



Water resistant/vibration resistant resin filled and robust body

- Passed 100-hour test for water and oil resistance
- Achieved a level of vibration resistance far above that of JIS standards
- Mounting hole pitch: 10 to 25.4 mm

Related products

Stainless steel housing

Z-M
 ● P.158

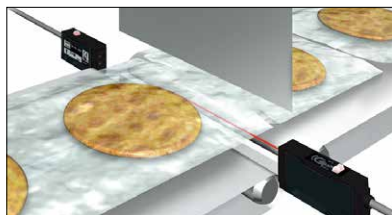

Standard type

Z3
 ● P.148


Universal voltage

V2
 ● P.246

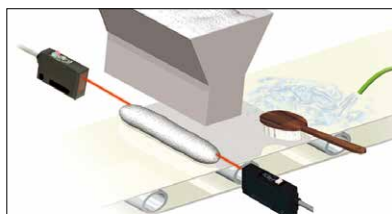

Detection of stuck rice crackers



Drill breakage on NC machine



Detection of rice dropped from automatic sushi wrap rolling machine



Confirmation of item passage on lightly vibrating line



Selection table

Type	Shape	Sensing distance	Model (Models in parentheses are connector types)		
			NPN type	PNP type	
Head ON type	Through-beam	Infrared light 10 m	JT-H1000N (JT-H1000CN)	JT-H1000P (JT-H1000CP)	
	Retro-reflective	0.01 to 3 m	JR-H300N (JR-H300CN)	JR-H300P (JR-H300CP)	
	Reflective	Diffuse	800 mm	JD-HR80N (JD-HR80CN)	JD-HR80P (JD-HR80CP)
		Limited diffuse	20 to 50 mm	JD-HL03N (JD-HL03CN)	JD-HL03P (JD-HL03CP)
Wide angle		80 mm	JD-HW08N (JD-HW08CN)	JD-HW08P (JD-HW08CP)	
Side ON type	Through-beam	Infrared light 10 m	JT-S1000N (JT-S1000CN)	JT-S1000P (JT-S1000CP)	
	Retro-reflective	0.01 to 3 m	JR-S300N (JR-S300CN)	JR-S300P (JR-S300CP)	
	Reflective	Diffuse	800 mm	JD-SR80N (JD-SR80CN)	JD-SR80P (JD-SR80CP)
		Limited diffuse	20 to 50 mm	JD-SL03N (JD-SL03CN)	JD-SL03P (JD-SL03CP)
Wide angle		80 mm	JD-SW08N (JD-SW08CN)	JD-SW08P (JD-SW08CP)	

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

Passed 100-hour test for water and oil resistance

Degree of protection on IP67g
It features highly reliable and robust housing for any environment. It also passes IP67g (JEM standard).



Excellent compatibility for various types of mounting brackets

Flexible mounting holes with an elongated hole
Flexible mounting is possible using holes whose pitch was altered during machining or holes that were already made. Also, the sensor can be mounted on various brackets for M3 or M4 screws.

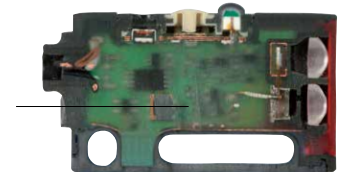
■ Supported pitch



Vibration resistance far above that of JIS standards

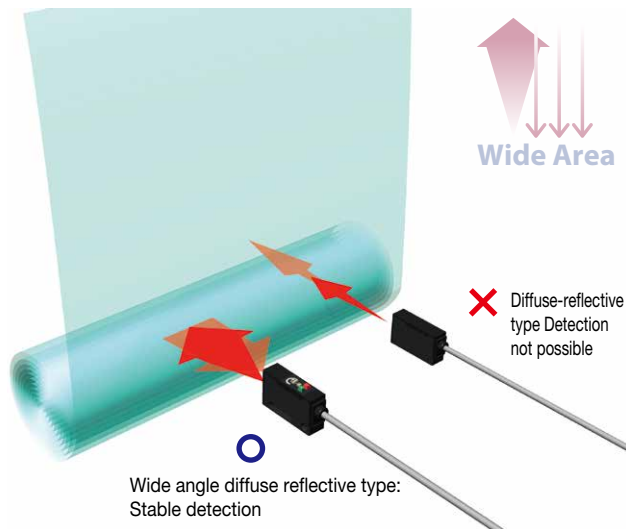
Resin filled internal structure
The resin evenly distributed inside the sensor securely protects electrical parts from vibration. In addition, it has passed vibration resistance tests of 100 hours or more. This allows for safe installation in areas with severe levels of vibration.

Resin provides secure protection and extends the life of the part.



Wide angle emitting

Wide angle diffuse reflective type
The wide angle diffuse reflective type, which can detect over an area 10 times or more than that of the diffuse-reflective type, has simplified and enabled signal processing which had to be done at post-processing as well as types of detection that were not possible or were unstable until now. It can also detect transparent objects without use of a reflector.



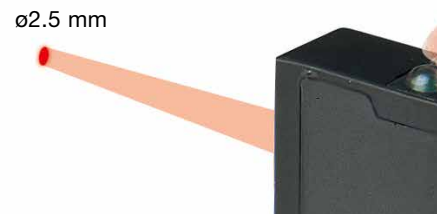
Stable detection of glossy objects equivalent to that of through-beam types

Retro-reflective type
Polarizing filter is built in. Detection of mirror is possible.



Small spot size red light

Limited diffuse reflective type
Spot size: $\varnothing 2.5$ mm at 30 mm distance. Optimal for small object detection.



Photoelectric Sensors

Specialized Photoelectric Sensors

Laser Displacement Sensors

Sensors with Built-in Amplifier

Z3

Z-M

Z2

E

J

K

S

S2

C-R

C2

PLN

Specifications

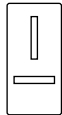
Type		Through-beam type	Retro-reflective type
Model	NPN	Cable type	JT-H1000N/JT-S1000N
		Connector type	JT-H1000CN/JT-S1000CN
	PNP	Cable type	JT-H1000P/JT-S1000P
		Connector type	JT-H1000CP/JT-S1000CP
Sensing distance		10 m	0.01 to 3 m
Light source		Infrared LED	Red LED
Smallest detectable object		ø6 mm	ø40 mm
Response time		0.5 ms or less	
Hysteresis		—	
Distance adjustment		2-turn endless potentiometer (with indicator)	
Indicators		Output indicator (orange LED), Stability indicator (green LED)	
Control output		NPN/PNP type 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	Emitter: 20 mA or less Receiver: 15 mA or less	20 mA or less
Applicable regulations		EMC directive (2004/108/EC)	
Applicable standards		EN 60947-5-2	
Company standards		Noise resistance: Feilen Level 3 cleared	
Environmental resistance	Ambient temperature/humidity	-25 to +55°C (no freezing) / 35 to 85% RH (no condensation)	
	Ambient illuminance	Sunlight: 10,000 lx Incandescent lamp: 3,000 lx	
	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. 100 G (1000 m/s ²); 3 times in each of the X, Y, and Z directions	
	Degree of protection	IEC standard, IP67 / JEM standard, IP67g	
Material		Housing: PBT, Lens: Polycarbonate (retro-reflective type is PMMA)	
Weight (including cable)		Through-beam type emitter: Approx. 13 g Other: Approx. 15 g	
Included accessories		Mounting bracket: BEF-W160	Mounting bracket: BEF-W160 Reflector: V-61

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

Options/Accessories

Slit mask

Slit mask for through-beam type



BL-160-SK

Reflector

Standard (included) Small type



V-61

Sensing distance:
3 m
60.9 × 50.9 mm



V-42

Sensing distance:
1.8 m
42 × 35 mm

Vertical type



P45A

Sensing distance:
1 m
54 × 12.4 mm

Reflective sheet



Diamond grade sheet

Sensing distance: 50 to 1500 mm
100 × 100 mm (adhesive type)

Sensor stand



Sensor stand (Image is for flat surface mounting)

PLN-1

Reflector mounting bracket for PLN-1

PLN-1M

PLN description

● **P.242**

Type		Diffuse-reflective type	Limited diffuse reflective type	Wide angle diffuse reflective type	
Model	NPN	Cable type	JD-HR80N/JD-SR80N	JD-HL03N/JD-SL03N	JD-HW08N/JD-SW08N
		Connector type	JD-HR80CN/JD-SR80CN	JD-HL03CN/JD-SL03CN	JD-HW08CN/JD-SW08CN
	PNP	Cable type	JD-HR80P/JD-SR80P	JD-HL03P/JD-SL03P	JD-HW08P/JD-SW08P
		Connector type	JD-HR80CP/JD-SR80CP	JD-HL03CP/JD-SL03CP	JD-HW08CP/JD-SW08CP
Sensing distance		800 mm	20 to 50 mm	80 mm	
Light source		Red LED			
Smallest detectable object		—			
Response time		0.5 ms or less			
Hysteresis		20% or less			
Distance adjustment		2-turn endless potentiometer (with indicator)			
Indicators		Output indicator (orange LED), Stability indicator (green LED)			
Control output		NPN/PNP type 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	20 mA or less			
Applicable regulations		EMC directive (2004/108/EC)			
Applicable standards		EN 60947-5-2			
Company standards		Noise resistance: Feilen Level 3 cleared			
Environmental resistance	Ambient temperature/humidity	-25 to +55°C (no freezing) / 35 to 85% RH (no condensation)			
	Ambient illuminance	Sunlight: 10,000 lx Incandescent lamp: 3,000 lx			
	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. 100 G (1000 m/s ²); 3 times in each of the X, Y, and Z directions			
	Degree of protection	IEC standard, IP67 / JEM standard, IP67g			
Material		Housing: PBT, Lens: Polycarbonate (retro-reflective type is PMMA)			
Weight without cable		Through-beam type emitter: Approx. 13 g Other: Approx. 15 g			
Included accessories		Mounting bracket: BEF-W160			

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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

Protective mounting bracket

- Ultra-durable 3 mm thick type ● Rust-resistant stainless steel
- Sensor is firmly secured using M4 Hex socket head cap screws ● The bracket is also firmly secured using M6 screw

LJ-H series (horizontal type)

LJ-S series (vertical type)

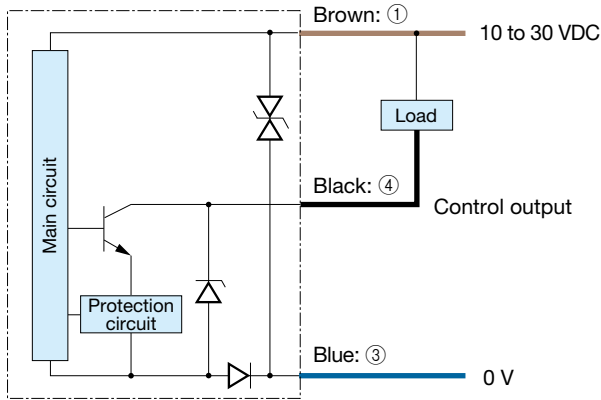
**LJ-H01****LJ-H02****LJ-S01****LJ-S02**

Distance adjustment

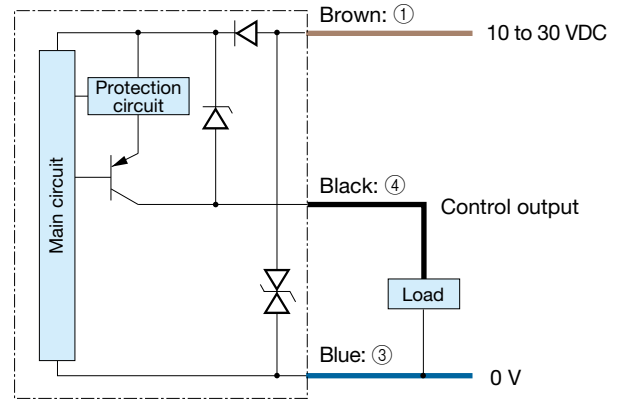
	Order	Diagram	Potentiometer	Output indicator	Adjustment procedure
Diffuse type	1			Lit (Orange)	Set the object for detection in the detection position and gradually raise the sensitivity adjustment potentiometer from the minimum to position A where the output indicator will light up.
	2			Not lit (Orange)	Remove the object for detection and gradually lower the sensitivity adjustment potentiometer from the maximum to position B where the output indicator will go out.
	3			Lit (Orange)	Position C between positions A and B is the optimal position for sensitivity. Positions A and B may be reversed depending on the model and the detection conditions. Place the workpiece in a fixed position and perform an operational check.

Output circuit diagram

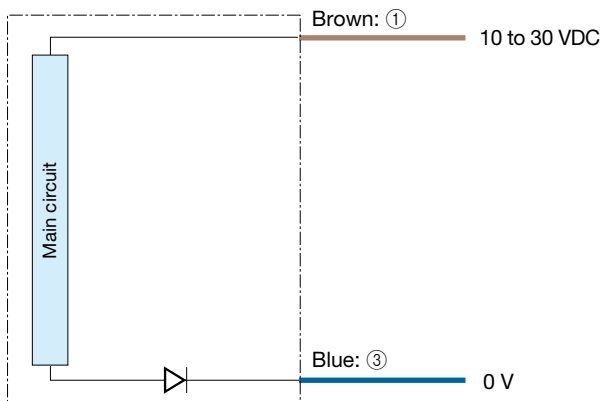
NPN output type



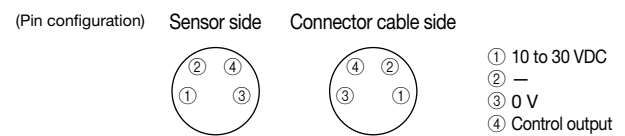
PNP output type



Through-beam type emitter



Connector type

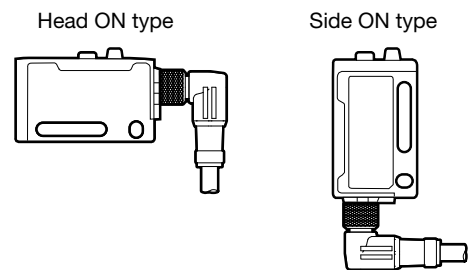


Connecting

■ 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.
- 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. 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.



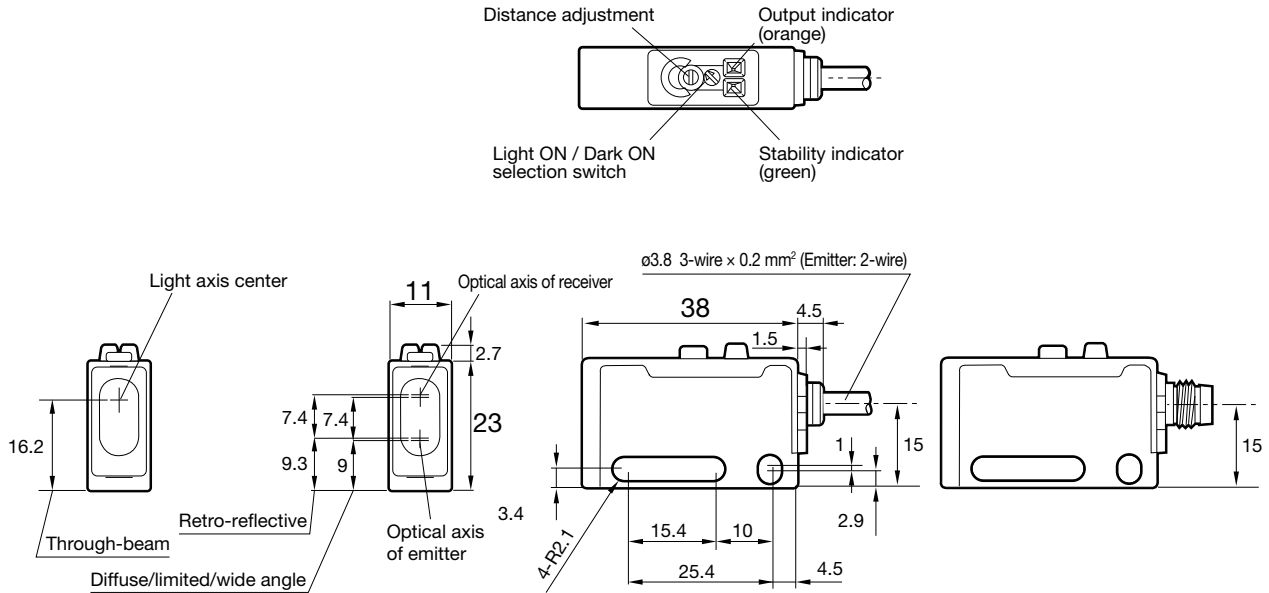
Dimensions

Sensor

(Unit: mm)

Head ON

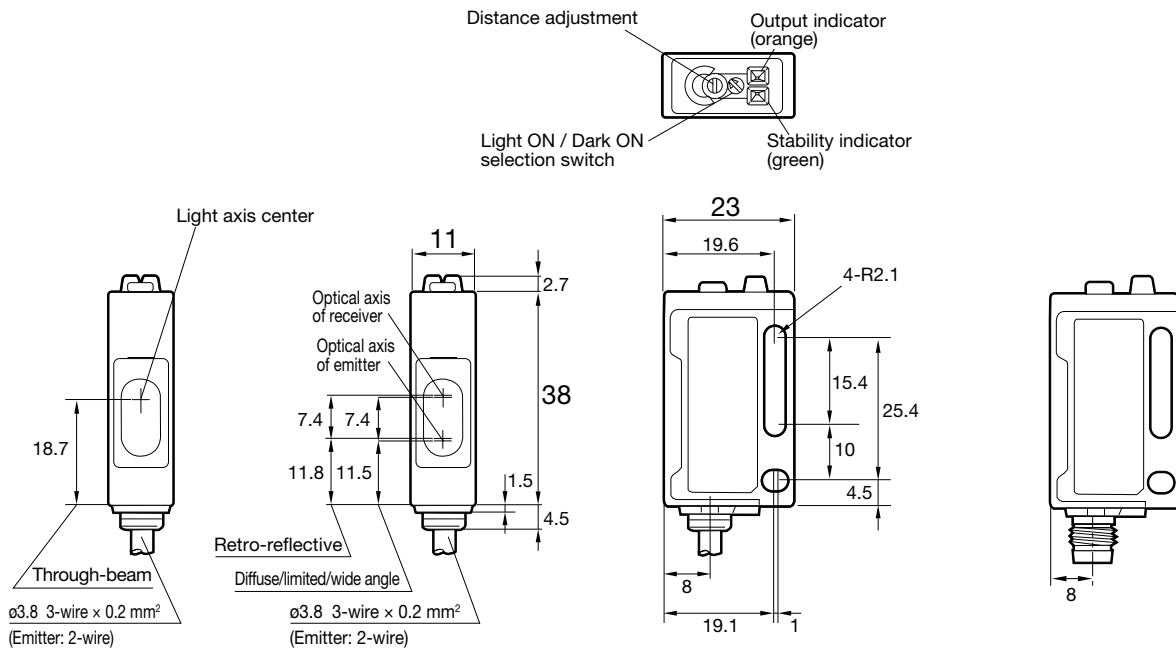
Connector type



*Tighten to each of the sensor mounting holes with a torque of 0.5 N·m or less.

Side ON

Connector type



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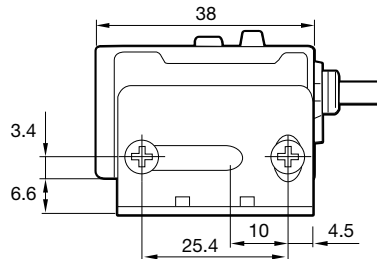
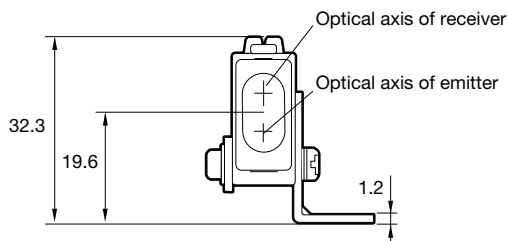
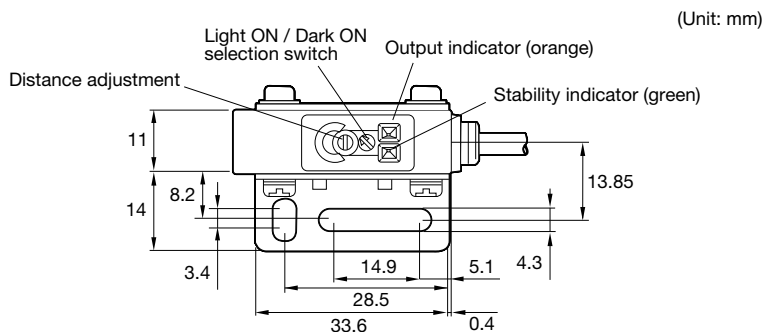
C2

PLN

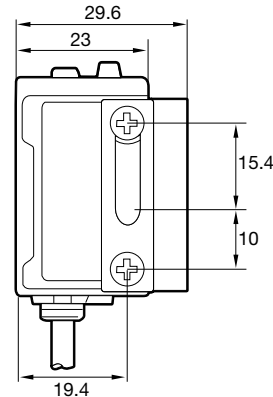
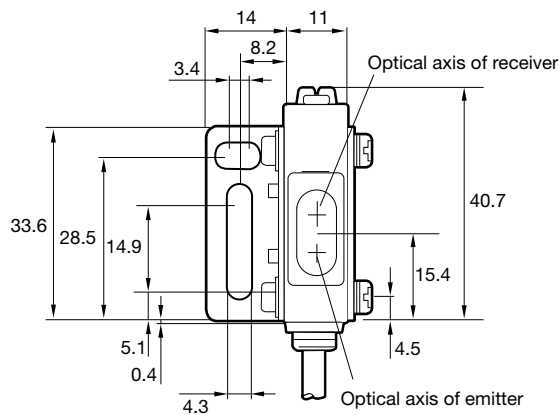
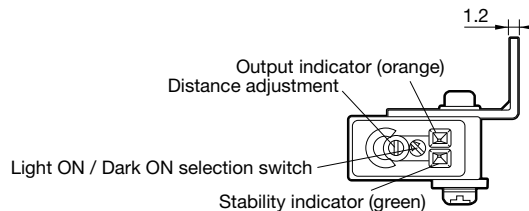
Dimensions

Mounting bracket

■ Head ON

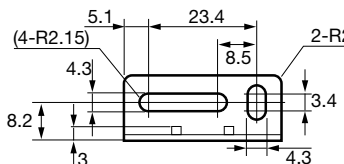
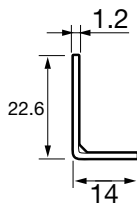
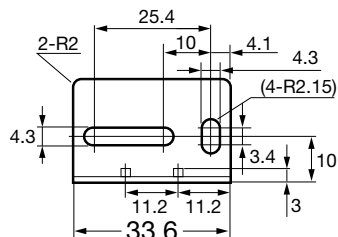


■ Side ON



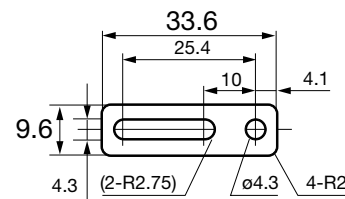
Mounting bracket (included)

■ BEF-W160



Nut plate

■ Included with BEF-W160 t = 1.2 mm



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Z3

Z-M

Z2

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S2

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C2

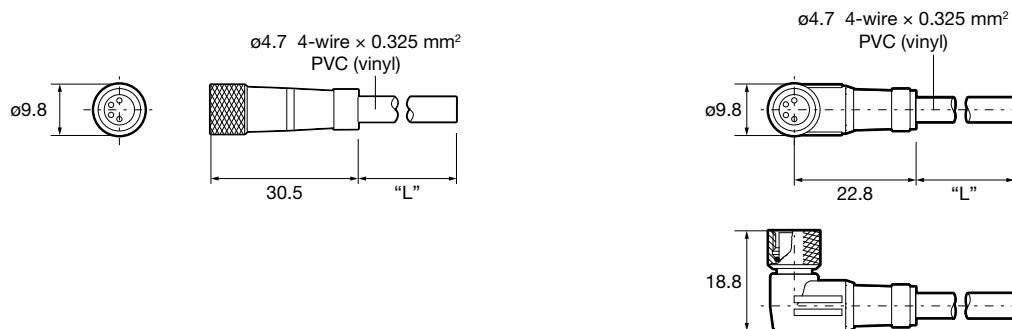
PLN

Connector cable (optional)

(Unit: mm)

■ JCN-S, JCN-5S, JCN-10S

■ JCN-L, JCN-5L, JCN-10L

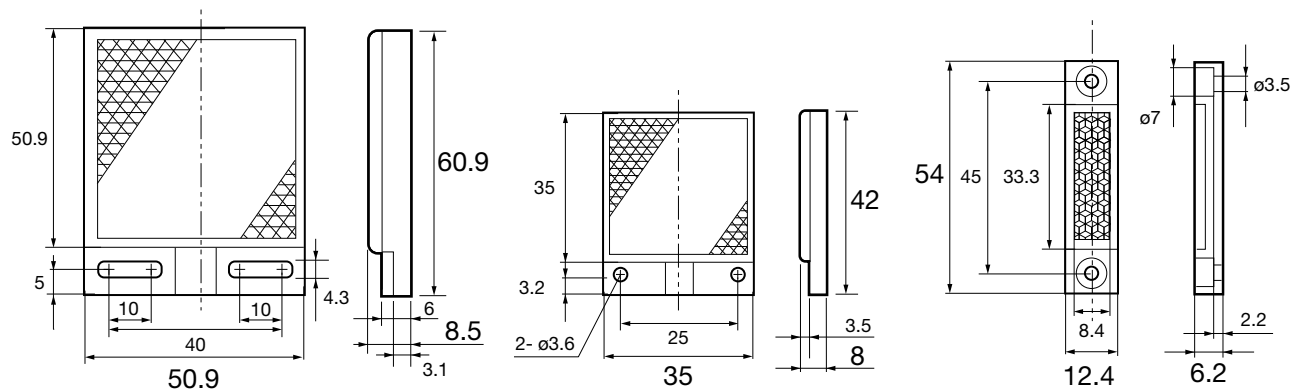


Reflector

■ V-61: Standard type reflector (included with retro-reflective type)

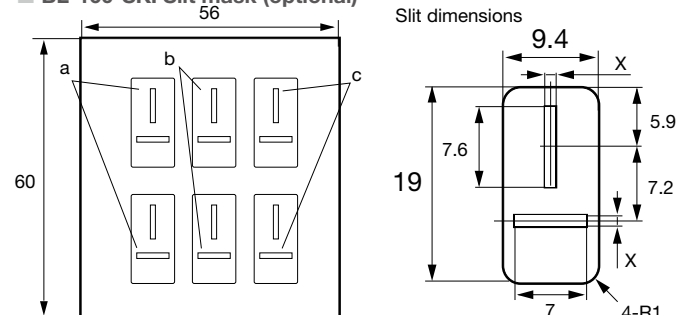
■ V-42: Small reflector (optional)

■ P45A: Vertical type reflector (optional)



Slit mask

■ BL-160-SK: Slit mask (optional)



Seal	Dimension X	Attachment	Smallest detectable object	Max. sensing distance
Slit a	0.5 mm	Both emitter and receiver	0.4 mm	0.8 m
Slit b	1 mm	Both emitter and receiver	0.6 mm	2.5 m
Slit c	2 mm	Both emitter and receiver	1.5 mm	5 m

*Please remove the protective seal and affix it to the lens surface.

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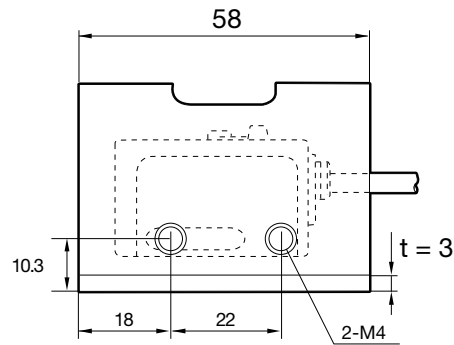
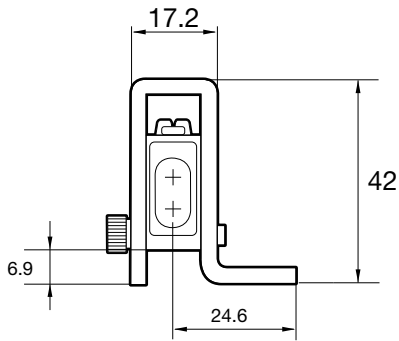
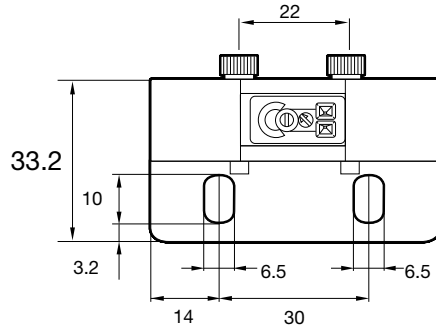
PLN

Dimensions

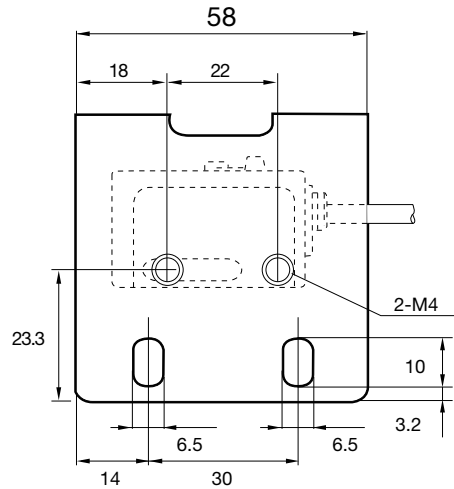
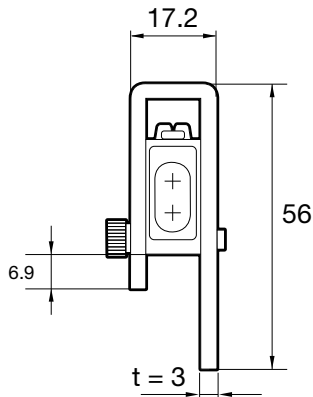
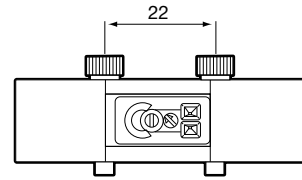
Protective mounting bracket (optional)

(Unit: mm)

■ LJ-H01 (for Head ON)



■ LJ-H02 (for Head ON)



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Z3

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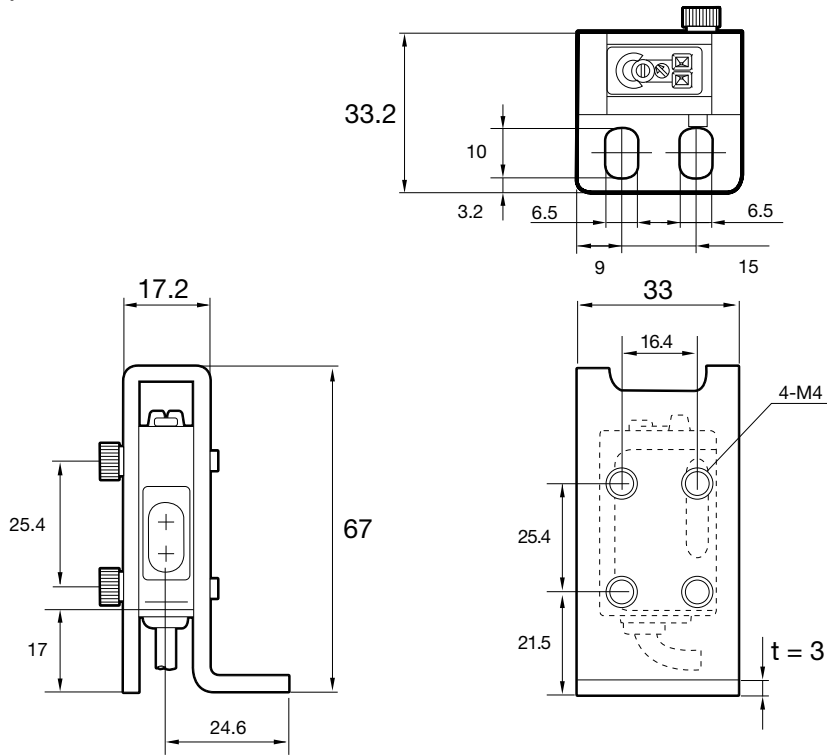
C-R

C2

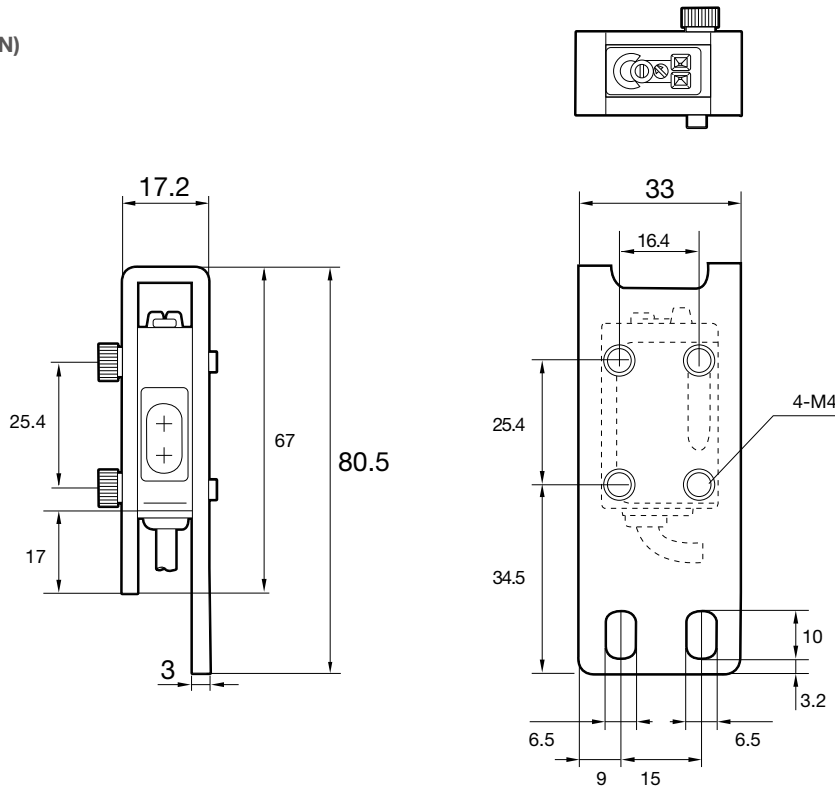
PLN

■ LJ-S01 (for Side ON)

(Unit:mm)



■ LJ-S02 (for Side ON)



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S2

C-R

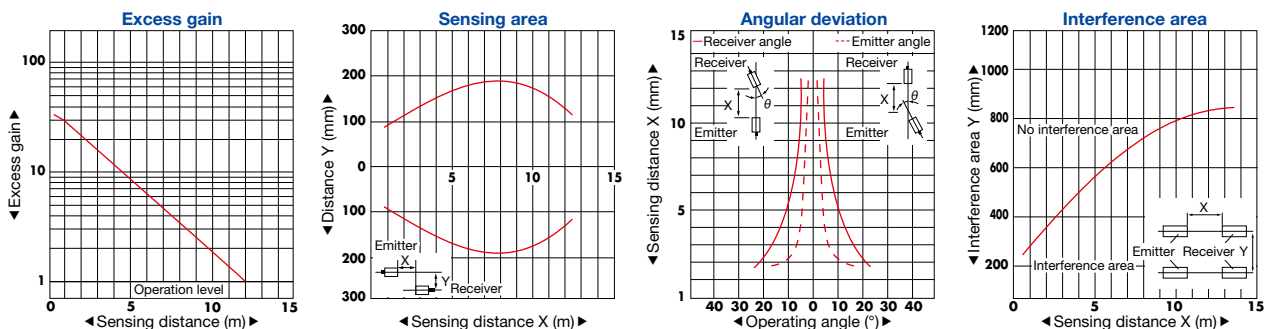
C2

PLN

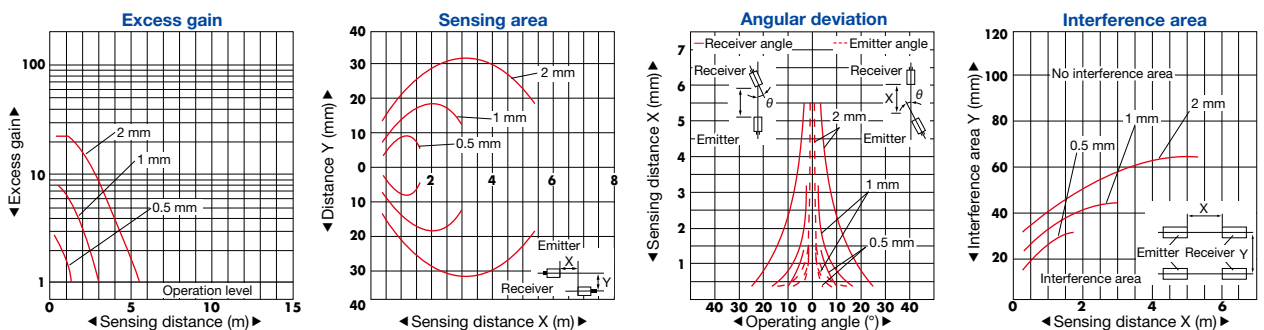
Typical characteristic data

*Contact us for any other characteristic data that may be required.

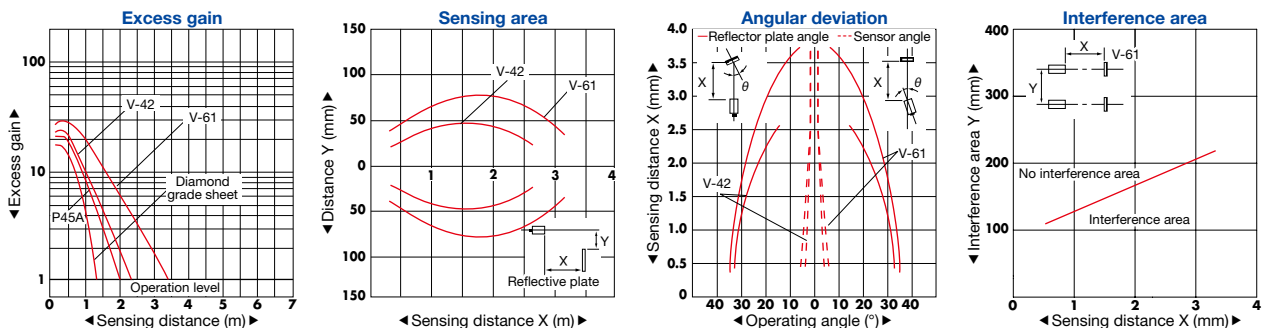
JT-H1000□/JT-S1000□



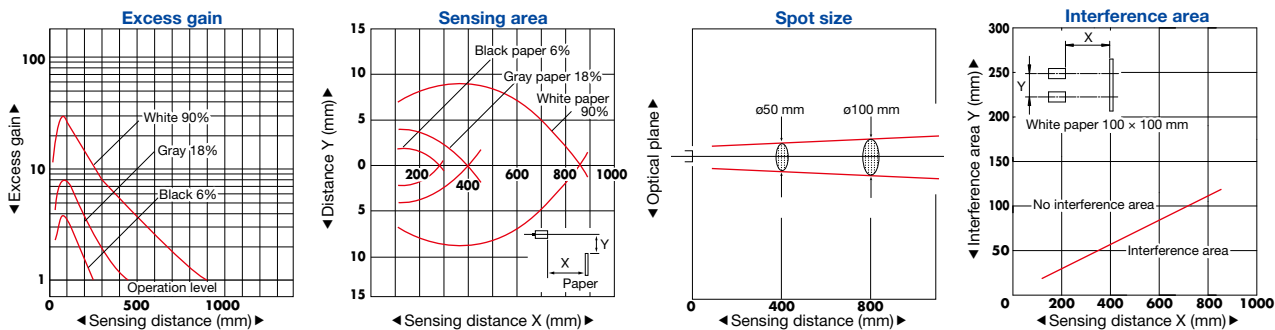
When slit mask is attached JT-H1000□/JT-S1000□



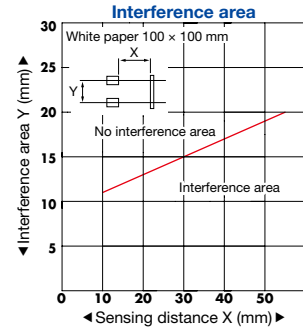
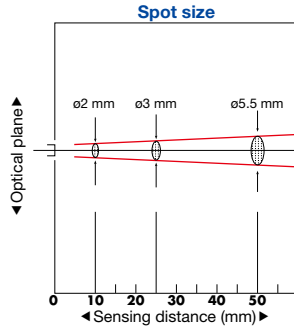
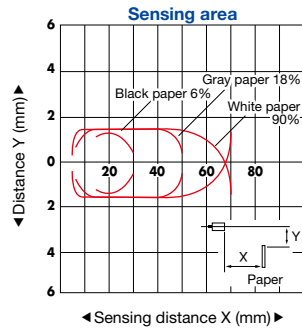
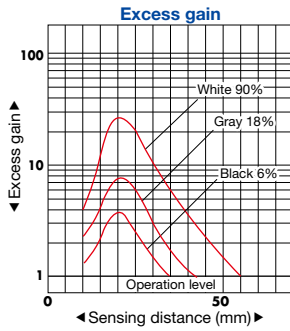
JR-H300□/JR-S300□



JD-HR80□/JD-SR80□



JD-HL03□/JD-SL03□



JD-HW08□/JD-SW08□

