# Easy Mount Photoelectric Sensor
## FXE-BGS
### Back Ground Suppression Type

## SALIENT FEATURES

- ◆ Distance Settable Type
- ◆ Back Ground Suppression
- ◆ IP-67, Shock Resistant - 100G
- ◆ M18 Threaded Front Mounting
- ◆ Light ON, Dark ON - Dual Output

C E

**DUAL OUTPUT Light ON Dark ON** | **RED LED** | **100G** | **IP 67** | **M18** | **Distance Settable** | **200mm**

## Model Number Legend

**FXE - BGS - ☐☐ - ☐**
**1      2      3 4      5**

### 1. Series

FXE

### 2. Type

BGS:     Diffuse Back Ground Suppression Type

### 3. Sensing Distance

200:      200 mm

### 4. Output

ND:       NPN - NO, NC Dual Output

PD:       PNP - NO, NC Dual Output

### 5. Connection

2M:       2m Cable

M8C:      M8 Connector

M12J3:    M12 Junction Connector with 0.3m extension

### #. Accessories included
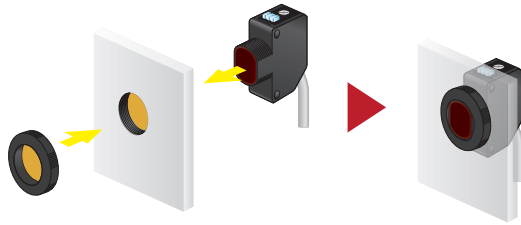
Mounting Nut (M18) : 1 No.

Mounting Screws     : 1 Set

**Example:**

FXE-BGS-200PD-2M

FXE Series - Diffuse Back Ground Suppression Type - 200mm Sensing Distance, PNP NO, NC Dual Outputs - 2m Cable

**NOTE:**     Contact us for models not shown in catalogue.
Connector cables are sold separately; look in CC series catalogue for the same (www.inno.sg/cc).

Proximity Sensors

Photoelectric Sensors

Measurement Sensors

Vision & Safety Sensors

Control

Weighing

Automation

Components

## Product Highlights

♦ **BGS Sensing**

The FXE-BGS sensors are distance settable and have Back Ground Suppression and the sensing is not influenced by Color or Texture of the sensing object. The same applies for the color changes in the background.

♦ **M18 Threaded Mounting!**

The FXE Series sensors can simply be mounted by inserting it into an M18 opening. The sensor head has a threaded surface and an M18 locking nut is provided. This makes mounting this unit Easy and Fast!

Conventional mounting holes are also provided in the sensor body for added flexibility.
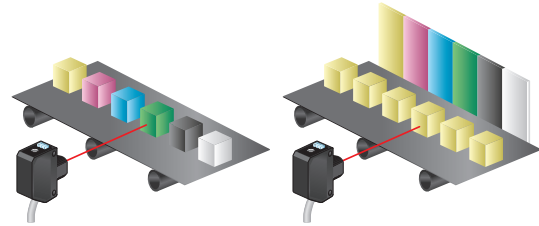
## Ratings and Specifications

| Type | | Diffuse Reflective | | |
|---|---|---|---|---|
| Models | NPN | FXE-BGS-200ND-2M | FXE-BGS-200ND-M8C | FXE-BGS-200ND-M12J3 |
| | PNP | FXE-BGS-200PD-2M | FXE-BGS-200PD-M8C | FXE-BGS-200PD-M12J3 |
| Sensing Distance | | 0 ~ 200mm | | |
| Setting Distance | | 30 ~ 200mm | | |
| Spot Size | | Ø 15mm at 200mm | | |
| Hysteresis | | 5% | | |
| Response Time | | 500 µ Sec | | |
| Sensitivity Adjustment | | Built-in externally adjustable 4 turn endless pot. | | |
| Operation Mode | | Light ON and Dark ON outputs provided | | |
| Supply Voltage | | 10 - 30 VDC (Ripple Max 10%) | | |
| Current Consumption | | max. 30mA | | |
| Protection Circuits | | Reverse Polarity, Transient Voltages, Output Overcurrent indication | | |
| Connection | | Prewired 2 meter cable outgoing type | M8 Connector type | M12 Jn. Connector, 0.3m extension |
| Control Output | | NO, NC - NPN or PNP open collector output (depending on model) | | |
| Control Output Rating | | Load Voltage: max. 30 VDC; Load Current: max 100mA | | |
| Operation Indication | | GREEN: Stable; YELLOW: Output ON; RED: Alarm - Overload | | |
| Shock Resistance | | 100 G- X,Y, Z three directions | | |
| Environmental Illuminance | | Sunlight: 10,000 lux, Lamp: 3,000 lux | | |
| Ambient Temperature | | Operation: -25° ~ 55°C; Storage: -40° ~ 70°C (non- freezing, non- condensing) | | |
| Ambient Humidity | | Operation: 35 ~ 85% RH; Storage: 35 ~ 90% RH (non- condensing) | | |
| Protection Class | | IP67 | | |
| Weight | | approx. 10g without cable | | |
| Material | | Housing: ABS with Glass, Lens: PMMA or Eqv. | | |

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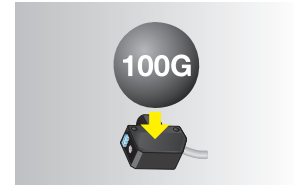Control

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# Product Highlights

**inno**™

### ♦ Rugged & Waterproof

The sensor has an IP67 construction making it suitable for use in places where it may be exposed to water spray.

The sensor has a rigid design and superior construction for high resistance to mechanical shocks upto 100G.
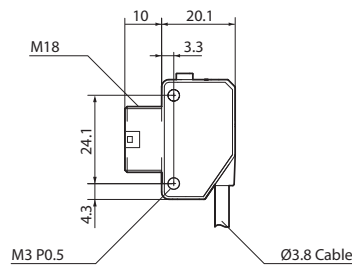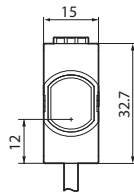
**100G**

## Sensor Dimension Drawing

### Outgoing Cable Type & M12 Junction Connector Type

- ♦ FXE-BGS-200ND-2M
- ♦ FXE-BGS-200PD-2M
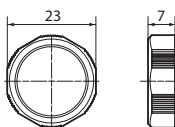- ♦ FXE-BGS-200ND-M12J3
- ♦ FXE-BGS-200PD-M12J3

15
32.7
12
10  20.1
M18
3.3
24.1
4.3
M3 P0.5
Ø3.8 Cable

### Connector Type

- ♦ FXE-BGS-200ND-M8C
- ♦ FXE-BGS-200PD-M8C

15
32.7
12
10
10  20.1
M18
3.3
24.1
4.3
M3 P0.5
4 pin, M8 Connector (Male)
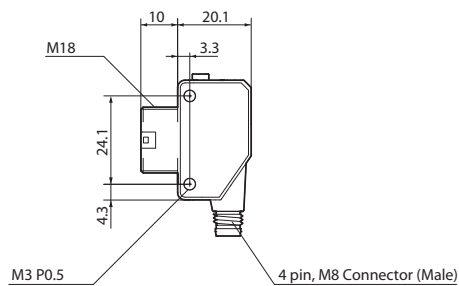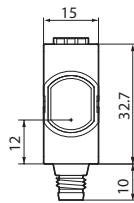
### Locking Nut

23
7
M18- 1 Nut

### M12 Junction Connector

42.2
13
9
20
4
M12
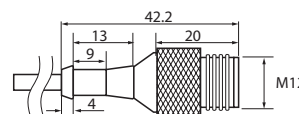
All dimensions are in mm

## Connection

### • Cable

Brown
NPN - NO        NPN - NC
Black
White
PNP - NO        PNP - NC
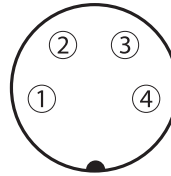Blue
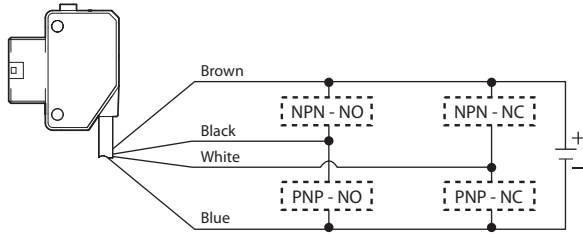
Brown : DC 10~30V
Blue : 0 V
Black : Control Output (Light ON)
White : Control Output (Dark ON)

### • M8 Connector *

② ③
① ④
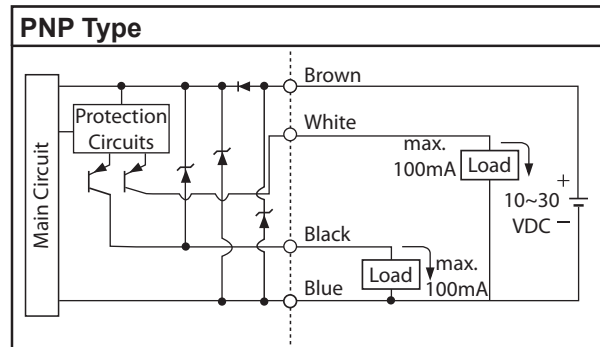
### • M12 Junction Connector *

② ③
① ④
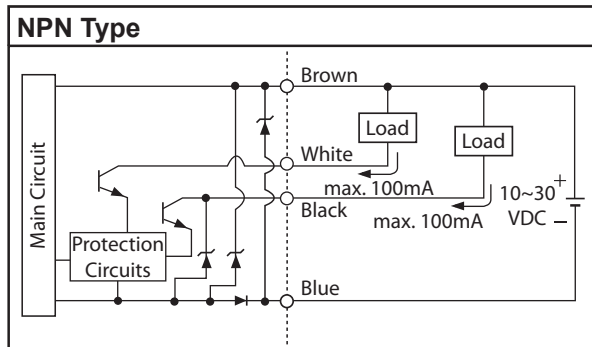
1        : DC 10~30V
2        : Control Output (Dark ON)
3        : 0 V
4        : Control Output (Light ON)
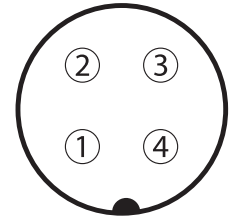
Note:        * - Connector Cable is not supplied along with unit

## Control Output Diagram

### NPN Type

Main Circuit

Brown
Load        Load
White
max. 100mA        10~30
Black        VDC
max. 100mA
Protection Circuits
Blue

### PNP Type

Main Circuit

Brown
Protection Circuits
White
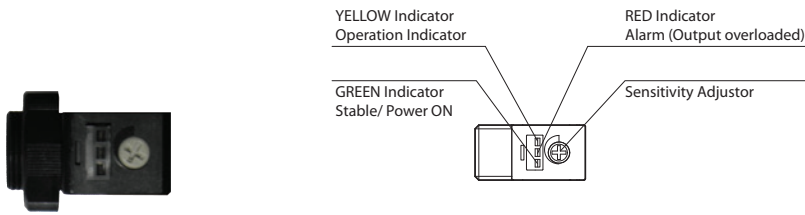max. 100mA        Load
10~30
Black        VDC
Load        max. 100mA
Blue

Brown: DC 10~30V; Blue: 0 V; Black: Control Output (Light ON); White: Control Output (Dark ON)

## Operation Type

Light        ON
             OFF

Operation Indicator        ON
                           OFF

Output Light ON        ON
                       OFF

Output Dark ON        ON
                      OFF

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# Nomenclature

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YELLOW Indicator
Operation Indicator

RED Indicator
Alarm (Output overloaded)

GREEN Indicator
Stable/ Power ON

Sensitivity Adjustor

# Operational Data

## Parallel Shifting Characteristic



100mm    150mm    200mm

Operation Point- Y (mm)

Sensing Distance- X (mm)

Test Object: White (90% Reflectance) 100mm*100mm

## Hysteresis



Hysteresis (%)

6%

18%

90%

Scanning Distance (mm)

% Reflectivity

## Spot Size



Sensing Dia

Aprox. Ø 5mm    Aprox. Ø 8mm    Aprox. Ø 15mm

Sensing Distance (mm)

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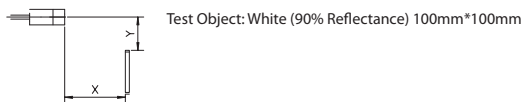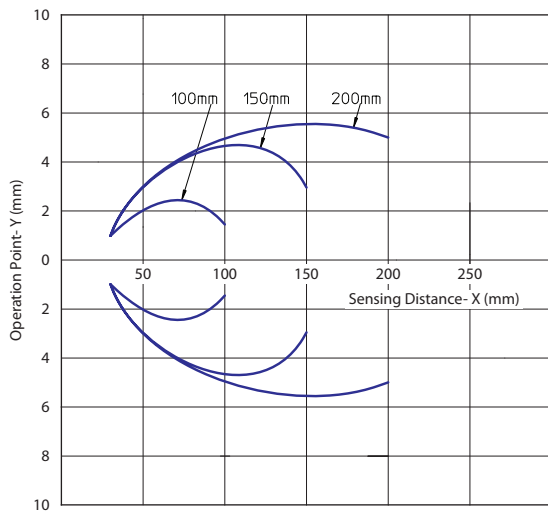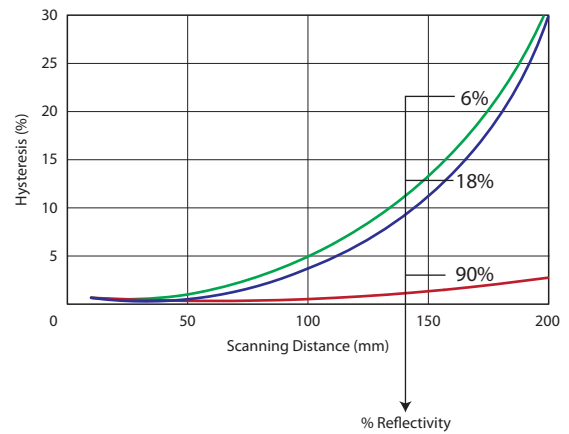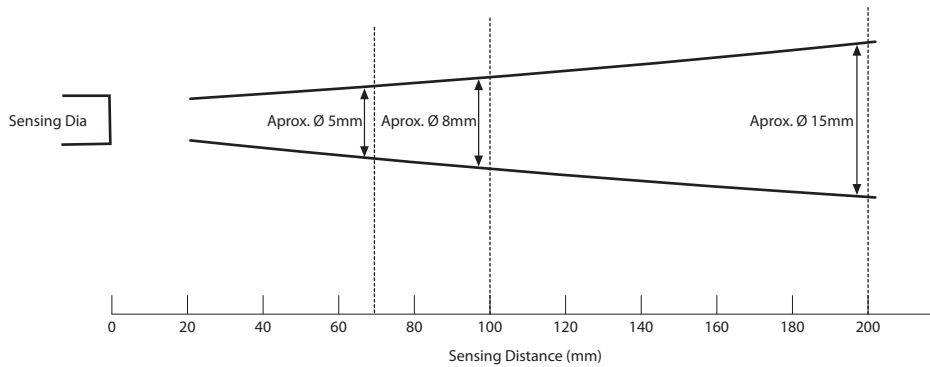
## Operation Mode Adjustment

The FXE-BGS sensors come with a dual output. Hence the need for selection between Light ON/ Dark ON models is eliminated.

The wire Black carries the Output NO/ Light ON.

The wire White carries the Output NC/ Dark ON.

## Sensitivity Adjustment

| | |
|---|---|
|  | The adjuster is to be rotated in the clockwise direction to increase the sensitivity and thereby the sensing distance. |
|  | The adjuster is to be rotated in the anti-clockwise direction to decrease the sensitivity and thereby the sensing distance. |

Note: The adjuster is a 4- turn endless pot

## Mounting

Sensor can be mounted on an M18 cutout. The locking nut holds the unit in position.
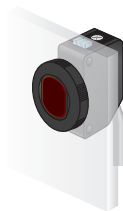


Sensor can be mounted on bracket. Screw size M3 is to be used for mounting of sensor to the bracket*.
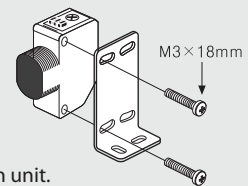
*: Bracket is not supplied along with unit.



M3×18mm

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Cat. No.FXE-BGS-512

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