Technical data sheet

Diffuse sensor with background

Part no.: 50139622

HT25C.XL/4P-M8

Figure can vary

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The Sensor People

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Technical data

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Basic data

Series	25C
Operating principle	Diffuse reflection principle with background suppression

Special version

Special version	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. ± 2°

Electrical data

Protective circuit	Polarity reversal protection
	Short circuit protected

Performance data

Supply voltage U_B	10 ... 30 V, DC, Incl. residual ripple
Residual ripple	0 ... 15 %, From U_B
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: ≥(U_B-2.5V)
	low: ≤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

Timing

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

Connection 1

Function	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M8
Type	Male
Material	PUR
No. of pins	4 -pin

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	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 5.1.4	27270904
eCl@ss 8.0	27270904
eCl@ss 9.0	27270904
eCl@ss 10.0	27270904
eCl@ss 11.0	27270904
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719

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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
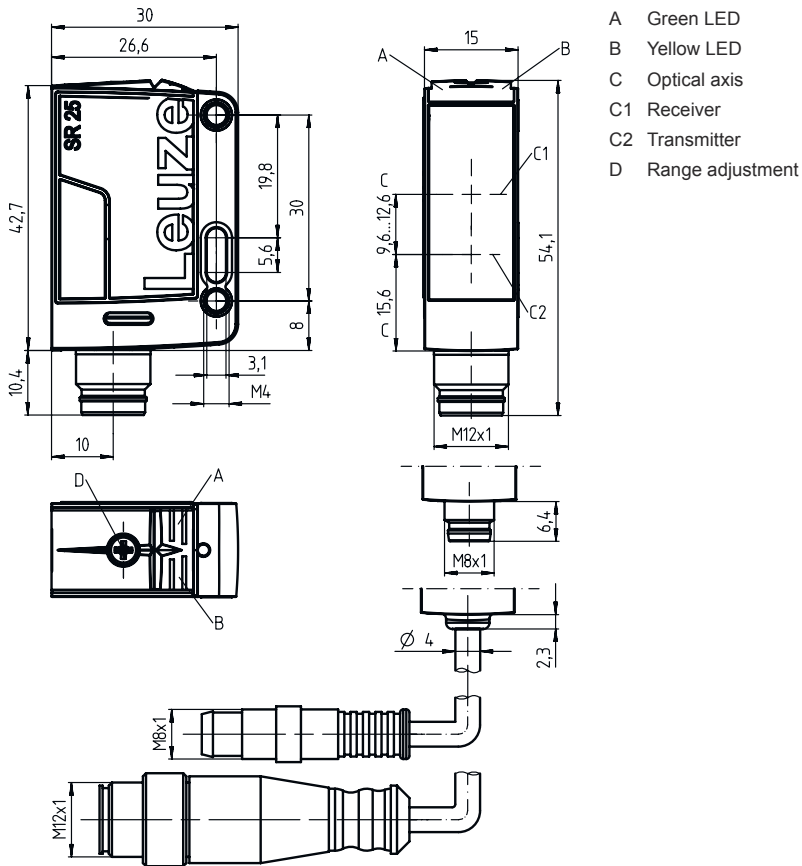
Electrical connection

Connection 1

Function	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M8
Type	Male
Material	PUR
No. of pins	4 -pin

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

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Diagrams

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Typ. response behavior (focusing distance 350 mm)
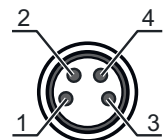
x   Distance [mm]

y   Misalignment [mm]

Typ. response behavior (focusing distance 600 mm)

x   Distance [mm]

y   Misalignment [mm]

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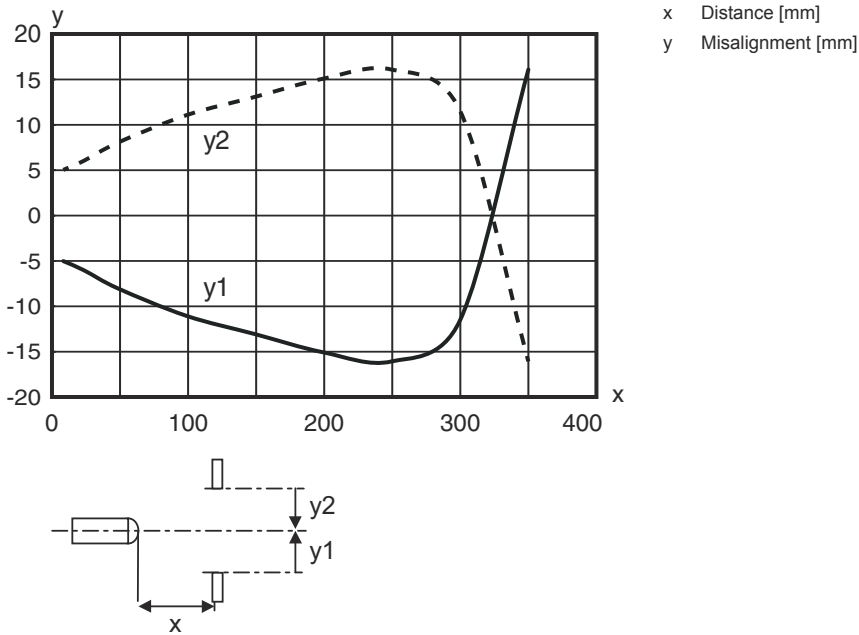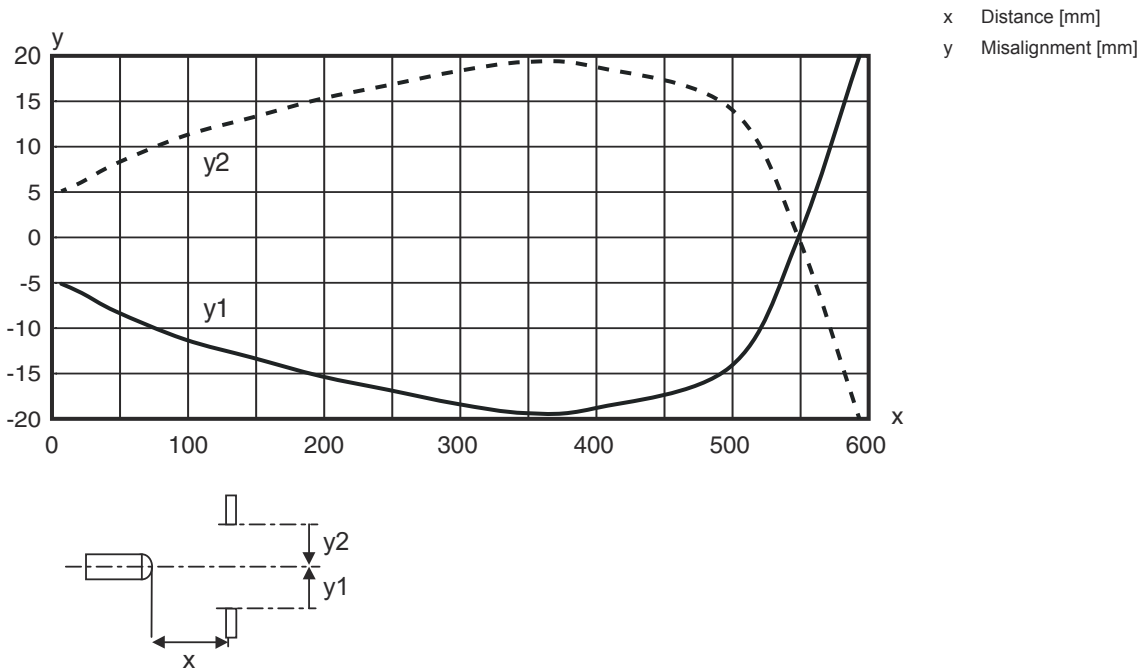
Diagrams

Typ. black/white behavior
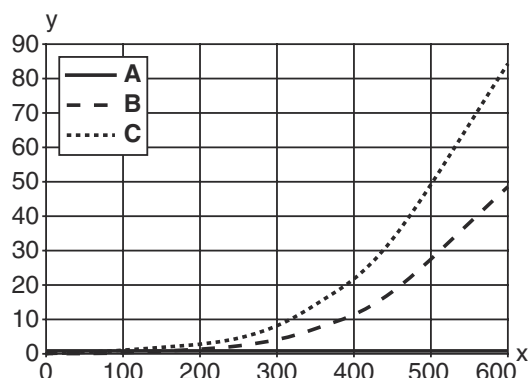
x	Range [mm]
y	Reduction of range [mm]
A	White 90%
B	Gray 18%
C	Black 6%

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**

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	
	l: 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	

Part number code

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 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.

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
- Sum of the output currents for both outputs 100 mA

Accessories

Connection technology - Connection cables

	Part no.	Designation	Article	Description
	50130850	KD U-M8-4A-V1-050	Connection cable	Connection 1: Connector, M8, Axial, Female, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC
	50130871	KD U-M8-4W-V1-050	Connection cable	Connection 1: Connector, M8, Angled, Female, 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

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 website in the Download tab of the article detailed page.