



คุณสมบัติ

Long Sensing Distance Sensor

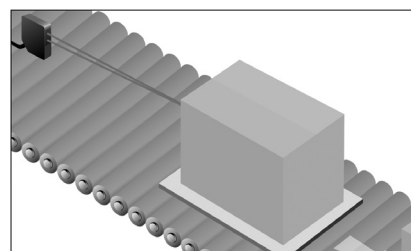
- TOF, Time Of Flight, method forms the technical basis for maximum reliability and high precision
- Immune to object color and angle

Selection table

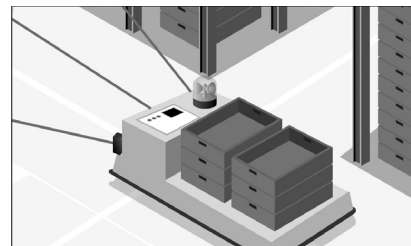
Type	Shape	Sensing distance	Control output	Model (Models in parentheses are connector types)	
				NPN type	PNP type
Diffuse-reflective		0.3 to 3 m	1CH	TOF-3V300N1 (TOF-3V300CN1)	TOF-3V300P1 (TOF-3V300CP1)
			2CH	TOF-3V300N (TOF-3V300CN)	TOF-3V300P (TOF-3V300CP)
Retro-reflective		0 to 20 m	1CH	TOF-3V2000N (TOF-3V2000CN)	TOF-3V2000P (TOF-3V2000CP)

Application

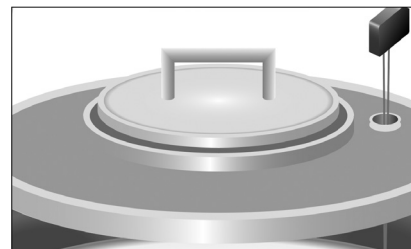
Position detection of items on moving palette.



Position detection of automated guided vehicle.



Level detection of melted aluminum liquid.



Reflectors for TOF-3V2000 □



Standard (included)
V-61
Sensing distance:
0.01 to 20 m

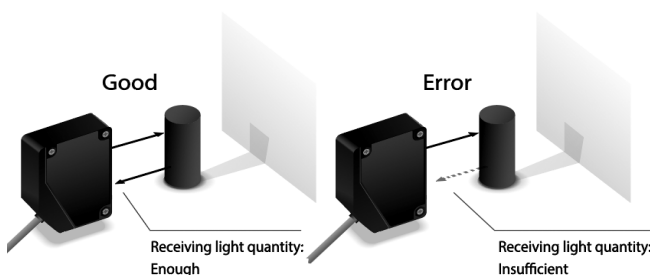
Connector cable



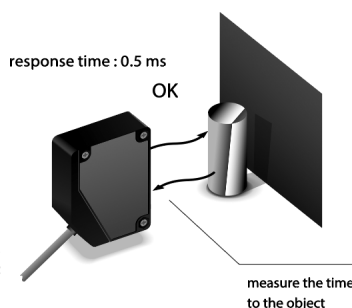
DOL-1205-G02M
Cable length: 2 m

*5 m and 10 m cables are separately available.
*Robot cables are also available.

Standard diffuse-reflective sensor



TOF (Diffuse-reflective)



Crosstalk prevention-2pcs MAX.

Up to 2pcs can be mounted side by side.



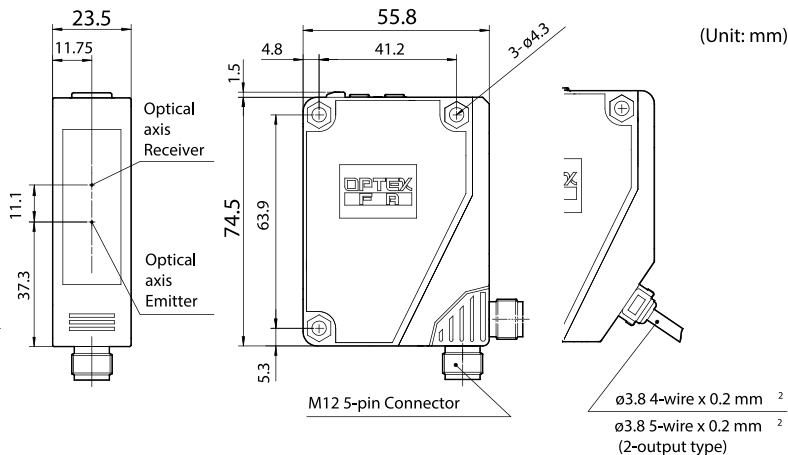
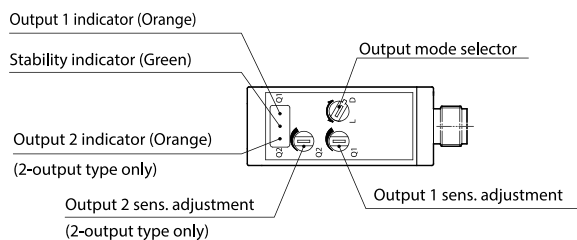
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Type				Diffuse Reflective	Retro Reflective
Model	Cable type	NPN	Output: 1CH	TOF-3V300N1	TOF-3V2000N
			Output: 2CH	TOF-3V300N	—
		PNP	Output: 1CH	TOF-3V300P1	TOF-3V2000P
			Output: 2CH	TOF-3V300P	—
	Connector type	NPN	Output: 1CH	TOF-3V300CN1	TOF-3V2000CN
			Output: 2CH	TOF-3V300CN	—
		PNP	Output: 1CH	TOF-3V300CP1	TOF-3V2000CP
			Output: 2CH	TOF-3V300CP	—
Detecting object/target				Opaque (Reflectance: 6 to 90%)	Reflector : V-61
Sensing distance				3000 mm (90% white)	20 m with Reflector V-61
Light source				Red laser diode, wavelength: 650 nm, Maximum output: 5 mW	
Laser class				FDA: Class I JIS/IEC: Class1	
Spot size				ø12 mm at 3 m distance	ø50 mm at 20 m distance
Optical angle deviation				0.5°(9 mrad) or less	
Hysteresis				15% Max : 300 to 1500 mm / 6% Max : 1500 to 3000 mm	10% Max : 1 to 4 m / 3% Max : 4 to 20 m
Repeat accuracy				2 mm	10 mm
Response time				0.5 ms	2 ms
Output mode				Light ON/ Dark ON selectable	
Environmental illuminance				Sunlight : 4,000 lx, Incandescent lamp : 3,000 lx (at 1 m)	
Indicator				Output indicator: Orange x 2 (2-output type), Stable indicator : Green	
Distance adjustment				4-turn Potentiometer	12-turn Potentiometer.
External input				Laser OFF	
Crosstalk prevention				Up to 2 pcs.	
Supply voltage				10 to 30 VDC ±10%, 70 mA max.	
Circuit protection				Reverse connection protection, Over current protection	
Control output				NPN/PNP Open collector, 30V/100mA, (Residual voltage 1.8 V max.)	
Connection (cable)				ø3.8 2 m cable 5 wires (2-output type) , 4 wires (1-output type)	
Connection (M12 connector)				M12, 5-pin connector	
EMC				EN60497-5-2	
Initialization time				300 ms	
Internal short circuit				according to VDE 160	
Materials				ABS/PMMA	
Degree of protection				IP67	
Vibration resistance				10 to 55 Hz, Double amplitude 1.5 mm, X, Y, Z for 2 Hours	
Shock resistance				500m/s ² (approx. 50G) X, Y, Z 3 times each	
UL				cUL	
CE				EMC directive	
Operating temp. humidity				-10 to +50°C, 35 to 85% RH	
Storage temp. humidity				-40 to +70°C, 35 to 95% RH	
Temperature drift				±1% max.	

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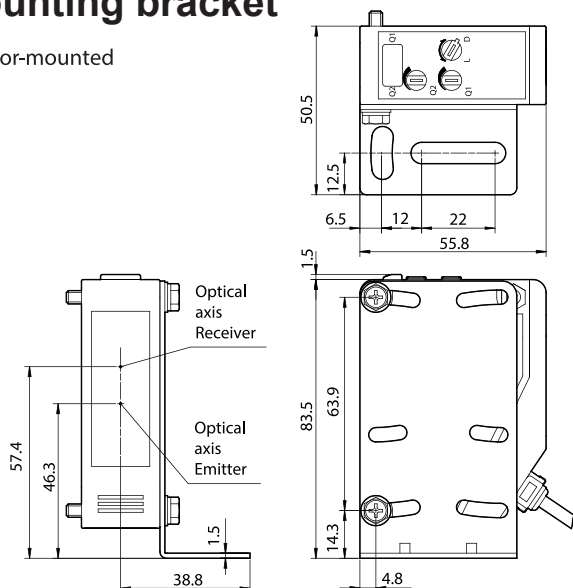
Sensor

■ Connector type/cable type

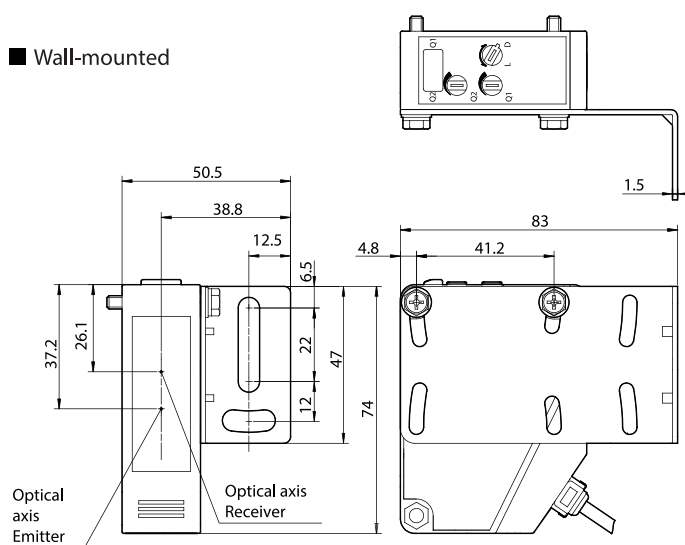


Mounting bracket

■ Floor-mounted

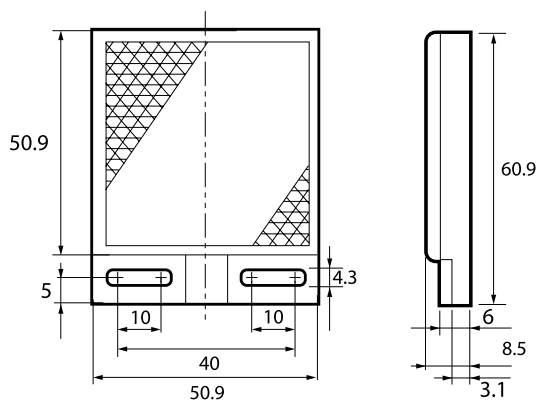


■ Wall-mounted



Reflectors for TOF-3V2000 □

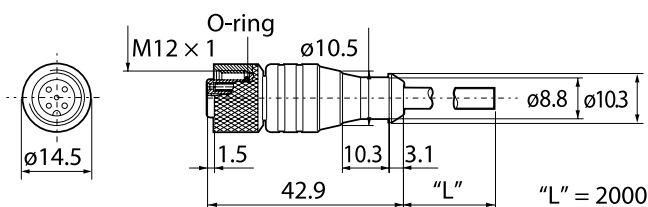
■ V-61: Standard type reflector



Connector cable

■ Cable for M12 connector type

DOL-1205-G02M

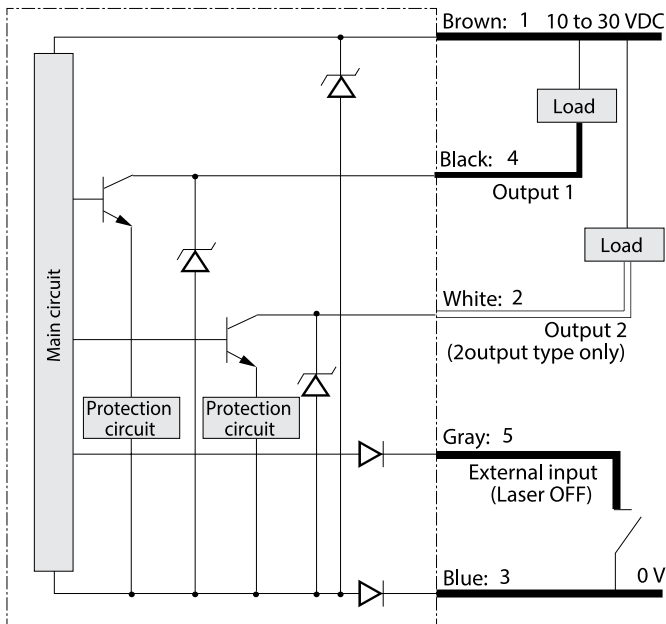


Cable section material: PVC
Conductor cross-section: 5-wire x 0.5 mm²

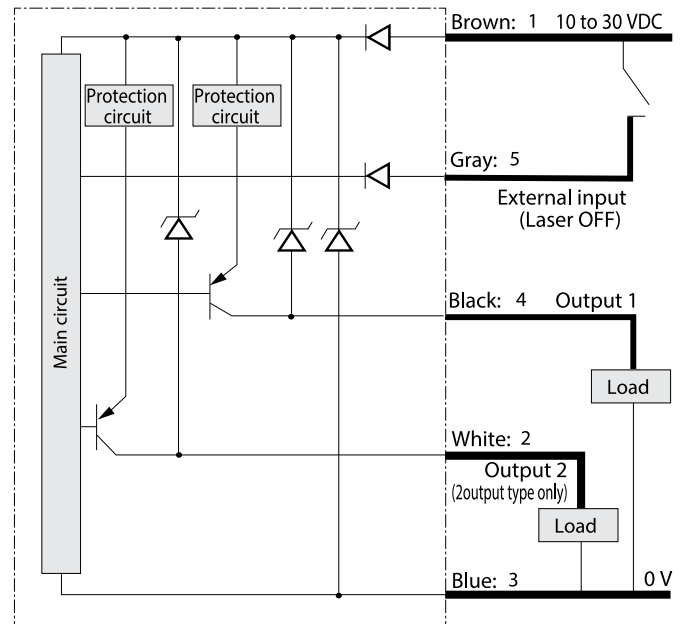
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I/O circuit diagram

■ NPN output type

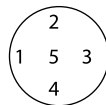
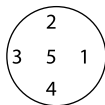


■ PNP output type



■ Connector type

(Pin configuration) Sensor side Connector cable side



- 1 10 to 30 VDC
- 2 Output 2
(2 Output type only)
- 3 0 V
- 4 Output 1
- 5 External input
(Laser OFF)

Notes

- When using a switching regulator for the power supply, be sure to ground the frame ground terminal.
- Because wiring sensor wires with high-voltage wires or power supply wires can result in malfunctions due to noise, which can cause damage, make sure to wire separately.
- Avoid using the transient state while the power is on (approx. 300 ms).