

Specifications

| Item | Through-beam | | Retro-reflective with M.S.R. | Diffuse-reflective | |
|----------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------|-----------------------|----------------|
| | E3H2-T4 | E3H2-T2 | E3H2-R | E3H2-DS30 | E3H2-DS10 |
| Sensing distance | 4 m (adjustable) | 2 m | 2 m (teachable) (when using E39-R1S) | 300 mm (teachable) | 100 mm (fixed) |
| Differential travel | 20% max of sensing distance | 10% max of sensing distance | | | |
| Light source (wave length) | Infrared LED (880 nm) | | Red LED (660 nm) | Infrared LED (880 nm) | |
| Power supply voltage | 10 to 30 VDC, 10% ripple | | | | |
| Current consumption | 45 mA max | | | | |
| Control output | Load current: 100 mA max. (residual voltage 2 V max.); E3H2- <u>C</u> : NPN E3H2- <u>B</u> : PNP | | | | |
| | Light-on/dark-on selectable by wire | E3H2-T2_2_: dark on E3H2-T2_1_: light on | Light-on/dark-on selectable by wire | | |
| Protective circuits | Power supply reverse polarity protection, output short circuit protection | | | | |
| Response time | Operation or reset: 2.5 ms max | Operation or reset: 1 ms max. | Operation or reset: 1.1 ms max | | |
| Sensitivity adjustment | Potentiometer adjuster | – | Teach-in | – | |
| Ambient illumination | Incandescent lamp: 1500 lx max.; Sunlight: 5000 lx max. | | | | |
| Ambient temperature | Operating: -25 to +55°C | Operating: -25 to +50°C | Operating: -25 to +55°C | | |
| Degree of protection | EN 60529: IP67 | | | | |
| Indicators | Emitter: Power supply indicator: yellow Receiver: Operation indicator: yellow | | Output indicator: yellow | | |
| Weight pre-wired connector | approx 110 g approx 40 g | approx 90 g approx 30 g | approx 55 g approx 20 g | | |
| Material case lens | nickel-plated brass plastic | stainless steel plastic | nickel-plated brass plastic | | |

Operation

Sensitivity adjustment

E3H2-T4

The emitter of the E3H2-T4 allows an adjustment of the emitted amount of light by turning the potentiometer. Turn the potentiometer clockwise for increasing the amount of emitted light and counter-clockwise for decreasing the amount of emitted light.

E3H2-R2

a) standard mode

To teach the retro-reflective model E3H2-R, place the sensor with the lens facing the reflector. Press the teach button for 2-5 seconds. For remote teach connect the white wire (Pin 2) for 2-5 seconds to common (-).

The threshold is now set to 50% of the received light level.

b) high sensitivity mode (e.g. for semi-transparent models)

To teach the retro-reflective model E3H2-R in high sensitivity mode, place the sensor with the lens facing the reflector. Press the teach button for >8 seconds. For remote teach connect the white wire (Pin 2) for >8 seconds to common (-).

The threshold is now set just below the received light level.

If the teaching was successful the LED should no longer be flashing and a state change occurs when the light is interrupted.

E3H2-DS30

a) standard mode

To teach the diffuse-reflective model E3H2-DS30, place the object in front of the sensor at the required sensing distance. Press the teach button for 2-5 seconds. For remote teach connect the white wire (Pin 2) for 2-5 seconds to common (-). The threshold is now set to 50% of the received light level.

When the object is removed, a state change at the sensor should occur. If this is not the case the high sensitivity mode may be required.

b) high sensitivity mode

To teach the diffuse-reflective model E3H2-DS30 in high sensitivity mode, place the object in front of the sensor at the required sensing distance. Press the teach button for >8 seconds. For remote teach connect the white wire (Pin 2) for >8 seconds to common (-).

The threshold is now set just below the received light level.

When the object is removed, a state change at the sensor should occur and the LED should no longer be flashing.

For E3H2-T2 and E3H2-DS10 the sensitivity setting is fixed.

Operation mode selection

The light-on / dark-on operation mode can be selected by wire (except for E3H2-T2). The white wire (Pin 2) can be connected to plus (+), common (-) or left open (not connected) for the default setting.

a) E3H2-T4 Receiver

Default setting (wire left open): DARK-ON

Connected to plus (+): LIGHT-ON

Connected to common (-): DARK-ON

b) E3H2-R2

Default setting (wire left open): DARK-ON

Connected to plus (+): LIGHT-ON

Connected to common (-): TEACH^{*1}

c) E3H2-DS30

Default setting (wire left open): LIGHT-ON

Connected to plus (+): DARK-ON

Connected to common (-): TEACH^{*1}

d) E3H2-DS10

Default setting (wire left open): LIGHT-ON

Connected to plus (+): DARK-ON

Connected to common (-): LIGHT-ON

For E3H2-T2 the operation mode is fixed and models with light-on and dark-on operation are available.

*1 In case the remote teach operation is required when the white wire is connected to plus (+), add a 2.2 kΩ resistor between the white wire and (+) to avoid a short circuit.