Technical data sheet

Dynamic reference diffuse sensor

Part no.: 50141897

DRT25C.3/L6-M12

Figure can vary

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Technical data

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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)

Switching outputs

Voltage type	DC
Switching current, max.	100 mA
Switching voltage	high: ≥(U_B-2.5V)
	low: ≤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

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

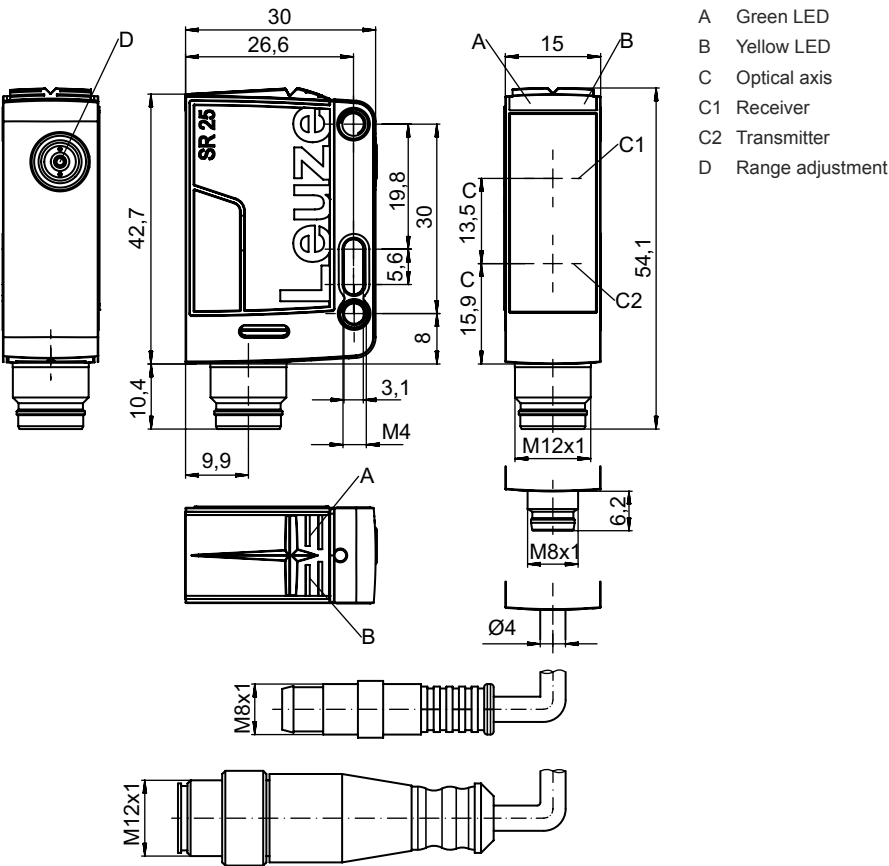|	
Ambient temperature, operation	-10 ... 50 °C, Temperature compensation ±15°C
Ambient temperature, storage	-40 ... 70 °C

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

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All dimensions in millimeters

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

Electrical connection

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
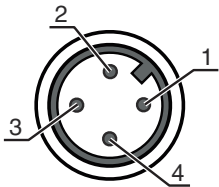
Operation and display

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	
ℹ	⮡ 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!

↳ 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

- 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

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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.