Technical data sheet
Throughbeam photoelectric sensor
Part no.: 50140167
LE412BL2.1/N



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

Switching element	Transistor, NPN
Switching principle	Dark switching

Timing

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

Connection

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 mm²

Mechanical data

Thread size	M12 x 1 mm
Dimension (Ø x L)	12 mm x 51 mm
Housing material	Stainless steel, 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

Certifications

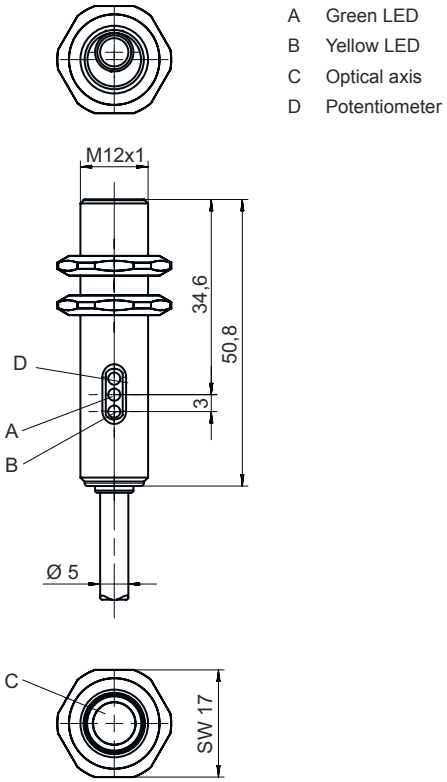
Degree of protection	IP 67
Protection class	III
Certifications	c UL US
Standards applied	IEC 60947-5-2

Classification

Customs tariff number	85365019
eCl@ss 8.0	27270901
eCl@ss 9.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716

Dimensioned drawings

All dimensions in millimeters



Electrical connection

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 mm²

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	Article	Description
	50140165	LS412BL2/D	Throughbeam photoelectric sensor transmitter	Special design: Deactivation input 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**

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 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.

Notes

WARNING! 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! 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

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

Note

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