

Technical data sheet

Polarized retro-reflective photoelectric sensor

Part no.: 50148849

PRK23.T3/4X-200-M12

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For illustration purposes only



Technical data

Basic data

Series	23
Operating principle	Reflection principle
Application	Detection of highly transparent bottles Detection of transparent films

Special version

Special version	Autocollimation
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Optical data

Operating range	0 ... 2 m, With reflector TK(S) 100x100
Operating range	Guaranteed operating range
Operating range limit	0 ... 3 m, With reflector TK(S) 100x100
Operating range limit	Typical operating range
Light source	LED, Red
Wavelength	635 nm
Transmitted-signal shape	Pulsed
LED group	Exempt group (in acc. with EN 62471)

Electrical data

Protective circuit	Polarity reversal protection Short circuit protected
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Performance data

Supply voltage U_B	10 ... 30 V, DC, Incl. residual ripple
Residual ripple	0 ... 15 %, From U_B
Open-circuit current	0 ... 15 mA

Outputs

Number of digital switching outputs	1 Piece(s)
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Switching outputs

Voltage type	DC
Switching current, max.	100 mA
Switching voltage	high: $\geq(U_B - 2V)$ low: $\leq 2 V$

Switching output 1

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

Time behavior

Switching frequency	1,000 Hz
Response time	0.5 ms
Readiness delay	300 ms
Response jitter	110 μ s

Connection 1

Function	Signal OUT Voltage supply
Type of connection	Cable with connector
Cable length	200 mm
Sheathing material	PUR
Cable color	Black
Number of conductors	4 -wire
Wire cross section	0.2 mm ²
Thread size	M12
Type	Male
Material	Plastic
No. of pins	4 -pin
Encoding	A-coded

Mechanical data

Dimension (W x H x L)	11.4 mm x 34.2 mm x 18.3 mm
Housing material	Plastic
Plastic housing	PC-ABS
Lens cover material	Plastic / PMMA
Net weight	50 g
Housing color	Black
Type of fastening	Through-hole mounting Via optional mounting device

Operation and display

Type of display	LED
Number of LEDs	2 Piece(s)
Operational controls	Teach button
Function of the operational control	Sensitivity adjustment

Environmental data

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

Certifications

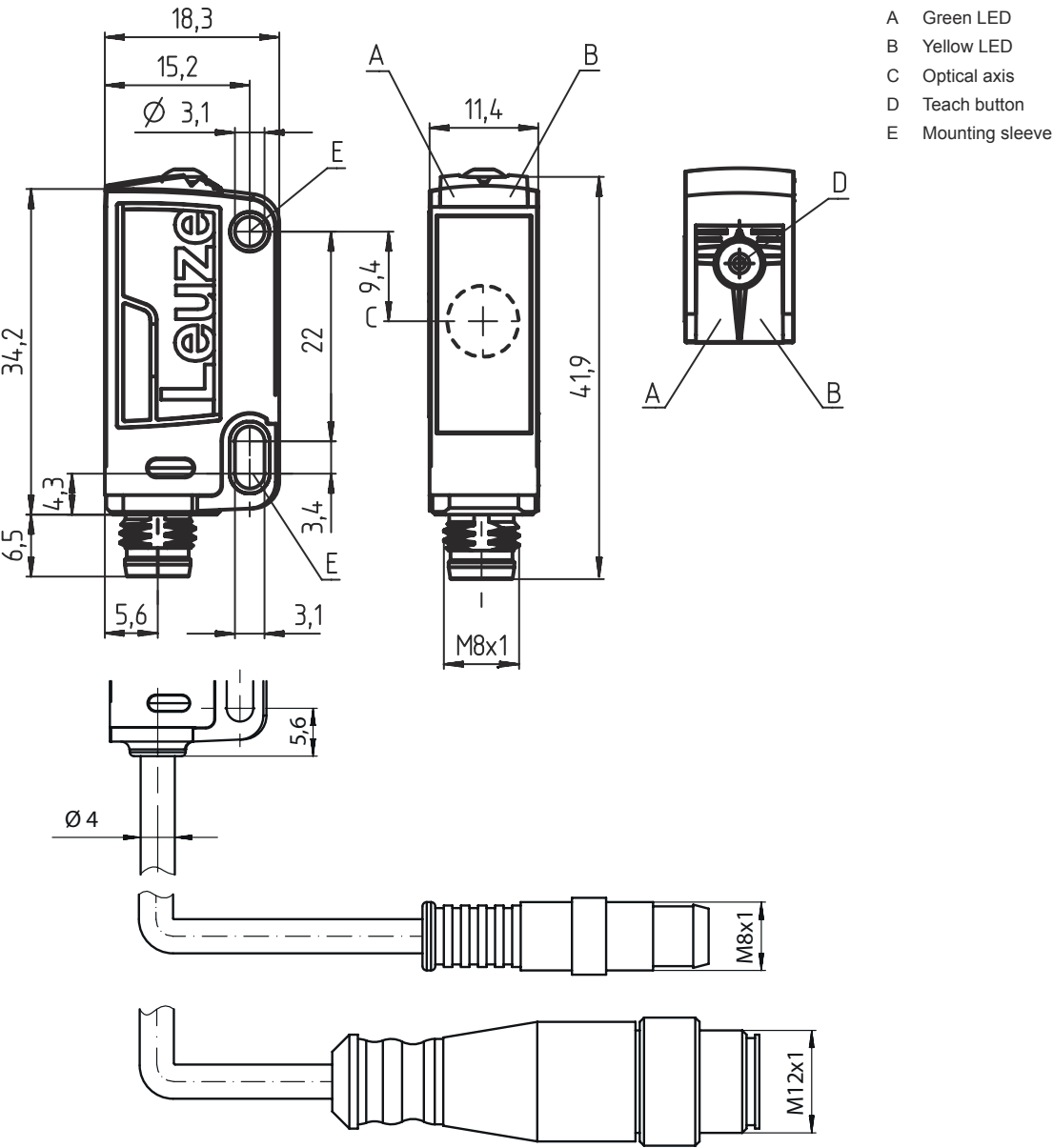
Degree of protection	IP 67
Protection class	III
Approvals	c UL US
Standards applied	IEC 60947-5-2

Classification

Customs tariff number	85365019
ECLASS 5.1.4	27270902
ECLASS 8.0	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ECLASS 13.0	27270902
ECLASS 14.0	27270902
ECLASS 15.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
ETIM 9.0	EC002717
ETIM 10.0	EC002717

Dimensioned drawings

All dimensions in millimeters



Electrical connection

Connection 1

Function	Signal OUT
	Voltage supply
Type of connection	Cable with connector
Cable length	200 mm
Sheathing material	PUR
Cable color	Black
Number of conductors	4 -wire

Electrical connection

Connection 1

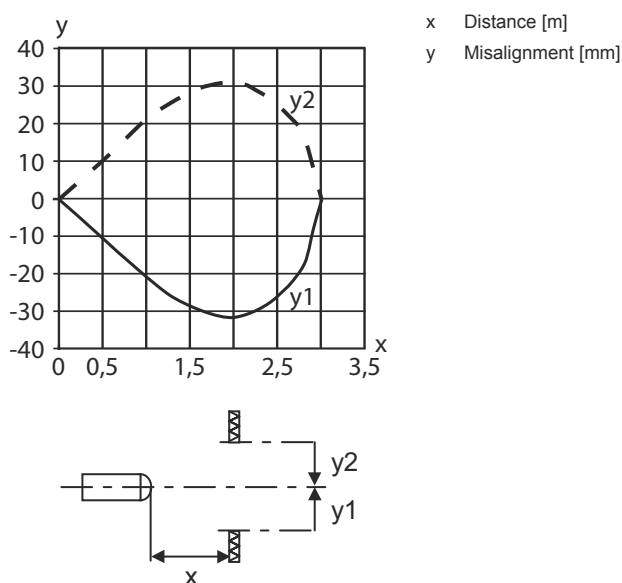
Wire cross section	0.2 mm²
Thread size	M12
Type	Male
Material	Plastic
No. of pins	4 -pin
Encoding	A-coded

Pin Pin assignment

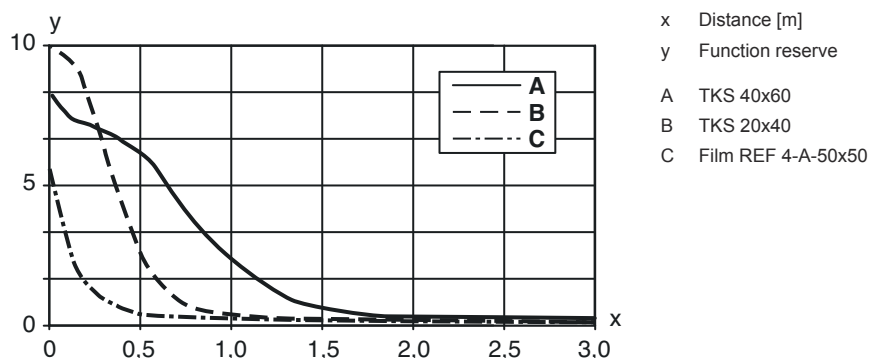
1	V+
2	n.c.
3	GND
4	OUT 1

Diagrams

Typ. response behavior



Typ. function reserve



Operation and display

LED	Display	Meaning
1	Green, continuous light	Operational readiness
2	Yellow, continuous light	Light path free
	Yellow, flashing	Light path free, no function reserve

Reflectors & reflective tapes

	Part no.	Designation	Operating range Operating range limit	Description
	50117583	MTKS 50x50.1	0 ... 1 m 0 ... 1.3 m	Design: Rectangular Triple reflector size: 1.2 mm Reflective surface: 50 mm x 50 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive
	50110192	REF 6-A-50x50	0 ... 0.8 m 0 ... 1 m	Design: Rectangular Triple reflector size: 0.3 mm Reflective surface: 50 mm x 50 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive
	50003192	TK 100x100	0 ... 2 m 0 ... 3 m	Design: Rectangular Triple reflector size: 4 mm Reflective surface: 96 mm x 96 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Rear side can be glued
	50022816	TKS 100X100	0 ... 2 m 0 ... 3 m	Design: Rectangular Triple reflector size: 4 mm Reflective surface: 96 mm x 96 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive
	50081283	TKS 20X40	0 ... 0.8 m 0 ... 1 m	Design: Rectangular Triple reflector size: 2.3 mm Reflective surface: 16 mm x 38 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive
	50040820	TKS 40X60	0 ... 1.6 m 0 ... 1.9 m	Design: Rectangular Triple reflector size: 4 mm Reflective surface: 37 mm x 56 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive

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:





For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).



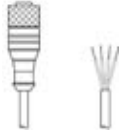
These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/ CYJV7 or PVVA/PVVA7)

Further information

- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C
- Response time: For short decay times, an ohmic load of approx. 5 kOhm is recommended
- The light spot may not exceed the reflector.
- Use of micro-triad-type reflectors beginning with MTK(S) or REF 6-A- reflective tape is preferred.
- For REF 6-A- reflective tape, the sensor's side edge must be aligned parallel to the side edge of the reflective tape.

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 Connector, LED: No 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 Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC

Accessories

Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	50060511	BT 3	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
	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

Micro-triad-type reflectors

	Part no.	Designation	Article	Description
	50117583	MTKS 50x50.1	Reflector	Design: Rectangular Triple reflector size: 1.2 mm Reflective surface: 50 mm x 50 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive

Note



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