Autonics

Photoelectric Sensor

BUM SERIES

INSTRUCTION MANUAL

Thank you for choosing our Autonics product.

Please read the following safety considerations before use.

■ Safety Considerations

※Please observe all safety considerations for safe and proper product operation to avoid hazards.

※⚠ symbol represents caution due to special circumstances in which hazards may occur.

⚠ **Warning** Failure to follow these instructions may result in serious injury or death.

⚠ **Caution** Failure to follow these instructions may result in personal injury or product damage.

⚠Warning

1. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)
Failure to follow this instruction may result in fire, personal injury, or economic loss.

2. Do not disassemble or modify the unit.
Failure to follow this instruction may result in fire.

3. Do not connect, repair, or inspect the unit while connected to a power source.
Failure to follow this instruction may result in fire.

4. Check 'Connections' before wiring.
Failure to follow this instruction may result in fire.

⚠Caution

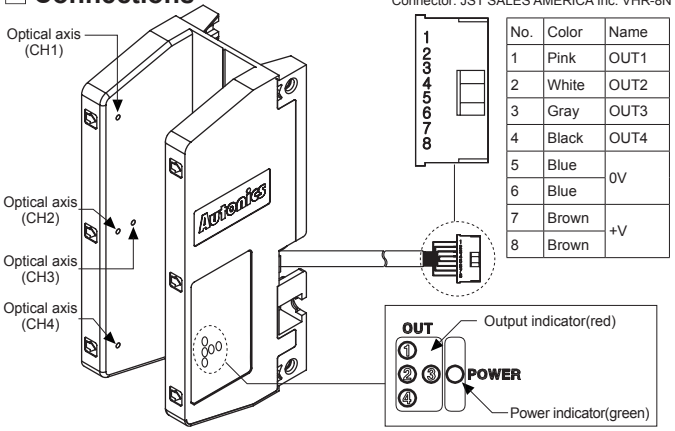
1. Use the unit within the rated specifications.
Failure to follow this instruction may result in fire or product damage.

2. Use dry cloth to clean the unit, and do not use water or organic solvent.
Failure to follow this instruction may result in fire.

3. Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.
Failure to follow this instruction may result in fire or explosion.

■ Connections

Connector: JST SALES AMERICA Inc. VHR-8N



No.	Color	Name
1	Pink	OUT1
2	White	OUT2
3	Gray	OUT3
4	Black	OUT4
5	Blue	0V
6	Blue	
7	Brown	+V
8	Brown	

■ Operation Mode

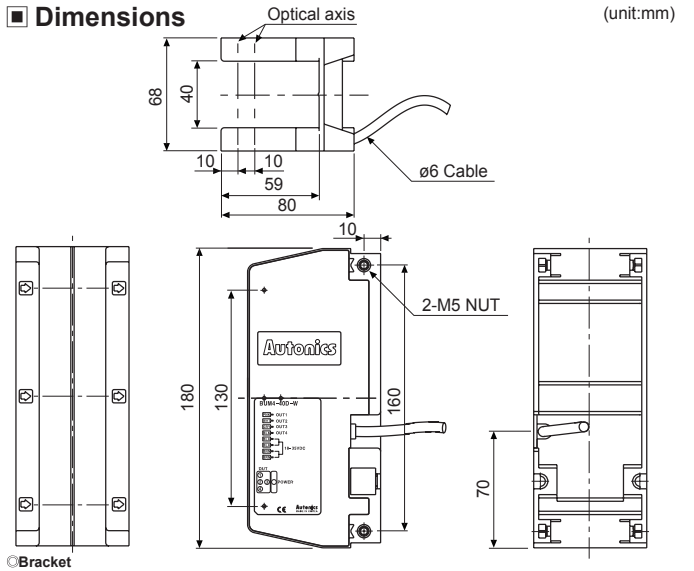
Operaiton mode	Dark ON
Receiver operation	Received light / Interrupt light
Operation indicator(LED)	ON / OFF
Transistor output	ON / OFF

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

※**Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).**

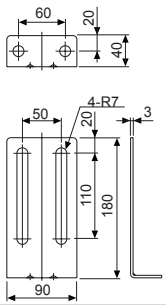
■ Dimensions

(unit:mm)

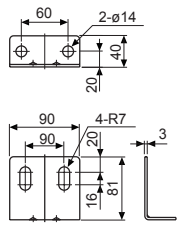


◎**Bracket**

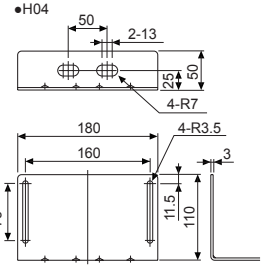
●H01



●H03

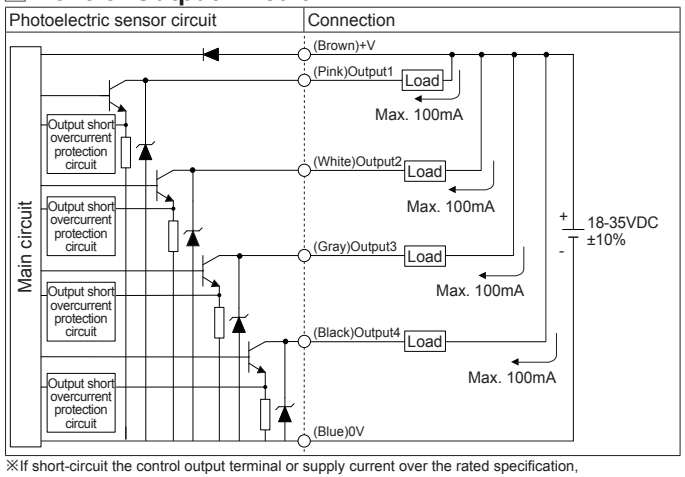


●H04



※When installing the product, tighten the screw with a tightening torque of 2N·m.

■ Control Output Circuit



※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.

■ 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.ø4.0mm						
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. 4VDC⎓						
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/s²(approx. 50G) in each of X, Y, Z directions for 3 times						
Environment: Ambient illumination	Sunlight: Max. 11000ℓx , Incandescent lamp: Max. 3000ℓx (receiver illumination)						
Environment: Ambient temperature	-25 to 65℃, storage: -25 to 70℃						
Environment: Ambient humidity	35 to 85%RH, storage: 35 to 85%RH						
Protection	IP65(IEC standards)						
Material	Case, Cover: ABS						
Cable	ø6.0mm, 8-wire(AWG 22, core diameter: ø1.2, number of cores: 60)						
Cable length	4m	2m	3m	4m	2m	3m	4m
Bracket	–	H01/H04(G01)			H03/H04(G02)		
Accessory	M12 bolt: 4, M12 nut: 4, M5 bolt: 2						
Approval	CE						
Weight	Approx. 510g (Approx. 500g)	Approx. 1.5kg(Approx. 500g)					

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

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

■ Cautions during Use

1. Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
2. When connecting a DC relay or other inductive load to the output, remove surge by using diodes or varistors.
3. Use the product, 0.5 sec after supplying power.
   When using separate power supply for the sensor and load, supply power to sensor first.
4. 18-35VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
5. Wire as short as possible and keep away from high voltage lines or power lines, to prevent inductive noise.
6. When using switching mode power supply to supply the power, ground F.G. terminal and connect a condenser between 0V and F.G. terminal to remove noise.
7. When using sensor with the equipment which generates noise (switching regulator, inverter, servo motor, etc.), ground F.G. terminal of the equipment.
8. This unit may be used in the following environments.
   ①Indoors (in the environment condition rated in 'Specifications')
   ②Altitude max. 2,000m
   ③Pollution degree 2
   ④Installation category III

■ 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, CO_2, Nd:YAG)
- Laser welding/Cutting system
- Temperature controllers
- Temperature/Humidity transducers
- SSR/Power controllers
- Counters
- Timers
- Panel meters
- Tachometer/Pulse(Rate)meters
- Display units
- Sensor controllers

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