

Photoelectric Sensor

J2 series



- Epoxy filled sensor housing provides IP67 rating for complete protection against water and 100G of shock resistance.
- Narrow view optics project a 1.5 mm spot (Diffuse Reflective type J2D-10).
- 1 meter sensing distance - Diffuse Reflective type (J2D-100).

Applications



BGS function for colorful object detection (BGS type)

Completely waterproof

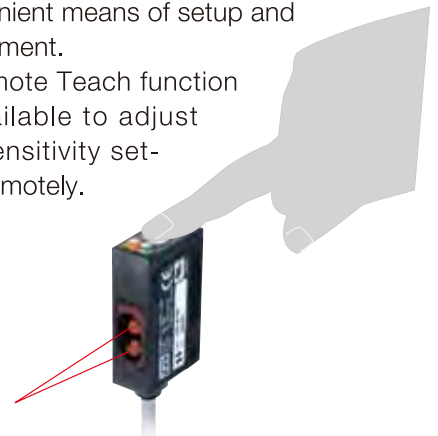
Fully epoxy injected inside the body. (IP67)
Protection category 100G means tough and rigid mechanics.



Single Button Teaching

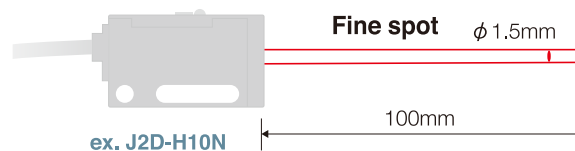
Built-in microcomputer offers a convenient means of setup and adjustment.

A Remote Teach function is available to adjust the sensitivity setting remotely.



Narrow View Diffuse.

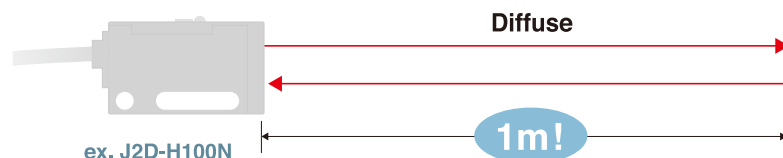
The Narrow view diffuse model projects a 1.5 mm diameter spot at 100 mm distance. The sharp angle of view is ideal for detecting a target through a small opening.



ex. J2D-H10N

1 meter Diffuse.

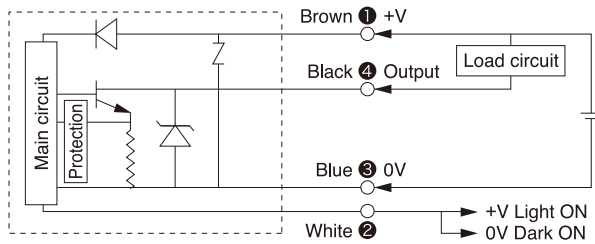
1 meter sensing distance in diffuse reflection mode.



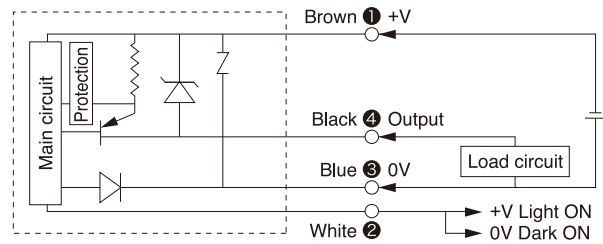
ex. J2D-H100N

Circuit diagram

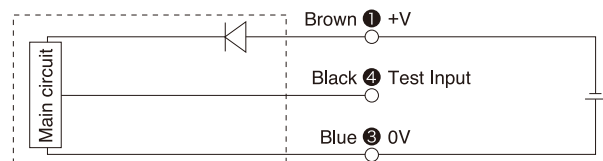
NPN output



PNP output

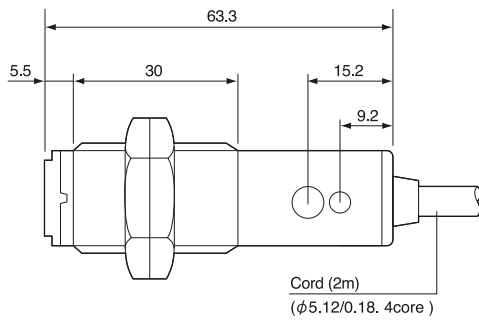


Emitter

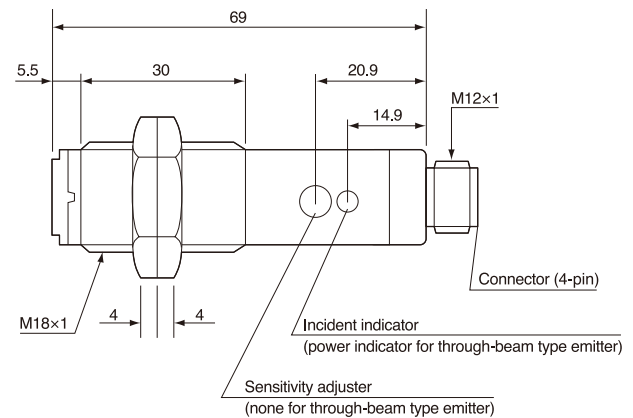


Dimensions

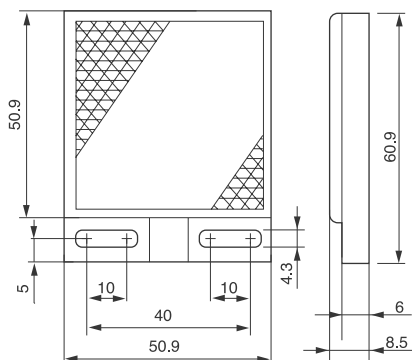
Cable type



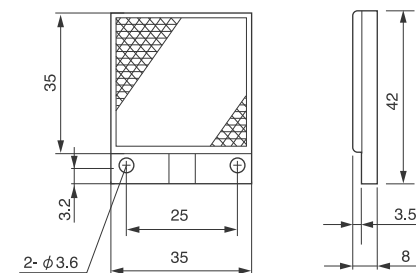
M12 QD type



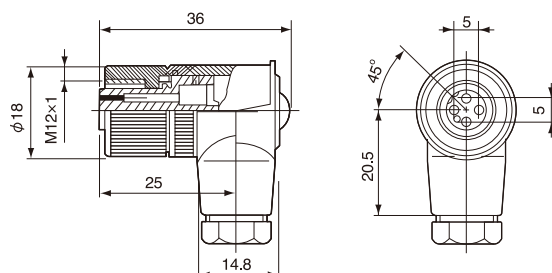
Standard reflector V-61



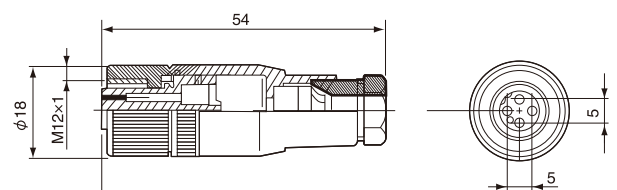
Small reflector V-42



90 degree QD connector CCN-L



Standard QD connector CCN-S



(Unit : mm)

Specifications

Model		Narrow View	Diffuse Reflective (IR)	Diffuse Reflective (Red)	BGS
Cable type	NPN	J2D-H(S)10N	J2D-H(S)100N	J2D-H(S)70N	BGS-H(S)15N
	PNP	J2D-H(S)10P	J2D-H(S)100P	J2D-H(S)70P	BGS-H(S)15P
Connector type	NPN	J2D-H(S)10CN	J2D-H(S)100CN	J2D-H(S)70CN	BGS-H(S)15CN
	PNP	J2D-H(S)10CP	J2D-H(S)100CP	J2D-H(S)70CP	BGS-H(S)15CP
(Remark)		*H = Head-on, S = Side-on			
Sensing distance		100mm	1000mm	700mm	50-150mm
Power consumption		10mA Max			45mA Max
Response time		0.5m sec			2.5 msec Max
Hysteresis		15%			8% @ 100mm
Spot size		φ 1.5mm@100mm	φ 85mm@1000mm	φ 50mm@600mm	φ 10mm@150mm
Light source		Red	Infrared	Red	
Supply voltage		DC 10 to 30V including 10% of ripple			
Control output		NPN or PNP Open collector, 100mA Max / 30V DC			
Sensitivity adjustment		Teach-in (Available Remote Teach-in)			
Shock resistance		100G (1,000m/S ²), X-Y-Z axis 3 times			
Remarks		Connector is M8, 3 and 4 pin connectors are available			
Operating mode		Light on / Dark on selectable			
Operating temp		-25 up to 55 °C			
Operating humidity		35 up to 95% RH			
Storage temp / humidity		-40 up to 70 °C, 35 - 95% RH			
Environmental illuminance		Sunlight : 10,000 lux Max, Incandescent lamp : 3,000 lux Max.			
Insulation resistance		Min. 20 M Ohm / DC500V			
Conformity		JIS, CE, CUL			
(JIS C4525)		1 sec, 300V			
Feilen test		Level 3			
VDE protection		Class 3			
Vibration resistance		10 to 55 hz amplitude 1.5mm, X-Y-Z for 2 hours			
Protection category		IP67			
Material		Case : PBT, Lens : PMMA			

Options

Standard reflector V-61



Small reflector V-42



Tiny reflector P-45



JCN-S : M8 Straight type



JCN-S : 2 meter
JCN-5S : 5 meter
JCN-10S : 10 meter

JCN-L : M8 L-shape type



JCN-L : 2 meter
JCN-5L : 5 meter
JCN-10L : 10 meter

Sensor stand
PLN-1Fixture of Reflector
PLN-1MProtective mounting brackets (For Head-on types)
LJ-H01

LJ-H02

Protective mounting brackets (For Side-on types)
LJ-S01

LJ-S02



Photoelectric Sensor

J3 series



- J3M Mark sensor with Pushbutton Teach.
- Narrow view optics project a 3.0 mm spot (Retro-reflective type J3R-100).
- 1.5 mm projected spot for BGS types.
- Epoxy filled sensor housing provides protection against vibration.

IP67

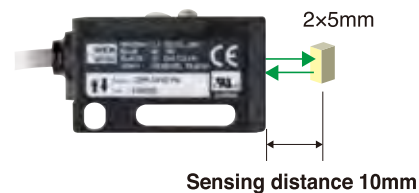
In addition to vibration resistance, the epoxy filled housing results in an IP67 rating.



Fast Response 200 micro sec,
10±2mm sensing distance
(Mark sensor J3M type)

A latest Green LED with physical composition of GlanN2.

It's best for mark sensing.



Completely waterproof

An IP67 rating is guaranteed by filling the sensor body with epoxy.

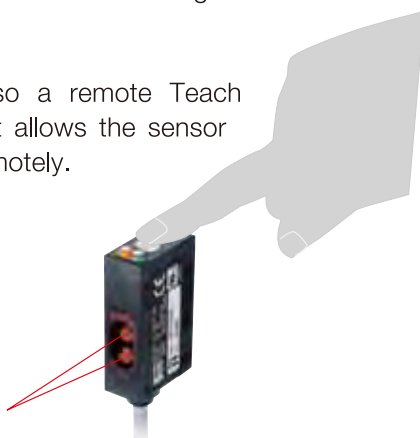
The 100G shock resistance rating protects the sensor against mechanical vibration.



One-push Teaching.

The built-in microcomputer provides a convenient means of setting the sensor.

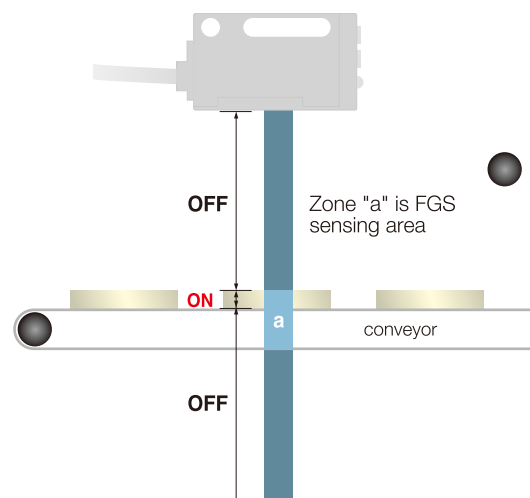
There is also a remote Teach function that allows the sensor to be set remotely.



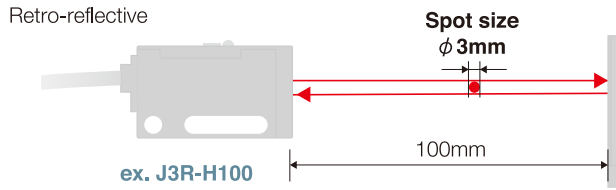
BGS-S/H15 : Built-in FGS function

The BGS-S15 and BGS-H15 sensors are able to operate as FGS (foreground suppression) sensors. The FGS function senses the surface of the conveyor and uses this as a reflector, the sensor will detect thin and/or flat objects positioned on the conveyor.

A standard diffuse reflective sensor could be used in this application but adjusting the sensitivity is sometimes difficult, the FGS function is easily adjusted and will operate in a manner similar to a retro-reflective sensor without the reflector.

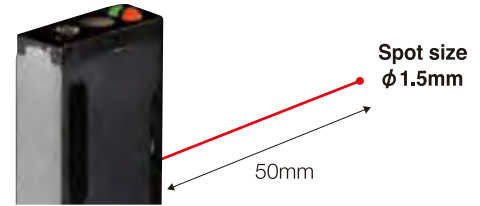


Ideal for detection of small objects



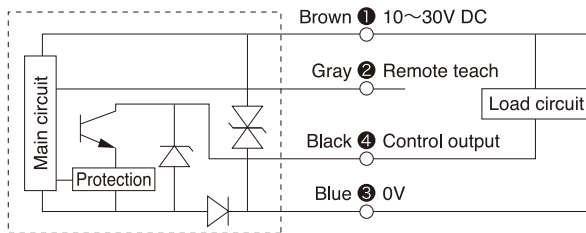
$\phi 1.5\text{mm}$ of small spot size (BGS-3JH05)

Small spot in a BGS sensing system.

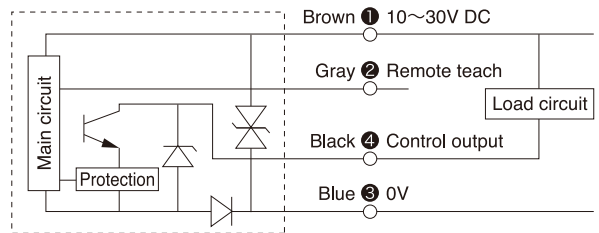


Circuit diagram

NPN output



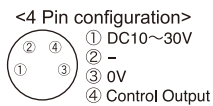
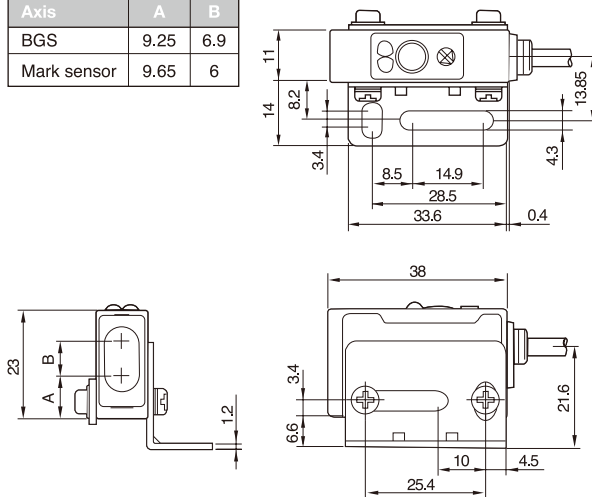
PNP output



Dimensions

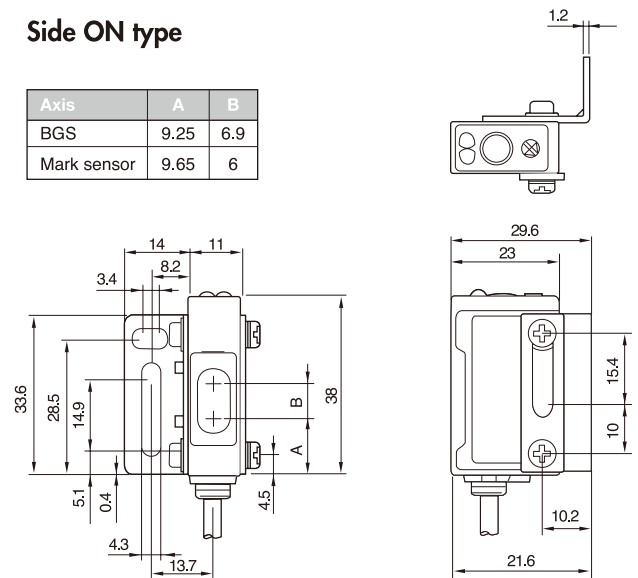
Head ON type

Axis	A	B
BGS	9.25	6.9
Mark sensor	9.65	6

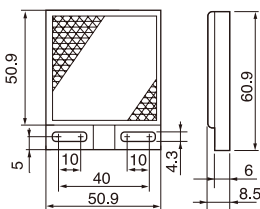


Side ON type

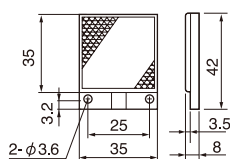
Axis	A	B
BGS	9.25	6.9
Mark sensor	9.65	6



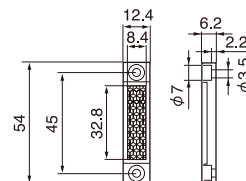
Standard reflector V-61



Small reflector V-42



Tiny reflector P-45



Specifications

Model		Mark Sensor	Retro-reflective Narrow View	BGS
Cable type	NPN	J3M-GH(S)01N	J3R-H(S)100N	BGS-3JH(S)05N
	PNP	J3M-GH(S)01P	J3R-H(S)100P	BGS-3JH(S)05P
Connector type	NPN	J3M-GH(S)01CN	J3R-H(S)100CN	BGS-3JH(S)05CN
	PNP	J3M-GH(S)01CP	J3R-H(S)100CP	BGS-3JH(S)05CP
(Remark)		*H = Head-on, S = Side-on		
Sensing distance		10 +/- 2m	0.05 - 1m	15 - 50mm/18%
Power consumption		40mA Max		
Response time		0.2m sec		0.7 msec
Hysteresis		N/A		5%
Min detectable object		Appr 2 x 5mm @ 10mm	1mm @ 100mm	0.5mm round@150mm
Light source		Green	Red LED with special focusing lens	Red
Off delay		40 msec fixed		
Supply voltage		DC 10 to 30V including 10% of ripple		
Control output		NPN or PNP Open collector, 100mA Max / 30V DC		
Sensitivity adjustment		Teach-in		
Remote teach-in		Available		
Shock resistance		100G (1,000m/S ²), X-Y-Z axis 3 times		
Remarks		Light on / Dark on selectable		
Operating temp		-25 up to 55 °C		
Operating humidity		35 up to 95% RH		
Storage conditions		-40 up to 70 °C, 35 - 95% RH		
Environmental illuminance		Sunlight : 10,000lux Max, Incandescent lamp : 3,000 lux Max.		
Insulation resistance		Min. 20 M Ohm / DC500V		
Conformity (JIS C4525)		JIS, CE, CUL		
Feilen test		Level 3		
VDE protection		Class 3		
Vibration resistance		10 to 55 hz amplitude 1.5mm, X-Y-Z for 2 hours		
Protection category		IP67		
Material		Case:PBT, Lens:PMMA		

Options

Standard reflector V-61



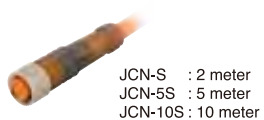
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Tiny reflector P-45



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JCN-5S : 5 meter
JCN-10S : 10 meter

JCN-L : M8 L-shape type



JCN-L : 2 meter
JCN-5L : 5 meter
JCN-10L : 10 meter

Protective mounting brackets (For Head-on types)

LJ-H01 : Protector



LJ-H02 : Protector



Protective mounting brackets (For Side-on types)

LJ-S01 : Protector



LJ-S02 : Protector



**Sensor stand
PLN-1**

**Fixture of Reflector
PLN-1M**

