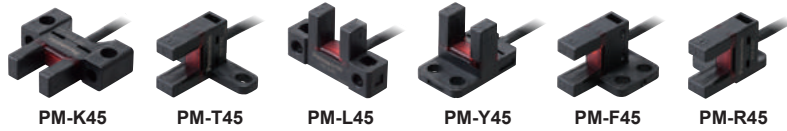


Compact / Cable type PM-45 SERIES

Cable type	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

Built-in connector



Compact size!

ORDER GUIDE

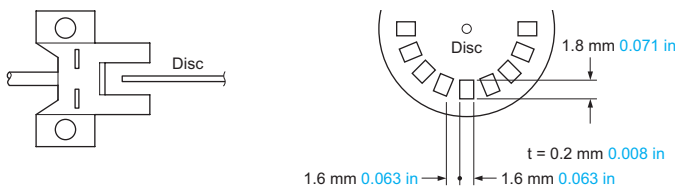
Type	Appearance (mm in)	Sensing range	Model No.	Cable length	Output	Output operation	
Compact / Cable type		6 mm 0.236 in (fixed)	PM-K45	1 m 3.281 ft	NPN open-collector transistor	Incorporated with 2 outputs: Light-ON / Dark-ON	
			PM-K45-C3	3 m 9.843 ft			
			PM-K45-P	1 m 3.281 ft	PNP open-collector transistor		
			PM-K45-P-C3	3 m 9.843 ft			
				PM-T45	1 m 3.281 ft		NPN open-collector transistor
				PM-T45-C3	3 m 9.843 ft		
	PM-T45-P			1 m 3.281 ft	PNP open-collector transistor		
	PM-T45-P-C3			3 m 9.843 ft			
				PM-L45	1 m 3.281 ft		NPN open-collector transistor
				PM-L45-C3	3 m 9.843 ft		
			PM-L45-P	1 m 3.281 ft	PNP open-collector transistor		
			PM-L45-P-C3	3 m 9.843 ft			
				PM-Y45	1 m 3.281 ft		NPN open-collector transistor
				PM-Y45-C3	3 m 9.843 ft		
	PM-Y45-P			1 m 3.281 ft	PNP open-collector transistor		
	PM-Y45-P-C3			3 m 9.843 ft			
				PM-F45	1 m 3.281 ft		NPN open-collector transistor
				PM-F45-C3	3 m 9.843 ft		
			PM-F45-P	1 m 3.281 ft	PNP open-collector transistor		
			PM-F45-P-C3	3 m 9.843 ft			
				PM-R45	1 m 3.281 ft		NPN open-collector transistor
				PM-R45-C3	3 m 9.843 ft		
	PM-R45-P			1 m 3.281 ft	PNP open-collector transistor		
	PM-R45-P-C3			3 m 9.843 ft			

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

SPECIFICATIONS

Item	Model No.	Type	Compact / Cable type	
		NPN output	PM-□45	3 m 9.843 ft cable
		PNP output	PM-□45-P	PM-□45-C3
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		<PNP output type> PNP open-collector transistor
		<ul style="list-style-type: none"> 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) 		<ul style="list-style-type: none"> 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	-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 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/s ²) in X, Y and Z directions for two hours each		
	Shock resistance	15,000 m/s ² 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-mm ² 4-core cabtyre cable, PVC, 1 m 3.281 ft long	0.09-mm ² 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 mm ² , or more, cable. (Note 3)		
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) 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.