



Part no.: 50134358
HT15I/2X-M12
Diffuse sensor with background suppression



Figure can vary

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Technical data

| Basic data | |
|-------------------------------------|--|
| Series | 15 |
| Operating principle | Diffuse reflection principle with background suppression |
| Optical data | |
| Black-white error | < 15% up to 350 mm |
| Operating range | Guaranteed operating range |
| Operating range, white 90% | 0.012 ... 1 m |
| Operating range, gray 18% | 0.012 ... 0.7 m |
| Operating range, black 6% | 0.012 ... 0.5 m |
| Operating range limit | Typical operating range |
| Operating range limit | 0.012 ... 1 m |
| Adjustment range | 50 ... 1,000 mm |
| Light source | LED , Infrared |
| LED light wavelength | 850 nm |
| LED group | Exempt group (in acc. with EN 62471) |
| Transmitted-signal shape | Pulsed |
| Electrical data | |
| Protective circuit | Polarity reversal protection Short circuit protected |
| Performance data | |
| Supply voltage U_B | 10 ... 30 V , DC , Incl. residual ripple |
| Residual ripple | 0 ... 15 % , From U_B |
| Open-circuit current | 0 ... 20 mA |
| Outputs | |
| Number of digital switching outputs | 1 Piece(s) |
| Switching outputs | |
| Voltage type | DC |
| Switching current, max. | 100 mA |
| Switching voltage | high: $\geq(U_B-2.5V)$ low: $\leq 2.5V$ |
| Switching output 1 | |
| Assignment | Connection 1, pin 4 |
| Switching element | Transistor , NPN |
| Switching principle | Light switching |
| Timing | |
| Switching frequency | 500 Hz |
| Response time | 1 ms |
| Readiness delay | 300 ms |
| Connection | |

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Connection 1

| | |
|--------------------|------------------------------|
| Type of connection | Connector |
| Function | Signal OUT Voltage supply |
| Thread size | M12 |
| Type | Male |
| Material | Plastic |
| No. of pins | 4 -pin |
| Encoding | A-coded |

Mechanical data

| | |
|-----------------------|---|
| Dimension (W x H x L) | 15 mm x 42.7 mm x 30 mm |
| Housing material | Plastic , ABS |
| Lens cover material | Plastic |
| Net weight | 15 g |
| Housing color | Black |
| Type of fastening | Through-hole mounting Via optional mounting device |

Operation and display

| | |
|-------------------------------------|-------------------------|
| Type of display | LED |
| Number of LEDs | 1 Piece(s) |
| Operational controls | Multiturn potentiometer |
| Function of the operational control | Range adjustment |

Environmental data

| | |
|--------------------------------|---------------|
| Ambient temperature, operation | -40 ... 60 °C |
| Ambient temperature, storage | -40 ... 70 °C |

Certifications

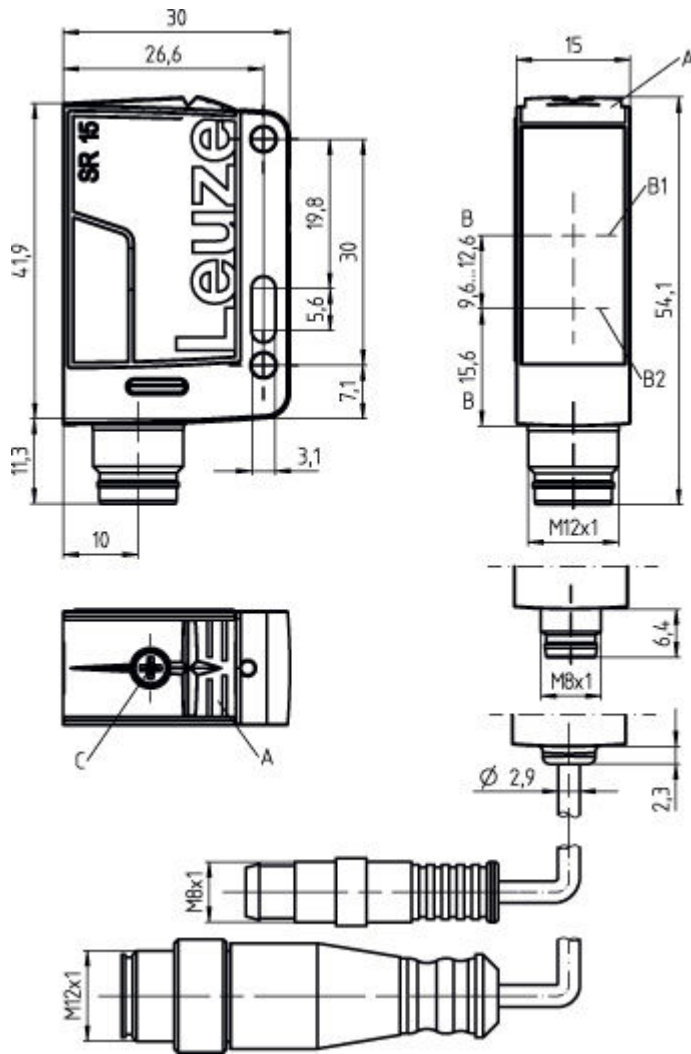
| | |
|----------------------|---------------|
| Degree of protection | IP 67 |
| Protection class | III |
| Certifications | c UL US |
| Standards applied | IEC 60947-5-2 |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0 | 27270904 |
| eCl@ss 9.0 | 27270904 |
| ETIM 5.0 | EC002719 |
| ETIM 6.0 | EC002719 |

Dimensioned drawings

All dimensions in millimeters

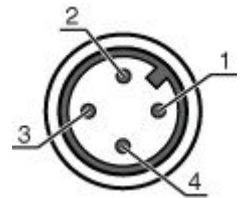


- A Yellow LED
- B Optical axis
- B1 Receiver
- B2 Transmitter
- C Range adjustment

Electrical connection

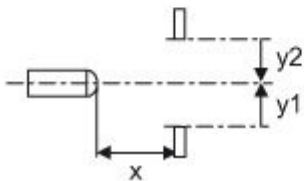
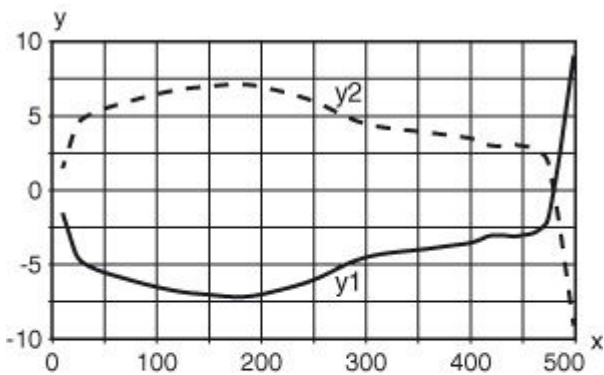
| Connection 1 | |
|--------------------|------------------------------|
| Type of connection | Connector |
| Function | Signal OUT Voltage supply |
| Thread size | M12 |
| Type | Male |
| Material | Plastic |
| No. of pins | 4 -pin |
| Encoding | A-coded |

| Pin | Pin assignment |
|-----|----------------|
| 1 | V+ |
| 2 | n.c. |
| 3 | GND |
| 4 | OUT 1 |



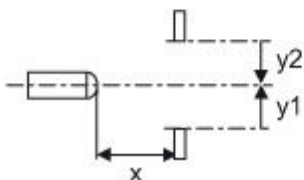
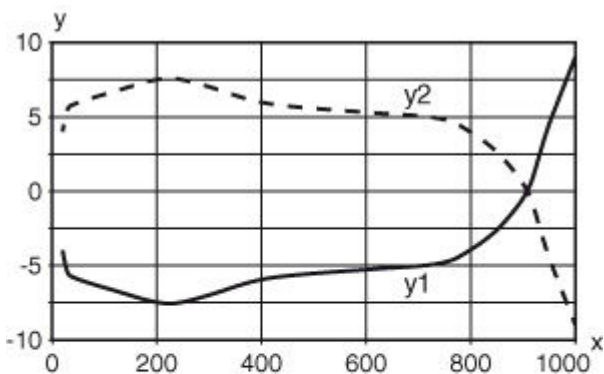
Diagrams

Typ. response behavior (focusing distance 500 mm)



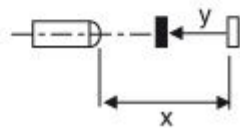
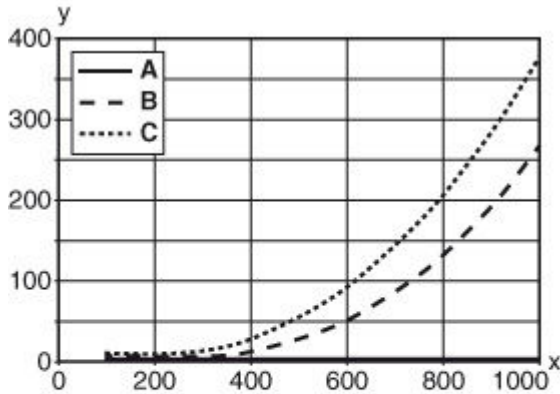
x Range [mm]
y Misalignment [mm]

Typ. response behavior (focusing distance 1000 mm)



x Distance [mm]
y Misalignment [mm]

Typ. black/white behavior



x Range [mm]
y Reduction of range [mm]
A White 90%
B Gray 18%
C Black 6%

Operation and display

LEDs

| LED | Display | Meaning |
|-----|--------------------------|-----------------|
| 1 | Yellow, continuous light | Object detected |

Part number code

Part designation: **AAA15d.EE/ ff-HH**

| | |
|-------|---|
| AAA15 | Operating principle / construction: HT15: diffuse reflection sensor with background suppression PRK15: retro-reflective photoelectric sensor with polarization filter LS15: throughbeam photoelectric sensor transmitter LE15: throughbeam photoelectric sensor receiver |
| d | Light type: n/a: red light I: infrared light |
| EE | Equipment: 1: adjustable range D: detection of stretch-wrapped objects |

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| | |
|----|--|
| ff | Switching output / function / OUT1OUT2 (OUT1 = pin 4, OUT2 = pin 2): 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching X: pin not used |
| HH | Electrical connection: n/a: cable, standard length 2000 mm, 4-wire M8: M8 connector, 4-pin (plug) 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug) M12: M12 connector, 4-pin (plug) |

Note

A list with all available device types can be found on the Leuze electronic website at www.leuze.com.

Notes

Observe intended use!

- This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- Only use the product in accordance with its intended use.


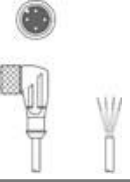
For UL applications:

- Only for use in "class 2" circuits
- These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)

- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C


Accessories

Connection technology - Connection cables



| | Part no. | Designation | Article | Description |
|---|----------|--------------------|------------------|--|
|  | 50130652 | KD U-M12-4A-V1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |
|  | 50130690 | KD U-M12-4W-V1-050 | Connection cable | Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |

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Mounting technology - Mounting brackets

| | Part no. | Designation | Article | Description |
|---|----------|-------------|-----------------|--|
|  | 50040269 | BT 25 | Mounting device | Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Metal |

Mounting technology - Rod mounts

| | Part no. | Designation | Article | Description |
|--|----------|--------------|-----------------|---|
|  | 50117829 | BTP 200M-D12 | Mounting system | Design of mounting device: Protection hood Fastening, at system: For 12 mm rod Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal |
|  | 50117255 | BTU 200M-D12 | Mounting system | Contains: 2x M3 x 16 screw, 2x M3 x 20 screw, 2x position washers Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal |