


# 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  $\mu$
- Detection of slight level differences.








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

## Ordering Information

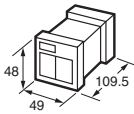

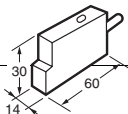

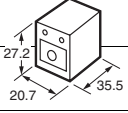
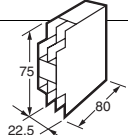
### Sensors

#### Sensor Heads

 Red light  Green light


Sensing method	Appearance	Connection method	Sensing distance	Model
Reflective model (for mark detection)		Pre-wired (2 m)	 10 $\pm$ 2 mm	E3C-VS1G 2M
			 30 $\pm$ 5 mm	E3C-VS3R 2M
	 35 $\pm$ 5 mm		E3C-VM35R 2M	
	 70 $\pm$ 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 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) Sunlight: 3,000 lx max. (on light-receiving side)			
Ambient temperature range		Operating: -10 to 70°C (with no icing or condensation) Storage: -25 to 70°C (with no icing or condensation)		Operating/storage: -25 to 70°C (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/ Phillips screws M3 × 16, Spring washer, Flat washer, M3 nuts	Mounting Bracket, Slotted/ Phillips screws M3 × 16, Spring washer, Flat washer, M3 nuts, Instruction manual

### Amplifier Units

Refer to E3C.

### I/O Circuit Diagrams

Refer to E3C.

### Connection

Refer to E3C.

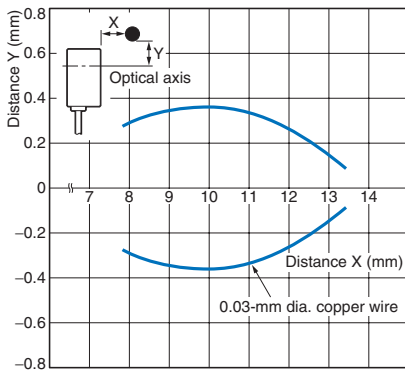
### Connectors

Refer to E3C.

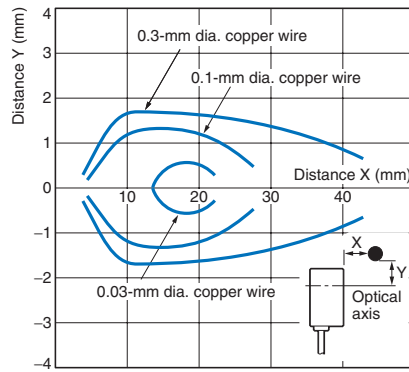
## Engineering Data (Typical)

### Operating Range

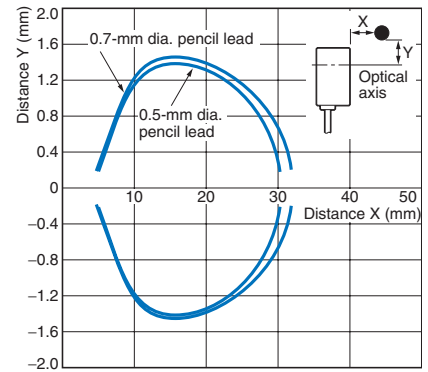
#### E3C-VS1G



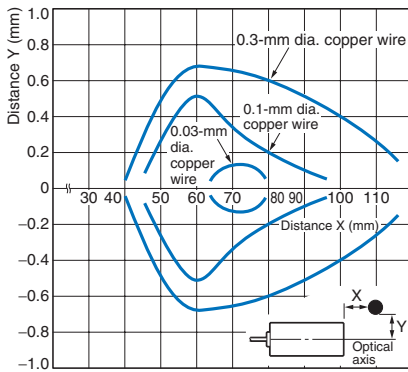
#### E3C-VS3R



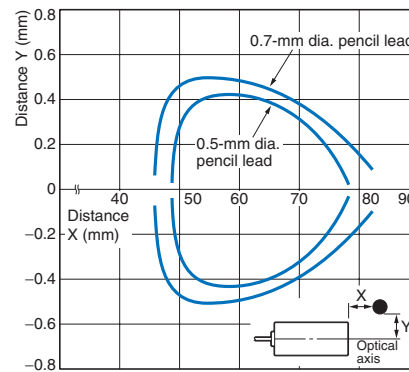
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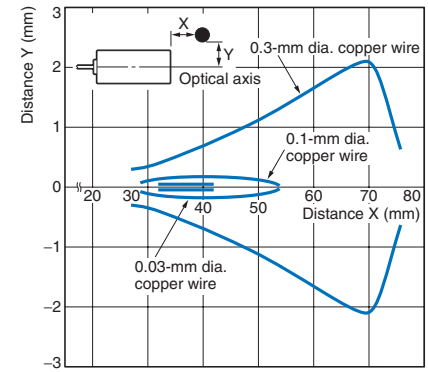
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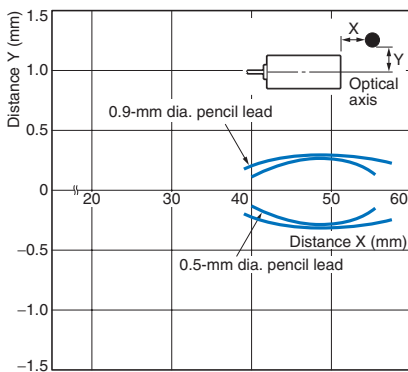
#### E3C-VS7R



#### E3C-VM35R

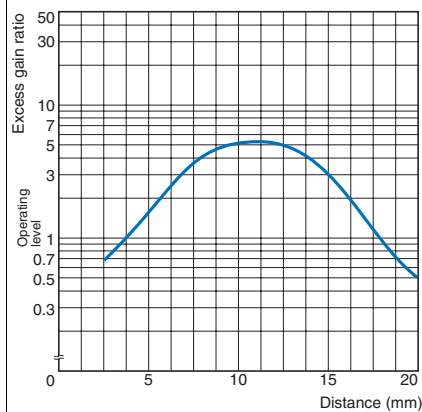


#### E3C-VM35R

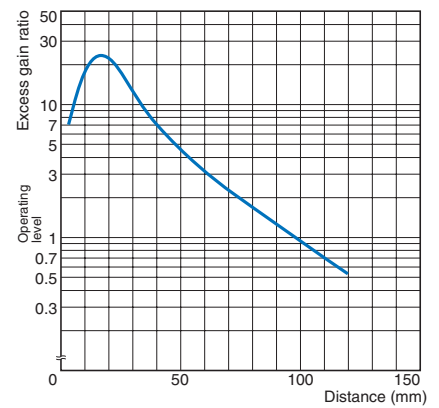


### Excess Gain vs. Set Distance

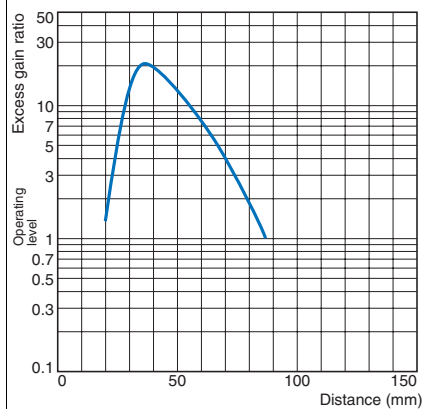
#### E3C-VS1G



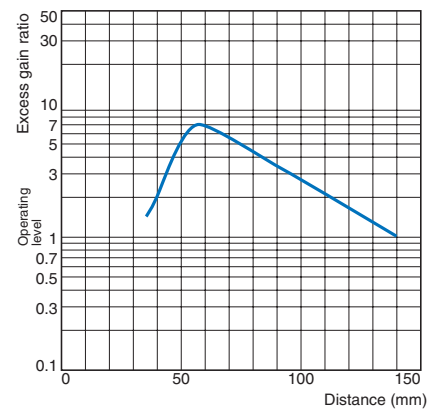
#### E3C-VS3R



#### 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

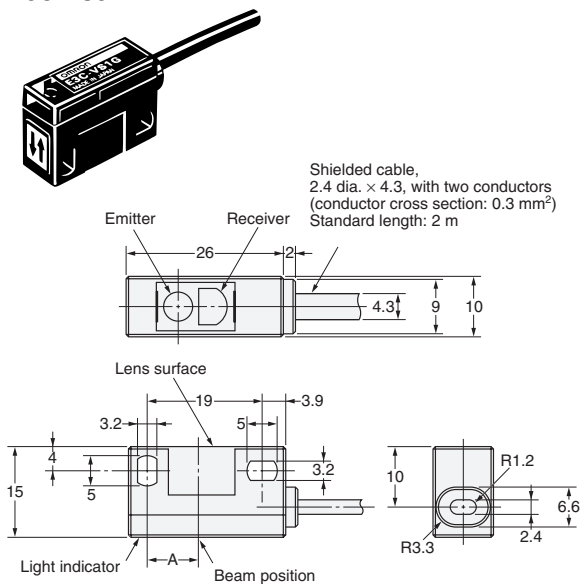
(Unit: mm)

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

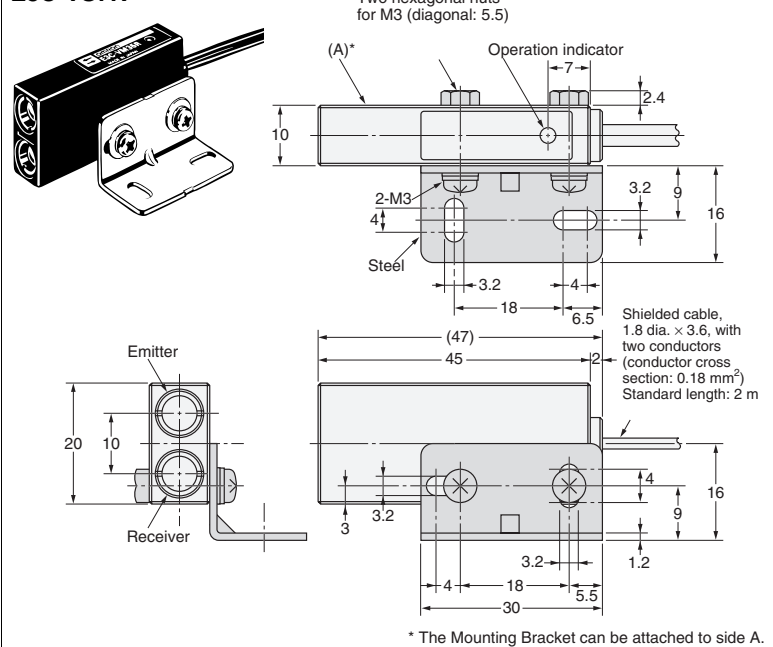
### Sensors

#### 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.

## Read and Understand This Catalog

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- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

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2008.11

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