

Autonics

**PHOTO MICRO SENSOR
BS5-E□□ 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 "Caution for your safety" to avoid accidents or damages as using it correctly.

※The meaning of 'Warning' and 'Caution' is as follows;

Warning In case a serious injury or dead may be occurred.

Caution In case a little injury or damage of this unit may be occurred.

※The meaning of the mark on the product and manual is as follows;

▲ is a caution mark for danger in special condition.

Warning

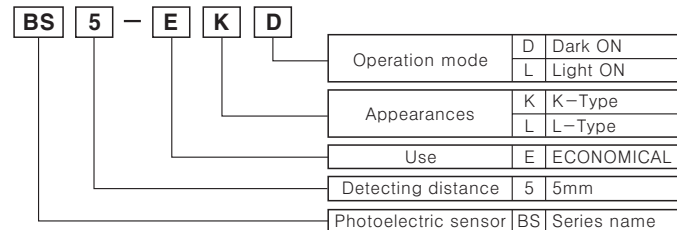
●In case of using this unit with machineries(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc), it requires installing fail-safe device, or contact us for information on type required. It may result in serious damage, fire or human injury.

Caution

Cable Connection

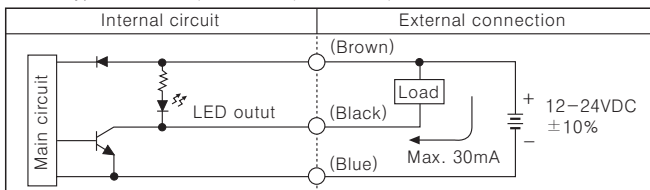
There is no over current protection circuit for output short-circuit. Please check each terminal layout, range of power voltage and connection after cutting off power line.

Ordering information



Control output circuit diagram

●Cable type:BS5-EKD, BS5-ELD, BS5-EKL, BS5-ELL

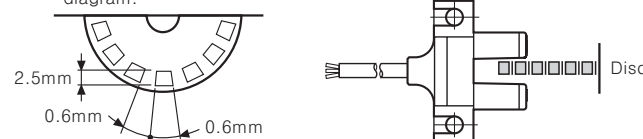


※The above specifications are changeable without notice anytime.

Specifications

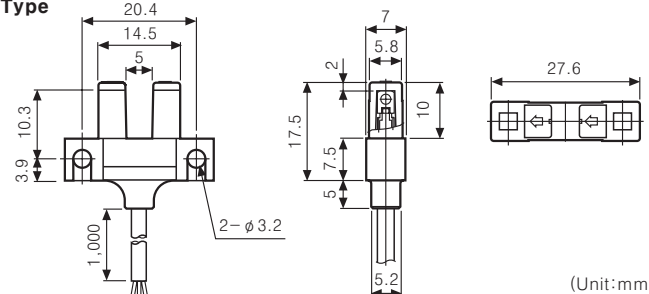
Type	Photo interrupter(Non-modulation type)			
Model	BS5-EKD	BS5-ELD	BS5-EKL	BS5-ELL
Detecting distance	5mm fixed			
Min. detecting target	0.8×1mm Opaque materials			
Hysteresis	0.05mm			
Power supply	12-24VDC ±10%(Ripple P-P:Max. 10%)			
Current consumption	Max. 15mA			
Control output	NPN open collector output Load voltage:Same as power voltage, Load current in resistance loading:Max. 30mA, Residual voltage:Max. 1V(at 30mA)			
Protection circuit	Reverse polarity protection			
Operation mode	Dark ON		Light ON	
Response time	Max. 20μs			
Response frequency	10kHz(Note1)			
Connection	Cable connection			
Light emitting diode for transmitting source	Infrared LED			
Light receiving element	Photo transistor			
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			
Ambient illumination	Fluorescent light : Max. 1,000lx			
Ambient temperature	-25 to +65°C(non-freezing condition), Storage:-40 to +85°C			
Ambient humidity	45 to 85%RH, Storage:35 to 95%RH			
Protection	IP40(IEC)			
Material	PA-6			
Cable	φ 3mm, 3P, Length:1m			
Weight	Approx. 30g			

※(Note1)Response frequency is the value from revolving the circle panel of below diagram.

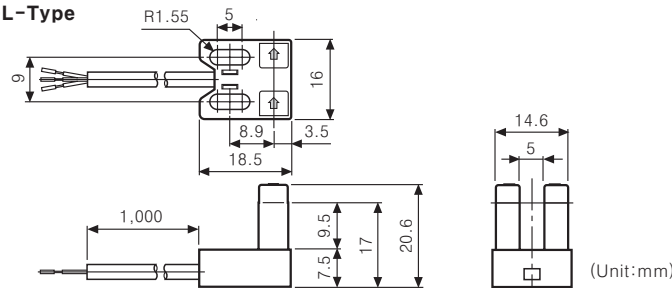


Dimensions

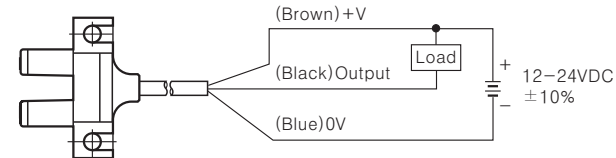
●K-Type



●L-Type



Connections



Operation mode

Operation mode		Operation condition	
Dark ON	Receiver operation	ON OFF	
	Output TR	ON OFF	
Light ON	Receiver operation	ON OFF	
	Output TR	ON OFF	

Caution for using

1. External light source

●There is no protection of external light source in this unit, please intercept external light source from the receiver.

2. Connection

●Do not wire with power line or high voltage line, use separated conduit to avoid malfunction or damage by inductive current.

3. Installation of the sensor

●Be sure not to touch any object to detecting part of sensor, if the detecting part damaged, it may cause malfunction or efficiency dropped.

4. Maintenance of the sensor

●If the sensor is installed at place there are a lot of dust and humidity, clear the receiver and the emitter with dry cloth. Pollution of the receiver and the emitter can occur malfunction of the sensor.

5. Noise generator

●If there are machines generating noise at surrounding photo micro sensor (Switching regulator, inverter motor etc.)be sure to earth F.G terminals of machines.

●In case of connect 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.

6. The others

●Avoid installing the sensor as follow;
Corrosive gas, oil or dust, vapor, strong flux & alkali, acid, and strong direct ray of the sun.

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

Main products

- COUNTER
- TIMER
- TEMPERATURE CONTROLLER
- PANEL METER
- TACHO/LINE SPEED/PULSE METER
- DISPLAY UNIT
- PROXIMITY SENSOR
- PHOTOELECTRIC SENSOR
- FIBER OPTIC SENSOR
- PRESSURE SENSOR
- ROTARY ENCODER
- SENSOR CONTROLLER
- POWER CONTROLLER
- STEPPING MOTOR & DRIVER & CONTROLLER
- LASER MARKING SYSTEM (CO₂, Nd:YAG)

Autonics Corporation
<http://www.autonics.com>

Satisfiable Partner For Factory Automation

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