

# Technical data sheet

## Throughbeam photoelectric sensor receiver

Part no.: 50140166

LE412BL2.1/2

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For illustration purposes only



CDRH

UK  
CA

## Technical data

### Basic data

Series	412B
Operating principle	Throughbeam principle
Device type	Receiver

### Optical data

Operating range	see transmitter
Max. laser power	0.001 W
Pulse duration	4.6 µs

### Electrical data

Protective circuit	Polarity reversal protection Short circuit protected
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### 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)
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#### Switching outputs

Type	Digital switching output
Voltage type	DC
Switching current, max.	200 mA

#### Switching output 1

Switching element	Transistor, NPN
Switching principle	Light switching

### Time behavior

Switching frequency	5,000 Hz
Response time	0.1 ms
Readiness delay	20 ms

### Connection

Number of connections	1 Piece(s)
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#### Connection 1

Function	Signal OUT Voltage supply
Type of connection	Cable
Cable length	2,000 mm
Sheathing material	PVC
Cable color	Black
Number of conductors	3 -wire
Wire cross section	0.34 mm <sup>2</sup>

### Mechanical data

Dimension (Ø x L)	12 mm x 51 mm
Thread size	M12 x 1 mm
Housing material	Stainless steel
Stainless steel housing	V2A
Lens cover material	Glass
Net weight	100 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
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### Certifications

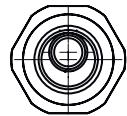
Degree of protection	IP 67
Protection class	III
Approvals	c UL US
Standards applied	IEC 60947-5-2

### Classification

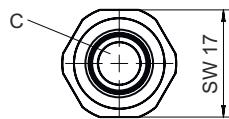
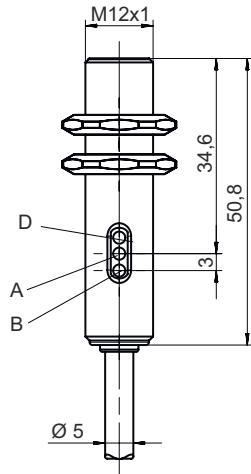
Customs tariff number	85365019
ECLASS 5.1.4	27270901
ECLASS 8.0	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ECLASS 13.0	27270901
ECLASS 14.0	27270901
ECLASS 15.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
ETIM 9.0	EC002716
ETIM 10.0	EC002716

## Dimensioned drawings

All dimensions in millimeters



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



## Electrical connection

### Connection 1

Function	Signal OUT
Type of connection	Voltage supply
Cable length	Cable
Sheathing material	2,000 mm
Cable color	PVC
Number of conductors	Black
Wire cross section	3 -wire
	0.34 mm <sup>2</sup>

Conductor color	Conductor assignment
Brown	V+
Black	OUT 1
Blue	GND

## Operation and display

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

## Suitable transmitters

Part no.	Designation	Operating range Operating range limit	Description
50140165	LS412BL2/D	0 ... 50 m 0 ... 50 m	Special version: Deactivation input Operating range limit: 0 ... 50 m Light source: Laser, Red Supply voltage: DC Deactivation inputs: 1 Piece(s) Connection: Cable, 2,000 mm, 3 -wire

## Part number code

Part designation: AAA412BGG.H/ii-K

<b>AAA412B</b>	<b>Operating principle / construction</b> LS412B: Throughbeam photoelectric sensor transmitter LE412B: Throughbeam photoelectric sensor receiver ET412B: Energetic diffuse reflection sensor PRK412B: Retro-reflective photoelectric sensor with polarization filter
<b>GG</b>	<b>Light source</b> n/a: LED L2: laser class 2
<b>H</b>	<b>Operating range adjustment</b> 1: 270° potentiometer
<b>ii</b>	<b>Switching output / function / OUT1OUT2 (OUT1 = pin 4, OUT2 = pin 2)</b> 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
<b>K</b>	<b>Electrical connection</b> 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 website at [www.leuze.com](http://www.leuze.com).

## Notes

	<b>Observe intended use!</b>
	<ul style="list-style-type: none"> <li>↳ This product is not a safety sensor and is not intended as personnel protection.</li> <li>↳ The product may only be put into operation by competent persons.</li> <li>↳ Only use the product in accordance with its intended use.</li> </ul>



## ATTENTION! LASER RADIATION – CLASS 2 LASER PRODUCT

**Do not stare into 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! The use of operating and adjusting devices other than those specified here or the carrying out of differing procedures may lead to dangerous exposure to radiation!
- ⌚ 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****Mounting technology - Mounting brackets**

Part no.	Designation	Article	Description
50113549	BT D12M.5	Mounting bracket	<p>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</p>

**Note**

- ⌚ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.