

## Technical data sheet

### Diffuse sensor with background suppression set

Part no.: 50143203

Set HT25CXPX200M12 BTU305M25



#### Contents

- Set consists of
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- Diagrams
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## Set consists of

	Quantity	Part no.	Designation	Article	Description
	1	50142989	BTU 305M.25-D12	Mounting system	Contains: 2x M3 x 8 screw, 2 M4 x 28 screws, 2 M4 x 8 screws Special version: Hexagon socket screw head 5 mm Design of mounting device: Mounting system Fastening, at system: Sheet-metal mounting, For 12 mm rod Mounting bracket, at device: Suited for M4 screws, Screw type, Suited for M3 screws Type of mounting device: Turning, 360°, Adjustable, Clampable Material: Metal
	1	50142191	HT25C.X/PX-200-M12	Diffuse sensor with background suppression	Special version: Reflective vest suppression in the background Operating range limit: 0 ... 0.9 m Light source: LED, Red Supply voltage: DC Digital switching outputs: 1 Piece(s) Switching output 1: Transistor, PNP, Dark switching Switching frequency: 1,500 Hz Connection: Cable with connector, 200 mm, M12, PUR, 4 -pin Operational controls: Multiturn potentiometer

## Technical data

### Basic data

Series	25C
Operating principle	Diffuse reflection principle with background suppression
Pre-mounted on	Mounting system

### Special version

Special version	Article set Reflective vest suppression in the background
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### Optical data

Black-white error	< 10% up to 350 mm
Operating range	Guaranteed operating range
Operating range, white 90%	0 ... 0.9 m
Operating range, gray 18%	0.005 ... 0.65 m
Operating range, black 6%	0.001 ... 0.55 m
Operating range limit	0 ... 0.9 m (typical operating range)
Adjustment range	50 ... 900 mm
Light source	LED, Red
Wavelength	640 nm
Transmitted-signal shape	Pulsed
LED group	Exempt group (in acc. with EN 62471)

### Electrical data

Protective circuit	Polarity reversal protection Short circuit protected
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### 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	1 Piece(s)
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### Switching outputs

Type	Digital switching output
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, PNP
Switching principle	Dark switching

### Time behavior

Switching frequency	1,500 Hz
Response time	0.33 ms
Readiness delay	300 ms

### Connection

Number of connections	1 Piece(s)
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### Connection 1

Function	Signal OUT Voltage supply
Type of connection	Cable with connector
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	Plastic
Plastic housing	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
Recommended tightening torque for M3 fastening	0.9 N·m
Recommended tightening torque for M4 fastening	1.4 N·m
Compatibility of materials	ECOLAB

## Technical data

### 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

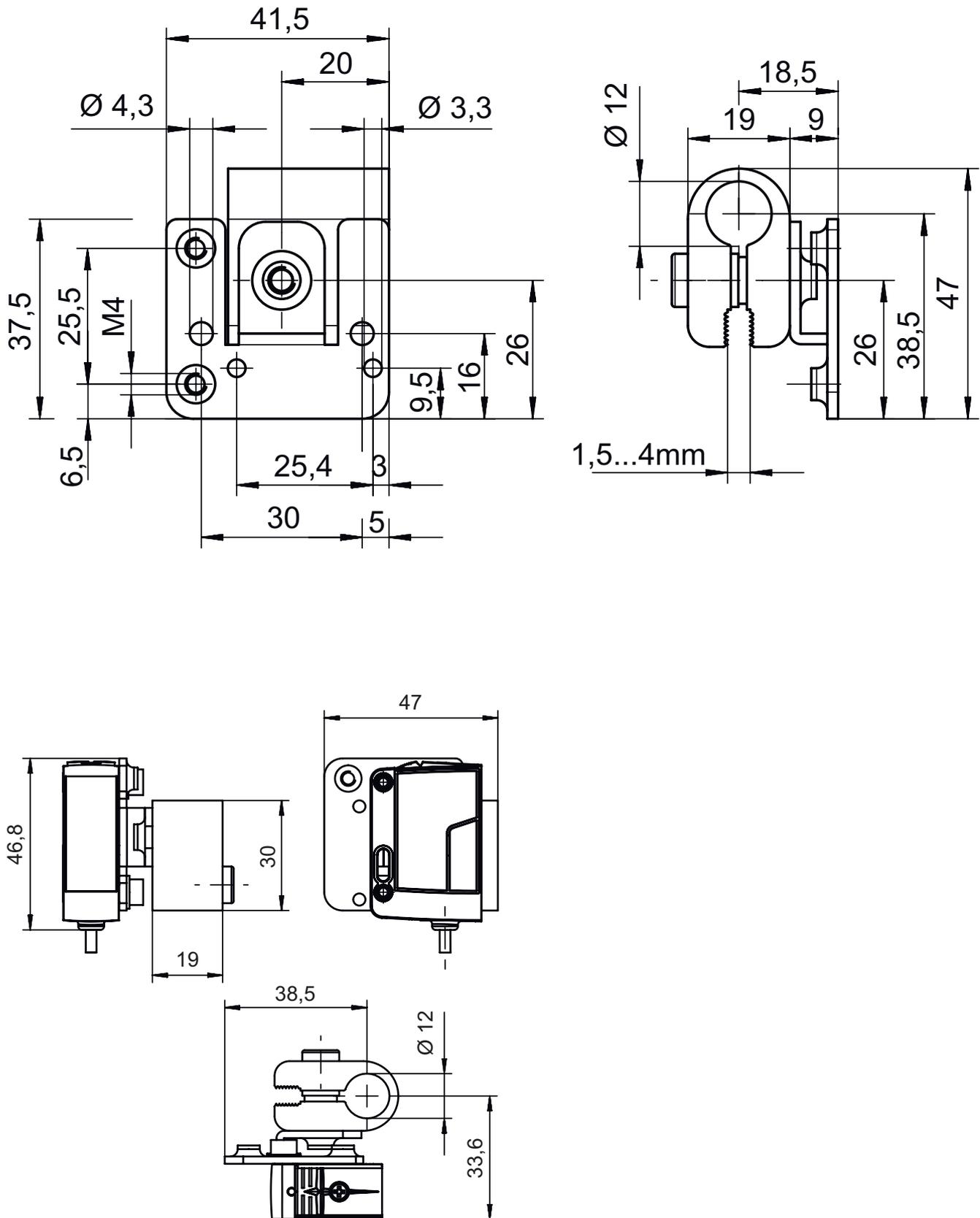
Degree of protection	IP 67 IP 69K
Protection class	III
Standards applied	IEC 60947-5-2

### Classification

Customs tariff number	85365019
ECLASS 5.1.4	27270904
ECLASS 8.0	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ECLASS 13.0	27270903
ECLASS 14.0	27270903
ECLASS 15.0	27270903
ECLASS 16.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
ETIM 9.0	EC002719
ETIM 10.0	EC002719



**Dimensioned drawings**

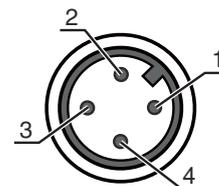


# Electrical connection

## Connection 1

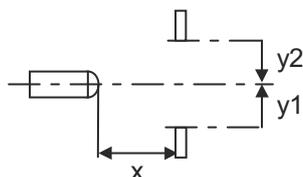
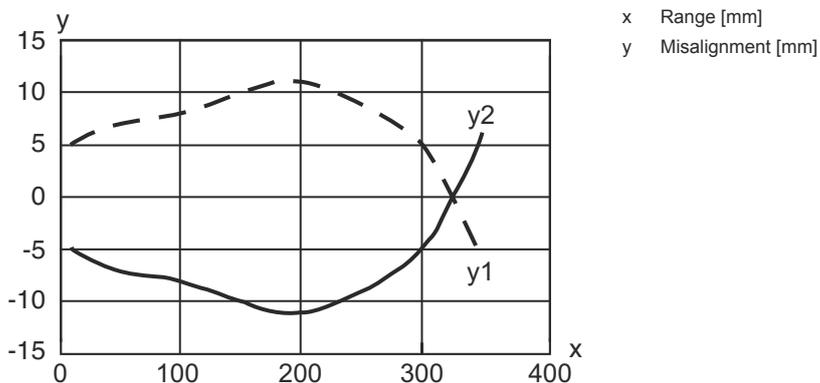
Function	Signal OUT
	Voltage supply
Type of connection	Cable with connector
Cable length	200 mm
Sheathing material	PUR
Cable color	Black
Wire cross section	0.2 mm <sup>2</sup>
Thread size	M12
Type	Male
Material	PUR
No. of pins	4 -pin
Encoding	A-coded

Pin	Pin assignment
1	V+
2	n.c.
3	GND
4	OUT 1



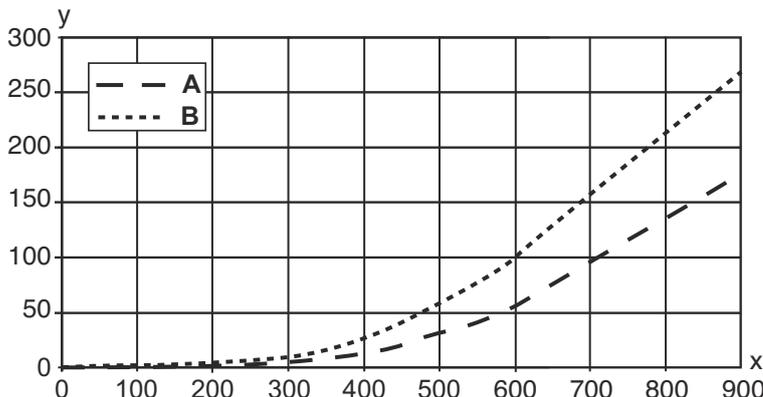
## Diagrams

Typ. response behavior (focusing distance 350 mm)

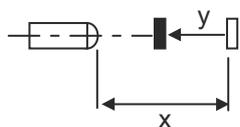


# Diagrams

## Typ. black/white behavior



x Range [mm]  
 y Reduction of range [mm]  
 A Gray 18%  
 B 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

<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

## Part number code

<b>H</b>	<b>Operating range adjustment</b> 1: 270° potentiometer 2: multiturn potentiometer 3: teach-in via button R: greater operating range
<b>i</b>	<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
<b>J</b>	<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)
<b>K</b>	<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)

### 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!



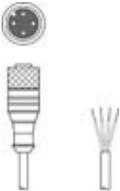
- ⚠ This product is not a safety sensor and is not intended as personnel protection.
- ⚠ The product may only be put into operation by competent persons.
- ⚠ Only use the product in accordance with its intended use.

## Further information

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

## Accessories

### Connection technology - Connection cables

	Part no.	Designation	Article	Description
	50130657	KD U-M12-4A-P1-050	Connection cable	Application: Oil and lubricant resistant 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: PUR
	50130694	KD U-M12-4W-P1-050	Connection cable	Application: Oil and lubricant resistant 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: PUR

#### Note



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