

## Technical data sheet

### Diffuse sensor with background suppression set

Part no.: 50136467

SET HT46C/PX-M12+BTU46.25




#### Contents

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## Set consists of

	Quantity	Part no.	Designation	Article	Description
	1	50127051	HT46C/PX-M12	Diffuse sensor with background suppression	Special version: AS-Interface, connection via coupling module Operating range limit: 0.005 ... 3 m Light source: LED, Red Supply voltage: DC Digital switching outputs: 1 Piece(s) Switching output 1: Transistor, PNP, Dark switching Switching frequency: 250 Hz Connection: Connector, M12, Plastic, 4 -pin Operational controls: Multiturn potentiometer

## Technical data

### Basic data

Series	46C
Operating principle	Diffuse reflection principle with background suppression
Contains	1x rod mount, diameter of 12 mm BTU 046M.25-D12 2x M4 x 25 screw

### Special version

Special version	AS-Interface, connection via coupling module
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### 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, Red
Wavelength	630 nm
Transmitted-signal shape	Pulsed
LED group	Exempt group (in acc. with EN 62471)
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)
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### Switching outputs

Voltage type	DC
Switching current, max.	100 mA
Switching voltage	high: $\geq(U_B-2V)$ low: $\leq 2 V$

### Switching output 1

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

### Time behavior

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

### Connection

#### Connection 1

Function	Signal OUT Voltage supply
Type of connection	Connector
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
Plastic housing	PC-PBT
Lens cover material	Plastic / PMMA
Net weight	60 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

### Certifications

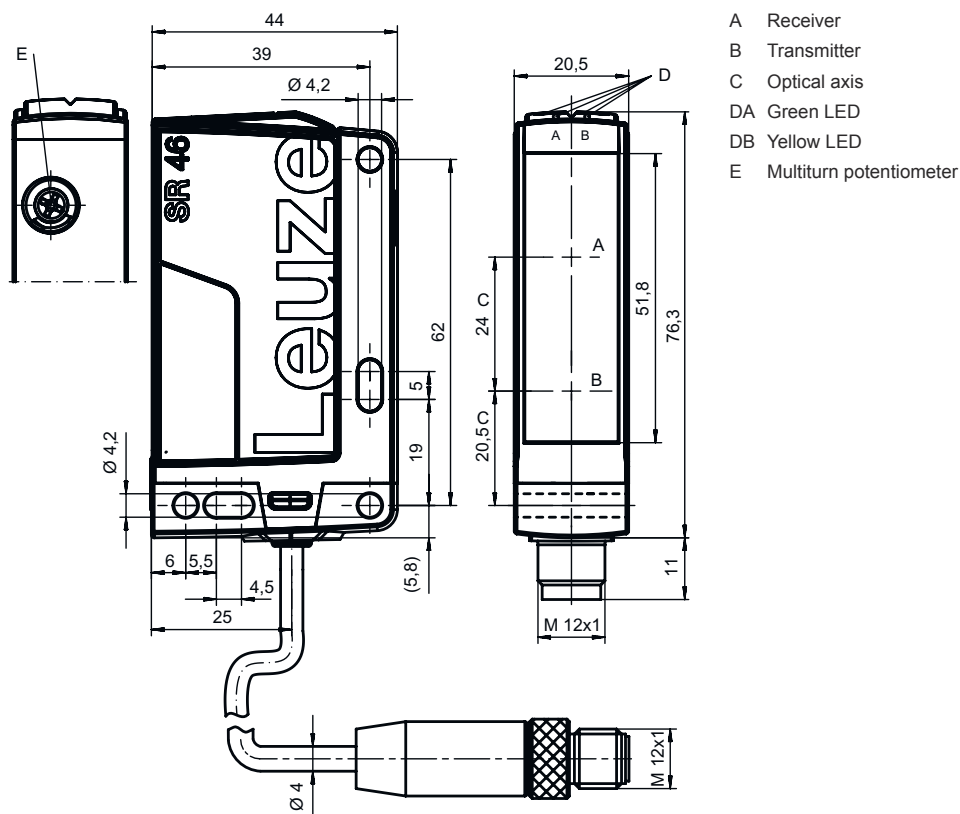
Degree of protection	IP 67 IP 69K
Protection class	III
Standards applied	IEC 60947-5-2

## Technical data

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
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719

## Dimensioned drawings

All dimensions in millimeters

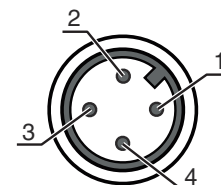


# Electrical connection

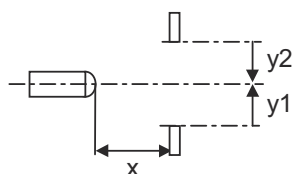
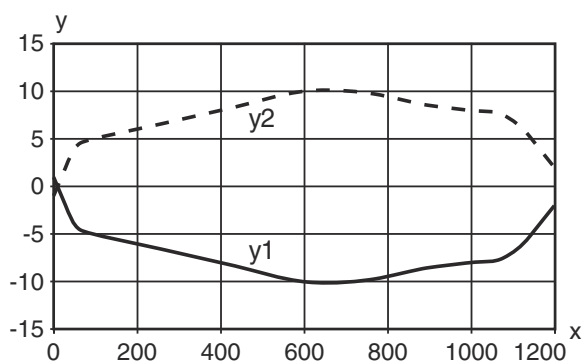
## Connection 1

Function	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M12
Type	Male
Material	Plastic
No. of pins	4 -pin
Encoding	A-coded

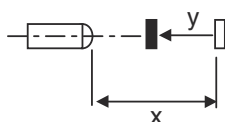
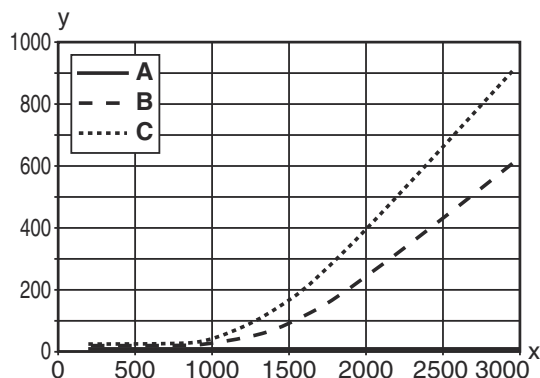
Pin	Pin assignment
1	V+
2	n.c.
3	GND
4	OUT 1



## Diagrams



# Diagrams



## 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**

<b>AAA46C</b>	<p><b>Operating principle / construction</b>                      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</p>
<b>d</b>	<p><b>Light type</b>                      n/a: red light                      I: infrared light</p>
<b>EE</b>	<p><b>Light source</b>                      n/a: LED                      L1: laser class 1                      L2: laser class 2</p>
<b>f</b>	<p><b>Preset range (optional)</b>                      n/a: operating range acc. to data sheet                      xxxF: Preset range [mm]</p>
<b>GG</b>	<p><b>Equipment</b>                      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</p>

## Part number code

<b>H</b>	<b>Operating range adjustment &amp; version</b> 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
<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 L: IO-Link
<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 8: activation input (activation with high signal) 9: deactivation input (deactivation with high signal) W: warning output X: pin not used
<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) M12: M12 connector, 4-pin (plug) 500-M12: cable, length 500 mm with M12 connector, 4-pin, axial (plug) 1000-M12: cable, length 1000 mm with M12 connector, 4-pin, axial (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.

### For UL applications:



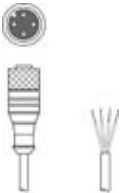

- ⌘ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).
- ⌘ These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/ CYJV7 or PVVA/PVVA7)

## Further information

- Light source: Average life expectancy 100,000h at an ambient temperature of 25 °C
- Response time: For short decay times, an ohmic load of approx. 5kOhm 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 Connector, LED: No 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 Connector, LED: No 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.