



# **M - series Circular Connectors**

## **M12 Series**

### **Product Selection Manual**

## **XY Code**

## RELIABLE CONNECTION EXPERTS

**ShunKonn Technology electronic Co., Ltd.** is a company specializing in the industrial automation field, committed to providing globally leading excellent connection solutions. Founded in 2013, it has rapidly established a good reputation in the market with its high - quality products and strong technical strength. **Connoder** is a brand under **Dongguan ShunKonn Technology electronic Co., Ltd.**

The company boasts a powerful R & D team that constantly innovates in technology to meet the ever - changing market demands. It strictly adheres to international quality standards, ensuring that every product undergoes comprehensive testing and verification, thus achieving extremely high reliability and performance.

It is dedicated to offering outstanding connection solutions, driving customers' technological innovation and development, and aspiring to become a leader in the connection industry. We welcome cooperation from all parties to jointly explore the future of connection technology.

In the industrial automation field, the demand for efficient, reliable and safe connection products is growing steadily. As a professional B2B direct - factory manufacturer focused on providing world - leading excellent connection solutions, Connoder has been motivated by innovation since its establishment in 2013. It has been constantly exploring and practicing, aiming to provide products and services that exceed customers' expectations.

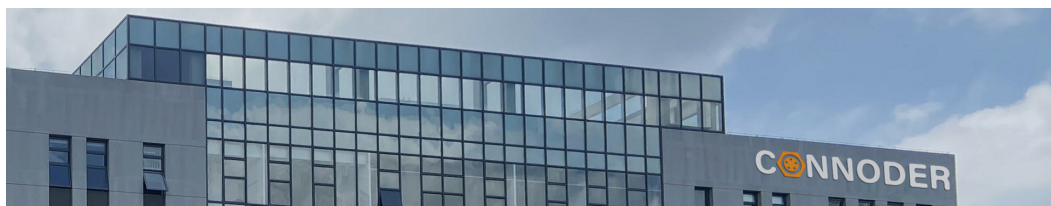
## Innovation Drives Development

The founder of **Connoder** has over 20 years of experience as an industry expert, deeply understanding the profound impact of intelligent manufacturing and Industry 4.0 on the market. The initial shortage of funds and backward technology at the company's establishment didn't stop our progress. By focusing on R & D and quickly responding to changes in market demands, our first M12 core circular connector was widely recognized by the market upon its launch, laying the company's fundamental position in the industry.

## Professional Manufacturing Strength

**Connoder** is a high - tech enterprise integrating the R & D and production of industrial connectors, cables, and related peripheral equipment.

The company covers an area of over 3,000 square meters and owns advanced precision molding equipment such as Swiss Charmilles and Japanese Sodick wire - cutting machines, ensuring high - quality products. In addition, we have precise testing equipment and more than 100 automatic assembly devices, strictly implementing the quality inspection process for each batch of products.



## Emphasis on Both Technology and Quality

**Connoder** not only focuses on technological innovation but also attaches great importance to product quality. The company strictly adheres to international quality standards, and all products must undergo comprehensive testing and verification to ensure high reliability and performance. Thanks to such perseverance, our products have been successfully sold to more than 50 countries and regions worldwide, winning unanimous praise from customers.

## Social Responsibility and Sustainable Development

Adhering to the principle of mutual benefit and win - win results, **Connoder** is deeply influenced by Mr. Kazuo Inamori's business philosophy. We put people first and value the growth and well - being of our employees. At the same time, we actively fulfill our social responsibilities, participate in sustainable development projects and public welfare activities, and encourage employees to face life's challenges with a positive and optimistic attitude.

## Looking to the Future

Looking ahead, **Connoder** will continue to deepen its global strategic layout, build new R & D centers and production bases, accelerate digital transformation, and strengthen its leading edge in the industry. We will continue to expand production scale, improve technological levels, further expand market share, and strive to promote the progress and development of global industrial automation.

## Innovation and R & D Capabilities

### R & D Team

Composed of engineers and technical experts with rich product development experience, they are specialized in the innovative design of connectors, cables, and accessories.

### Technical Innovation

Through continuous investment in technology and innovation, we are committed to applying the latest technologies to our products. This helps improve performance and reliability, and ensures seamless connections between devices.

### Innovative Applications

We develop smart connectors that support Internet of Things (IoT) and Industry 4.0 applications, enabling more efficient data transmission and device interconnection.



## Production Capacity

### High - Precision Injection Molding Machines

**Connoder** has a professional production team for plastic parts, dedicated to manufacturing high - precision and complex - structured circular connectors. The injection molding machines are equipped with advanced control systems, which can accurately control temperature, pressure, and injection speed, ensuring the consistency and high precision of each batch of products.





### Precision Machining and Production Capability

Precision mold design is a key technology for manufacturing high - precision connectors. During the mold R & D and design process, in - depth analysis is carried out on the functional requirements, material properties, dimensional tolerances, and electrical performance of the connectors. This ensures that the mold design can accurately replicate complex geometric shapes and tiny details.

### Die - casting

Metals such as aluminum alloy and zinc alloy are melted and then injected into the mold under high pressure. After cooling, they take shape.



## Brand Official Website ([connoder.com](http://connoder.com) / [noderconn.com](http://noderconn.com))



### Product Information Display

On the Connoder official website, customers can quickly select models and keep up with the latest product updates.



### Product Technical Data Download

The Connoder official website provides access to product documents. Users can download the required product 3D models, drawings, product specifications, user manuals, test reports, product certificates and related materials at any time, which helps users choose products efficiently.



### Quick Browsing of Video Resources

By visiting the Connoder official website, users can quickly understand products. They can watch detailed information of various products, learn about product features, functions and application scenarios, so as to get to know the products.

## Application Field



Medical Device



Industrial Equipment



New Energy Equipment



Communication



Test And Measurement



Transportation



Aerospace



Robot

## Why Choose Connoder?

### 1. High - quality Raw Materials

We have established long - term cooperative relationships with globally leading raw material suppliers, ensuring that every batch of raw materials meets high - quality standards. The use of high - quality raw materials improves the durability and safety of products, laying a solid foundation for production and processing.

### 2. Advanced Production Equipment

Equipped with automated equipment such as high - precision CNC machines, intelligent assembly lines, and automated robots, the production process is efficient, accurate, and stable. This enables us to respond quickly to market demands, increase production efficiency, and reduce production costs.

### 3. Professional R & D Team

Composed of engineers and technical experts with rich product development experience, the team focuses on the innovative design of connectors, cables, and accessories. Through cooperation with industry - leading enterprises, we have accumulated valuable practical experience and enhanced our innovation capabilities.

### 4. Advanced Testing Equipment

We are equipped with advanced testing equipment, such as automatic test systems, environmental test chambers, and microscopes, to ensure the high quality and reliability of products. These are comprehensively used to evaluate electrical performance, material strength, and stability under harsh environments, thus providing accurate data and high - standard quality control.

### 5. Intelligent Monitoring System

By collecting and analyzing real - time data, it improves production efficiency and product quality. The system monitors equipment status, temperature, and humidity, helping production managers quickly identify problems.

### 6. Quality Traceability System

By comprehensively recording data from each production link, it ensures the traceability and transparency of product quality. The system uses QR codes, which can be quickly scanned for identification, to monitor the production process in real - time and generate quality reports.





## 1. Intelligent Warehouse AGV

The efficient operation of intelligent warehouse AGVs depends on stable signal and power transmission.

In the complex warehouse environment, frequent starts and stops, as well as vibration and impact, are common. The M8 circular connector, with its compact structure and reliable connection, is suitable for the narrow installation space on the AGV body. It ensures the stable transmission of control signals and power supplies, enabling the AGV to accurately identify paths and efficiently transport goods, thus improving the automated circulation efficiency of warehouse logistics.



## 2. Food and Beverage Filling Line

The food and beverage filling line needs to operate stably for a long time and faces complex environments such as humidity, dust, and acid - base residues. The M16 circular connector has a high protection level (IP67 and above), is corrosion - resistant and prevents liquid intrusion. It can stably connect the sensors (such as level and pressure sensors) of the filling equipment to the control system, ensuring accurate control of the filling volume and stable operation of the equipment, and meeting the strict hygiene and reliability requirements of food production.



## 3. Automotive Welding Production Line

In the automotive welding production line, welding robots and conveying equipment work in coordination, and there are harsh conditions such as strong electromagnetic interference and high - temperature spatter. The M12 circular connector has strong anti - interference ability. It can ensure the stability of signals (such as robot motion control signals and welding parameter transmission) in a complex electromagnetic environment. Moreover, it has certain temperature - resistance and impact - resistance performance, adapts to the high - frequency connection requirements of welding workstations, helps the production line to weld efficiently and stably, and guarantees the welding quality of the vehicle body.



## 4. Medical Imaging Equipment

Medical imaging equipment (such as CT, MRI) has extremely high requirements for signal transmission accuracy and equipment stability. The M5 circular connector is small in size and has a precise connection. It can be used for the transmission of weak signals between internal modules of the equipment (such as between the detector and the processing unit), realizing the stable acquisition and transmission of high - definition image data. It meets the high - precision operation requirements of the equipment and provides reliable connection support for accurate medical diagnosis.



## 5. Environmental Monitoring Station

Field - based environmental monitoring stations operate in harsh environments with variable temperature and humidity, as well as sand, dust, wind and rain for long periods. They connect various sensors (such as temperature - humidity sensors and PM2.5 sensors) to the data acquisition unit. The 7/8 circular connector features excellent protective performance and high mechanical strength. It can effectively resist the impact of the external environment, ensuring stable transmission of sensor data to the monitoring system. This helps accurately collect and analyze environmental data, providing a reliable basis for environmental protection decision - making.



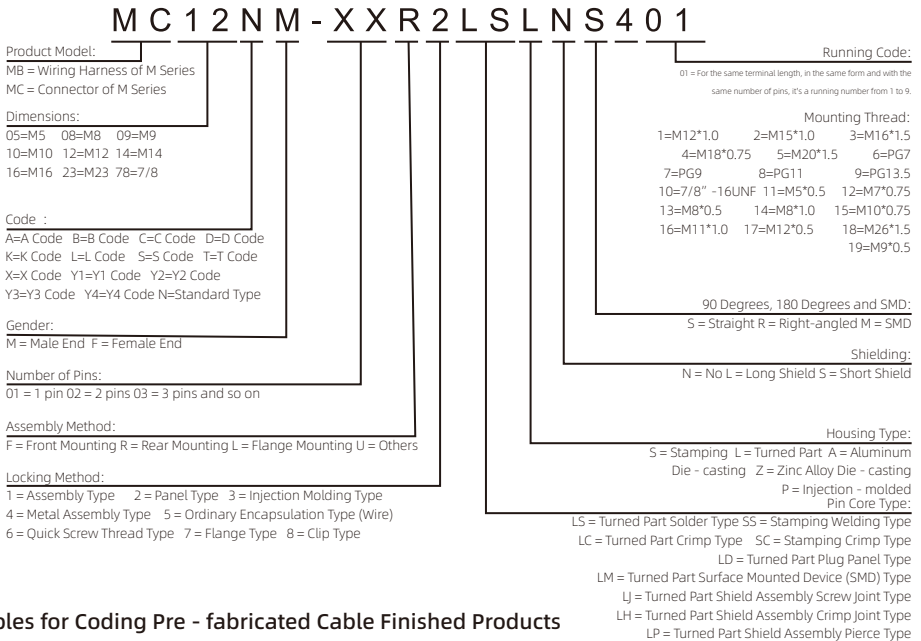
## 6. Industrial Automation Detection Equipment

Industrial automation detection equipment (such as dimension detection and appearance defect detection equipment) requires high - speed and accurate transmission of images and detection signals. The M9 circular connector can be adapted to the high - speed data transmission modules inside the equipment. In a narrow installation space, it enables stable and low - latency connections, ensuring real - time and accurate transmission of detection signals. This helps the equipment quickly identify product defects and precisely measure dimensions, improving the detection efficiency and quality of industrial products.

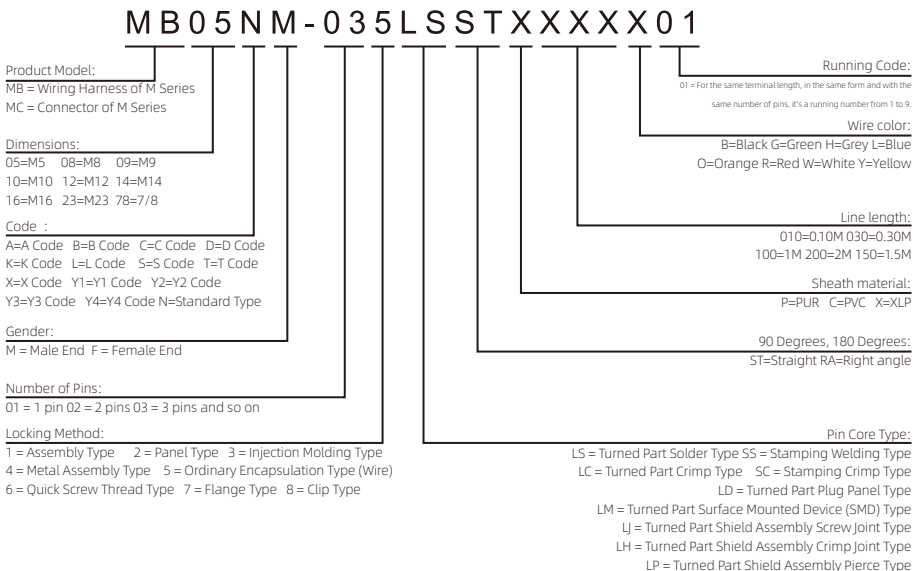
**As a reliable connection expert, we focus on industrial connection needs and professionally provide a wide variety of connectors for signal, data, and power transmission. We empower equipment to operate efficiently with stable connections.**

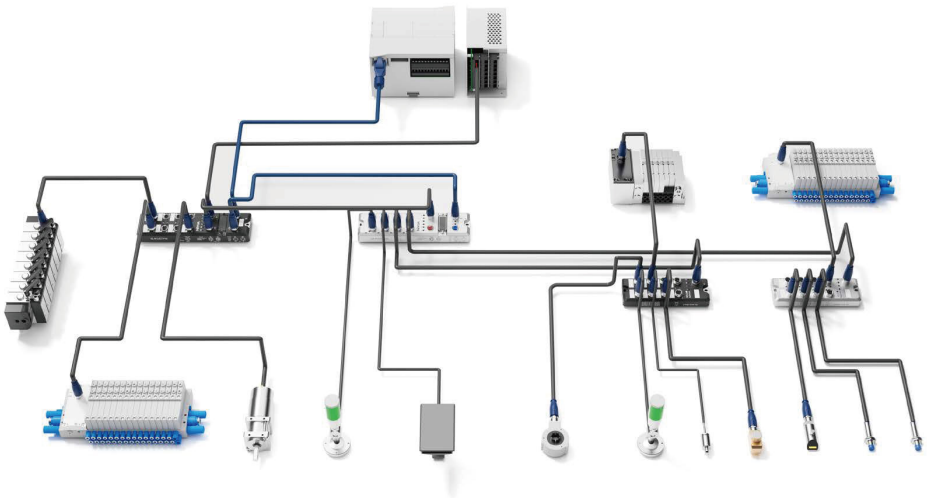


## Principles for Coding Connector Finished Products



## Principles for Coding Pre - fabricated Cable Finished Products





### Schematic Diagram of IO - Link Connection Technology





M12 SERIES

1. Transmits signals, data and power, applicable to multiple fields such as industrial automation and sensors.
2. Threaded locking design ensures high resistance to vibration and shock, providing a stable and reliable connection.
3. With protection ratings up to IP67/IP68/IP69K, it has excellent sealing performance against water and dust.
4. Shielding options: unshielded, shielded and grounded types are available, offering strong anti - interference capabilities.
5. Universal design can meet a variety of industrial connection requirements.

6. Multiple coding types (A/B/D/L/X etc.) with anti - misplug design to prevent incorrect insertion.

7. Can be interoperated with mainstream brand M12 connectors, facilitating replacement and system integration.

8. Complies with the IEC61076 standard. A complete range of products is available, supporting both standard and customized application selections. The M12 circular connector has a protection rating of IP67 and above. It is waterproof, dustproof, oil - resistant and resistant to chemical corrosion. It can operate within a wide temperature range from - 40°C to + 85°C, ensuring stable and reliable performance in extreme environments. With a threaded locking design, it is resistant to vibration and shock, continuously guaranteeing excellent electrical performance.

It is widely used in power, signal and data transmission connections in industrial automation, sensor systems, robots, rail transit, new energy equipment and intelligent production lines of Industry 4.0.

Connoder provides a full range of standard and customized M12 connectors and cable assemblies. It supports multiple coding types (such as A, B, D, L, X, etc.) and shielding solutions, is compatible with mainstream brands, and helps with the efficient interconnection of devices and reliable system integration.

M12 Product Specifications

Housing material	Nickel-plated brass	Contact resistance	≤5mΩ
Sealing material	Epoxy resin/rubber	Durability	≥500 times
Contact material	Phosphorus copper gold plating/brass gold plating	Insulation resistor	100 mΩ
Insulation material	PA9T	Applicable temperature	-40°C To +85°C
Modeling materials	TPU/PVC/PUR	Waterproof grade	IP67 / IP68

Pin Configuration and Electrical Parameters of M12 Connector

Code	Pins	Male	Female	Rated Voltage		Rated Current	Conductor Size	
				AC	DC		AWG	mm²
X	8			50V	60V	0.5A	26-24	0.14-0.25
Y	6			30V	30V	0.5A/12A	2*26AWG+4*20AWG	0.14-0.25
	8			30V	30V	0.5A/6A	4*26AWG+4*20AWG	0.14-0.25





# M12 SERIES-XY CODE

## M12 Panel Mount

Product image	Product Description	Pins	Rated voltage	Rated current	Connection method	Connection range	Product code	2D drawings	QR code
	Female Rear Mounting With Shielding	 X code - 8 Pins	AC 50V DC 60V	0.5A	Welded Type M16*1.5	26-24AWG 0.14-0.25mm <sup>2</sup>	MC12XF-08R2LSLNS301		
		 Y code - 6 Pins	30V	0.5A/12A	Welded Type M16*1.5	2*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YF-06RF2LSLNS301		
		 Y code - 8 Pins	30V	0.5A/12A	Welded Type M16*1.5	4*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YF-08RF2LSLNS301		

Product image	Product Description	Pins	Rated voltage	Rated current	Connection method	Connection range	Product code	2D drawings	QR code
	Female Front Mounting	 X code - 8 Pins	AC 50V DC 60V	0.5A	PCB M16*1.5	MC12XF-08F2LDLNS301			
		 Y code - 6 Pins	30V	0.5A/12A	PCB M16*1.5	MC12YF-06F2LDLNS301			
		 Y code - 8 Pins	30V	0.5A/12A	PCB M16*1.5	MC12YF-08F2LDLNS301			
	Female Rear Mounting	 X code - 8 Pins	AC 50V DC 60V	0.5A	PCB M16*1.5	MC12XF-08R2LDLNS301			
		 Y code - 6 Pins	30V	0.5A/12A	PCB M16*1.5	MC12YF-06R2LDLNS301			
		 Y code - 8 Pins	30V	0.5A/12A	PCB M16*1.5	MC12YF-08F2LDLNS301			
	Female 90 Degrees Long style	 X code - 8 Pins	AC 50V DC 60V	0.5A	PCB M16*1.5	MC12XF-08R2LDLSR101			
		 Y code - 6 Pins	30V	0.5A/12A	PCB M16*1.5	MC12YF-06R2LDLSR101			
		 Y code - 8 Pins	30V	0.5A/12A	PCB M16*1.5	MC12YF-08R2LDLSR101			
	Female 90 Degrees Short style	 X code - 8 Pins	AC 50V DC 60V	0.5A	PCB M16*1.5	MC12XF-08R2LDLSR101			
		 Y code - 6 Pins	30V	0.5A/12A	PCB M16*1.5	MC12YF-06R2LDLSR101			
		 Y code - 8 Pins	30V	0.5A/12A	PCB M16*1.5	MC12YF-08R2LDLSR101			
	Female SMD Type Socket	 X code - 8 Pins	AC 50V DC 60V	0.5A	SMD PCB	MC12XF-08U2LMLSM101			
		 Y code - 6 Pins	30V	0.5A/12A	SMD PCB	MC12YF-06U2LMLSM101			
		 Y code - 8 Pins	30V	0.5A/12A	SMD PCB	MC12YF-08U2LMLSM101			



## M12 SERIES-XY CODE

### M12 Assembled Type

Product image	Product Description	Pins	Rated voltage	Rated current	Connection method	Connection range	Product code	2D drawings	QR code
	Male Right - Angle Metal Assembly	 X code - 8 Pins	AC 50V DC 60V	0.5A	Welded Type PG7	26-24AWG 0.14-0.25mm <sup>2</sup>	MC12XM-08U2LSLSR101		
		 Y code - 6 Pins	30V	0.5A/12A	Welded Type PG7	2*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YM-06U2LSLSR101		
		 Y code - 8 Pins	30V	0.5A/12A	Welded Type PG7	4*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YM-08U2LSLSR101		
	Female Right - Angle Metal Assembly	 X code - 8 Pins	AC 50V DC 60V	0.5A	Welded Type PG7	26-24AWG 0.14-0.25mm <sup>2</sup>	MC12XF-08U2LSLSR101		
		 Y code - 6 Pins	30V	0.5A/12A	Welded Type PG7	2*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YF-06U2LSLSR101		
		 Y code - 8 Pins	30V	0.5A/12A	Welded Type PG7	4*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YF-08U2LSLSR101		
	Male Straight Type Metal Assembly	 X code - 8 Pins	AC 50V DC 60V	0.5A	Welded Type PG7	26-24AWG 0.14-0.25mm <sup>2</sup>	MC12XM-08U2LSLSS101		
		 Y code - 6 Pins	30V	0.5A/12A	Welded Type PG7	2*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YM-06U2LSLSS101		
		 Y code - 8 Pins	30V	0.5A/12A	Welded Type PG7	4*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YM-08U2LSLSS101		
	Female Straight Type Metal Assembly	 X code - 8 Pins	AC 50V DC 60V	0.5A	Welded Type PG7	26-24AWG 0.14-0.25mm <sup>2</sup>	MC12XF-08U2LSLSS101		
		 Y code - 6 Pins	30V	0.5A/12A	Welded Type PG7	2*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YF-06U2LSLSS101		
		 Y code - 8 Pins	30V	0.5A/12A	Welded Type PG7	4*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YF-08U2LSLSS101		



## M12 SERIES-XY CODE

### M12 Prefabricated Cable

Product image	Product Description	Pins	Rated voltage	Rated current	Connection method	Connection range	Product code	2D drawings	QR code
	Male Straight Type Overmolded Typ	 X code - 8 Pins	AC 50V DC 60V	0.5A	PVC/PUR	26-24AWG 0.14-0.25mm <sup>2</sup>	MB12XM-085LSSTXXXXX01		
		 Y code - 6 Pins	30V	0.5A/12A	PVC/PUR	2*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MB12YM-065LSSTXXXXX01		
		 Y code - 8 Pins	30V	0.5A/12A	PVC/PUR	4*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MB12YM-085LSSTXXXXX01		
	Female Straight Type Overmolded Typ	 X code - 8 Pins	AC 50V DC 60V	0.5A	PVC/PUR	26-24AWG 0.14-0.25mm <sup>2</sup>	MB12XF-085LSSTXXXXX01		
		 Y code - 6 Pins	30V	0.5A/12A	PVC/PUR	2*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MB12YF-065LSSTXXXXX01		
		 Y code - 8 Pins	30V	0.5A/12A	PVC/PUR	4*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MB12YF-085LSSTXXXXX01		
	Male Angled Type Overmolded Type	 X code - 8 Pins	AC 50V DC 60V	0.5A	PVC/PUR	26-24AWG 0.14-0.25mm <sup>2</sup>	MB12XM-085LSRAXXXXXX01		
		 Y code - 6 Pins	30V	0.5A/12A	PVC/PUR	2*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MB12YM-065LSRAXXXXXX01		
		 Y code - 8 Pins	30V	0.5A/12A	PVC/PUR	4*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MB12YM-085LSRAXXXXXX01		
	Female Angled Type Overmolded Type	 X code - 8 Pins	AC 50V DC 60V	0.5A	PVC/PUR	26-24AWG 0.14-0.25mm <sup>2</sup>	MB12XF-085LSRAXXXXXX01		
		 Y code - 6 Pins	30V	0.5A/12A	PVC/PUR	2*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MB12YF-065LSRAXXXXXX01		
		 Y code - 8 Pins	30V	0.5A/12A	PVC/PUR	4*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MB12YF-085LSRAXXXXXX01		

Product image	Product Description	Pins	Rated voltage	Rated current	Connection method	Connection range	Product code	2D drawings	QR code
	Male Pre-Molded Plug	 X code - 8 Pins	AC 50V DC 60V	0.5A	Welded Type	26-24AWG 0.14-0.25mm <sup>2</sup>	MC12XM-08U5LSLSS101		
		 Y code - 6 Pins	30V	0.5A/12A	Welded Type	2*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YM-06U5LSLSS101		
		 Y code - 8 Pins	30V	0.5A/12A	Welded Type	4*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YM-08U5LSLSS101		
	Female Pre-Molded Plug	 X code - 8 Pins	AC 50V DC 60V	0.5A	Welded Type	26-24AWG 0.14-0.25mm <sup>2</sup>	MC12XF-08U5LSLSS101		
		 Y code - 6 Pins	30V	0.5A/12A	Welded Type	2*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YF-06U5LSLSS101		
		 Y code - 8 Pins	30V	0.5A/12A	Welded Type	4*26AWG 4*20AWG 0.14-0/25mm <sup>2</sup>	MC12YF-08U5LSLSS101		

## RELIABLE CONNECTION EXPERTS

Connoder is committed to driving the progress of industrial automation through innovative, reliable, and efficient circular connector solutions. We unremittingly pursue excellence, aiming to become the most trustworthy partner in the global industrial automation field and help our customers achieve higher productivity and sustainable development.



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