



Figure can vary

**Part no.: 50134246**  
**HT25C.S/2N-200-M12**  
**Diffuse sensor with background suppression**



## Contents

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- Dimensioned drawings
- Electrical connection
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## Technical data

<b>Basic data</b>	
Series	25C
Operating principle	Diffuse reflection principle with background suppression
<b>Special design</b>	
Special design	Small light spot (S)
<b>Optical data</b>	
Black-white error	< 10% up to 300 mm
Operating range	Guaranteed operating range
Operating range, white 90%	0 ... 0.5 m
Operating range, gray 18%	0.015 ... 0.45 m
Operating range, black 6%	0.03 ... 0.4 m
Operating range limit	Typical operating range
Operating range limit	0 ... 0.5 m
Adjustment range	50 ... 500 mm
Light source	LED, Red
LED light wavelength	640 nm
Transmitted-signal shape	Pulsed
LED protection class	Exempt group (in acc. with EN 62471)
<b>Electrical data</b>	
Protective circuit	Polarity reversal protection Short circuit protected
<b>Performance data</b>	
Supply voltage	10 ... 30 V, DC, Incl. residual ripple
Residual ripple	0 ... 15 %, From $U_B$
Open-circuit current	0 ... 20 mA
<b>Outputs</b>	
Number of digital switching outputs	2 Piece(s)
<b>Switching outputs</b>	
Voltage type	DC
Switching current, max.	100 mA
Switching voltage	low: $\leq 2.5V$ high: $\geq (U_B - 2.5V)$
<b>Switching output 1</b>	
Assignment	Connection 1, pin 4
Switching element	Transistor, NPN
Switching principle	Light switching
<b>Switching output 2</b>	
Assignment	Connection 1, pin 2
Switching element	Transistor, NPN
Switching principle	Dark switching
<b>Timing</b>	
Switching frequency	1,500 Hz
Response time	0.33 ms
Readiness delay	300 ms

**Connection**
**Connection 1**

Type of connection	Cable with connector
Function	Voltage supply Signal OUT
Cable length	200 mm
Sheathing material	PUR
Cable color	Black
Wire cross section	0.2 mm <sup>2</sup>
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	Metal Plastic, Diecast zinc, ABS
Lens cover material	Plastic
Net weight	33 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)

**Environmental data**

Ambient temperature, operation	-40 ... 60 °C
Ambient temperature, storage	-40 ... 70 °C

**Certifications**

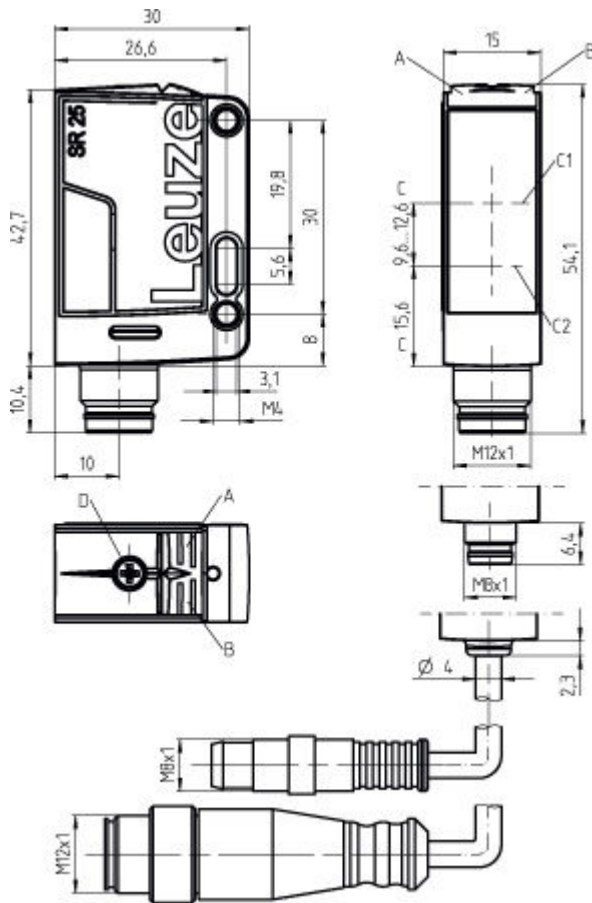
Degree of protection	IP 69K IP 67
Protection class	III
Certifications	c UL US
Standards applied	IEC 60947-5-2

**Classification**

eCl@ss 8.0	27270902
eCl@ss 9.0	27270902
ETIM 5.0	EC002717

## Dimensioned drawings

All dimensions in millimeters



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

## Electrical connection

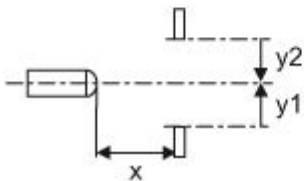
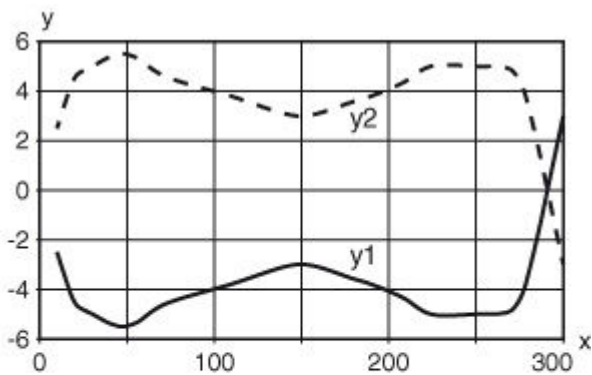
Connection 1	
Type of connection	Cable with connector
Function	Voltage supply Signal OUT
Cable length	200 mm
Sheathing material	PUR
Cable color	Black
Wire cross section	0.2 mm <sup>2</sup>
Thread size	M12
Type	Male
Material	PUR
No. of pins	4 -pin
Encoding	A-coded

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



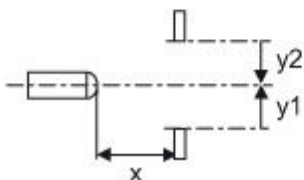
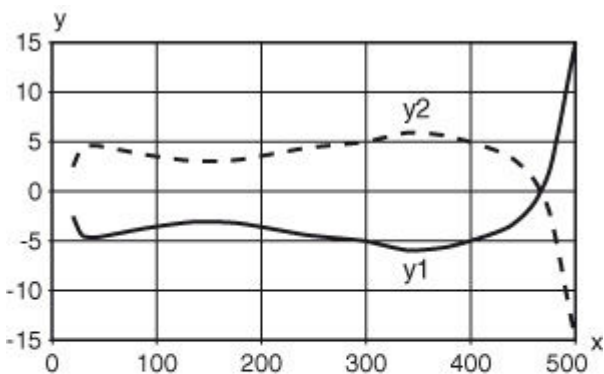
## Diagrams

Typ. response behavior (focusing distance 300 mm)



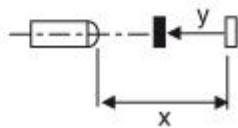
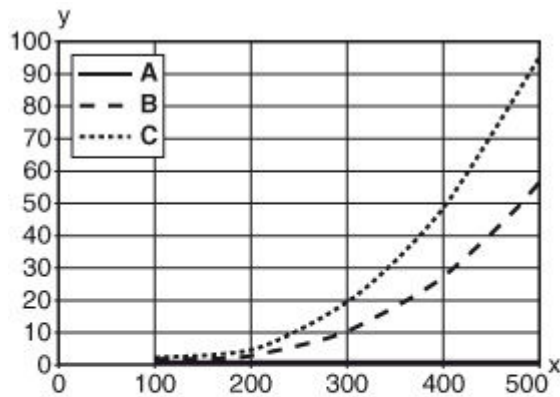
x Range [mm]  
y Misalignment [mm]

Typ. response behavior (focusing distance 500 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%

## Operation and display

### LEDs

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

## Part number code

Part designation: **AAA25Cd-f.GGH/iJ-K**


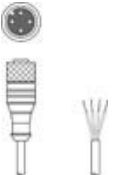



AAA25C	<b>Operating principle / construction:</b> HT25C: diffuse reflection sensor with background suppression PRK25C: retro-reflective photoelectric sensor with polarization filter
d	<b>Light type:</b> n/a: red light l: infrared light
f	<b>Pre-set range (optional):</b> n/a: operating range acc. to data sheet XXXX: pre-set range [mm]

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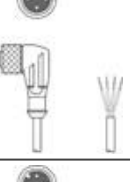
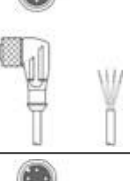

GG	<b>Equipment:</b> A: autocollimation principle (single lens) S: small light spot D: detection of stretch-wrapped objects X: extended model
H	<b>Operating range adjustment:</b> 1: 270° potentiometer 2: multiturn potentiometer
i	<b>Switching output/function OUT 1/IN: Pin 4 or black conductor:</b> 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching
J	<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 8: activation input (activation with high signal)
K	<b>Electrical connection:</b> n/a: cable, PVC, standard length 2000 mm, 4-wire M8: M8 connector, 4-pin (plug) 200-M12: cable, PVC, length 200 mm with M12 connector, 4-pin, axial (plug) M12: M12 connector, 4-pin (plug)

## Accessories

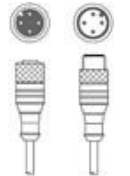
### Connection technology - Connection cables

	Part no.	Designation	Article	Description
	50130654	KD U-M12-4A-P1-020	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PUR
	50130657	KD U-M12-4A-P1-050	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: PUR
	50130658	KD U-M12-4A-P1-100	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 10,000 mm Sheathing material: PUR
	50130648	KD U-M12-4A-V1-020	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PVC
	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

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	Part no.	Designation	Article	Description
	50130653	KD U-M12-4A-V1-100	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 10,000 mm Sheathing material: PVC
	50130692	KD U-M12-4W-P1-020	Connection cable	Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PUR
	50130694	KD U-M12-4W-P1-050	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: PUR
	50130695	KD U-M12-4W-P1-100	Connection cable	Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 10,000 mm Sheathing material: PUR
	50130688	KD U-M12-4W-V1-020	Connection cable	Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 2,000 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
	50130691	KD U-M12-4W-V1-100	Connection cable	Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 10,000 mm Sheathing material: PVC

**Connection technology - Interconnection cables**

	Part no.	Designation	Article	Description
	50130738	KDS U-M12-4A-M12-4A-P1-006	Interconnection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 4 -pin Shielded: No Cable length: 600 mm Sheathing material: PUR

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## Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	50124651	BT 205M-10SET	Mounting device set	Contains: 10x Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Metal
	50040269	BT 25	Mounting device	Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Metal

## Mounting technology - Rod mounts

	Part no.	Designation	Article	Description
	50117830	BTP 200M-D10	Mounting system	Design of mounting device: Protection hood Fastening, at system: For 10 mm rod Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal
	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
	50117828	BTP 200M-D14	Mounting system	Design of mounting device: Protection hood Fastening, at system: For 14 mm rod Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal
	50117256	BTU 200M-D10	Mounting system	Contains: 2x M3 x 18 screw, 2x position washers Design of mounting device: Mounting system Fastening, at system: For 10 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal
	50117255	BTU 200M-D12	Mounting system	Contains: 2x M3 x 18 screw, 2x position washers Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal
	50117254	BTU 200M-D14	Mounting system	Contains: 2x M3 x 18 screw, 2x position washers Design of mounting device: Mounting system Fastening, at system: For 14 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal

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	Part no.	Designation	Article	Description
	50122797	BTU 346M-D12	Mounting system	Contains: 2x M4 x 25 screw, 2x position washers Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type Type of mounting device: Turning, 360°, Clampable, Adjustable Material: Metal

## 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)

- 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