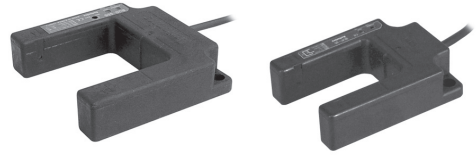


## Reinforced Plastic Case U-shaped Type

### ■ Features

- Improved noise resistance to disturbance light
- Max. 1ms high speed response type
- Built-in reverse polarity protection circuit and output short overcurrent protection circuit
- Light ON / Dark ON Selectable by control wire
- Protection structure IP66 (IEC standard)  
: BUP-30, BUP-50



**⚠ Please read "Safety Considerations" in the instruction manual before using.**



### ■ Specifications

Model	NPN open collector output	BUP-30	BUP-30S	BUP-50	BUP-50S
	PNP open collector output	BUP-30-P	BUP-30S-P	BUP-50-P	BUP-50S-P
Sensing type	Through-beam				
Sensing target	Opaque materials of min. Ø4mm		Opaque materials of min. Ø1.5mm		Opaque materials of min. Ø1.5mm
Operation mode	Selectable Light ON or Dark ON by control wire				
Sensing distance	30mm			50mm	
Response speed	Max. 1ms				
Power supply	12-24VDC $\pm$ 10% (ripple P-P: max. 10%)				
Current consumption	Max. 30mA				
Light source	Infrared LED (940nm)				
Sensitivity adjustment	Fixed	Sensitivity adjuster		Fixed	Sensitivity adjuster
Control output	NPN or PNP open collector output ●Load voltage: max. 30VDC $\pm$ ●Load current: max. 200mA ●Residual voltage - NPN: max. 1VDC $\pm$ , PNP: max. 2.5VDC				
Protection circuit	Reverse polarity protection circuit, output short overcurrent protection circuit				
Indication	Power indicator: green LED, operation indicator: red LED				
Insulation resistance	Over 20M $\Omega$ (at 500VDC megger)				
Noise immunity	$\pm$ 240V the square wave noise (pulse width: 1 $\mu$ s) by the noise simulator				
Dielectric strength	1,000VAC 50/60Hz for 1 minute				
Vibration	1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 2 hours				
Shock	500m/s <sup>2</sup> (approx. 50G) in each X, Y, Z direction for 3 times				
Environment	Ambient illumination	Sunlight: max. 11,000lx, incandescent lamp: max. 3,000lx (receiving illumination)			
	Ambient temperature	-25 to 65°C[BUP-30S (-P) & BUP-50S (-P): -10 to 60°C], storage: -25 to 70°C			
	Ambient humidity	35 to 85%RH, storage: 35 to 85%RH			
Protection structure	IP66 (IEC standard)	IP50 (IEC standard)	IP66 (IEC standard)	IP50 (IEC standard)	
Material	Case: acrylonitrile butadiene styrene, cap: polycarbonate				
Cable	Ø4mm, 4-wire, 2m (AWG22, core diameter: 0.08mm, number of cores: 60, insulation out diameter: Ø1.25mm)				
Accessory	—	Adjuster driver	—	Adjuster driver	
Approval	<b>CE</b>				
Unit weight	Approx. 90g			Approx. 140g	

※The temperature or humidity mentioned in Environment indicates a non freezing or condensation environment.

### ■ Operation Mode

Operation mode	Light ON	Dark ON
Receiver operation	Received light  Interrupted light	Received light  Interrupted light
Operation indicator (red LED)	ON  OFF	ON  OFF
Transistor output	ON  OFF	ON  OFF

SENSORS

CONTROLLERS

MOTION DEVICES

SOFTWARE

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) LIDAR

(D) Door/Area Sensors

(E) Vision Sensors

(F) Proximity Sensors

(G) Pressure Sensors

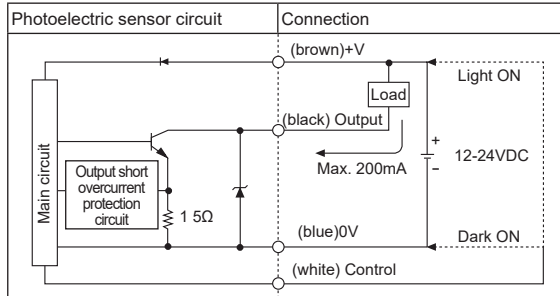
(H) Rotary Encoders

(I) Connectors/ Connector Cables/ Sensor Distribution Boxes/ Sockets

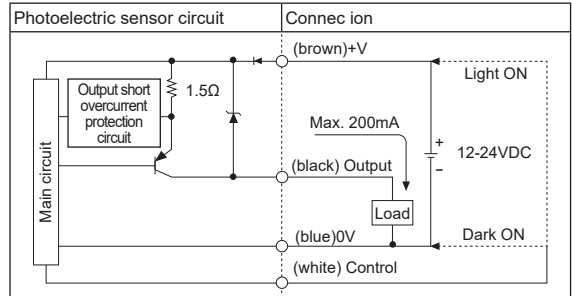
# BUP Series

## Control Output Diagram

### ● NPN open collector output



### ● PNP open collector output



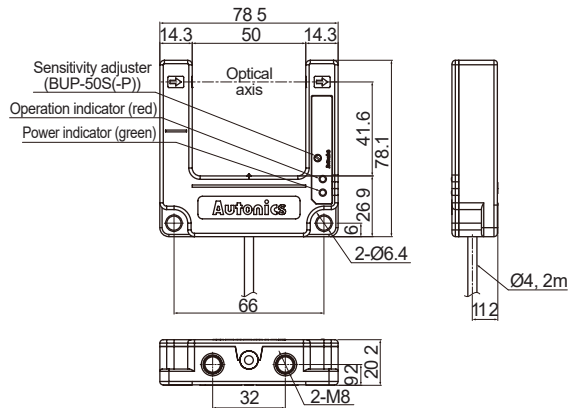
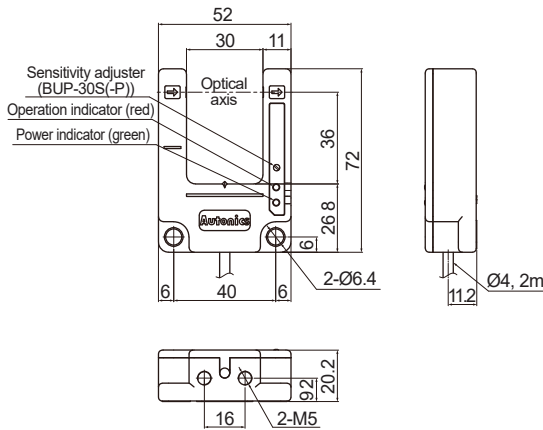
※Select Light ON / Dark ON by control wire. - Light ON: Connect control wire to +V / Dark ON: Connect control wire to 0V  
 ※If short-circuit the control output terminal or supply current over the rated specification, normal control signal is not output due to the output short over current protection circuit.

## Dimensions

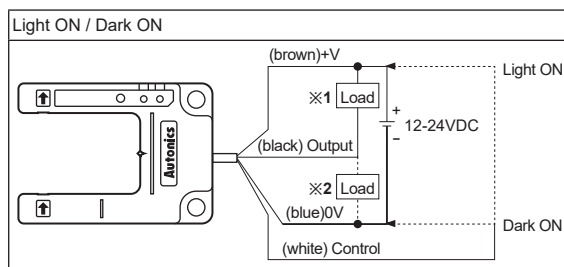
(unit: mm)

### ● BUP-30, BUP-30-P, BUP-30S, BUP-30S-P

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



## Connections



※1: Load connection for NPN open collector output  
 ※2: Load connection for PNP open collector output

## Mounting and Sensitivity Adjustment

Check the position where the photoelectric sensor will be used and the connection then supply the power and set sensitivity as below.

※BUP-30□□: When installing the product, tighten the screw with a tightening torque of 1.96N·m.

BUP-50□□: When installing the product, tighten the screw with a tightening torque of 4.9N·m.

### ● Sensitivity adjustment

When placing a target within sensing range of sensor, turn the sensitivity adjuster from the minimum position and check the position 'A' where the operation indicator is turned on (dark on) or turned off (light on). Turn the sensitivity adjuster to 'B' in the middle between 'A' and 'C' which is the maximum sensitivity position, this will be the optimal sensitivity position. (the operation indicator can be operated at the lowest sensitivity position.)

