

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.

Specifications

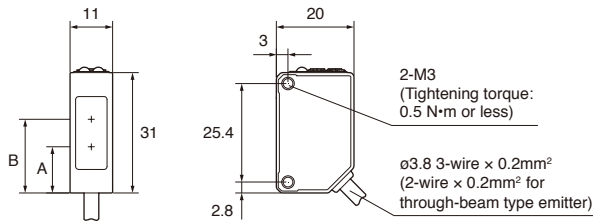
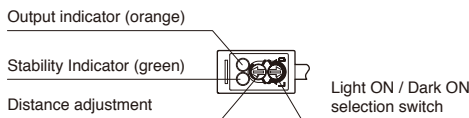
Model		Through-beam	Retro reflective	Diffuse reflective	Limited diffuse reflective
NPN	Cable type	Z4T-2500N	Z4R-400N	Z4D-100N	Z4D-L09N
	M8 connector type	Z4T-2500CN4	Z4R-400CN4	Z4D-100CN4	Z4D-L09CN4
PNP	Cable type	Z4T-2500P	Z4R-400P	Z4D-100P	Z4D-L09P
	M8 connector type	Z4T-2500CP4	Z4R-400CP4	Z4D-100CP4	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: 1.0 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		UL Recognized Component (Under development)			
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/s ² (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

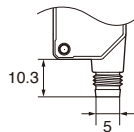
Dimensions

(Unit: mm)

[Cable type]



[Connector type]



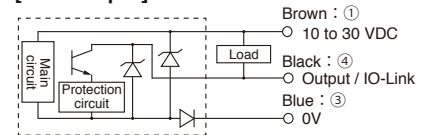
Type	A:Emitter optical axis	B:Receiver optical axis
Through-beam	-	19(Emitter & Receiver)
Retro reflective	11.9	19
Diffuse reflective		19
Limited diffuse reflective		18.8

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.

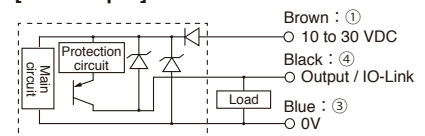
• Specifications are subject to change without prior notice.

Circuit diagram

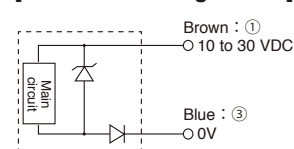
[NPN output]



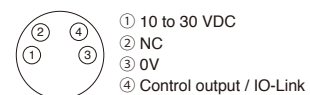
[PNP output]



[Emitter for through-beam]



[M8 connector pin layout]



OPTEX FA CO., LTD. www.optex-fa.com

Japan OPTEX FA Co., Ltd. Kyoto +81-75-325-1314 faovs@optex-fa.com
China Guangzhou OPTEX Co., Ltd. Guangzhou, Guangdong +86-20-39922102 sales_ofc@optex-fa.cn
Thailand OPTEX (Thailand) Co., Ltd. Bangkok +66-2-168-3162 thailand@optex-fa.com
U.S.A. OPTEX FA Inc. Schaumburg, Illinois +1-847-466-1149 off-sales@optexfa-america.com