

Technical data sheet

Dynamic reference diffuse sensor

Part no.: 50141897

DRT25C.3/L6-M12



Figure can vary

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Technical data

Basic data

Series	25C
Operating principle	Reference teach on background

Optical data

Operating range	Max. distance to reference surface
Operating range	0.05 ... 0.2 m
Adjustment range	50 ... 200 mm
Light source	LED, Red
LED light wavelength	645 nm
Transmitted-signal shape	Pulsed
LED group	Exempt group (in acc. with EN 62471)

Electrical data

Protective circuit	Polarity reversal protection
	Short circuit protected

Performance data

Supply voltage U_B	12 ... 30 V, DC, Incl. residual ripple
Residual ripple	0 ... 15 %, From U_B
Open-circuit current	0 ... 40 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, pin 4
Switching element	Transistor, Push-pull
Switching principle	IO-Link / light switching (PNP)/dark switching (NPN)

Switching output 2

Assignment	Connection 1, pin 2
Switching element	Transistor, Push-pull
Switching principle	Light switching (PNP)/dark switching (NPN)

Timing

Switching frequency	750 Hz, (Teach level 1: 500 Hz)
Response time	0.66 ms
Readiness delay	300 ms

Interface

Type	IO-Link
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IO-Link

COM mode	COM3
Frame type	2.5
Specification	V1.1
Device ID	2140
SIO-mode support	Yes
Process data IN	8 bit
Process data OUT	8 bit
Dual-core operating mode	Yes
Min. cycle time	COM3 = 0.4 ms

Connection 1

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

Mechanical data

Dimension (W x H x L)	15 mm x 42.7 mm x 30 mm
Housing material	Plastic, ABS
Lens cover material	Plastic
Net weight	22 g
Housing color	Red
Type of fastening	Through-hole mounting with M4 thread
	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	Teach-in on reference surface

Environmental data

Ambient temperature, operation	-10 ... 50 °C, Temperature compensation $\pm 15^\circ\text{C}$
Ambient temperature, storage	-40 ... 70 °C

Certifications

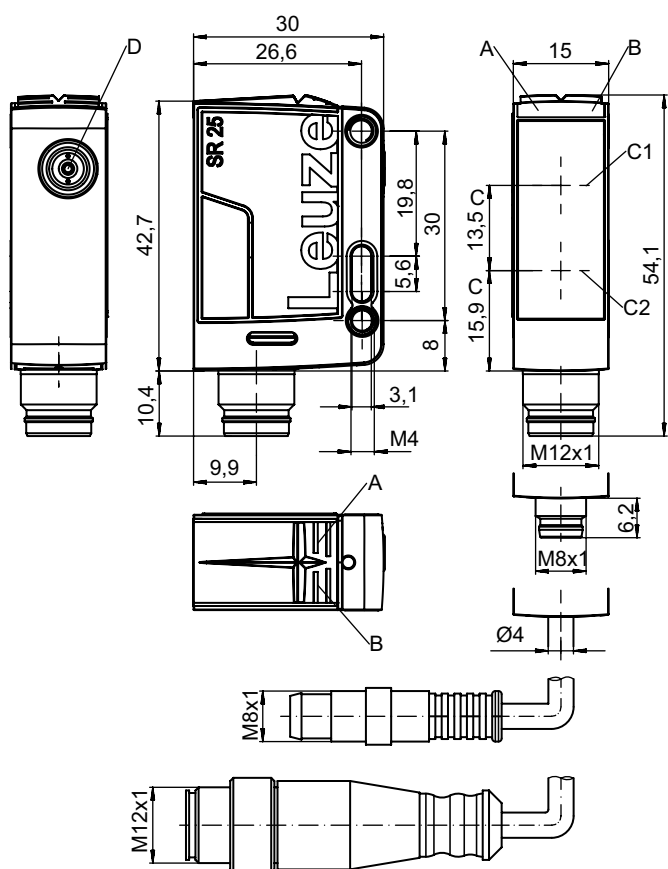
Degree of protection	IP 67
	IP 69K
Protection class	III
Certifications	c UL US
Standards applied	IEC 60947-5-2

Classification

Customs tariff number	85365019
eCl@ss 8.0	27270903
eCl@ss 9.0	27270903
ETIM 5.0	EC001821
ETIM 6.0	EC001821

Dimensioned drawings

All dimensions in millimeters



- A Green LED
- B Yellow LED
- C Optical axis
- C1 Receiver
- C2 Transmitter
- D Range adjustment

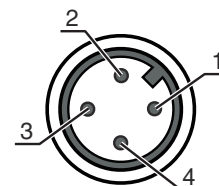
Electrical connection

Connection 1

Function	Signal OUT Voltage supply
Type of connection	Connector
Thread size	M12
Type	Male
Material	PUR
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

Operation and display

LED	Display	Meaning
2	Yellow, continuous light	Object detected

Part number code

Part designation: **AAA25C d EE-f.GGH/IJ-K**

AAA25C	Operating principle / construction HT25C: diffuse reflection sensor with background suppression PRK25C: retro-reflective photoelectric sensor with polarization filter LS25C: throughbeam photoelectric sensor transmitter LE25C: throughbeam photoelectric sensor receiver DRT25C: Dynamic reference diffuse sensor
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]
GG	Equipment A: autocollimation principle (single lens) S: small light spot D: detection of stretch-wrapped objects X: extended model HF: suppression of HF illumination (LED) XL: extra long light spot T: autocollimation principle (single lens) for highly transparent bottles without tracking TT: autocollimation principle (single lens) for highly transparent bottles with tracking
H	Operating range adjustment 1: 270° potentiometer 2: multiturn potentiometer 3: teach-in via button
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 X: pin not used 8: activation input (activation with high signal) L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching) 6: push-pull switching output, PNP light switching, NPN dark switching G: push-pull switching output, PNP dark switching, NPN light switching
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 W: warning output X: pin not used 6: push-pull switching output, PNP light switching, NPN dark switching T: teach-in via cable G: push-pull switching output, PNP dark switching, NPN light switching
K	Electrical connection n/a: cable, standard length 2000 mm, 4-wire 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug) M8: M8 connector, 4-pin (plug) M12: M12 connector, 4-pin (plug) 200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug)

Note



A list with all available device types can be found on the Leuze website at

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"> ⌘ 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

- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C

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 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 Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC

Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	50118543	BT 300M.5	Mounting bracket	Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type, Suited for M4 screws Type of mounting device: Adjustable Material: Stainless steel

Accessories

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
	50117252	BTU 300M-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 M4 screws Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal
	50142207	BTU 300M-D12-90	Rod mounting	Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type, Suited for M4 screws Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal
	50142208	BTU D12M-L-200	Rod	Design of mounting device: Rod Fastening, at system: Clampable Mounting bracket, at device: Clampable 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.