

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.

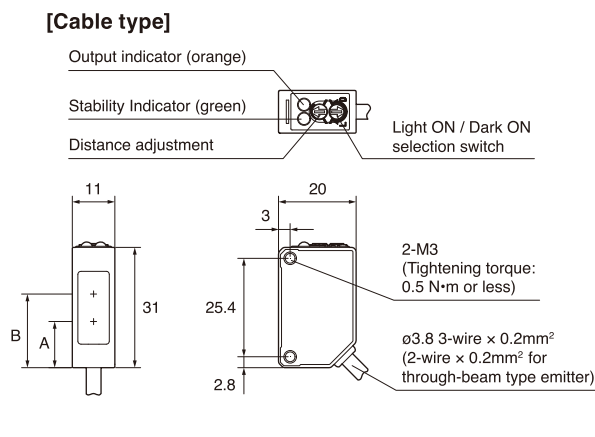
Specifications

Model	NPN	Cable type	Through-beam	Retro reflective	Diffuse reflective	Limited diffuse reflective
		M8 connector type	Z4T-2500N	Z4R-400N	Z4D-100N	Z4D-L09N
	PNP	Cable type	Z4T-2500CN4	Z4R-400CN4	Z4D-100CN4	Z4D-L09CN4
		M8 connector 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/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			

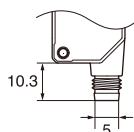
*1. With the V-61 reflector *2. Using a 200 x 200 mm white sheet paper *3. Using a 100 x 100 mm white sheet paper *4. Not including control output load current
*5. Under UL certification, use input voltages up to 24 VDC, 40 mA and ambient temperature up to 40°C.

Dimensions

(Unit: mm)



[Connector type]

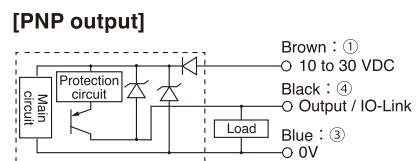
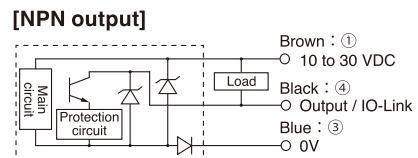


Type	A:Emitter optical axis	B:Receiver optical axis
Through-beam	-	19(Emitter & Receiver)
Retro reflective	11.9	19
Diffuse reflective		19
Limited diffuse reflective		18.8

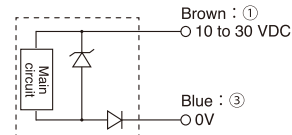
Never use these products as sensing devices for personnel protection.
Doing so could lead to serious injury or death.
Before use please read an instruction manual.

• Specifications are subject to change without prior notice.

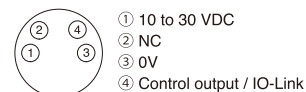
Circuit diagram



[Emitter for through-beam]



[M8 connector pin layout]



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