

Laser type with potentiometer

BGS-DL series**The low cost laser BGS sensor!**

- | Class 2 laser
- | 2PD (2-photo-diode) used for the receiver element
- | Low cost potentiometer type

Related products

C-MOS laser
**BGS-HL,
BGS-HDL**
● P.310



Small laser BGS
BGS-ZL
● P.326



Analog output
CD22
● P.464

**Selection table**

| Type | Shape | Sensing distance | Receiver element | Distance adjustment | Model (Models in parentheses are connector types) | |
|-----------|-------|------------------|------------------|---------------------|--|----------------------------------|
| | | | | | NPN type | PNP type |
| Laser BGS | | 40 to 100 mm | 2PD | Potentiometer type | BGS-DL10N (BGS-DL10CN) | BGS-DL10P (BGS-DL10CP) |
| | | 100 to 300 mm | 2PD | Potentiometer type | BGS-DL30N (BGS-DL30CN) | BGS-DL30P (BGS-DL30CP) |
| | | 100 to 700 mm | 2PD | Potentiometer type | BGS-DL70N (BGS-DL70CN) | BGS-DL70P (BGS-DL70CP) |

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

Low cost potentiometer type featuring a 2PD (2-photo-diode) for the receiver element

This is a potentiometer type without digital monitor for customers who love conventional potentiometer type sensors. Because it features a laser light source, it boasts high level positioning performance.

Options/Accessories**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



Photoelectric
SensorsSpecialized
Photoelectric
SensorsLaser
Displacement
Sensors

BGS Sensors

BGS-HL,
BGS-HDL

BGS-DL

BGS-ZL,
BGS-Z

BGS-ZM

BGS-S,
BGS-2S

BGS

BGS-DL
(potentiometer type)

Specifications

| Type | | Laser BGS type (potentiometer type) | | | |
|-----------------------------|------------------------------|--|--|--|-------------------|
| Model | NPN | Cable type | BGS-DL10N | BGS-DL30N | BGS-DL70N |
| | | Connector type | BGS-DL10CN | BGS-DL30CN | BGS-DL70CN |
| | PNP | Cable type | BGS-DL10P | BGS-DL30P | BGS-DL70P |
| | | Connector type | BGS-DL10CP | BGS-DL30CP | BGS-DL70CP |
| Sensing distance | | 10 to 100 mm ^{*1} | 50 to 300 mm ^{*1} | 50 to 700 mm ^{*1} | |
| Adjustable distance range | | 40 to 100 mm ^{*1} | 100 to 300 mm ^{*1} | 100 to 700 mm ^{*1} | |
| Light source | | Red semiconductor laser Class 2 (IEC/JIS) ^{*2} Wavelength: 650 nm Pulse width: 6 μs | | | |
| | | Maximum output: 2 mW | | Maximum output: 3 mW | |
| Spot size | | Approx. ø3 mm / at a distance of 80 mm | Approx. ø6 mm / at a distance of 200 mm | Approx. ø2.5 mm / at a distance of 300 mm | |
| Response time | | 0.7 ms or less | | | |
| Hysteresis | | 5% or less | | 5 to 20% | |
| Distance adjustment | | 4-turn endless potentiometer | | | |
| Indicators | | Output indicator (orange) Laser emission indicator (green) | | | |
| Control output | | NPN/PNP open collector Max. 100 mA/30 VDC | | | |
| Output mode | | Light ON / Dark ON selectable | | | |
| 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 | 35 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 (no freezing) / 35 to 85% RH (no 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/s ²), 3 times in each of the X, Y, and Z directions | | | |
| | Degree of protection | IP67 | | | |
| Material | | Housing: ABS Front cover: PMMA | | | |
| Weight without cable | | Approx. 20 g (excluding cable) | | | |
| Included accessories | | Mounting bracket: BEF-WK-190 | | | |

*1. Using a 100 × 100 mm white sheet of paper.

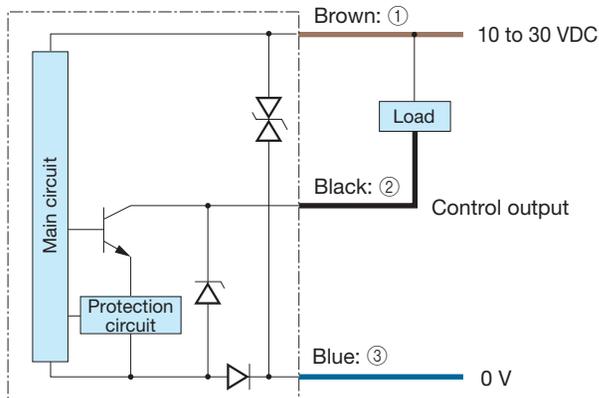
*2. Classified as Class II in the US FDA standards.

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

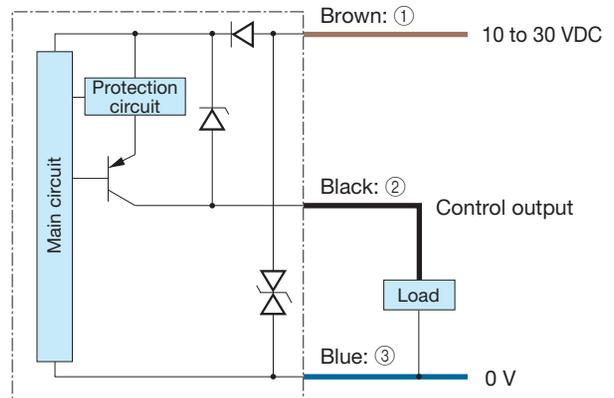
Laser type with potentiometer **BGS-DL** series

Output circuit diagram

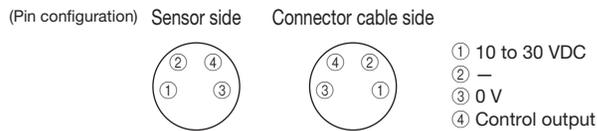
■ **NPN output type**



■ **PNP output type**



■ **Connector type**

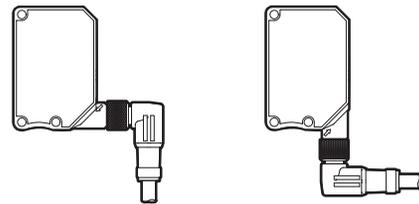


Connecting

■ 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.

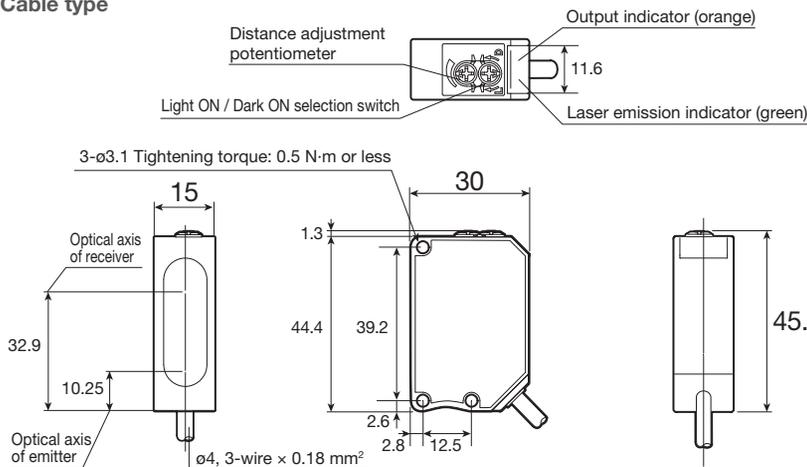


Dimensions

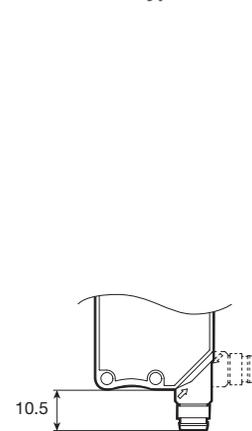
Sensor

(Unit: mm)

■ **Cable type**



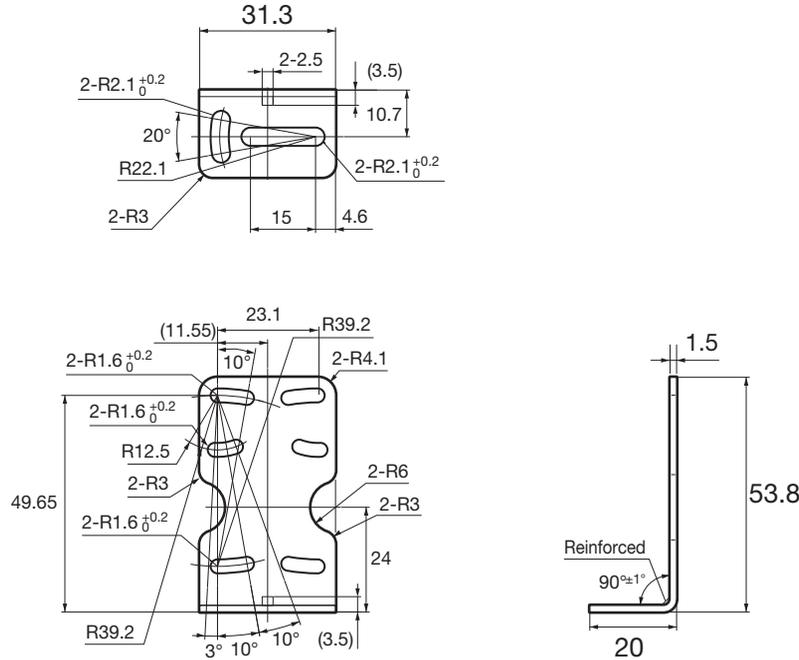
■ **Connector type**



(Unit: mm)

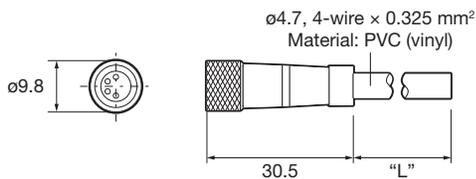
Mounting bracket

■ BEF-WK-190 (included)

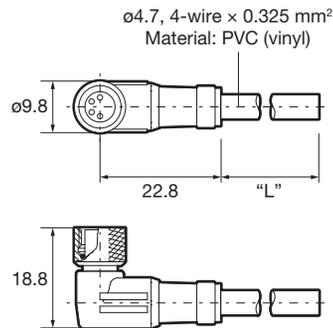


Connector cable (optional)

■ JCN-S, JCN-5S, JCN-10S



■ JCN-L, JCN-5L, JCN-10L



Photoelectric Sensors

Specialized Photoelectric Sensors

Laser Displacement Sensors

BGS Sensors

BGS-HL, BGS-HDL

BGS-DL

BGS-ZL, BGS-Z

BGS-ZM

BGS-S, BGS-2S

BGS

BGS-DL (potentiometer type)

Notes for sensor usage

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 beam in another person's eyes. Doing so may cause damage to the eyes or health.

BGS-DL10□□
BGS-DL30□□



BGS-DL70□□

