

### Amplifier Built-in Ultra-compact Type Photoelectric Sensor EX-20 Series

MJECK-EX20 No.0054-68V

Thank you very much for purchasing Panasonic products. Please read this Instruction Manual carefully and thoroughly for the correct and optimum use of this product. Kindly keep this manual in a convenient place for quick reference.

- Please refer "our web site (<http://panasonic.net/id/pidsx/global>)".
- Access method is "Download" → "Manual" → "Model No."
- If you could not visit our web site, contact our sales office near your sight.

## WARNING

- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.

## 1 INTENDED PRODUCTS FOR CE MARKING

- Refer "our web site (<http://panasonic.net/id/pidsx/global>)" for the intended products.
- Contact for CE  
Panasonic Marketing Europe GmbH Panasonic Testing Center  
Winsbergring 15, 22525 Hamburg, Germany



## 2 PART DESCRIPTION

### • Front sensing

Stability indicator (Green) (Note 1)		Operation indicator (Orange) (Note 1)
Lights up under the stable light condition or the stable dark condition		Lights up when the sensing output is ON

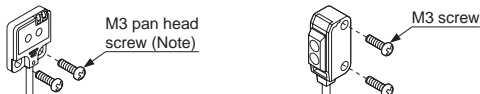
### • Side sensing

Sensitivity adjuster (Note 2)		Operation mode switch (Note 3)
Sensing range becomes longer when turned clockwise		L: Light-ON D: Dark-ON

- Notes: 1) Not incorporated on the thru-beam type sensor emitter.  
2) Not incorporated on the thru-beam type sensor receiver.  
3) Incorporated on the thru-beam type sensor receiver only.

## 3 MOUNTING

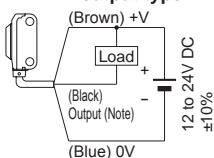
- The tightening torque should be 0.5N·m or less.



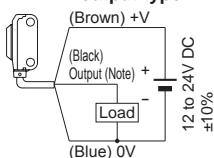
Note: When mounting the front sensing type sensor, use M3 pan head screws without washers, etc.

## 4 WIRING DIAGRAMS

### • NPN output type



### • PNP output type

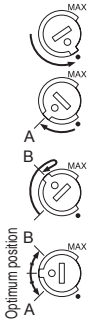


Note: The thru-beam type sensor emitter does not incorporate the output.

## 5 SENSITIVITY ADJUSTMENT

### Step

1. Turn the sensitivity adjuster fully counterclockwise to the minimum sensitivity position, MIN.
2. In the light received condition, turn the sensitivity adjuster slowly clockwise and confirm the point A where the sensor enters the "Light" state operation.
3. In the dark condition, turn the sensitivity adjuster further clockwise until the sensor enters the "Light" state operation and then bring it back to confirm point B where the sensor just returns to the "Dark" state operation.  
(If the sensor does not enter the "Light" state operation even when the sensitivity adjuster is turned fully clockwise, the position is point B.)
4. The position at the middle of points A and B is the optimum sensing position.



## 6 CAUTIONS

- This product has been developed / produced for industrial use only.
- The thin cable (0.1mm<sup>2</sup>) is used for this product. Thus, take care that if the cable is pulled with excessive force, it may cause cable break.
- EX-24□ are not incorporated with a sensitivity adjuster.
- If there is a reflective object (conveyor, etc.) in the background, since it may affect the sensing, use these models by keeping enough distance from the reflective object.
- If a reflective object is present in the background, the sensing of EX-28□ may be affected. When setting the sensor, make sure to confirm that the reflective object has no effect. In case the reflective object affects the sensing, take measures such as removing the reflective object or coloring it in black, etc.
- If sensors are mounted close together and the ambient temperature is near the maximum rated value, provide for enough heat radiation / ventilation.
- Make sure to carry out wiring in the power supply OFF condition.
- Take care that wrong wiring will damage the sensor.
- Verify that the supply voltage variation is within the rating.
- If power is supplied from a commercial switching regulator, ensure that the frame ground (F.G.) terminal of the power supply is connected to an actual ground.
- In case noise generating equipment (switching regulator, inverter motor, etc.) is used in the vicinity of this product, connect the frame ground (F.G.) terminal of the equipment to an actual ground.
- Extension up to total 50m (each emitter and receiver of thru-beam type), or less, is possible with 0.3mm<sup>2</sup>, or more of conductor area cable. However, the extension of a power supply line and the output line of less than 10m is acceptable in case using this product as conforming to S-mark.
- Do not run the wires together with high-voltage lines or power lines or put them in the same raceway. This can cause malfunction due to induction.
- Do not use during the initial transient time (50ms) after the power supply is switched ON.
- Take care that the sensor is not directly exposed to fluorescent lamp from a rapid-starter lamp, a high frequency lighting device or sunlight etc., as it may affect the sensing performance.
- This sensor is suitable for indoor use only.
- Do not use this sensor in places having excessive vapor, dust, etc., or where it may come in contact with corrosive gas, etc.
- Take care that the sensor does not come in contact with oil, grease, organic solvents such as thinner, etc., strong acid, or alkaline.
- This sensor cannot be used in an environment containing inflammable or explosive gases.
- Never disassemble or modify the sensor.

## 7 RoHS DIRECTIVE

- This equipment complies with RoHS (EC and Chinese directive).
- Chinese RoHS indicates inclusion despite regulation value. (Refer to Chinese part.)

Panasonic Industrial Devices SUNX Co., Ltd.

<http://panasonic.net/id/pidsx/global>

Overseas Sales Division (Head Office)

2431-1 Ushiyama-cho, Kasugai-shi, Aichi, 486-0901, Japan

Phone: +81-568-33-7861 FAX: +81-568-33-8591

For sales network, please visit our website.

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