

Compact, Watertight, Round Connectors

- Water-resistive, compact connector meets IP67 requirements.
- Ideal for a wide variety of FA and OA applications.
- Using connectors for wiring ensures ease of equipment maintenance and reduces downtime required for equipment maintenance.



Refer to *Safety Precautions* on page 11.



Ratings and Specifications

Rated current	3A
Rated voltage	125 VDC
Contact resistance	60 mΩ max. (20 mV max., 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	1,000 VAC for 1 min (leakage current: 1 mA max.)
Degree of protection	IP67 (IEC60529)
Insertion tolerance	200 times min.

Material

Contact / Surface	Copper Alloy / Nickel base, Au0.4 μm
Connector housing	PBT resin (UL94V-0)
Nut / Surface	Copper Alloy / Nickel plated
Cover	PBT resin (UL94V-0)

PVC Cable

Item	Model	3 cores	4 cores
Color		Black	
Outer diameter		5 mm dia.	4.8 mm dia.
Conductor size		AWG22 0.34 mm ² (43 × 0.1)	0.25 mm ² (32 × 0.1)
Approvals		AWM	
Features		Flame retardant	
Temperature range		-25 to +70°C	

PUR Cable

Item	Model	3 cores	4 cores
Color		Black	
Outer diameter		4.3 mm dia.	4.7 mm dia.
Conductor size		AWG22 0.34 mm ² (43 × 0.1)	
Approvals		AWM	
Features		Flame retardant Halogen free Oil resistance	
Temperature range		Cable fixed: -50 to +80°C / Cable moved: -25 to +80°C	

PVC Cable (For IP69K)

Item	Model	Standard
Color		Dark Grey
Outer diameter		4 mm dia.
Conductor size		AWG24 0.2 mm ² (18 × 0.12)
Approvals		—
Features		—
Temperature range		-25 to +70°C

Socket Appearance

3 poles		4 poles	
Male	Female	Male	Female

XS3F Sockets on One Cable End

Model Number Legend

Use this model number legend to identify products from their model number. When ordering, use a model number from the table in *Ordering Information*.

XS3F-M 8 **M**

1 2 3 4 5



1. Screw Size

M8: M8 size

2. Cable

PVC: PVC cable
PUR: PUR cable

3. Number of Poles

3: 3 poles
4: 4 poles

4. Shape

A: Angled
S: Straight

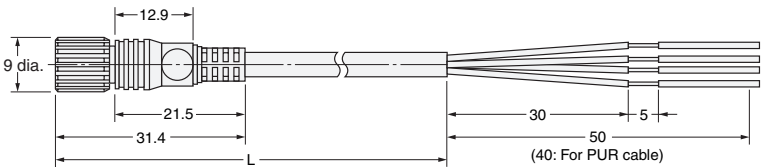
5. Cable Length

2M: 2 m
5M: 5 m
10M: 10 m

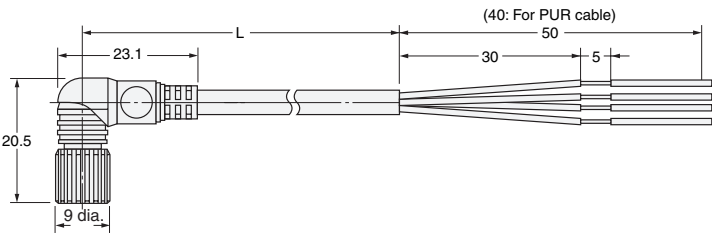
Dimensions

(Unit: mm)

Straight



Angled



Wiring Diagram

3 Poles		4 Poles	
Contact No. Cable lead colors Brown Blue Black		Contact No. Cable lead colors Brown White Blue Black	

Ordering Information

Connector	Size	Cable material	Poles	Type	Length (m)	Product description
Socket	M8	PVC	3	Angled	2	XS3F-M8PVC3A2M
					5	XS3F-M8PVC3A5M
					10	XS3F-M8PVC3A10M
				Straight	2	XS3F-M8PVC3S2M
					5	XS3F-M8PVC3S5M
					10	XS3F-M8PVC3S10M
			4	Angled	2	XS3F-M8PVC4A2M
					5	XS3F-M8PVC4A5M
					10	XS3F-M8PVC4A10M
				Straight	2	XS3F-M8PVC4S2M
					5	XS3F-M8PVC4S5M
					10	XS3F-M8PVC4S10M
		PUR	3	Angled	2	XS3F-M8PUR3A2M
					5	XS3F-M8PUR3A5M
					10	XS3F-M8PUR3A10M
				Straight	2	XS3F-M8PUR3S2M
					5	XS3F-M8PUR3S5M
					10	XS3F-M8PUR3S10M
			4	Angled	2	XS3F-M8PUR4A2M
					5	XS3F-M8PUR4A5M
					10	XS3F-M8PUR4A10M
				Straight	2	XS3F-M8PUR4S2M
					5	XS3F-M8PUR4S5M
					10	XS3F-M8PUR4S10M

XS3F Sockets on One Cable End IP69K

Model Number Legend

Use this model number legend to identify products from their model number. When ordering, use a model number from the table in *Ordering Information*.

XS3F-E 4 2 - 4 - A

1
2
3
4
5
6

1. Screw Size

E: Stainless

2. Connector Pole

4: 4 poles

3. Cable Connection Direction

1. Straight
2. Angled

4. Connections

Pin No.

(1) (2) (3) (4)
4 Brown White Blue Black

5. Cable Length

02: 2 m
05: 5 m
10: 10 m

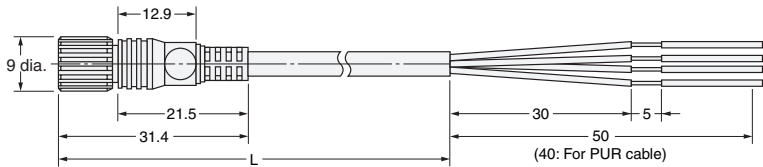
6. Cable Specifications

A. Standard cable

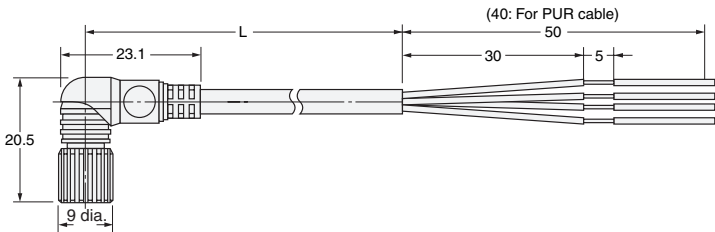
Dimensions

(Unit: mm)

Straight

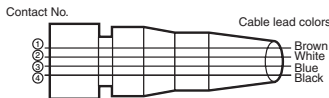


Angled



Wiring Diagram

4 Poles



Ordering Information

Connector	Size	Cable material	Poles	Type	Length (m)	Product description
female	M8	PVC	4	Angled	2	XS3F-E422-402-A
					5	XS3F-E422-405-A
					10	XS3F-E422-410-A
				Straight	2	XS3F-E421-402-A
					5	XS3F-E421-405-A
					10	XS3F-E421-410-A

XS3H Plugs on One Cable End

Model Number Legend

Use this model number legend to identify products from their model number. When ordering, use a model number from the table in *Ordering Information*.

XS3H-M 8 **M**

1 2 3 4 5



1. Screw Size

M8: M8 size

2. Cable

PVC: PVC cable
PUR: PUR cable

3. Number of Poles

3: 3 poles
4: 4 poles

4. Shape

A: Angled
S: Straight

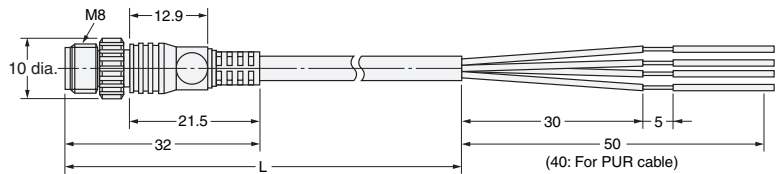
5. Cable Length

03M: 0.3 M
1M: 1 M

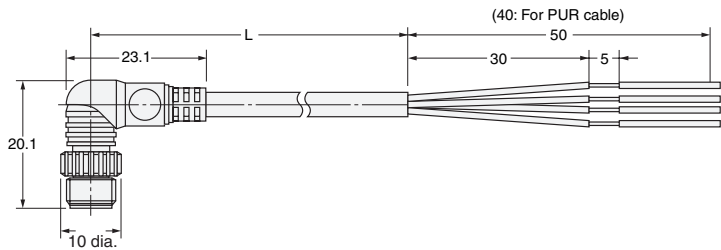
Dimensions

(Unit: mm)

Straight



Angled



Wiring Diagram

3 Poles	4 Poles
Contact No. Cable lead colors Brown Blue Black	Contact No. Cable lead colors Brown White Blue Black

Ordering Information

Connector	Size	Cable material	Poles	Type	Length (m)	Product description
plug	M8	PVC	3	Angled	0.3	XS3H-M8PVC3A03M
					1	XS3H-M8PVC3A1M
				Straight	0.3	XS3H-M8PVC3S03M
					1	XS3H-M8PVC3S1M
			4	Angled	0.3	XS3H-M8PVC4A03M
					1	XS3H-M8PVC4A1M
				Straight	0.3	XS3H-M8PVC4S03M
					1	XS3H-M8PVC4S1M
		PUR	3	Angled	0.3	XS3H-M8PUR3A03M
					1	XS3H-M8PUR3A1M
				Straight	0.3	XS3H-M8PUR3S03M
					1	XS3H-M8PUR3S1M
			4	Angled	0.3	XS3H-M8PUR4A03M
					1	XS3H-M8PUR4A1M
				Straight	0.3	XS3H-M8PUR4S03M
					1	XS3H-M8PUR4S1M

XS3W Sockets and Plugs on Cable Ends

Model Number Legend

Use this model number legend to identify products from their model number. When ordering, use a model number from the table in *Ordering Information*.

XS3W-M 8 **M**

1 2 3 4 5



1. Screw Size

M8: M8 size

2. Cable

PVC: PVC cable
PUR: PUR cable

3. Number of Poles

3: 3 poles
4: 4 poles

4. Shape

SS: Straight / Straight
AA: Angled / Angled
SA: Straight / Angled
AS: Angled / Straight

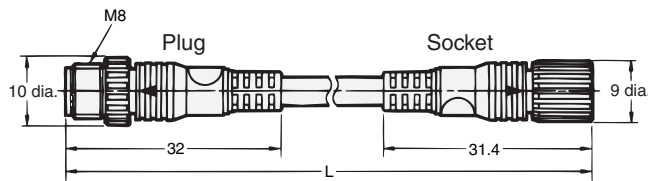
5. Cable Length

2M: 2 m
5M: 5 m
10M: 10 m

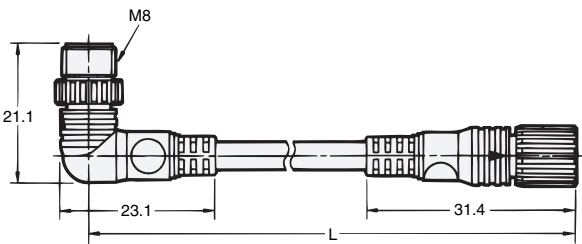
Dimensions

(Unit: mm)

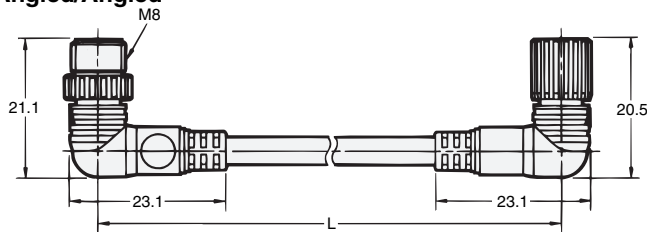
Straight/Straight



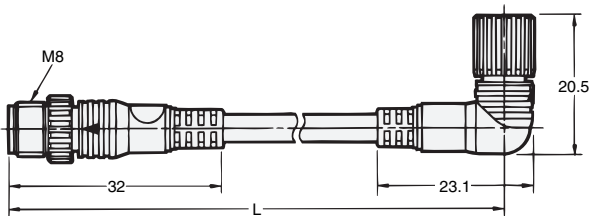
Straight/Angled



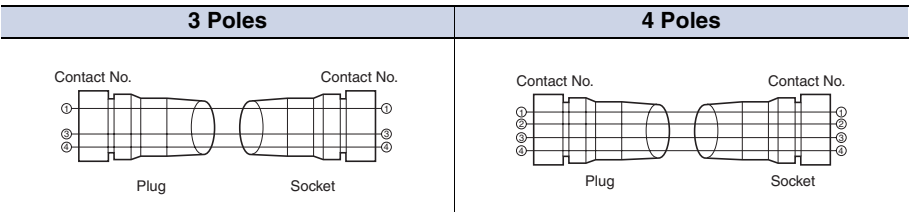
Angled/Angled



Angled/Straight



Wiring Diagram



Ordering Information

Connector	Size	Cable material	Poles	Shape		Length (m)	Product description
				Plug	Socket		
Both	M8	PVC	3	Angled	Angled	2	XS3W-M8PVC3AA2M
						5	XS3W-M8PVC3AA5M
						10	XS3W-M8PVC3AA10M
				Straight	Straight	2	XS3W-M8PVC3SS2M
						5	XS3W-M8PVC3SS5M
						10	XS3W-M8PVC3SS10M
				Angled	Straight	2	XS3W-M8PVC3AS2M
						5	XS3W-M8PVC3AS5M
						10	XS3W-M8PVC3AS10M
			Straight	Angled	2	XS3W-M8PVC3SA2M	
					5	XS3W-M8PVC3SA5M	
					10	XS3W-M8PVC3SA10M	
			4	Angled	Angled	2	XS3W-M8PVC4AA2M
						5	XS3W-M8PVC4AA5M
						10	XS3W-M8PVC4AA10M
				Straight	Straight	2	XS3W-M8PVC4SS2M
						5	XS3W-M8PVC4SS5M
						10	XS3W-M8PVC4SS10M
				Angled	Straight	2	XS3W-M8PVC4AS2M
						5	XS3W-M8PVC4AS5M
						10	XS3W-M8PVC4AS10M
			Straight	Angled	2	XS3W-M8PVC4SA2M	
					5	XS3W-M8PVC4SA5M	
					10	XS3W-M8PVC4SA10M	
		PUR	3	Angled	Angled	2	XS3W-M8PUR3AA2M
						5	XS3W-M8PUR3AA5M
						10	XS3W-M8PUR3AA10M
				Straight	Straight	2	XS3W-M8PUR3SS2M
						5	XS3W-M8PUR3SS5M
						10	XS3W-M8PUR3SS10M
				Angled	Straight	2	XS3W-M8PUR3AS2M
						5	XS3W-M8PUR3AS5M
						10	XS3W-M8PUR3AS10M
			Straight	Angled	2	XS3W-M8PUR3SA2M	
					5	XS3W-M8PUR3SA5M	
					10	XS3W-M8PUR3SA10M	
			4	Angled	Angled	2	XS3W-M8PUR4AA2M
						5	XS3W-M8PUR4AA5M
						10	XS3W-M8PUR4AA10M
				Straight	Straight	2	XS3W-M8PUR4SS2M
						5	XS3W-M8PUR4SS5M
						10	XS3W-M8PUR4SS10M
				Angled	Straight	2	XS3W-M8PUR4AS2M
						5	XS3W-M8PUR4AS5M
						10	XS3W-M8PUR4AS10M
				Straight	Angled	2	XS3W-M8PUR4SA2M
						5	XS3W-M8PUR4SA5M
						10	XS3W-M8PUR4SA10M

XS3R Y-Joint Plug/Socket Connectors

● Screw-on Models (M8)

With Standard Cable:
Without Cable:

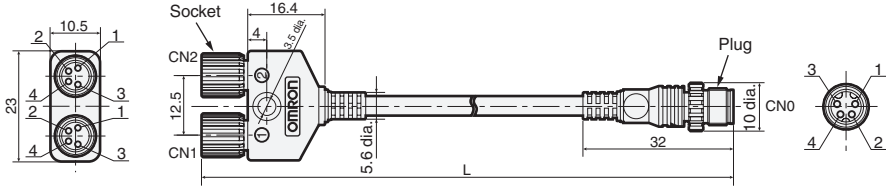
XS3R-M426-1□□□-A
XS3R-M426-□

Dimensions

(Unit: mm)

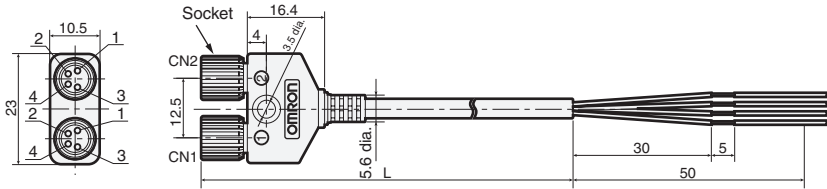
XS3R-M426-1□□□1-A

Connectors on Both Cable Ends (Y-Joint Plug/Socket)



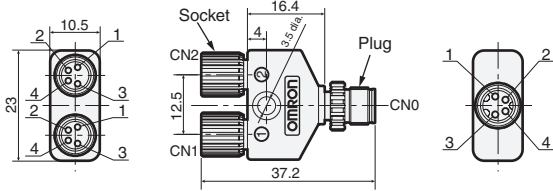
XS3R-M426-1□□□0-A

Connector on One Cable End (Y-Joint/Socket)



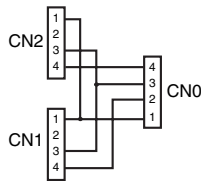
XS3R-M426-□

Connector on Both Ends (Y-Joint Plug/Socket) without Cable

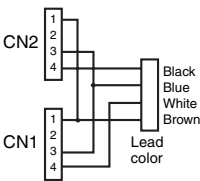


Wiring Diagram

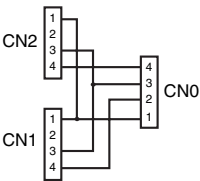
XS3R-M426-1□□□1-A



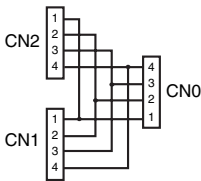
XS3R-M426-1□□□0-A



XS3R-M426-1



XS3R-M426-5



Mating Connectors

Item	Model
XS3R(M8)	XS3F(M8)
	XS3H(M8)
	XS3W(M8)
	XS3P(M8)

Ordering Information

For M8 Connectors

Cable	Connector	Cable length L (m)	Model	Minimum order
With cable	Connectors on both cable ends	0.5	XS3R-M426-1C51-A	5
		1	XS3R-M426-1011-A	
		2	XS3R-M426-1021-A	
		3	XS3R-M426-1031-A	
	Connector on one cable end	2	XS3R-M426-1020-A	
		5	XS3R-M426-1050-A	
Without cable	Connectors on both cable ends	—	XS3R-M426-1	10
			XS3R-M426-5	

- XS3P-M421-1
XS3P-M421-2
XS3P-M422-2

(Unit: mm)

(Unit: mm)

Technical drawing of a circular part. The drawing shows a circle with a center point. Two dimensions are indicated: a horizontal dimension of $7.2^{+0.2}_0$ and a vertical dimension of $8.2^{+0.2}_0$. Both dimensions are shown with arrows indicating the extent of the measurement.

Rear Lock

Panel

Nut

Rubber bushing

Note: Orders are accepted in multiples of the minimum order.

In addition to the following information, also refer to *Safety Precautions* on page 13

tightening torque of between 0.4 and 0.6 N·m to mount the Connectors.

XS3M Sensor Embedded Plugs

- Embedded Plugs with Screw Threads and DIP Pins
- Embedded Plugs with Screw Threads and Solder Cup Pins

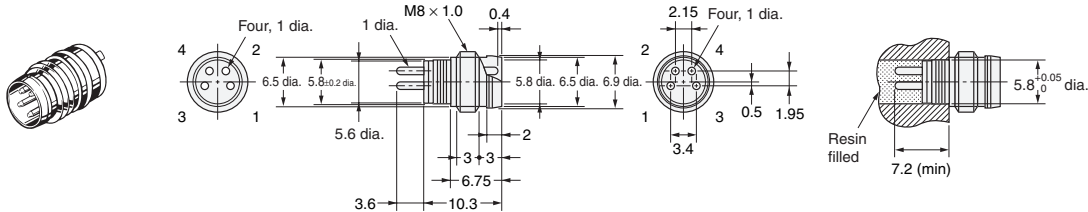
XS3M-K421-1
XS3M-K421-2

Dimensions

(Unit: mm)

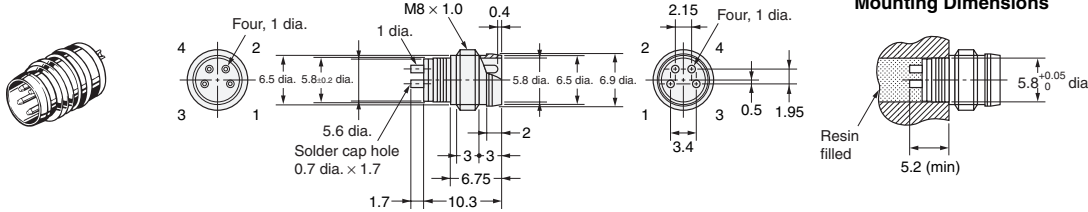
XS3M-K421-1

Embedded Model with DIP Pins



XS3M-K421-2

Embedded Model with Solder Cup Pins



Mating Connectors

Item	Model
XS3M	XS3F, XS3W

Ordering Information

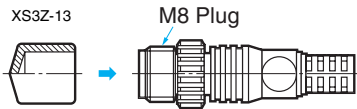
Connection method	Pin shape	Model	Minimum order
Embedded model	DIP pins	XS3M-K421-1	200
	Solder cup pins	XS3M-K421-2	

Note: Orders are accepted in multiples of the minimum order.

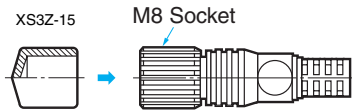
XS3 Connector Cover

Dust Cover

XS3Z-13



XS3Z-15



Model	Material	Suitable connector	
		Model	Mounting portion
XS3Z-13	Acrylic resin/transparent	XS3H/XS3M/XS3W/XS3R	M8 plug
XS3Z-15		XS3F/XS3M/XS3W/XS3R	M8 socket

The Dust Cover is for dust prevention and does not ensure IP67. When mounting the Dust Cover to a Connector, be sure to press the Dust Cover onto the Connector until the Connector is fully inserted into the Dust Cover.

Safety Precautions

Precautions for Correct Use

Do not use the product in atmospheres or environments that exceed product ratings.

Connections

- The XS3 and XS2 Sensor I/O Connectors cannot be connected to each other.
- When using Sensors with Connectors or Limit Switches, use the Sensor I/O Connectors specified in the catalog.
- Do not connect M8 screw models and S8 snap-in models together, otherwise the proper degree of protection of the Connectors will not be maintained.

Connector Connection and Disconnection

- Before connecting or disconnecting Connectors, make sure that no power is being supplied to the Connectors.
- When connecting or disconnecting Connectors, be sure to hold the Connectors by hand. Do not disconnect the Connectors by pulling the cable.
- Do not touch the engagement side of any Connector with wet hands. If there is any water on the Connector or near the Connector, be sure to wipe off the water before connecting or disconnecting the Connector, otherwise the Connector may short-circuit internally or not ensure good insulation.
- Make sure that engagement side of any Connector is free of metal dust or power.
- Do not use pliers to tighten mounting the thread bracket, otherwise the thread bracket may be damaged. Be sure to tighten each thread bracket by hand within a torque of 0.2 N·m. If the thread bracket is not tightened securely, the Connector may not maintain its proper degree of protection or the thread bracket may fall off due to vibration.
- Fully insert S8 snap-in models until the Connectors are hidden by the metal casing of the opposite parts, otherwise the Connectors will not maintain their proper degree of protection or the thread brackets may become loose due to vibration.

Cable Wire Color

- The M8 Sensor I/O Connectors use the following lead wire colors.

Model		Pin No.			
		1	2	3	4
For DC	8-mm-dia. DC4	Brown	White	Blue	Black

Degree of Protection

- Do not impose external force continuously on the joints of pin blocks and covers, otherwise the Connectors may not keep its proper degree of protection (i.e., IP67).
- Connectors are not fully watertight. Do not use them underwater.
- The Connectors are not oil-resistant. Do not use them where they would be subject to oil.
- If Connectors are used in places with vibration or shock, secure the engaged side of each Connector, otherwise the Connectors may be disconnected or fail to maintain their proper degree of protection.
- Connectors are of resin mold construction. Do not impose excessive force on them.

Storage

Do not store Connectors for long periods of time in the following locations

- Locations subject to dust or high humidity
- Locations subject to ammonia gas or sulfide gas

Installation

- Do not make any cable bends near the base of the Unit.
- Any bends made must have a minimum radius of 36 mm.

Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

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