Ultra-small / Cable type PM-25 SERIES

Easy mounting with M2/M3 screws!

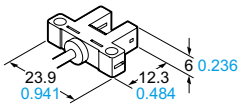
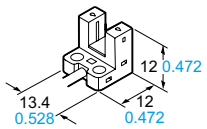
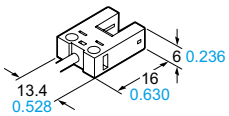
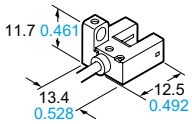
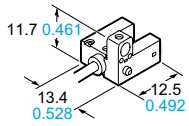
Cable type			
Built-in connector	NPN output	1 m 3.281 ft cable	3 m 9.843 ft cable	1 m 3.281 ft bending-resistant cable
	PNP output	1 m 3.281 ft cable	3 m 9.843 ft cable	1 m 3.281 ft bending-resistant cable

Recognition Certified

* NPN output / 1 m 3.281 ft cable length type only (Excluding bending-resistant cable type)

PM-K25 PM-L25 PM-U25 PM-F25 PM-R25

ORDER GUIDE

Type		Appearance (mm in)	Sensing range	Model No.	Cable length	Output	Output operation
Ultra-small / Cable type	K type		6 mm 0.236 in (fixed)	**PM-K25**	1 m 3.281 ft	NPN open-collector transistor	Incorporated with 2 outputs: Light-ON/Dark-ON
				PM-K25-R	1 m 3.281 ft, bending-resistant cable		
				PM-K25-C3	3 m 9.843 ft		
				PM-K25-P	1 m 3.281 ft	PNP open-collector transistor	
	L type			**PM-L25**	1 m 3.281 ft	NPN open-collector transistor	
				PM-L25-R	1 m 3.281 ft, bending-resistant cable		
				PM-L25-C3	3 m 9.843 ft		
				PM-L25-P	1 m 3.281 ft	PNP open-collector transistor	
	U type			**PM-U25**	1 m 3.281 ft	NPN open-collector transistor	
				PM-U25-R	1 m 3.281 ft, bending-resistant cable		
				PM-U25-C3	3 m 9.843 ft		
				PM-U25-P	1 m 3.281 ft	PNP open-collector transistor	
	F type			**PM-F25**	1 m 3.281 ft	NPN open-collector transistor	
				PM-F25-R	1 m 3.281 ft, bending-resistant cable		
				PM-F25-C3	3 m 9.843 ft		
				PM-F25-P	1 m 3.281 ft	PNP open-collector transistor	
	R type			**PM-R25**	1 m 3.281 ft	NPN open-collector transistor	
				PM-R25-R	1 m 3.281 ft, bending-resistant cable		
				PM-R25-C3	3 m 9.843 ft		
				PM-R25-P	1 m 3.281 ft	PNP open-collector transistor	

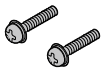
Note: The suffix "**-R**" in the model No. indicates a bending-resistant cable type. The suffix "**-C3**" indicates a 3 m 9.843 ft cable length type.

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**

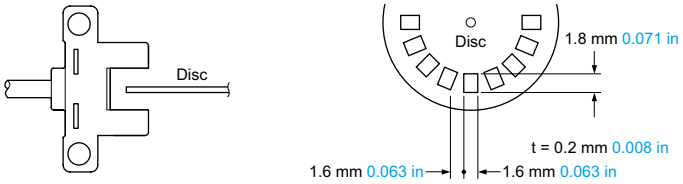


M2 (length 10 mm 0.394 in) screw with a spring washer

SPECIFICATIONS

Item \ Type		Ultra-small / Cable type		
			Bending-resistant cable	3 m 9.843 ft cable
Model No.	NPN output	**PM-□25**	**PM-□25-R**	**PM-□25-C3**
	PNP output	**PM-□25-P**	———	———
CE marking directive compliance		EMC Directive, RoHS Directive		
Sensing range		6 mm 0.236 in (fixed)		
Minimum sensing object		0.8 × 1.2 mm 0.031 × 0.047 in opaque object		
Hysteresis		0.05 mm 0.002 in or less		
Repeatability		0.01 mm 0.0004 in or less		
Supply voltage		5 to 24 V DC ±10 % Ripple P-P 10 % or less		
Current consumption		15 mA or less		
Output		<NPN output type> NPN open-collector transistor • Maximum sink current: 50 mA • Applied voltage: 30 V DC or less (between output and 0 V) • Residual voltage: 2 V or less (at 50 mA sink current) 1 V or less (at 16 mA sink current)		<PNP output type> PNP open-collector transistor • Maximum source current: 50 mA • Applied voltage: 30 V DC or less (between output and +V) • Residual voltage: 2 V or less (at 50 mA source current) 1 V or less (at 16 mA source current)
	Output operation	Incorporated with 2 outputs: Light-ON/Dark-ON		
	Short-circuit protection	Incorporated		
Response time		Under light received condition: 20 µs or less Under light interrupted condition: 80 µs or less (Maximum response frequency: 3 kHz) (Note 2)		
Operation indicator		Orange LED (lights up under light received condition)		
Pollution degree		3		
Environmental resistance	Protection	IP64 (IEC)		
	Ambient temperature (Note 3, 4)	–25 to +55 °C –13 to +131 °F (No dew condensation or icing allowed), Storage: –30 to +80 °C –22 to +176 °F		
	Ambient humidity	5 to 85 % RH, Storage: 5 to 95 % RH		
	Ambient illuminance	Fluorescent light: 1,000 ℓx or less at the light-receiving face		
	Voltage withstandability	1,000 V AC for one min. between all supply terminals connected together and enclosure		
	Insulation resistance	20 MΩ, or more, with 250 V DC megger between all supply terminals connected together and enclosure		
	Vibration resistance	10 to 2,000 Hz frequency, 1.5 mm 0.059 in double amplitude (maximum acceleration 196 m/s²) in X, Y and Z directions for two hours each		
	Shock resistance	15,000 m/s² acceleration (1,500 G approx.) in X, Y and Z directions three times each		
Emitting element		Infrared LED (Peak emission wavelength: 855 nm 0.034 mil, non-modulated)		
Material		Enclosure: PBT, Display section: Polycarbonate		
Cable		0.09 mm² 4-core cabtyre cable, PVC, 1 m 3.281 ft long	0.1 mm² 4-core bending-resistant cabtyre cable, PVC, 1 m 3.281 ft long (Note 5, 6)	0.09 mm² 4-core cabtyre cable, PVC, 3 m 9.843 ft long
Cable extension		Extension up to total 100 m 328.084 ft is possible with 0.3 mm², or more, cable. (Note 7)		
Weight		Net weight: 10 g approx., Gross weight: 15 g approx.		Net weight: 30 g approx., Gross weight: 35 g approx.

Notes: 1) Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +23 °C +73.4 °F.
2) The response frequency is the value when the disc, given in the figure below, is rotated.



3) In case the **PM-25** series is used at an ambient temperature of +50 °C +122 °F, or more, make sure to mount it on a metal body.
4) Note that the cable of **PM-□25-R** loses its flexibility when the ambient temperature decreases to about -10 °C +14 F°.
5) The cable of **PM-□25-R** is a bending-resistant cable usable on a moving base. When the sensor is mounted on a moving base, secure the sensor cable joint at the unit in place so that stress is not applied to it.
6) When storing **PM-□25-R**, make sure that the cable does not come into contact with the sensing section or operation indicator.
7) If the cable is extended to 20 m 65.617 ft or longer, confirm that the supply voltage at the end of the cable attached to the sensor is 4.5 V or higher.