



Long range laser photoelectric sensor!

- | Sensing distance: 40 m (through-beam type)
- | Response time: 0.5 ms or less
- | Larger laser spot

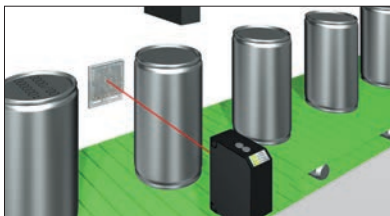
Related products

Transparent object detection
DR-Q
 ● P.396

C-MOS laser
BGS-DL
 ● P.318

Color/mark detection
DM
 ● P.426

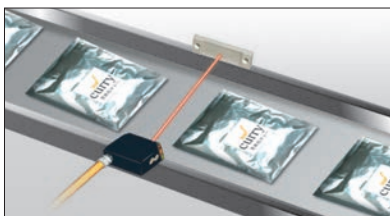
Triggering for printer



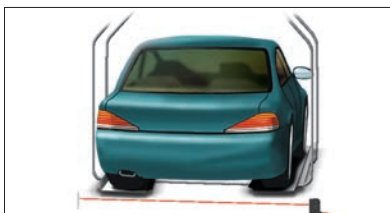
Vehicle checks on final assembly lines



Confirmation of retort pouch food arrival



Confirmation of vehicle stopping position in a parking lot



Selection table

Type	Shape	Sensing distance	Model (Models in parentheses are connector types)	
			NPN type	PNP type
Laser through-beam		0 to 40 m	DT-4000N (DT-4000CN)	DT-4000P (DT-4000CP)
Laser coaxial retro-reflective		0 to 5 m	DR-500N (DR-500CN)	DR-500P (DR-500CP)
Laser transparent object detection		0 to 1.5 m	DR-Q150TN (DR-Q150TCN)	DR-Q150TP (DR-Q150TCP)
		0 to 4 m	DR-Q400TN (DR-Q400TCN)	DR-Q400TP (DR-Q400TCP)
C-MOS laser		5 to 100 mm (40 to 100 mm)	BGS-DL10TN (BGS-DL10TCN)	BGS-DL10TP (BGS-DL10TCP)
		20 to 250 mm (100 to 250 mm)	BGS-DL25TN (BGS-DL25TCN)	BGS-DL25TP (BGS-DL25TCP)

● For the connector type, please purchase an optional JCN series connector cable.

Options/Accessories

Reflector

Standard (included)



P250F
 Sensing distance: 0 to 5 m
 61 × 51 mm
 Included with retro-reflective type

Small (optional)



PL20F
 Sensing distance: 0 to 3 m
 60 × 20 mm

Ultra-small (optional)



PL10F
 Sensing distance: 0 to 1 m
 32 × 20 mm

Connector cables

Straight



JCN-5
 Cable length: 2 m
JCN-5S
 Cable length: 5 m
JCN-10S
 Cable length: 10 m

L-shaped



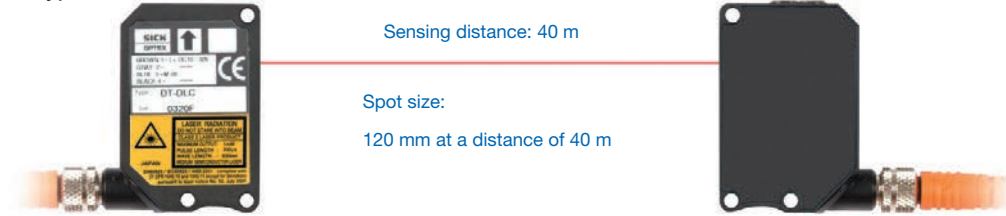
JCN-L
 Cable length: 2 m
JCN-5L
 Cable length: 5 m
JCN-10L
 Cable length: 10 m

Achieves long distance, high-accuracy detection

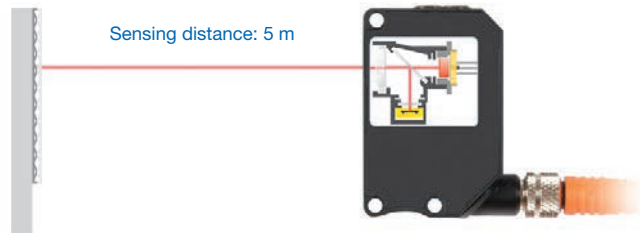
Sensing distance: 40 m (through-beam type)

Features a sensing distance of 40 m, one of the longest for small photoelectric sensors. Employs red lasers (Class 2) as the light source to enable highly precise positioning detection.

Through-beam type



Coaxial retro-reflective type



Easy adjustment of light axis

☉ **Larger laser spot**

Features a larger laser spot for easier light axis adjustments. Because the spot light can be confirmed visually, detection position adjustments can be performed quickly.



Small spot type
Z-L series ○ **P.272**
DS series ○ **P.280**

For high-speed lines

☉ **Response time: 0.5 ms**

Features one of the top response times for laser photoelectric sensors in the industry. This feature makes detection in high speed production line possible.

Photoelectric Sensors

Specialized Photoelectric Sensors

Laser Displacement Sensors

Laser Sensors

Z-L

DS

D

Specifications

Type		Through-beam type	Retro-reflective type	
Model	NPN	Cable type	DT-4000N	DR-500N
		Connector type	DT-4000CN	DR-500CN
	PNP	Cable type	DT-4000P	DR-500P
		Connector type	DT-4000CP	DR-500CP
Sensing distance		40 m	0 to 5 m (when reflector P250F is used)	
Light source		Red semiconductor laser Class 2 (IEC/JIS)* Wavelength: 650 nm Pulse width: 6 μs Maximum output: 2 mW		
Spot size		Approx. ø15 mm / at a distance of 5 m	Approx. ø20 mm / at a distance of 3.5 m	
Response time		0.5 ms		
Distance adjustment		1-turn potentiometer		
Indicators		Output indicator (orange LED) Laser emission indicator (green LED)		
Control output		NPN/PNP Open collector Max. 100 mA/30 VDC		
Output mode		Light ON / Dark ON selection switch		
Connection type		Cable type: Cable length: 2 m (ø4 mm) / Connector type: M8, 4-pin		
Insulation resistance		20 MΩ or more (with 500 VDC)		
Rating	Supply voltage	10 to 30 VDC, including 10% ripple (p-p)		
	Current consumption	40 mA or less	30 mA or less	
Applicable regulations		EMC directive (2004/108/EC) / FDA regulations (21 CFR 1040.10)		
Applicable standards		EN 60947-5-2		
Company standards		Noise resistance: Feilen Level 3 cleared		
Environmental resistance	Ambient temperature/humidity	-10 to +40°C / 35 to 95% RH (no freezing or condensation)		
	Ambient illuminance	Sunlight: 10,000 lx or less Incandescent light: 3,000 lx or less		
	Vibration resistance	10 to 55 Hz; double amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions		
	Shock resistance	Approx. 50 G (500 m/s ²); 3 times in each of the X, Y, and Z directions		
	Degree of protection	IP67		
Material		Housing: ABS Lens front cover: PMMA		
Weight		Approx. 20 g (excluding cable)		
Included accessories		Mounting bracket: BEF-WK-190	Mounting bracket: BEF-WK-190 Reflector: P250F	

● Specifications are subject to change without prior notice for product improvement purposes.

*Classified as Class II in the US FDA standards.

Laser light precautions

This product emits a Class 2 (II) visible laser beam that is compliant with JIS C6802/ IEC/FDA laser safety standards.

Warning and explanation labels are affixed to the sides of the sensor.

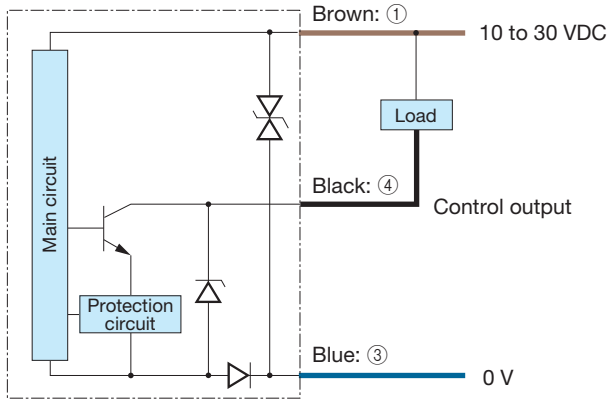


Warning Do not look directly at the laser or intentionally shine the laser in another person's eyes.

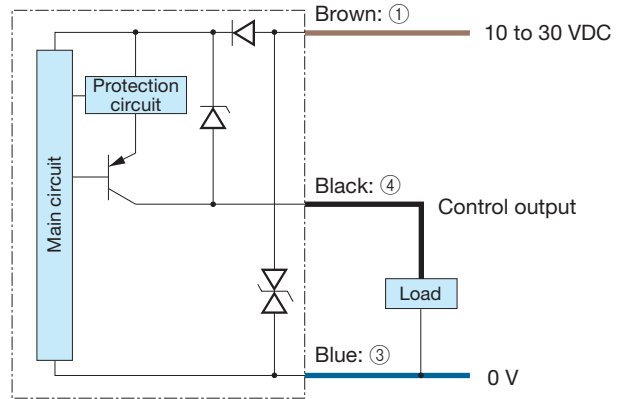


Output circuit diagram

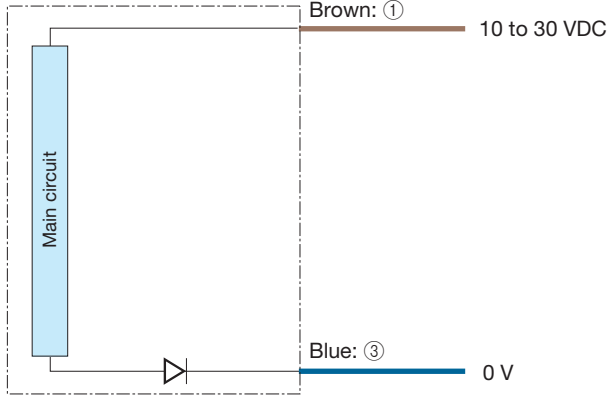
■ NPN output type



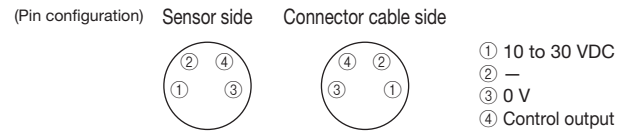
■ PNP output type



■ Through-beam type emitter



■ Connector type

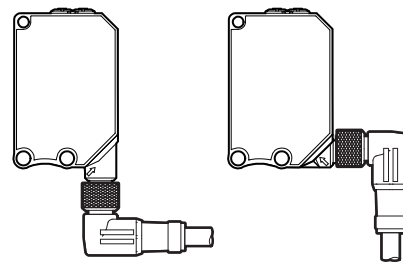


Connecting

- 1 to 4 are connector pin No.

Notes

- When using a switching regulator for the power supply, be sure to ground the frame ground terminal.
- Avoid wiring in parallel with or in the same piping as high-voltage wires or power lines. Doing so may lead to malfunctions caused by noise. Also, shorten the power supply and signal wires as much as possible.
- Avoid using the transient state while the power is on (approx. 100 ms).
- The connector direction is fixed as the drawing below when you use L-shaped connector cable. Be aware that rotation is not possible.



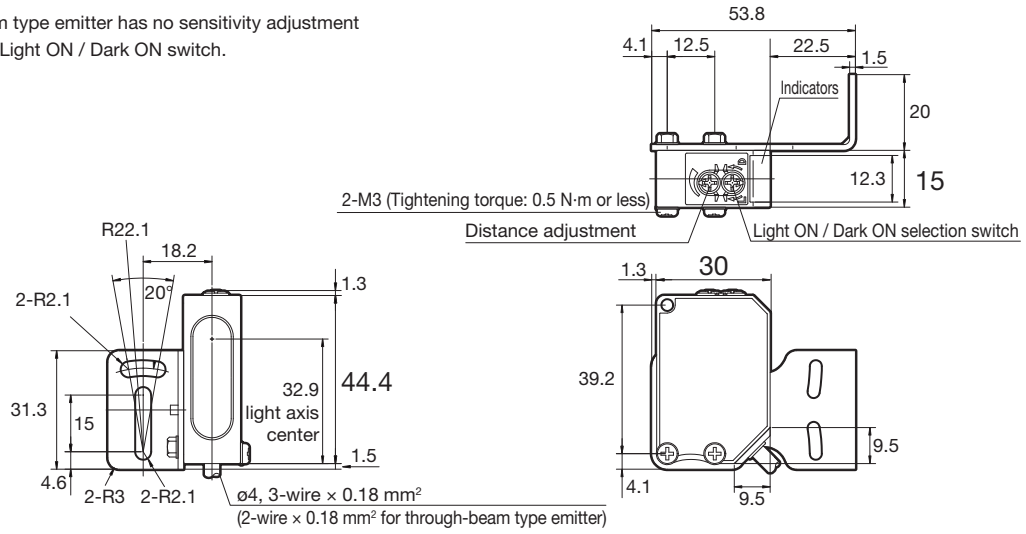
Dimensions

Cable type

(Unit: mm)

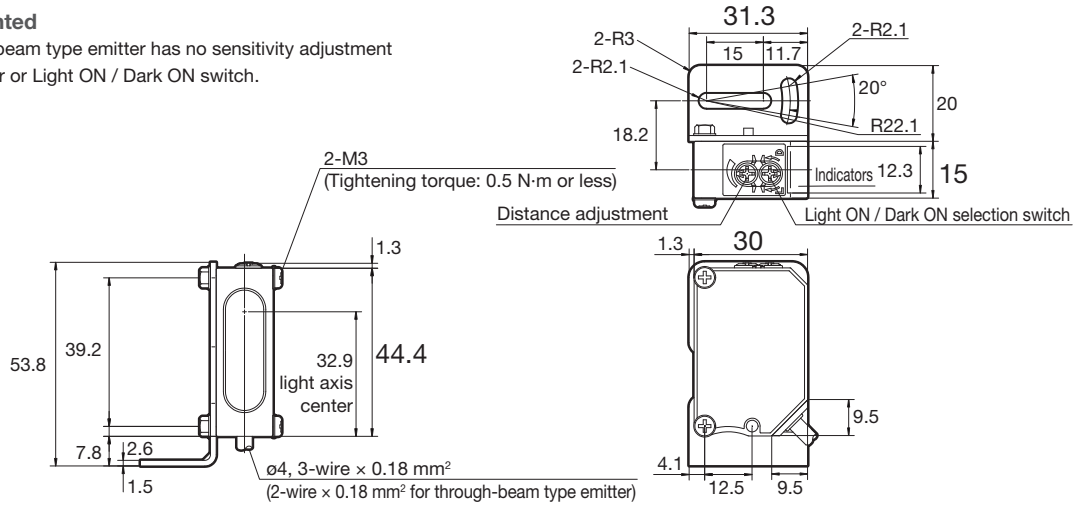
■ **Wall-mounted**

*The through-beam type emitter has no sensitivity adjustment potentiometer or Light ON / Dark ON switch.



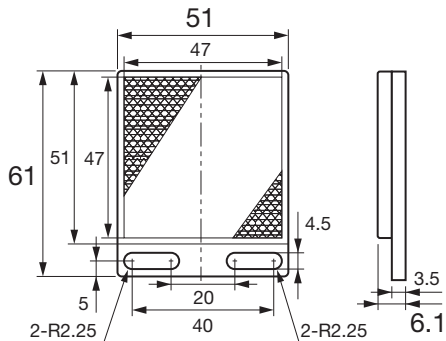
■ **Floor-mounted**

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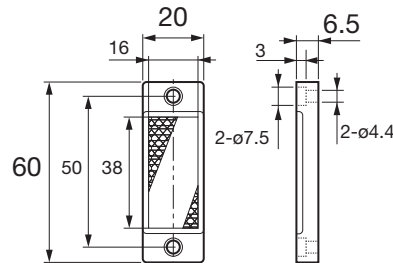


Reflector

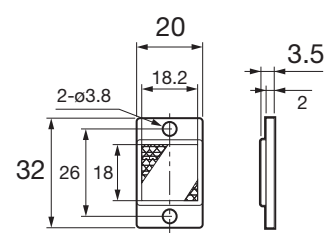
■ **P250F Standard (included)**



■ **PL20F Small**



■ **PL10F Ultra-small**

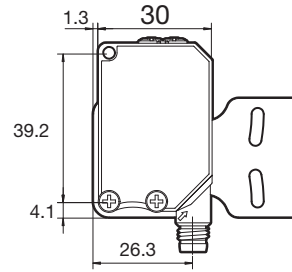
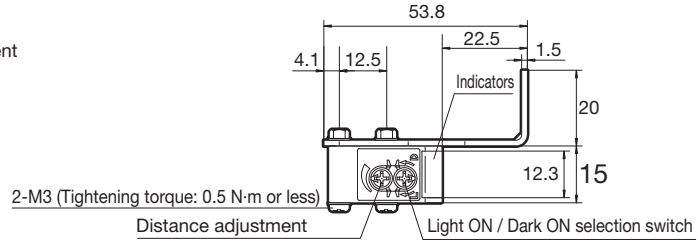
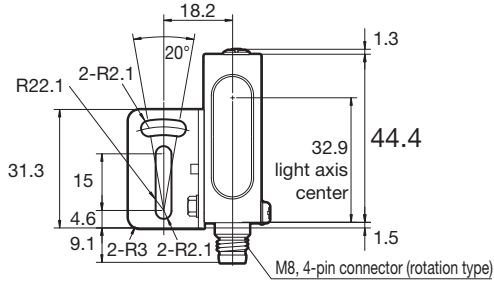


(Unit: mm)

Connector type

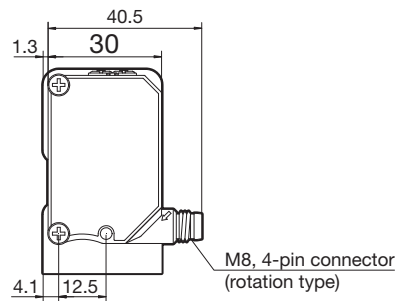
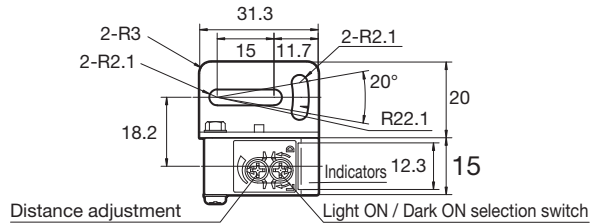
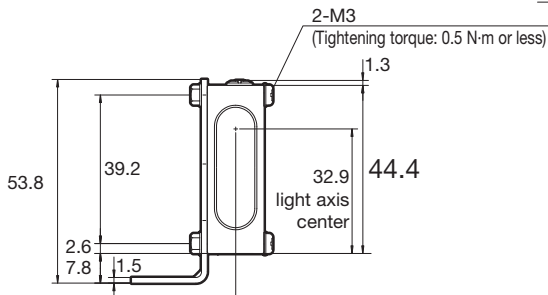
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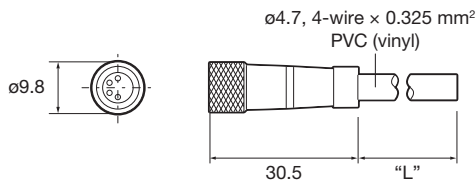
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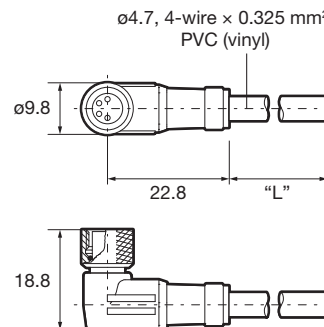


Connector cable (optional)

■ **JCN-S, JCN-5S, JCN-10S**



■ **JCN-L, JCN-5L, JCN-10L**



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