OPTEX FA

Photoelectric Sensor

D SERIES Laser type

- DT- 4000□□(E)
- DR- 500□□(E)
- BGS-DL10□□(E)
- BGS-DL30□□(E)
- BGS-DL70□□(E)

INSTRUCTION MANUAL

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

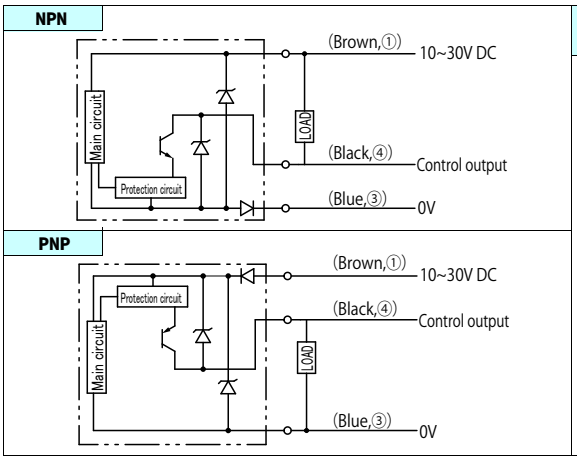
Specifications

Model	Through beam type	Retro reflection type	BGS type		
			Accurate type	Longer type	
Cable type	DT-4000 (N,P)-(E)	DR-500 (N,P)-(E)	BGS-DL10(N,P)-(E)	BGS-DL30(N,P)-(E)	BGS-DL70(N,P)-(E)
M8 connector type	DT-4000C (N,P)-(E)	DR-500C (N,P)-(E)	BGS-DL10C (N,P)-(E)	BGS-DL30C (N,P)-(E)	BGS-DL70C (N,P)-(E)
Setting range	40 m	5m *1	40～100mm	100～300mm	100～700mm
Supply voltage	DC10 ～ 30V including 10% ripple (P-P)				
Current consumption	40mA max.	30mA max.	35mA max.		
Response time	0.5ms max.		0.7ms max.		
Repeat accuracy *2	0.5mm/20m	0.3mm/5m	0.2mm/100mm	0.2mm/300mm	0.3mm/400mm
Light source	Red Laser diode 650nm CLASS 2 (Ⅱ)				
	Max. 2mW				Max. 3mW
Indicator	Receiver : Output indicator (Orange) Source pilot lamp (Green) Emitter : Laser emitter indication (Green)	Output indicator (Orange LED) , Laser emitter indication (Green LED)			
Control output	NPN/PNP open collector DC30V 100mA max.				
Operation mode	Light ON / Dark ON Switchable				
Sensitivity adjustment	1-turn volume		4-turn volume		
Ambient tem/ humid	-10～40℃ / 35～95%				
Protect category/material	IEC Standard IP67 housing : heat-resistant ABS(antibacterial) lens : PC				
Weight	cable type: about 66g / connector type: about 20g				

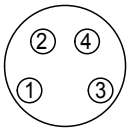
*1 with reflector P250F

*2 in the vertical direction of optical axis (theoretical value)

Input/Output circuit design



Pin configuration

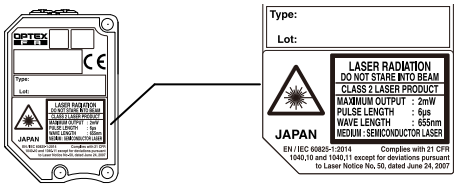


① 10~30V DC
② —
③ 0V
④ Control output

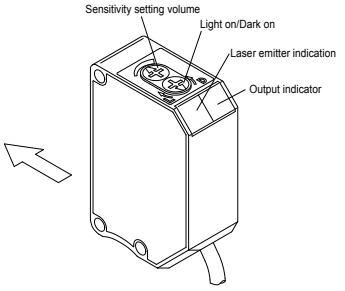
Warnings

Laser beam

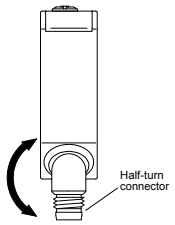
- This item utilizes visible light laser beam and is subject to safety standard class 2(Ⅱ) of JIS C6802 as well as IEC and FDA regulations.
- Must not stare into laser beam directly or reflection by mirror.
- Must not disassemble.
  Automatic stop function of laser emission is not equipped.
- This product have already been registered at CDRH (Center for Devices and Radiological Health).



Parts name



*The tightening torque should be 0.5N・m or less.



*For connector type only

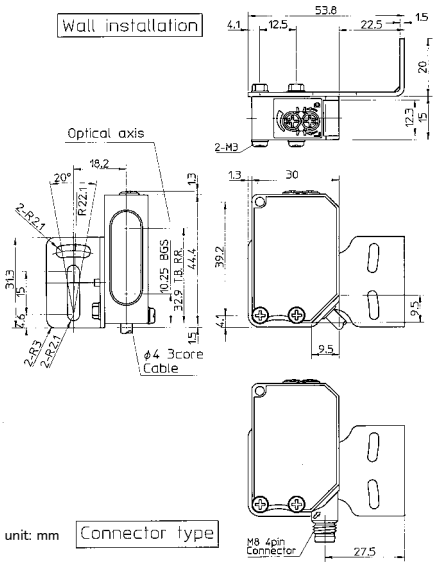
Turn the connector as Black Arrow indicates, otherwise you will damage the connector. The damage will be unrepairable.

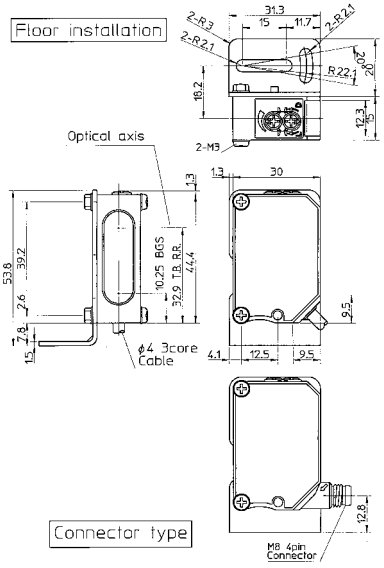
Cautions

- Warm-up period (apprx.100 msec.) must be secured.
- Should avoid parallel wiring with high-voltage wire and/ or power line. Never install in same conduit.
- Avoid dust, oil and water adhesion to sensor forehead to escape light's insulation and refraction.
  In case of adhesion, wipe with dustless cloth or lens cleaner.
- In case of switching regulator, frame ground (FG) must be grounded.
- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- Don't bend the cable when the temperature of the cable or atmosphere is below freezing.

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

Dimensions





- 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.

ⓘ → http://www.optex-fa.com/rohs_cn/

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0805370

OPTEX FA

Photoelectric Sensor

D SERIES Laser type

·BGS-DL10T□□(E)
·BGS-DL25T□□(E)

INSTRUCTION MANUAL

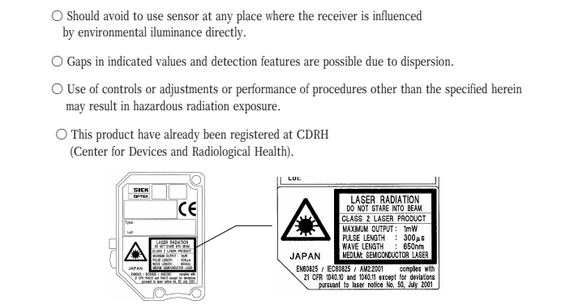
- Confirm if the item meets your needs.
- Before the use, you should first thoroughly read this manual and operate correctly as mentioned.
- You should keep this manual at hand for proper use.

Specification

Type	Accurate type	Longer type
Cable type	BGS-DL10T(N,P)-(E)	BGS-DL25T(N,P)-(E)
M8 connector type	BGS-DL10TC(N,P)-(E)	BGS-DL25TC(N,P)-(E)
Setting range *1	40～100mm	100～250mm
Supply voltage	DC10 ～ 30V including 10% ripple (P-P)	
Current consumption	40mA max. (12V) , 27mA max (24V)	
Response time	1.5ms max. (fixed sensitivity)	
Repeat accuracy *2	0.3mm/100mm	0.4mm/200mm
Timer	Off delay / On delay / One shot delay (1msec increment :0-999msec, 1sec increment for 1-10sec)	
Light source	Red laser diode (wave :650nm Max. 1mW class 2)	
Indicator	Output indicator (Orange LED), Laser emitter indication(Green LED)	
Digital indicator	7 segment, 3 digits Red LED (function indicator, 0～999 distance index)	
Control output	NPN/PNP open collector DC30V 100mA max.	
Operation mode	Light ON/ Dark ON selectable	
Scanning range adjustment	Teaching /Manual setting	
Ambient temp/ humid	-10～40°C / 35～85%	
Protection category/ material	IEC standard IP67 housing : heat-resistant ABS(antibacterial) lens : PC button : TEEE	
Weight	cable type: about 68g / connector type: about 20g	

*1 100x100mm gray paper (reflectance 90%) *2 in the direction of optical axis

Input/ Output circuit design



Pin configuration

Parts name

∗ For connector type only

Turn the connector as Black Arrow indicates, otherwise you will damage the connector. The damage will be unrepairable.

Warnings

Laser beam

- ○ This item utilizes visible light laser beam and is subject to safety standard class 2(II) of JIS C6802 as well as IEC and FDA regulations.
- ○ Must not stare into laser beam directly or reflection by mirror.
- ○ Must not disassemble. Automation stop function of laser emission is not equipped.

Digital indicator

- ○ The numerical display is given in non-linear, and mean just relative values.
- ○ 999 or 000 appears in case background or objects are out of scanning range.
- ○ The far sensor is positioned to object, the bigger numerical value is.

Cautions

- ○ Warm-up period (approx. 100 msec) must be secured.
- ○ Should avoid to use sensor at any place where the receiver is influenced by environmental iluminance directly.
- ○ Gaps in indicated values and detection features are possible due to dispersion.
- ○ Use of controls or adjustments or performance of procedures other than the specified herein may result in hazardous radiation exposure.
- ○ This product have already been registered at CDRH (Center for Devices and Radiological Health).

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

Setting range and adjustment

BGS teaching

① Choose proper setting (between default functions)

1-point teaching

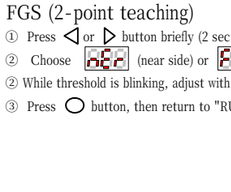
② Push and hold ○ button until 1Pt is shown on digital display panel. (about 2 sec.)

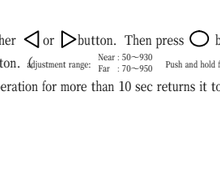
③ Present value appears on digital display panel. Then setting range adjustment is done.

positioning teaching

② Push and hold ○ button until PoS is shown on digital display panel. (about 2 sec.)

③ Present value appears on digital display panel. Then setting range adjustment is done.





FGS teaching

① Choose proper setting (between default functions)

1-point teaching

② Push and hold ○ button on background until 1Pt appears . (about 2 sec.)

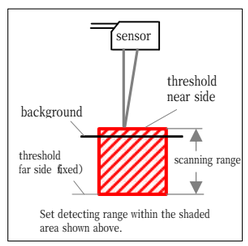
③ Present value appears on digital display panel. Then scanning range adjustment is done.

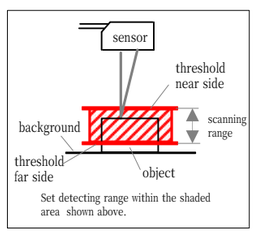
2-point teaching

② Push and hold ○ button on background until 2Pt appears. (first point: about 2 sec.)

③ After blinking 2Pt on digital display panel, push ○ button on object. (second point)

④ Present value appears on digital display panel. Then scanning range adjustment is done.





Manual setting

BGS/FGS(1-point teaching)

① Press ◁ or ▷ briefly (2 sec. Max). Present value of threshold appears on digital display panel.

② While threshold is blinking, adjust with either ◁ or ▷ button. (Adjustment range: BGS : 50～950 FGS : 50～930 Push and hold for fast-forwarding.)

③ Press ○ button, then return to "RUN". Also no button operation for more than 10 sec return to "RUN".

FGS (2-point teaching)

① Press ◁ or ▷ button briefly (2 sec. Max).

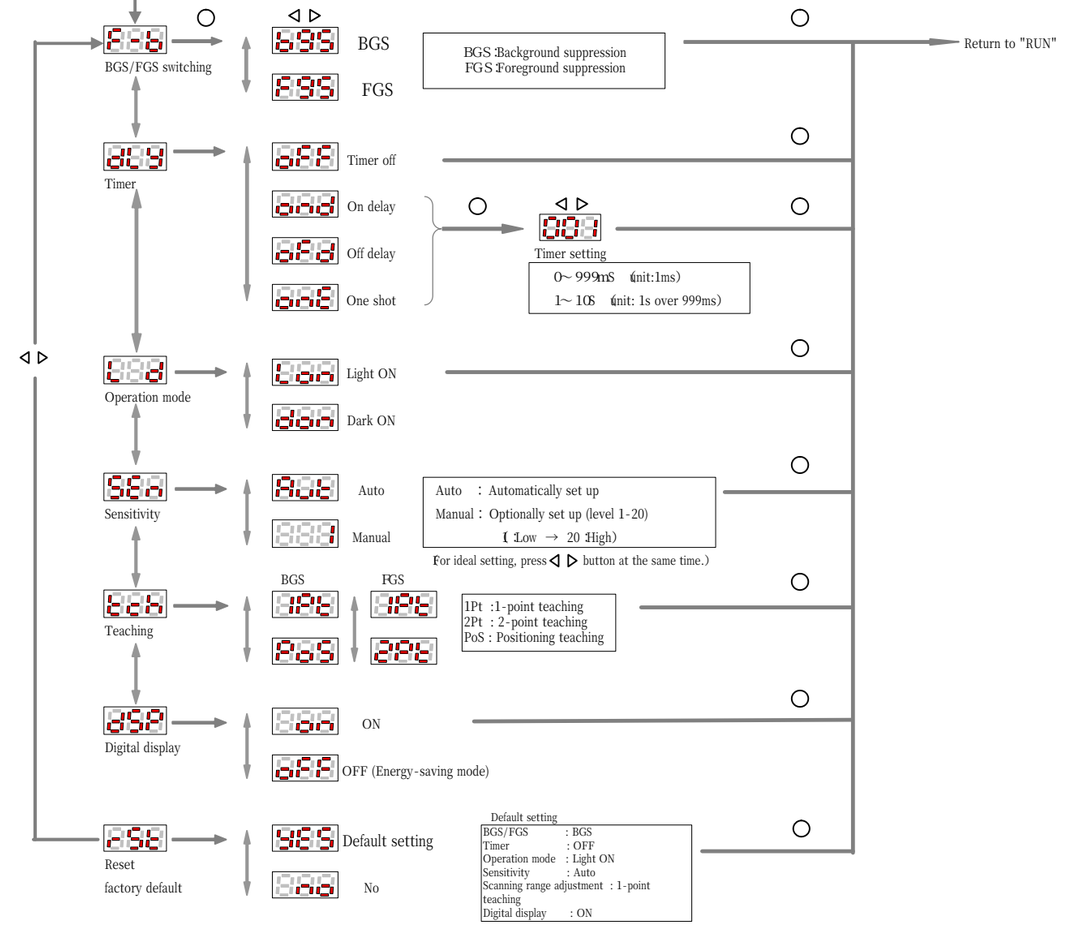
② Choose nEA (near side) or FAr (far side) by either ◁ or ▷button. Then press ○ button.

② While threshold is blinking, adjust with either ◁ or ▷ button. (Adjustment range: Near : 50～930 Far : 70～950 Push and hold for fast-forwarding.)

③ Press ○ button, then return to "RUN". Or no button operation for more than 10 sec returns it to "RUN".

Function to set up

Press ◁ or ▷ button until SEt appears on digital display panel (about 2 sec.). After releasing button, function choice is available.

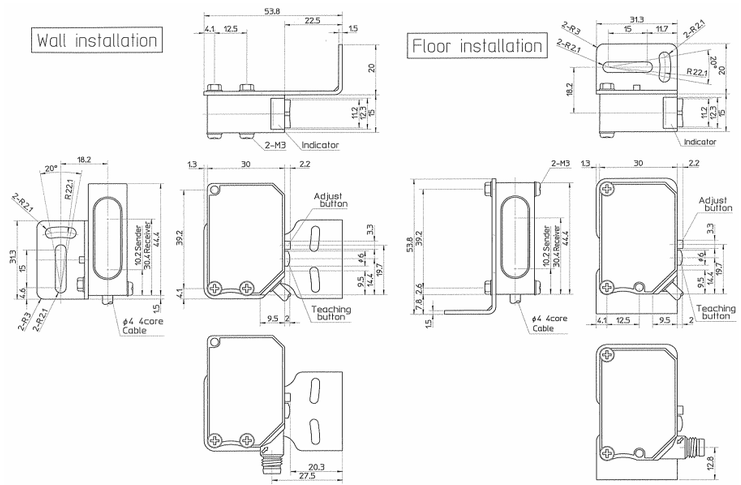


Keylock Push ◁ ▷ button at the same time until LOC appears. Same procedure for unlock. (UnL :unlock)

Push either ◁ or ▷ button for the confirmation of threshold under keylock.

Dimensions

Unit: mm



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