◆ IO-Link

*FASTUS is a product brand of OPTEX FA.

Industry-standard photoelectric sensor

Z4 Series

/ Features

■ IO-Link connection supported

- ● Easy integration in application with Fieldbus/IO-Link network
- ● Monitoring of light receiving level for sensing status and maintenance time prediction
- ● Parameter setting of sensitivity, ON/OFF mode and timer via network

■ Enhanced ambient illuminance resistance against sunlight, incandescent and LED lights

■ Brighter status indicators for remote status monitoring

/ Lineup

Optical system		Sensing distance		Model	
				NPN type	**PNP type**
Through-beam			25 m	**Z4T-2500N** **Z4T-2500CN4**	**Z4T-2500P** **Z4T-2500CP4**
Retro reflective			0.01 to 4 m	**Z4R-400N** **Z4R-400CN4**	**Z4R-400P** **Z4R-400CP4**
Diffuse reflective			0 to 1 m	**Z4D-100N** **Z4D-100CN4**	**Z4D-100P** **Z4D-100CP4**
Limited diffuse reflective			10 to 90 mm	**Z4D-L09N** **Z4D-L09CN4**	**Z4D-L09P** **Z4D-L09CP4**

/ Accessories

Reflectors

Model	Description
V-61	Standard, 60.9 × 50.9 mm, 0.01 to 4 m
V-42	Small, 42 × 35 mm, 0.01 to 2.4 m
P45A	Vertical, 54 × 12.4 mm, 0.01 to 1.4 m
P25	Side mount, 32 × 14 mm, 0.01 to 1.6 m
V-30	Ultra-small, 43 × 23 mm, 0.01 to 2.2 m

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

Protective mounting brackets

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

Slit masks (For Through-beam)

Model	Description
BL-W100	Width: 0.5 mm, 1 mm, 2 mm, 2 sheets
BL-100-M1-10pcs	Width: 1 mm, Stainless steel, 10 pieces
BL-100-M05	Width: 0.5 mm, Stainless steel, 2 pieces

Anti-interference filter (For Through-beam)

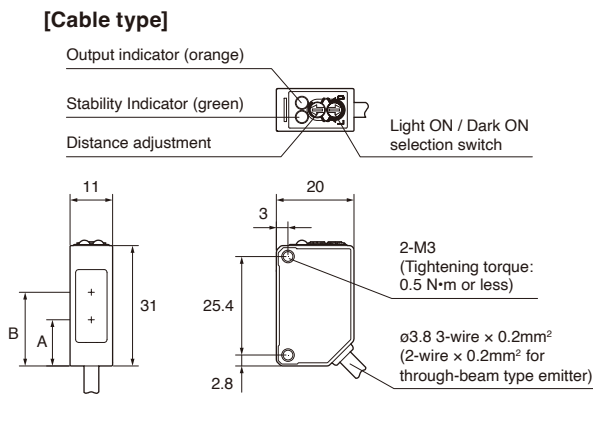| Model	Description
BL-100-POLF	POL filter, vertical and horizontal, 2 sets of each

- ● Mounting bracket is not included. Purchase as necessary.
- ● Reflector is not included with the retro-reflective type. Purchase an optional reflector.
- ● 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

Model			Through-beam	Retro reflective	Diffuse reflective	Limited diffuse reflective
	NPN	Cable type	Z4T-2500N	Z4R-400N	Z4D-100N	Z4D-L09N
		M8 connector type	Z4T-2500CN4	Z4R-400CN4	Z4D-100CN4	Z4D-L09CN4
	PNP	Cable type	Z4T-2500P	Z4R-400P	Z4D-100P	Z4D-L09P
		M8 connector type	Z4T-2500CP4	Z4R-400CP4	Z4D-100CP4	Z4D-L09CP4
Sensing distance			25 m	0.01 to 4 m[*1]	0 to 1 m[*2]	10 to 90 mm[*3]
Light source			4-element red LED, Wavelength: 632 nm			
Spot size			Approx. ø1800 mm (At distance of 25 m)	Approx. ø280 mm (At distance of 4 m)	Approx. ø75 mm (At distance of 1 m)	Approx. ø8 mm (At distance of 90 mm)
Response time			500 µs or less			
Hysteresis			-	-	20 % Max.	10 % Max.
Sensitivity adjustment			1-turn potentiometer or via IO-Link network			
Indicators			Output indicator: Orange, Stability indicator: Green (No indicators equipped on through-beam type emitter)			
Control output			NPN/PNP Open collector, Max. 100 mA / 30 VDC, Residual voltage 1.8 V Max.			
Output mode			Light ON / Dark ON by selection switch or via IO-Link network			
IO-Link specification			Ver. 1.1, Transmission rate: COM 3 (230.4 kbps), Process data length: 4 byte, Min. Cycle time: 0.5 ms			
Timer function			ON delay / OFF delay /One-shot only via IO-Link network			
Cable connection			Cable: 2m, ø3.8 mm / Connector: M8 4-pin			
Protection circuit			Reverse connection protection, Overcurrent protection			
Rating	Supply voltage		10 to 30 VDC, including 10% ripple (p-p)			
	Current consumption[*4]		Emitter: 14 mA or less Receiver: 20 mA or less	20 mA or less	20 mA or less	20 mA or less
Applicable regulations	EMC		EMC directive (2014/30/EU)			
	RoHS		RoHS directive (2011/65/EU), China RoHS (Directive 32)			
Applicable standards			EN 60947-5-2			
NRTL Certification[*5]			UL Recognized Components, Proximity Switch Certified for US and Canada			
Environmental resistance	Ambient temperature		−25 to +55°C (No freezing)			
	Ambient humidity		35 to 85% RH (No condensation)			
	Ambient illuminance		Sunlight: 50.000 lx or less, Incandescent lamp: 5,000 lx or less			
	Vibration resistance		10 to 55 Hz, double amplitude 1.5 mm, 2 hours in each of the XY and Z directions			
	Shock resistance		1000 m/s² (Approx. 100 G), 3 times in each of the XY and Z directions			
	Protection category		IP67			
Material			Housing: ABS, Front cover: PMMA			
Weight without cable			Approx. 10 g			
Included accessories			Instruction manual			

*1. With the V-61 reflector   *2. Using a 200 x 200 mm white sheet paper   *3. Using a 100 x 100 mm white sheet paper   *4. Not including control output load current
*5 . Under UL certification, use input voltages up to 24 VDC, 40 mA and ambient temperature up to 40°C.
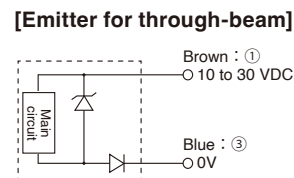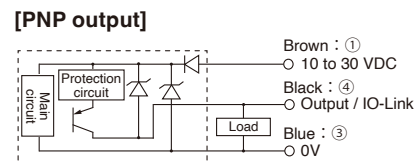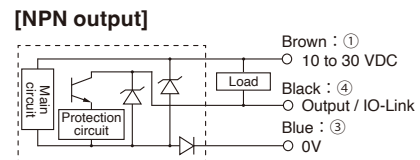
Dimensions

(Unit: mm)

[Cable type]

Output indicator (orange)
Stability Indicator (green)
Distance adjustment
Light ON / Dark ON selection switch

11
20
3
2-M3 (Tightening torque: 0.5 N·m or less)
31
25.4
B A
2.8
ø3.8 3-wire × 0.2mm² (2-wire × 0.2mm² for through-beam type emitter)

[Connector type]

10.3
5

Type	A:Emitter optical axis	B:Receiver optical axis
Through-beam	-	19(Emitter & Receiver)
Retro reflective	11.9	19
Diffuse reflective		19
Limited diffuse reflective		18.8

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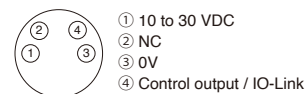**Before use please read an instruction manual.**

● Specifications are subject to change without prior notice.

Circuit diagram

[NPN output]

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

[PNP output]

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

[Emitter for through-beam]

Brown : ①
10 to 30 VDC
Main circuit
Blue : ③
0V

[M8 connector pin layout]

① 10 to 30 VDC
② NC
③ 0V
④ Control output / IO-Link