


# E3C-VS/VM

## Extremely thin beam ideal for detection of minute objects and marks

- Ideal for detection of small objects and slight color differences
- Bad mark detection
- Detection of thin wire of 200 μ
- Detection of slight level differences.








 Be sure to read *Safety Precautions* on page 4.

## Ordering Information

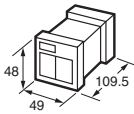

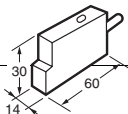

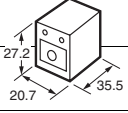
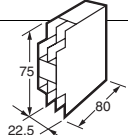
### Sensors

#### Sensor Heads

 Red light  Green light


| Sensing method                           | Appearance  | Connection method | Sensing distance   | Model       |
|--|---|-------------------|--|-------------|
| Reflective model<br>(for mark detection) |             | Pre-wired (2 m)   |  10±2 mm  | E3C-VS1G 2M |
|  |   |                   |  30±5 mm | E3C-VS3R 2M |
|  |  35±5 mm  |                   | E3C-VM35R 2M   |             |
|  |  70±10 mm |                   | E3C-VS7R 2M  |             |

### Amplifier Units

| Power supply | Application            | Appearance  | Function  | Model       |
|--------------|------------------------|---|---|-------------|
| AC           | General-purpose models |  | --  | E3C-A       |
|              |                        |   |  | E3C-C       |
| DC           | Slim body              |  |  | E3C-JC4P 2M |
|              | Compact body           |  | --  | E3C-GE4     |
|              | Front terminal         |  |   | E3C-WE4     |
|              |                        |   |   | E3C-WH4F    |

## Accessories (Order Separately)

### Mounting Brackets

| Appearance  | Model   | Quantity | Remarks                                     |
|---|---------|----------|---|
|  | E39-L42 | 2        | Can be used with the E3C-VS1G, or E3C-VS3R. |

Refer to Mounting Brackets on *E39-L/F39-L/E39-S/E39-R* for details.

\* If a through-beam model is used, order two Mounting Brackets; one for the Emitter and one for the Receiver.

## Ratings and Specifications

### Sensor Head

| Item  | Sensing method<br>Model | Reflective model (for mark detection)   |                                  |  |  |
|---|-------------------------|---|----------------------------------|--|--|
|   |                         | E3C-VS1G  | E3C-VS3R                         | E3C-VM35R  | E3C-VS7R   |
| Sensing distance                                |                         | 10±2 mm   | 30±5 mm                          | 35±5 mm  | 7±10 mm  |
| Minimum detectable object (black mark on white) |                         | 0.7 mm at central sensing distance  | 2 mm at central sensing distance | 0.2 mm at central sensing distance   | 0.6 mm at central sensing distance   |
| Light source (wavelength)                       |                         | Green LED (565 nm)  | Red LED (680 nm)                 | Red LED (660 nm)   |  |
| Ambient illumination                            |                         | Incandescent lamp: 1,000 lx max. (on light-receiving side)<br>Sunlight: 3,000 lx max. (on light-receiving side) |                                  |  |  |
| Ambient temperature range                       |                         | Operating: -10 to 70°C (with no icing or condensation)<br>Storage: -25 to 70°C (with no icing or condensation)  |                                  | Operating/storage: -25 to 70°C<br>(with no icing or condensation)                                |  |
| Ambient humidity range                          |                         | Operating: 35% to 85%, Storage: 35% to 95% (with no condensation)   |                                  |  |  |
| Insulation resistance                           |                         | 20 MΩ min. (at 500 VDC)   |                                  |  |  |
| Dielectric strength                             |                         | 500 VAC, 50/60 Hz for 1 min   |                                  |  |  |
| Vibration resistance (destruction)              |                         | 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions                                 |                                  |  |  |
| Shock resistance (destruction)                  |                         | 500 m/s <sup>2</sup> 3 times each in X, Y, and Z directions   |                                  |  |  |
| Degree of protection                            |                         | IEC IP64 (indoors only)   |                                  | IEC IP50 (indoors only)  |  |
| Connection method                               |                         | Pre-wired cable (standard length: 2 m)  |                                  |  |  |
| Weight (packed state)                           |                         | Approx. 50 g  |                                  | Approx. 60 g   |  |
| Material  | Case                    | Polycarbonate   |                                  | Heat-resistant ABS   |  |
|   | Lens                    | Polycarbonate   |                                  | Glass  |  |
|   | Mounting Bracket        | ---   |                                  | Steel  |  |
| Accessories                                     |                         | Instruction manual  |                                  | Mounting Bracket, Slotted/<br>Phillips screws M3 × 16,<br>Spring washer, Flat washer,<br>M3 nuts | Mounting Bracket, Slotted/<br>Phillips screws M3 × 16,<br>Spring washer, Flat washer,<br>M3 nuts, Instruction manual |

### Amplifier Units

Refer to E3C.

### I/O Circuit Diagrams

Refer to E3C.

### Connection

Refer to E3C.

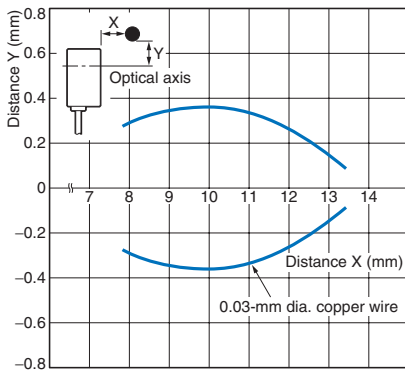
### Connectors

Refer to E3C.

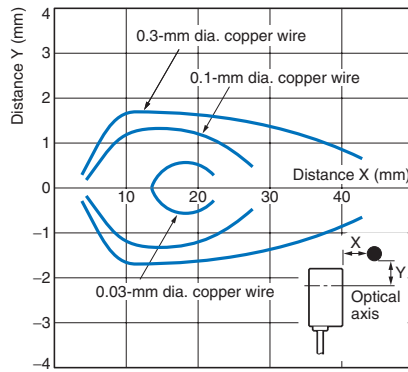
## Engineering Data (Typical)

### Operating Range

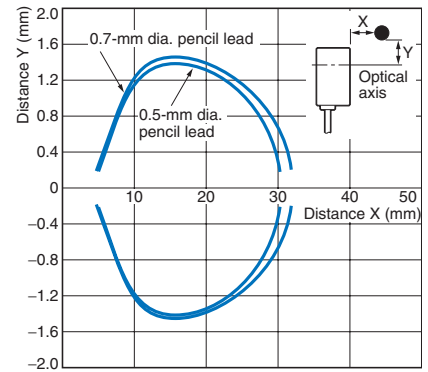
#### E3C-VS1G



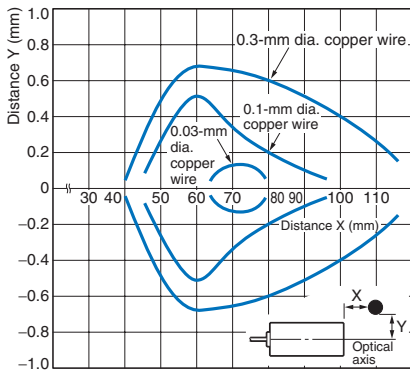
#### E3C-VS3R



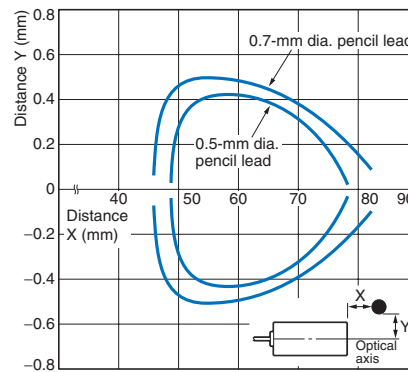
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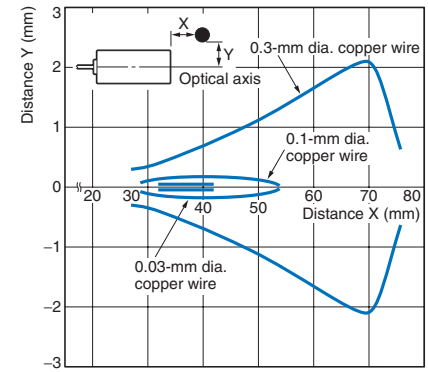
#### E3C-VS7R



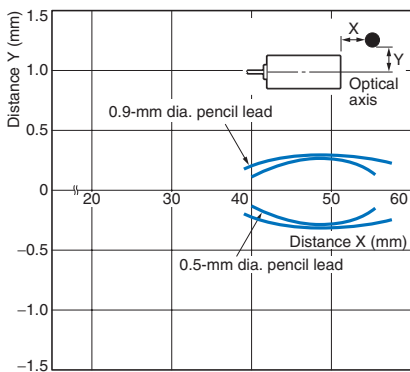
#### E3C-VS7R



#### E3C-VM35R

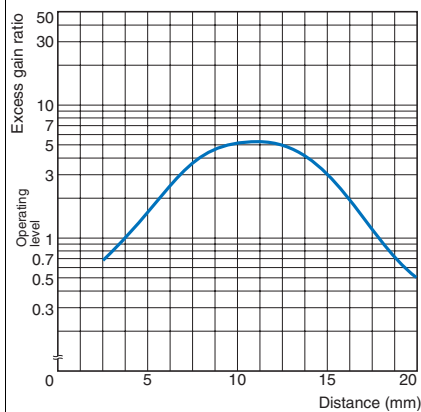


#### E3C-VM35R

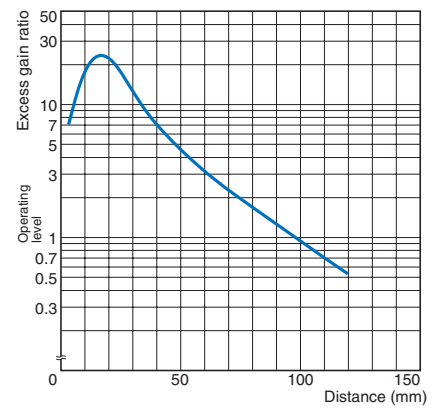


### Excess Gain vs. Set Distance

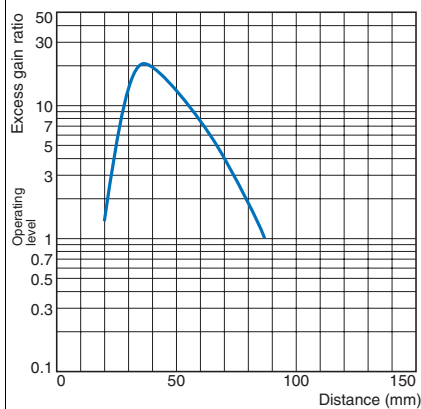
#### E3C-VS1G



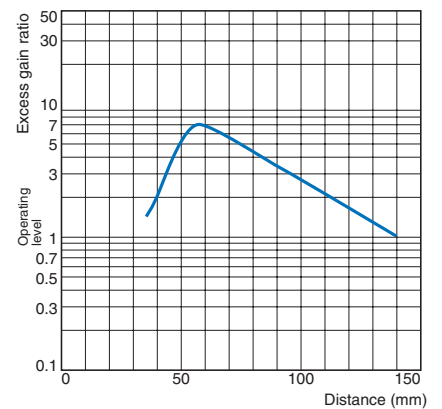
#### E3C-VS3R



#### E3C-VM35R



#### E3C-VS7R



## Safety Precautions

Refer to *Warranty and Limitations of Liability*.

### ⚠ WARNING

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.



### Precautions for Correct Use

Do not use the product in atmospheres or environments that exceed product ratings.

#### ● Wiring

For details on [Extension Cables](#), refer to E3C.

## Dimensions

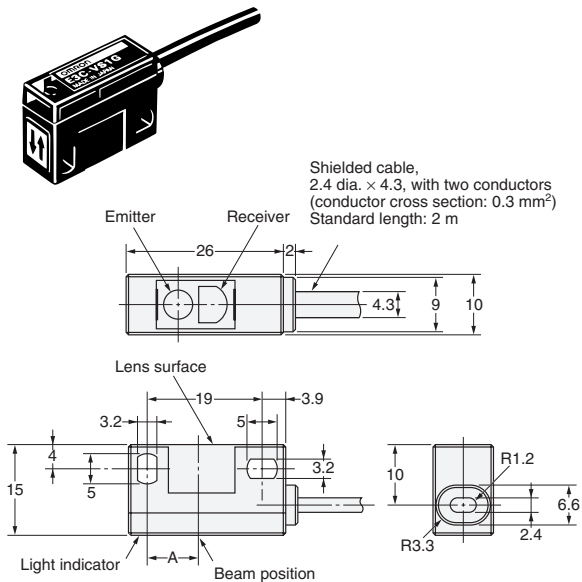
(Unit: mm)

Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

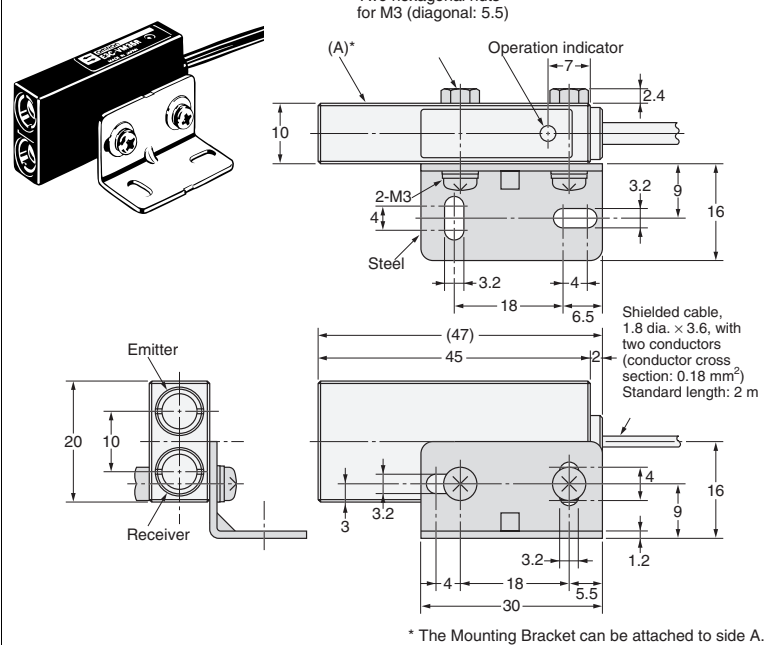
### Sensors

#### Sensor Heads

##### E3C-VS1G E3C-VS3R



##### E3C-VM35R E3C-VS7R



#### Amplifier Unit

Refer to *E3C* for details.

#### Accessories (Order Separately)

##### Mounting Brackets

Refer to *E39-L/F39-L/E39-S/E39-R* for details.

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2008.11

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# Mouser Electronics

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