

# DC U-Shaped Type

## Reinforced plastic case U-Shaped type photoelectric sensor

### ■ Features

- High speed response type
- Reverse power polarity and short-circuit (Overcurrent) protection circuit
- Selectable Light / Dark ON mode by control wire
- IP66 rated waterproof structure (IEC standard)  
: BUP-30, BUP-50



**⚠ Please read "Caution for your safety" in operation manual before using.**



### ■ Specifications

Model	NPN open collector	BUP-30	BUP-30S	BUP-50	BUP-50S
	PNP open collector	—	—	BUP-50-P	BUP-50S-P
Sensing type	Transmitted beam				
Sensing target	Opaque materials of min. $\phi$ 4mm	Opaque materials of min. $\phi$ 1.5mm	Opaque materials of min. $\phi$ 4mm	Opaque materials of min. $\phi$ 1.5mm	
Operation mode	Selectable Light ON / Dark ON mode by control wire				
Sensing distance	30mm			50mm	
Response time	Max. 1ms				
Power supply	12-24VDC $\pm$ 10% (Ripple P-P : Max. 10%)				
Current consumption	Max. 30mA				
Light source	Infrared LED (modulated)				
Sensitivity adjustment	Fixed	Adjuster	Fixed	Adjuster	
Control output	NPN open collector output $\Rightarrow$ Load voltage : Max. 30VDC, Load current : Max. 200mA, Residual voltage : Max. 1V PNP open collector output $\Rightarrow$ Output voltage : (Min. Power supply - 2.5V), Load current : Max. 100mA				
Protection circuit	Reverse power polarity, Short-circuit (Overcurrent) protection				
Indication	Power indicator : Green LED, Operation indicator : Red LED				
Connection	Outgoing cable				
Insulation resistance	Min. 20M $\Omega$ (at 500VDC mega)				
Noise strength	$\pm$ 240V the square wave noise (pulse width: 1 $\mu$ s) by the noise simulator				
Dielectric strength	500VAC 50/60Hz for 1 minute				
Vibration	1.5mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours				
Shock	500m/s <sup>2</sup> (50G) in X, Y, Z directions for 3 times				
Ambient illumination	Sunlight : Max. 11,000lx Incandescent lamp : Max. 3,000lx				
Ambient temperature	-25 ~ +65 $^{\circ}$ C <BUP-30S and BUP-50S : -10 ~ +60 $^{\circ}$ C> (at non-freezing stausts), Storage : -35 ~ +70 $^{\circ}$ C (at non-freezing stausts)				
Ambient humidity	35 ~ 85%RH, Storage : 35 ~ 85%RH				
Protection	IP66 (IEC standard)	IP50 (IEC standard)	IP66 (IEC standard)	IP50 (IEC standard)	
Material	Case : ABS12, Cover : PC				
Cable	4P, $\phi$ 4mm, Length : 2m				
Accessory	—	Adjustment driver	—	Adjustment driver	
Approval	<b>CE</b>				
Unit weight	Approx. 90g			Approx. 140g	

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/Speed/Pulse meter

(G) Display unit

(H) Sensor controller

(I) Switching power supply

(J) Proximity sensor

(K) Photo electric sensor

(L) Pressure sensor

(M) Rotary encoder

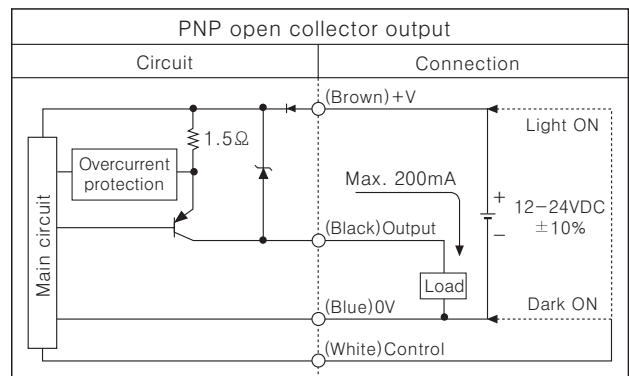
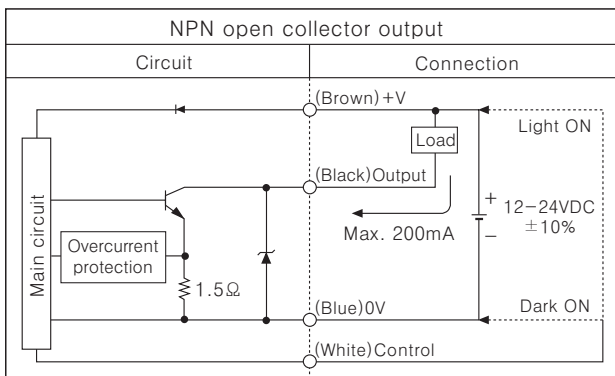
(N) Stepping motor & Driver & Controller

(O) Graphic panel

(P) Production stoppage models & replacement

# BUP Series

## Control output diagram



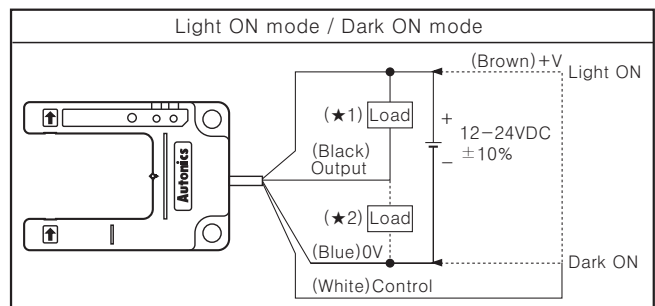
※Selectable Light ON / Dark ON mode by control wire.

## Operation mode

Operation mode	Light ON mode	Dark ON mode
Receiver operation	Received light Interrupted light	
Operation indicator(LED)	ON OFF	
Output TR	ON OFF	

Note) If the control output terminal is short-circuited or flow beyond rating current, the control signal will not be output normally due protection circuit.

## Connections

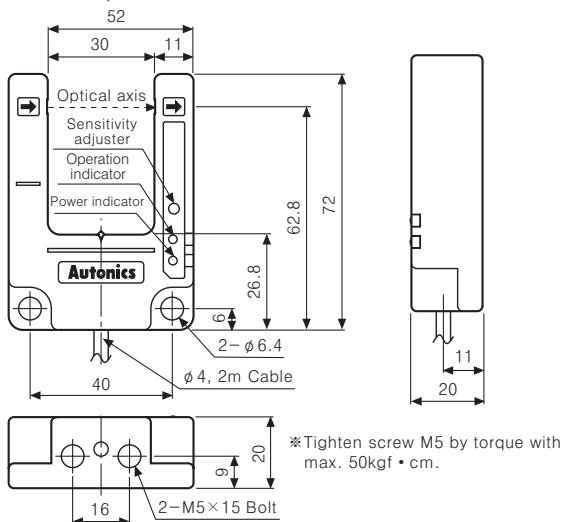


※(★1)–Load connection for NPN open collector output  
 (★2)–Load connection for PNP open collector output

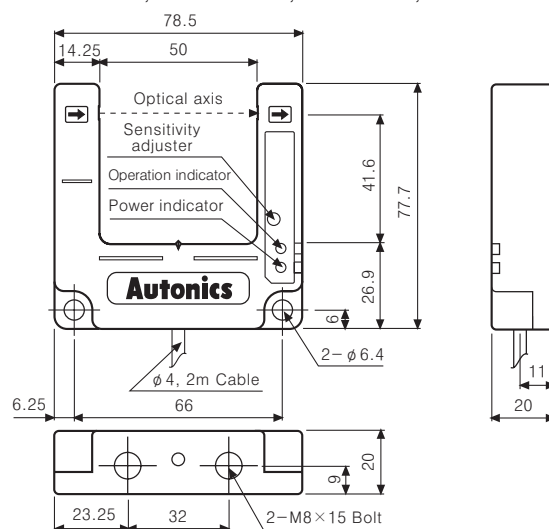
## Dimensions

(Unit:mm)

### ●BUP-30, BUP-30S

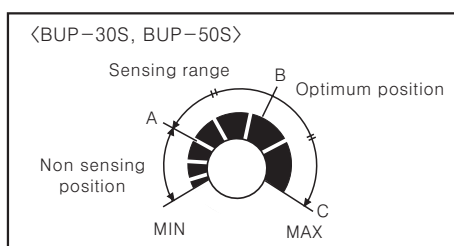


### ●BUP-50, BUP-50-P, BUP-50S, BUP-50S-P



## Mounting and sensitivity adjustment

Please supply the power to the sensor after mount the emitter and the receiver facing each other, and then adjust an optical axis and the sensitivity as follow;



※Sensing target at a position to be detected by the beam, then turn the adjuster until position A in the middle of the operation range of indicator(Dark ON mode) or indicator is turned off(Light ON mode) (It is able to operate in min. sensitivity position.)  
 Place adjuster at "B", in the middle of two switching A, C.