

**PHOTOELECTRIC SENSOR  
BJG 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(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc), it is required to install fail-safe device.**  
It may cause serious human or a fire and damage to property.
- Do not disassemble or modify this unit. Please contact us if it is required.**  
It may cause a fire or give an electric shock.

**Caution**

- This unit shall not be used outdoors.**  
It might shorten the life cycle of the product or give an electric shock.
- Do not use this unit in place with flammable or explosive gas.**  
It may cause a fire or explosion.
- Please observe rating specification.**  
It may shorten the life cycle or damage to the product.
- Do not use this unit beyond rating power and do not supply AC power at DC power type.**  
It may cause damage to the product.
- Please check the polarity of power and wrong wiring.**  
It may cause damage to the product.
- Do not use this unit in place with vibration or impact.**  
It may cause damage to the product..
- In cleaning the unit, do not use water or an oil-based detergent.**  
It might cause an electric shock or fire.

**Ordering information**

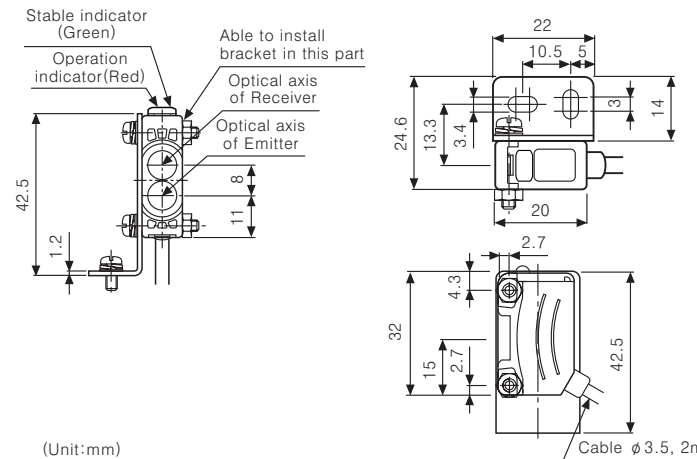
<b>BJG</b>	<b>30</b>	<b>-</b>	<b>D</b>	<b>D</b>	<b>T</b>
					T Solid-state output(TR)
					D DC power
					D Diffuse reflective
					Sensing distance 30mm
					BJG Series name

※The above specifications are changeable at anytime without notice.

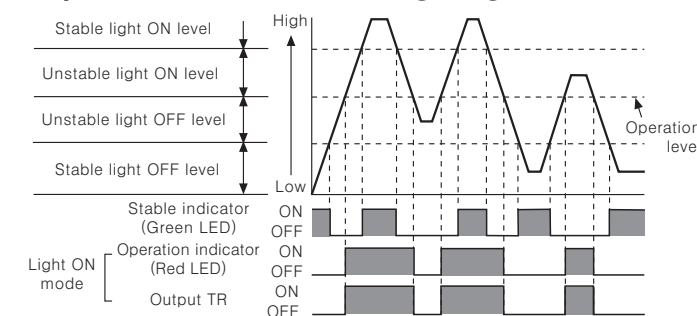
**Specification**

Model	<b>BJG30-DDT</b>
Sensing type	Diffuse reflective
Power supply	12~24VDC ±10%(Ripple P-P:Max. 10%)
Power consumption	Max. 30mA
Sensing distance	0~30mm(Non-glossy white paper 100×100mm) 0~15mm(Transparent glass 50×50mm, t=3.0mm)
Hysteresis	Max. 20% at sensing distance
Light source/ Wavelength	Infrared LED / 850nm
Control output	NPN Open collector type Load voltage:Max. 26.4VDC, Load current:Max. 100mA, Residual voltage:Max. 1V
Operation mode	Light ON mode fixed
Protection circuit	Reverse polarity protection, Short-circuit protection, Interference prevention function
Response time	Max. 1ms
Insulation resistance	Min. 20MΩ (500VDC)
Dielectric strength	1000VAC 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 <sup>2</sup> (50G) in X, Y, Z directions for 3 times
Ambient illumination	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (Illumination of receiver)
Ambient temperature	Operation : -25~55℃, Storage : -40~70℃(non-dew status)
Ambient humidity	Operation & Storage : 35~85%RH(non-dew status)
Protection	IP67(IEC standard)
Connection	Outgoing cable type
Indicator	Operation indicator:Red, Stable indicator:Green
Material	Case:PC+ABS, Cover:PMMA, LED Cap:PC
Cable	φ3.5mm, 3P, Length:2m
Accessory	Mounting bracket, Bolt
Unit weight	Approx. 45g

**Dimensions**



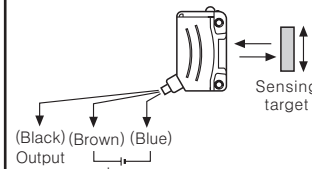
**Operation mode and timing diagram**



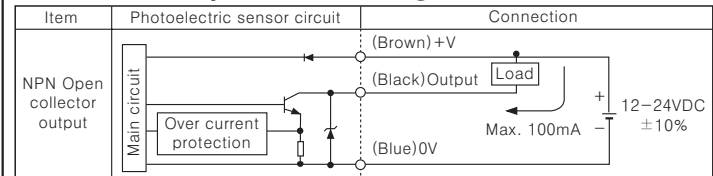
**Operation mode**

Operation mode	Light ON mode
Receiver	Received light Interrupted light
Operation indicator (Red LED)	ON OFF
TR Output	ON OFF

**Connection**



**Control output circuit diagram**

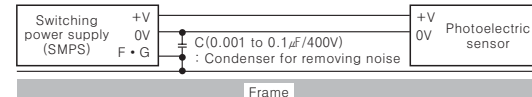


**Mounting & Adjustment**

- For mounting**  
Please use screw M3 for mounting of sensor, set the tightening torque under 0.5N.m.
- 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.

**Caution for using**

- The sensor will be in a detectable status within 500ms after supplying the power. If the power line of the load and the sensor is different, you must supply power to the sensor first.
- 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.
- If photoelectric sensor is installed at flat part, it might cause malfunction by reflection light from flat part. Be sure to put space between photoelectric sensor and ground.
- When wiring the photoelectric sensor with high voltage line, power line in the same conduit, it may cause malfunction or mechanical problem, please do wire separately.
- Avoid to install the unit in place with corrosive gas, oil or dust, strong flux, noise, sunlight, strong alkali, acid.
- In case of connecting 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, do not use an organic materials such as alkali, acid, chromic acid.
- When using switching power supply 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.



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

**Major products**

- PROXIMITY SENSOR ■ PHOTOELECTRIC SENSOR
- AREA SENSOR ■ FIBER OPTIC SENSOR
- DOOR/DOOR SIDE SENSOR ■ PRESSURE SENSOR
- ROTARY ENCODER ■ COUNTER
- TIMER ■ TEMPERATURE CONTROLLER
- TEMPERATURE/HUMIDITY TRANSDUCER
- POWER CONTROLLER ■ PANEL METER
- TACHO/LINE SPEED/PULSE METER
- DISPLAY UNIT ■ SENSOR CONTROLLER
- SWITCHING POWER SUPPLY ■ GRAPHIC PANEL
- STEPPING MOTOR & DRIVER & CONTROLLER
- LASER MARKING SYSTEM(CO<sub>2</sub>, Nd:YAG)

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