Leuze

Technical data sheet Energetic diffuse sensor

Part no.: 50122593 FT28.3/2N-M12



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Technical data

Basic data

Series Operating principle

28 Diffuse reflection principle

Special design

Optical data

Operating range	Guaranteed operating range
Operating range, white 90%	0.001 0.21 m
Operating range, gray 50%	0.002 0.185 m
Operating range, gray 18%	0.003 0.145 m
Operating range, black 6%	0.005 0.125 m
Operating range limit	Typical operating range
Operating range limit, white 90%	0 0.25 m
Operating range limit, gray 50%	0.002 0.225 m
Operating range limit, gray 18%	0.003 0.175 m
Operating range limit, black 6%	0.005 0.15 m
Light source	LED, Red
LED light wavelength	620 nm
Transmitted-signal shape	Pulsed
LED group	Exempt group (in acc. with EN 62471)

Electrical data

Protective circuit

Polarity reversal protection
Short circuit protected

0 ... 15 %, From U_B

0 ... 20 mA

10 ... 30 V, DC, Incl. residual ripple

Performance data	
Supply voltage U _B	
Residual ripple	
Open-circuit current	

Outputs

Number of digital switching outputs 2 Piece(s)

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Switching outputs
Voltage type
Switching current, max
Switching voltage

.. . .

100 mA high: ≥(U_B -2.5V) low: ≤2.5V

Switching output 1	
Assignment	Connection 1, pin 4
Switching element	Transistor, NPN
Switching principle	Light switching

DC

Switching output 2	
Assignment	Connection 1, pin 2
Switching element	Transistor, NPN
Switching principle	Dark switching

Timing

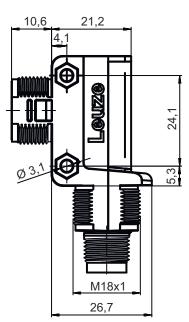
Switching frequency	500 Hz
Response time	1 ms
Readiness delay	300 ms



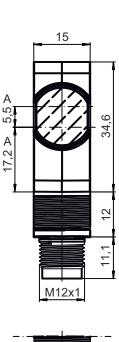
Voltage supplyType of connectionConnectorThread sizeM12TypeMaleMaterialPlasticNo. of pins4 - pinEncodingA-codedMechanical dataM18Dimension (W x H x L)15 mm x 46.5 mmThread sizeM18Length31.8 mmHousing materialPlasticNet weight25 gHousing colorBlackRedOperation and displayLEDNumber of LEDs2 Piece(s)Operational controlsTeach buttonEnvironmental dataAmbient temperature, operation-40 60 °CAmbient temperature, storage-40 70 °CCertificationsc UL USStandards appliedIEC 60947-5-2Classification27270903Customs tariff number8536519ecl@ess 8.027270903ETM 5.0EC001821	Connection 1	Signal OUT
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Dimensioned drawings

All dimensions in millimeters



37,3



- A Optical axisB Indicator diode
- C Teach button

Electrical connection

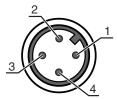
Connection 1

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

Ø 4

Pin Pin assignment

1	V+		
2	OUT 2		
3	GND		
4	OUT 1		

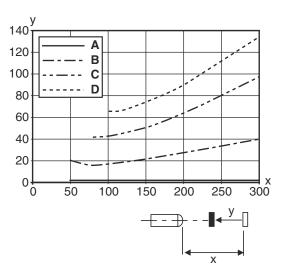


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Diagrams

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Typ. black/white behavior



- x Range [mm]
- y Reduction of range [mm]
- A White 90%
- B Gray 50%
- C Gray 18%
- D Black 6%

Fading: black/white error < 50 %The black/white error is calculated from the operating range against white and the reduction of the operating range against

Operation and display

LED	Display	Meaning
1	Green, continuous light	Operational readiness
	Yellow, continuous light	Object detected

Part number code

Part designation: AAA28d.E/ ff-hh

AAA28	Operating principle / construction LS28: throughbeam photoelectric sensor transmitter LE28: throughbeam photoelectric sensor receiver ET28: energetic diffuse reflection sensor FT28: diffuse reflection sensor with fading PRK28: retro-reflective photoelectric sensor with polarization filter
d	Light type n/a: red light I: infrared light
E	Equipment 3: teach-in via button
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, dark switching D: deactivation input (deactivation with low signal) 9: deactivation input (deactivation with high signal)
hh	Electrical connection n/a: cable, standard length 2000mm, 4-wire 200-M12: cable, length 200mm with M12 connector, 4-pin, axial (plug)

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

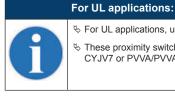
Observe intended use!

CYJV7 or PVVA/PVVA7)

b This product is not a safety sensor and is not intended as personnel protection.

b The product may only be put into operation by competent persons.

b Only use the product in accordance with its intended use.



b For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code). 🗞 These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/

Further information

- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C
- With the set scanning range, a tolerance of the operating range is possible depending on the reflection properties of the material surface.

Accessories

Connection technology - Connection cables

	Part no.	Designation	Article	Description
W	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
W	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
50124651	BT 205M-10SET	Mounting device set	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

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Accessories

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Mounting technology - Rod mounts

	Part no.	Designation	Article	Description
j.	50117255	BTU 200M-D12	Mounting system	Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type, Suited for M3 screws Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal
Of:	50117490	BTU D18M-D12	Mounting system	Design of mounting device: Mounting system Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal

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