

188

Resin filled type

J series



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

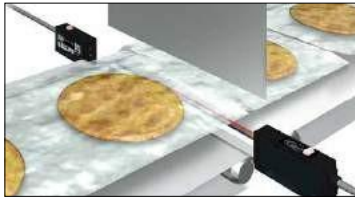
Related products

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.

Resin filled type **J** series**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).

**Vibration resistance far above that of JIS standards**

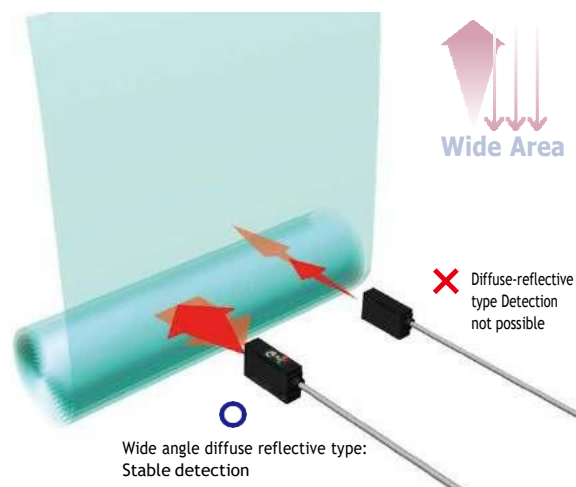
Resin filled internal structure

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.

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.

**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



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

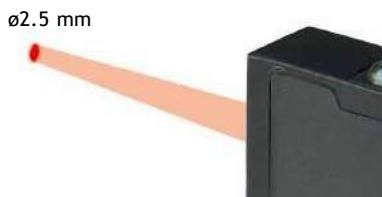
**Stable detection of glossy objects equivalent to that of through-beam types**

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. $\varnothing 2.5$ mmPhotoelectric
SensorsSpecialized
Photoelectric
SensorsLaser
Displacement
SensorsSensors with
Built-in
Amplifier

Z3

Z-M

Z2

E

J

K

S

S2

C-R

C2

PLN

Specifications

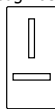
Type		Through-beam type	Retro-reflective type
Model	NPN	Cable type Connector type JT-H1000N/JT-S1000N JT-H1000CN/JT-S1000CN	JR-H300N/JR-S300N JR-H300CN/JR-S300CN
	PNP	Cable type Connector type JT-H1000P/JT-S1000P JT-H1000CP/JT-S1000CP	JR-H300P/JR-S300P JR-H300CP/JR-S300CP
Sensing distance		10 m	0.01 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 Vertical type



V-61
Sensing distance:
3 m
60.9 × 50.9 mm



V-42
Sensing distance:
1.8 m
42 × 35 mm



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 Connector type	JD-HR80N/JD-SR80N JD-HR80CN/JD-SR80CN	JD-HL03N/JD-SL03N JD-HL03CN/JD-SL03CN
	PNP	Cable type Connector type	JD-HR80P/JD-SR80P JD-HR80CP/JD-SR80CP	JD-HL03P/JD-SL03P JD-HL03CP/JD-SL03CP
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		

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

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

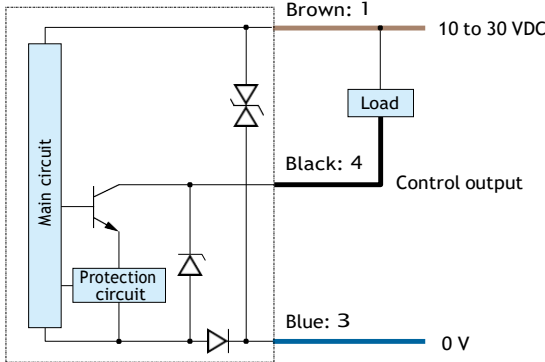
Resin filled type J series

Distance adjustment

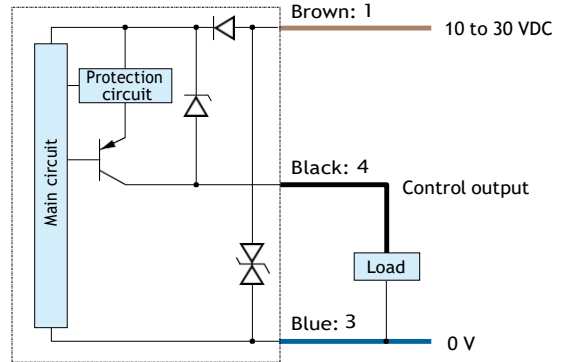
Diffuse type	Order	Diagram	Potentiometer	Output indicator	Adjustment procedure
	1			Lit (Orange)	Set the object for detection in the detection position and gradually raise the sensitivity adjustment potentiometer from the minimum to position A where the output indicator will light up.
	2			Not lit (Orange)	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

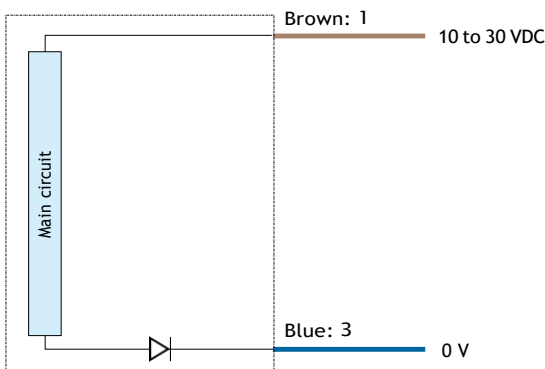
NPN output type



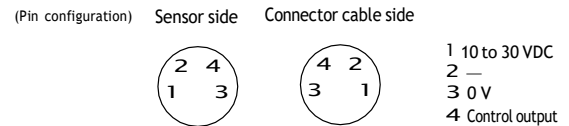
PNP output type



Through-beam type emitter



Connector type



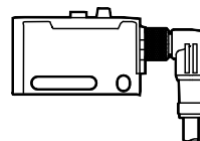
Connecting

① 1 to 4 are connector pin No.

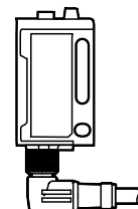
Notes

- 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.

Head ON type



Side ON type

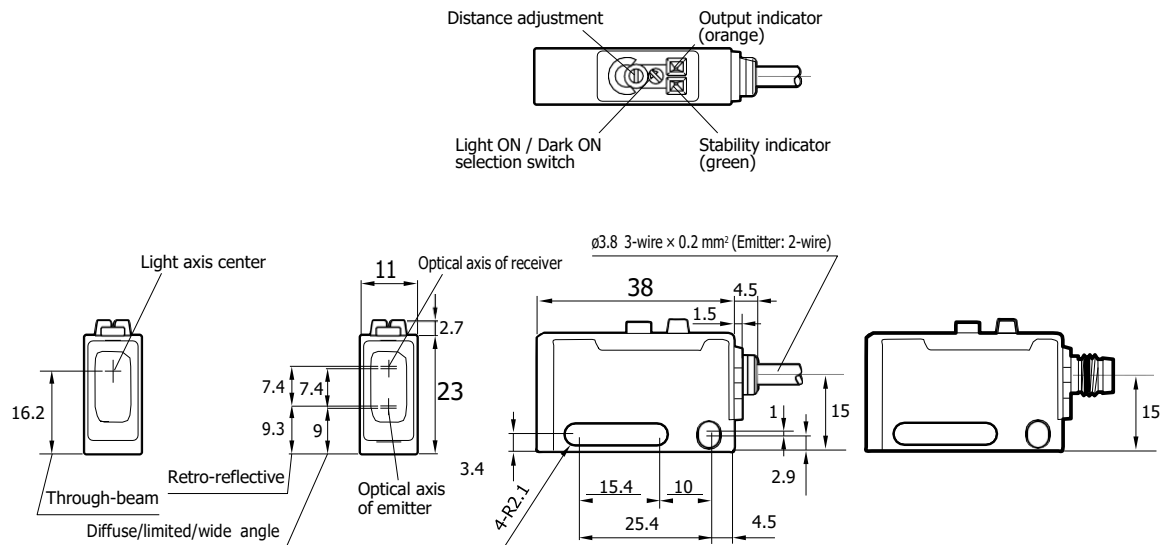


Dimensions

Sensor

(Unit: mm)

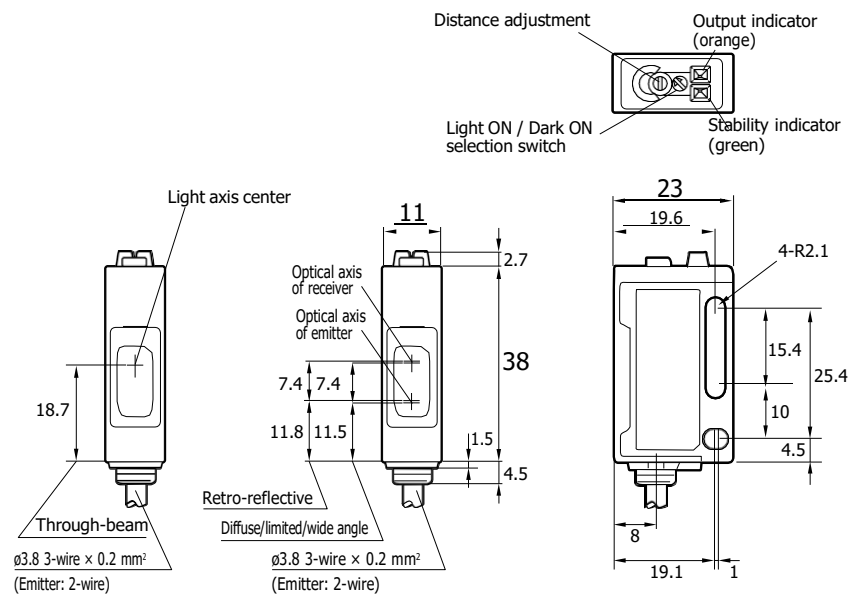
Head ON



Connector type

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

Side ON

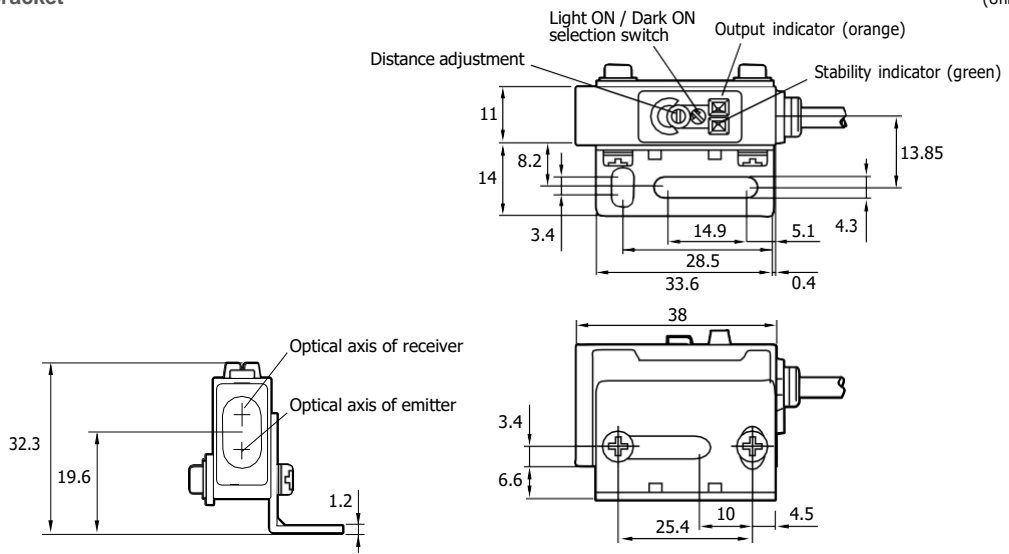


Connector type

Dimensions

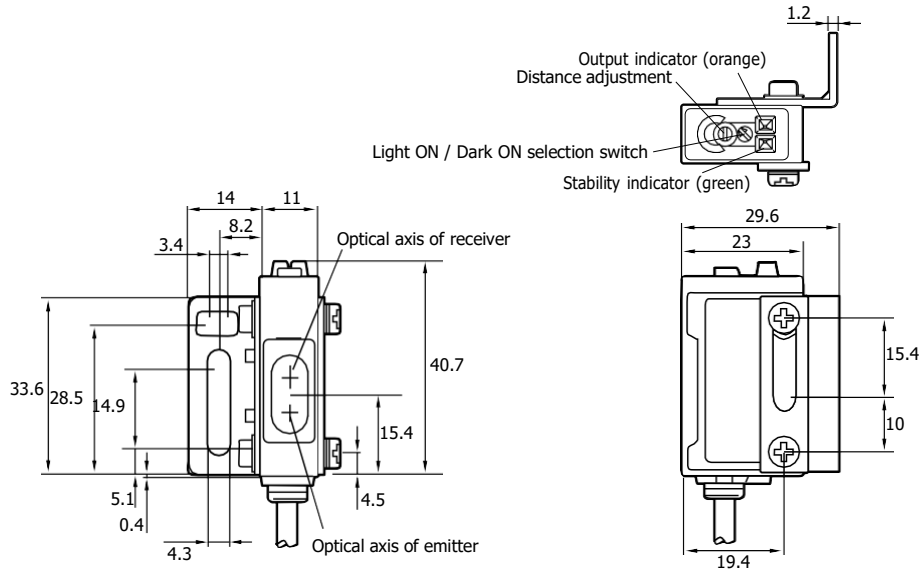
Mounting bracket

Head ON



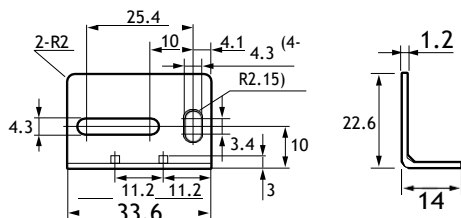
(Unit: mm)

Side ON



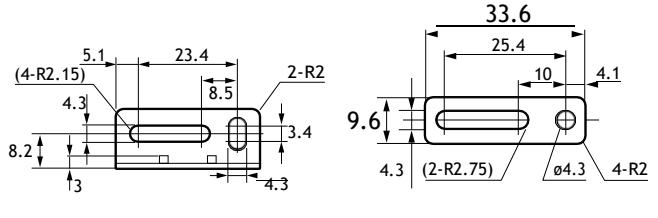
Mounting bracket (included)

BEF-W160



Nut plate

Included with BEF-W160 t = 1.2 mm

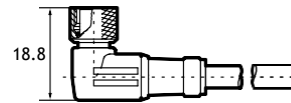
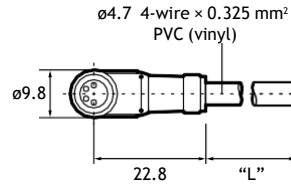
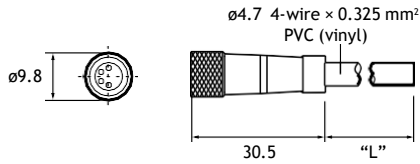


Connector cable (optional)

(Unit: mm)

▮ JCN-S, JCN-5S, JCN-10S

▮ JCN-L, JCN-5L, JCN-10L

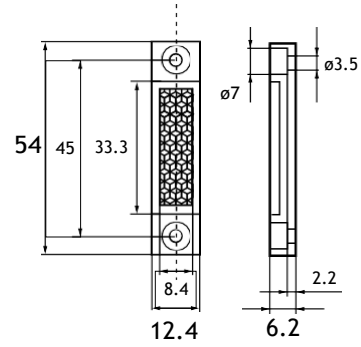
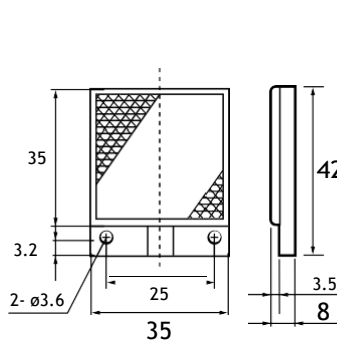
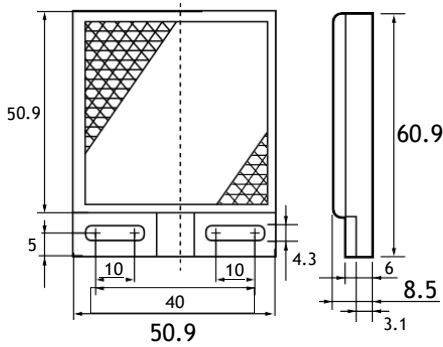


Reflector

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

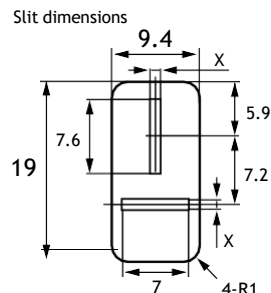
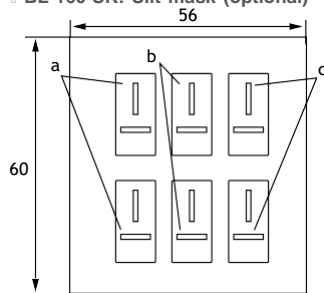
▮ V-42: Small reflector (optional)

▮ 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.

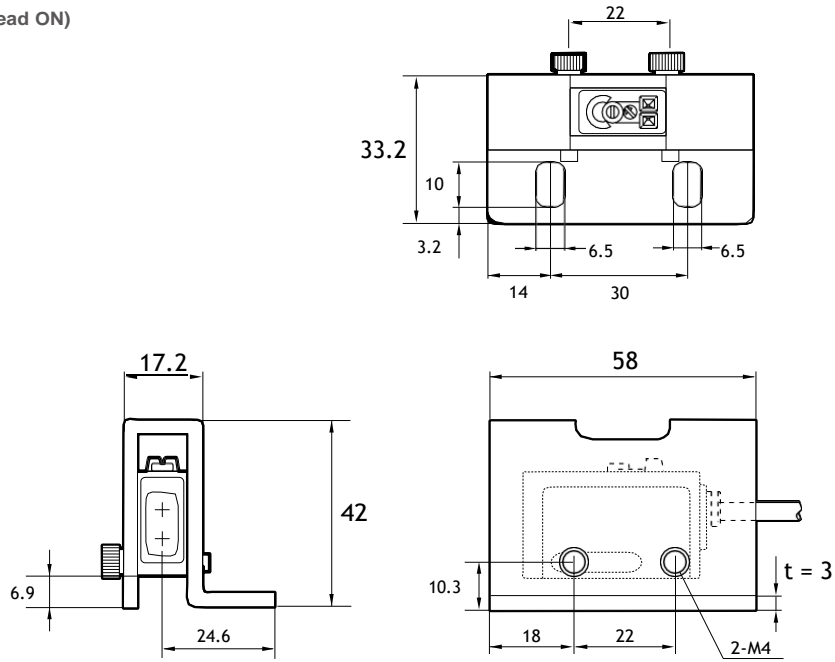
Resin filled type J series

Dimensions

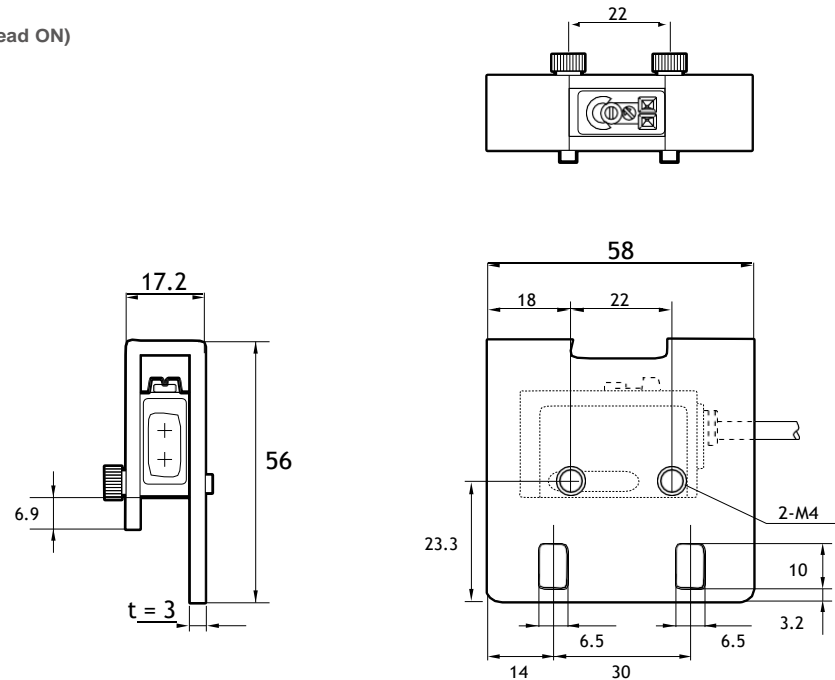
Protective mounting bracket (optional)

(Unit: mm)

LJ-H01 (for Head ON)

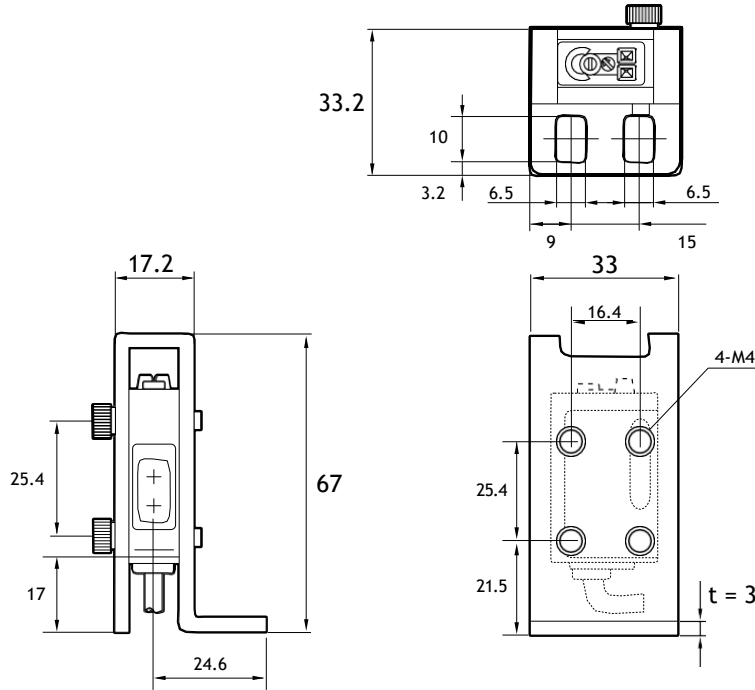


LJ-H02 (for Head ON)

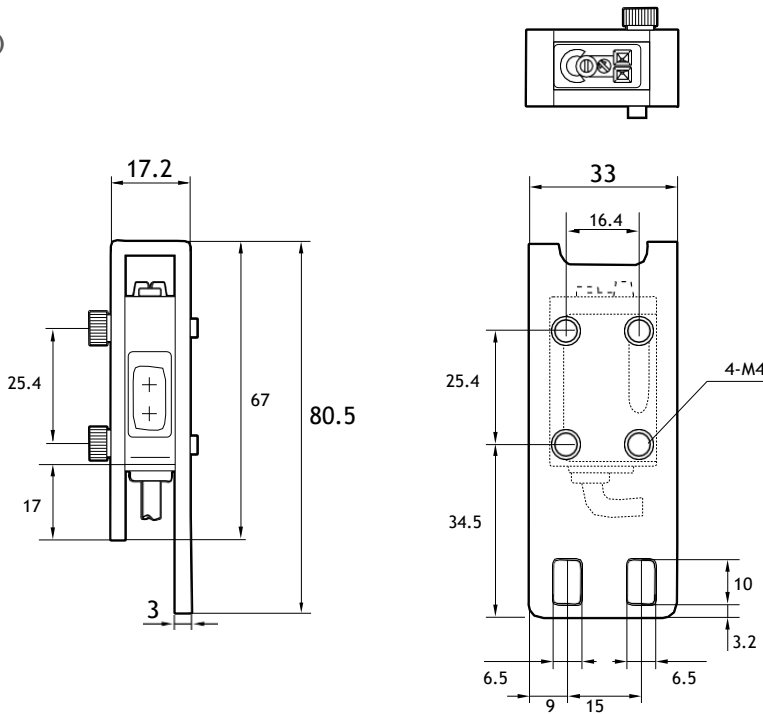


(Unit:mm)

LJ-S01 (for Side ON)



LJ-S02 (for Side ON)



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

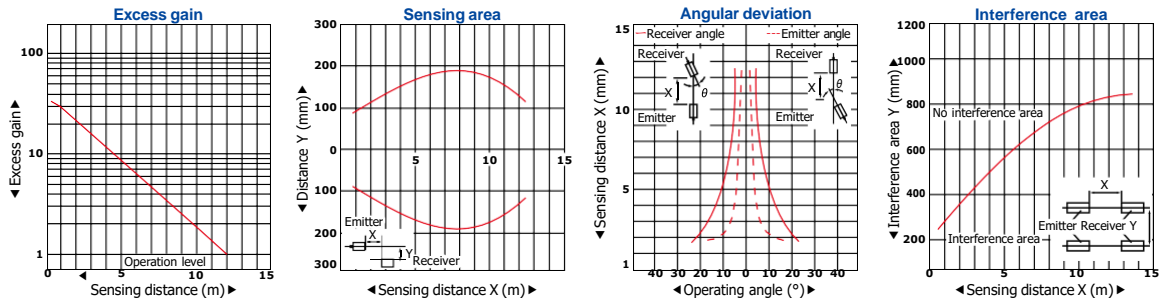
PLN

Resin filled type J series

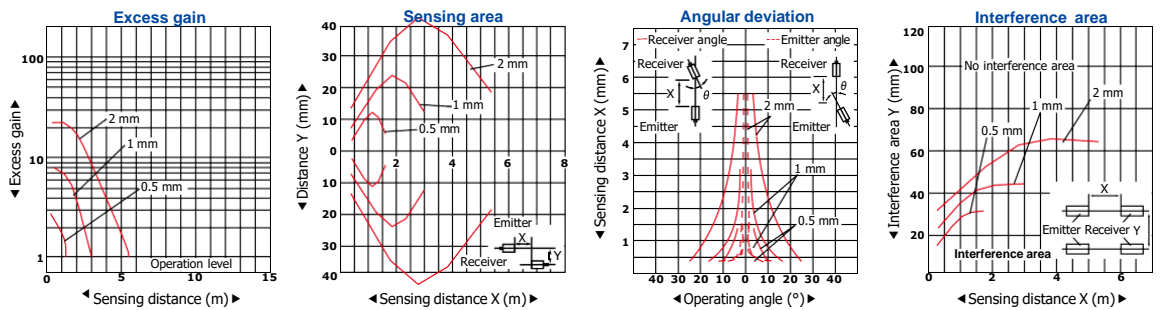
Typical characteristic data

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

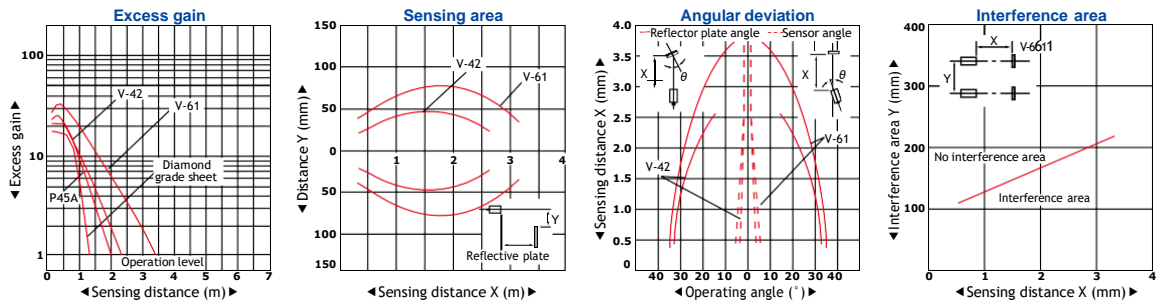
JT-H1000□/JT-S1000□



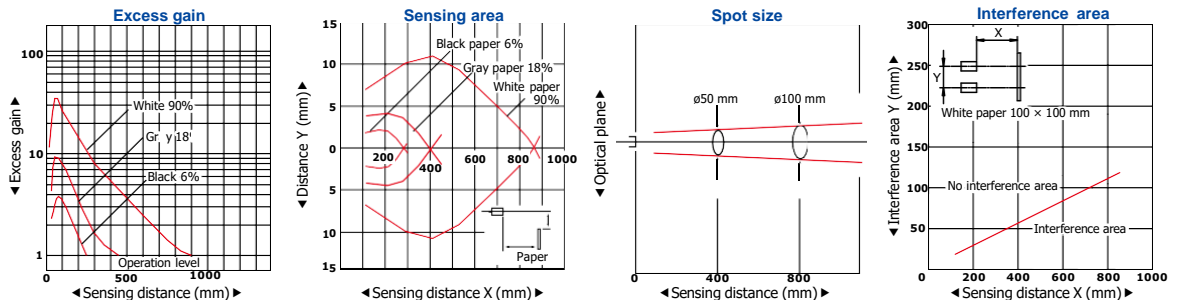
When slit mask is attached JT-H1000□/JT-S1000□



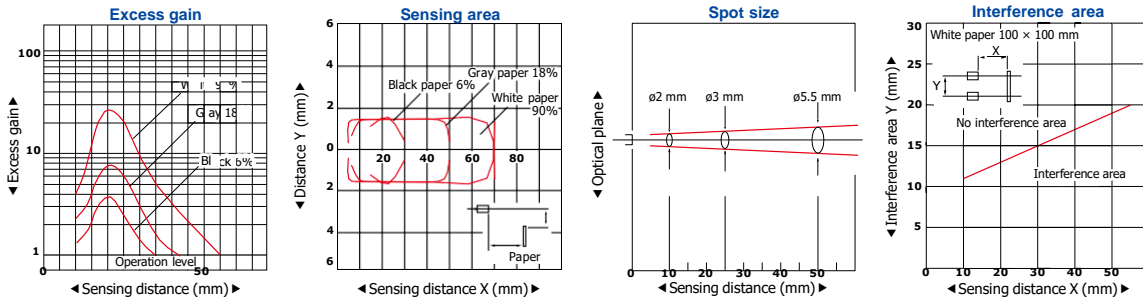
JR-H300□/JR-S300□



JD-HR80□/JD-SR80□



JD-HL03□/JD-SL03□



JD-HW08□/JD-SW08□

