Technical data sheet
Diffuse sensor with background
Part no.: 50144560
SET HT46CI/PX-200-M12+BTU300M



Figure can vary

Contents

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Set consists of

	Quantity	Part no.	Designation	Article	Description
	1	50127065	HT46CI/PX-200-M12	Diffuse sensor with background suppression	Special version: AS-Interface, connection via coupling module Operating range limit: 0.005 ... 3 m Light source: LED, Infrared Supply voltage: DC Digital switching outputs: 1 Piece(s) Switching output 1: Transistor, PNP, Dark switching Switching frequency: 250 Hz Connection: Cable with connector, 200 mm, M12, Plastic, 4 -pin Operational controls: Multiturn potentiometer

Technical data

Basic data

Series	46C
Operating principle	Diffuse reflection principle with background suppression
Pre-mounted on	Mounting system

Special version

Special version	Article set
	AS-Interface, connection via coupling module

Optical data

Black-white error	< 10% up to 1200 mm
Operating range	Guaranteed operating range
Operating range, white 90%	0.005 ... 3 m
Operating range, gray 18%	0.02 ... 2 m
Operating range, black 6%	0.05 ... 1.5 m
Operating range limit	Typical operating range
Operating range limit	0.005 ... 3 m
Adjustment range	120 ... 3,000 mm
Beam path	Focused
Light source	LED, Infrared
LED light wavelength	860 nm
LED group	Exempt group (in acc. with EN 62471)
Transmitted-signal shape	Pulsed
Type of light spot geometry	Rectangular
Focus	Fixed

Electrical data

Protective circuit	Polarity reversal protection
	Short circuit protected
	Transient protection

Performance data

Supply voltage U_B	10 ... 30 V, DC, Incl. residual ripple
Residual ripple	0 ... 15 %, From U_B
Open-circuit current	0 ... 30 mA

Outputs

Number of digital switching outputs	1 Piece(s)

Switching outputs

Voltage type	DC
Switching current, max.	100 mA
Switching voltage	high: ≥(U_B-2V)
	Low: ≤2V

Switching output 1

Assignment	Connection 1, pin 4
Switching element	Transistor, PNP
Switching principle	Dark switching

Timing

Switching frequency	250 Hz
Response time	2 ms
Readiness delay	300 ms

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 mm²
Thread size	M12
Type	Male
Material	Plastic
No. of pins	4 -pin
Encoding	A-coded

Mechanical data

Dimension (W x H x L)	20.5 mm x 76.3 mm x 44 mm
Housing material	Plastic, PC-PBT
Lens cover material	Plastic / PMMA
Net weight	65 g
Housing color	Red
Type of fastening	Through-hole mounting
	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

Technical data

Certifications

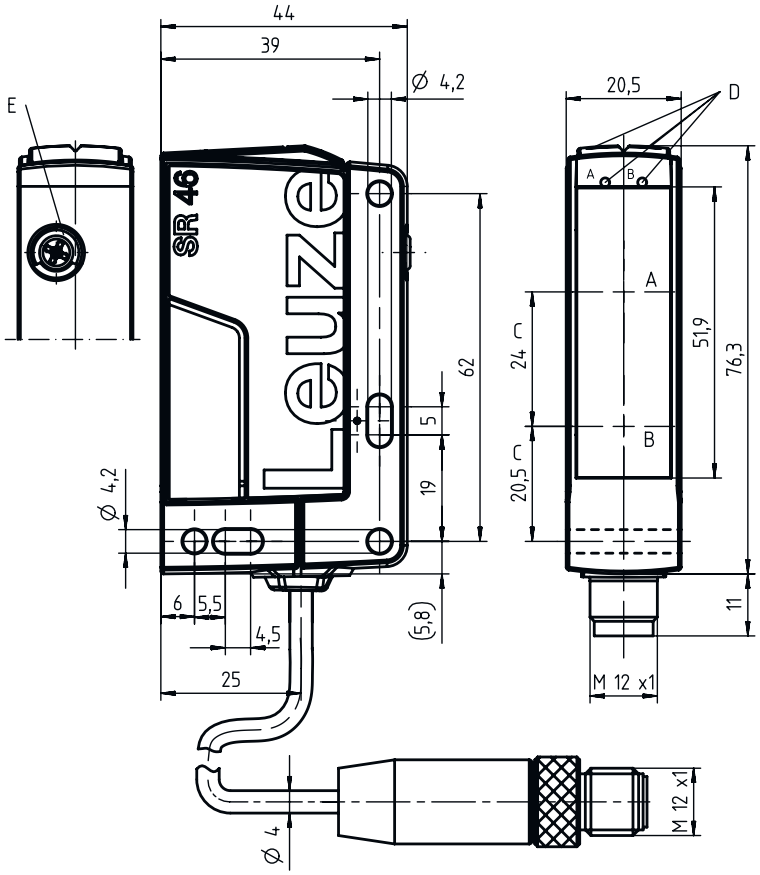
Degree of protection	IP 67
	IP 69K
Protection class	III
Standards applied	IEC 60947-5-2

Classification

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

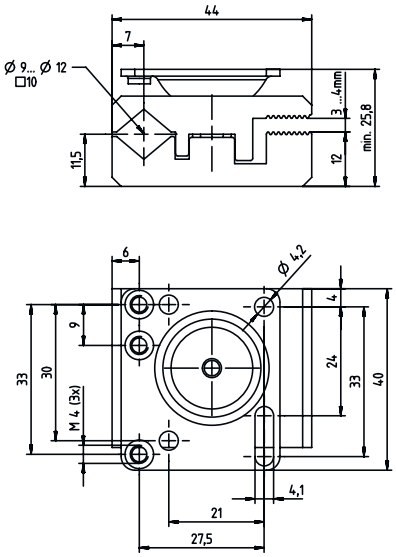
Dimensioned drawings

All dimensions in millimeters



A Receiver
B Transmitter
C Optical axis
DA Green LED
DB Yellow LED
E Multiturn potentiometer

Dimensioned drawings

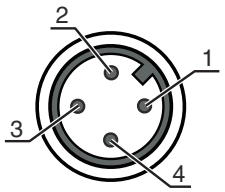


Electrical connection

Connection 1

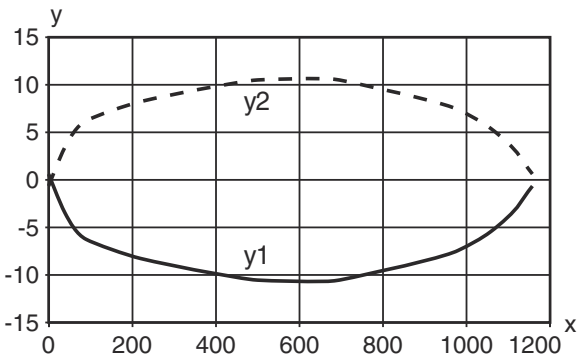
Function	Signal OUT
	Voltage supply
Type of connection	Cable with connector
Cable length	200 mm
Sheathing material	PUR
Cable color	Black
Wire cross section	0.2 mm²
Thread size	M12
Type	Male
Material	Plastic
No. of pins	4 -pin
Encoding	A-coded

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

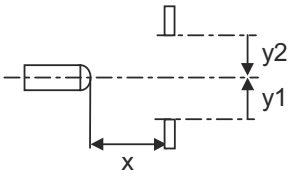


Diagrams

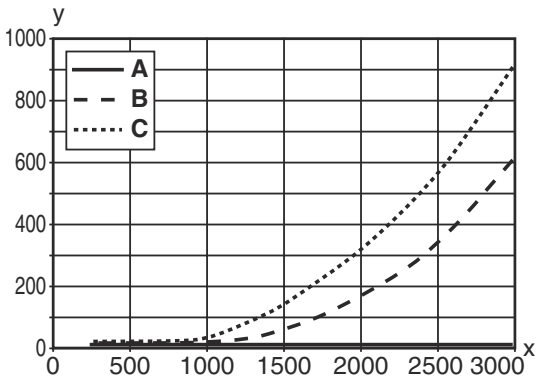
Typ. response behavior (white 90 %)



x Distance [mm]
y Misalignment [mm]

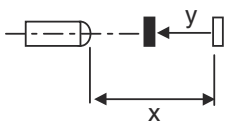


Typ. black/white behavior



x Range [mm]
y Reduction of range [mm]

A White 90%
B Gray 18%
C Black 6%



Operation and display

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

Part number code

Part designation: **AAA46C d EE-f.GG H/i J-K**

AAA46C	**Operating principle / construction** HT46C: diffuse reflection sensor with background suppression LS46C: throughbeam photoelectric sensor transmitter LE46C: throughbeam photoelectric sensor receiver PRK46C: retro-reflective photoelectric sensor with polarization filter RK46C: retro-reflective photoelectric 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** n/a: standard 1: 270° potentiometer 8: activation input (activation with high signal) 01: diffuse reflection sensor with background suppression (HT): HG tape (HighGain tape) is not detected from a distance of 900 mm with a set operating range of ≤ 450 mm (diffuse reflection: 6%, black) D: depolarizing media E: diffuse reflection sensor with background suppression (HT): optimized for dusty environments SL: diffuse reflection sensor with background suppression (HT): slit diaphragm 25 mm x 3 mm P: throughbeam photoelectric sensor receiver (LE): edge filter for parallel operation L: Light-band XL: extra long light spot
H	**Operating range adjustment & version** n/a with diffuse reflection sensor with background suppression (HT): range adjustment via mechanical adjusting spindle n/a with retro-reflective photoelectric sensors (PRK): operating range not adjustable 1: retro-reflective photoelectric sensors (PRK/RK): sensitivity adjustment via potentiometer 3: teach-in via button P2: resolution 2 mm
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 L: IO-Link
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 8: activation input (activation with high signal) 9: deactivation input (deactivation with high signal) W: warning output X: pin not used
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) M12: M12 connector, 4-pin (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:

- For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).
- 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
- Response time: For short decay times, an ohmic load of approx. 5 kOhm is recommended

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

Note

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