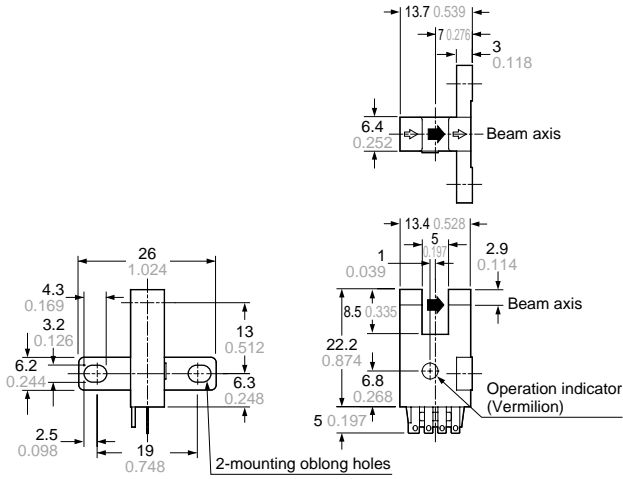
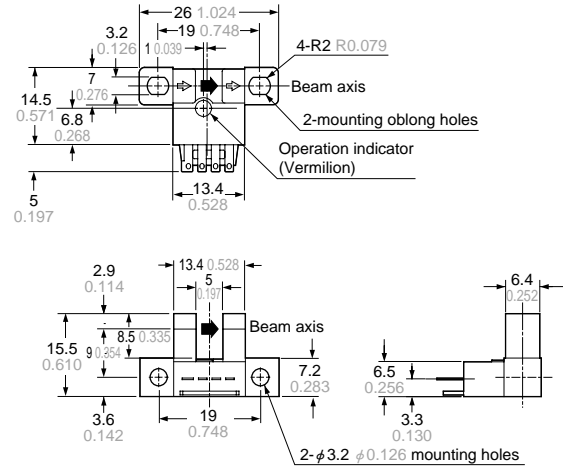


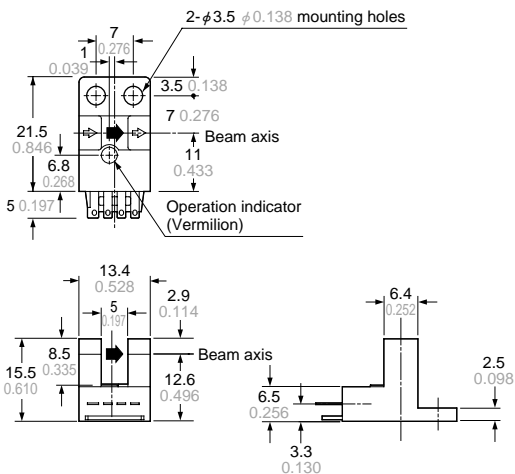
PM-T54
PM-T54P Sensor



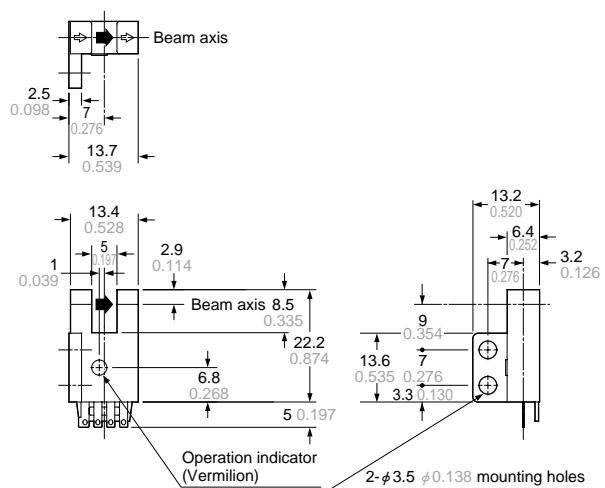
PM-L54
PM-L54P Sensor



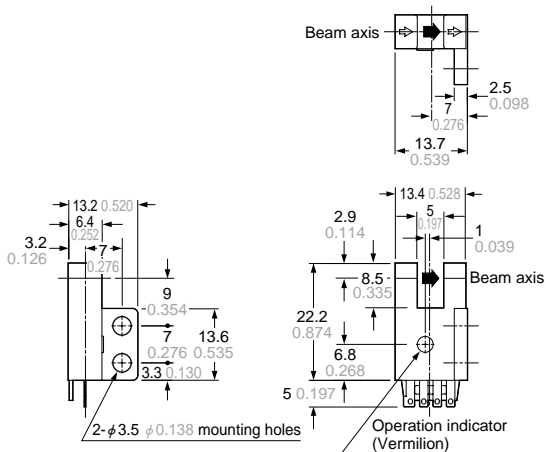
PM-Y54
PM-Y54P Sensor



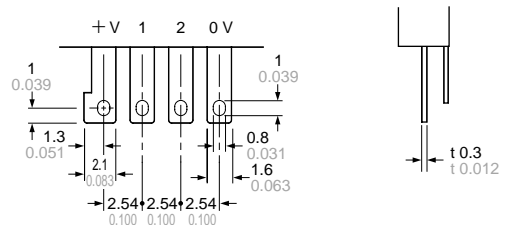
PM-F54
PM-F54P Sensor



PM-R54
PM-R54P Sensor



※Terminal part (PM-□54, PM-□54P)



SPECIFICATIONS

Item	Type		Ultra-small		Small	
	Model No.	NPN output type	PM-□24	With flexible cable	With cable	With connector
		PNP output type		PM-□24-R	PM-□44	PM-□54
				PM-□44P	PM-□54P	
Sensing range			5 mm 0.197 in (fixed)			
Minimum sensing object			0.8 × 1.8 mm 0.031 × 0.071 in opaque object			
Hysteresis			0.05 mm 0.002 in or less			
Repeatability			0.03 mm 0.001 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: 0.7 V or less (at 50 mA sink current) 0.4 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: 0.7 V or less (at 50 mA source current) 0.4 V or less (at 16 mA source current)	
Utilization category			DC-12 or DC-13			
Output operation			Incorporated with 2 outputs: Light-ON / Dark-ON			
Response time			Under light received condition: 20 μs or less Under light interrupted condition: 100 μs or less (Response frequency: 1 kHz or more)(Note 1)			
Operation indicator			Vermilion LED (lights up under light received condition)			
Environmental resistance	Pollution degree		3 (Industrial environment)			
	Ambient temperature (Note 2, 3)		− 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		35 to 85 % RH, Storage: 35 to 85 % RH			
	Ambient illuminance		Fluorescent light: 1,000 lx at the light-receiving face			
	EMC		EN 50081-2, EN 50082-2, EN 60947-5-2			
	Voltage withstandability		1,000 V AC for one min. between all supply terminals connected together and enclosure			
	Insulation resistance		50 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 amplitude 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 for three times each				
Emitting element			Infrared LED (non-modulated)			
Material			Enclosure: PBT, Slit cover: Polycarbonate, Terminal part [PM-□54(P) only]: Solder plated			
Cable			0.09 mm ² 4-core cabtyre cable [PM-□24-R: 0.1 mm ² flexible, oil and heat resistant cabtyre cable (Note 4)], 1 m 3.281 ft long			
Cable extension			Extension up to total 100 m 328.084 ft is possible with 0.3 mm ² , or more, cable.			
Weight			10 g approx.		15 g approx. 3 g approx.	

Notes: 1) The response frequency is the value when the disc, given in the figure below, is rotated.



2) In case the ultra-small type PM-□24(-R) is used at an ambient temperature of + 50 °C + 122 °F, or more, make sure to mount it on a metal body.

3) Take care that the flexibility of the PM-□24-R cable is lost if the ambient temperature is near − 10 °C + 14 °F.

4) The cable of PM-□24-R is a flexible cable usable on a moving base. When the sensor is mounted on a moving base, fix the sensor cable joint so that stress is not applied to it.