

RAY-RT REFLECTIVE PHOTO EYE



Reflective Photo Eye

RAY-RT is a versatile, reflective photo eye, the first one specifically designed to address the challenges of the door industry. Due to the use of minimum cabling and its small size, RAY-RT does not disturb the aesthetic design of the building or the door itself.

Maximal Detection Reliability

Built-in polarizing filters as well as the arrangement of the transmitter and receiver components maximize the RAY-RT's detection reliability. It can reliably detect objects in the door opening even in very problematic situations, such as trucks with chrome-plated body parts. Red Light technology makes the sensor resilient to ambient light as well as other infrared sensors that can often be found around today's doors.

Interface Options

RAY-RT is available in different output versions typical for the door and gate industry (relay, transistor, 2-wire signal).

Easy Installation

Several characteristics of RAY-RT make it one of the most easy to install protection sensors. It requires cabling only from one side of the door, since the reflector component needs no power supply. An LED indicates the alignment of the sensor and the visible red light technology of the photo eye indicates power and proper operation.

Sensor Versions

For optimal fit to the application, RAY-RT is offered in three different versions:

- **Standard (xR)**
This compact sensor can be used in almost any door or gate application. The housing also allows for guide mounting. Available in both standard and long range versions
- **Industrial (xl)**
This sensor provides a sturdier housing that allows for bracket mounting, while still providing all the available features of the standard sensor.
- **Heavy Duty (HD)**
Equipped with a robust protective enclosure, this sensor is the first choice for applications in harsh environments.

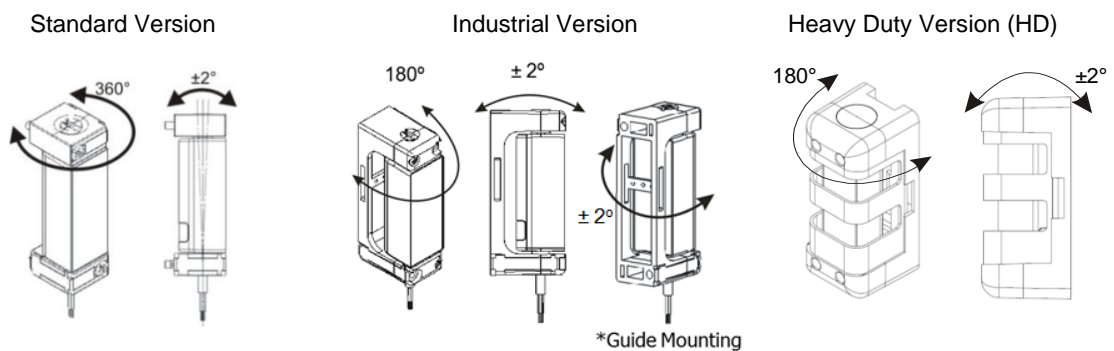
RAY-RT REFLECTIVE PHOTO EYE

Alignment and LED Pattern

LED Off	Aligned
LED On	Misaligned or interrupted
LED Blinking Fast	Not properly aligned, Sensor or reflector dirty
LED Blinking Slowly ¹⁾	Not 100% aligned

1) to assist alignment within 2 minutes after power-up

Sensor Alignment



Technical Data

Range	Standard and Industrial (SR, SI) Long Range Standard and Industrial (LR, LI) Heavy Duty Version (HD)	1.6 – 7 m, 5 ft. to 23 ft. 1.6 – 12 m, 5 ft. to 40 ft. 1.6 – 12 m, 5 ft. to 40 ft.
Environmental Protection	IP65, NEMA 4X	
Temperature Range	-30 – 60°C [-22 – 140°F]	
Photo Eye Dimensions	Standard Version (xR) Industrial Version (xI) Heavy Duty Version (HD)	25x87x35 mm [1"x3.5"x1.4"] 25x87x40 mm [1"x3.5"x1.6"] 43x100x45 mm [1.75"x4"x1.75"]
Reflector Dimensions	Standard Ranges (Sx) Long Ranges (Lx) Heavy Duty (HD)	25x87x15 mm [1"x3.5"x0.6"] 50x87x15 mm [2"x3.5"x0.5"] 50x87x15 mm [2"x3.5"x0.5"]
Power Consumption	40 mA max.	
Response time	30 ms	
Wake Up Delay	500 ms	
Connection	2m cable, fine stranded, wire size 0.25 mm ²	

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Compliance/ Certification

Europe

Declaration of EC-Conformity

D-Solution, acc. to EN12453

Sensor Versions²⁾

Art. Number	Art. Name	Output Specification	Test Input
10019848	RAY-RT 2001 SR	2-Wire Signal Output	n.a.
10019826	RAY-RT 2001 LR	2-Wire Signal Output	n.a.
10027173	RAY-RT 2001 SI	2-Wire Signal Output	n.a.
10027172	RAY-RT 2001 LI	2-Wire Signal Output	n.a.
	RAY-RT 2001 HD	2-Wire Signal Output	n.a.
10012846	RAY-RT 4704 SR	Relay Output NCC, with test input	active low
10019847	RAY-RT 4704 LR	Relay Output NCC, with test input	active low
10027175	RAY-RT 4704 SI	Relay Output NCC, with test input	active low
10027176	RAY-RT 4704 LI	Relay Output NCC, with test input	active low
10019857	RAY-RT 4704 HD	Relay Output NCC, with test input	active low

2) Additional Version available on Request

RAY-RT 2xxx - 2-Wire Output

The RAY-RT 2xxx supplies the door operator with a dynamic 2-wire signal. The sensor is compatible with most operators on the market, offering a 2-wire input for entrapment protection devices. Electrically, a non-polarized connection means that the sensor can be connected to the 2-wire interface without paying attention to the supply voltages polarity.

Wire Color	Description
BN	2-Wire Signal ³⁾
BU	Electrically Unpolarized Connection

3) Interface Description available upon request

RAY-RT REFLECTIVE PHOTO EYE

RAY-RT 4xxx – NCC Relay Output with Self-Test

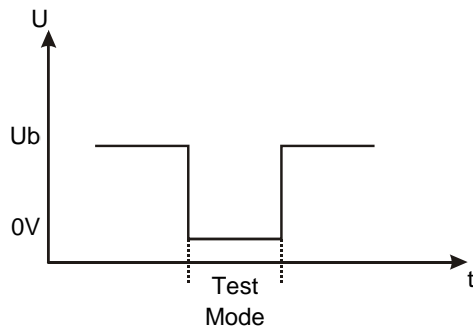
The RAY-RT 4xxx provides a Normally Closed Contact (NCC) relay output with optional test input. The test function can be used for door operators with test output.

Wire Color	Description	
BN	+U _b	24 V DC
BU	0 V	
BK	NCC Relay Output	
WH	Relay Common	
GY	Test Input (Test = active Low)	

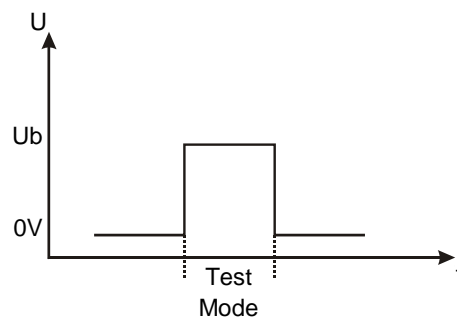
Test Input

When using this function, the test wire of the sensor has to be connected to the door operator's test input, which provides a test signal. Active low test operations means that during normal operation the test wire has to be connected to the sensors power supply (+U_b), a change of this voltage to 0 V/ Gnd causes the sensor to switch into self-test mode. Active high test mode works exactly opposite, requiring power supply voltage (+U_b) for the sensor to switch to test mode.

Test Mode: Active Low



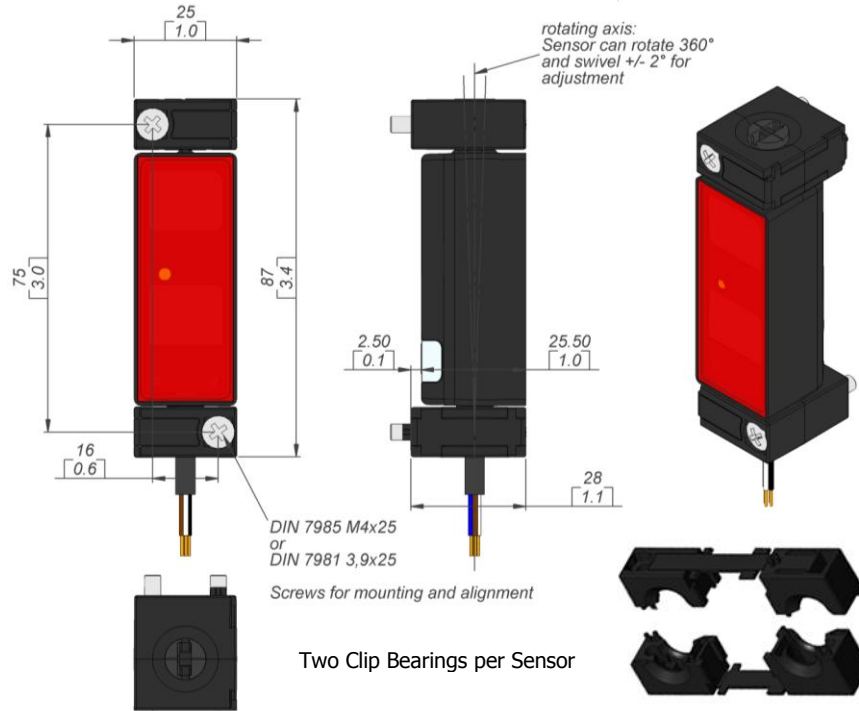
Test Mode: Active High



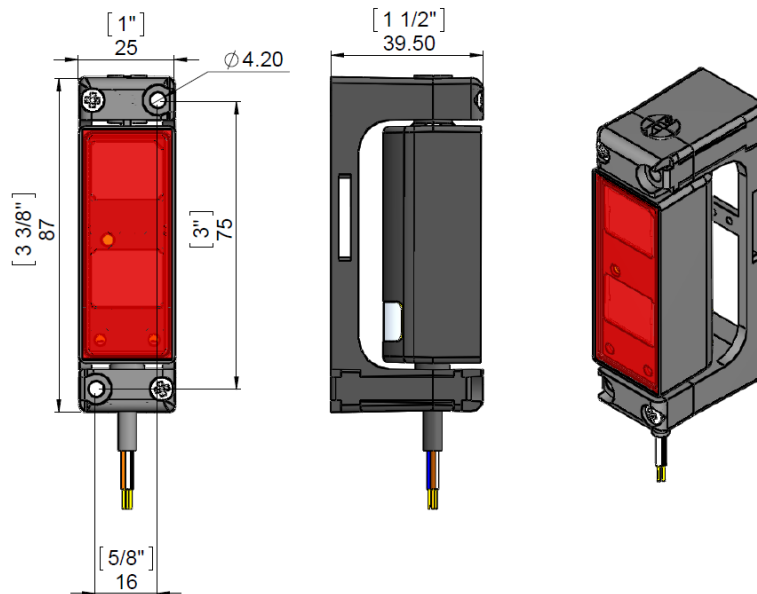
RAY-RT REFLECTIVE PHOTO EYE

Technical Drawings

Standard Version: Standard Range (SR) and Long Range (LR)

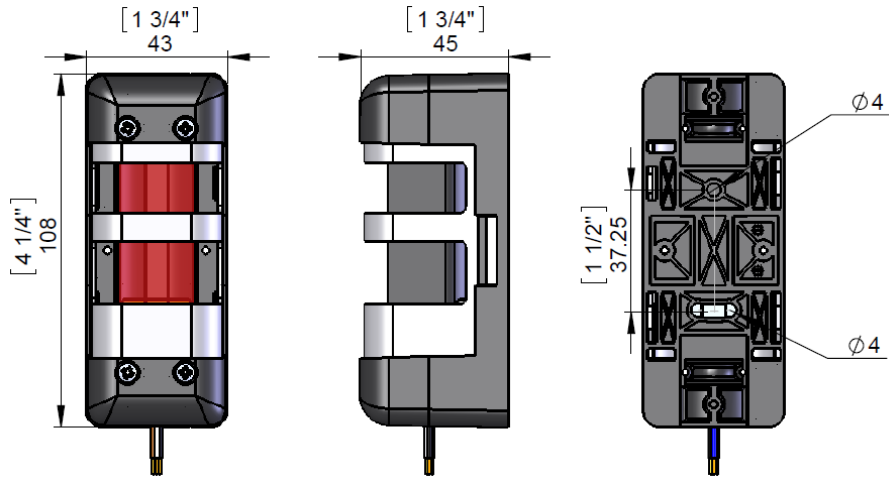


Industrial Version: Standard Range (SI) and Long Range (LI)

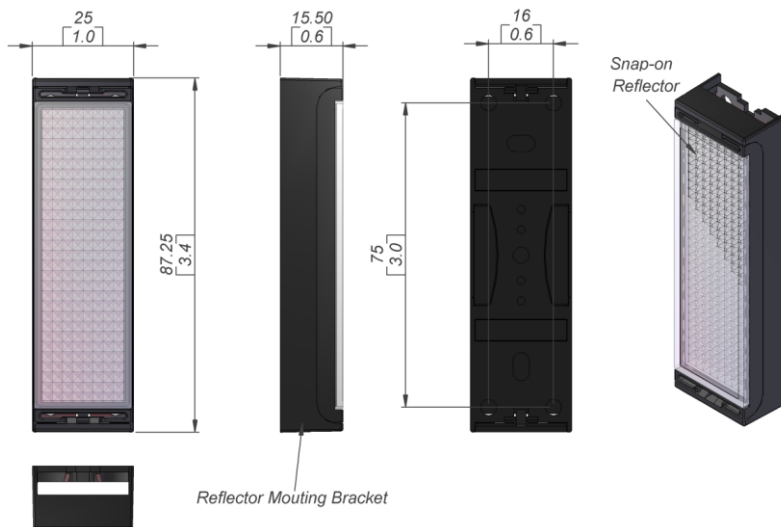


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Sensor Heavy Duty Version (HD)



Reflector Standard Range Version (SR/SI)



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Reflector Long Range Version (LR/LI)

