



Part no.: 50140164
LE412BL2.1/PX-M12
Throughbeam photoelectric sensor receiver



Figure can vary

Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Operation and display
- Suitable transmitters
- Part number code
- Notes
- Accessories

Technical data

| Basic data | |
|-------------------------------------|---|
| Series | 412B |
| Operating principle | Throughbeam principle |
| Device type | Receiver |
| Optical data | |
| Operating range | Guaranteed operating range |
| Operating range | 0 ... 50 m |
| Max. laser power | 0.001 W |
| Pulse duration | 4.6 µs |
| Electrical data | |
| Protective circuit | Polarity reversal protection Short circuit protected |
| Performance data | |
| Supply voltage U_B | 10 ... 36 V , DC , Incl. residual ripple |
| Residual ripple | 0 ... 20 % , From U_B |
| Open-circuit current | 0 ... 10 mA |
| Outputs | |
| Number of digital switching outputs | 1 Piece(s) |
| Switching outputs | |
| Voltage type | DC |
| Switching current, max. | 200 mA |
| Switching output 1 | |
| Assignment | Connection 1, pin 4 |
| Switching element | Transistor , PNP |
| Switching principle | Dark switching |
| Timing | |
| Switching frequency | 5,000 Hz |
| Response time | 0.1 ms |
| Readiness delay | 20 ms |
| Connection | |
| Connection 1 | |
| Type of connection | Connector |
| Function | Signal OUT Voltage supply |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | A-coded |
| Mechanical data | |
| Thread size | M12 x 1 mm |
| Dimension (Ø x L) | 12 mm x 60 mm |
| Housing material | Stainless steel , V2A |

Part no.: 50140164 – LE412BL2.1/PX-M12 – Throughbeam photoelectric sensor

| | |
|---------------------|--------|
| Lens cover material | Glass |
| Net weight | 32 g |
| Housing color | Silver |

Operation and display

| | |
|-------------------------------------|------------------------|
| Type of display | LED |
| Number of LEDs | 2 Piece(s) |
| Operational controls | 270° potentiometer |
| Function of the operational control | Sensitivity adjustment |

Environmental data

| | |
|--------------------------------|---------------|
| Ambient temperature, operation | -10 ... 50 °C |
|--------------------------------|---------------|

Certifications

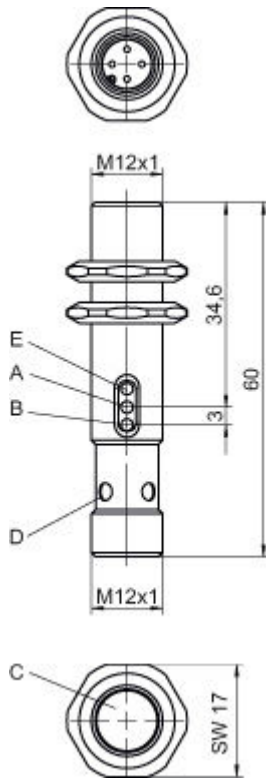
| | |
|----------------------|---------------|
| Degree of protection | IP 67 |
| Protection class | III |
| Certifications | c UL US |
| Standards applied | IEC 60947-5-2 |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0 | 27270901 |
| eCl@ss 9.0 | 27270901 |
| ETIM 5.0 | EC002716 |

Dimensioned drawings

All dimensions in millimeters

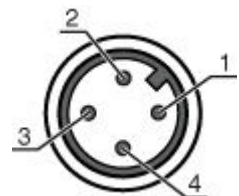


- A Green LED
- B Yellow LED
- C Optical axis
- D Yellow LED
- E Potentiometer

Electrical connection

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

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




Part no.: 50140164 – LE412BL2.1/PX-M12 – Throughbeam photoelectric sensor

Operation and display

LEDs

| LED | Display | Meaning |
|-----|--------------------------|---|
| 1 | Green, continuous light | Function reserve |
| 2 | Yellow, continuous light | Switching output/switching state active |

Suitable transmitters

| | Part no. | Designation | Article | Description |
|---|----------|-----------------|--|--|
|  | 50140160 | LS412BL2/DX-M12 | Throughbeam photoelectric sensor transmitter | Special design: Deactivation input Light source: Laser, Red Supply voltage: DC Deactivation inputs: 1 Piece(s) Connection: Connector, M12, Metal, 4 -pin |

Part number code

Part designation: **AAA412BGG.H/ii-K**

| | |
|---------|--|
| AAA412B | Operating principle / construction: LS412B: throughbeam photoelectric sensor transmitter LE412B: throughbeam photoelectric sensor receiver ET412B: energetic diffuse reflection sensor PRK412B: retro-reflective photoelectric sensor with polarization filter |
| GG | Light source: n/a: LED L2: laser class 2 |
| H | Operating range adjustment: 1: 270° potentiometer |
| ii | 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 D: deactivation input (deactivation with low signal) X: pin not used |
| K | Electrical connection: n/a: cable, standard length 2000 mm, 3-wire 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.

WARNING! LASER RADIATION – LASER CLASS 2



Never look directly into the beam!

The device satisfies the requirements of IEC 60825-1:2007 (EN 60825-1:2007) safety regulations for a product of **laser class 2** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to "Laser Notice No. 50" from June 24, 2007.


- Never look directly into the laser beam or in the direction of reflected laser beams! If you look into the beam path over a longer time period, there is a risk of injury to the retina.
- Do not point the laser beam of the device at persons!
- Interrupt the laser beam using a non-transparent, non-reflective object if the laser beam is accidentally directed towards a person.
- When mounting and aligning the device, avoid reflections of the laser beam off reflective surfaces!
- CAUTION! Use of controls or adjustments or performance of procedures other than specified herein may result in hazardous light exposure.
- Observe the applicable statutory and local laser protection regulations.
- The device must not be tampered with and must not be changed in any way.
There are no user-serviceable parts inside the device.
Repairs must only be performed by Leuze electronic GmbH + Co. KG.

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 |

Mounting technology - Mounting brackets

| | Part no. | Designation | Article | Description |
|---|----------|-------------|------------------|--|
|  | 50113549 | BT D12M.5 | Mounting bracket | Diameter, inner: 12 mm 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: Stainless steel |