Customer Presentation

M12 SIGNAL CONNECTORS AND CABLE ASSEMBLIES

PRODUCT NOTICE

PRESENTER'S NAME:
DATE:

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creating connections for life

M12 Signal Connectors and Cable Assemblies

Delivering rugged, compact and flexible connectivity solutions, sealed M12 Signal Connectors and Cable Assemblies support efficient signal and low-power transmission for industrial sensor, actuator and network infrastructure applications. They use the industry-standard M12 form factor and meet the IEC 61076-2-101 specification.

Key Product Information

Category: Industrial connectors
IEC Specification: 61076-2-101
Current: Up to 4.0A
Poles: 2, 3, 4, 5, 8, 12
Coding: A-code, B-code, C-code
Ingress Protection Rating: IP67

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Download Datasheet

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Vital Product Information

M12 Signal Connectors and Cable Assemblies

What makes this product different from the competition?

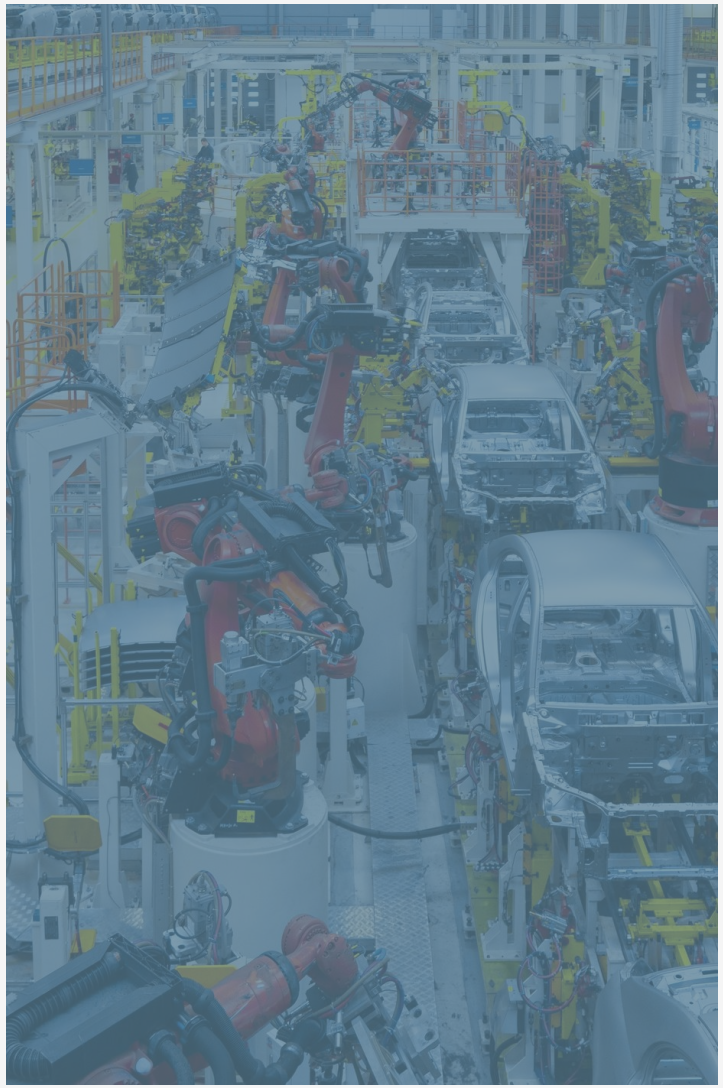
The broad range of industrial connectivity solutions from Molex offers customers end-to-end connectivity solutions for a variety of applications. Customers can leverage Molex's extensive experience and collaborative technical expertise, together with Molex M12 signal, power and data interconnect solutions, to optimize their networks and maximize productivity and efficiency.

How does this product create value for our customers?

The extensive line of Molex M12 signal and low-power interconnect solutions provides compact, robust and high-performance connectivity for a variety of industrial and commercial-vehicle applications. The industry-standard M12 system supports flexible, scalable and upgradable system design with durable and ruggedized components that minimize system downtime, simplify installation processes and reduce long-term costs.

What is the Molex advantage?

Global manufacturing capability, robust engineering support and consistent quality make Molex a unique resource in finding versatile connectivity solutions optimized for harsh environments.



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Product Overview

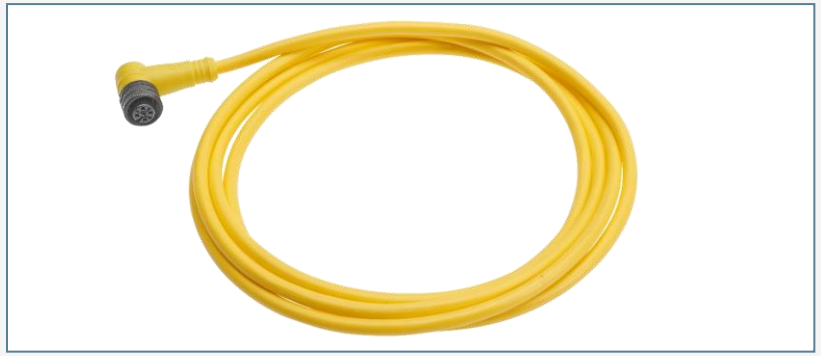
M12 Signal Connectors and Cable Assemblies

Reliable Signal Connectivity for Harsh Environments

Rugged, compact and versatile M12 Signal Connectors and Cable Assemblies provide flexible and sealed A-code, B-code and C-code connections for industrial sensor, actuator and network infrastructure applications. Connectors meet the IEC 61076-2-101 specification and offer a wide variety of interconnect options.

Single- and Double-Ended Cordsets for M12 Signal Applications

Delivering the versatility and ruggedness required for Industry 4.0 networks, M12 cable assemblies use weld-slag and oil-resistant (WSOR) cables to provide reliable connections in harsh environments. Cordsets are available in a variety of single- and double-ended configurations.



Versatile Options for Quick-Change Connections

M12 Signal Connectors are available with threaded or push-pull connections to support flexible industrial networks, reduce downtime, simplify maintenance operations and eliminate assembly errors.

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Markets and Applications

M12 Signal Connectors and Cable Assemblies

Food and Beverage Automation Systems

Automotive Manufacturing Equipment

Heavy Machinery

INDUSTRIAL AUTOMATION

- Actuators
- Automated material-handling systems
- Devices
- Food and beverage automation systems
- Sensors

AUTOMOTIVE

- Automotive manufacturing equipment
- Smart warehousing

COMMERCIAL & INDUSTRIAL VEHICLES

- Agricultural machinery
- Harsh-environment connected systems
- Heavy machinery
- Mining, construction and forestry equipment

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Frequently Asked Questions

M12 Signal Connectors and Cable Assemblies

Are M12 Signal Connectors and Cable Assemblies suitable for outdoor or harsh-environment applications?

Yes, they are. These solutions can be used in a variety of challenging environments, including outdoors.

Do these products meet specific industry standards or certifications?

Yes, M12 Signal Connectors and Cable Assemblies meet IEC specification 61076-2-101. Molex also offers push-pull M12 Signal Connectors that meet IEC specification 61076-2-010.

Are there customization options available for M12 Signal Connectors and Cable Assemblies?

Yes, some customization may be available—contact Molex for details.

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Solving Industry Challenges

M12 Signal Connectors and Cable Assemblies

Industry Need	Industry Challenge	Industry Solution	Anticipated Results
Integrating complex systems in confined spaces	Integrating a variety of increasingly complex machines and systems within limited space requires versatile and capable connections.	Compact M12 Connectors deliver a variety of interconnect solutions in a miniaturized, robust and versatile form factor.	System designers can integrate complex systems with minimal space usage and streamlined, simplified connections.
High reliability in harsh environments	Signal connectors and cables must maintain high performance in environments subject to high temperatures as well as moisture, chemical and dust exposure.	M12 Signal Connectors and Cable Assemblies are designed to withstand demanding conditions, with IP67-rated sealing against dust or moisture ingress.	Reliable electrical connections help enhance productivity, minimize downtime and maintenance requirements, reduce assembly errors, and extend the product life cycle for connectors and cables.
Flexibility for power and signal transmission	Power and signal interconnect solutions that are flexible, adaptable and scalable are necessary to support changes and upgrades.	Flexible M12 Signal Connectors and Cable Assemblies deliver modular, scalable connectivity solutions that streamline upgrades and accelerate changes to networks and devices.	Making upgrades and expansions easier supports more efficient operations and enables manufacturers to adapt more quickly to market needs and ensure outputs meet demand.

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Product Advantages and Features

M12 Signal Connectors and Cable Assemblies

Provides consistent connectivity in harsh environments

Sealed, IP67-rated M12 connectors safeguard against moisture or dust ingress and are designed to withstand temporary immersion in water, ensuring stable performance in challenging conditions.

Enhances system design flexibility

A variety of connector and cable assembly configurations support various coding options and industrial protocols, streamlining system design while making industrial networks more scalable and upgradable.

Delivers high performance in a compact form factor

The design enhances efficiency and improves design flexibility by reducing the connector footprint.

Improves long-term reliability

Precision-engineered M12 solutions are optimized for ruggedness and dependability, providing long-term value by minimizing maintenance work and system downtime.

Simplifies installation

Threaded and push-pull connector options are designed for quick changes and reliable, secure mating, improving productivity by reducing setup time and preventing assembly errors.

Key Specifications	
IEC Specification	61076-2-101
Current	Up to 4.0A
Voltage	Up to 250V
Poles	2, 3, 4, 5, 8, 12
Ingress Protection Rating	IP67
Coding	A-code, B-code, C-code
Operating Temperatures	-30 to +85°C (with exceptions)

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Product Specifications

M12 Signal Connectors and Cable Assemblies

Reference Information

Packaging: Dependent on component

Designed in: Millimeters

RoHS: Compliant by exemption

Halogen Free: Varies by component

Mates With: M12 cordsets, receptacles and message passing interface (MPI) I/O blocks

Electrical

Voltage (max.):
- 2-, 3-, 4-pole—250V
- 5-pole—60V
- 8-, 12-pole—30V

Current (max.):
- 2-, 3-, 4-, 5-pole—4.0A
- 8-pole—2.0A
- 12-pole—1.5A

Mechanical

Coding: A-code, B-code, C-code (other coding options available for power and data applications)

Poles: 2, 3, 4, 5, 8, 12

Ingress Protection Rating: IP67

Durability (min.): 100 mating cycles

Physical

Coupling Nut: Brass, plastic, stainless steel

Insert: Plastic

Overmold: Plastic

O-Ring: FPM

Contact: Brass, copper alloy

Contact Plating: Gold over nickel

Operating Temperatures: -30 to +85°C (with exceptions—depending on components used)

Additional Resources	
Web Overview Page	**https://www.molex.com/en-us/products/connectors/industrial-connectors/micro-change-m12**
Datasheet	987652-8211.pdf (molex.com)
Global Product Manager	Dariusz Stachowiak, ISBU, DSS

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THANK YOU

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