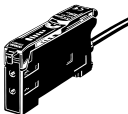


## Ordering Information

## Amplifier Units

## Pre-wired

| Item                   | Shape                                                                             | Control output | Model      |            |
|------------------------|-----------------------------------------------------------------------------------|----------------|------------|------------|
|                        |                                                                                   |                | NPN output | PNP output |
| Standard models        |  | ON/OFF output  | E3X-NA11   | E3X-NA41   |
| High-speed detection   |                                                                                   |                | E3X-NA11F  | E3X-NA41F  |
| Mark-detecting models  |                                                                                   |                | E3X-NAG11  | E3X-NAG41  |
| Water-resistant models |  |                | E3X-NA11V  | E3X-NA41V  |

## Connector type

| Item                                     | Shape                                                                             | Applicable Connector<br>(order separately) |          | Control output | Model      |            |
|------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------|----------|----------------|------------|------------|
|                                          |                                                                                   |                                            |          |                | NPN output | PNP output |
| Standard models                          |  | Master                                     | E3X-CN11 | ON/OFF output  | E3X-NA6    | E3X-NA8    |
|                                          |                                                                                   | Slave                                      | E3X-CN12 |                |            |            |
| Water-resistant models<br>(M8 Connector) |  | XS3F-M421-40□-A<br>XS3F-M422-40□-A         |          |                |            | E3X-NA14V  |

Amplifier Units Connectors (Order Separately) Note: Stickers for Connectors are included as accessories.

| Item             | Shape                                                                               | Cable length | No. of conductors | Model    |
|------------------|-------------------------------------------------------------------------------------|--------------|-------------------|----------|
| Master connector |  | 2 m          | 3                 | E3X-CN11 |
| Slave connector  |  |              | 1                 | E3X-CN12 |

## Precautions for ordering the connector type

Refer to the following tables when placing an order. Basically, Amplifier Units and connectors are sold separately.

Please place an order after referring to the combination given below.

| Amplifier Units |         |         | + | Applicable Connector (order separately) |                   |
|-----------------|---------|---------|---|-----------------------------------------|-------------------|
| Type            | NPN     | PNP     |   | Master connector                        | Slave connector   |
| Standard        | E3X-NA6 | E3X-NA8 |   | E3X-CN11 (3 wires)                      | E3X-CN12 (1 wire) |

**When Using 5 Amplifier Units**

|                           |   |                                         |
|---------------------------|---|-----------------------------------------|
| Amplifier Units (5 Units) | + | 1 Master Connector + 4 Slave Connectors |
|---------------------------|---|-----------------------------------------|

## Sensor I/O Connectors (Order separately)

| Size | Cable type     | Shape                                                                                        | Cable length | Model           |
|------|----------------|----------------------------------------------------------------------------------------------|--------------|-----------------|
| M8   | Standard cable | Straight  | 2 m          | XS3F-M421-402-A |
|      |                |                                                                                              | 5 m          | XS3F-M421-405-A |
|      |                | L-shaped  | 2 m          | XS3F-M422-402-A |
|      |                |                                                                                              | 5 m          | XS3F-M422-405-A |

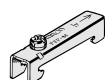
Note: Refer to page NB-6 for details.

## Accessories (Order Separately)

## Mounting Brackets

| Shape                                                                               | Applicable type                 | Model    | Quantity |
|-------------------------------------------------------------------------------------|---------------------------------|----------|----------|
|  | E3X-NA□<br>E3X-NA□F<br>E3X-NAG□ | E39-L143 | 1        |
|  | E3X-NA□V                        | E39-L148 |          |

## End Plate

| Shape                                                                                | Model | Quantity |
|--------------------------------------------------------------------------------------|-------|----------|
|  | PFP-M | 1        |

## Rating/performance

## Amplifier Units

| Item                          | Model | Type                                                                                                                                                                                                 | Pre-wired                                                               |                                                                                                                            |                          |                                                       | Connector type                                        |                                                       |
|-------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
|                               |       |                                                                                                                                                                                                      | Standard models                                                         | High-speed de-<br>tection models                                                                                           | Mark-detecting<br>models | Water-resistant<br>models                             | Standard models                                       | Water-resistant mod-<br>els (M8 Connector)            |
|                               |       |                                                                                                                                                                                                      | E3X-NA11                                                                | E3X-NA11F                                                                                                                  | E3X-NAG11                | E3X-NA11V                                             | E3X-NA6                                               | E3X-NA14V                                             |
|                               |       | NPN<br>output                                                                                                                                                                                        | E3X-NA41                                                                | E3X-NA41F                                                                                                                  | E3X-NAG41                | E3X-NA41V                                             | E3X-NA8                                               | E3X-NA44V                                             |
| Light source (wave<br>length) |       | Red LED (680 nm)                                                                                                                                                                                     |                                                                         |                                                                                                                            | Green LED<br>(520 nm)    | Red LED (680 nm)                                      |                                                       |                                                       |
| Power supply volt-<br>age     |       | 12 to 24 VDC ±10%, ripple (p-p): 10% max.                                                                                                                                                            |                                                                         |                                                                                                                            |                          |                                                       |                                                       |                                                       |
| Current consumption           |       | 35 mA max.                                                                                                                                                                                           | 35 mA max. (at<br>power supply<br>voltage 24 VDC)                       | 35 mA max.                                                                                                                 |                          |                                                       |                                                       |                                                       |
| Control output                |       | Load current 50 mA (residual voltage 1 V max. each) Open collector output type (depends on the NPN/PNP out-<br>put format) Light-ON/Dark-ON switch selectable                                        |                                                                         |                                                                                                                            |                          |                                                       |                                                       |                                                       |
| Response time                 |       | Operation or re-<br>set: 200 s max. *                                                                                                                                                                | Operating: 20 s<br>max. Reset: 30 s<br>max.                             | 200 s max. for operation and reset respectively (See note.)                                                                |                          |                                                       |                                                       |                                                       |
| Sensitivity adjust-<br>ment   |       | 8-turn endless adjuster (with indicator)                                                                                                                                                             |                                                                         |                                                                                                                            |                          |                                                       |                                                       |                                                       |
| Protective circuits           |       | Reverse polarity<br>protection, out-<br>put short-circuit<br>protection, mutu-<br>al interference<br>prevention (opti-<br>cally synchro-<br>nized)                                                   | Reverse polarity<br>protection, out-<br>put short-circuit<br>protection | Reverse polarity protection, output short-circuit protection, mutual interfer-<br>ence prevention (optically synchronized) |                          |                                                       |                                                       |                                                       |
| Timer function                |       | OFF-delay timer: 40 ms (fixed)                                                                                                                                                                       |                                                                         |                                                                                                                            |                          |                                                       |                                                       |                                                       |
| Ambient illuminance           |       | Incandescent lamp: 10,000 lux max. Sunlight: 20,000 lux max.                                                                                                                                         |                                                                         |                                                                                                                            |                          |                                                       |                                                       |                                                       |
| Ambient temperature           |       | Operating: Groups of 1 to 3 Amplifiers: -25 to +55°C, Groups of 4 to 11 Amplifiers: -25 to +50°C, Groups of 12 to 16 Amplifiers: -25 to +45°C Storage: -30 to +70°C (with no icing and condensation) |                                                                         |                                                                                                                            |                          |                                                       |                                                       |                                                       |
| Ambient humidity              |       | Operating/Storage: 35% to 85% RH (with no condensation)                                                                                                                                              |                                                                         |                                                                                                                            |                          |                                                       |                                                       |                                                       |
| Insulation resistance         |       | 20 M min. at 500 VDC                                                                                                                                                                                 |                                                                         |                                                                                                                            |                          |                                                       |                                                       |                                                       |
| Dielectric strength           |       | 1,000 VAC at 50/60 Hz for 1 minute                                                                                                                                                                   |                                                                         |                                                                                                                            |                          |                                                       |                                                       | 500 VAC at<br>50/60 Hz for<br>1 minute                |
| Vibration resistance          |       | 10 to 55 Hz with a 1.5 mm double amplitude for 2 hrs each in X, Y and Z directions                                                                                                                   |                                                                         |                                                                                                                            |                          |                                                       |                                                       |                                                       |
| Shock resistance              |       | Destruction: 500 m/s <sup>2</sup> for 3 times each in X, Y, and Z directions                                                                                                                         |                                                                         |                                                                                                                            |                          |                                                       |                                                       |                                                       |
| Protective structure          |       | IEC 60529 IP50 (with Protective Cover attached)                                                                                                                                                      |                                                                         |                                                                                                                            |                          | IEC 60529 IP66<br>(with Protective<br>Cover attached) | IEC 60529 IP50<br>(with Protective<br>Cover attached) | IEC 60529 IP66<br>(with Protective<br>Cover attached) |
| Connection method             |       | Pre-wired models (standard length: 2 m)                                                                                                                                                              |                                                                         |                                                                                                                            |                          |                                                       | Connector type                                        | M8 connector                                          |
| Weight (Packed<br>state)      |       | Approx. 100 g                                                                                                                                                                                        |                                                                         |                                                                                                                            |                          | Approx. 110 g                                         | Approx. 55 g                                          | 65 g                                                  |
| Material                      | Case  | PBT (polybutylene terephthalate)                                                                                                                                                                     |                                                                         |                                                                                                                            |                          |                                                       |                                                       |                                                       |
|                               | Cover | Polycarbonate                                                                                                                                                                                        |                                                                         |                                                                                                                            |                          | Polyethersul-<br>fone (PES)                           | Polycarbonate                                         | Polyethersul-<br>fone (PES)                           |
| Accessories                   |       | Instruction manual                                                                                                                                                                                   |                                                                         |                                                                                                                            |                          |                                                       |                                                       |                                                       |

\* If 8 or more Units are installed side-by-side, the response time will be 350  $\mu$ s max.