

PL-D2B

Distance-settable photo sensor

- IP65 Protective structure (IEC)
- Long detection distance (2 m) and can be applied in various fields.
- Stable detection is possible without influence color & quality of detection object.
- Built in the reverse connection of power protecting circuit and built in the output break protecting circuit
- Distance Setting type and BGS (Background suppression) function.



Suffix code

Model	Code	Description
PL-	D 2 B	Distance-settable photo sensor
Sensing method	D	Limited reflective
Sensing distance	2	2 m
Power supply voltage	B	12 -24 V DC

Specification

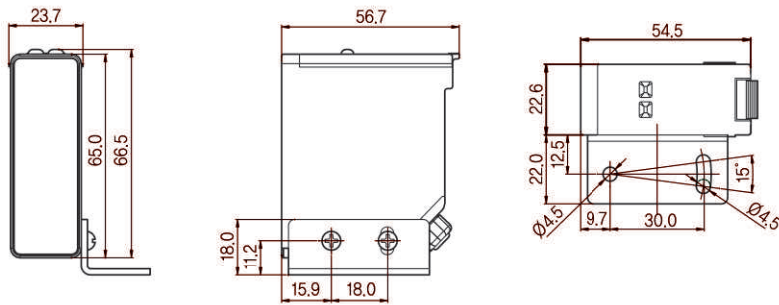
Model	PL - D2B
Sensing method	Distance-settable
Sensing distance	0.2 ~ 2 m
Sensing object	200 X 200 mm White paper with no gloss
Power supply voltage	12 - 24 V DC ±10 %
Current consumption	30 mA max.
Control output	NPN / PNP open collector asynchronously, Load current : 150 mA DC max. (Resistive load) NPN residual voltage : 1 V DC max., PNP residual voltage : 2 V DC max
Operation mode	Light ON / Dark ON ※ Selectable by the mode V/R
Response time	2 ms max.
Hysteresis	Less than 10 % of the sensing distance
Light source(Wave length)	Infrared lightening LED (880 nm)
Receiving part	2 photo diodes
Display	Control out display : Red LED, Stability display : Green LED
Distance setting	Near/Far : Optical distance adjusting volume 5 cycles.
Protective circuit	Power reverse connection protecting circuit and output break protecting circuit
Ambient illumination	Sunlight : 11,000 lx max., Incandescent lamp : 3,000 lx max.
Ambient temperature	Operation : -20 ~ 60 °C, Storage : -25 ~ 70 °C (Without freezing)
Ambient humidity	35 ~ 85 % RH (Without condensation)
Protective structure	IP 65



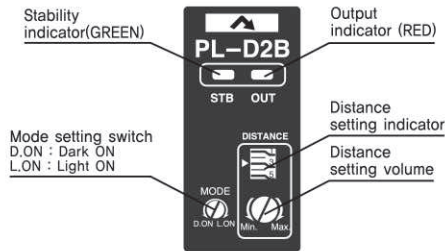
Photo Sensor

Insulation resistance	20 M Ω min. (500 V DC Mega)
Dielectric strength	1000 V AC (50/60 Hz for 1 min)
Vibration resistance	10 – 55 Hz, double amplitude :1.5 mm for 2 hours each in X, Y and Z directions.
Shock resistance	500 % \geq 3 times each in X, Y and Z directions.
Connection method	Cable output type, Number of wires: 4P, Thickness : \varnothing 4 mm, Length 2 m
Material	Case : PC, Lens : PC
Accessory	Bracket, Adjustable driver, bolt, Nut.

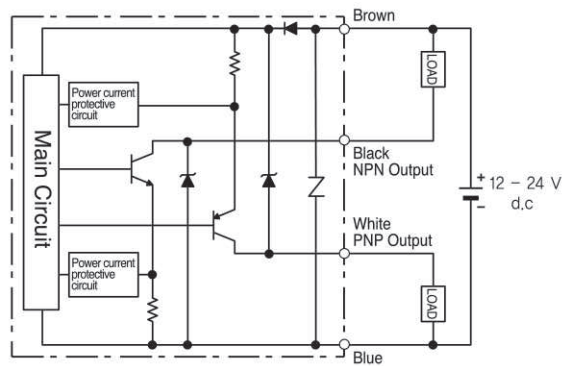
Dimension (Unit : mm)



Name of each part

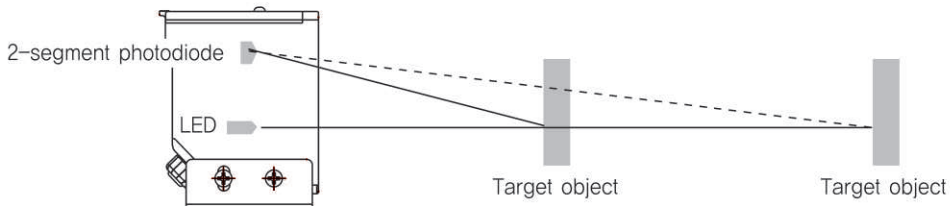


Connection diagram

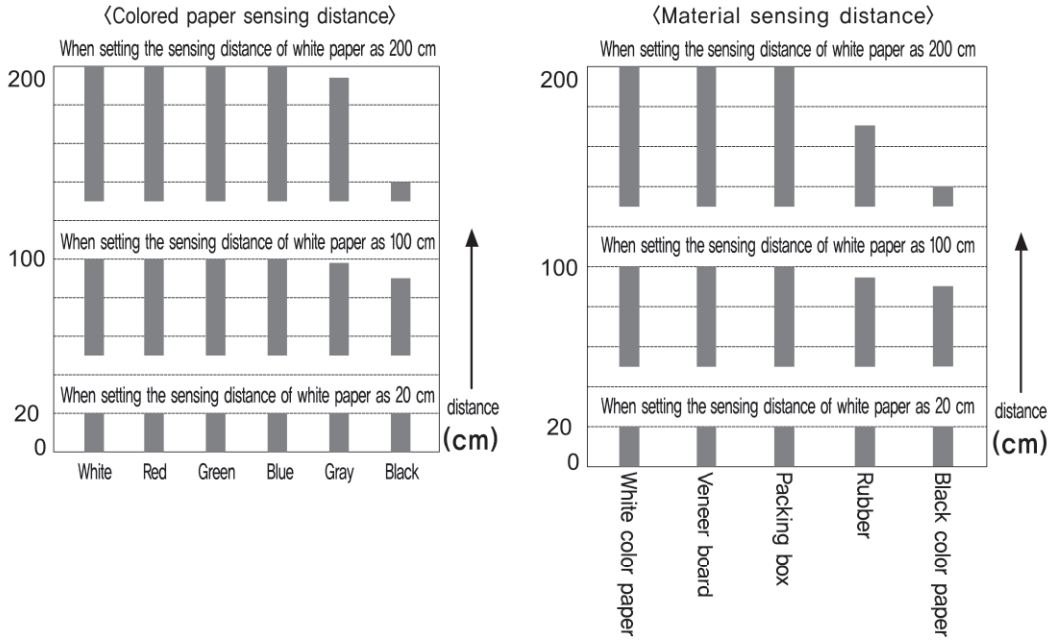


Distance settable photo sensor by 2-segment photodiode

The general reflective type photo sensor detect object by change of the intensity of light. But 2-segment photodiode sensor detect object by change of the receiving light which is changed according to the change of the target object. So it detects object regardless of the object color/ material, reflection of the background.



Characteristic of sensing distance



Operation chart

Stability indicator becomes ON when an amount of light exceed the operation level and becomes 120% (stable L.ON area). It can be used as the environmental change after setup or level down during operation and initial operation check.

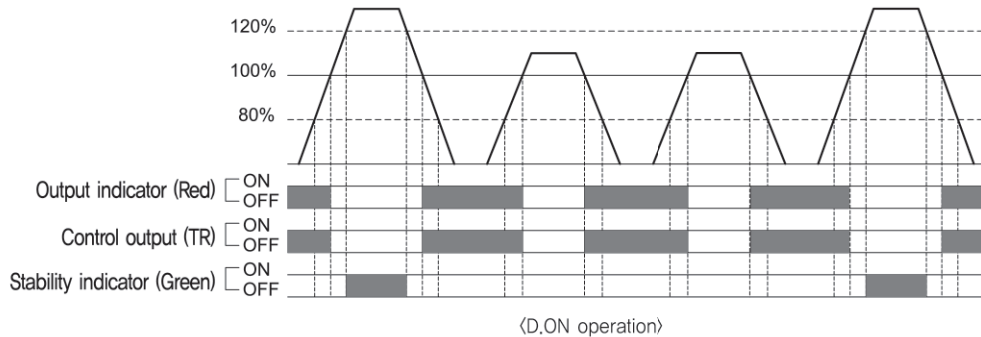
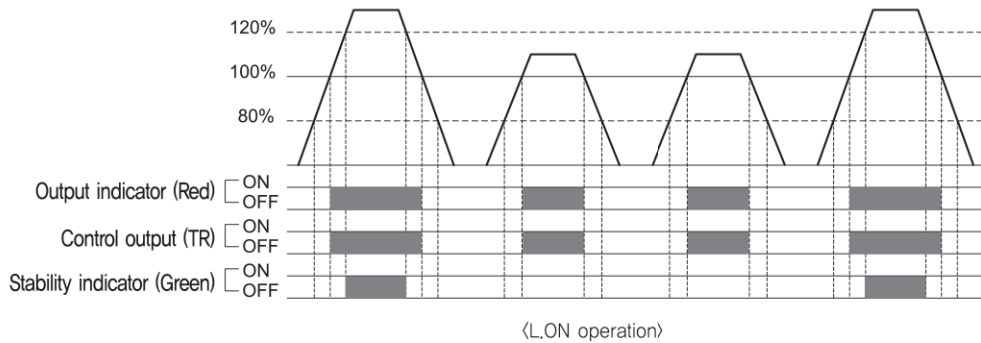


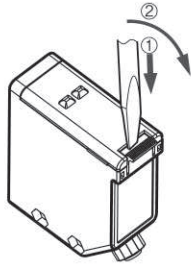
Photo Sensor

How to set the distance

NO	How to set the distance	Setting state	Indicator for indicating the setting distance
1	Remove the sensing object and turn the distance setting volume to Max direction until right before the operation indicator becomes ON. Here, we will refer this position as the position A. If operation indicator does not become ON then we will refer the maximum position as A.		
2	Place the sensing object in the sensing position and check whether the operation indicator and stability indicator become ON. After inspecting such things, turn the setting volume to Min direction until the operation indicator becomes OFF. We will refer this position as the position B.		
3	Set the indicator of distance setting to fall in between A and B by turning the distance setting volume to Max direction and checks whether it is operating properly. Here, if the stability indicator (green) does not become ON even after sensing a certain object then the cause is maybe due to the unstable sensing so please re-check the sensing method.		

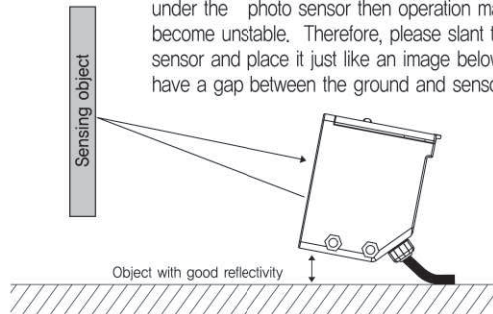
G Photo Sensor

Precautions during installation

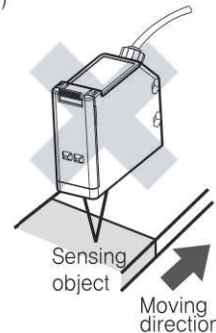
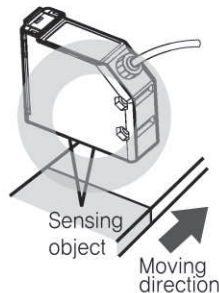
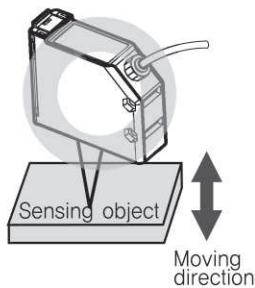


- Please use ⊖ driver as above picture when you detach Top cover from the case.

* If an object with good reflectivity is present under the photo sensor then operation may become unstable. Therefore, please slant the sensor and place it just like an image below or have a gap between the ground and sensor.



- Regarding the installation direction of photo sensor, please consider about the moving direction of sensing object and install it (please refer to an image below)



- Please do not let strong ray light such as sunlight, fluorescent light, incandescent lamp and etc to fall within the directional angle of photo sensor.
- When installing the photo sensor, do not apply strong force on it by using tools such as hammer and etc. Doing so may damage the internal functions.
- Please use M4 for screw
- The tightening torque of screw should be less than 1.2 N · m