

## Technical data sheet

### Dynamic reference diffuse sensor

Part no.: 50141901

DRT25C.3/LT-M12



For illustration purposes only

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## Technical data

### Basic data

Series	25C
Operating principle	Reference teach on background

### Special version

Special version	Teach input
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### Optical data

Operating range	0.05 ... 0.2 m
Operating range	Max. distance to reference surface
Adjustment range	50 ... 200 mm
Light source	LED, Red
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

### Inputs

Number of teach inputs	1 Piece(s)
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### Teach inputs

Voltage type	DC
Switching voltage	high: $\geq 10V$
	low: $\leq 2 V$
Input resistance	22,000 $\Omega$

### Teach input 1

Assignment	Connection 1, pin 2
Function	Keyboard lockout
	Setting the teach levels
Active switching state	High

### 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: $\geq (U_B - 2.5V)$
	low: $\leq 2.5 V$

### Switching output 1

Assignment	Connection 1, pin 4
Switching element	Transistor, Push-pull
Switching principle	IO-Link / light switching (PNP)/dark switching (NPN)

### Time behavior

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

### Interface

Type	IO-Link
<b>IO-Link</b>	
COM mode	COM3
Min. cycle time	COM3 = 0.4 ms
Frame type	2.5
Specification	V1.1
Device ID	2142
SIO-mode support	Yes
Process data IN	8 bit
Process data OUT	8 bit
Dual Channel	No

### Connection

#### Connection 1

Function	Signal IN
	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
Plastic housing	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 $\pm 15^\circ C$
Ambient temperature, storage	-40 ... 70 °C

### Certifications

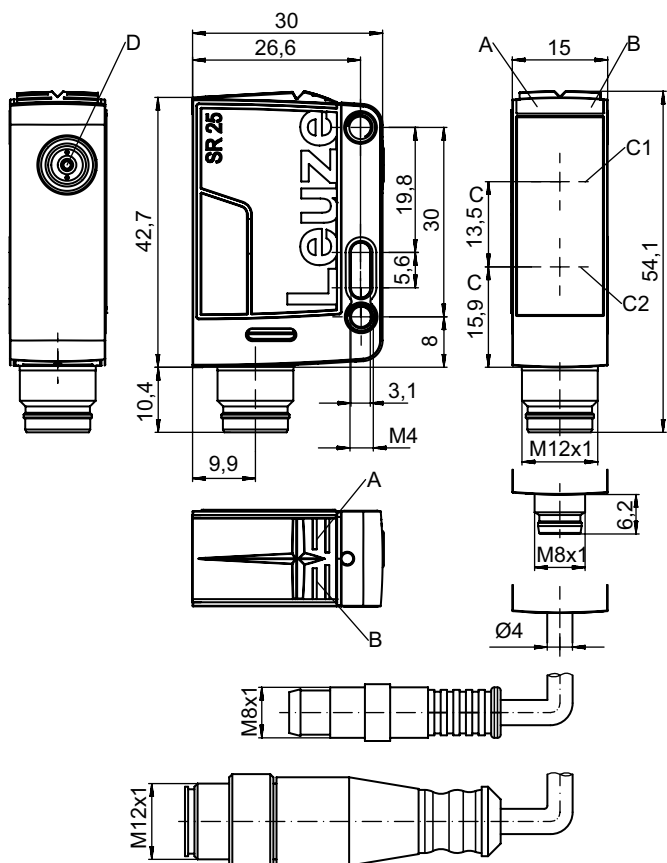
Degree of protection	IP 67
	IP 69K
Protection class	III
Approvals	c UL US
Standards applied	IEC 60947-5-2

## Technical data

Customs tariff number	85365019
ECLASS 5.1.4	27270903
ECLASS 8.0	27270903
ECLASS 9.0	27270903
ECLASS 10.0	27270903
ECLASS 11.0	27270903
ECLASS 12.0	27270903
ECLASS 13.0	27270903
ECLASS 14.0	27270903
ECLASS 15.0	27270903
ETIM 5.0	EC001821
ETIM 6.0	EC001821
ETIM 7.0	EC001821
ETIM 8.0	EC001821
ETIM 9.0	EC001821
ETIM 10.0	EC001821

## Dimensioned drawings

All dimensions in millimeters



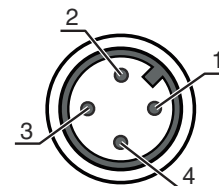
- A Green LED
- B Yellow LED
- C Optical axis
- C1 Receiver
- C2 Transmitter
- D Range adjustment

## Electrical connection

### Connection 1

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

Pin	Pin assignment
1	V+
2	Teach-in
3	GND
4	IO-Link / OUT 1



## Operation and display

LED	Display	Meaning
1	Green, continuous light	Operational readiness
2	Yellow, continuous light	Object detected

## Part number code

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

<b>AAA25C</b>	<b>Operating principle / construction</b> 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
<b>d</b>	<b>Light type</b> n/a: red light I: infrared light
<b>EE</b>	<b>Light source</b> n/a: LED PP: Power PinPoint LED L1: laser class 1 L2: laser class 2
<b>f</b>	<b>Preset range (optional)</b> n/a: operating range acc. to data sheet xxxF: Preset range [mm]
<b>GG</b>	<b>Equipment</b> 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 F: Foreground suppression R: greater operating range SL: Slit diaphragm
<b>H</b>	<b>Operating range adjustment</b> 1: 270° potentiometer 2: multiturn potentiometer 3: teach-in via button R: greater operating range

## Part number code

<b>i</b>	<p><b>Switching output/function OUT 1/IN: Pin 4 or black conductor</b>                  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</p>
<b>J</b>	<p><b>Switching output / function OUT 2/IN: pin 2 or white conductor</b>                  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                  8: activation input (activation with high signal)</p>
<b>K</b>	<p><b>Electrical connection</b>                  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)                  M8.1: Snap-in, M8 connector, 4-pin (plug)</p>

### Note



A list with all available device types can be found on the Leuze website at [www.leuze.com](http://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.

## Further information



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

## Accessories


### Connection technology - Connection unit

	Part no.	Designation	Article	Description
	50144900	MD 798i-11-82/L5-2222	IO-Link master	Type: IO-Link master Current consumption, max.: 11,000 mA Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP, PROFINET Connections: 12 Piece(s) Sensor connections: 8 Piece(s) Connections for voltage supply: 2 Piece(s) Interface connections: 2 Piece(s) Degree of protection: IP 67, IP 65, IP 69K


### 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




### 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

### 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

## Accessories

	Part no.	Designation	Article	Description
	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.