PY Series

Mini flat type photo sensor

- Built in the reverse connection of power protecting circuit and built in the output break protecting circuit.
- Flexible installation due to the compact size
- 1ms response time
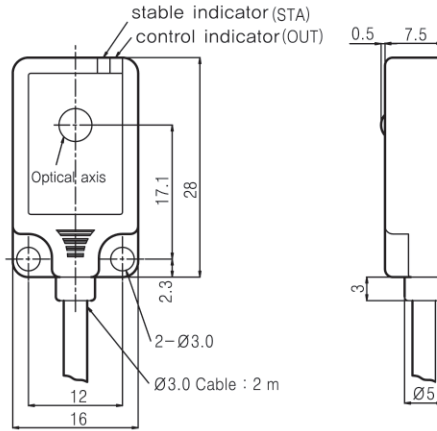- Indicate the control output and stable output

⚬ Specification

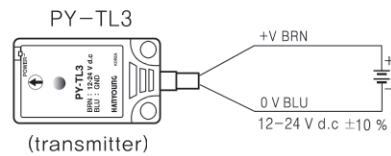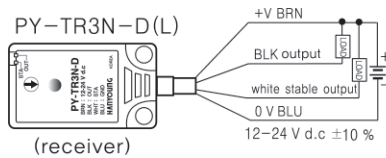| Model	NPN	PY-T3N-D	PY-T3N-L
	PNP	PY-T3P-D	PY-T3P-L
Sensing method		Through beam type	
Sensing distance		3 m	
Sensing object		min detector (Over Ø5 ㎜ then opaque object)	
Power supply voltage		12 - 24 V DC ± 10 % (Less than 10% of ripple)	
Current consumption		Emitter : 23 ㎃, Receiver : Less than 18 ㎃ (With 24 V DC)	
Output	Control	NPN / PNP open collector output less than 100 ㎃ (30 V DC)	
	Stable	NPN open collector output less than 50 ㎃(30 V DC) (but there is no stable output in PNP output type)	
Output action		Dark ON	Light ON
Response time		max 1 ㎳	
Hysteresis		Within 10 % of the sensing distance	
Light source (wave length)		Infrared lightening LED (890 ㎚)	
LED		Control output indicator : Red LED, stable output indicator : green LED (Red LED of through beam type emitter is the power indicator)	
Protective circuit		Power reverse connection protecting circuit and output break protecting circuit (exclude the stable output)	
Ambient illumination		Sunlight : max 11000 Lux, Incandescent lamp : max 3,000 Lux	
Ambient temperature		−25 ~ 55 ℃ (Surrounding storage temperature : −25 ~ 70 ℃)	
Ambient humidity		35 ~ 85 % RH (With no condensation)	
Protective structure		IP 67	
Insulation resistance		min 20 ㏁ (500 V DC between the code and case)	
Dielectric strength		1,000 V AC,(50/60 ㎐ for 1 min)	
Vibration resistance		10 - 55 ㎐, Double amplitude : 1.5 ㎜, for 2 hours each in X, Y and Z direction	
Shock resistance		500 ㎨, 3 times each in X, Y and Z directions	
Connection method		Emitter : 2P, Receiver : 3P (NPN type 4P), Thickness : Ø3 ㎜, Length : 2 m	
Material		Case : PC, Lens : PC	
Weight		Approx. 66g	

Dimension (unit : ㎜)

stable indicator (STA)
control indicator (OUT)

Optical axis

17.1
28
2.3
0.5 7.5
3
12
16
2−Ø3.0
Ø3.0 Cable : 2 m
Ø5

Connection diagram

■ NPN open collector output

PY−TR3N−D(L)
(receiver)
+V BRN
BLK output
white stable output
0 V BLU
12−24 V d.c ±10 %

PY−TL3
(transmitter)
+V BRN
0 V BLU
12−24 V d.c ±10 %

■ PNP open collector output

PY−TR3P−D(L)
(receiver)
+V BRN
BLK output
0 V BLU
12−24 V d.c ±10 %

PY−TL3
(transmitter)
+V BRN
0 V BLU
12−24 V d.c ±10 %
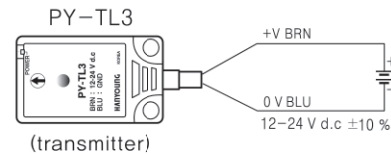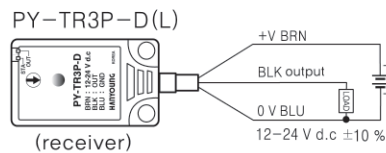
Output circuit

■ NPN open collector output

Internal circuit
over current protecting circuit
BRN
12−24 V DC
BLK
OUT 100 ㎃ max.
WHT
STA(Stable output)
0 V BLU

■ PNP open collector output

Internal circuit
over current protecting circuit
BRN
12−24 V DC
BLK
OUT 100 ㎃ max.
0 V BLU

G
Photo
Sensor

⚙ Operation chart

Operation mode	Output method		
Light ON	Control output	ON OFF	
	Stable output	ON OFF	
Dark ON	Control output	ON OFF	
	Stable output	ON OFF	
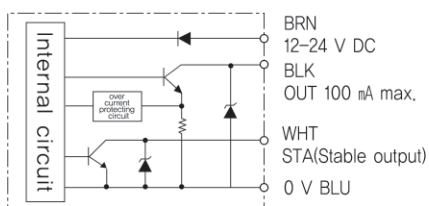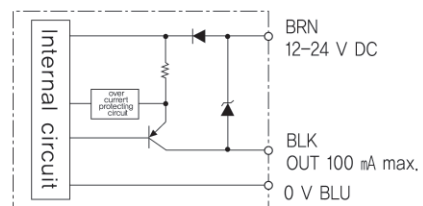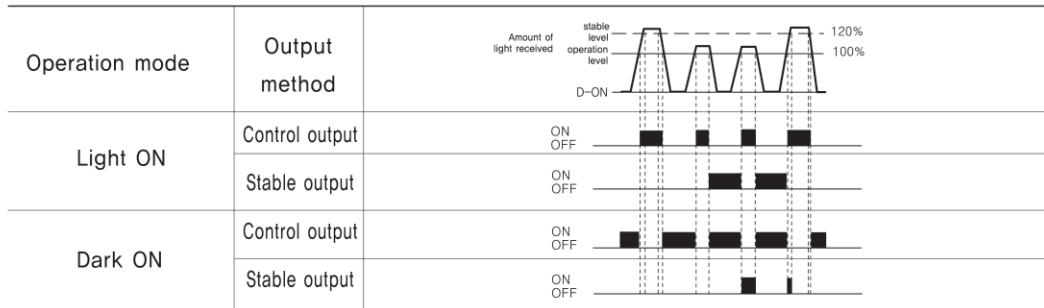
(Cautious) The stability output of power is used for checking convulsion changes after setting the distance or level drop during it's usage at the initial stage. If the receiving level exceeds the operation level of 120% (stable level) or get distant from the standard detection distance, the control output of power will recognize it as an OFF state and generate the power. However the PY-T3P-D/ type has the stability indication function only and not the stability output of power

⚙ LED

● Operation LED (red LED) and stability LED (green LED) indicate the level of the picture
● Setting within the stable area will provide the high reliability regarding the change of a light amount even after setting up.

STA (Green)   OUT (Red)

Light ON operation   Dark ON operation

120% — Light
100% — Light — Operating distance × 1.2
80% — Light — Operating distance
Light — Operating distance × 0.8