



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

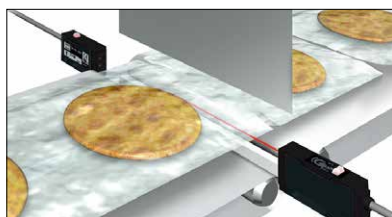


Universal voltage

V2
● P.246



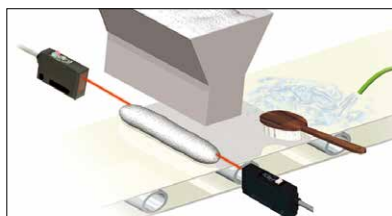
Detection of stuck rice crackers



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).



Vibration resistance far above that of JIS standards

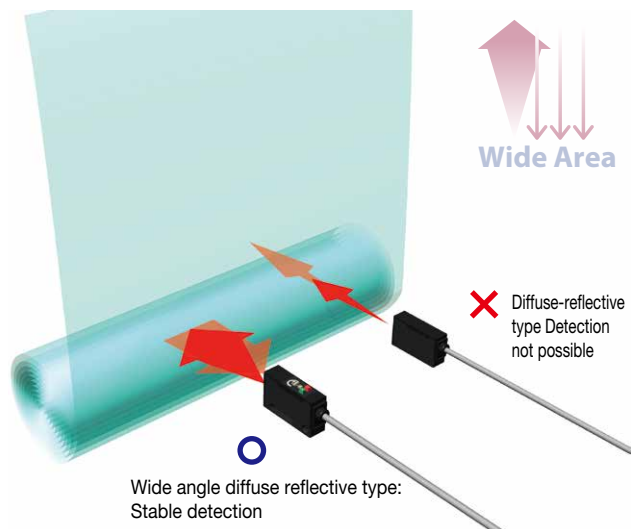
Resin filled internal structure

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

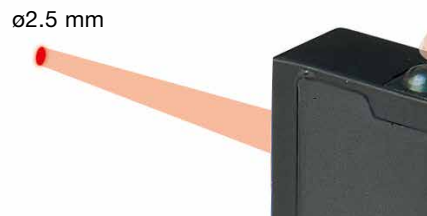
Polarizing filter is built in. Detection of mirror is possible.



Small spot size red light

Limited diffuse reflective type

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



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

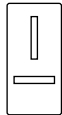
| Type | | Through-beam type | Retro-reflective type |
|----------------------------|------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------|
| Model | NPN | Cable type | JT-H1000N/JT-S1000N |
| | | 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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Photoelectric
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SensorsLaser
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PLN

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)

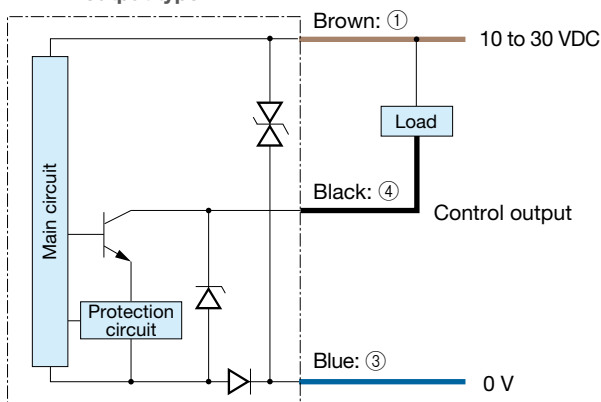
**LJ-H01****LJ-H02****LJ-S01****LJ-S02**

Distance adjustment

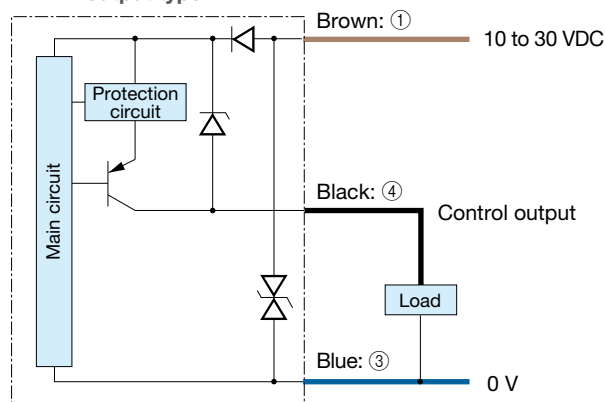
| | Order | Diagram | Potentiometer | Output indicator | Adjustment procedure |
|---------------------|-------|---------|---------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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

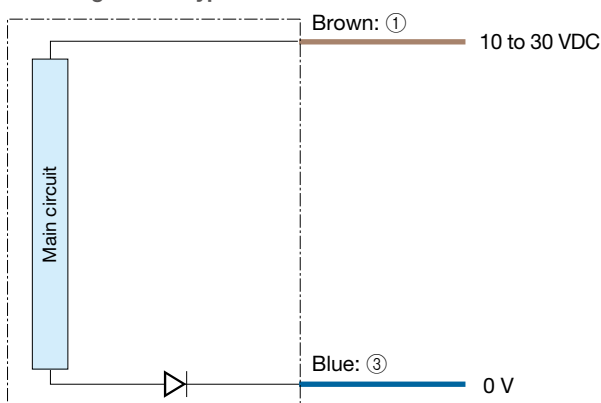
NPN output type



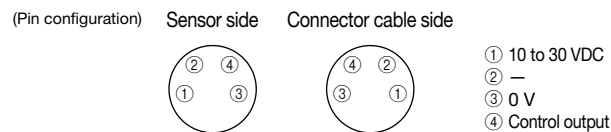
PNP output type



Through-beam type emitter



Connector type

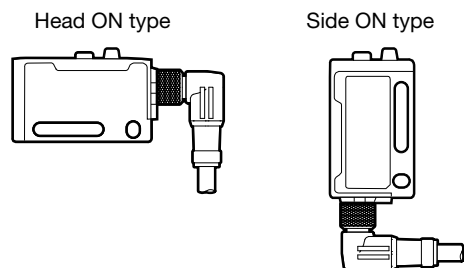


Connecting

■ 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.



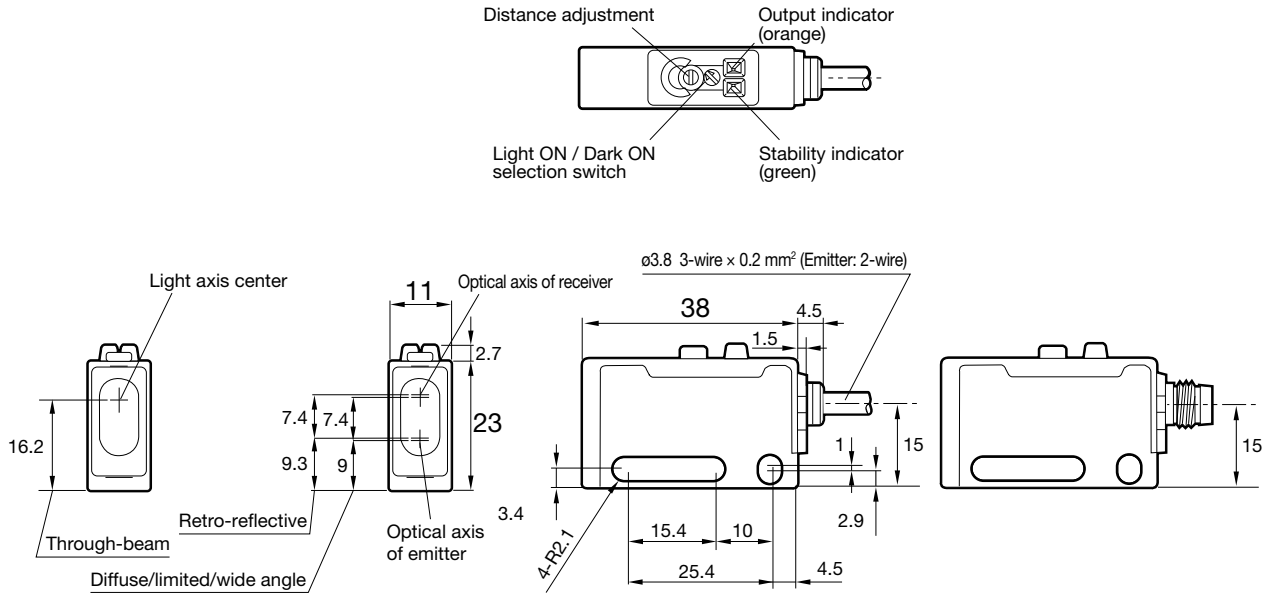
Dimensions

Sensor

(Unit: mm)

Head ON

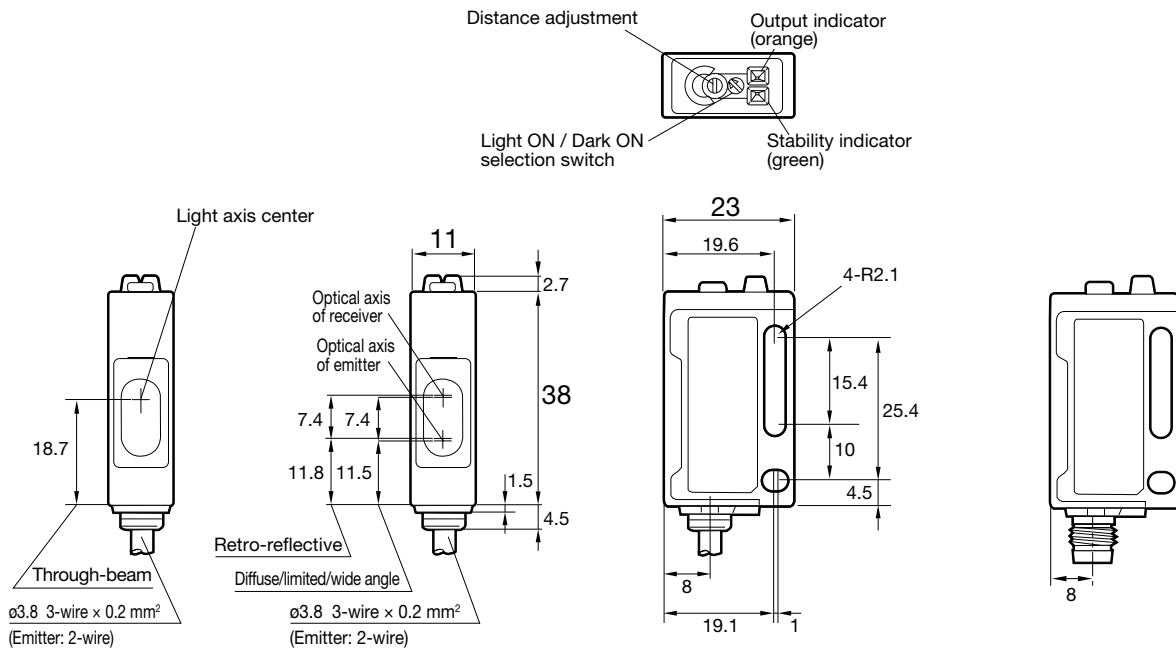
Connector type



*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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Laser Displacement Sensors

Sensors with Built-in Amplifier

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Z-M

Z2

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C2

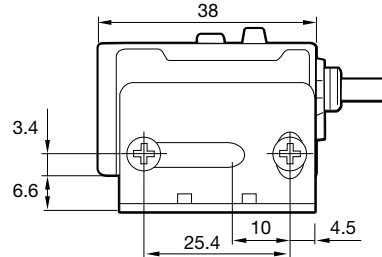
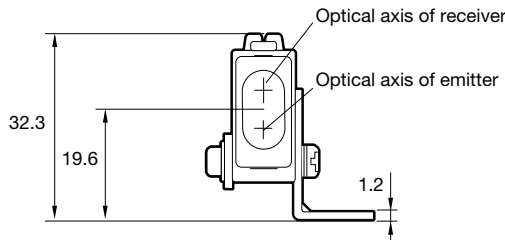
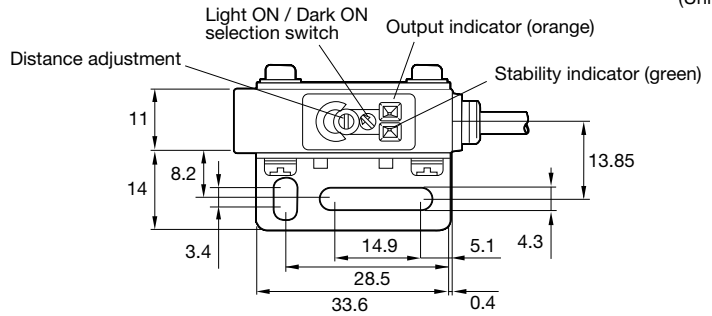
PLN

Dimensions

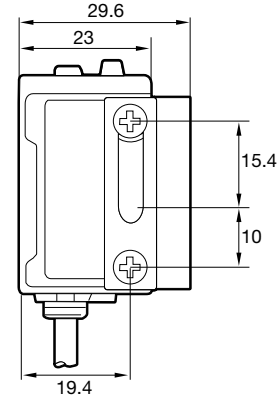
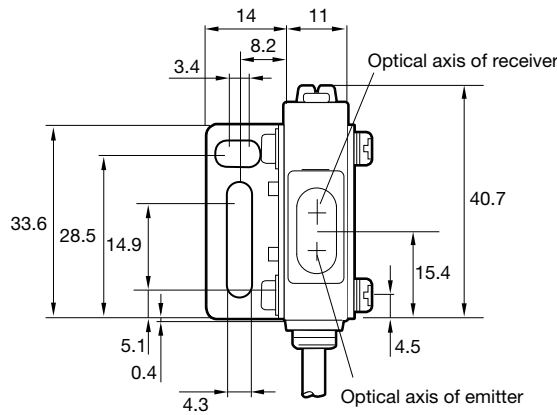
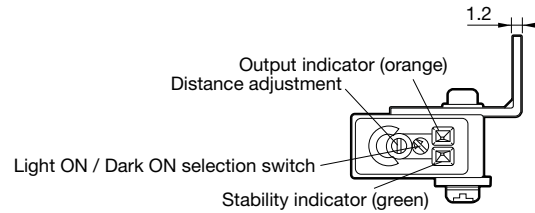
Mounting bracket

Head ON

(Unit: mm)

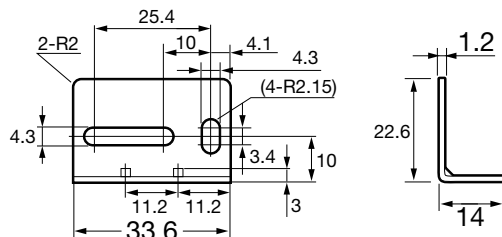


Side ON



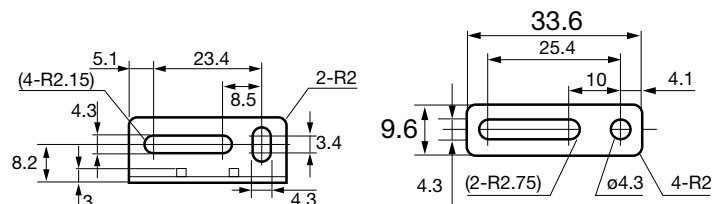
Mounting bracket (included)

BEF-W160



Nut plate

Included with BEF-W160
t = 1.2 mm

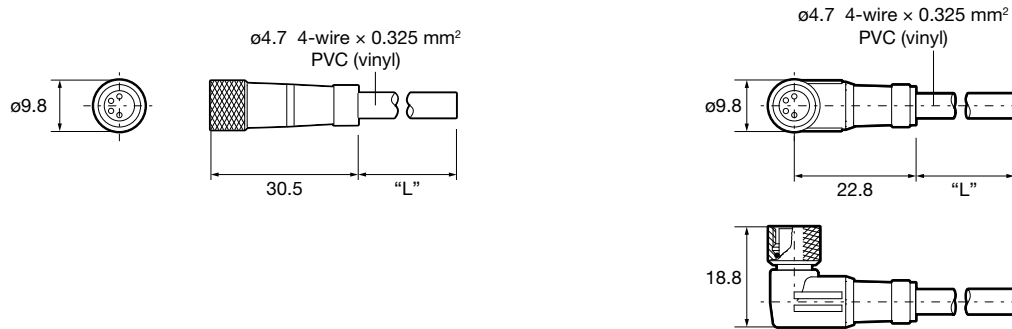


Connector cable (optional)

(Unit: mm)

■ JCN-S, JCN-5S, JCN-10S

■ JCN-L, JCN-5L, JCN-10L

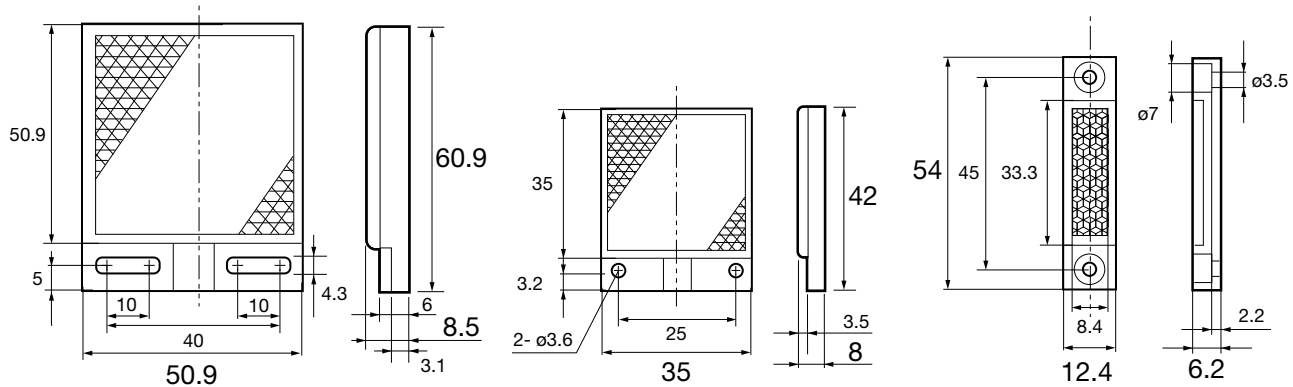


Reflector

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

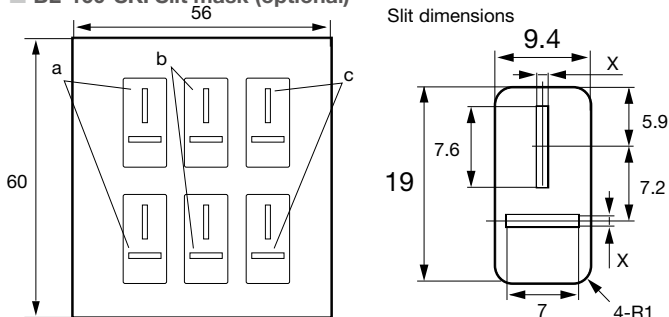
■ V-42: Small reflector (optional)

■ 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 |

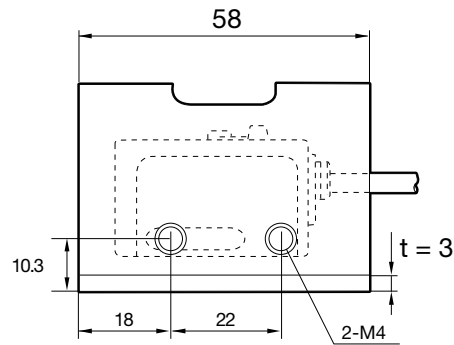
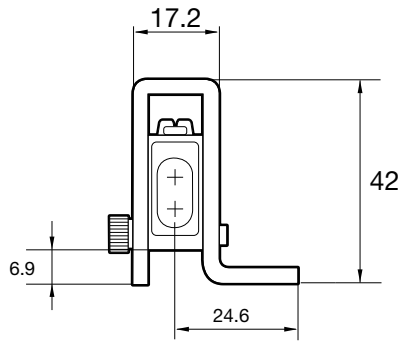
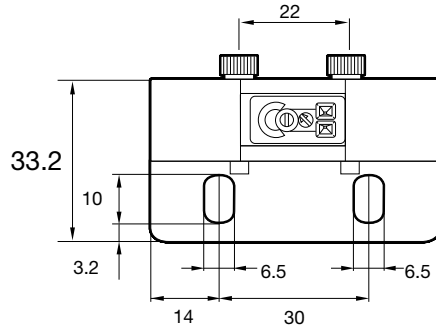
*Please remove the protective seal and affix it to the lens surface.

Dimensions

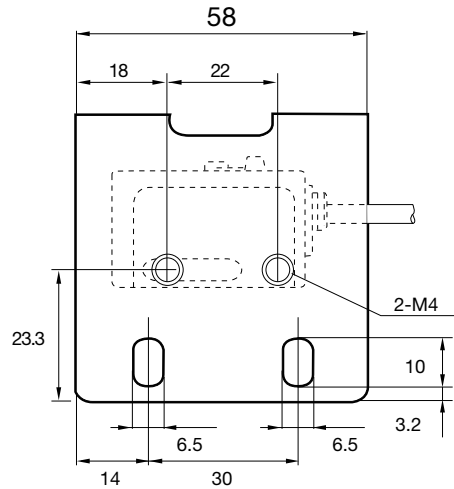
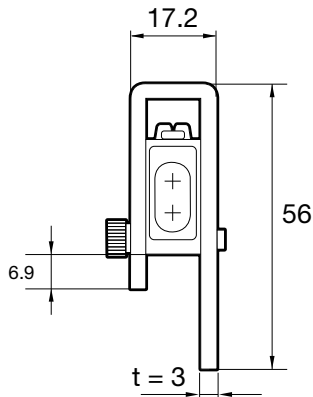
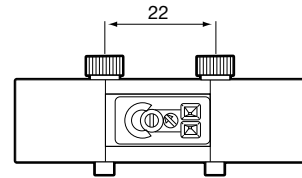
Protective mounting bracket (optional)

(Unit: mm)

■ LJ-H01 (for Head ON)



■ LJ-H02 (for Head ON)



Photoelectric Sensors

Specialized Photoelectric Sensors

Laser Displacement Sensors

Sensors with Built-in Amplifier

Z3

Z-M

Z2

E

J

K

S

S2

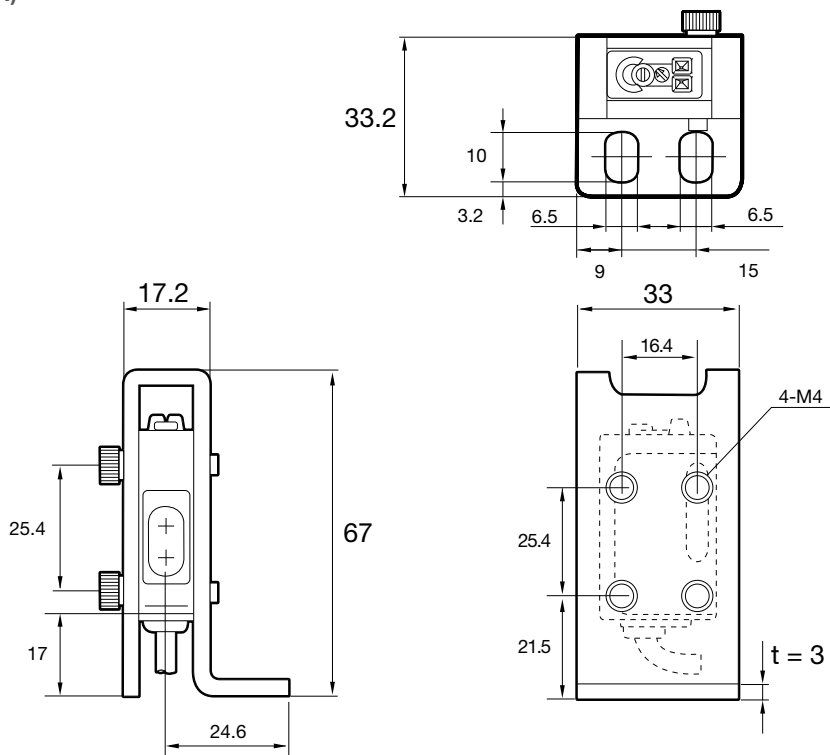
C-R

C2

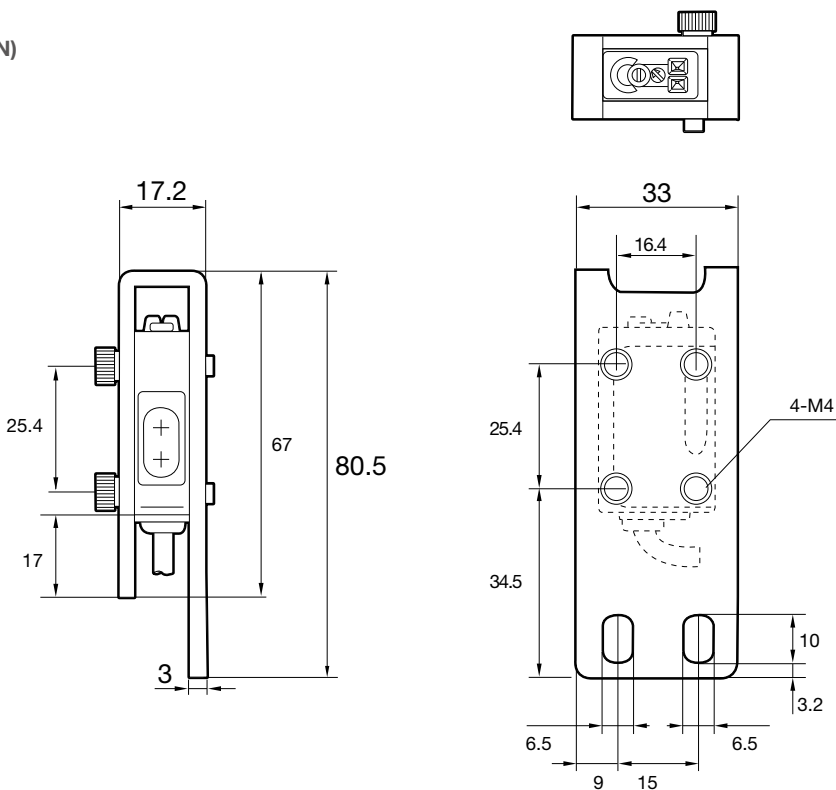
PLN

■ LJ-S01 (for Side ON)

(Unit:mm)



■ LJ-S02 (for Side ON)



Photoelectric Sensors

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Sensors with Built-in Amplifier

Z3

Z-M

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S2

C-R

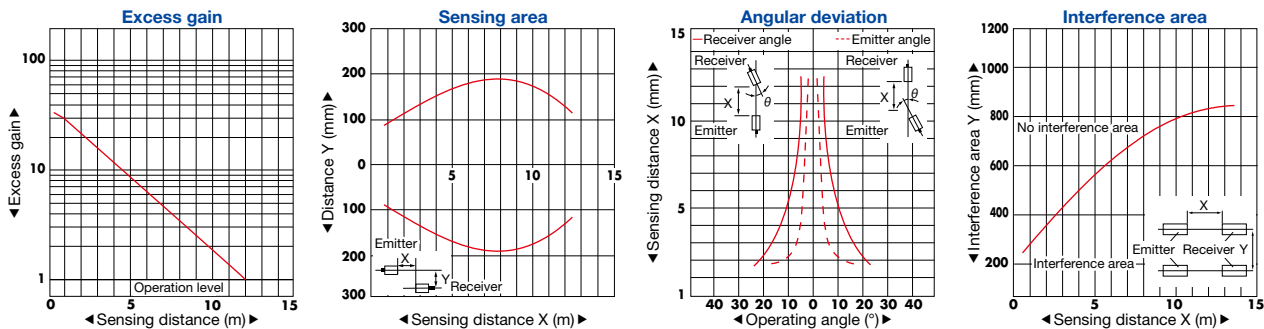
C2

PLN

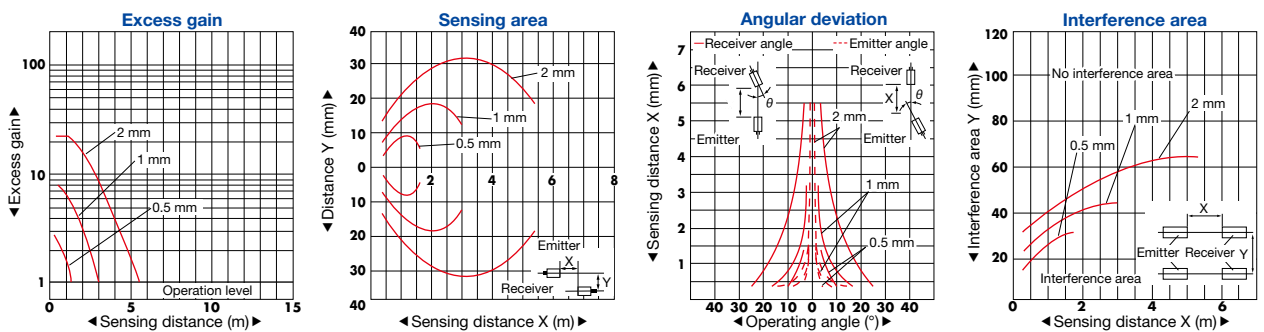
Typical characteristic data

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

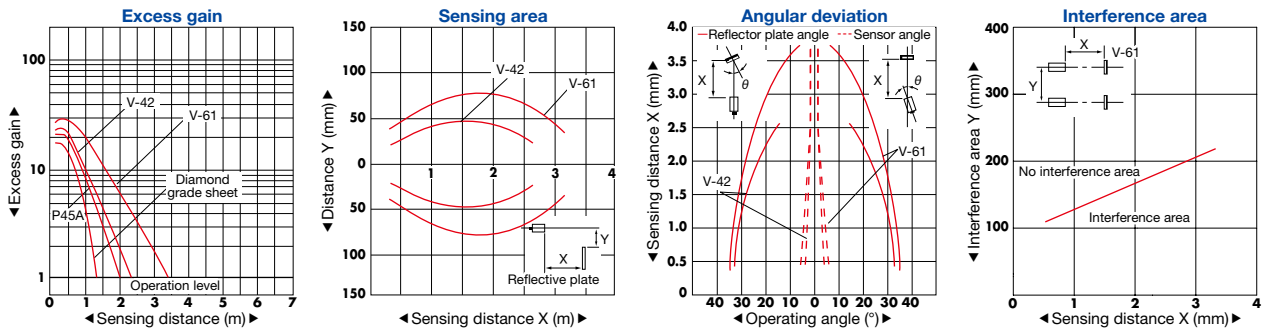
JT-H1000□/JT-S1000□



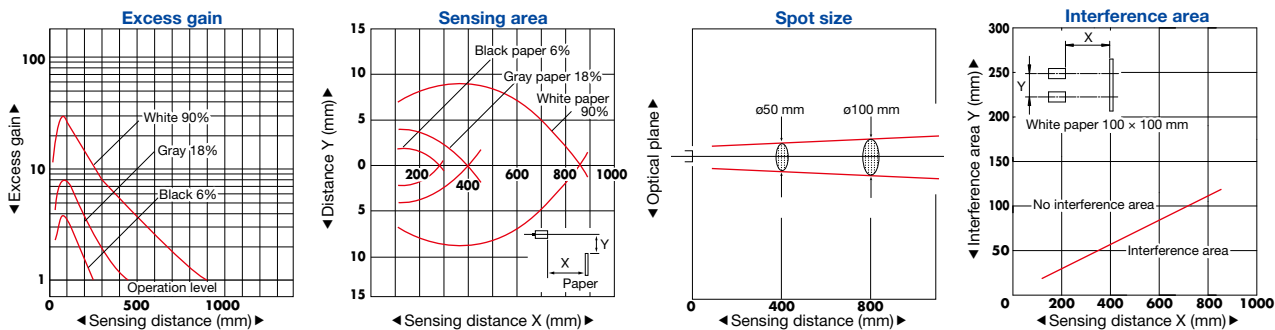
When slit mask is attached JT-H1000□/JT-S1000□



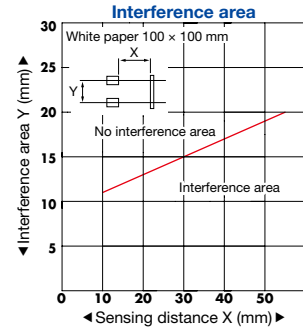
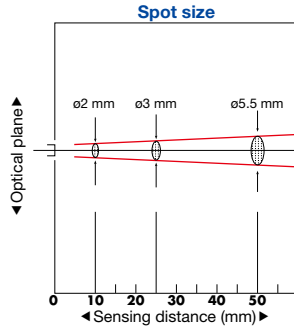
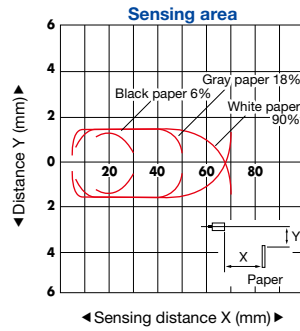
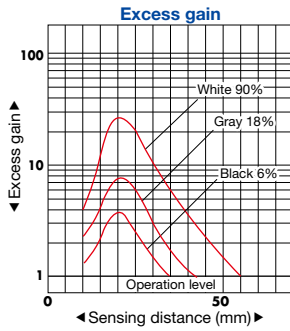
JR-H300□/JR-S300□



JD-HR80□/JD-SR80□



JD-HL03□/JD-SL03□



JD-HW08□/JD-SW08□

