

Autonics PHOTOELECTRIC SENSOR

BUM 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.

Caution: 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 or modify this unit. Please contact us if it is required. It may cause electric shock or a fire.

Caution

- This unit shall not be used outdoors.

It might shorten the life cycle of the product or cause 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 cause damage to this unit.

- Please check the polarity of power and wrong wiring.

It may cause damage to this unit.

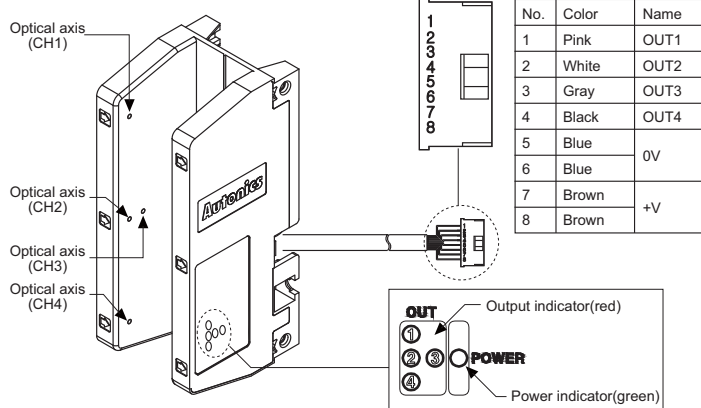
- Do not use this unit in place where there is vibration or impact.

It may cause damage to this unit.

- In cleaning the unit, do not use water or an oil-based detergent.

It may cause electric shock or fire.

Connections



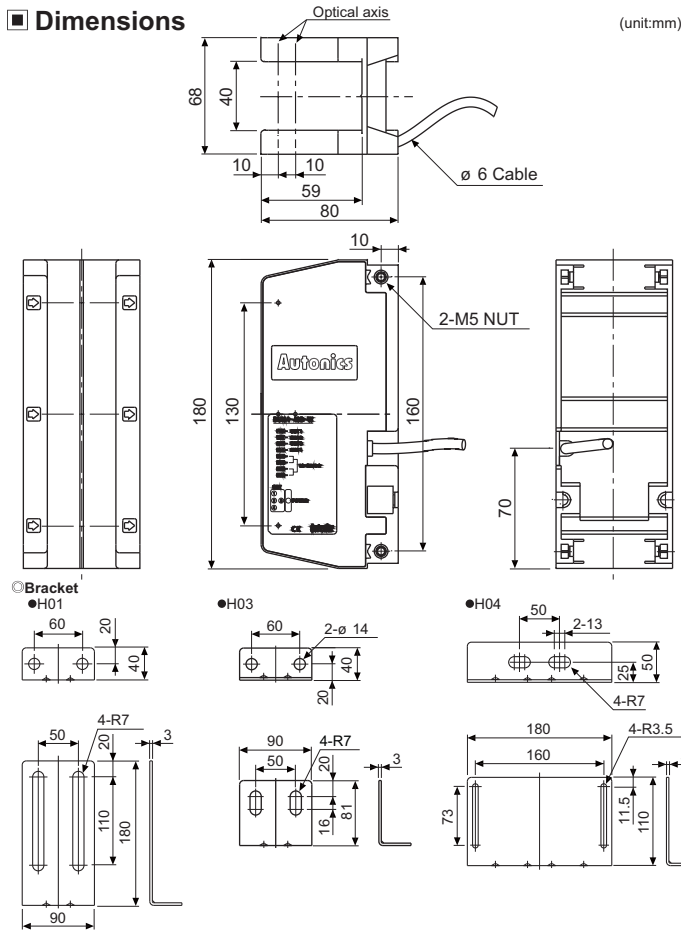
Operation mode

Operation mode	Dark ON
Receiver operation	Received light Interrupt light
Operation indicator(LED)	ON OFF
Transistor output	ON OFF

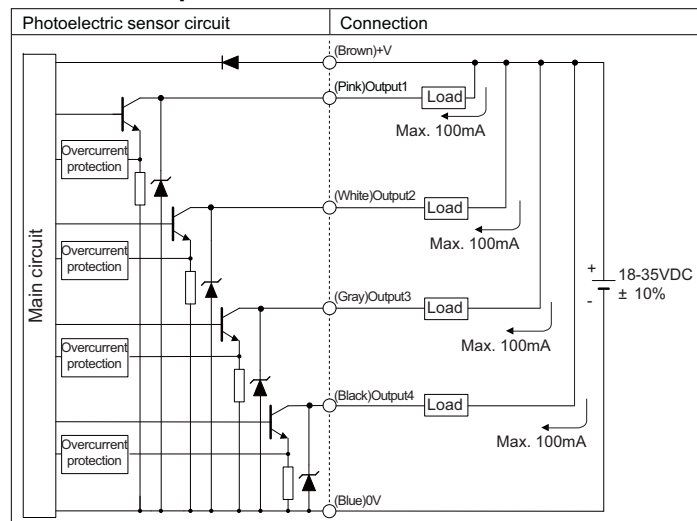
When shorting control output terminal or flow over the rated current, protection circuit operates and normal signal is not output.

※The above specifications are subject to change without notice.

Dimensions



Control output circuit



Specifications

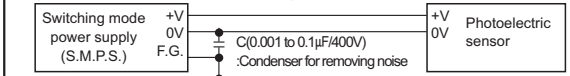
Model	BUM4-40D-W-4M	BUM4-40D-W-2M/A	BUM4-40D-W-3M/A	BUM4-40D-W-4M/A	BUM4-40D-W-2M/B	BUM4-40D-W-3M/B	BUM4-40D-W-4M/B
Sensing type	Through-beam						
Sensing distance	40mm						
Sensing target	Opaque materials of min.ø 4.0mm						
Sensing CH	4 channels						
Hysteresis	Max. 1ms						
Power supply	18-35VDC ± 10%(ripple P-P: max. 10%)						
Current consumption	Max. 50mA						
Light source	Infrared LED(940nm)						
Operation mode	Dark ON						
Control output	NPN open collector output(individual 4 outputs) • Load voltage: Max. 35VDC, • Load current: Max. 100mA, • Residual voltage: Max. 4V						
Protection circuit	Power reverse polarity protection circuit, output short-circuit over current protection circuit						
Indicator	Output indicator: red LED, Power indicator: green LED						
Insulation resistance	Max. 20MΩ (at 500VDC megger)						
Noise resistance	± 240V the square wave noise (pulse width 1μs) by noise simulator						
Dielectric strength	1000VAC 50/60Hz for 1 min.						
Vibration	1.5mm amplitude at frequency of 10to 55Hz(for 1 min.) in each of X, Y, Z directions for 2 hours						
Shock	500m/s ² (approx. 50G) in each of X, Y, Z directions for 3 times						
Environment	Ambient illumination: Sunlight: Max. 11000lx, Incandescent lamp: Max. 3000lx (receiver illumination)						
	Ambient temperature: -25 to 65°C, storage: -25 to 70°C						
	Ambient humidity: 35 to 85%RH, storage: 35 to 85%RH						
Protection	IP65(IEC standards)						
Material	Case, Cover: ABS						
Cable	ø 6.0mm, 8-wire(AWG 22, core diameter: ø 1.2, number of cores: 60)						
Cable length	4m	2m	3m	4m	2m	3m	4m
Bracket	-		H01/H04(G01)		H03/H04(G02)		
Approval	CE						
Weight	Approx. 510g (Approx. 500g)		Approx. 1.5kg(Approx. 500g)				

※1: The weight is with packaging and the weight in parentheses is only unit weight.

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

Caution for using

- Shade a strong source of light as like sunlight, spotlight not to be let in the inclination angle range of photoelectric sensor directly.
- The photoelectric sensor may cause malfunction under the fluorescent lamp light, be sure to use the cover or the shutter to shade the light.
- When wiring the photoelectric sensor with high voltage line, power line in a same conduit, it may cause malfunction or mechanical problem, please do wire separately or use different conduit.
- Avoid install the unit in place with corrosive gas, oil or dust, strong flux, noise, sunlight, strong alkali and acid.
- The edges of the product are sharp. Use gloves to install this unit.
- In case of connecting relay as inductive load to output, please remove surge by using diode or varistor.
- 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, do not use an organic materials such as alkali, acid and chromic acid.
- When using switching power supply(S.M.P.S.) as the source of supplying power, F.G. terminal shall be grounded and a condenser for removing noise shall be installed between 0V and F.G. terminal.



- Installation environment
 - ①It shall be used indoor.
 - ②Altitude max. 2,000m
 - ③Pollution Degree 2
 - ④Installation Category III

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

Major products

- Proximity sensors
- Area sensors
- Door/Door side sensors
- Counters
- Rotary encoders
- Power controllers
- Panel meters
- Temperature controllers
- Tachometer/Pulse(Rate) meters
- Temperature/Humidity transducers
- Stepping motors/drivers/motion controllers
- Laser marking system(CO₂, Nd:YAG)
- Laser welding/soldering system
- Photoelectric sensors
- Fiber optic sensors
- Pressure sensors
- Timers
- Display units
- Sensor controllers
- Graphic/Logic panels

Autonics Corporation
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Satisfiable Partner For Factory Automation

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