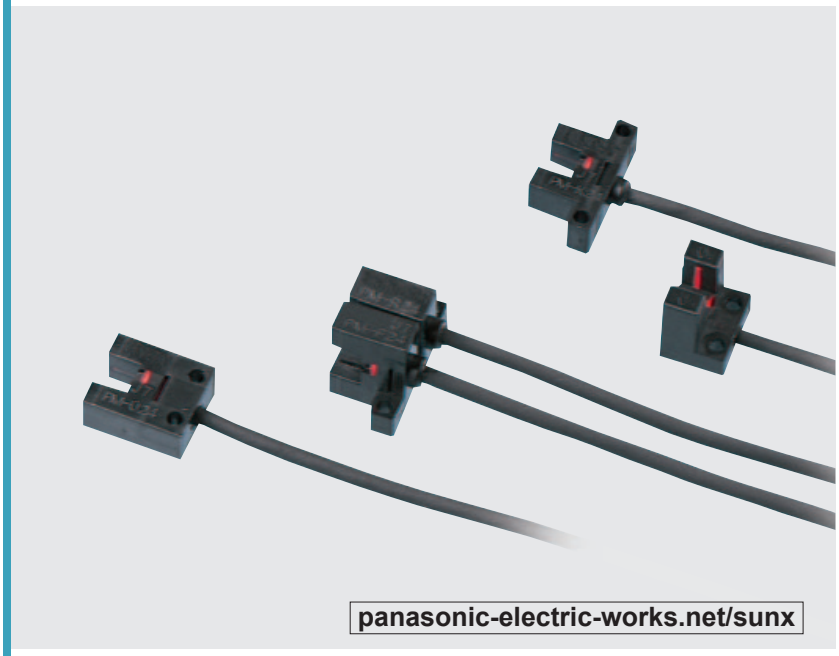
Ultra-small U-shaped Micro Photoelectric Sensor Amplifer Built-in

PM-24 SERIES

Related Information
General terms and conditions F-17
Glossary of terms / General precautions..... P.1359~ / P.1405
Sensor selection guide..... P.441~
Korea's S-mark..... P.1410



panasonic-electric-works.net/sunx

Conforming to EMC Directive

c UL us Recognition

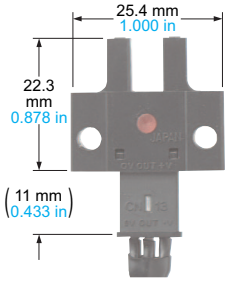
Certified (Some models only)

Extremely small size enables space saving!!

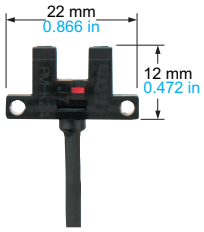
Extremely small size and space saving

PM-24 series contributes to the miniaturization or space saving of your equipment.

Previous model



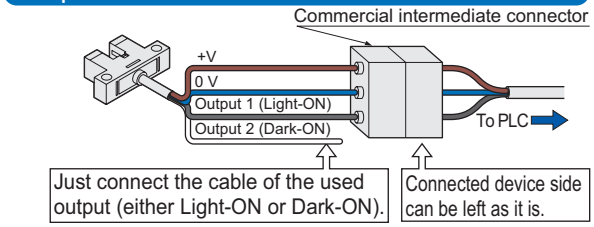
Ultra-small type PM-K24(-R)



Equipped with two independent outputs

All models are equipped with two independent outputs-Light-ON and Dark-ON.
Hence, one model suffces even if the output is to be used differently, depending upon the location of use. Also, since two independent outputs have been provided, cumbersome handling of the output conversion control input, or fear of logic inversion due to a cable break, is eliminated. The sensor can be connected to the existing wiring as it is.

Example of connection with a commercial intermediate connector



Note: Ensure to insulate the unused output wire.

Wide model variety

A wide variety of 5 shapes and 15 models is available. You may select from this wide range to suit the mounting conditions.

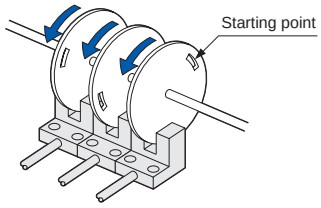
Meets global requirements

Conforms to Europe's EMC Directive and obtains UL Recognition.
Both, NPN and PNP output models are available.
The 30th has also obtained Korea's S-mark certifcation.

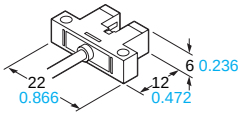
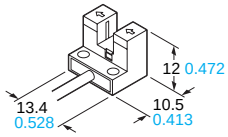
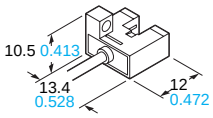
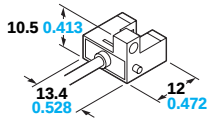
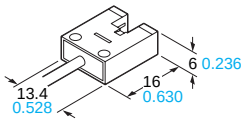
APPLICATIONS

Sensing the starting point on a rotating body

The starting point can be sensed by making a slit in the rotating body.



ORDER GUIDE

Type		Appearance (mm in)	Sensing range	Model No. (Note)	Output	Output operation
Ultra-small	K type		5 mm 0.197 in (fixed)	**PM-K24**	NPN open-collector transistor	Incorporated with 2 outputs: Light-ON / Dark-ON
				PM-K24P	PNP open-collector transistor	
				PM-K24-R	NPN open-collector transistor	
	L type			**PM-L24**	NPN open-collector transistor	
				PM-L24P	PNP open-collector transistor	
				PM-L24-R	NPN open-collector transistor	
	F type			**PM-F24**	NPN open-collector transistor	
				PM-F24P	PNP open-collector transistor	
				PM-F24-R	NPN open-collector transistor	
	R type			**PM-R24**	NPN open-collector transistor	
				PM-R24P	PNP open-collector transistor	
				PM-R24-R	NPN open-collector transistor	
	U type			**PM-U24**	NPN open-collector transistor	
				PM-U24P	PNP open-collector transistor	
				PM-U24-R	NPN open-collector transistor	

Note: The suffix "**-R**" indicates a flexible cable type.

3 m 9.843 ft cable length type

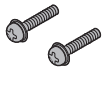
3 m 9.843 ft cable length type (standard: 1 m 3.281 ft) is also available. (excluding flexible cable type and PNP output type)
When ordering this type, suffix "**-C3**" to the model No.
(e.g.) 3m 9.843 ft cable length type of **PM-K24** is "**PM-K24-C3**".

OPTIONS

Designation	Model No.	Description
Mounting screw	**MS-M2**	Mounting screw with washers for the ultra-small type sensor (50 pcs. lot). It can mount securely as it is spring washer attached.

Mounting screw

MS-M2



PRECAUTIONS FOR PROPER USE

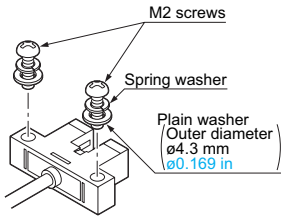
Refer to General precautions.

- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.

Make sure to connect terminals correctly as the sensor does not incorporate a reverse polarity protection circuit.
Further, the output is not incorporated with a short-circuit protection circuit. Do not connect it directly to a power supply or a capacitive load. Faulty wiring may result in damage.

Mounting

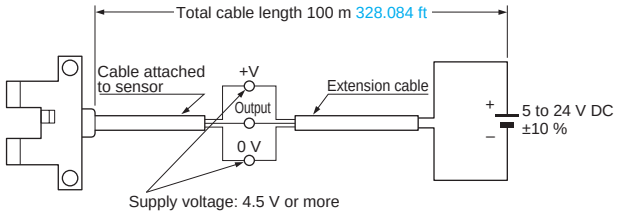
- When fxing the sensor with screws, use M2 screws and the tightening torque should be 0.15 N·m or less. Further, use small, round type plain washers. (ø4.3 mm ø0.169 in)
When using the optional mounting screw set **MS-M2**, a spring washer is included.



- In case the **PM-24** series is used at an ambient temperature of +50 °C +122 °F, or more, make sure to mount it on a metal body.

Cable extension

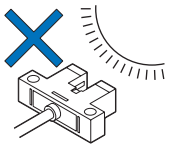
- Cable extension is possible up to an overall length of 100 m 328.084 ft with a 0.3 mm², or more, cable. However, since a voltage drop shall occur due to the cable extension, ensure that the power supply voltage at the end of the cable attached to the sensor is within the rating.



But, when the overall cable length, including the cable attached to the sensor, is as given below, there is no need to confrm the voltage.

Conductor cross-section area of extension cable	Total cable length
0.08 to 0.1 mm²	Up to 5 m 16.404 ft
0.2 mm²	Up to 10 m 32.808 ft
0.3 mm²	Up to 20 m 65.617 ft

Others

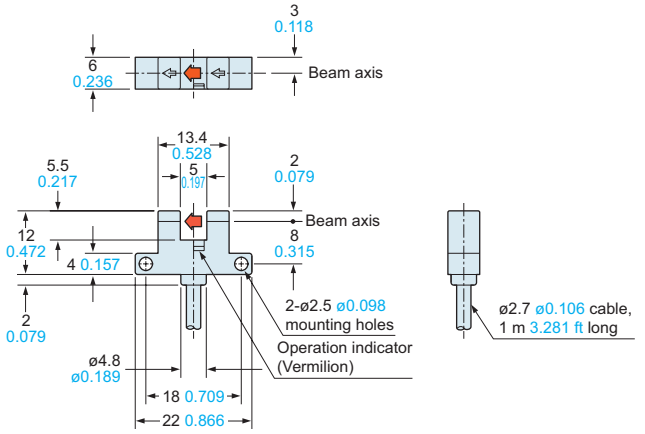


- Since the sensor is intended for use inside machines, no special countermeasures have been taken against extraneous light. Take care that extraneous light is not directly incident on the beam receiving section.
- Do not use during the initial transient time (50 ms) after the power supply is switched on.
- The cable of 305 is a fexible cable usable on a moving base. When the sensor is mounted on a moving base, fx the sensor cable joint so that stress is not applied to it. (Models other than the 305 cannot be used on a moving base.)
- Take care that the fexibility of the PM-□24-R cable is lost if the ambient temperature is –10 °C +14 °F or less.

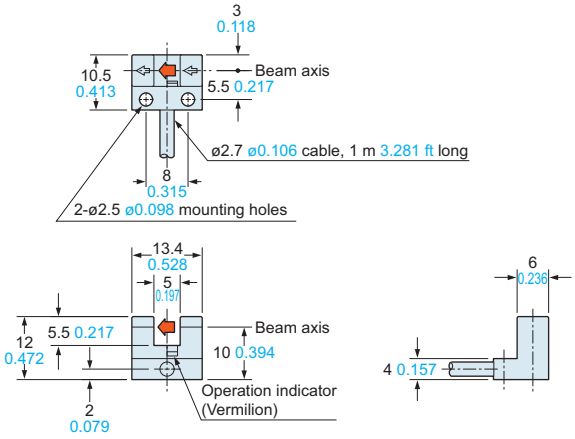
DIMENSIONS (Unit: mm in)

The CAD data in the dimensions can be downloaded from our website.

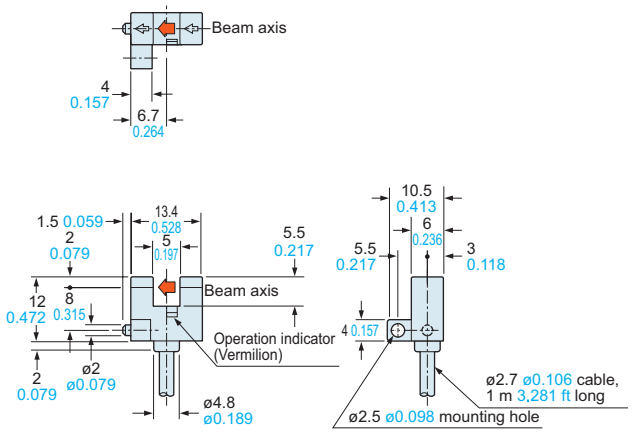
PM-K24(P) PM-K24-R — Sensor



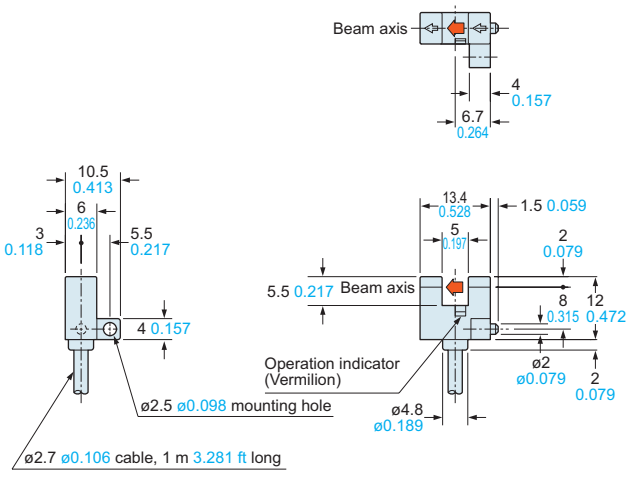
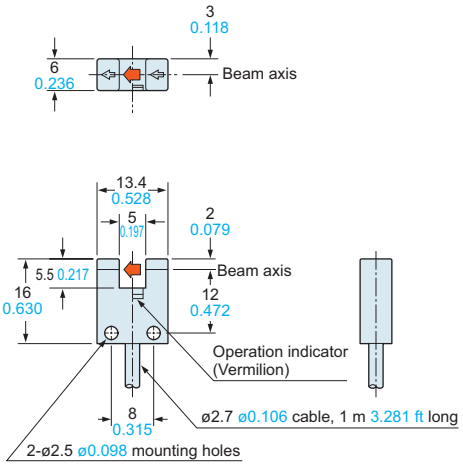
PM-L24(P) PM-L24-R — Sensor



PM-F24(P) PM-F24-R — Sensor



PM-R24(P) PM-R24-R — Sensor



PM-U24(P) PM-U24-R — Sensor