

Autonics

Photoelectric Sensor BJG 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.

■ Ordering Information

BJG	30	-	D	D	T	
						T Transistor output
						D DC power
						D Diffuse reflective
						Sensing distance 30mm
						BJG Series name

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

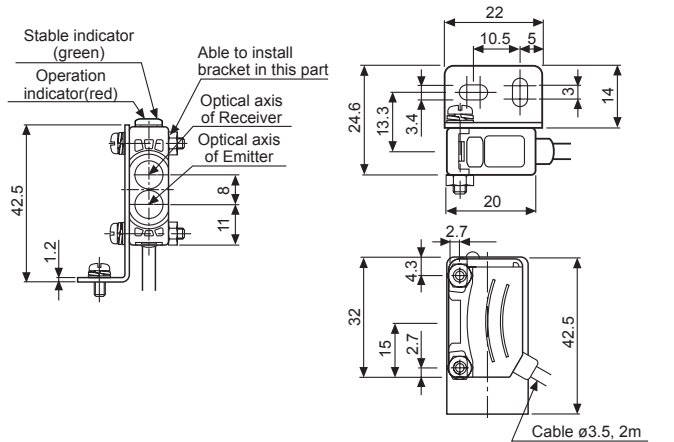
※ Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).

■ Specification

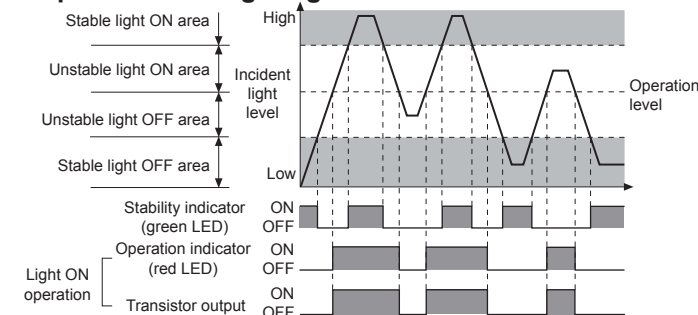
Model	BJG30-DDT	
Sensing type	Diffuse reflective	
Power supply	12-24VDC±10%(ripple P-P: max. 10%)	
Power consumption	Max. 30mA	
Sensing distance	0 to 30mm (non-glossy white paper 100×100mm), 0 to 15mm (transparent glass 50×50mm, t=3.0mm)	
Hysteresis	Max. 20% at sensing distance	
Light source	Infrared LED (850nm)	
Control output	NPN Open collector type • Load voltage: max. 26.4VDC± • Residual voltage: max. 1VDC±	
Operation mode	Light ON mode fixed	
Protection circuit	Reverse polarity protection circuit, output short over current protection circuit, interference prevention function	
Response time	Max. 1ms	
Insulation resistance	Over 20MΩ (500VDC)	
Dielectric strength	1000VAC 50/60Hz for 1 minute	
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	
Environment	Ambient illum.	Sunlight: max. 11,000lx, incandescent lamp: max. 3,000lx (receiver illumination)
	Ambient temp.	-25 to 55°C, storage: -40 to 70°C
Ambient humi.	35 to 85%RH, storage: 35 to 85%RH	
Protection structure	IP65 (IEC standard)	
Connection	Outgoing cable type	
Indicator	Operation indicator: red, stable indicator: green	
Material	Case:PC+ABS, cover:PMMA, LED Cap:PC	
Cable	ø3.5mm, 3P, length:2m	
Accessory	Mounting bracket, M3 bolt: 2, M3 nut: 2	
Unit weight	Approx. 45g	

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

■ Dimensions



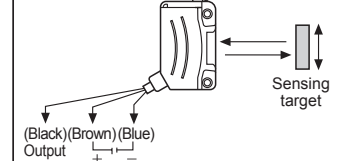
■ Operation Timing Diagram



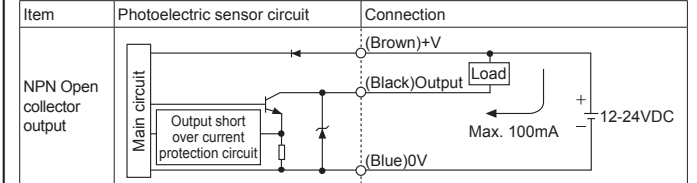
■ Operation Mode

Operation mode	Light ON
Receiver	Received light Interrupted light
Operation indicator (red LED)	ON OFF
Transistor Output	ON OFF

■ Connection



■ Control Output Circuit Diagram



※ 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.

■ Mounting & Adjustment

Ⓞ For mounting

When using photoelectric sensors closely over three units, it may result in malfunction due to mutual interference.

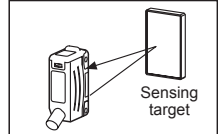
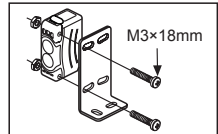
When installing the product, tighten the screw with a tightening torque of 0.5Nm.

Ⓞ Optical axis adjustment

After mounting the sensing target, fix it in the center of position where the indicator is operated adjusting the sensor to up/down, left/right. It should maintain the rating distance between sensor and the target.

※ The sensing distance indicated on specification chart is against 100×100mm of non-glossy white paper.

Be sure that it can be changed by size, surface and gloss of target.
※ The reliability of environment (temperature, supply, dust etc) is increased when mounting it in a stable area.



■ Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- When connecting a DC relay or other inductive load to the output, remove surge by using diodes or varistors.
- Use the product, 0.5 sec after supplying power.
- When using separate power supply for the sensor and load, supply power to sensor first.
- 12-24VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Wire as short as possible and keep away from high voltage lines or power lines, to prevent inductive noise.
- 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.
- When using sensor with the equipment which generates noise (switching regulator, inverter, servo motor, etc.), ground F.G. terminal of the equipment.
- This unit may be used in the following environments.
 - Ⓞ Indoors (in the environment condition rated in 'Specifications')
 - Ⓞ Altitude max. 2,000m
 - Ⓞ Pollution degree 3
 - Ⓞ Installation category II

■ 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

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