

OMRON

OPTICAL FIBER PHOTOELECTRIC SENSOR E3X-SD

Instruction Sheet

Thank you for selecting OMRON product. Before operating this product, read the sheet thoroughly to acquire sufficient knowledge of the product.

- Please let the experts operate with electric knowledge. Please use the product correctly on the basis of reading and understanding the instruction sheet. Please keep this instruction sheet well for using.



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Precaution on Safety

Meanings of Signal Words

CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

Alert statements in this Manual

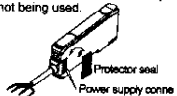
- Do not use it exceeding the rated voltage. There is a possibility of failure and fire. Do not connect sensor to AC power supply. Risk of explosion. Hot surface may cause heat injury.

Precautions for Safe Use

- Do not use the Amplifier Unit in environments subject to flammable or explosive gases. Do not use the Amplifier Unit in environments subject to exposure to water, oil, chemicals, etc. Do not attempt to disassemble, repair, or modify the Amplifier Unit in any way. Do not apply voltages or currents that exceed the rated ratings. Do not use the Amplifier Unit in atmospheres or environments at exceed product ratings. Wire the Amplifier Unit correctly, e.g., do not reverse the polarity of the power supply. Connect the load correctly. Do not short both ends of the load. Do not use the Amplifier Unit if the case is damaged. When disposing of the Amplifier Unit, treat it as industrial waste. Do not use the sensor in the place exposed to the direct sunlight. The surface temperature of sensor rises depending on the use conditions such as ambient temperature and power supply voltage. Be careful when you operate or clean it. Hot surface may cause heat injury.

Precautions for Correct Use

- Do not use the Amplifier Unit under the following conditions. In the place exposed to the direct sunlight. In the place where humidity is high and condensation may occur. In the place where corrosive gases exist. In the place where vibration or shock is directly transmitted to the product. Wire the Amplifier Unit separately from power supply or high voltage lines. Do not extend the cable to more than 100 m, and use a wire size of 0.3 mm² or larger for the extension cable. The Amplifier Unit is ready to operate 200 ms after the power supply is turned ON. If the Amplifier Unit and load are connected power supplies separately, turn ON the power supply to the Amplifier Unit first. Output pulses may occur when the power is interrupted turn OFF the power to the load or load line before turning ON the power to the Sensor. When you use the Amplifier Units with Connectors to prevent electric shock or short-circuits, attach the protector seats (provided with E3X-CN-series). Connectors to the sides of pc supply connectors that are not being used.

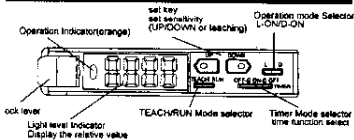


- Always turn OFF the power supply before connecting, separating or adding Amplifier Units. Do not pull or apply excessive pressure or force (exceeding 9.8 N) on the Fiber Unit when it is mounted to the Amplifier Unit. Always keep the protective cover in place when using the Amplifier Unit. Do not use thinners, benzene, acetone, or kerosene for cleaning the Amplifier Unit.

Specifications

Table with columns: Connection method, Model, Light source, Power supply voltage, Power consumption, Control output, Response time, Sensitivity setting, Timer, Protection circuits, Indicator, Digital display, Interference prevention, Ambient illumination, Ambient temperature, Ambient humidity, Infiltration resistance, Dielectric strength, Vibration resistance, Shock resistance, Degree of protection, Materials.

Nomenclature



Installing the Amplifier Unit

Mounting Units: Attach the hook on the Fiber Unit connector end of the unit on the DIN Track and then press down on the other end of the Unit until it locks into place. Always attach the Fiber Unit connector and first, the incorrect end is attached first, the mounting strength will be reduced.

Removing Units: Press the Unit in the direction indicated by "1" and then lift up on the Fiber Unit connector and the Unit in the direction indicated by "2".

Joining Amplifier Units (for Units with Connectors): Up to 16 Units can be joined. Mount the Amplifier Units one at a time onto the DIN Track. Slide the Amplifier Units together and press the Amplifier Units together until they click into place.

Secure the Units with an End Plate (EPP-M) if there is a possibility of the Amplifier Units moving. Due to vibration, remove the Units in the reverse order.

Connecting the Fiber Unit

Open the protective cover. Press up the lock button. Insert the fibers all the way to the back of the connector insertion opening. Return the lock button to its original position to secure the fibers.

Basic Settings

1. Set Operation Mode

Table for Operation Mode settings: L-ON, D-ON, L-D-ON. Includes a diagram of the selector switch.

2. Set Timer Mode

Select Timer Mode OFF, OFF-D, ON. Set by Timer Mode selector. The delay time is 10ms (fixed).

3. Sensitivity Setting Method

Use Manual and Teaching to set sensitivity.

Set sensitivity by Manual: In measure state (RUN), adjust the sensitivity while affirm the action.

Table for Manual Sensitivity Setting: Shows UP and DOWN key actions and resulting sensitivity levels (e.g., 10.2P, 10.3P, 12.0P, 11.0P).

Set sensitivity by Teaching: There are three Teaching methods to set sensitivity. Please choose the best.

1. Teaching with workpiece: When Teaching is over, Operation Mode selector must return to RUN. 2-1. The maximum sensitivity setting. Use the maximum sensitivity as threshold.

Table for Teaching with workpiece: Shows TEACH/RUN switch actions and resulting display (Ech, FULL, rUn).

2. Teaching without workpiece: Get two point about with/without workpiece, then set the action level in the middle.

Table for Teaching without workpiece: Shows TEACH/RUN switch actions and resulting display (Ech, 2Pnt, rUn).

3. Automatic Teaching: Measuring the changes in the time ordered, set the middle of max sensitivity and min sensitivity as threshold. This method is mostly be adopted to the situation that the workpiece is moving continuously on product line.

Table for Automatic Teaching: Shows TEACH/RUN switch actions and resulting display (Ech, RuTo, rUn).

TEACH ERROR: In the course of TEACH, errors have taken place when the situation was displayed below.

Table for Error Display: Over Error, Low Error, Near Error. Includes flash codes and descriptions.

9. Error Display

When error occurred, the indicator will express the following information. Please reference the matter before operation.

Table for Error Display: Data Error, Over current Error. Includes flash codes and descriptions.

Confirming the Package Contents

Amplifier Unit, 1 Instruction Sheet (this sheet), 1

Suitability for Use

THE PRODUCTS CONTAINED IN THIS SHEET ARE NOT SAFETY RATED. THEY ARE NOT DESIGNED OR RATED FOR ENSURING SAFETY OF PERSONS, AND SHOULD NOT BE RELIED UPON AS A SAFETY COMPONENT OR PROTECTIVE DEVICE FOR SUCH PURPOSES.

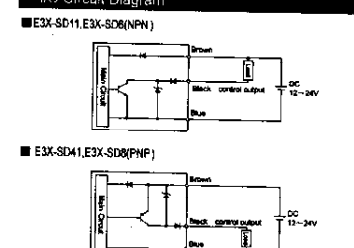
OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer's application or use of the product.

Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

EUROPE, NORTH AMERICA, ASIA-PACIFIC contact information and OMRON Corporation logo.

I/O Circuit Diagram



Dimensions

