Photoelectric Sensor

F/ASTUS

Z3 SERIES

- Z3T-2500 □□
- Z3R- Q200 □□
- Z3D- 100 □□
- Z3D- L09 □□
- Z3R- 400 □□

INSTRUCTION MANUAL

- I Please confirm if specifications fulfill your needs.
- I Please read this manual carefully before the use and keep this for future reference.

Safety Precautions



- •It is dangerous to wire or attach/remove the connector with the power on. Make sure to turn off the power before operation.
- Make sure to use the product with the protective cover attached and closed.
- Installing in the following places may result in malfunction:
 1. A dusty or steamy place
 2. A place generating corrosive gas
 3. A place directly receiving scattering water or oil.
 4. A place suff ered from heavy vibration or impact.
- ●The product is not designed for outdoor use.
- Do not use the sensor in transient state after power on (approx. 100 ms).
- Do not wire with the high voltage cable or the power line.
 Failure to do this will cause malfunction by induction or
- The sensor performance or digital display values may depend on the individual units or the condition of detected product.
- This product is not an explosion-proof construction.

 Do not use the product under fl ammable, explosive gas or liquid environment.
- Do not use the product in water.
- Do not disassemble, repair, or convert the product.
 Failure to do this may cause failure, fi re, or electric shock.
- Operate within the rated range.

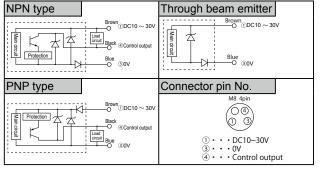
This product cannot be used as a safety device to protect human body.

SPECIFICATION

		Through	Retro ref.	Diffused ref.	Transparent objects	Limited range	
	Cable type	Z3T-2500(N/P)	Z3R-400(N/P)	Z3D-100(N/P)	Z3R-Q200(N/P)	Z3D-L09(N/P)	
	Connector type	Z3T-2500C(N4/P4)	Z3R-400C(N4/P4)	Z3D-100C(N4/P4)	Z3R-Q200C(N4/P4)	Z3D-L09C(N4/P4)	
	Nominal distance*1	25m	0.01~4m	0~1m	0.01~2m	10~90mm	
Light Source		Red LED					
Spot size		φ 1800mm/25 m	φ 280mm /4 m	φ 75mm/1200mm	φ 140mm/2 m	ϕ 8mm /90mm	
	Supply voltage	DC10 ~ 30V Including ripple (P-P) 10%					
C	urrent consumption	Sender: 20mA max	20mA max	25mA max	20mA max		
		Receiver: 15mA max.	ZUITA ITIAX				
	Response time 500µs max						
	Control output	NPN/PNP Open collector 100mA max. / DC30V max. (Residual voltage 1.8V max.)			e 1.8V max.)		
	Operation mode Light ON, Dark ON Selectable by switch						
Se	ensitivity adjustment	nsitivity adjustment 1 turn volume					
	Indicator	Output indicator (orange LED) / Stable indicator (green LED)					
Am	bient temp. / humidity	temp. $/$ humidity $-25 \sim 55^{\circ}\text{C}$ /35 $\sim 85\%\text{RH}$ (No condensation or freezing)					
Sto	rage temp. / humidity	ge temp. / humidity $-40 \sim 70^{\circ}\text{C}/35 \sim 95\%\text{RH}$ (No condensation or freezing)					
prof	protection category/material IP67 / Case : ABS , Front Cover : PMMA						

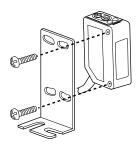
- Sensing distance showed in above table is typical value in each type.
 - Retro ref. /Transparent objects types: Reflector V-61(option)
 Diffused ref. type: Whtie plate 200x200mm
 - · Limited range type: White plate 100x100mm

INPUT AND OUTPUT CIRCUIT DIAGRAM



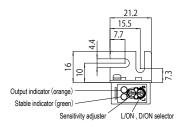
Attachment

- Tightening torque need to be under 0.5N•m.
- Use M3 screw to mount.

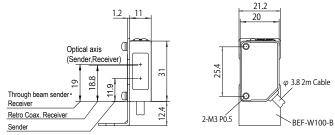


DIMENSIONS

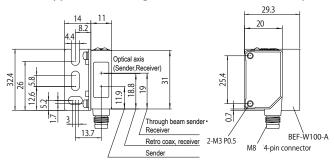
Brackets for installation are optional and not included in this kit. (Not standard accessory and please purchase if needed.)



Cable type: When using brackets of BEF-W100-B (option)



Connector type: When using brackets of BEF-W100-A (option)



Adjusting the potentiometer

	. ,	
(1	^ <u>\</u>	Set the detectable object at the detection position and turn the potentiometer from MIN toward MAX until the output indicator(orange) light up. Call it position A.
(2	Ø B B	Remove detectable object and turn the potentiometer from MAX toward MIN position where the output indicator(orange) is extinguished. Call it position B.
(3	A Ç B	Point C midway between A and B is the optimum sensitivity position. The position A and B may reverse by types and detecting situation .

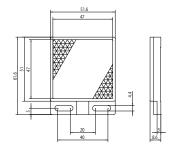
Reflectors (option)

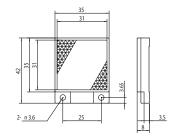
For Retro Reflective use only

Please confirm appropriate type considering sensing distance and conditions to use. Reflectors are optional and not included in this kit.

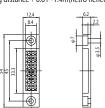
(Not standard accessory and please purchase if needed.)

●Standard Type Type: V-61 Sensing distance: 0.01~4m(Retro Reflective Type) ●Small reflector Type: V-42 Sensing distance: 0.01~2.4m(Retro Reflective Type)





●Small reflector Type: P-45A Sensing distance: 0.01~1.4m(Retro Reflective Type)



Manufactured and sold by :

OPTEX FA CO.,LTD.

600-8815 Kyoto, Shimogyo, Awata Chudoji 91, Japan

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Website: http://www.optex-fa.com

Photoelectric Sensor



Z SERIES

· ZT- 1200 [
· ZR- 350 [
· ZD- 70 [
· ZD- L09 [
· ZD- W20 [
· ZR- Q200 [
· ZR- X250 [
· ZR-QX200 [
· BGS-Z	

INSTRUCTION MANUAL

- Confirm if the item meets your needs.
- Before the use, you should first thoroughly read this manual and operate correctly as
- You should keep this manual at hand for proper

Carefully read and understand the safety precautions before operation. The important information is provided to protect your health and property. Do not apply any other installing or operating procedure other than that

Safety Precautions

- CAUTION

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 Do not wire with the high voltage cable or the power line.

 - line.
 Failure to do this will cause malfunction by induction or damage.
 The sensor performance or digital display values may depend on the individual units or the condition of detected product.

 - ●This product is not an explosion-proof construction. Do not use the product under flammable, explosive gas or liquid environment.
 ●Do not use the product in water.
 ●Do not disassemble, repair, or convert the product. Failure to do this may cause failure, fire, or electric stock.
 - Operate within the rated range.

This product cannot be used as a safety device to protect human body.

SPECIFICATION

	Through beam		Retro ref.	Diffused ref.	Limited range	Wide angle(divergent)		
Cable type	ZT-1200 (N,P) (D) (-B)	ZT-1200 (N,P) IR	ZR-350 (N,P) (D) (-B)	ZD-70 (N,P) (-B)	ZD-L09 (N,P) (-B)	ZD-W20(N,P)		
Connector type	ZT-1200C (N, P) (D) (-B)	ZT-1200C(N,P) IR	ZR-350C(N,P)(D)(-B)	ZD-70C(N,P)(-B)	ZD-L09C(N,P)(-B)	ZD-W2OC(N,P)		
Detecting distance	ting distance 12m		0~3.5m(V-61)	0~70cm	10~90mm	1~200mm*1		
Light Source	Red LED IR LED		Red LED					
Spot size	φ1.5m/	at 12m	φ350mm/at 3.5m	φ100mm/at 700mm	φ12mm/at 90mm	φ30mm/at 50mm		
Supply voltage			DC10~30V Including ripple (P-P) 10%					
Current consumption	Sender : 20mA max.		20mA max.					
Current consumption	Receiver :	15mA max.		ZUIIIA	iliax .			
Response time	$500\mu\mathrm{s}$ max.							
Control output	NPN/PNP Open collector 100mA max./DC30V							
Operation mode	Light ON, Dark ON Selectable by switch or Dark ON fixed("-D"type)							
Sensitivity adjustment	1 turn volume/Not equippend("-D"type)							
Indicator	Output indicator(orange LED)/Stable indicator(green LED)							
Ambient temp./humidity	−25~55°C / 35~85%RH							
protection category/material	ny/material IP67 / Case: ABS (glass included) Front cover, Lens: PMMA							

	Transparent objects	Retro Coax.	Retro Coax. Transparent	BO	GS	
Cable type	ZR-Q200 (N,P) (-B)	ZR-X250 (N,P)	ZR-QX200(N,P)	BGS-Z10(N,P)	BGS-Z30 (N,P)	
Connector type	ZR-Q200C (N,P) (-B)	ZR-X250C (N4, N3, P4, P3)	ZR-QX200C (N4, N3, P4, P3)	BGS-Z10C(N,P)	BGS-Z30C(N,P)	
Detecting distance	0.01~2m(V-61)	0~2.5m(V-61)	0~2m(P250F)	5~100mm*2	10~300mm*2	
Light Source	Red LED					
Spot size	φ300mm/at 2m	φ60mm/at 2m		φ10mm/at 100mm	φ30mm/at 300mm	
Supply voltage	DC10~30V Including ripple (P-P) 10%					
Current consumption		20mA max.		30mA max.		
Response time	500 μs max.	250 μs max.	500μs max.			
Control output	· · · · · · · · · · · · · · · · · · ·					
Operation mode						
Sensitivity adjustment		1 turn volume		4 turn(endless)		
Indicator	Output indicator(orange LED):	Stable indicator(green LED)	Output indicator(orange LED)	ED) Output indicator(orange LED)/Stable indicator(green LED)		
Ambient temp./humidity	−25~55°C / 35~85%RH					
protection category/material	IP67 / Case: ABS (glass included) Front cover, Lens: PMMA					

'D' in the type Sensitivity adjustor is not equipped and dark on fixed.

'-B' in the type : Without accessories (bracket, reflector)

'N4' 'P4' is 4pin type. 'N3' 'P3' is 3pin type

White90% 250 × 200mm

White90% 100×100mm

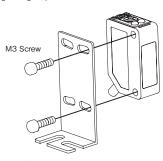
INPUT AND OUTPUT CIRCUIT DIAGRAMS

NPN type Through beam emitter Brown © DC10 ~30V Load circuit Black Control outpu PNP type Connector pin No. Brown © DC10 ~30V Black @ Control output

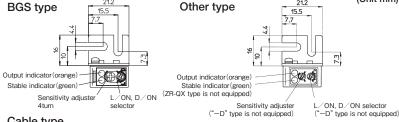
(Unit mm)

Attachment ____

Tightening torque need to be under 0.5N·m.



DIMENSIONS



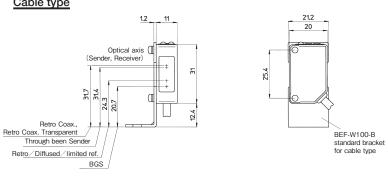
Adjusting the potentiometer

1	A S	①Set the detectable object at the detection position and turn the potentiometer from MIN toward MAX until the output indicator(orange) light up. Call it position A.
2	 B B	②Remove detectable object and turn the potentiometer from MAX toward MIN position where the output indicator(orange) is extinguished. Call it position B.
3	A C B	③Point C midway between A and B is the optimum sensitivity position. The position A and B may reverse by types and detecting situation.

Cable type

Connector type

32.4 26 5.8

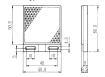


Reflectors =

3.5m : ZR-types

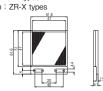
●Type: V-61 Standard for Retro Types except ZR-QX200.

2.5m: ZR-X types



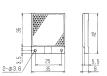
●Type: V-42 Optional reflector for all except ZR-QX200

2.0m : ZR-types 1.5m : ZR-X types



●Type: R250F Standard for ZR-QX200.

2.0m : ZR-QX200 only



●Type: P45 Optional reflector for all except ZR-QX200

1.2m : ZR-types 0.8m : ZR-X types



Manufactured and sold by:



600-8815 Kyoto, Shimogyo, Awata Chudoji 93, Japan TEL.+81-(0)75-325-2920 FAX.+81-(0)75-325-2921

! Must not use this item as safety equipment for the purpose of human body protection.

Optical axis

11.9

10.3

19.3

29.3

BFF-W100-A Standard bracket for connector type

20

25.4

0.7

Retro Coax, Transparent

Retro Coax.

Through been Sender Retro / Diffused / limited ref.

- Specifications and equipment are subject to change without any obligations on the part of manufacture.
- For more information, questions and comments regarding products, please contact us below.

8.2 4.4

13.7