

Robust Designed M18 Cylindrical Metal Sensor

Enhanced performance with easier-to-use features than the conventional models

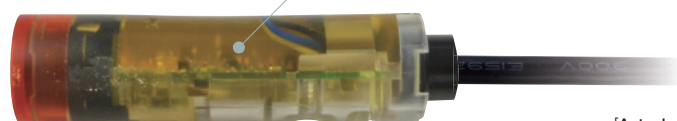


Inside: Hot-melt molding



Larger sensitivity potentiometer

Hot-melt molding for high vibration resistance and watertightness



[Actual sizes]

Protection : IP67



Note: Due to refraction of light resulting from water or oil on the optical surface, detection may not be performed correctly.

The C-R Series conforms to the watertight IP67 rating. It can be used on work sites or machines that are exposed to splashing water, such as those in the food and beverage industry.

Front output indicator on through-beam model



Output indicator is equipped not only on the side of the receiver, but also on the front. When panning the emitter for alignment, the ON/OFF state of the indicator is visible from the emitter side, so alignment can be performed more easily by a single operator.

Lineup

Sensing mode	Light source	Sensing distance	Model	
			NPN	PNP
Through-beam	RED LED	0 to 25m	CTD-2500N-R	CTD-2500P-R
	Infrared LED	0 to 25m	CTD-2500N-IR	CTD-2500P-IR
Retro reflective	RED LED	0.01 to 4m	CRD-400N-R	CRD-400P-R
Diffuse reflective	RED LED	0 to 1m	CDD-100N-R	CDD-100P-R
	Infrared LED	0 to 1m	CDD-100N-IR	CDD-100P-IR
	Infrared LED	0 to 400mm	CDD-40N-IR	CDD-40P-IR
Limited diffuse reflective	RED LED	0 to 110mm	CDD-11N-R	CDD-11P-R
	Infrared LED	0 to 110mm	CDD-11N-IR	CDD-11P-IR

Accessories

Reflectors



Standard V-61
60.9 × 50.9 mm
Sensing distance: 0.01 to 4 m



Small V-42
42 × 35 mm
Sensing distance: 0.01 to 2.4 m



Vertical P45A
54 × 12.4 mm
Sensing distance: 0.01 to 1.4 m



Side mount P25
32 × 14 mm
Sensing distance: 0.01 to 1.6 m



Ultra-small V-30
43 × 23 mm
Sensing distance: 0.01 to 2.2 m

Reflective sheet



Diamond grade sheet
Sensing distance:
0.1 to 1 m 100 × 100 mm
(adhesive type)

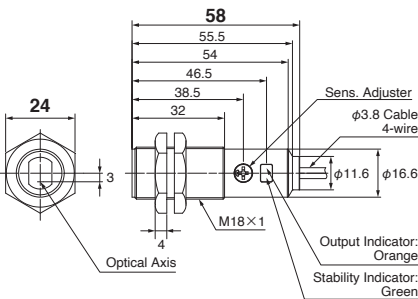
■ Specifications

		Through-beam	Retro reflective	Diffuse reflective		Limited diffuse reflective
RED LED	NPN	CTD-2500N-R	CRD-400N-R	CDD-100N-R	-	CDD-11N-R
	PNP	CTD-2500P-R	CRD-400P-R	CDD-100P-R	-	CDD-11P-R
Infrared LED	NPN	CTD-2500N-IR	-	CDD-100N-IR	CDD-40N-IR	CDD-11N-IR
	PNP	CTD-2500P-IR	-	CDD-100P-IR	CDD-40P-IR	CDD-11P-IR
Sensing distance *		25 m	0.01 to 4 m	0 to 1 m	0 to 400mm	0 to 110mm
Light source		RED LED/ IR LED	RED LED	RED LED/ IR LED	IR LED	RED LED/ IR LED
Spot size (approx.)		ø 1600mm / 25m	ø 240mm / 4m	ø 70mm / 1m	ø 30mm / 400mm	ø 5mm / 110mm
Supply voltage		10 to 30VDC Including ripple (P-P) 10%				
Current consumption		Emitter : 20mA max. Receiver : 25mA max.	25mA max.	30mA max.	30mA max.	25mA max.
Response time		500µs max.				
Control output		NPN/PNP Open collector 100mA max. / 30VDC (Residual voltage 1.8V max.)				
Output mode		Light ON / Dark ON, selectable by wiring				
Sensitivity adjustment		1-turn potentiometer				
Indicators		Output indicator (Orange LED) / Stability indicator (Green LED)				
Connection type		4-wire 2m cable (Through-beam emitter: 2-wire)				
Applicable regulations	EMC	EMC directive (2014/30/EU)				
	Environment	RoHS (2011/65/EU, MIIT Order No. 32)				
Applicable standards		EN 60947-5-2				
Environmental resistance	Ambient temp./humidity	-25 to +55°C / 35 to 85%RH (No condensation or freezing)				
	Ambient illuminance	Sunlight : 10,000 lux, Incandescent lamp : 3,000 lux max.				
	Vibration resistance	10 to 100 Hz; max.1.5mm (p-p), max.150m/s ² , 8 hours in each of the X, Y, and Z directions				
	Shock resistance	Approximately 50 G (500 m/s ²), 3 times in each of the X, Y, and Z directions				
Degree of protection		IP67				
Material		Case : Brass Ni plated, Front Cover : PMMA				
Weight without cable		Approx. 30g				
Included accessories		-	Reflector: V-61	-	-	-

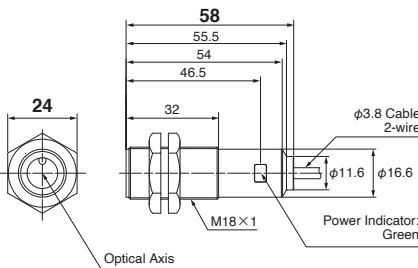
* • Retro Reflective : Reflector V-61 • Diffuse Reflective : White paper 90% 200x200mm • Limited diffuse reflective : White paper 90% 100x100mm

■ Dimensions

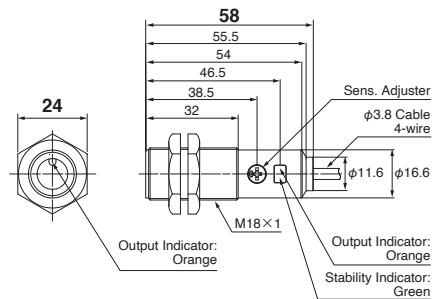
Retro reflective, Diffuse reflective,
Limited diffuse reflective



Through-beam (Emitter)

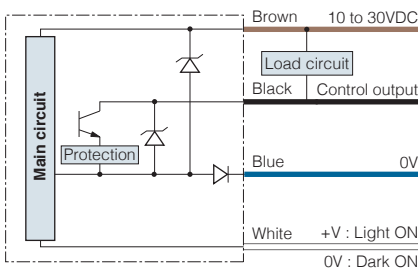


Through-beam (Receiver)

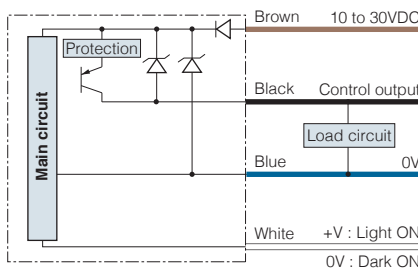


■ Circuit diagram

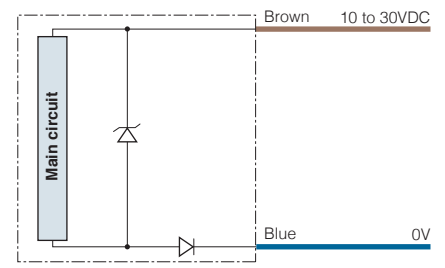
NPN type



PNP type



Through-beam Emitter



OPTEX
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