



Photoelectric Sensor D SERIES Laser type

BGS-DL10T (E)
BGS-DL25T (E)

INSTRUCTION MANUAL

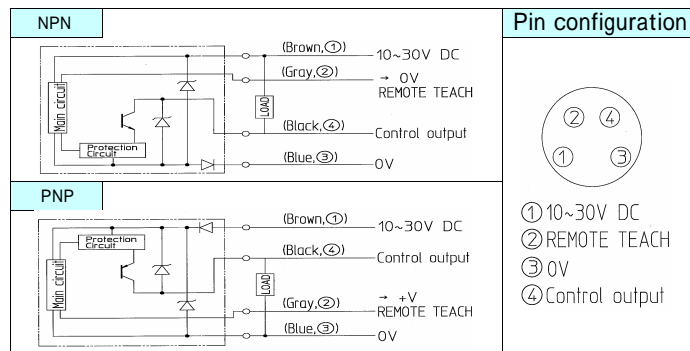
Confirm if the item meets your needs.
Before the use, you should first thoroughly read this manual and operate correctly as mentioned.
You should keep this manual at hand for proper use.

Specification

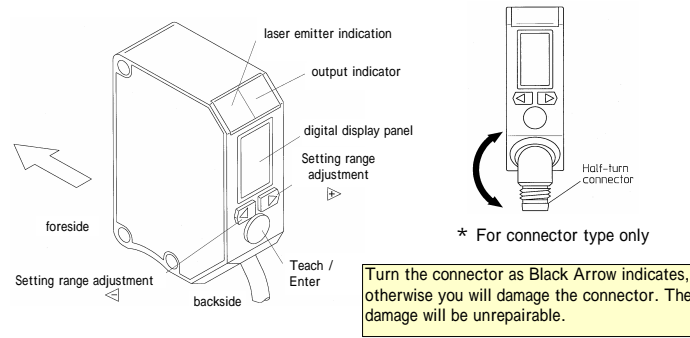
Type	Accurate type	Longer type
Cable type	BGS-DL10T(N,P)-(E)	BGS-DL25T(N,P)-(E)
M8 connector type	BGS-DL10TC(N,P)-(E)	BGS-DL25TC(N,P)-(E)
Setting range *1	40 ~ 100mm	100 ~ 250mm
Supply voltage	DC10 ~ 30V including 10% ripple (P-P)	
Current consumption	40mA max. (12V) , 27mA max (24V)	
Response time	1.5ms 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 / 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



Parts name

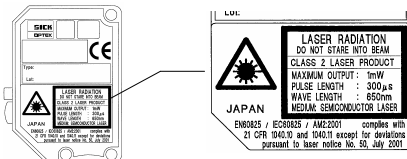


Warnings

- Laser beam**
- This item utilizes visible light laser beam and is subject to safety standard class 2 () 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 illuminance 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.

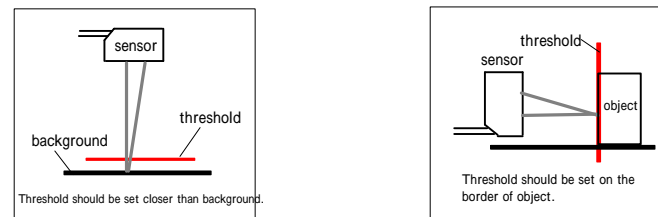
Setting range and adjustment

BGS teaching

Choose proper setting (between default functions)

1-point teaching
Push and hold \bigcirc button until 1Pt is shown on digital display panel. (about 2 sec.)
Present value appears on digital display panel.
Then setting range adjustment is done.

positioning teaching
Push and hold \bigcirc button until PoS is shown on digital display panel. (about 2 sec.)
Present value appears on digital display panel.
Then setting range adjustment is done.

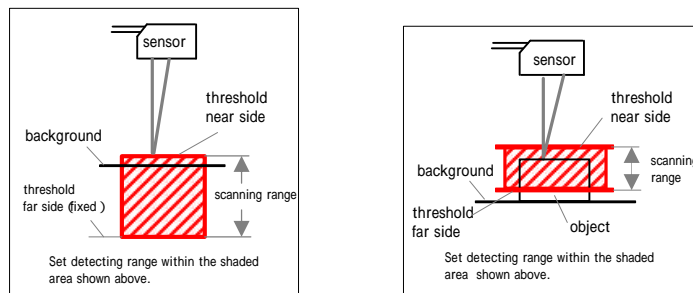


FGS teaching

Choose proper setting (between default functions)

1-point teaching
Push and hold \bigcirc button on background until 1Pt appears. (about 2 sec.)
Present value appears on digital display panel.
Then scanning range adjustment is done.

2-point teaching
Push and hold \bigcirc button on background until 2Pt appears. (first point: about 2 sec.)
After blinking 2Pt on digital display panel, push \bigcirc button on object. (second point)
Present value appears on digital display panel.
Then scanning range adjustment is done.



Manual setting

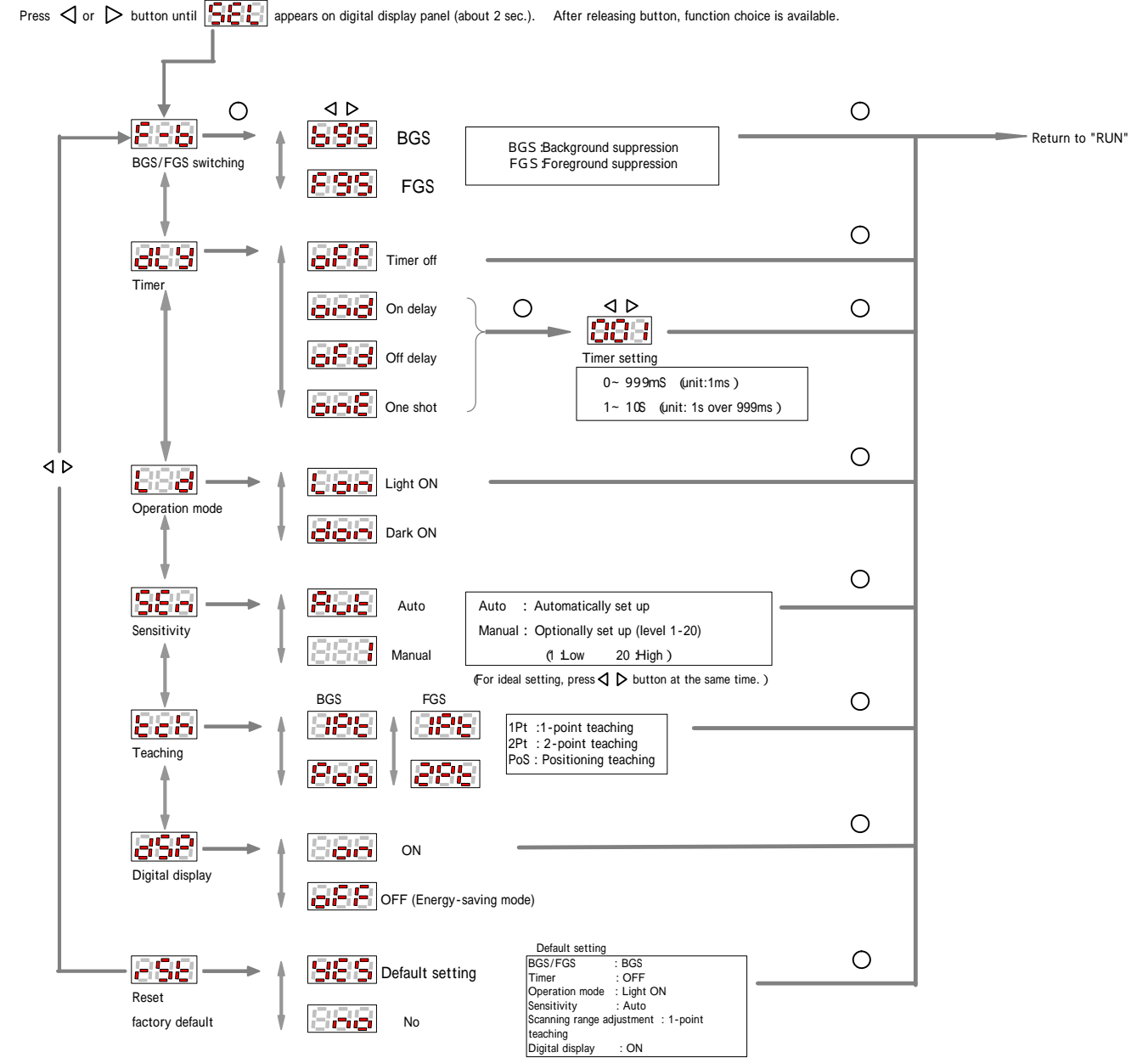
BGS/FGS(1-point teaching)

Press \triangleleft or \triangleright briefly (2 sec. Max). Present value of threshold appears on digital display panel.
While threshold is blinking, adjust with either \triangleleft or \triangleright button. (adjustment range: BGS: 50 ~ 950 FGS: 50 ~ 930 Push and hold for last-forwarding)
Press \bigcirc button, then return to "RUN". Also no button operation for more than 10 sec return to "RUN".

FGS (2-point teaching)

Press \triangleleft or \triangleright button briefly (2 sec. Max).
Choose 1Pt (near side) or 2Pt (far side) by either \triangleleft or \triangleright button. Then press \bigcirc button.
While threshold is blinking, adjust with either \triangleleft or \triangleright button. (adjustment range: Near: 50 ~ 930 Far: 70 ~ 950 Push and hold for last-forwarding)
Press \bigcirc button, then return to "RUN". Or no button operation for more than 10 sec returns it to "RUN".

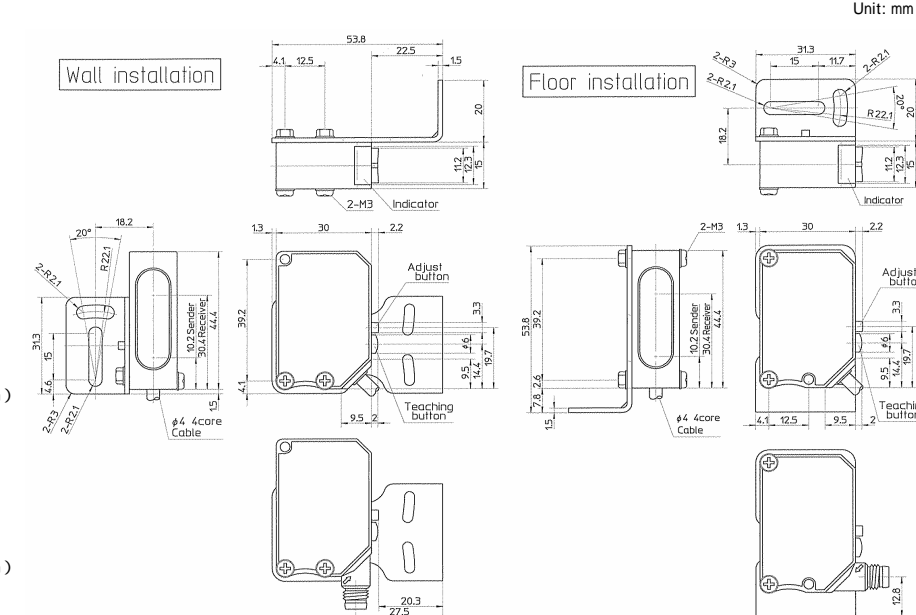
Function to set up



Keylock

Push \triangleleft \triangleright button at the same time until 888 appears. Push either \triangleleft or \triangleright button for the confirmation of threshold under keylock.
Same procedure for unlock. (888 :unlock)

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.

Manufactured and sold by :

OPTEX FA CO., LTD.

607-8085 Kyoto, Yamashina,Takehanadonomaecho 46-1, JAPAN

Tel : +81-(0)75-594-8123

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



Photoelectric Sensor D SERIES Laser type

Transparent type
DR-Q150T
DR-Q400T

INSTRUCTION MANUAL

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this manual and operate correctly as mentioned.
You should keep this manual at hand for the proper use.

Specifications

Type	Accurate type	Longer type
Cable type	DR-Q150T (N,P)-(E)	DR-Q400T (N,P)-(E)
M8 connector type	DR-Q150TC (N,P)-(E)	DR-Q400TC (N,P)-(E)
Scanning range *1	1.5m	4m
Supply voltage	DC10 ~ 30V including 10% ripple (P-P)	
Current consumption	35mA max.	
Response time	0.7ms max.	
Repeat accuracy *2	0.2mm /1.5m	0.3mm / 4m
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. 2mW class 2)	
Indicator	Output indicator (Orange LED), laser emitter indication (Green LED)	
Digital indicator	7 segment, 3 digits (function indicator, 0 ~ 999 Incoming light Q'ty)	
Control output	NPN/PNP open collector DC30V 100mA max.	
Operation mode	Light ON / Dark ON switchable	
Sensitivity setting	Teaching (threshold adjustment)	
Ambient tem/humid	-10 ~ 40 / 35 ~ 95%	
Protection category / material	IEC IP67 housing : heat-resistant ABS(antibacterial) lens : PC button : NBR	
Weight	cable type: about 66g / connector type: about 20g	

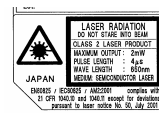
*1 with reflector P250F

*2 in the vertical direction of optical axis

Warnings

Laser

This item utilizes visible light laser beam and is subject to safety standard class 2 () 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).

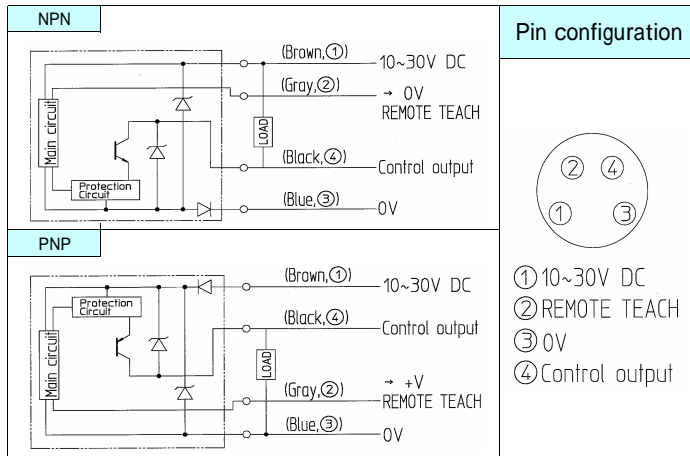


Cautions

Warm-up period (approx. 100 msec) must be secured.
Should avoid parallel wiring with high-voltage wire and/ or power line. Never install in same conduit.
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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

Input/ Output circuit design



Sensitivity setting

Teaching

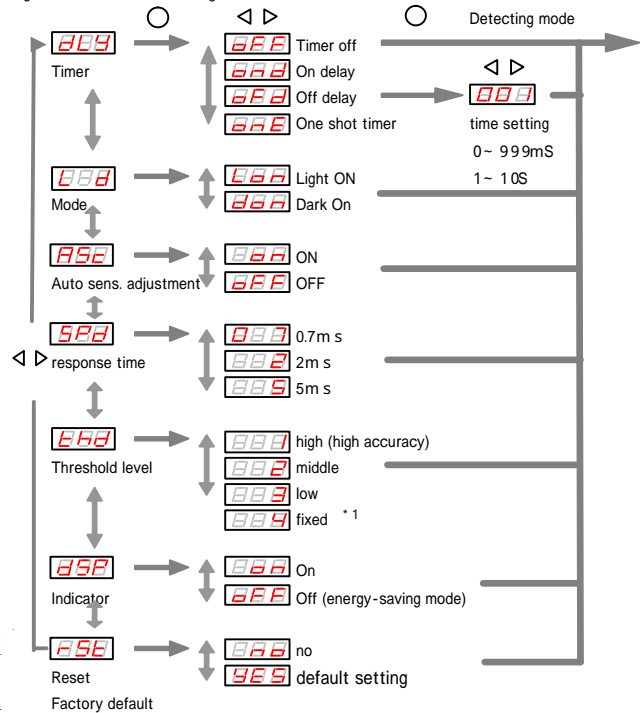
Place sensor and reflector to adjust optical axis.
Push \bigcirc , until ~~1666~~ is indicating. (about 2 sec.)
Setting is completed with indication ~~1000~~ on digital display panel.

Threshold adjustment

Push \triangleleft or \triangleright shortly (2 sec. Max.). Present threshold is blinking on digital display panel.
During threshold blinking, adjust with \triangleleft or \triangleright @adjustment range: 20 ~ 96)
By pushing \bigcirc , go back to detecting mode. Or automatically back to detecting mode in 10 sec with no operation.

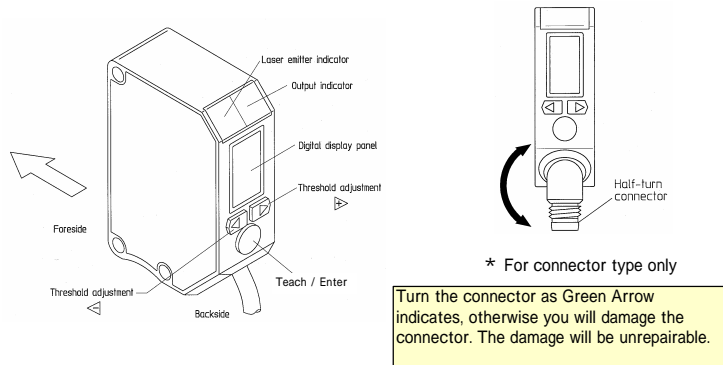
Setting chart

Push \triangleleft or \triangleright until ~~5000~~ is indicating. (more than 2 sec.)
Setting mode starts after releasing button.

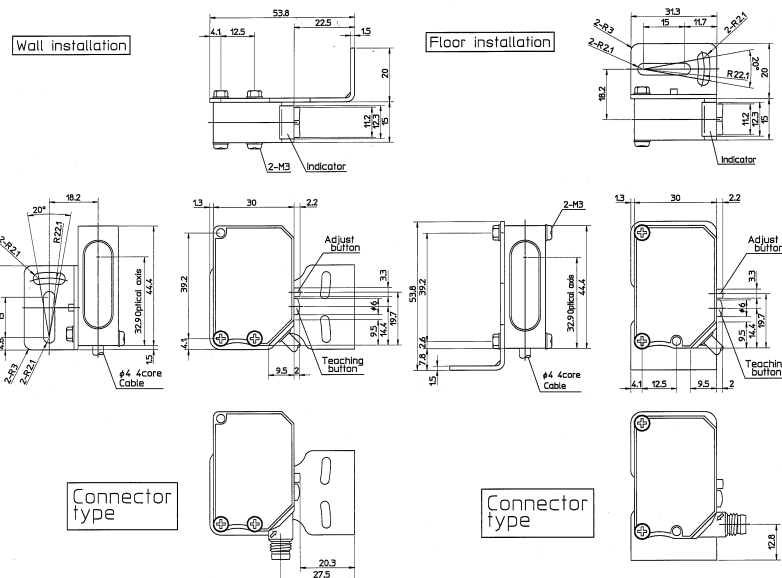


* 1 Manual adjusted threshold level is not reset by teaching.
The range of automatic sensitivity adjustment is limited. ~~1666~~ will blink during operation if it is out of range. When auto sensitivity adjustment function is OFF, no indication will come out.

Parts name



Dimensions



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Photoelectric Sensor
D SERIES Laser type

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

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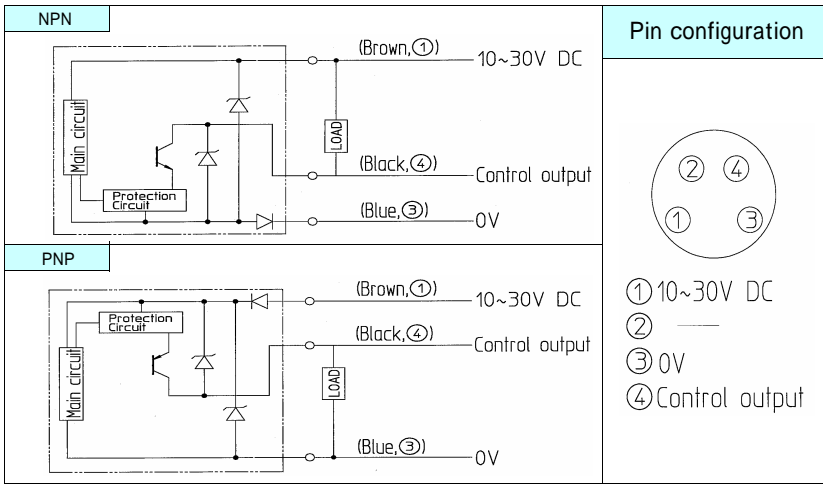
Specifications

Type	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)
M8 connector type	DT-4000C (N,P)-(E)	DR-500C (N,P)-(E)	BGS-DL10C (N,P)-(E)	BGS-DL30C (N,P)-(E)
Setting range	40 m	5m *1	40 ~ 100mm	100 ~ 300mm
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
Light source	Red Laser diode (WL : 650nm Max. 2mW class 2)			
Indicator	Receiver : Output indicator (Orange LED) Source pilot lamp (Green LED)	Output indicator (Orange LED) , Laser emitter indication (Green LED)		
	Emitter : 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			
Ambient tem/ humid	-10 ~ 40 / 35 ~ 95%			
Protect category/material	IEC Standard IP67 housing : heat-resistant ABS(antibacterial) lens : PC button : NBR			
Weight	cable type: about 66g / connector type: about 20g			

*1 with reflector P250F

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

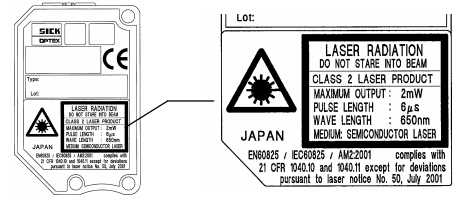
Input/Output circuit design



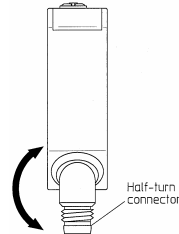
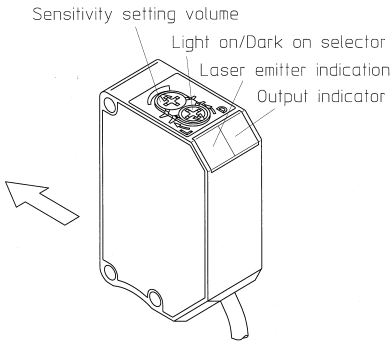
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Parts name



* For connector type only

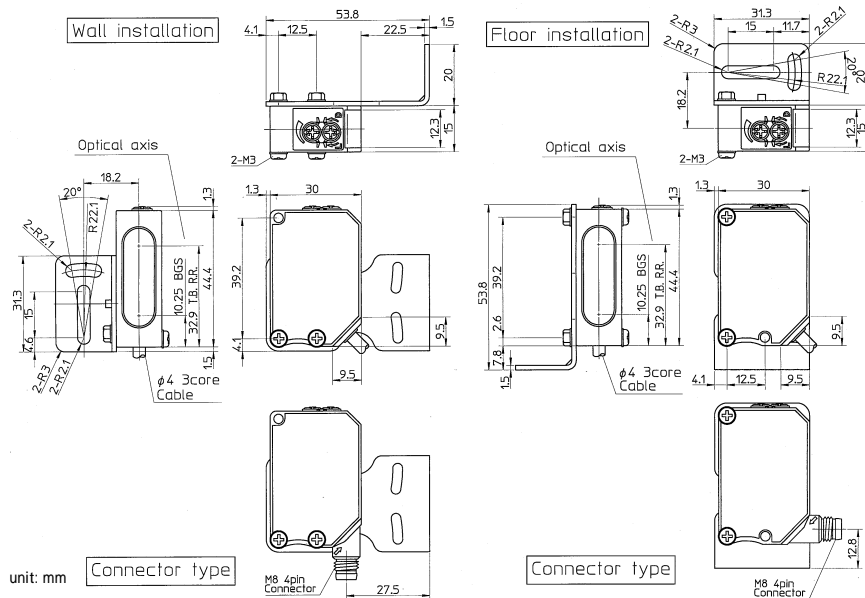
Turn the connector as Black Arrow indicates, otherwise you will damage the connector. The damage will be unrepairable.

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.

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Dimensions



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