

Small size long distance diffuse reflection photo sensor

# PLD Series

## INSTRUCTION MANUAL

Thank you for purchasing HANYOUNG NUX Co.,Ltd. product.  
Please check whether the product you purchased is the exactly same as you ordered. Before using this product, please read instruction manual carefully.


**HANYOUNG NUX**
**HEAD / OFFICE**

 1381-3, Juan-Dong, Nam-Gu Incheon, Korea  
 TEL: (82-32)876-4697 FAX: (82-32)876-4696

### Safety Information

Before using this product, please read safety precautions carefully in order to use this product properly. Safety information described in this manual contains important contents regarding safety issues. Therefore, please follow the instructions accordingly. Safety information is composed of WARNING and CAUTION.



#### WARNING

- This product is not designed as safety instrument so users must attach other safety device together when using with instruments which concerns life incident, property damage and etc.
- To prevent defecation or malfunction of this product, please apply a proper power voltage in accordance with the rating
- Reassemble this product when power is OFF. Otherwise, it may cause electric shock or malfunction.
- Do not disassemble, manufacture, reform, and repair this product. There is possibility of malfunction and electric fire.



#### CAUTION

- Please use insulated power Trans in order to maintain power voltage safety of this product. Do not use auto power Trans
- When extending cable line, please use line as thick as possible (above 0.3 mm<sup>2</sup>). Also when extending cable line, please be cautious regarding a drop of electric pressure.

- Please wire high voltage cable or power line separated from sensor.
- Continuously turning ON/OFF power is might be the reason for shortening life of the product or causing malfunction of the product.
- When cleaning up lens or case of this product, please use dry cloth to wipe out foreign substances. Do not use organic solvents such as thinner or alcohol.
- When setting sensitivity, adjusting volume too strongly may cause volume to be break down so users must be careful regarding this issue.
- In case of using Switching Regulator, users must earth the frame ground (F,G). Not following this instruction may cause malfunction which is caused by switching noise of power so users must be cautious regarding this issue.
- Using photo sensor under the light of fluorescent lamp may cause malfunction so please block it with light trap.

※ Dark ON operation mode is an option

 ※ Detectable range may vary depending on size of object and existence of light.  
Please be cautious.

### Suffix code Information

Model name	Suffix code	Description
<b>PLD-</b>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Small size long distance diffuse reflection photo sensor
Detection method and detection distance	R 2	Diffuse Reflection
Output Specification	N	NPN open collector output
	P	PNP open collector output

### Specification

Model	Description	
Model name	PLD-R2N	PLD-R2P
Detectable distance	2 m	
Hysteresis	Within 20% of detectable distance	
Response time	Approximately 1ms	
Proper voltage	12 - 24 V d.c (±10%)	
Current consumption	Max. 30 mA d.c	
Control output	NPN open collector output	PNP open collector output
	Load current: (resistance load)	Load current: (resistance load)
	Remaining voltage: Max. 1 V d.c	Remaining voltage: power voltage Min. 1 V d.c
Light source	Infrared light emitting diode (850 nm)	
Sensitivity adjustment	Built in sensitivity adjustment V/R (220 degree spin V/R)	
Operation mode	Light ON mode	
Operation display LED	Operation display LED: RED, Stable display LED: GREEN	
Protectable circuit	Protection circuit for reverse polarity connection, Protection circuit for short of output (Over current)	
Material	Case : PET, Lens Cap : PC, Lens : PMMA	
Protectable structure	IP64(IEC standard)	
Connection type	Cable extended type	
Connection method	Number of cable line: 3 p, Thickness: Ø3 mm , length: 2 m	
Ambient intensity of illumination	Light of the sun: less than 11000	
	Incandescent lamp: less than 3000	
Ambient temperature	When operating : -20 ~ 55°C, when maintaining : -25 ~ 70°C (Freezing not allowed)	
Ambient humidity	Max. 35 ~ 85 % R.H.	
Insulating resistance	Min 20 M $\Omega$ (using 500 V d.c insulating resistor, between code/CASE and between control switch/CASE)	
Max vibration	10 - 55 Hz (cycle for 1 min), double amplitude: 1.5 mm, X, Y, Z each directions for 2 hours	
Voltage	1000 V a.c (50 / 60 Hz for 1 min)	
Shock	100 % $\text{g}$ (approximately 10 G), X, Y, Z each directions for 3 times	
Weight	Approximately 60 g	
Accessories	Sensitivity controlling driver, volt, nut	

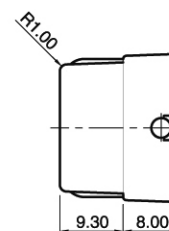
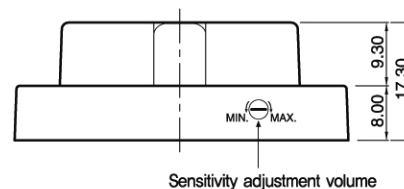
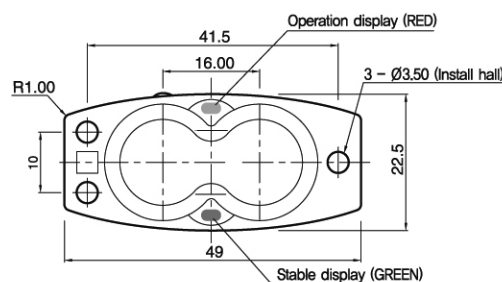
### Features

- Choice of double formation lens made for detecting distance of 2 M possible
- Stable LED display (green)
- Built in sensitivity adjustment function

### Dimension

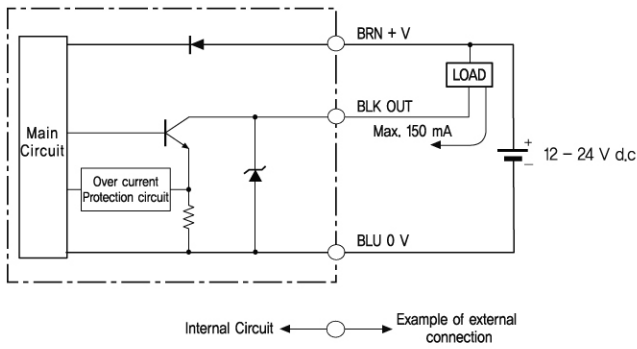
#### Sizes

(Unit : mm)

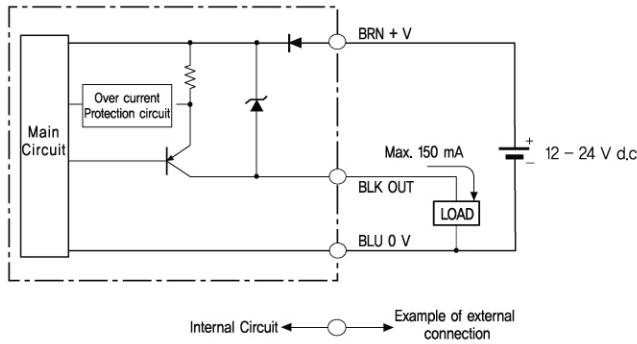


## Special features and Connection

### NPN output circuit



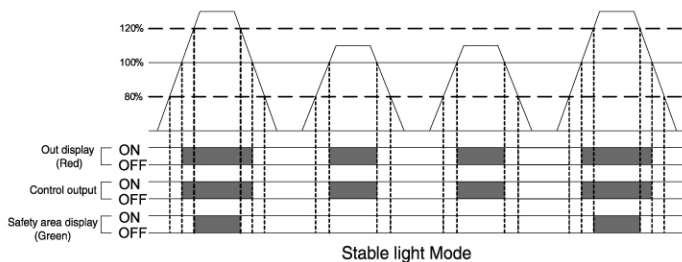
### PNP output circuit



## Install and setting method

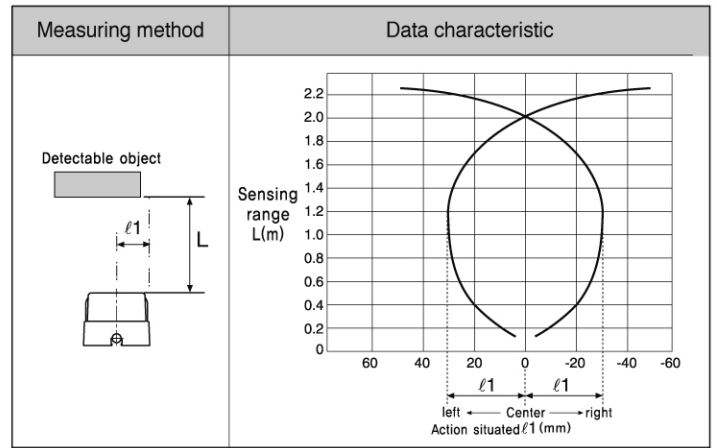
Order	Install method	Setting image	Sensitivity volume	Output mode
1	After removing the detectable object, turn sensitivity volume to the MAX. direction until operation LED is lighted. We call this state as 'A'			Light ON
2	Place detectable object and turn sensitivity volume from 'A' to the MIN direction slowly, then LED will be turned OFF. We call this state as 'B'			
3	Adjust sensitivity volume to the middle of between MAX. and 'A' and place detectable object in between setting range. After that, check for the safety operation and fix the sensor.			

## Output operation specialty

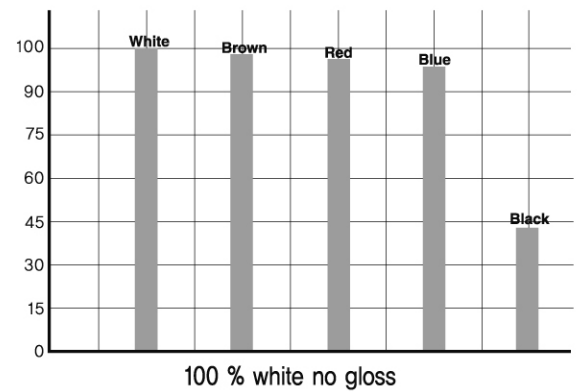


※ | Shortening output control terminal or sending in overflow current will make control output protecting circuit to be operated. Due to that, proper control will not be printed

## Detectable area specialty



## Color specialty of detectable object



## Size and distance specialty of detectable object.

