

Autonics

PHOTOELECTRIC SENSOR

BUP-50-HD SERIES

M A N U A L



Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

Caution for your safety

※Please keep these instructions and review them before using this unit.

※Please observe the cautions that follow;

Warning Serious injury may result if instructions are not followed.

Caution Product may be damaged, or injury may result if instructions are not followed.

※The following is an explanation of the symbols used in the operation manual.

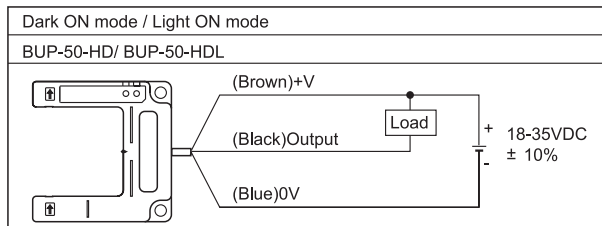
△:Injury or danger may occur under special conditions.

Warning

- In case of using this unit with machinery (Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, it is required to install fail-safe device.**
It may cause a fire, human injury or damage to property.
- Do not disassemble and modify this unit. If needs, please contact us.**
If needs, please contact us.
It may give an electric shock and cause a fire.

Caution

- This equipment shall not be used outdoors.**
It might shorten the life cycle of the product or give an electric shock. Use this product inside only. Do not use the product outdoors or location subject to temperatures or humidity outside.(Ex: rain, dirty, frost, sunlight, condensation, etc.)
- Do not use this unit in place where there is flammable or explosive gas.**
It may cause a fire or explosion.
- Please observe the rated voltage and do not supply AC power.**
It may result in damage to this unit.
- Please check the polarity of power and wrong wiring.**
It may result in damage to this unit.
- Do not use this unit in place where there is vibration or impact.**
It may result in damage to this unit.
- In cleaning the unit, do not use water or an oil-based detergent**
It may cause an electric shock and cause a fire.

Connection

※The above specifications are subject to change and some models may be discontinued without notice.

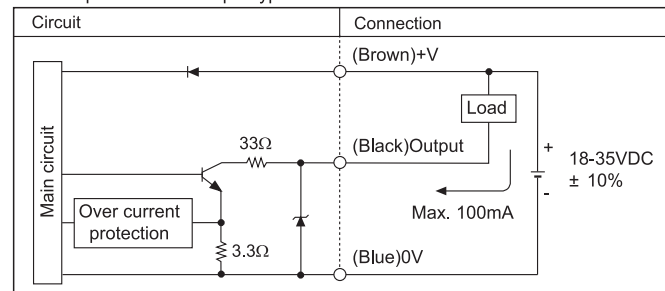
Specifications

Model	BUP-50-HD	BUP-50-HDL
Sensing distance	50mm	
Sensing target	Min.ø 4.0mm Opaque	
Response time	Max. 1ms	
Power supply	18-35VDC ± 10%(Ripple P-P:Max. 10%)	
Current consumption	Max. 30mA	
Light source	Infrared LED(modulated)	
Operation mode	Dark ON Mode Fixed	Light ON Mode Fixed
Control output	NPN open collector output ⇄ Load voltage:Max. 35VDC, Load current:Max. 100mA, Residual voltage:Max. 4V	
Protection circuit	Reverse polarity protection, Short output over current	
Cable	ø 4, 3P, Length: 2m, AWG 22, Insulation diameter: ø 1.2	
Indicator	Operation indicator: Red LED, Power indicator: Green LED	
Connection	Outgoing cable	
Insulation resistance	Min. 20MΩ (at 500VDC megger)	
Noise strength	± 240V the square wave noise(pulse width: 1 μs) by the noise simulator	
Dielectric strength	500VAC 50/60Hz for 1minute	
Vibration	1.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 2 hours	
Shock	500m/s ² (50G) in X, Y, Z directions for 3 times	
Environ-ment	Ambient illumination	Sunlight:Max. 11,000lx, Incandescent lamp:Max. 3,000lx
	Ambient temperature	-25 to 65°C, Storage: -25 to 70°C
	Ambient humidity	35 to 85%RH, Storage: 35 to 85%RH
Protection	IP66(IEC standard)	
Accessories	Case: ABS, Cap: PC	
Approval	CE	
Unit weight	Approx. 130g	

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

Control output circuit diagram

● NPN open collector output type

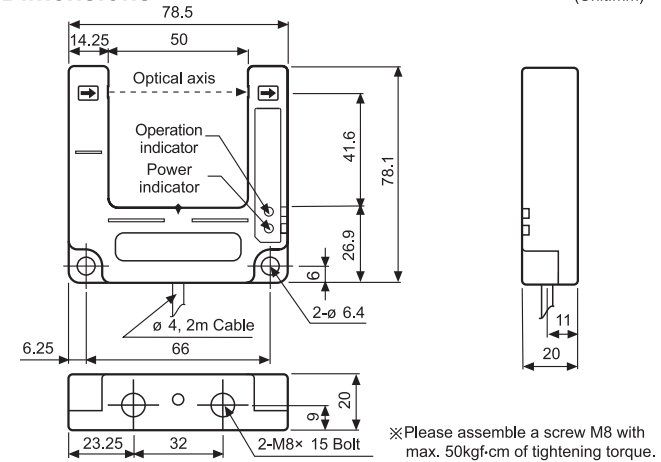
**Operation mode**

Operation mode	Light ON mode	Dark ON mode
Receiver operation	Light ON	Light OFF
Operation indicator(LED)	ON	OFF
TR output	ON	OFF

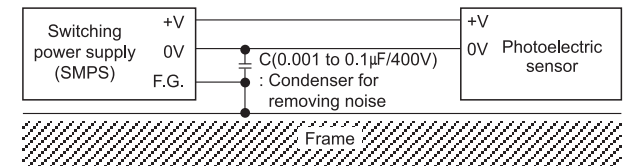
If the control output terminal is short-circuited or flow beyond the rated current, the control signal will not be output normally due to operating protection circuit.

Dimensions

(Unit:mm)

**Caution for using**

- Intercept a strong source of light as like sunlight, spotlight within inclination angle range of photoelectric sensor.
- The photoelectric sensor may cause malfunction under the fluorescent lamp light, so be sure to use cut-off light with panel.
- When wire the photoelectric sensor with high voltage line or power line in the same conduit, it may cause malfunction or mechanical trouble.
Therefore please wire separately or use different conduit.
- Avoid installing the unit where there is severe corrosive gas, or dust, etc.
- In case of connect DC relay as inductive load to output, please remove surges by using diode or varistor.
- The photoelectric sensor cable shall be used as short as possible, because it may cause malfunction by noise through the cable.
- When it is stained by dirt at lens, please clean the lens with dry cloth, but do not use an organic materials such as alkali, acid, chromic acid.
- When use switching power supply as the source of supplying power, F.G. terminal shall be good earth ground and condenser for removing noise shall be installed between 0V and F.G. terminal.



- Installation environment
 - It shall be used indoor
 - Altitude Max. 2,000m
 - Pollution Degree 2
 - Installation Category III

※It may cause malfunction if above instructions are not followed.

Major products

- Photoelectric sensors
- Fiber optic sensors
- Door sensors
- Door side sensors
- Area sensors
- Proximity sensors
- Pressure sensors
- Rotary encoders
- Connector/sockets
- Switching mode power supplies
- Control switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper motors/drivers/motion controllers
- Graphic/Logic panels
- Field network devices
- Laser marking system(Fiber, CO₂, Nd:YAG)
- Laser welding/soldering system
- Temperature controllers
- Temperature/Humidity transducers
- SSR/Power controllers
- Counters
- Timers
- Panel meters
- Tachometer/Pulse(Rate)meters
- Display units
- Sensor controllers

Autonics Corporation
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