin 90° / Socket 90° 	No	Gray PUR	No	14 AWG	-	-	-	-	-	-	-	1276580/…/…	280	
				16 AWG	-	-	-	-	-	-	-		290	
		Gray PVC		14 AWG	-	-	-	-	-	-	-		500	
				16 AWG	-	-	-	-	-	-	-		510	
		Black PVC	Yes	14 AWG	-	-	-	-	-	-	-	1292211/…/…	U60	
	Yes	Gray PUR	No	14 AWG	-	-	-	-	-	-	-	1276570/…/…	280	
		Gray PVC			-	-	-	-	-	-	-		500	
		Black PVC	Yes	14 AWG	-	-	-	-	-	-	-	1292223/…/…	U60	

Highlighted green indicates U.S. Production – Speedy Transaction
U60 TC-ER cable assemblies are part of the North American Speedy Transaction

M12 Power receptacles – T-code

Panel Mount Thread = 16 mm



Configuration		Design	Mounting	AWG	0.2 m	0.5 m	1.0 m	1.5 m	Locknut
4pos T-code 	Male	XL	Front	16 AWG	-	1411608	-	-	1504097
			Rear	16 AWG	-	1411604	1162539	1162541	Included
	Male	Standard	Front	16 AWG	-	1424140	-	-	1504097
			Rear	16 AWG	-	1424136	1037080	1420794	Included
	Female	XL	Front	16 AWG	-	1411606	-	-	1504097
			Rear	16 AWG	1426488	1411599	1162552	1162554	Included
	Female	Standard	Front	16 AWG	-	1424138	-	-	1504097
			Rear	16 AWG	-	1424134	-	1420501	Included

M12 Power receptacles – L-code

Panel Mount Thread = 16 mm



Configuration		Design	Mounting	AWG	0.2 m	0.5 m	1.0 m	1.5 m	2.0 m	Locknut
4+PE K-code	Male	XL	Front	14 AWG	1425586	1329925	1329927	-	1329929	1504097
				16 AWG	1425631	-	-	-	-	1504097
			Rear	14 AWG	1425588	1163033	1163034	1163035	-	Included
				16 AWG	1425633	-	-	-	-	Included
	Female	XL	Front	14 AWG	1425587	1329926	1329928	-	1329930	1504097
				16 AWG	1425632	-	-	-	-	1504097
			Rear	14 AWG	1425589	1163053	1163054	1163055	-	Included
				16 AWG	1425634	-	-	-	-	Included
4+FE L-code	Male, Black	XL	Front	14 AWG	1415295	1329931	1329934	-	1329936	1504097
			Rear	14 AWG	1415297	1163063	1163064	1163066	-	Included
	Male, Gray	XL	Front	14 AWG	1425582	-	-	-	-	1504097
			Front	16 AWG	1425627	-	-	-	-	1504097
			Rear	14 AWG	1425584	1163083	1163085	1163087	-	Included
			Rear	16 AWG	1425629	-	-	-	-	Included
	Female, Black	XL	Front	14 AWG	1415296	1329932	1329935	-	1329937	1504097
			Rear	14 AWG	1415299	1163111	1163112	1163114	-	Included
	Female, Gray	XL	Front	14 AWG	1425583	-	-	-	-	1504097
			Front	16 AWG	1425628	-	-	-	-	1504097
			Rear	14 AWG	1425585	1163099	1163100	1163101	-	Included
				16 AWG	1425630	-	-	-	-	Included

Power distribution for industrial machinery

The National Fire Protection Agency (NFPA) is responsible for NFPA 70, National Electric Code (NEC) and NFPA 79. Both standards are applied for the safe electrical design of industrial equipment.

As part of NFPA 79, overmolded cordsets can be used as a part of the installation, replacing traditional junction boxes and conduit. As a part of the NFPA 79 code, cordsets that are ER, or Exposed Run-rated, can now be used. This ER rating means the cables pass additional crush and impact testing and would be a suitable replacement for conduit.

That ER rating allows for quicker and easier deployment of power distribution networks beholden to the NEC Tap rule. That rule requires overcurrent, ground fault, and short-circuit protection to be implemented at the beginning of the circuit, leading to the trunk line exiting the cabinet. Then, depending on the distance of the devices from the trunk line, there are different rules.

For the 3m (10') rule, feeder taps of up to 3m need to utilize conductors that are rated for no less than 1/10 of the trunk line. For example, a 40A trunk must have feeder taps that are at least rated for 4A each. This works well with several of the TC-ER rated 7/8" and M12 sensor/power cables.

However, for devices mounted farther from the trunk there is the 7.5m (25') rule. Here feeder taps of up to 3m to 7.5m in length need to utilize conductors that are rated for no less than 1/3 of the trunk line. For example, a 30A trunk must have feeder taps that are at least rated for 10A each. This is where the use of sensor cables would drop off, and 7/8" and M12 Power TC-ER cables would fit well.

The feeder tap lines must be run in a raceway of some sort, or the cables need to be TC-ER (tray cable-exposed run) rated. While TC-ER cable still needs to be secured every 2m (6’), there is a significant time and cost savings associated with being able to eliminate the need for additional raceway installations.

Phoenix Contact's new line of TC-ER M12 power cordsets meet the need for providing a factory molded, exposed run rated cordset for just these types of applications.

M12 Power also forms the core of our new Power Distribution program, which allows for trunk & drop systems to devices using an M12 connector. A larger trunk line can now be stepped down in AWG to M12 power cordsets. M12 power to the device can be run through a TC-ER cable up to 6 ft. without the use of additional supports or conduit.

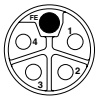
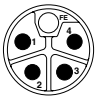
With the additional flexibility for molded cordsets for power distribution, you can save time, simplify the installation, and allow for easy plug and play replacement in the field.

M12 Power field-wired connectors

When the situation calls for flexibility in cable lengths or for field repairs, field-wired connectors are an excellent solution in place of pre-assembled cordsets. For the M12 form factor, we offer A-coded (sensor-actuator cables), K- and S-coded (AC Power), and L- and T-coded (DC Power).



M12 Power – field-wired recommended pinout and color chart

Connector		Pos. 1	Pos. 2	Pos. 3	Pos. 4	Pos. 5
 Female, 3-pos, S-coded	 Male, 3-pos, S-coded	Black (1)	Black (2)	Green Yellow	-	-
 Female, 4-pos, S-coded	 Male, 4-pos, S-coded	Black (1)	Black (2)	Black (3)	Green Yellow	-
 Female, 5-pos, K-coded	 Male, 5-pos, K-coded	Black (1)	Black (2)	Black (3)	Black (4)	Green Yellow
 Female, 4-pos, T-coded	 Male, 4-pos, T-coded	Brown	White	Blue	Black	-
 Female, 4-pos, L-coded	 Male, 4-pos, L-coded	Brown	White	Blue	Black	-
 Female, 5-pos, L-coded	 Male, 5-pos, L-coded	Brown	White	Blue	Black	Gray

M12 Power field-wired connectors

S-Code: 3pos (2+PE)													
Configuration		Termination	Cable OD	Wire mm²		Wire AWG		Shielded	Article No.	Power contacts		PE contacts	
										14 AWG		14 AWG	
				No ferrule	With ferrule	No ferrule	With ferrule			1.5 mm²	2.5 mm²	1.5 mm²	2.5 mm²
	Socket Straight	Push-Lock	6 - 11mm	1.5 - 1.5	0.75 - 2.5	16	18 - 14	Yes	1080227	-	-	-	-
	Pin Straight								1080225	-	-	-	-
	Socket Straight	Crimp	6.5 - 11mm	1.5 - 2.5	-	14	-	Yes	1027469	1029395	1029390	1029400	1029391
	Pin Straight								1027467	1029394	1029388	1029398	1029389
	Socket Straight	Screw	6 - 8mm	0.75 - 2.5	0.75 - 1.5	-	18 - 16	No	1419640	-	-	-	-
	Socket 90°								1419642	-	-	-	-
	Pin Straight								1419639	-	-	-	-
	Pin 90°								1419641	-	-	-	-

S-Code: 4pos (3+PE)													
Configuration		Termination	Cable OD	Wire mm²		Wire AWG		Shielded	Article No.	Power contacts		PE contacts	
										14 AWG		14 AWG	
				No ferrule	With ferrule	No ferrule	With ferrule			1.5 mm²	2.5 mm²	1.5 mm²	2.5 mm²
	Socket Straight	Push-Lock	6-11mm	1.5 - 1.5	0.75 - 2.5	16	18 - 14	Yes	1080222	-	-	-	-
	Pin Straight								1080220	-	-	-	-
	Socket Straight	Crimp	6.5-11mm	1.5 - 2.5	-	14	-	Yes	1027469	1029395	1029390	1029400	1029391
	Pin Straight								1027467	1029394	1029388	1029398	1029389
	Socket Straight	Screw	8-10mm	0.75 - 2.5	0.75 - 1.5	-	18 - 16	No	1404642	-	-	-	-
	Socket 90°								1408987	-	-	-	-
	Pin Straight								1404641	-	-	-	-
	Pin 90°								1408985	-	-	-	-

K-Code: 5pos (4+PE)													
Configuration		Termination	Cable OD	Wire mm²		Wire AWG		Shielded	Article No.	Power contacts		PE contacts	
										14 AWG		14 AWG	
				No ferrule	With ferrule	No ferrule	With ferrule			1.5 mm²	2.5 mm²	1.5 mm²	2.5 mm²
	Socket Straight	Push-Lock	8-13mm	1.5 - 1.5	0.75 - 2.5	16	18 - 14	Yes	1080228	-	-	-	-
	Pin Straight								1080231	-	-	-	-
	Socket Straight	Crimp	8-13mm	1.5 - 2.5	-	14	-	Yes	1027476	1029396	1029392	1029398	1029389
	Pin Straight								1027474	1029394	1029388	1029401	1029393

M12 Power field-wired connectors

T-Code: 4pos													
Configuration		Termination	Cable OD	Wire mm²		Wire AWG		Shielded	Article No.	Power contacts		PE contacts	
										14 AWG		14 AWG	
				No ferrule	With ferrule	No ferrule	With ferrule			1.5 mm²	2.5 mm²	1.5 mm²	2.5 mm²
	Socket Straight	Push-Lock	6-11mm	1.5 - 1.5	0.75 - 2.5	16	18 - 14	No	1151366	-	-	-	-
	Pin Straight								1151362	-	-	-	-
	Socket Straight	Push-Lock	6-11mm	1.5 - 1.5	0.75 - 2.5	16	18 - 14	Yes	1080218	-	-	-	-
	Pin Straight								1080215	-	-	-	-
	Socket Straight	Crimp	6.5-11mm	1.5 - 2.5	-	14	-	Yes	1027466	1029395	1029390	1029400	1029391
	Pin Straight								1027465	1029394	1029388	1029398	1029389
	Socket Straight	Screw	8-10mm	0.75 - 2.5	0.75 - 1.5	-	18 - 16	No	1404644	-	-	-	-
	Socket 90°								1408989	-	-	-	-
	Pin Straight								1404643	-	-	-	-
	Pin 90°								1408988	-	-	-	-

L-Code: 4pos											
Configuration		Termination	Cable OD	Wire mm²		Wire AWG		Shielded	Article No.	Power contacts	
										14 AWG	
				No ferrule	With ferrule	No ferrule	With ferrule			1.5 mm²	2.5 mm²
	Socket Straight	Push-Lock	6-11mm	1.5 - 1.5	0.75 - 2.5	16	18 - 14	Yes	1080237	-	-
	Pin Straight								1080239	-	-
	Socket Straight	Crimp	8-13mm	1.5 - 2.5	-	14	-	Yes	1027480	1029396	1029392
	Pin Straight								1027479	1029394	1029388

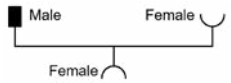
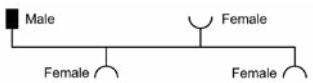
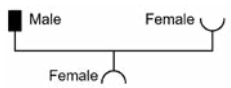
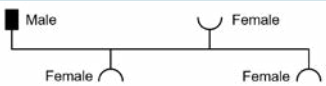
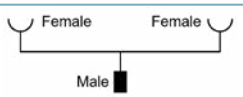
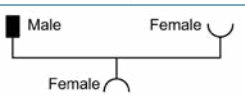
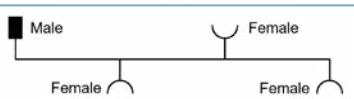
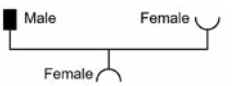
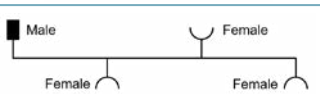
L-Code: 5pos (4+FE)													
Configuration		Termination	Cable OD	Wire mm²		Wire AWG		Shielded	Article No.	Power contacts		FE contacts	
										14 AWG		14 AWG	
				No ferrule	With ferrule	No ferrule	With ferrule			1.5 mm²	2.5 mm²	1.5 mm²	2.5 mm²
	Socket Straight	Push-Lock	8-13mm	1.5 - 1.5	0.75 - 2.5	16	18 - 14	No	1151390	-	-	-	-
	Pin Straight								1151368	-	-	-	-
	Socket Straight	Push-Lock	8-13mm	1.5 - 2.5	-	14	-	Yes	1080233	-	-	-	-
	Pin Straight								1080235	-	-	-	-
	Socket Straight	Crimp	8-13mm	0.75 - 2.5	0.75 - 1.5	-	18 - 16	Yes	1027478	1029396	1029392	1029398	1029389
	Pin Straight								1027477	1029394	1029388	1029401	1029393

M12 Power accessories

Description		Material	Coding	Order No.
	Sealing cap for Male connectors	Plastic	S/K/M/T/L	1560251
	Sealing cap for Male connectors	Metal	S/K/M/T/L	1430488
	Screw plug for Female connectors	Plastic	S/T	1680539
	Screw plug for Female connectors	Plastic	K/M/L	1092802
	M12 Power Locking Clip	Plastic	S/K/M/T/L	1292631

M12 Power distribution

Power distribution boxes			
Configuration			Article No.
	Power Distribution Boxes - T-code, 4pos Includes LED status displays Number of Slots: 4, single throw Master cable connection – HEAVYCON Compact	With M12 A-coded Diagnostics Port	1411048
		Without Diagnostics Port	1413929

Y and H distributors					
Configuration			Positions	Coding	Article No.
	Y-Distributor		3+PE	S-code	1080243
	H-Distributor				1080242
	Y-Distributor		4+PE	K-code	1080247
	H-Distributor				1080246
	Y-Distributor		4	T-code	1410632
	Y-Distributor				1080245
	H-Distributor				1080244
	Y-Distributor		4+FE	L-code	1080249
	H-Distributor				1080248

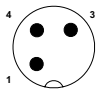
M12 cordsets for hazardous locations

In many process applications, it is not just measuring and evaluation devices that must satisfy standard requirements for potentially explosive areas. Connection components must also meet these requirements. We therefore offer UL-listed M12 cabling for Class I, Division 2 and for Class I, Zone 2 IIC in Groups A, B, C, and D.

The M12 cabling for potentially explosive areas is supplied with a locking clip. It can only be opened using a screwdriver and prevents accidental disconnection of the plug-in connection.



M12 pinout and color chart

Connector		Series	Pos. 1	Pos. 2	Pos. 3	Pos. 4	Pos. 5	Cable shield
 Female, 3-pos, A-coded	 Male, 3-pos, A-coded	Unshielded	Brown	-	Blue	Black		-
		Braided shield	Brown	-	Blue	Black		To coupling nut
 Female, 4-pos, A-coded	 Male, 4-pos, A-coded	Unshielded	Brown	White	Blue	Black		-
		Braided shield	Brown	White	Blue	Black		To coupling nut
 Female, 5-pos, A-coded	 Male, 5-pos, A-coded	Unshielded	Brown	White	Blue	Black	Gray	-
		Braided shield	Brown	White	Blue	Black	Gray	To coupling nut

M12 CID2 sensor cordsets (unshielded)

Cable jacket: Yellow PVC, 105°C
Wire Gauge: 22 AWG
Properties: CID2, PLTC/ITC rated, sunlight resistant



Class I, Division 2 sensor cables – unshielded								
# Wires	**Configuration**	**0.5 M**	**1.5 M**	**2 M**	**5 M**	**10 M**	**15 M**	**20 M**
3-pos. A-code	Female Straight / Open End	-	-	1409534	1409533	1409532	1420336	
	Female 90° / Open End	-	-	1409537	1409536	1409535	1420334	1420335
	Male Straight / Open End	-	-	1409524	1409523	1409522		
	Male 90° / Open End	-	-	1409531	1409530	1409529		
	Male Straight / Female Straight	1409519	1409508	-	-	-	1420132	1420133
	Male Straight / Female 90°	1409521	1409520	-	-	-		
	Male 90° / Female Straight	1409526	1409525	-	-	-		
	Male 90° / Female 90°	1409528	1409527	-	-	-		
4-pos. A-code	Female Straight / Open End	-	-	1409574	1409573	1409572	1084251	
	Female 90° / Open End	-	-	1409577	1409576	1409575	1420342	1420343
	Male Straight / Open End	-	-	1409564	1409563	1409562		
	Male 90° / Open End	-	-	1409571	1409570	1409569		
	Male Straight / Female Straight	1409559	1409558	-	-	-	1420146	1420147
	Male Straight / Female 90°	1409561	1409560	-	-	-		
	Male 90° / Female Straight	1409566	1409565	-	-	-		
	Male 90° / Female 90°	1409568	1409567	-	-	-		
5-pos. A-code	Female Straight / Open End	-	-	1409637	1409636	1409635	1420366	1420367
	Female 90° / Open End	-	-	1409650	1409639	1409638	1420364	1420365
	Male Straight / Open End	-	-	1409606	1409605	1409604	1297515	
	Male 90° / Open End	-	-	1409634	1409632	1409630		
	Male Straight / Female Straight	1409599	1409598	-	-	-	1420240	1420241
	Male Straight / Female 90°	1409603	1409600	-	-	-		1456794
	Male 90° / Female Straight	1409622	1409608	-	-	-		
	Male 90° / Female 90°	1409626	1409624	-	-	-		

Accessories

	Female	**Male**
Locking clip 	1558991	1558988
Sealing cap 	1430873	1430899

M12 sensor cordsets (braided shield tied to coupling nut)



Cable jacket: Yellow PVC, 105°C
Wire Gauge: 22 AWG
Properties: CID2, PLTC/ITC rated, sunlight resistant

Class I, Division 2 sensor cables – braided shield tied to coupling nut									
# Wires	**Configuration**	**0.5 M**	**1.5 M**	**2 M**	**5 M**	**10 M**	**15 M**	**20 M**	**30 M**
3-pos. A-code 	Female Straight / Open End	-	-	1409504	1409499	1409498	1420340	-	-
	Female 90° / Open End	-	-	1409507	1409506	1409505	1420338	1420339	-
	Male Straight / Open End	-	-	1409516	1409515	1409514	-	-	-
	Male 90° / Open End	-	-	1409497	1409496	1409495	-	-	-
	Male Straight / Female Straight	1409511	1409510	-	-	-	1420137	1420138	-
	Male Straight / Female 90°	1409513	1409512	-	-	-	-	-	-
	Male 90° / Female Straight	1409518	1409517	-	-	-	-	-	-
	Male 90° / Female 90°	1409494	1409493	-	-	-	-	-	-
4-pos. A-code 	Female Straight / Open End	-	-	1409554	1409553	1409552	1420362	1420363	1018141
	Female 90° / Open End	-	-	1409557	1409556	1409555	1420344	1420345	-
	Male Straight / Open End	-	-	1409544	1409543	1409542	-	-	-
	Male 90° / Open End	-	-	1409551	1409550	1409549	-	-	-
	Male Straight / Female Straight	1409539	1409538	-	-	-	1420151	-	-
	Male Straight / Female 90°	1409541	1409540	-	-	-	-	-	-
	Male 90° / Female Straight	1409546	1409545	-	-	-	-	-	-
	Male 90° / Female 90°	1409548	1409547	-	-	-	-	-	-
5-pos. A-code 	Female Straight / Open End	-	-	1409594	1409593	1409592	1420370	1420371	-
	Female 90° / Open End	-	-	1409597	1409596	1409595	1420368	1420369	-
	Male Straight / Open End	-	-	1409584	1409583	1409582	-	-	-
	Male 90° / Open End	-	-	1409591	1409590	1409589	-	-	-
	Male Straight / Female Straight	1409579	1409578	-	-	-	1420245	1420246	-
	Male Straight / Female 90°	1409581	1409580	-	-	-	-	-	-
	Male 90° / Female Straight	1409586	1409585	-	-	-	-	-	-
	Male 90° / Female 90°	1409588	1409587	-	-	-	-	-	-

Accessories

	Female	**Male**
Locking clip 	1558991	1558988
Sealing cap 	1430873	1430899

M12 CID2 receptacles with pre-terminated leads



Design	# Wires	Configuration	Style	Design	Panel mount thread	AWG	1 Meter	Locknut
3-pos. A-code 	3-pos.	Female	Front mount	Standard	1/2" NPT	22 AWG	1421080	Included
	3-pos.	Male		Standard	1/2" NPT	22 AWG	1421079	Included
4-pos. A-code 	4-pos.	Female	Front mount	Standard	1/2" NPT	22 AWG	1421082	Included
	4-pos.	Male		Standard	1/2" NPT	22 AWG	1421081	Included
5-pos. A-code 	5-pos.	Female	Front mount	Standard	1/2" NPT	22 AWG	1421084	Included
	5-pos.	Male		Standard	1/2" NPT	22 AWG	1421083	Included

Accessories for NPT threaded receptacles

O-ring 	Not required for NPT thread sealing. Add if using with panel cutout.	1020363
Locknut 	Included with assembly. Available also as spare part.	1020362

M12 weld-resistant cordsets for automotive

Our M12 weld-resistant cordsets are designed for the harshest of robotic welding environments. The cable is made with 105°C yellow TPE. It is high-flex rated to 10,000,000 bend cycles under both lateral (C-track) and torsional (± 360 °/m) flex. The cable is welding sputter and sunlight resistant, offered in unshielded variants. Furthermore, our specially designed coupling nuts have a weld slag-resistant coating to ensure the slag does not stick to the coupling nuts and therefore prevents unintended welding to the receptacle.



M12 pinout and color chart

Connector		Series	Pos. 1	Pos. 2	Pos. 3	Pos. 4	Pos. 5	Cable shield
 M12 Female, 4-pos, A-coded	 Male, 4-pos, A-coded	Unshielded	Brown	White	Blue	Black	-	-
 M12 Female, 5-pos, A-coded	 Male, 5-pos, A-coded	Unshielded	Brown	White	Blue	Black	Gray	-

M12 sensor cordsets (unshielded)

Cable jacket: Yellow TPE, 105°C
Wire Gauge: 22 AWG
Properties: PLTC/ITC rated, weld and sunlight resistant, 10 million flex



Weld slag cables for automotive – unshielded													
# Wires	**Configuration**	**0.5 M**	**1 M**	**2 M**	**3 M**	**4 M**	**5 M**	**7 M**	**8 M**	**10 M**	**12 M**	**15 M**	**18 M**	**20 M**
4-pos. A-code 	Male Straight / Female Straight	1432047	1432048	1432049	1432050	1432051	1432052	1432053	1432054	1432055	1432056	1432057	-	1432058
5-pos. A-code 	Male Straight / Female Straight	-	1420816	-	-	-	1420498	-	-	1420499	1430396	1430397	1430398	1430399

Additional testing

The cables included in this program passed the additional in-house testing according to the DAKM586 welding spark test. This test determines the performance of cable assemblies and raw cable following exposure to welding sparks. The test includes:

- Vertical close-up spark test
- Vertical cascading spark test
- Horizontal spark test

Successful completion of the test is determined by:

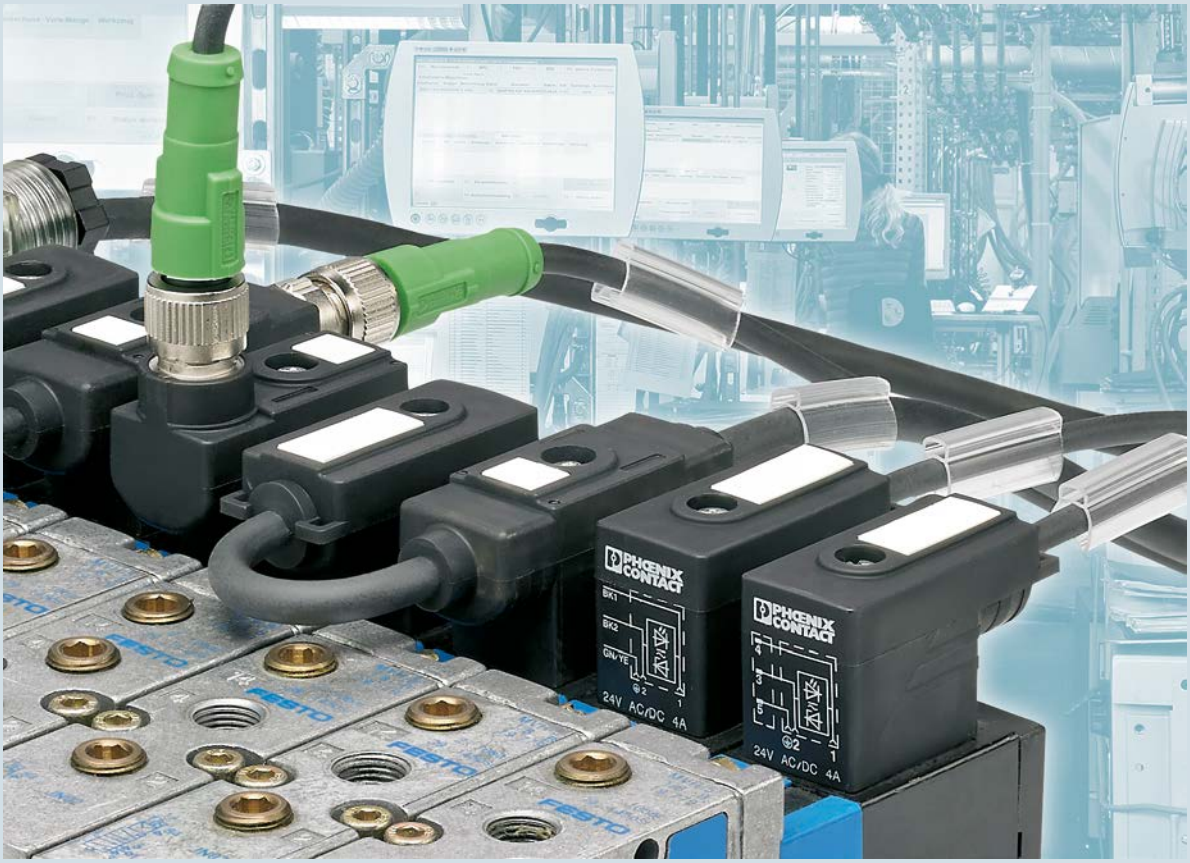
- Free and normal movement of the coupling mechanisms
- Slag build-up on overmold and coupling mechanisms is easily removed
- No electrical shorting or discontinuities



Valve plugs

Pneumatic and hydraulic valve control applications require rugged, sealed DIN-style connectors. Cordsets for valve plugs can be used to connect field devices, such as solenoid valves and limit switches. Our uniquely designed cordsets offer the benefit of a translucent membrane molding with embedded LEDs, integrated gasket, and marker carrier. For high-density valve banks, double-headed valve plugs consolidate wiring by connecting two valves per cordset.

Protective circuitry such as a zener diode, varistor, or freewheeling diode are optional. Multiple configurations are available on 20 AWG black PVC or PUR cable.



Type A, 18mm pin spacing to open end, PUR black 80°C



Protection	1.5m	3m	5m	10m	Variable
Freewheeling Diode	1400589	1400588	1400798	1400799	1417832
Zener Diode	1434989	1434992	1435001	1435014	1435027
110V Zener Diode	-	1439667	1400627	1440685	-
24V Varistor	1443103	1443116	1443129	1443132	1400876
230V Varistor	1402985	1400694	1400648	1402986	-

Type A, 18mm pin spacing to open end, PVC black 80°C



Protection	1.5m	3m	5m	10m	Variable
Freewheeling Diode	1415916	1415917	1415918	1415919	1417832
Zener Diode	1438684	1415905	1439502	1439492	1435027
24V Varistor	1415908	1415909	1415910	1415911	1400876
230V Varistor	1415912	1415913	1415914	1415915	-

Type A, 18mm pin spacing to M12, PUR black 80°C



Protection	Configuration	.3m	.6m	1.5m	3m	Variable
Freewheeling Diode	M12 Straight	-	-	-	-	1417833
	M12 Angled	-	-	-	-	1417834
Zener Diode	M12 Straight	1434882	1434895	1434905	1434918	1434921
	M12 Angled	1434934	1434947	1434950	1434963	1434976
	M8 Straight	-	-	-	-	1405650
24V Varistor	M12 Straight	-	-	-	-	1400874
	M12 Angled	-	-	-	-	1400875

Type AD pressure switch, 18mm pin spacing to open end, PUR black 80°C



Protection	1.5m	3m	5m	10m	Variable
-	1435085	1435098	1435108	1435111	1435124

Type AD pressure switch, 18mm pin spacing to M12, PUR black 80°C



Protection	.3m	.6m	1.5m	3m	Variable
-	1435056	1435069	1435056	1435069	1435072

Type A (double head), 18mm pin spacing, PUR black 80°C



Protection	Distance	1.5m	3m	5m	10m
24V Zener Diode	.1m	1457982	1457995	1458004	1458017
	.15m	1458020	1458033	1458046	1458059
	.2m	1458062	1458075	1458088	1458091
110V Zener Diode	.2m	-	-	1422561	-

Type C with 8mm pin spacing to open end, PUR black 80°C



Protection	1.5m	3m	5m	10m	Variable
Zener Diode	1435535	1435548	1435551	1435564	1435726

Type C with 8mm pin spacing to M12, PUR black 80°C



Protection	.3m	.6m	1.5m	3m	Variable
Zender Diode	1435438	1435441	1435454	1435467	1435629

Valve plug to M12 adapter



Type/protection	Design	Adapter
Type A Zener Diode	3 pos. straight	1458525
	3 pos. right angle	1458538
Type AD	5 pos. straight	1458596
	5 pos. right angle	1458606

Valve plug (double head) to M12 adapter



Type/design	Distance	Adapter
Type A M12 straight	.1m	1458101
	.15m	1458114
	.2m	1458127
Type A M12 right angle	.1m	1458130
	.15m	1458143
	.2m	1458156

M12 valve plug adapter cables

		Contact positions	5m	10m	Variable
	M12 3 position Double ended	3, 4, 5	1402561	1402562	-
	M12 3 position Single ended	3, 4, 5	-	-	1406702
	M12 4 position Single ended (For double valve plugs)	2, 3, 4, 5	-	-	1406704

Valve plugs for field wiring



Type/protection	Positions	Connector
Type A, Zener Diode	3-pos.	1671137
Type A, 24V Varistor	3-pos.	1452149
Type A, 110V Varistor	3-pos.	1452152
Type C (8mm), 24V Varistor	3-pos.	1452262
Type C (8mm), 110V Varistor	3-pos.	1452275
Type CI (9.4mm), 24V Varistor	3-pos.	1452291
Type CI (9.4mm), 110V Varistor	3-pos.	1452301
Type A, no protective circuit	3-pos.	1452123
Type AD, no protective circuit	4-pos.	1452136
Type AD, no protective circuit	5-pos.	1457908

Industrial vehicles and equipment

Heavy equipment, agricultural, and industrial vehicles are becoming more sophisticated and more connected than ever before. As the industry adopts new technologies, Phoenix Contact builds on our industry-leading expertise in the factory environment to develop products to support connected systems in everything from mining to farming.

Our products are designed to perform flawlessly in harsh environments, including exposure to rain, UV light, dust, and chemical contaminants. M12 connectors have become an industry standard for supporting communication in the field, and can meet all your sensor and actuator interconnect needs.





Connectivity throughout the vehicle is critical for data and signal, and so is the need for custom wiring and harness solutions. In addition to our off-the-shelf cabling solutions, we offer custom harness solutions utilizing our own line of M12, DT, and Heavycon style connectors.

Ethernet cable

UV resistant, black jacket Our line of PVC and PUR black-jacketed Ethernet cable is a popular choice for overmolded M12 cordsets for the agriculture and construction markets. Available in 2 twisted pair or 4 twisted pair configurations through our bulk cable program.

Deutsch connector pre-molded cordsets

# Wires	Configuration	.3m	.6m	1.5m	3m	5m	10m
2-pos. 	Single ended DT06-2S (female)	-	-	1410723	1410724	1410726	1410727
	Double ended	1414991	1414992	1414993	1414994	-	-
3-pos. 	Single ended DT06-3S (female)	-	-	1414995	1414996	1414997	1414998
	Single ended DT04-3P (male)	-	-	1414999	1415000	1415001	1415002
	Double ended	1415003	1415004	1415005	1415006	-	-
4-pos. 	Single ended DT04-4S (female)	-	-	1415007	1415008	1415010	1415011
	Single ended DT04-4P (male)	-	-	1415012	1415013	1415014	1415015
	Double ended	1415016	1415017	1415019	1415025	-	-
6-pos. 	Single ended DT06-6S (female)	-	-	1415026	1415027	1415028	1415029
	Single ended DT06-6P (male)	-	-	1415030	1415031	1415032	1415033
	Double ended	1415035	1415036	1415037	1415038	-	-

CAN distribution boxes

	Phoenix Article Number	Description	Description
	1531878	SACB-DT-DB-CAN-L-IV	CAN Splitter, PWR LED
	1531886	SACB-DT-DBM-CAN-L-IV	CAN Splitter, PWR LED
	1531877*	SACB-DT-DB-SP-PNP-IV	Passive, Sensor Power, PNP I/O LED, 13A MAX
	1531880*	SACB-DT-DB-NSP-PNP-IV	Passive, No Sensor Power, PNP I/O LED, 26A MAX
	1531881*	SACB-DT-DB-NSP-NPN-IV	Passive, No Sensor Power, NPN I/O LED, 26A MAX
	1531883*	SACB-DT-DB-NSP-IV	Passive, No Sensor Power, No I/O LED, 26A MAX
	1531885*	SACB-DT-DB-SP-IV	Passive, Sensor Power, No I/O LED, 13A MAX
	1531887*	SACB-DT-DBM-CAN-IV	CAN Splitter, No PWR LED

**Parts only available on request, these are not "stocked" items.*

DT to M12 adapter, DT04-6P to M12 5-pin female

	Description	Manufacturer part number	Reference number
	DT04-6P to Female M12 adapter (metal nut)	SAC-6P-DTMS-5P-M12FS	1088171
	Deutch DT04-6P to Female M12 adapter (plastic nut)	SAC-6P-DTMS-5P-M12FS P	1088173
	DT04-6P to Female M12 adapter (stainless nut)	SAC-6P-DTMS-5P-M12FS VA	1088172

Crimp and poke-style connectors

Crimp & poke connectors are an industry standard for reliable performance in industrial vehicle, agriculture, construction and marine. Our fully stocked line of crimp and poke connectors mate with DT and AT style connectors and offer a quick, easy field wire solution. Value-add harnessing is also available through our Solution Center.

			Wire size range		Gland size/ seal (mm)		2-pos.	3-pos.	4-pos.	6-pos.	8-pos.	12-pos.	18 pos.
HOUSINGS 	Gender	Housing Design	Max	Min	Min	Max							
	Female	Standard	14 AWG	20 AWG	1.3	3.0	1520757	1520761	1520765	1520771	1520775	1520778	1520781
	Female	Standard	14 AWG	20 AWG	2.2	3.6	1520758	1520762	1520766	1520772			
	Male	Standard	14 AWG	20 AWG	1.3	3.0	1520944	1520948	1520951	1520954	1520957	1521005	1521007
	Male	Standard	14 AWG	20 AWG	2.2	3.6	1520946	1520949	1520952	1520955			

	Gender	Housing Design	Color	Special	2-pos.	3-pos.	4-pos.	6-pos.	8-pos.	12-pos.
WEDGE LOCKS 	Female	Standard	Green		1521018	1521020	1521022	1521023	1521024	1521026
	Male	Standard	Green		1521027	1521028	1521030	1521031	1521032	1521033
	Female	Standard	Blue	J1939		1521021				
	Male	Standard	Blue	J1939		1521029				

		Use With	Contact Size	Order #
ACCESSORIES 	Seal plug	Standard Housings	Size 16	1521037
	Male Y connector	N/A	N/A	1521042

			Wire size range		
CONTACTS 	Gender	Material	Max	Min	Order #
	Female	Ni Plated	14 AWG	14 AWG	1519750
	Female	Gold Plated	16 AWG	20 AWG	1519751
	Female	Ni Plated	16 AWG	20 AWG	1519753
	Male	Ni Plated	14 AWG	14 AWG	1519754
	Male	Gold Plated	16 AWG	20 AWG	1519755
	Male	Ni Plated	16 AWG	20 AWG	1519756

Crimp and poke-style connectors

MINI series, compatible with ATM & DTM style connectors

			Wire size range		Gland size/seal (mm)		2-pos.	3-pos.	4-pos.	6-pos.	8-pos.	12-pos.
	Gender	Housing Design	Max	Min	Min	Max						
	Female	Standard	16 AWG	22 AWG	1.3	3.0	1521076	1521078	1521080	1521082	1521085	1521087
	Male	Standard	16 AWG	22 AWG	1.3	3.0	1521089	1521091	1521093	1521095	1521098	1521100

	Gender	Housing Design	Color	2-pos.	3-pos.	4-pos.	6-pos.	8-pos.	12-pos.
WEDGE LOCKS 	Female	Standard	Orange	1521102	1521103	1521104	1521105	1521107	1521108
	Male	Standard	Orange	1521109	1521110	1521111	1521112	1521113	1521114

	Gender	Use With	Contact Size
ACCESSORIES 	Seal Plug	Standard Mini Housings	Size 20
	Male Y connector	N/A	N/A
	Male 2p 120Ω resistor	N/A	N/A

			Wire size range		
CONTACTS 	Gender	Material	Max	Min	Order #
	Female	Ni Plated	16 AWG	18 AWG	1521064
	Female	Gold Plated	16 AWG	18 AWG	1521065
	Female	Ni Plated	20 AWG	20 AWG	1521068
	Female	Gold Plated	20 AWG	20 AWG	1521071
	Male	Ni Plated	16 AWG	18 AWG	1521072
	Male	Gold Plated	16 AWG	18 AWG	1521073
	Male	Ni Plated	20 AWG	20 AWG	1521074
	Male	Gold Plated	20 AWG	20 AWG	1521075

Coiled cable assemblies

		Pos.	Part number	Description		Pos.	Part number	Description
	UNSHIELDED	3	1698982	SAC-3P-MS/1,5-PUR/FS COIL	SHIELDED	3	1698986	SAC-3P-MS/1,5-PUR/FS SH COIL
		4	1698983	SAC-4P-MS/1,5-PUR/FS COIL		4	1698988	SAC-4P-MS/1,5-PUR/FS SH COIL
		5	1698984	SAC-5P-MS/1,5-PUR/FS COIL		5	1698989	SAC-5P-MS/1,5-PUR/FS SH COIL
		8	1698985	SAC-8P-MS/1,5-PUR/FS COIL		8	1698991	SAC-8P-MS/1,5-PUR/FS SH COIL

Extended/retracted lengths: 1.5m / 3.3m

1698992 SAC-5P-COILCORD MKT
1698993 SAC-5P-COILCORD SH MKT

ECS housings

Robust outdoor housings from the ECS series are the ideal solution for protecting sensitive electronics used in indoor and outdoor applications from dust, dirt, and water. Thanks to IP67 and IP69 degrees of protection and a wide temperature range from -40°C to 100°C, the housings are ideal for challenging ambient conditions.

Multiple enclosure options and additional faceplate configurations available. More details phoenixcontact.com/ecs



Housing						
	Version	Dimensions (W x H x D) [mm]	Ventilation [1]	Color	Item no.	Type
	Snap-in locking	170 x 176 x 64	•	Black Gray	2230000 1050206	ECS-B-122X169-L-UV1-V ECS-B-122X169-L-UV-V GY
		172 x 116 x 64	•	Black Gray	1054714 1054702	ECS-B-122X109-L-UV1-V ECS-B-122X109-L-UV-V GY
		170 x 176 x 64		Black Gray	2230001 1050212	ECS-B-122X169-L-UV1-NV ECS-B-122X169-L-UV-NV GY
		172 x 116 x 64		Black Gray	1054713 1054705	ECS-B-122X109-L-UV1-NV ECS-B-122X109-L-UV-NV GY
	Screw locking mechanism	164 x 176 x 64	•	Black Gray	2230002 1050209	ECS-B-122X169-S-UV1-V ECS-B-122X169-S-UV-V GY
		164 x 116 x 64	•	Black Gray	1054710 1054708	ECS-B-122X109-S-UV1-V ECS-B-122X109-S-UV-V GY
		164 x 176 x 64		Black Gray	2230003 1050207	ECS-B-122X169-S-UV1-NV ECS-B-122X169-S-UV-NV GY
		164 x 116 x 64		Black Gray	1054711 1054706	ECS-B-122X109-S-UV1-NV ECS-B-122X109-S-UV-NV GY
	Snap-in locking	97 x 86 x 45		Gray	1186431	ECS-B-64x80-L-UV-NV GY
			•	Gray	1196942	ECS-B-64x80-L-UV-V GY
	Screw locking mechanism	97 x 86 x 45		Gray	1186433	ECS-B-64x80-S-UV-NV GY
			•	Gray	1196941	ECS-B-64x80-S-UV-V GY

ECS housings

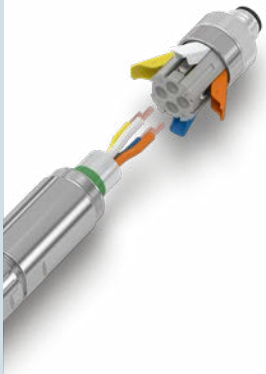
Front panel						
	Version	**Dimensions (W x H x D) [mm]**	**Connection**	**Color**	**Item no.**	**Type**
	Snap-in locking	196 x 34 x 62	None	Black Gray	2230004 1050386	ECS-P-122X169-L-UV1-B ECS-P-122X169-L-UV-B GY
	Screw locking mechanism	163 x 30 x 62	None	Black Gray	2230008 1050382	ECS-P-122X169-S-UV1-B ECS-P-122X169-S-UV-B GY
	Snap-in locking	97 x 15 x 42	None	Gray	1186436	ECS-P-64x80-L-UV-B GY
	Screw locking mechanism	97 x 15 x 42	None	Gray	1186435	ECS-P-64x80-S-UV-B GY
	Snap-in locking	196 x 34 x 62	1 x M12 nut	Black Gray	2230005 1050385	ECS-P-122X169-L-UV1-1M12 ECS-P-122X169-L-UV-1M12 GY
			2 x M12 nut	Black Gray	2230006 1050384	ECS-P-122X169-L-UV1-2M12 ECS-P-122X169-L-UV-2M12 GY
			Cable gland M20 x 1.5 (6 … 12 mm)	Black Gray	2230007 1050383	ECS-P-122X169-L-UV1-CG ECS-P-122X169-L-UV-CG GY
	Screw locking mechanism	163 x 30 x 62	1 x M12 nut	Black Gray	2230009 1050381	ECS-P-122X169-S-UV1-1M12 ECS-P-122X169-S-UV-1M12 GY
			2 x M12 nut	Black Gray	2230010 1050379	ECS-P-122X169-S-UV1-2M12 ECS-P-122X169-S-UV-2M12 GY
			Cable gland M20 x 1.5 (6 … 12 mm)	Black Gray	2230011 1050380	ECS-P-122X169-S-UV1-CG ECS-P-122X169-S-UV-CG GY
			1 x M12 nut and 1 x M12 male	Black	1091841	ECS-P-122X169-S-UV1- 1M1FM12

NMEA 2000® Micro series cables and connectors

NMEA 2000-certified products support communication for CAN-based instrument networks in a marine environment. Phoenix Contact provides NMEA 2000-certified products that enable communication and data transmission over a single channel. Our products go beyond the standard with additional features like time-saving connection technology and reliable cabling.

Phoenix Contact's NMEA 2000 starter kit includes two T adapters, two terminating resistors (male and female), a backbone cable, and a drop cable.





Push-lock connector

- ☑ Time-saving conductor connection with tool-free direct connection technology
- ☑ Convenient push-in design
- ☑ High conductor pull-out forces with intuitive spring design
- ☑ Vibration-resistant and maintenance-free connection
- ☑ Easy conductor release without special tools





Two cable types

- ☑ **Violet cable jacket**
  - PUR
  - AWG 24
  - -40°C…80°C
  - IP65, IP67
  - Halogen-free
- ☑ **Grey cable jacket**
  - PVC
  - AWG 22
  - -30°C…75°C
  - IP65, IP67, IP68
  - UV resistant

NMEA 2000® Micro series cables and connectors

Micro series	Reference no.	Manufacturer part number	Description
Micro T Adapter 	1424712	SAC-5PT-F/F-M VP	Micro T Adapter
Micro Field-Attachable Connector 	1072543	SACC-M12MS-5PL DN	Field-installable connector-Male (straight)(plastic nut) (push-in wire connection)
	1072544	SACC-M12MR-5PL DN	Field-installable connector-Male (right angle)(plastic nut) (push-in wire connection)
	1072545	SACC-M12FS-5PL DN	Field-installable connector-Female (straight)(plastic nut) (push-in wire connection)
	1072547	SACC-M12FR-5PL DN	Field-installable connector-Female (right angle)(plastic nut) (push-in wire connection)
	1424670	SACC-M12MS-5PL SH DN	Field-installable connector-Male (straight)(metal nut)(shielded) (push-in wire connection)
	1424671	SACC-M12MR-5PL SH DN	Field-installable connector-Male (right angle)(metal nut)(shielded) (push-in wire connection)
	1424672	SACC-M12FS-5PL SH DN	Field-installable connector-Female (straight)(metal nut)(shielded) (push-in wire connection)
	1424673	SACC-M12FR-5PL SH DN	Field-installable connector-Female (right angle)(metal nut)(shielded) (push-in wire connection)
	1012966	SACC-M12MS-5PL M DN	Field-installable connector-Male (straight)(metal nut) (push-in wire connection)
	1012967	SACC-M12MR-5PL M DN	Field-installable connector-Male (right angle)(metal nut) (push-in wire connection)
	1012968	SACC-M12FS-5PL M DN	Field-installable connector-Female (straight)(metal nut) (push-in wire connection)
	1012969	SACC-M12FR-5PL M DN	Field-installable connector-Female (right angle)(metal nut) (push-in wire connection)
	1500774	SACC-M12MS-5CON-PG 9	Field-installable connector-Male (straight)(plastic nut) (screw wire connection)
	1500787	SACC-M12FS-5CON-PG 9	Field-installable connector-Female (straight)(plastic nut) (screw wire connection)
	1681460	SACC-M12MS-5CON-PG 9-M	Field-installable connector-Male (straight)(metal nut) (screw wire connection)
	1681486	SACC-M12FS-5CON-PG 9-M	Field-installable connector-Female (straight)(metal nut) (screw wire connection)
Micro M/F Assembly Plastic 	1088171	SAC-6P-DTMS-5P-M12FS	Deutch DT04-6P to Female M12 adapter (metal nut)
	1088173	SAC-6P-DTMS-5P-M12FS P	Deutch DT04-6P to Female M12 adapter (plastic nut)
	1088172	SAC-6P-DTMS-5P-M12FS VA	Deutch DT04-6P to Female M12 adapter (stainless nut)
Termination Resistor 	1507816	SAC-5P-M12MS CAN TR	Termination resistor-Male (straight)(metal nut)
	1529344	SAC-5P-M12FS CAN TR	Termination resistor-Female (straight)(metal nut)
Micro M/F Assembly 	1405797*	SAC-5P-M12MS-M12FS/924/XX or SAC-5P-M12MS/XX-924/M12FS	Micro Double-End Male-Female cable assembly (metal nut) using NMEA cable (gray PVC cable jacket) (XX=cable length 0.2m…40m)
	1538144*	SAC-5P-M12MS-M12FS/920/XX or SAC-5P-M12MS/XX-920/M12FS	Micro Double-End Male-Female cable assembly (metal nut) using NMEA cable (violet PUR cable jacket) (XX=cable length 0.2m…40m)
Micro Connector Female Cable Assemblies 	1405796*	SAC-5P-M12FS/924/XX or SAC-5P-XX-924/M12FS	Micro Connector Female cable assemblies - Single Ended (metal nut) using NMEA cable (gray PVC cable jacket) (XX=cable length 0.2m…40m)
	1538128*	SAC-5P-M12FS/920/XX or SAC-5P-XX-920/M12FS	Micro Connector Female cable assemblies - Single Ended (metal nut) using NMEA cable (violet PUR cable jacket) (XX=cable length 0.2m…40m)
Micro Connector Male Cable Assemblies 	1405794*	SAC-5P-MS SCO/924/XX or SAC-5P-M12MS/XX-924	Micro Connector Male cable assemblies - Single Ended (metal nut) using NMEA cable (gray PVC cable jacket) (XX=cable length 0.2m…40m)
	1538102*	SAC-5P-M12MS/920/XX or SAC-5P-M12MS/XX-920	Micro Connector Male cable assemblies - Single Ended (metal nut) using NMEA cable (violet PUR cable jacket) (XX=cable length 0.2m…40m)
Mini/Thick M/F Assembly 	1416908	SAC-5P-MINMS/XX-U40/MINFS	Mini/Thick Double-End Male-Female cable assembly
Mini/Thick Bulkhead Feed Through 	1420961	SACC-E-MINF-5CON-NPT12-U40/1.0	Mini/Thick Connector Female cable assemblies - Single Ended
	1420959	SACC-E-MINM-5CON-NPT12-U40/1.0	Mini/Thick Connector Male cable assemblies - Single Ended

DeviceNet Cables - Gray 75°C PVC - Shielded

Design	Configuration	0.5 M	1.0 M	2 M	3 M	5 M	10 M	15 M	20 M	CMAT
5-pos. A-Code 	Female Straight / Open End	-	1669352	1669353	1669354	1669355	1669357	-	-	-
	Female 90° / Open End	-	1669358	1669359	1669360	1669361	1669362	-	-	-
	Male Straight / Open End	-	1669363	1669364	1669365	1669366	1669367	-	-	-
	Male 90° / Open End	-	1669368	1669370	1669371	1669373	1669374	-	-	-
	Male Straight / Female Straight	-	1669375	1669376	1669377	1669378	1669379	-	-	-
	Male Straight / Female 90°	-	-	-	-	-	-	-	-	-
	Male 90° / Female Straight	-	-	-	-	-	-	-	-	-
	Male 90° / Female 90°	-	-	-	-	-	-	-	-	-

Cable reels

Reliability without the wait

Phoenix Contact recognizes the various design challenges that can make it difficult to select factory-molded cordsets:

- Tight spaces mandate non-connectorized cable pulls
- Lengths are unpredictable due to custom machine builds
- Exact cable lengths are needed in less than a week
- Low quantities are required in many different lengths

Given these design challenges, we receive many requests each year to purchase cable material in bulk. This has prompted us to release our popular North American cable materials in both 100-meter and 300-meter lengths on a cable reel. Furthermore, by combining our field-wired connectors, shop technicians can quickly assemble factory-quality cables in less than five minutes.



M8 sensor cable reels

Cable jacket material	Number of wires	Wire configuration	Shield	Jacket color	Wire size		Cable diameter	Cable type	Cables spools	
					AWG	mm²			100m	300m
PVC	3	3 Wires	No	Yellow	**24 AWG**	0.25 mm²	4.1 mm	542	1421998	1421999
		3 Wires	No	Black	**24 AWG**	0.25 mm²	4.1 mm	535	1422018	1422019
		2 Wires + Drain	Foil + Drain	Gray	**24 AWG**	0.25 mm²	4.0 mm	680	1112973	1112974
		3 Wires	Braided	Yellow	**24 AWG**	0.25 mm²	4.7 mm	542	1422006	1422007
		3 Wires	Braided	Black	**24 AWG**	0.25 mm²	4.7 mm	535	1422030	1422031
	4	4 Wires	No	Yellow	**24 AWG**	0.25 mm²	4.4 mm	542	1422000	1422001
		4 Wires	No	Black	**24 AWG**	0.25 mm²	4.4 mm	535	1422022	1422023
		3 Wires + Drain	Foil + Drain	Gray	**24 AWG**	0.25 mm²	4.2 mm	680	1112975	1112976
		4 Wires	Braided	Yellow	**24 AWG**	0.25 mm²	4.9 mm	542	1422010	1422011
		4 Wires	Braided	Black	**24 AWG**	0.25 mm²	4.9 mm	535	1422034	1422035
	5	4 Wires + Drain	Foil + Drain	Gray	**24 AWG**	0.25 mm²	4.5 mm	680	1112977	1112978
PUR	3	3 Wires	No	Yellow	24 AWG	**0.25 mm²**	4.4 mm	240	1422042	1422043
		3 Wires	No	Black	24 AWG	**0.25 mm²**	3.6 mm	PUR	1422066	1422067
		3 Wires	No	Gray	24 AWG	**0.25 mm²**	4.3 mm	800	1422097	1422098
		3 Wires	Braided	Yellow	24 AWG	**0.25 mm²**	5.0 mm	240	1422054	1422055
		3 Wires	Braided	Black	24 AWG	**0.25 mm²**	4.4 mm	PUR	1422084	1422085
	4	4 Wires	No	Yellow	24 AWG	**0.25 mm²**	4.4 mm	240	1422046	1422047
		4 Wires	No	Black	24 AWG	**0.25 mm²**	4.0 mm	PUR	1422070	1422071
		4 Wires	No	Gray	24 AWG	**0.25 mm²**	4.5 mm	800	1422101	1422102
		4 Wires	Braided	Yellow	24 AWG	**0.25 mm²**	5.0 mm	240	1422058	1422059
		4 Wires	Braided	Black	24 AWG	**0.25 mm²**	4.7 mm	PUR	1422088	1422089

Wire size in **BOLD** is actual size based on design specifications. Additional wire size spec based on approximate conversion:
0.25 mm² = roughly 24 AWG, 0.34 mm² = roughly 22 AWG
*94F cable is spooled in 400 ft. (122 m) and 1000 ft. (305 m)

M12 sensor cable reels

Cable jacket material	Number of wires	Wire configuration	Shield	Jacket color	Wire size		Cable diameter	Cable type	Cables spools	
					AWG	mm²			100m	300m
PVC	3	3 Wires	No	Yellow	**22 AWG**	0.34 mm²	4.7 mm	542	1421996	1421997
		3 Wires	No	Yellow	**18 AWG**	1.0 mm²	5.7 mm	547	1070218	1070219
		3 Wires	No	Gray	**22 AWG**	0.34 mm²	4.7 mm	544	1318392	1318408
		3 Wires	No	Black	**22 AWG**	0.34 mm²	4.7 mm	535	1422020	1422021
		3 Wires	Braided	Yellow	**22 AWG**	0.34 mm²	5.2 mm	542	1422008	1422009
		3 Wires	Braided	Gray	**22 AWG**	0.34 mm²	5.2 mm	544	1318404	1318412
		3 Wires	Braided	Black	**22 AWG**	0.34 mm²	5.2 mm	535	1422032	1422033
	4	4 Wires	No	Yellow	**22 AWG**	0.34 mm²	5.0 mm	542	1430405	1419663
		4 Wires	No	Yellow	**18 AWG**	1.0 mm²	6.0 mm	547	1070220	1070221
		4 Wires	No	Gray	**22 AWG**	0.34 mm²	5.0 mm	544	1318401	1318409
		4 Wires	No	Black	**22 AWG**	0.34 mm²	5.0 mm	535	1422024	1422025
		3 Wires + Drain	Foil + Drain	Gray	**22 AWG**	0.34 mm²	4.8 mm	680	1112979	1112980
		4 Wires	Braided	Yellow	**22 AWG**	0.34 mm²	5.5 mm	542	1422012	1422013
		4 Wires	Braided	Black	**22 AWG**	0.34 mm²	5.5 mm	535	1422036	1422037
	5	5 Wires	No	Yellow	**22 AWG**	0.34 mm²	5.4 mm	542	1422002	1422003
		5 Wires	No	Yellow	**18 AWG**	1.0 mm²	6.6 mm	547	1070222	1070223
		5 Wires	No	Gray	**22 AWG**	0.34 mm²	5.4 mm	544	1318402	1318410
		5 Wires	No	Black	**22 AWG**	0.34 mm²	5.4 mm	535	1422026	1422027
		4 Wires + Drain	Foil + Drain	Gray	**22 AWG**	0.34 mm²	5.1 mm	680	1112981	1112982
		5 Wires	Braided	Yellow	**22 AWG**	0.34 mm²	5.9 mm	542	1422014	1422015
		5 Wires	Braided	Gray	**22 AWG**	0.34 mm²	5.9 mm	544	1318406	1318414
		5 Wires	Braided	Black	**22 AWG**	0.34 mm²	5.9 mm	535	1422038	1422039
	6	5 Wires + Drain	Foil + Drain	Gray	**22 AWG**	0.34 mm²	5.4 mm	680	1112983	1112984
	8	8 Wires	No	Yellow	**24 AWG**	0.25 mm²	5.7 mm	542	1422004	1422005
		8 Wires	No	Black	**24 AWG**	0.25 mm²	5.7 mm	535	1422028	1422029
		7 Wires + Drain	Foil + Drain	Gray	**24 AWG**	0.25 mm²	5.1 mm	680	1112985	1112986
		8 Wires	Braided	Yellow	**24 AWG**	0.25 mm²	6.3 mm	542	1422016	1422017
		8 Wires	Braided	Black	**24 AWG**	0.25 mm²	6.3 mm	535	1422040	1422041
	9	8 Wires + Drain	Foil + Drain	Gray	**24 AWG**	0.25 mm²	5.8 mm	680	1112987	1112988
PUR	3	3 Wires	No	Yellow	22 AWG	**0.34 mm²**	4.4 mm	240	1422044	1422045
		3 Wires	No	Black	22 AWG	**0.34 mm²**	3.9 mm	PUR	1422068	1422069
		3 Wires	No	Gray	22 AWG	**0.34 mm²**	4.5 mm	800	1422099	1422100
		3 Wires	Braided	Yellow	22 AWG	**0.34 mm²**	5.9 mm	240	1422056	1422057
		3 Wires	Braided	Black	22 AWG	**0.34 mm²**	4.7 mm	PUR	1422086	1422087
	4	4 Wires	No	Yellow	22 AWG	**0.34 mm²**	4.7 mm	240	1422048	1422049
		4 Wires	No	Black	22 AWG	**0.34 mm²**	4.2 mm	PUR	1422072	1422073
		4 Wires	No	Gray	22 AWG	**0.34 mm²**	4.8 mm	800	1422103	1422104
		4 Wires	Braided	Yellow	22 AWG	**0.34 mm²**	5.9 mm	240	1422060	1422061
		4 Wires	Braided	Black	22 AWG	**0.34 mm²**	5.0 mm	PUR	1422090	1422092
	5	5 Wires	No	Yellow	22 AWG	**0.34 mm²**	5.0 mm	240	1422050	1422051
		5 Wires	No	Black	22 AWG	**0.34 mm²**	4.6 mm	PUR	1422080	1422081
		5 Wires	No	Gray	22 AWG	**0.34 mm²**	5.1 mm	800	1422105	1422106
		5 Wires	Braided	Yellow	22 AWG	**0.34 mm²**	5.9 mm	240	1422062	1422063
		5 Wires	Braided	Black	22 AWG	**0.34 mm²**	5.3 mm	PUR	1422093	1422094
	8	8 Wires	No	Yellow	24 AWG	**0.25 mm²**	5.9 mm	240	1422052	1422053
		8 Wires	No	Black	24 AWG	**0.25 mm²**	5.9 mm	PUR	1422082	1422083
		8 Wires	No	Gray	24 AWG	**0.25 mm²**	6.0 mm	800	1422107	1422109
		8 Wires	Braided	Yellow	24 AWG	**0.25 mm²**	5.9 mm	240	1422064	1422065
		8 Wires	Braided	Black	24 AWG	**0.25 mm²**	5.9 mm	PUR	1422095	1422096

M12 Ethernet data cable reels

Cable jacket material	Number of wires	Wire configuration	Shield	Jacket color	Wire size		Cable diameter	Cable type	Cables spools	
					AWG	mm²			100m	300m
PVC	4 (2x2)	2x2, 100 Mbps	Braided SF-UTP	Black	**26 AWG**	0.14 mm²	6.0 mm	94D	1107611	1107612
	8 (4x2)	4x2, 1 Gbps	Braided SF-UTP	Black	**26 AWG**	0.14 mm²	6.4 mm	94D	1107613	1107614
PUR	4 (2x2)	2x2, 100 Mbps	Braided SF-UTP	Teal	**26 AWG**	0.14 mm²	6.4 mm	93E	1422111	1422112
		2x2, 100 Mbps	Braided SF-UTP	Black	**26 AWG**	0.14 mm²	6.0 mm	93D	1107607	1107608
	8 (4x2)	4x2, 1 Gbps	Braided SF-UTP	Teal	**26 AWG**	0.14 mm²	6.4 mm	94B	1422113	1422114
		4x2, 1 Gbps	Braided SF-UTP	Black	**26 AWG**	0.14 mm²	6.4 mm	93D	1107609	1107610
	8 (4x2)	4x2, 10 Gbps	Braided S-FTP	Teal	**26 AWG**	0.14 mm²	6.4 mm	94F	1415329*	1415335*
TPE	4 (2x2)	2x2, 100 Mbps	Braided SF-UTP	Teal	**24 AWG**	0.25 mm²	6.3 mm	93F	1180721	1180722
	8 (4x2)	4x2, 100 Mbps	Braided SF-UTP	Teal	**24 AWG**	0.25 mm²	6.3 mm	94L	1180723	1180724

M12 DeviceNet™ data cable reels

PVC	5 (2x2+DN)	2x2 + Drain	Foil	Gray	**22/22 AWG**	0.34 mm²	6.9 mm	924	1422115	1422116

M12 power cables

PVC	3 (AC color code)	2+PE	No	Black	**16 AWG**	1.5 mm²	6.8 mm	PVC	1318677	-
PUR	4 (AC color code)	3+PE	No	Black	**16 AWG**	1.5 mm²	8.8 mm	PUR	1318675	-
		3+PE	Yes	Orange	**16 AWG**	1.5 mm²	9.7 mm	PUR	1318674	-
	5 (AC color code)	4+PE	No	Black	**14 AWG**	2.5 mm²	9.7 mm	PUR	1318679	-
		4+PE	Yes	Orange	**14 AWG**	2.5 mm²	10.3 mm	PUR	1318678	-
	4 (DC color code)	4 Wires	No	Black	**16 AWG**	1.5 mm²	8.4 mm	PUR	1318676	-
		4 Wires	Yes	Black	**16 AWG**	1.5 mm²	9.7 mm	PUR	1318673	-
		4 Wires	No	Black	**14 AWG**	2.5 mm²	8.8 mm	PUR	1318680	-
	5 (DC color code)	5 Wires	No	Gray	**14 AWG**	2.5 mm²	9.65 mm	280	1318681	-
		5 Wires	No	Gray	**16 AWG**	1.5 mm²	9.1 mm	290	1318683	-
		5 Wires	Yes	Gray	**14 AWG**	2.5 mm²	10.4 mm	280	1318682	-

Accessories

The following items will help you prepare cable jackets and wires for use with connectors and ensure proper torque of coupling nuts and cable glands to meet IP ratings.

Cable processing

Function	Description	Range	CUTFOX 12	CUTFOX 18	WIREFOX SAC	WIREFOX SAC 1	WIREFOX D11	WIREFOX D40
								
Cable cutters	One-hand cable cutter, for Cu and Al conductors	up to 12 mm Ø (up to 35 mm²)	1212128	-	-	-	-	-
	One-hand cable cutter, angled, for Cu and Al conductors	up to 18 mm Ø (up to 50 mm²)	-	1212129	-	-	-	-
Cable jacket strippers	Best for SAC cables, with PUR and PVC insulation (most M12 sensor cables)	4.4 - 7 mm any stripping length	-	-	1212623	-	-	-
	Best for SAC cables, with PUR and PVC insulation (most M8 sensor cables)	3.2 - 4.4 mm any stripping length	-	-	-	1212757	-	-
	Best for shielded Network cabling	2.5 - 11 mm Ø, insulation thickness up to 1 mm	-	-	-	-	1212160	-
	Best for Network and Power cabling, swivel blade for round, lengthwise and spiral cuts	4.5 - 40 mm Ø, insulation thickness up to 4.5 mm	-	-	-	-	-	1212161

Wire processing

Function	Description	Range	MICROFOX SP	MICROFOX SP-1	WIREFOX 2.5	WIREFOX 4	WIREFOX 10
							
Wire cutters (snips)	Electronic diagonal cutter, tapered head, angled (21°), without chamfer, with opening spring	-	1212488	-	-	-	-
	Electronic diagonal cutter, tapered head, without chamfer, with opening spring, punched version	-	-	1212487	-	-	-
Wire strippers	Strip length adjustable up to 15 mm, cutting capacity up to 6 mm² stranded/ 1.5 mm² solid	0.08 mm² - 2.5 mm²	-	-	1212368	-	-
	Strip length adjustable up to 18 mm, cutting capacity: stranded up to 10 mm²/ 1.5 mm² solid	0.1 mm² ... 4 mm²	-	-	-	1212156	-
	Strip length adjustable up to 18 mm, cutting capacity: stranded up to 10 mm²/ 1.5 mm² solid	0.02 mm² ... 10 mm²	-	-	-	-	1212150

Torque screwdrivers and bits for tightening connector coupling nuts

Torque driver	Description	Range	Torque driver	Adapter nut for unshielded QUICKON SACCs	Adapter nut for SAC cables	Adapter nut for all other SACCs (Screw, PT, etc.)	Adapter nut for SACB glands	Adapter bit for adjustable torque driver to accept SAC bits
								
M8	Preset torque of 0.2 Nm and 4 mm hexagonal drive for M8 connectors	0.2 Nm	1208487	1208461	1208461	1208474	-	-
M12	Preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors	0.4 Nm	1208429	1208432	1208432	1208445	-	-
MINI 7/8"	Preset torque of 0.8 Nm and 4 mm hexagonal drive for MINI 7/8" connectors	0.8 Nm	1212597	1212512	-	1212512	-	-
SACB glands	Preset torque of 2.5 Nm and 4 mm hexagonal drive for M8 and M12 sensor box cable glands	2.5 Nm	1212315	-	-	-	1212486	-
Adjustable	Adjustable torque screwdriver, accuracy as per EN ISO 6789 standard	0.3 - 1.2 Nm	1212224	-	-	-	-	1212600

Cable glands

Gland sealing range			Plastic				Metal			
Min. (mm)	Max (mm)	Mounting thread	 Gray Gland	 Locknut	 Black Gland	 Locknut	 Standard	 Locknut	 Shielded	 Locknut
3	6.5	M12	1411123	1411205	1411131	1411213	1411160	1411240	1411187	1411267
3	6.5	Pg7	1411140	1411221	1424495	1424558	1411170	1411255	1411195	1411275
4	8	M16	1424475	1411206	1424480	1411214	1424526	1411241	-	-
4	8	Pg9	1411141	1411222	1424496	1424559	1411171	1411256	1411196	1411276
5	9	M16	-	-	-	-	-	-	1411188	1411268
5	10	M16	1411124	1411206	1411132	1411214	1411162	1411241	-	-
5	10	Pg11	1411142	1411223	1424497	1424560	1411172	1411257	1411197	1411277
5	10	3/8" NPT	1411152	1411231	1411156	1411236	1411182	1416009	-	-
6	12	M20	1411125	1411207	1411133	1411215	1411163	1411242	-	-
6	12	Pg13.5	1411143	1411224	1424498	1424561	1411173	1411259	1411198	1411278
9	13	M20	-	-	-	-	-	-	1411189	1411269
10	14	M20	1424476	1411207	1424481	1411215	-	-	-	-
10	14	M25	-	-	-	-	1424527	1411243	-	-
10	14	Pg16	1411144	1411225	1424499	1424562	1411174	1411260	1411199	1411279
10	14	1/2" NPT	1411153	1411233	1411157	1411237	1411183	1416010	-	-
13	18	M25	1424477	1411208	1424482	1411216	-	-	-	-
13	18	Pg 21	1411145	1411226	1424500	1424563	1411175	1411262	1411200	1411280
13	18	3/4" NPT	1411154	1411234	1411158	1411238	1411184	1416011	-	-
13	18	M32	-	-	-	-	1424528	1411244	-	-

Receptacle locking nuts and flat gaskets

	M8	M16	M16 EMC	Pg9	Pg9 EMC
Locking nuts 	1504071	1504097	1440164	1504084	140177
Flat gaskets (replacements) 	-	1430394	-	1556320	-

Cover caps

	Description	M8		M12		MINI 7/8"	
		Male	Female	Male	Female	Male	Female
	Plastic, full-thread	1682540	-	1680539	1560251	1410604	1410605
	Plastic, SPEEDCON	-	-	1553129	-	-	-
	Plastic, special for M12 Power	-	-	1092802	-	-	-
	Metal	-	-	1414148	1430488	-	-
	Metal for shielded cables	-	-	1503302	-	-	-
	Plastic, with cable tie	1430860	1430857	1430899	1430873	1430925	1430912
	Plastic, with 3 mm fixing eye	1441105	-	-	-	-	-
	Plastic, with 7.5 mm fixing eye	-	1441082	-	-	-	-
	Plastic, with 11.5 mm fixing eye	1441095	-	-	-	-	-
	Plastic, with 12 mm fixing eye	-	-	-	1456187	-	-
	Plastic, with 14.5 mm fixing eye	-	-	1456200	1456190	-	-
	Metal, with 16 mm fixing eye	-	-	1414147	1430491	-	-

Full cable selection guide

	Phoenix Contact North American Cable Typ					
Features:	**186**	**542**	**535**	**544**	**547**	**U20**
Jacket material	PUR	PVC	PVC	PVC	PVC	PVC
Jacket color	Black	Yellow	Black	Gray	Yellow	Yellow
Wire Size	.75mm2 (18 AWG)	22 AWG 24 AWG	22 AWG 24 AWG	22 AWG 24 AWG	18 AWG	16 AWG
Sheild	Unshielded	Shielded / Unshielded	Shielded / Unshielded	Shielded / Unshielded	Unshielded	Unshielde
Temperature, flexed	-25 to 80°C	-5 to 105°C	-5 to 105°C	-5 to 105°C	-5 to 105°C	-20 to 105
Temperature, fixed	-40 to 80°C	-30 to 105°C	-30 to 105°C	-30 to 105°C	-30 to 105°C	-20 to 105
Abrasion resistance	Excellent	Fair/Good	Fair/Good	Fair/Good	Fair/Good	Fair/Goo
Flex Rated (lateral)	Yes	No	No	No	No	No
Torsional Flex Rated	No	No	No	No	No	No
UV resistance	Good	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excellent	Yes
Sunlight resistance	Good	Excellent	Excellent	Excellent	Fair	Fair
Halogen-free	Yes	No	No	No	No	No
Welding spark resistance	No	No	No	No	No	No
Oil resistance	Good/Excellent	Fair/Good	Fair/Good	Fair/Good	Fair/Good	Fair/Goo
Chemical resistance	Good/Excellent	Fair/Good	Fair/Good	Fair/Good	Fair/Good	Fair/Goo
Relative cost	$$	$	$	$	$$	$$
Cordset Series						
M8 Sensor/actuator		X	X	X		
M12 Sensor/actuator	X	X	X	X	X	
M12 Power						
MINI 7/8-inch Sensor/actuator					X	X
Sweet Spot - Custom	X	X	X	X	X	

	Phoenix Contact North American Ca					
Features:	**920**	**923**	**924**	**U40**	**U30**	**93E**
Jacket material	PUR	PUR	PVC	PVC	PVC	PUR
Jacket color	Purple	Gray	Gray	Gray	Gray	Teal blue
Wire size	2x24 AWG	2x24 AWG	2x22 AWG	2x15 AWG	2x24 AWG	2x2x26 AW
	2x22 AWG	2x22 AWG	2x22 AWG	2x18 AWG	2x22 AWG	SF-UTP
	Drain	Drain	Drain	Drain	Drain	
Data rate						100 Mbps
Temperature, flexed	-20 to 80°C	-20 to 80°C	-25 to 80°C	-20 to 60°C	-20 to 70°C	-10 to 50°
Temperature, fixed	-40 to 80°C	-40 to 80°C	-40 to 80°C	-20 to 60°C	-20 to 70°C	-40 to 70°
Abrasion resistance	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Flex Rated (lateral)	Yes	Yes	No	No	No	No
Torsional Flex Rated	No	No	No	No	No	No
UV resistance	No	No	No	Yes	Yes	No
Sunlight resistance	No	No	No	No	No	No
Halogen-free	Yes	Yes	Yes	No	No	Yes
Welding spark resistance	No	No	No	No	No	No
Oil resistance	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excell
Chemical resistance	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excell
Relative cost	$$	$$	$$$	$$$	$$$	$$$
Cordset series						
M12 Ethernet						X
M12 DeviceNet	X	X	X			
MINI 7/8-inch DeviceNet				X	X	
Sweet Spot - Custom	X	X	X			X

pes for Standard Sensor/Actuator Applications							
	U50	**U60**	**652**	**680**	**701**	**PUR**	**800**
	PVC	PVC TC-ER	TPE	PVC	PUR	PUR	TPE
	Black	Black	Yellow	Gray	Black	Black	Gray
G	14 AWG	14 AWG	18 AWG 22 AWG	22 AWG 24 AWG	18 AWG	22 AWG 24 AWG	22 AWG 24 AWG
ed	Unshielded	Shielded / Unshielded	Unshielded	Shielded	Shielded	Shielded / Unshielded	Unshielded
°C	-20 to 105°C	-20 to 105°C	-5 to 105°C	-5 to 105°C	-25 to 80°C	-25 to 80°C	-30 to 90°C
°C	-20 to 105°C	-20 to 105°C	-30 to 105°C	-30 to 105°C	-40 to 80°C	-40 to 80°C	-40 to 90°C
d	Fair/Good	Fair/Good	Good	Fair/Good	Excellent	Excellent	Excellent
	No	No	Yes	No	Yes	Yes	Yes
	No	No	Yes	No	No	No	Yes
	Yes	Yes	Yes	Yes	Good	Good	No
	Fair	Fair	Good		Good	Good	No
	No	No	Yes	No	Yes	Yes	Yes
	No	No	Yes	No	No	No	Yes
d	Fair/Good	Fair/Good	Good	Fair/Good	Good/Excellent	Good/Excellent	Good/Excellent
d	Fair/Good	Fair/Good	Good	Fair/Good	Good/Excellent	Good/Excellent	Good/Excellent
	$$	$$$	$$$	$$	$$$	$$	$$$
				X		X	X
			X	X		X	X
		X					
	X						
		X	X	X	X	X	X

able Types for DeviceNet and Ethernet						
	94B	**93D**	**94D**	**94F**	**94L**	**94S**
	PUR	PUR	PVC	PUR	PUR	PUR
e	Teal blue	Black	Black	Teal blue	Teal blue	Black
VG	4x2x26 AWG	2x2x26 AWG	2x2x26 AWG	4x2x26 AWG	4x2x26 AWG	4x2x26 AWG
	SF-UTP	4x2x26 AWG	4x2x26 AWG	S-FTP	S-FTP	S-FTP
		SF-UTP	SF-UTP			
s	1 Gbps	2 pair: 100 Mbps 4 pair: 1 Gbps	2 pair: 100 Mbps 4 pair: 1 Gbps	10 Gbps	10 Gbps	10 Gbps
C	-10 to 50°C	0 to 50°C	0 to 50°C	-10 to 50°C	-10 to 50°C	
C	-40 to 70°C	-40 to 80°C	-40 to 80°C	-40 to 70°C	-40 to 70°C	-40 to 80°C
t	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
	No	Yes	No	Yes	Yes	No
	No	No	No	No	Yes	No
	No	Yes	Yes	No	No	No
	No	No	No	No	No	No
	Yes	Yes	Yes	Yes	Yes	LSZH
	No	No	No	No	No	No
lent	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excellent
lent	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excellent	Good/Excellent
	$$$	$$$	$$$	$$$	$$$$	$$$$$
	X	X	X	X	X	X
	X	X	X	X	X	X

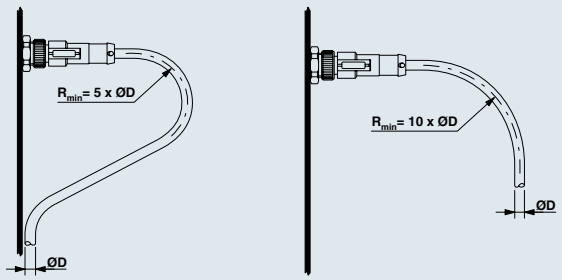
Cable installation guidelines

Please take care to follow recommended installation practices for industrial applications. Described on these pages are both appropriate and inappropriate installation practices for sensor/actuator cables. Following these recommendations will guarantee you a long service life and reduce maintenance costs.



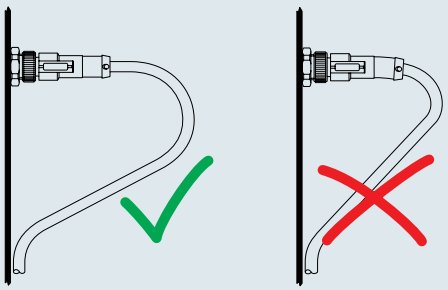
Bending radius

Ensure a sufficient bending radius. This is important since a greater bending radius will better absorb energy that results from cable movement. In fixed installations, the minimum bending radius is 5 x diameter, and for flexing/moving installations a minimum of 10 x diameter is recommended.



Strain relief

A sufficient cable loop at the connection point can prevent the cable jacket and inner conductors from stress and premature wear. In applications with stress loops, sufficient clearance is needed for additional energy to be absorbed.





Moving and continuously flexed installations

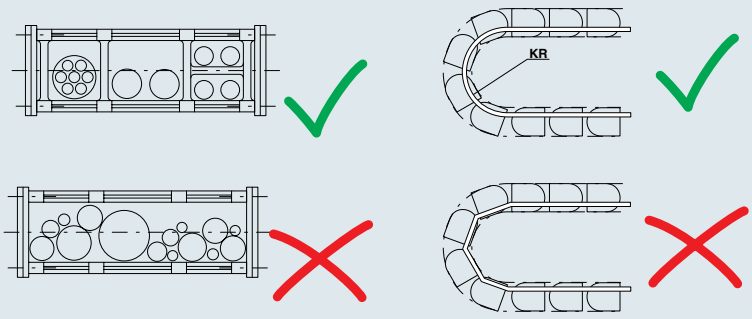
In the case of linear or torsional flexing installations, the cable length should be sufficient to provide adequate slack for absorbing tensile stress. This can be achieved using mechanical supports and cable loops.



Cable track installation

Cables should be laid individually and loosely next to each other within drag chains. Those cables with very different diameters should be isolated with bridges. If bridges cannot be used, we recommend our cables with an outside diameter < 10 mm should be laid loose within a guide tube in the cable track.

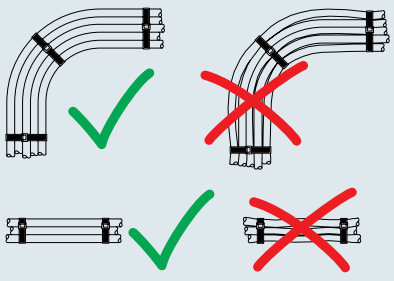
Arrange heavy cables on the outer side of the track and light-weight cables, such as our SAC cables, laid inwards. They should have adequate strain relief at both ends. A distance of 20 to 30 times the outside diameter of the cable is recommended between the connection point and where the bending motion ends.



Observe the information provided by the cable track manufacturer for laying cables.

Cable bundling

When bundling cables together, always ensure that they can move freely within the bundle. If the bundle is too tight, the cables could be pinched and stressed.



Resistance to chemicals

- Not resistant
0 Moderately resistant
+ Good resistance

Chemicals	Concentration in %	Temperature in °C	Plastics: PA 66 / PA 6	PA 66 GF	PA 46 GF	PC GF	POM	NBR	PP	EPDM	PBT	PUR	PUR irradiated*	PVC-P (soft)	PE-LD	TPU	FPM (Viton)	CR (neoprene)
Acetaldehyde			0	0	0	-	0	-	-	0		+	+	+	0	0	-	0
Acetone		20	+				+	-	+	+	0	0	0	-	+	-	-	0
Acetate			+	+	+	0	0	-	+	0	0	+	+	-	-	-	-	-
Acetophenone			+	+	+	0	0	-	+	0	0	+	+	-	-	-	-	-
Aldehyde			0	0	0	-	0	-	-	0		+	+	+	0	-	0	0
Formic acid			-	-	0	0	+	-	+	+	+	0	0	-	+	0	0	+
Amines			+	+	+	-	0	-	-	0	+	+	+	+	0	-	-	-
Alcohols			0	0	0	0	+	0	+	+	+	+	+	-	+	+	0	+
Ammonia	10	20	+				+	0	+	+	+	+	+	0	+	0	-	+
Benzaldehyde			0	0	0	-	0	-	-	0		+	+	+	0	0	-	0
Gasoline		20	+	+	+	0	+	0	0	-	+	+	+	-	-	-	+	-
Benzol		50	+	+	+	+	0	-	0	-	+	0	0	-	0	-	0	-
Benzophenone		20	+	+	+	0	0	-	+	0	0	+	+	-	-	-	+	-
Boracic acid	100	20	0				0	+		+	+	0	0	0	+	+	+	+
Brake fluid		100	+				+	-		+	+	-	-	0	+	-	-	-
Butyric acid			-	-	0	0	+	0	+	+	+	0	0	+	+	-	0	0
Cyclohexanone			+	+	+	0	0	-	+	0	0	+	+	-	-	-	-	-
Diesel oil			+				+	+	+	-	+	+	+	-	+	-	+	-
Diethylamine			+	+	+	-	0	-	-	0	+	+	+	+	-	-	-	-
Dimethylamine			+	+	+	-	0	-	-	0	+	+	+	+	0		-	-
Glacial acetic acid		50		-	-	-	-	-	0	+	-	-	-	-	+	-	-	-
Acetic acid	20		-	-	0	0	+	-	+	+	+	0	0	0	+	-	-	0
Esters			+	+	+	0	-	-	-	0	+			-	+	-	-	-
Ethanol			0	0	0	0	+	0	+	+	+	+	+	-	+	+	+	+
Ether			+	+	+	-	0	-	0	0	+	+	+	-	0	+	-	-
Greases			+	+	+	+	+	+	0	0				0	+	-	+	0
Formaldehyde			0	0	0	-	0	-	-	0		+	+	+	0	0	+	0
Gear oil		100	+				+	+		-	+	+	+	+	+	-	+	-
Halogens (fluorine, chlorine, bromine, iodine)			-	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-
Hydraulic oil		20	+				0	+		-	+	+	+	-	+	-	+	-
Potassium hydroxide solution			+	+	+	-	+	0	+		-	+	+	+	+	0	+	-
Kerosene		20	+				+				+	+	+	-	0	-	+	-
Ketones			+	+	+	0	0	-	+	0	0	+	+	-	-	-	-	-
Hydrocarbons, aliphatic			+	+	+	+	+	+	0	0	+	+	+	-	+	+	+	-
Hydrocarbons, aromatic			+	+	+	-	0	-	0	0	0	+	+	-	-	-	+	-
Hydrocarbons, chlorinated			0	0	0	-	+	-	-	-	0	-	-	-	-	-	+	-
Hydrocarbons, unsaturated chlorinated			0	0	0	-	+	-	-	-	0	0	0	-	-	-	+	-
Fuels			+	+	+	0	+	0	0	-	+	+	+	-	-	-	+	-
Alkalis, weak			+	+	+	-	+	0	+	+	+	+	+	+	+	0	+	0
Alkalis, strong			0	-	-	-	+	-	+		+	-	-	+	0	0	-	-
Inorganic salt solutions			+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	
Machine oil			+				+				+	+	+	0	+	-	+	-
Metal chloride			+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+
Metal sulfate			+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+
Metal nitrate			+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+
Methanol			0	0	0	0	+	0	+	+	+	+	+	-	+	+	-	+
Methylamine			+	+	+	-	0	-	-	0	+	+	+	+	+	0	0	-
Lactic acid	10	20	+				+	+	+	+	+	+	+	-	+	+	+	+
Mineral oil			+	+	+		+	+	+	-	+	+	+	-	+	-	+	-
Motor oil		120	+	+	+	0	+	+	+	-	+	+	+	-	+	-	+	-
Sodium hydroxide solution	50	50	0	0	+	-	+	+	+	+	-	+	+	+	+	0	0	0
Nitrobenzene			0				0	-		0	+	-	-	-	0	+	0	-
Ozone			0	0	0	-	0	-	+	+	+	0	0	+	+	0	+	-
Propyl alcohol			0	0	0	0	+	0	+	+	+	+	+	-	+	+	+	+
Nitric acid	30	20	-	0	-	0	-	-	+	0	0	0	0	-	+	-	+	-
Hydrochloric acid		20	-				-	0	+	0	0	-	-	-	+	0	+	0
Sulfuric acid	50	50	-	0	-	0	-	-	+	+	-	0	0	+	+	0	+	-
Salt water		20	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Turpentine			0	0	0	+	-	+	-	-	+	0	0	-	-	-	+	-
UV resistance			+	+	+	0	0	-	-		+	+	+	0	0	+	+	
Detergent alkalis	2	100	0				+	+		+	+	+	+	-	+	+	+	0
Water (dist.)		20												+				
Water, cold			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Water, hot			-	-	-	-	+	+	+	+	-	+	+	+	+	0	+	0
Citric acid	10		+				+	+	+	+	+			+	+	+	+	+

* The irradiated PUR version is generally more resistant than the non-irradiated version. This cannot be quantified and must be checked in individual cases.

The information in the table has been gathered from the recommendations of our plastic suppliers.

Since individual operating conditions can also affect the usability of each product, this information should be used as a guide only.

For applications where no prior experience exists, we recommend that the user carries out preliminary tests.

Notes

Open communication with customers and partners worldwide

Phoenix Contact is a global market leader based in Germany. We are known for producing forward-thinking products and solutions for the comprehensive electrification, networking, and automation of all sectors of the economy and infrastructure. With a global network, we maintain close relationships with our customers, something we believe is essential for our common success.

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