

# B1-Sensor®

## CAPACITIVE PROXIMITY SWITCH

### MANUAL



Thanks for using B1-Sensor electrical, 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

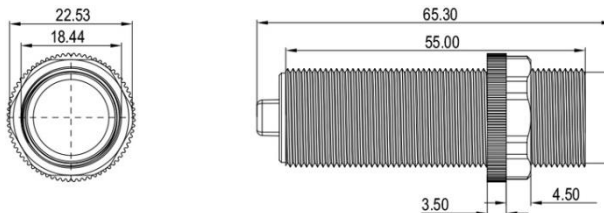
In case of using this unit with machinery (Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, it is required to install fail-safe device. It may cause a fire, human injury or damage to property.

#### Caution

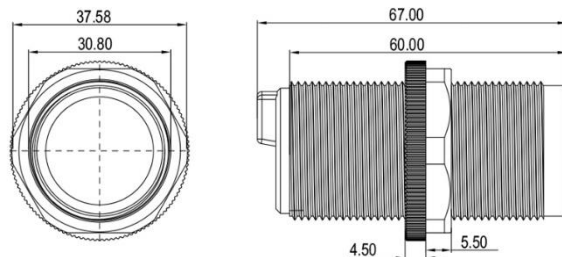
- Do not use this unit in place where there are flammable, explosive gas, chemical or strong alkalis, acids. It may cause a fire or explosion.
- Do not impact on this unit. It may result in malfunction or damage to the product.
- Do not apply AC power and observe the rated specification. It may result in serious damage to the product.

### Dimensions

#### BCR18



#### BCR30



### Specification

| Model                            | M18  |                | M30            |                |
|----------------------------------|--|----------------|----------------|----------------|
| Sensing distance                 | 5mm   8mm  |                | 10mm   15mm    |                |
| Hysteresis                       | Max. 10% of sensing distance   |                |                |                |
| Standard sensing target          | 18 * 18 Entity   | 25 * 25 Entity | 30 * 30 Entity | 45 * 45 Entity |
| Setting distance                 | 0-3.5mm  | 0-5.6mm        | 0-7mm          | 0-10.5mm       |
| Power supply (Operating voltage) | 12 24VDC (10-30VDC)  |                |                |                |
| Leakage current                  | Max 0.6mA  |                |                |                |
| Response frequency (^1)          | 50Hz   |                |                |                |
| Residual voltage                 | 3.5V C   |                |                |                |
| Affection by Temp.               | Max. ± 10% for sensing distance at ambient temperature 20C                         |                |                |                |
| Control output                   | 200mA  |                |                |                |
| Insulation resistance            | Min. 50MQ (500VDC megger)  |                |                |                |
| Dielectric strength              | 1500VAC 50/60Hz for 1 minute   |                |                |                |
| Vibration                        | 1 mm amplitude at frequency of 10 - 55Hz in each of X, Y Z directions for 2 hours  |                |                |                |
| Shock                            | 500m/s <sup>2</sup> (50G)X,Y,Z directions for 3 times                              |                |                |                |
| Indicator                        | Operating indicator (Red LED)  |                |                |                |
| Ambient temperature              | 25→+55C (No icing)   |                |                |                |
| Storage temperature              | 30→+80C (No icing)   |                |                |                |
| Ambient humidity                 | 35-95%RH (No condensation)   |                |                |                |
| Protection circuit               | Surge protection, Reverse polarity protection, Overload & short circuit protection |                |                |                |
| Protection                       | IP65(IEC Standards)  |                |                |                |
| Materials                        | Oil resistant cable(Gray): Oil resistant Polyvinyl chloride(PVC)                   |                |                |                |

### Ordering Information

| Item             | Code    | Description     |
|------------------|---------|-----------------|
| Company Code     | B       | B1 Sensor       |
| Shape            | C       | Cylinder Type   |
| Dimension        | R       | Square Type     |
| Sensing Distance | 18      | Sensing mm      |
| Dimension        | 8       | mm              |
| Voltage          | D       | DC 3Wire        |
| Output Type      | NO      | NPN N.O         |
| Connection       | NO mark | Cable Type      |
|                  | T       | Connection Type |
|                  | O       | Normally Open   |
|                  | C       | Normally Close  |
|                  | NO      | NPN N.O         |
|                  | NC      | NPN N.C         |
|                  | PO      | PNP N.O         |
|                  | PC      | PNP N.C         |
|                  | A       | AC 2Wire        |
|                  | T       | DC 2Wire        |
|                  | D       | DC 3Wire        |