


E3HQ

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

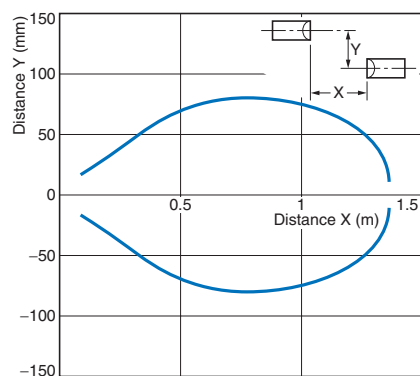
Sensing method		Through-beam
Item	Model	E3HQ-CT1□
Sensing distance		800 mm
Standard sensing object		Opaque: 6.25-mm dia. min.
Directional angle		Both Emitter and Receiver 10° to 25°
Light source (wavelength)		Infrared LED (950 nm)
Power supply voltage		12 to 24 VDC±10% including 10% (p-p) max. ripple
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

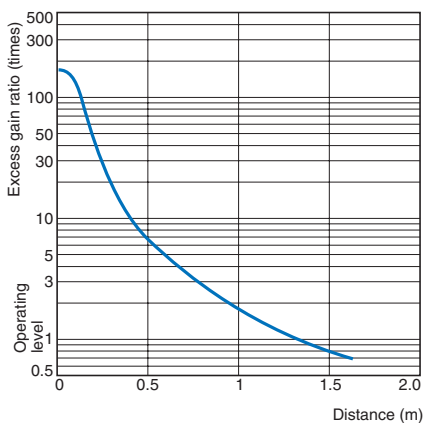
E3HQ-CT1□



Excess Gain vs. Set Distance

Through-beam

E3HQ-CT1□



I/O Circuit Diagrams

NPN Output

Model	Operation mode	Timing charts	Output circuits
E3HQ-CT11	Light-ON		<p>Through-beam Model Receivers</p>
E3HQ-CT12	Dark-ON		<p>Through-beam Model Emitters</p>

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

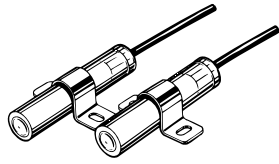
- Use only the specified Mounting Bracket to mount the Sensor.
- Do not scratch the case when mounting the Sensor. Otherwise the Sensor will lose its chemical-resistant properties.

● **Others**

Refer to [Chemical Resistance](#).

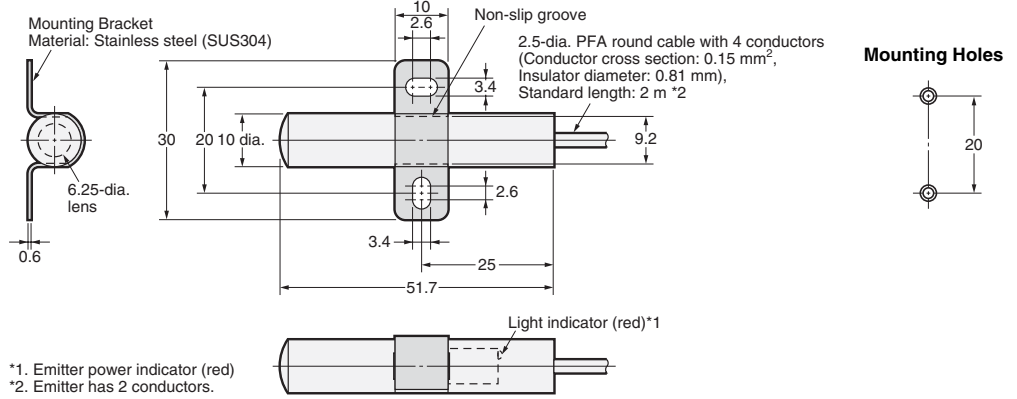
Dimensions

E3HQ-CT1□



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

With Mounting Bracket Attachment



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.