



Part no.: 50139619
HT25C.XL/4P-M12
Diffuse sensor with background suppression



Figure can vary

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Technical data

Basic data	
Series	25C
Operating principle	Diffuse reflection principle with background suppression
Special design	
Special design	Extra long light spot (XL)
Optical data	
Black-white error	< 10% up to 350 mm
Operating range	Guaranteed operating range
Operating range, white 90%	0 ... 0.6 m
Operating range, gray 18%	0.005 ... 0.5 m
Operating range, black 6%	0.005 ... 0.45 m
Operating range limit	Typical operating range
Operating range limit	0 ... 0.6 m
Adjustment range	50 ... 600 mm
Beam path	Divergent
Light source	LED , Red
LED light wavelength	640 nm
Transmitted-signal shape	Pulsed
LED group	Exempt group (in acc. with EN 62471)
Light spot size [at sensor distance]	15 mm x 40 mm [300 mm]
Type of light spot geometry	Rectangular
Shift angle	Typ. $\pm 2^\circ$
Electrical data	
Protective circuit	Polarity reversal protection Short circuit protected
Performance data	
Supply voltage UB	10 ... 30 V , DC , Incl. residual ripple
Residual ripple	0 ... 15 % , From UB
Open-circuit current	0 ... 20 mA
Outputs	
Number of digital switching outputs	2 Piece(s)
Switching outputs	
Voltage type	DC
Switching current, max.	100 mA
Switching voltage	high: $\geq (UB-2.5V)$ low: $\leq 2.5V$
Switching output 1	
Assignment	Connection 1, pin 4
Switching element	Transistor , PNP
Switching principle	Light switching
Switching output 2	
Assignment	Connection 1, pin 2
Switching element	Transistor , PNP
Switching principle	Dark switching

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Timing

Switching frequency	1,000 Hz
Response time	0.33 ms
Readiness delay	300 ms

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

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	Multiturn potentiometer
Function of the operational control	Range adjustment

Environmental data

Ambient temperature, operation	-40 ... 60 °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

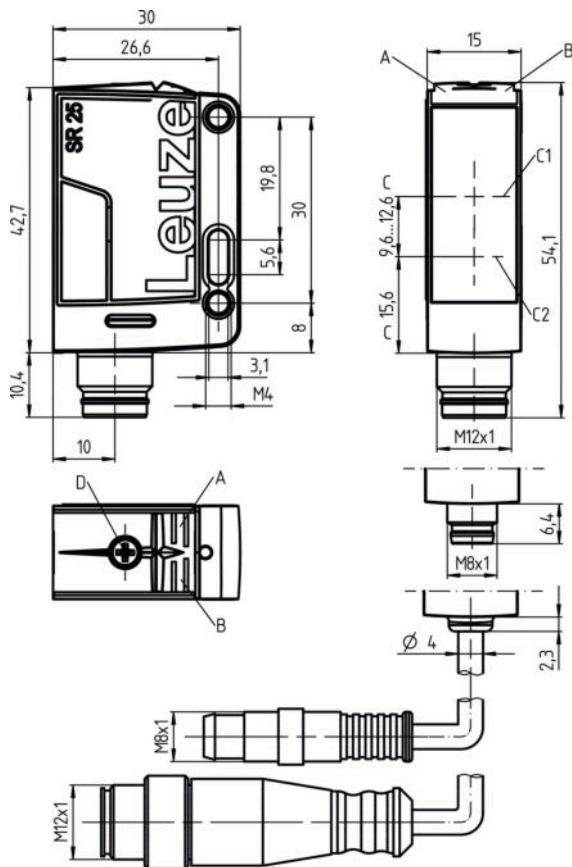
Classification

Customs tariff number	85365019
eCl@ss 8.0	27270904
eCl@ss 9.0	27270904
ETIM 5.0	EC002719
ETIM 6.0	EC002719

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Dimensioned drawings

All dimensions in millimeters



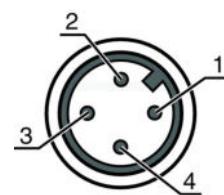
- A Green LED
- B Yellow LED
- C Optical axis
- C1 Receiver
- C2 Transmitter
- D Range adjustment

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

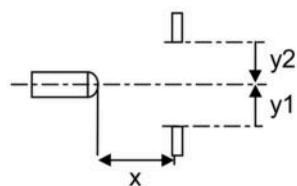
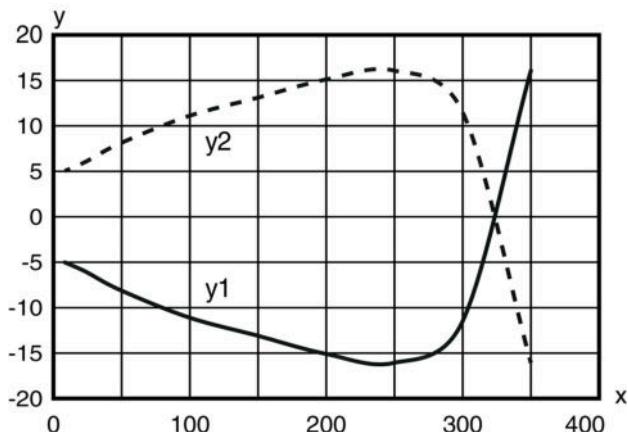
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Pin	Pin assignment
1	V+
2	OUT 2
3	GND
4	OUT 1



Diagrams

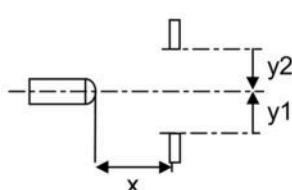
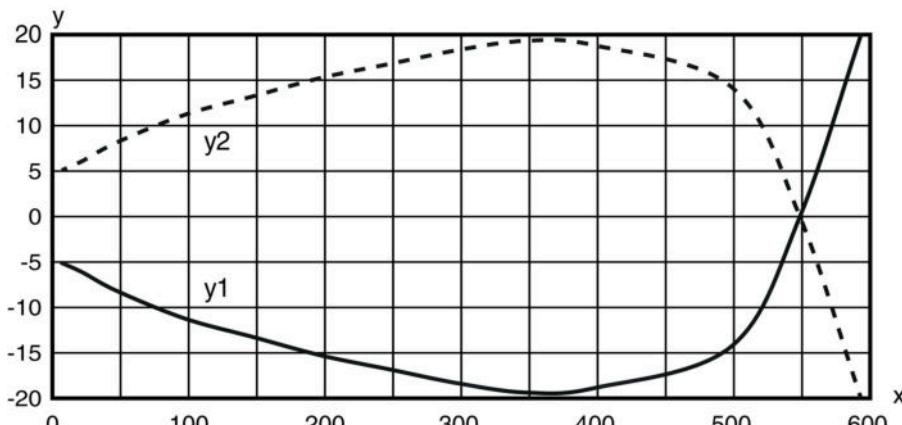
Typ. response behavior (focusing distance 350 mm)



x Distance [mm]
y Misalignment [mm]

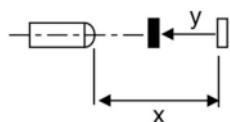
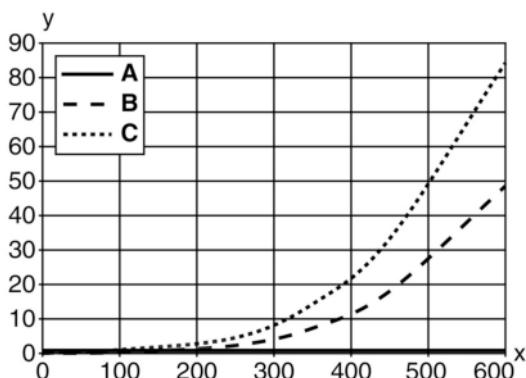
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Typ. response behavior (focusing distance 600 mm)



x Distance [mm]
y Misalignment [mm]

Typ. black/white behavior



x Range [mm]
y Reduction of range [mm]
A White 90%
B Gray 18%
C Black 6%

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Operation and display

LEDs

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

AAA25	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)
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
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 www.leuze.com .

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Notes

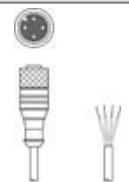
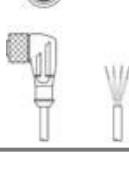
Observe intended use!
<ul style="list-style-type: none"> • This product is not a safety sensor and is not intended as personnel protection. • The product may only be put into operation by competent persons. • Only use the product in accordance with its intended use.

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)

- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C
- Sum of the output currents for both outputs 100 mA

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

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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

Note

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