◉ **IO**-Link

*FASTUS is a product brand of OPTEX FA.

IO-Link Supported BGS Sensor

# Z4B Series

## Features

■ **IO-Link supported: Connectable to various field networks via IO-Link Master**
■ **High power and small spot LED light source**
■ **Enhanced ambient illuminance resistance**

## Lineup

| Type | Appearance | Sensing distance | Model (Models in parentheses are connector types) | |
|------|-----------|------------------|------------------|------------------|
| | | | **NPN type** | **PNP type** |
| BGS | | 5 to 80 mm (20 to 80 mm) | **Z4B-S08N** (Z4B-S08CN4) | **Z4B-S08P** (Z4B-S08CP4) |
| | | 5 to 100 mm (20 to 100 mm) | **Z4B-10N** (Z4B-10CN4) | **Z4B-10P** (Z4B-10CP4) |
| | | 10 to 300 mm (50 to 300 mm) | **Z4B-30N** (Z4B-30CN4) | **Z4B-30P** (Z4B-30CP4) |

● For the connector type, purchase an optional connector cable.

## Accessories

**M8 connector cables**

| Model | Description |
|-------|-------------|
| **M84CN-2S** | Straight, 2 m |
| **M84CN-5S** | Straight, 5 m |
| **M84CN-10S** | Straight, 10 m |
| **M84CN-2L** | L-shaped, 2 m |
| **M84CN-5L** | L-shaped, 5 m |
| **M84CN-10L** | L-shaped, 10 m |

**Mounting brackets**

| Model | Description |
|-------|-------------|
| **BEF-W100-B** | For cable type, Floor mounted |
| **BEF-W100-A** | For connector type, Back-mounted |
| **BEF-W100-C** | For cable type, Floor mounted |

**Protective mounting brackets**

| Model | Description |
|-------|-------------|
| **LK-S01** | Floor mounted |
| **LK-S02** | Wall mounted |

● Mounting bracket is not included. Purchase as necessary.
● For the connector type, purchase an optional connector cable.
● For IO-Link connection with USB adapter and master unit, use 3rd party product in the market.

# OPTEX FA CO., LTD.

# Specifications

| Type | | | BGS | | |
|---|---|---|---|---|---|
| **Model** | **NPN** | **Cable** | Z4B-S08N | Z4B-10N | Z4B-30N |
| | | **Connector** | Z4B-S08CN4 | Z4B-10CN4 | Z4B-30CN4 |
| | **PNP** | **Cable** | Z4B-S08P | Z4B-10P | Z4B-30P |
| | | **Connector** | Z4B-S08CP4 | Z4B-10CP4 | Z4B-30CP4 |
| Sensing distance* | | | 5 to 80 mm | 5 to 100 mm | 10 to 300 mm |
| Adjustable distance range* | | | 20 to 80 mm | 20 to 100 mm | 50 to 300 mm |
| Light source | | | Red LED | | |
| Spot size | | | Approx. Ø 2.5 mm at 60 mm | Approx. Ø 10 mm at 100 mm | Approx. Ø 30 mm at 300 mm |
| Response time | | | Light ON setting: No light received → Light received; 1 ms or less, Light received → No light received; 3.5 ms or less<br>Dark ON setting: Light received → No light received; 3.5 ms or less, No light received → Light received; 1 ms or less | | |
| Hysteresis* | | | Max. 3 % | Max. 3 % | Max. 5 % |
| Sensitivity adjustment | | | 6-turn potentiometer (endless) | | 4-turn potentiometer (endless) |
| Indicators | | | Output indicator (orange LED), Stability indicator (green LED) | | |
| Control output | | | NPN/PNP Open collector 100 mA/30 VDC Max. (Residual voltage 1.8 V Max.) | | |
| Output mode | | | Light ON, Dark ON selectable by switch | | |
| IO-Link specifications | | | Ver. 1.1, Baud rate: COM3 (230.4 kbps), Number of process input data bytes: 2 bytes, Minimum cycle time: 0.5 ms | | |
| Connection | | | Cable type: 2 m long, Ø 3.8 mm<br>(Minimum bending radius: 15.2 mm (When fixed in place))<br>Connector type: M8 4-pin | | |
| Rating | Supply voltage | | IO-Link mode: 18 to 30 VDC, SIO mode: 10 to 30 VDC including 10 % ripple (p-p) | | |
| | Current consumption | | 30 mA or less | | |
| Applicable regulations | EMC | | EMC directive (2014/30/EU) | | |
| | Environment | | RoHS directive (2011/65/EU), China RoHS (MIIT Order No. 32) | | |
| Applicable standards | | | EN 60947-5-2 | | |
| Company standards | | | Noise resistance: Feilen Level 3 cleared | | |
| Environmental resistance | Ambient temperature/humidity | | -25 to 55°C/35 to 85 %RH (No condensation or freezing) | | |
| | Ambient illuminance | | Sunlight: 50,000 lx or less, Incandescent lamp: 5,000 lx or less | | |
| | Storage temperature/humidity | | -40 to 70°C/35 to 95 %RH (No condensation or freezing) | | |
| | 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/s²) 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. 10 g | | |
| Included items | | | Instruction manual | | |
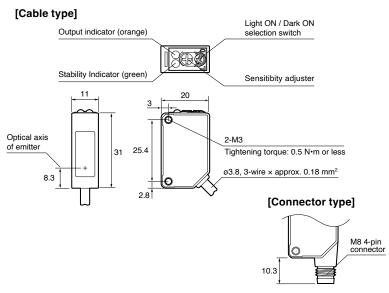
*White paper 100 mm × 100 mm

● Specifications are subject to change without prior notice. Thank you for your understanding.

# Dimensions

(Unit: mm)

## [Cable type]

Output indicator (orange)
Light ON / Dark ON selection switch
Stability Indicator (green)
Sensibity adjuster

11
20
3
Optical axis of emitter
31
25.4
8.3
2.8
2-M3
Tightening torque: 0.5 N•m or less
ø3.8, 3-wire × approx. 0.18 mm²

## [Connector type]

M8 4-pin connector
10.3

**Never use these products as sensing devices for personnel protection.**
**Doing so could lead to serious injury or death.**
**Before use please read an instruction manual.**

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# Circuit diagram

## [NPN mode]

Main circuit
Protection circuit
Load
Brown : ①  10 to 30 VDC
Black : ④  Control output / IO-Link
Blue : ③  0 V

## [PNP mode]

Main circuit
Protection circuit
Load
Brown : ①  10 to 30 VDC
Black : ④  Control output / IO-Link
Blue : ③  0 V

## [IO-Link mode]

IO-Link Master
Main circuit
Protection circuit
Brown : ①  +V
Black : ④  C/Q
Blue : ③  0 V

## [M8 connector pin layout]

M8 4 pin
① 10 to 30 VDC
③ 0 V
④ Control output / IO-Link