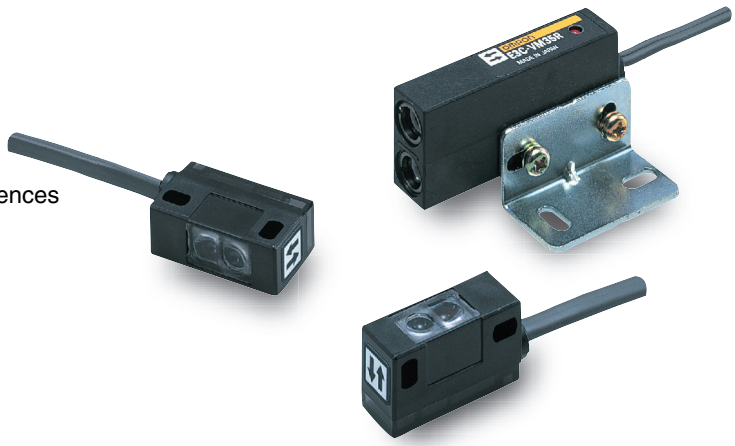
Small Spot/Mark (Separate Amplifier)

E3C-VS/VM

CSM_E3C-VS_VM_DS_E_3_1

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.

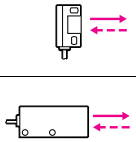
⚠ Be sure to read *Safety Precautions* on page 4.

Ordering Information

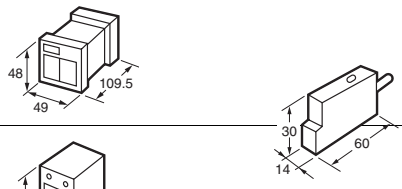
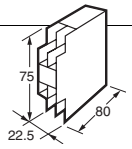
Sensors

Sensor Heads

Red light Green light

Sensing method	Appearance	Connection method	Sensing distance	Model
Reflective model (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**
			Timer	**E3C-C**
DC	Slim body		Self-diagnosis	**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.

Downloaded from Arrow.com.

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^2 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

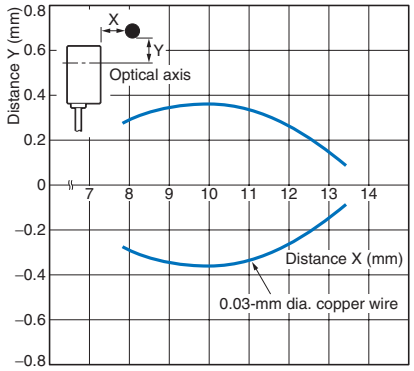
Refer to *E3C*.

OMRON
Downloaded from Arrow.com.

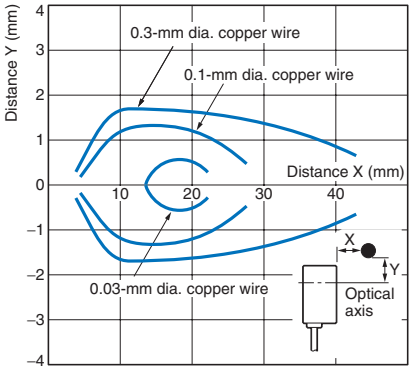
Engineering Data (Typical)

Operating Range

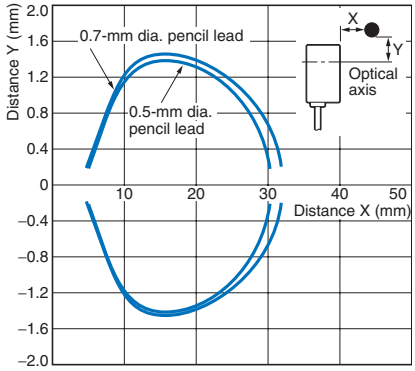
E3C-VS1G



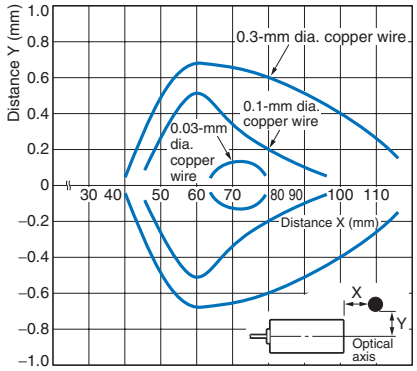
E3C-VS3R



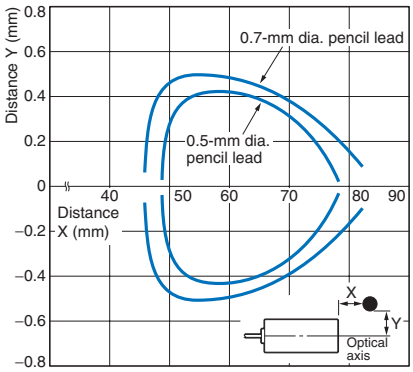
E3C-VS3R



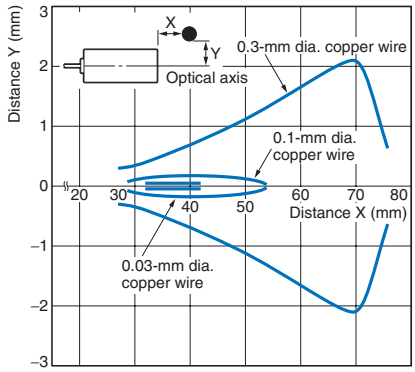
E3C-VS7R



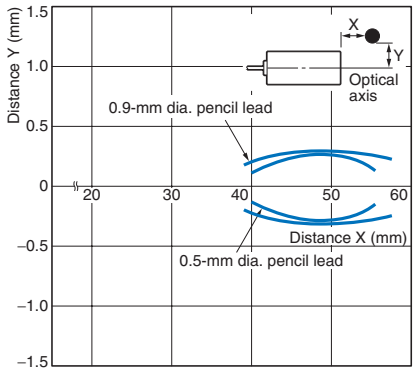
E3C-VS7R



E3C-VM35R

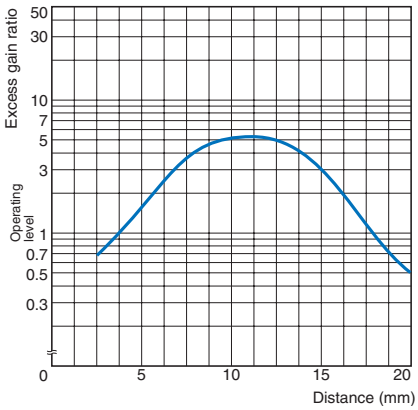


E3C-VM35R

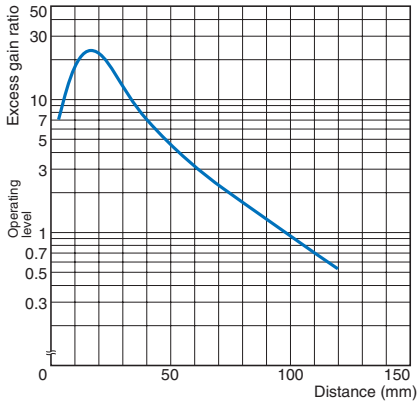


Excess Gain vs. Set Distance

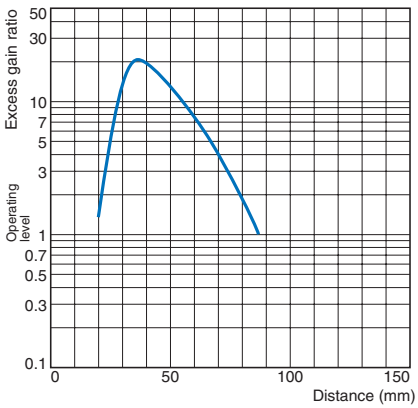
E3C-VS1G



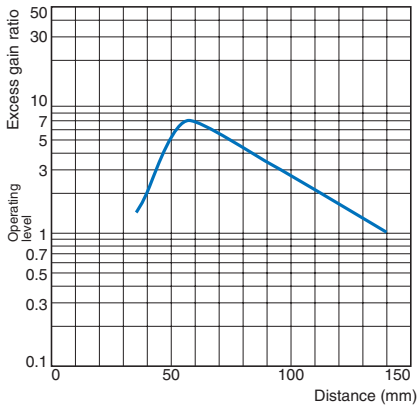
E3C-VS3R



E3C-VM35R



E3C-VS7R



OMRON
Downloaded from Arrow.com.

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

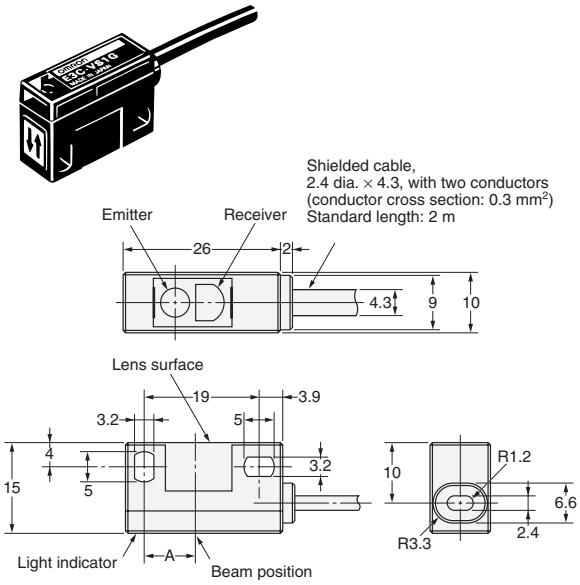
(Unit: mm)

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

Sensors

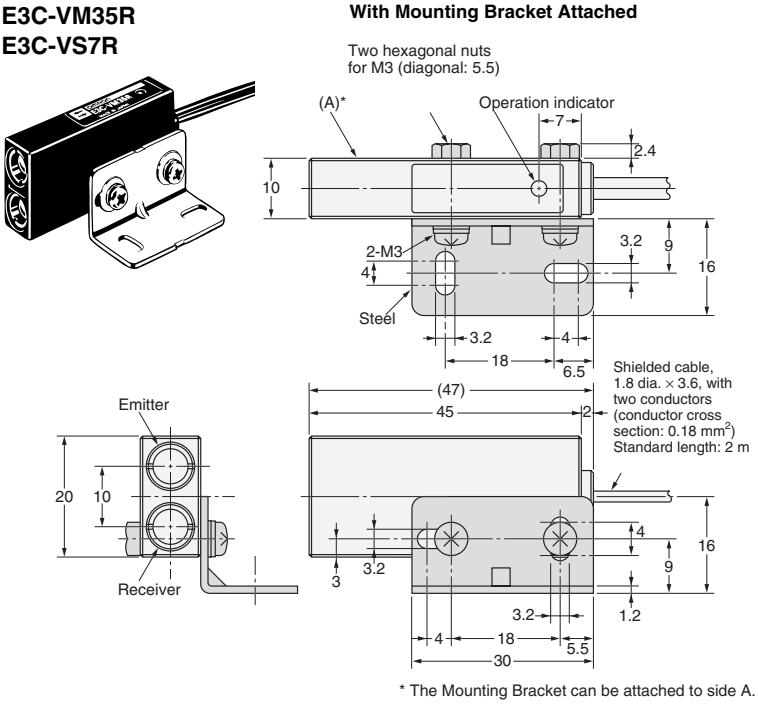
Sensor Heads

E3C-VS1G
E3C-VS3R



E3C-VM35R
E3C-VS7R

With Mounting Bracket Attached



* The Mounting Bracket can be attached to side A.

Amplifier Unit

Refer to *E3C* for details.

Accessories (Order Separately)

Mounting Brackets

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

Downloaded from Arrow.com.

Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

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

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- 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.

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 PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

2008.11

In the interest of product improvement, specifications are subject to change without notice.

OMRON Corporation
Industrial Automation Company

http://www.ia.omron.com/

(c)Copyright OMRON Corporation 2008 All Right Reserved.

Downloaded from Arrow.com.