Environmentally-resistive Fluororesin Photoelectric Sensor

E3HQ

CSM_E3HQ_DS_E_3_1

Superior Fluororesin Finish Protects Against Oil and Chemicals

- Fluororesin coated cable and case.
- Rounded tip lens resists water drops.
- Small built-in Amplifier Unit.

Be sure to read *Safety Precautions* on page 3.

Ordering Information

Infrared light

Sensing method	Appearance	Connection method	Sensing distance	Operation mode	Model
Through-beam (Emitter + Receiver) *		Pre-wired (2 m)	800 mm	Light-ON	**E3HQ-CT11 2M**
				Dark-ON	**E3HQ-CT12 2M**

* The model number of the Emitter is E3HQ-CT-L 2M for all models. The model number of the Receiver is E3HQ-CT11-D 2M for Light-ON models and E3HQ-CT12-D 2M for Dark-ON models.
Orders for individual Emitters and Receivers are accepted.

Ratings and Specifications

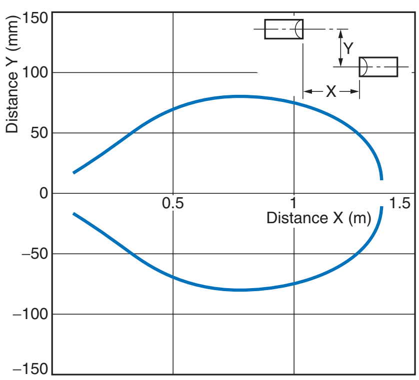
Item / Sensing method / Model		Through-beam
		E3HQ-CT1☐
Sensing distance		800 mm
Standard sensing object		Opaque: 6.25-mm dia. min.
Directional angle		Both Emitter and Receiver 10° to 25°
Light source (wavelength)		Infrared LED (950 nm)
Power supply voltage		12 to 24 VDC±10% including 10% (p-p) max. ripple
Current consumption		40 mA max. (Emitter: 25 mA max., Receiver: 15 mA max.)
Control output		Load power supply voltage: 24 VDC max., Load current: 80 mA max. (residual voltage: 1 V max.) NPN voltage output configuration Light-ON/Dark-ON (depends on model)
Protection circuits		Power supply reverse polarity protection, Output short-circuit protection
Response time		Operate or reset: 5 ms max.
Ambient illumination (Receiver side)		Incandescent lamp: 3,000 lx max.
Ambient temperature range		Operating: –25 to 55°C, Storage: –30 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		IP67 (IEC 60529)
Connection method		Pre-wired cable (standard length: 2 m)
Weight (packed state)		Approx. 100 g
Material	Case	Fluororesin
	Cable	Fluororesin
	Mounting Bracket	Stainless steel (SUS304)
Accessories		Mounting Bracket, 10 Phillips and flat-blade M3 screws, Instruction manual

Engineering Data (Typical)

Parallel Operating Range

Through-beam

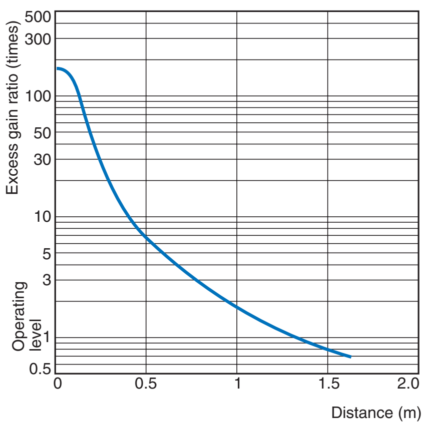
E3HQ-CT1☐



Excess Gain vs. Set Distance

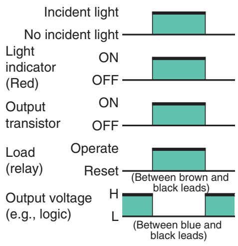
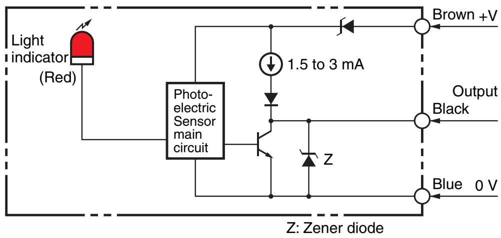
Through-beam

E3HQ-CT1☐



I/O Circuit Diagrams

NPN Output

<table>
<tr><th>Model</th><th>Operation mode</th><th>Timing charts</th><th>Output circuits</th></tr>
<tr><td>E3HQ-CT11</td><td>Light-ON</td><td>
</td><td>Through-beam Model Receivers

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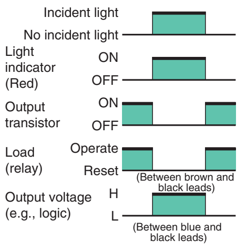
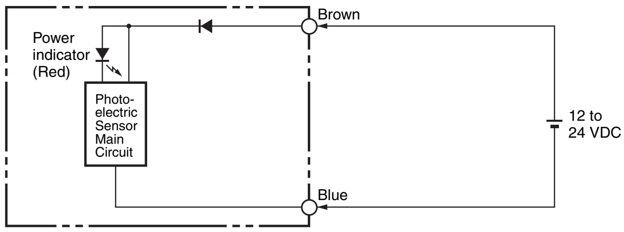
<tr><td>E3HQ-CT12</td><td>Dark-ON</td><td>
</td><td>Through-beam Model Emitters

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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.

● Mounting

Mounting

- Use only the specified Mounting Bracket to mount the Sensor.
- Do not scratch the case when mounting the Sensor. Otherwise the Sensor will lose its chemical-resistant properties.

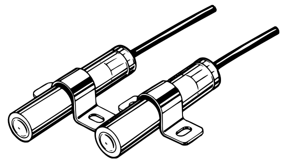
● Others

Refer to Chemical Resistance.

Dimensions

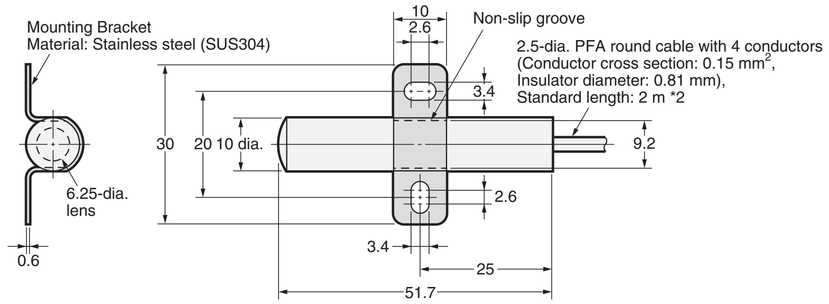
(Unit: mm)
Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

E3HQ-CT1□

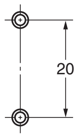


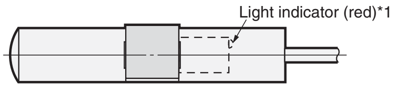
Emitter: E3HQ-CT-L Receiver E3HQ-CT1□-D

With Mounting Bracket Attachment



Mounting Holes





*1. Emitter power indicator (red)
*2. Emitter has 2 conductors.

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

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

Disclaimers

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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

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2008.11

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Industrial Automation Company

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