

298

Long range type

D series

CE

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

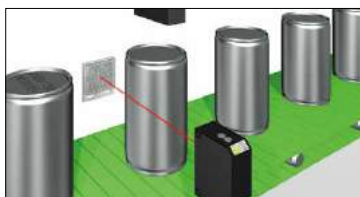

C-MOS laser

BGS-DL
 ● P.318


Color/mark detection

DM
 ● P.426


Triggering for printer



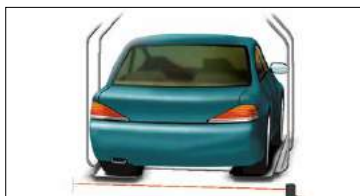
Vehicle checks on final assembly lines



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-S**

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

OPTEX
FA

Ramco National - Optex FA Sensors

www.Optex-Ramco.com

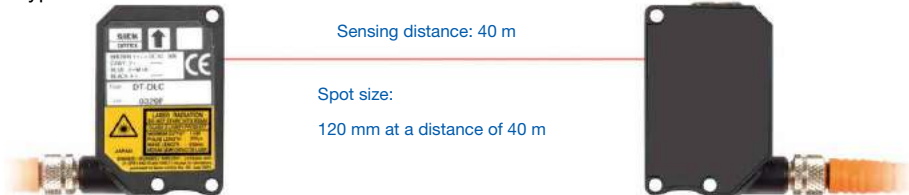
Got Questions? 1-800-280-6933

Achieves long distance, high-accuracy detection

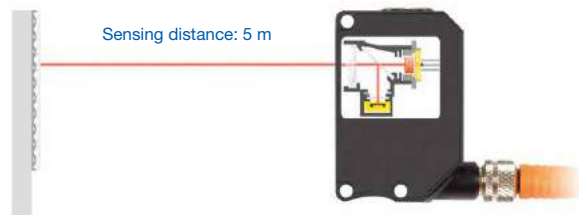
Sensing distance: 40 m (through-beam type)

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.

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/s²); 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.

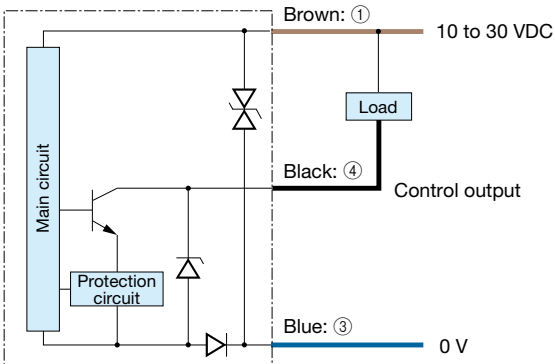


Warning Do not look directly at the laser or intentionally shine the laser in another person's eyes.

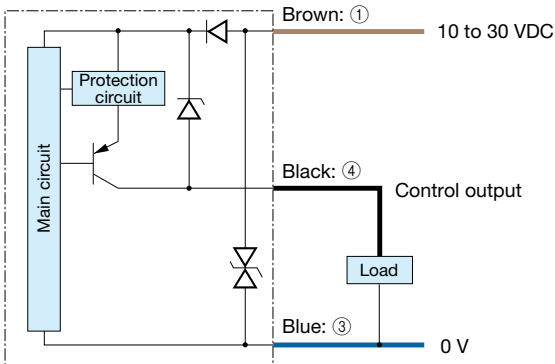


Output circuit diagram

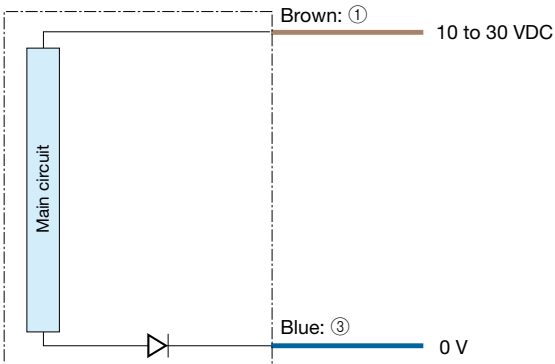
NPN output type



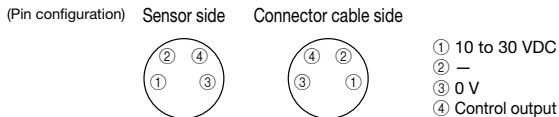
PNP output type



Through-beam type emitter



Connector type

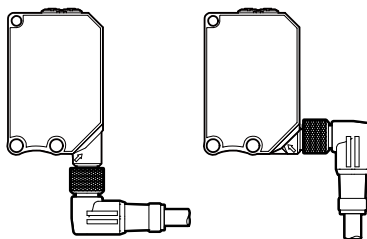


Connecting

■ 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.



Long range type **D** series

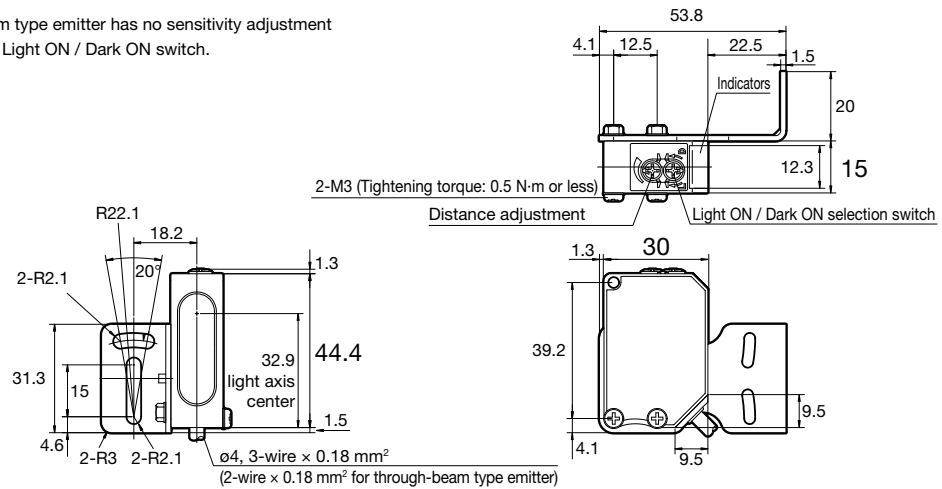
Dimensions

Cable type

(Unit: mm)

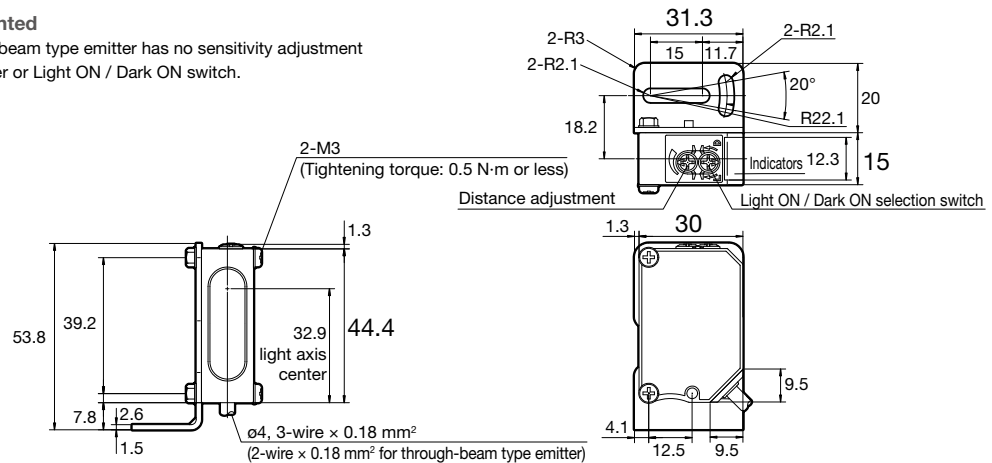
■ Wall-mounted

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



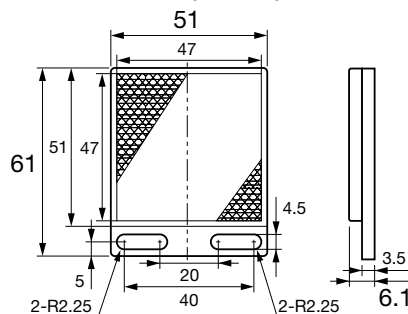
■ Floor-mounted

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

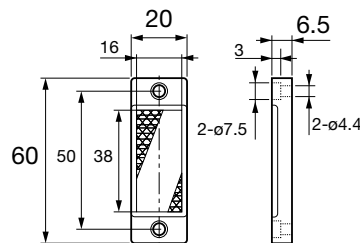


Reflector

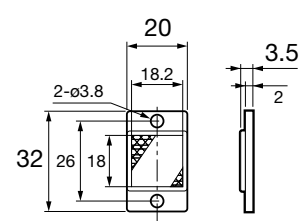
■ P250F Standard (included)



■ PL20F Small



■ PL10F Ultra-small

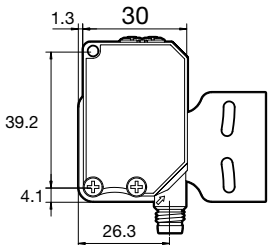
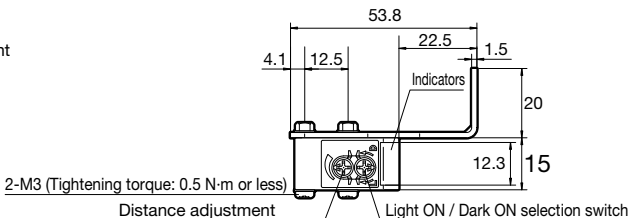
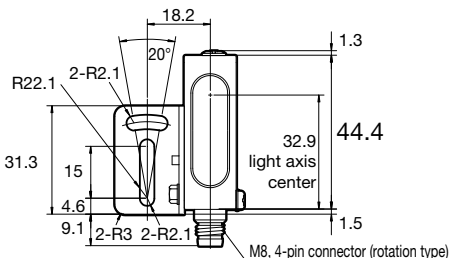


(Unit: mm)

Connector type

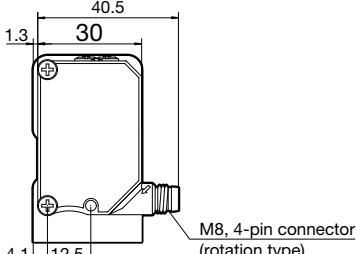
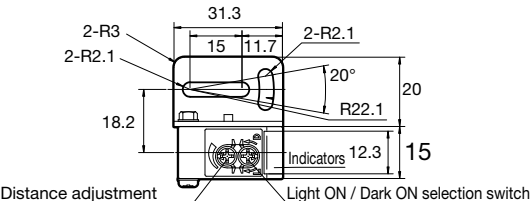
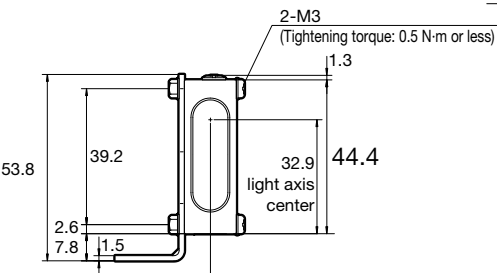
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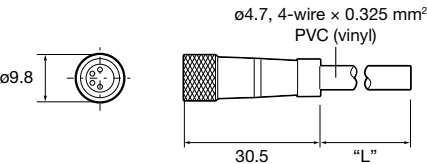
■ Floor-mounted

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Connector cable (optional)

■ JCN-S, JCN-5S, JCN-10S



■ JCN-L, JCN-5L, JCN-10L

