

Technical data sheet

Polarized retro-reflective photoelectric

Part no.: 50128201

PRK5.M3/4P

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Figure can vary



Technical data

Basic data

Series	5
Operating principle	Reflection principle
Application	Detection of bottle container Detection of semi-transparent media

Optical data

Operating range	Guaranteed operating range
Operating range	0.02 ... 4.5 m, With reflector TK(S) 100x100
Operating range limit	Typical operating range
Operating range limit	0.02 ... 6 m, With reflector TK(S) 100x100
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
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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 ... 20 mA

Outputs

Number of digital switching outputs	2 Piece(s)
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Switching outputs

Voltage type	DC
Switching current, max.	100 mA
Switching voltage	high: $\geq(U_B - 2.5V)$ low: $\leq 2.5V$

Switching output 1

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

Switching output 2

Assignment	Connection 1, conductor 2
Switching element	Transistor, PNP
Switching principle	Dark switching

Timing

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

Connection 1

Function	Signal OUT Voltage supply
Type of connection	Cable
Cable length	2,000 mm
Sheathing material	PUR
Cable color	Black
Number of conductors	4 -wire
Wire cross section	0.02 mm ²

Mechanical data

Dimension (W x H x L)	14 mm x 32.5 mm x 20.2 mm
Housing material	Plastic
Plastic housing	ABS
Lens cover material	Plastic
Net weight	70 g
Housing color	Black Red

Operation and display

Type of display	LED
Number of LEDs	2 Piece(s)
Operational controls	Teach button

Environmental data

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

Certifications

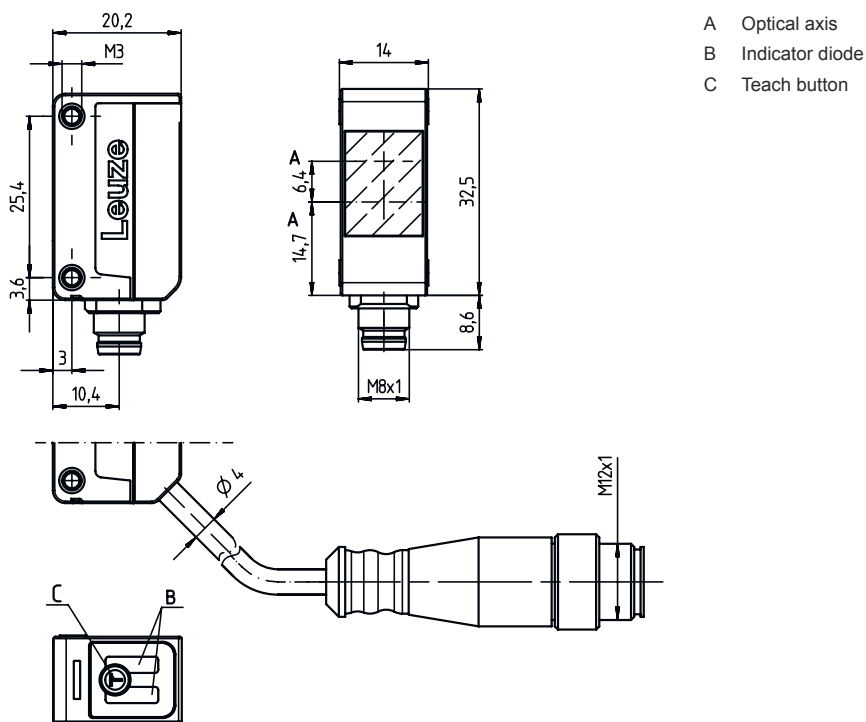
Degree of protection	IP 67
Protection class	III
Certifications	c UL US
Standards applied	IEC 60947-5-2

Classification

Customs tariff number	85365019
eCl@ss 5.1.4	27270902
eCl@ss 8.0	27270902
eCl@ss 9.0	27270902
eCl@ss 10.0	27270902
eCl@ss 11.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717

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	PUR
Cable color	Black
Number of conductors	4 -wire
Wire cross section	0.02 mm ²

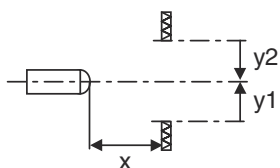
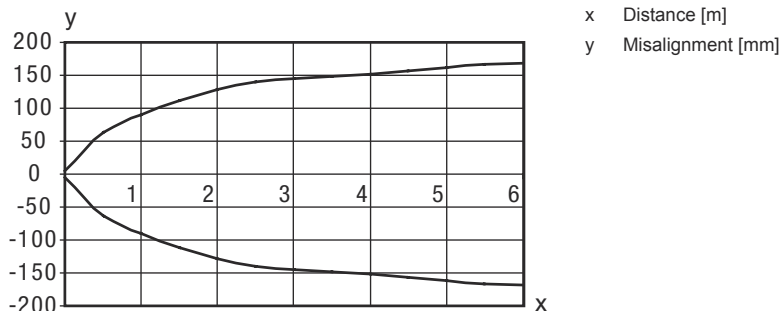
Conductor color

Conductor assignment

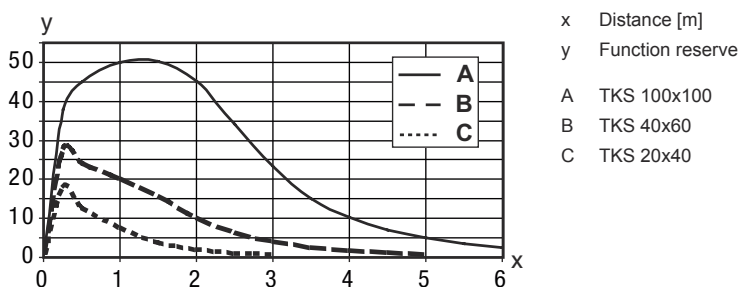
Brown	V+
White	OUT 2
Blue	GND
Black	OUT 1

Diagrams

Typ. response behavior (TKS100x100)



Typ. function reserve




Operation and display

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

Reflectors & reflective tapes

Part no.	Designation	Operating range Operating range	Description
50108300	REF 4-A-50x50	0.08 ... 1.4 m 0.08 ... 2 m	Design: Rectangular Reflective surface: 50 mm x 50 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive



Reflectors & reflective tapes

	Part no.	Designation	Operating range Operating range	Description
	50003192	TK 100x100	0.02 ... 4.5 m 0.02 ... 6 m	Design: Rectangular Reflective surface: 96 mm x 96 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Adhesive
	50003189	TK 30x50	0.03 ... 1.9 m 0.03 ... 2.5 m	Design: Rectangular Reflective surface: 29 mm x 45 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Adhesive
	50024127	TK 82.2	0.05 ... 3.6 m 0.05 ... 4.5 m	Design: Round Triple reflector size: 4 mm Reflection surface diameter: 79 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive
	50022816	TKS 100X100	0.02 ... 4.5 m 0.02 ... 6 m	Design: Rectangular Reflective surface: 96 mm x 96 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive
	50081283	TKS 20X40	0.04 ... 1.6 m 0.04 ... 2.2 m	Design: Rectangular Reflective surface: 16 mm x 38 mm Triple reflector size: 2.3 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive
	50023525	TKS 30X50	0.03 ... 1.9 m 0.03 ... 2.5 m	Design: Rectangular Reflective surface: 27 mm x 44 mm Triple reflector size: 3 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive
	50040820	TKS 40X60	0.02 ... 3 m 0.02 ... 4 m	Design: Rectangular Reflective surface: 37 mm x 56 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive

Part number code

Part designation: AAA5d.EE/ ff-GG-hh-I

AAA5	Operating principle / construction HT5: diffuse reflection sensor with background suppression LS5: throughbeam photoelectric sensor transmitter LE5: throughbeam photoelectric sensor receiver ET5: energetic diffuse reflection sensor FT5: diffuse reflection sensor with fading PRK5: retro-reflective photoelectric sensor with polarization filter
d	Light type n/a: red light I: infrared light
EE	Equipment 1: adjustable range M: for semi-transparent objects H: for the detection of transparent films X: reinforced fading 3: teach-in via button R: combination product for reflector DTKS 30x50
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, light switching P: PNP transistor output, dark switching X: pin not used 9: deactivation input (deactivation with high signal) D: deactivation input (deactivation with low signal)
GG	Version P1: narrow light beam
hh	Electrical connection n/a: cable, standard length 2000 mm, 4-wire M8: M8 connector, 4-pin (plug) M8.3: M8 connector, 3-pin (plug) 200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug) 200-M8.3: cable, length 200 mm with M8 connector, 3-pin, axial (plug) 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug) M8.1: Snap-in, M8 connector, 4-pin (plug)
I	Configuration P1: different configuration

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.

For UL applications:





- ⌘ Only for use in "class 2" circuits
- ⌘ 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



- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C

Accessories


Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	50118542	BT 200M.5	Mounting bracket	Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type, Suited for M3 screws Type of mounting device: Adjustable Material: Stainless steel
	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

Mounting technology - Rod mounts


	Part no.	Designation	Article	Description
	50117829	BTP 200M-D12	Mounting system	Design of mounting device: Protection hood Fastening, at system: For 12 mm rod Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal
	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

Standard reflectors

	Part no.	Designation	Article	Description
	50109257	TKS 40x60.1	Reflector	Design: Rectangular Reflective surface: 37 mm x 56 mm Triple reflector size: 2.3 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive

Accessories

Micro-triad-type reflectors

	Part no.	Designation	Article	Description
	50117583	MTKS 50x50.1	Reflector	Design: Rectangular Reflective surface: 50 mm x 50 mm Triple reflector size: 1.2 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.