

Technical data sheet

Polarized retro-reflective photoelectric sensor

Part no.: 50133708

PRK3CL1.BT3/LP-200-M12

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CDRH



IO-Link



For illustration purposes only

Technical data

Basic data

Series	3C
Operating principle	Reflection principle
Application	Detection of highly transparent bottles Detection of transparent films

IO-Link

COM mode	COM2
Min. cycle time	COM2 = 2.3 ms
Frame type	2.5
Specification	V1.1
SIO-mode support	Yes

Special version

Special version	Autocollimation
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Connection

Number of connections	1 Piece(s)
Connection 1	
Function	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Cable with connector
Cable length	200 mm
Sheathing material	PUR
Cable color	Black
Wire cross section	0.2 mm ²
Thread size	M12
Type	Male
Material	Metal
No. of pins	4 -pin
Encoding	A-coded

Electrical data

Protective circuit	Polarity reversal protection Short circuit protected
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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	20 g
Housing color	Red
Type of fastening	Two M3 threaded sleeves Via optional mounting device
Compatibility of materials	ECOLAB

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	-10 ... 55 °C
Ambient temperature, storage	-40 ... 70 °C

Certifications

Degree of protection	IP 67
	IP 69K
Protection class	III
Approvals	c UL US
Standards applied	IEC 60947-5-2

Time behavior

Switching frequency	3,000 Hz
Response time	0.17 ms
Readiness delay	300 ms

Interface

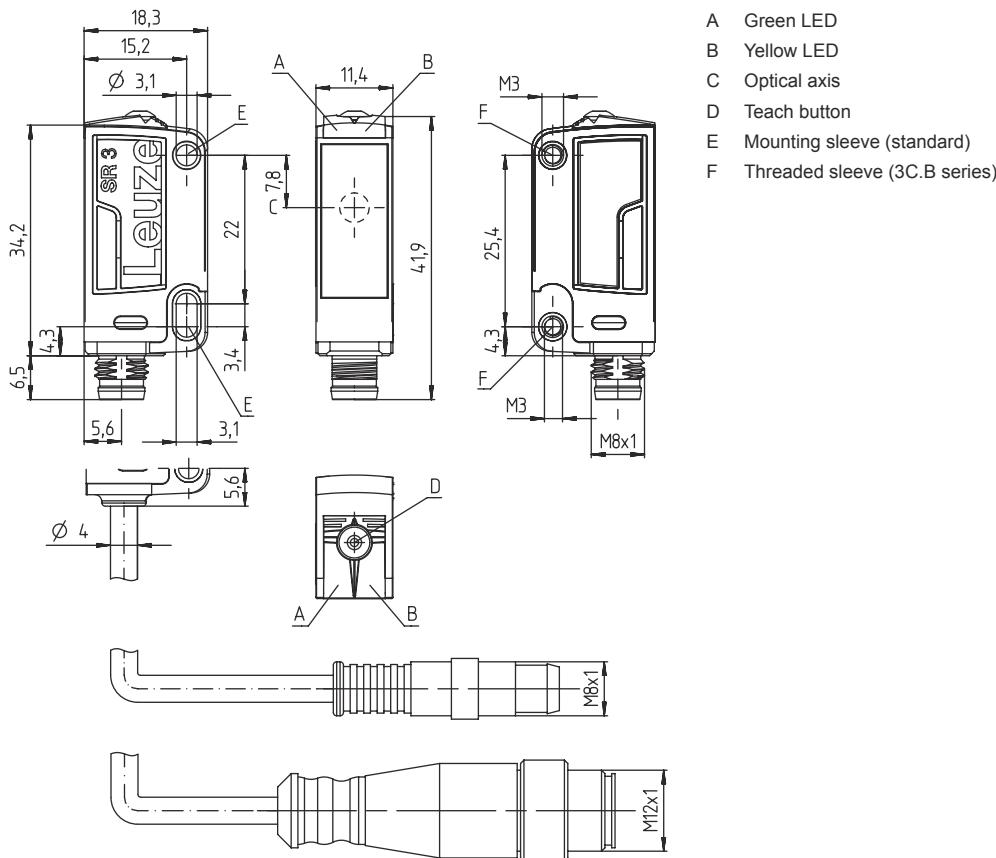
Type	IO-Link
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Technical data

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
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717

Dimensioned drawings

All dimensions in millimeters



Electrical connection

Connection 1

Function	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Cable with connector
Cable length	200 mm
Sheathing material	PUR
Cable color	Black

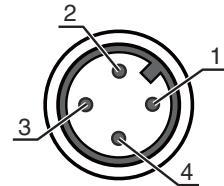
Electrical connection

Connection 1

Wire cross section	0.2 mm ²
Thread size	M12
Type	Male
Material	Metal
No. of pins	4-pin
Encoding	A-coded

Pin Pin assignment

1	V+
2	OUT 2
3	GND
4	IO-Link / OUT 1



Operation and display

LED	Display	Meaning
1	Green, continuous light	Operational readiness
2	Yellow, continuous light	Light path free

Reflectors & reflective tapes

Part no.	Designation	Operating range Operating range limit	Description	
 50110191	REF 6-A-25x25	0 ... 0.4 m 0 ... 0.5 m	Design: Rectangular Triple reflector size: 0.3 mm Reflective surface: 25 mm x 25 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive	
	50114185	REF 6-S-20x40	0 ... 0.4 m 0 ... 0.5 m	Design: Rectangular Triple reflector size: 0.3 mm Reflective surface: 16 mm x 38 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Screw type
	50112142	TK BR 53	0 ... 0.4 m 0 ... 0.5 m	Design: Rectangular Triple reflector size: 0.3 mm Reflective surface: 29 mm x 10 mm Material: Plastic Base material: Stainless steel Chemical designation of the material: Stainless steel Fastening: Housing fit

Part number code

Part designation: AAA 3C d EE-f.GG H/i J-K

AAA3C	Operating principle / construction
	HT3C: Diffuse reflection sensor with background suppression
	LS3C: Throughbeam photoelectric sensor transmitter
	LE3C: Throughbeam photoelectric sensor receiver
	PRK3C: Retro-reflective photoelectric sensor with polarization filter
	ODT3C: Distance diffuse sensor with background suppression

Part number code

d	Light type n/a: red light I: infrared light
EE	Light source n/a: LED L1: laser class 1 L2: laser class 2
f	Preset range (optional) n/a: operating range acc. to data sheet xxxF: Preset range [mm] 2M: operating range of 2 meters
GG	Equipment n/a: standard A: Autocollimation principle (single lens) for positioning tasks B: Housing model with two M3 threaded sleeves, brass F: Permanently set range L: Long light spot S: small light spot T: autocollimation principle (single lens) for highly transparent bottles without tracking TT: autocollimation principle (single lens) for highly transparent bottles with tracking V: V-optics XL: Extra long light spot X: extended model HF: Suppression of HF illumination (LED)
H	Operating range adjustment n/a with HT: range adjustable via 8-turn potentiometer n/a with retro-reflective photoelectric sensors (PRK): operating range not adjustable 1: 270° potentiometer 3: teach-in via button 6: auto-teach
i	Switching output/function OUT 1/IN: Pin 4 or black conductor 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 6: push-pull switching output, PNP light switching, NPN dark switching G: Push-pull switching output, PNP dark switching, NPN light switching L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching) 8: activation input (activation with high signal) X: pin not used 1: IO-Link / light switching (NPN) / dark switching (PNP)
J	Switching output / function OUT 2/IN: pin 2 or white conductor 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 6: push-pull switching output, PNP light switching, NPN dark switching G: Push-pull switching output, PNP dark switching, NPN light switching W: warning output X: pin not used 8: activation input (activation with high signal) 9: deactivation input (deactivation with high signal) T: teach-in via cable
K	Electrical connection n/a: cable, standard length 2000 mm, 4-wire 5000: cable, standard length 5000 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)

Note

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

Notes

	Observe intended use!
	<ul style="list-style-type: none"> ⌚ 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:
	<ul style="list-style-type: none"> ⌚ 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)

	WARNING! LASER RADIATION – CLASS 1 LASER PRODUCT
	<p>The device satisfies the requirements of IEC/EN 60825-1:2014 safety regulations for a product of laser class 1 and complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.</p> <ul style="list-style-type: none"> ⌚ 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.

Further information

- Light source: Average life expectancy 50,000 h at an ambient temperature of 25 °C
- Response time: For short decay times, an ohmic load of approx. 5 kOhm is recommended
- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C
- Permissible operating temperature range during IO-Link operation: -10 °C to +40 °C

Accessories

Connection technology - Connection unit

Part no.	Designation	Article	Description
	50144900 MD 798i-11-82/L5-2222	IO-Link master	<p>Current consumption, max.: 11,000 mA Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP, PROFINET Connections: 12 Piece(s) Sensor connections: 8 Piece(s) Degree of protection: IP 67, IP 65, IP 69K</p>

Accessories

Connection technology - Connection cables

Part no.	Designation	Article	Description
	50130652	KD U-M12-4A-V1-050	Connection cable Application: Chemical resistant 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 Application: Chemical resistant 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

Mounting technology - Mounting brackets

Part no.	Designation	Article	Description
	50139831	BT 205M	Mounting device 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 Contains: 2x M3 x 16 screw, 2 M3 x 20 screws, 2x position washers 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

Note

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