SMART SENSOR BUSINESS

Leuze electronic
the sensor people

Part no.: 50129380

HT3C.S/4P

Diffuse sensor with background suppression

CE

c(UL)us LISTED

IP 67

IP 69K

ECOLAB

Figure can vary

Contents

Part no.: 50129380 – HT3C.S/4P – Diffuse sensor with background suppression

Technical data

Basic data	
Series	3C
Operating principle	Diffuse reflection principle with background suppression
Application	Detection of small parts

Special design	
Special design	Small light spot (S)

Optical data	
Black-white error	< 10% up to 100 mm
Operating range	Guaranteed operating range
Operating range, white 90%	0.005 ... 0.2 m
Operating range, gray 18%	0.01 ... 0.15 m
Operating range, black 6%	0.015 ... 0.12 m
Operating range limit	Typical operating range
Operating range limit	0.005 ... 0.2 m
Adjustment range	15 ... 200 mm
Light source	LED , Red
LED light wavelength	650 nm
Transmitted-signal shape	Pulsed
LED group	Exempt group (in acc. with EN 62471)

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 ... 15 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-2V) Low: ≤2V
Switching output 1	
Switching element	Transistor , PNP
Switching principle	Light switching
Switching output 2	
Switching element	Transistor , PNP
Switching principle	Dark switching

Timing	
Switching frequency	1,000 Hz
Response time	0.5 ms
Readiness delay	300 ms
Response jitter	166 µs

Connection	
Connection 1	
Function	Signal OUT Voltage supply
Type of connection	Cable
Cable length	2,000 mm
Sheathing material	PUR
Cable color	Black
Number of conductors	4 -wire
Wire cross section	0.2 mm²

Mechanical data	
Dimension (W x H x L)	11.4 mm x 34.2 mm x 18.3 mm
Housing material	Plastic , PC-ABS
Lens cover material	Plastic / PMMA
Net weight	50 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
Certifications	c UL US
Standards applied	IEC 60947-5-2

Classification	
Customs tariff number	85365019
eCl@ss 8.0	27270904
eCl@ss 9.0	27270904
ETIM 5.0	EC002719
ETIM 6.0	EC002719

Dimensioned drawings

All dimensions in millimeters

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3 / 8

Part no.: 50129380 – HT3C.S/4P – Diffuse sensor with background suppression
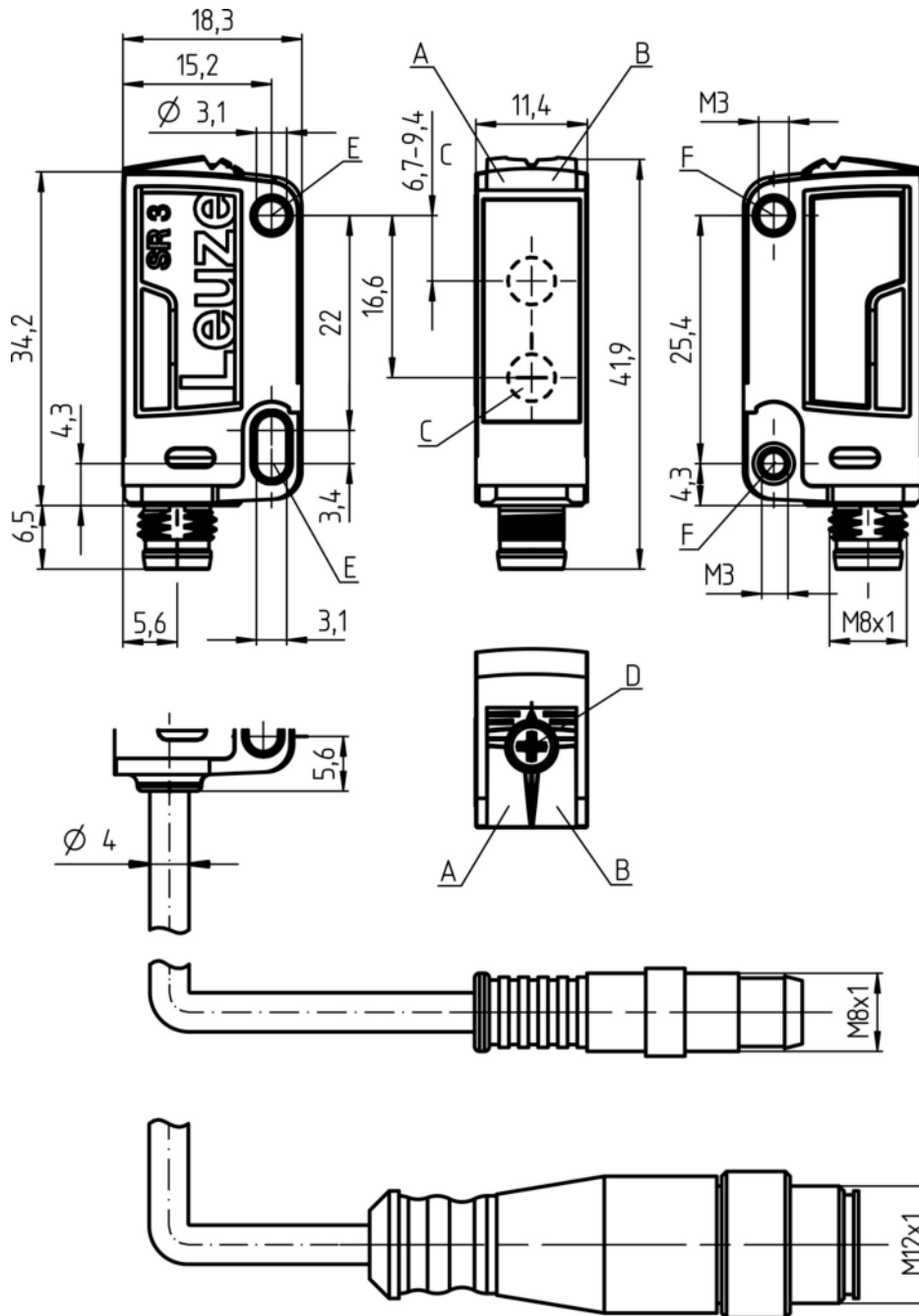
A Green LED
B Yellow LED
C Optical axis
D Multiturn potentiometer
E Mounting sleeve (standard)
F Threaded sleeve (3C.B series)

Electrical connection

Connection 1	
Function	Signal OUT Voltage supply
Type of connection	Cable
Cable length	2,000 mm

Connection 1	
Sheathing material	PUR
Cable color	Black
Number of conductors	4 -wire
Wire cross section	0.2 mm²

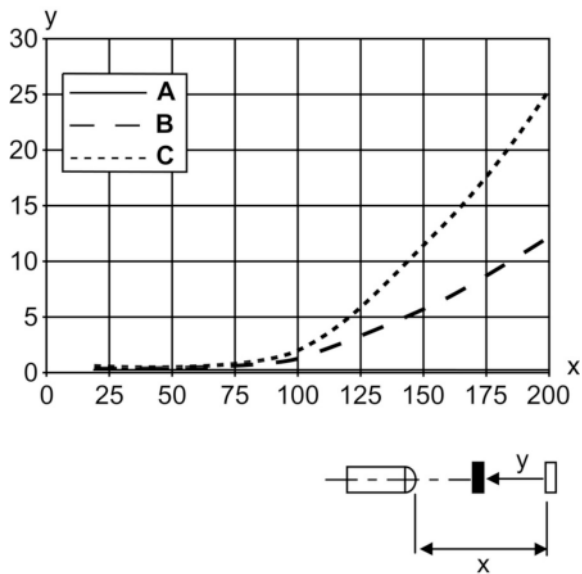| Conductor color	Conductor assignment
Brown	V+
White	OUT 2
Blue	GND
Black	OUT 1

Diagrams

Typ. response behavior (white 90 %)
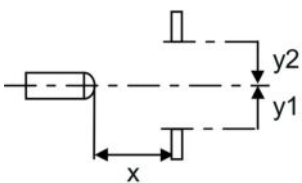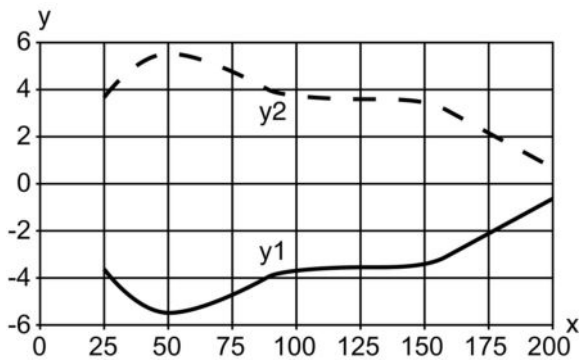
x   Distance [mm]
y   Misalignment [mm]

Typ. black/white behavior

x	Range [mm]
y	Reduction of range [mm]
A	White 90%
B	Gray 18%
C	Black 6%

Operation and display

LEDs

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

Part number code

Part designation: **AAA 3C d EE-f.GG H/i J-K**

AAA3C	**Operating principle / construction:** HT3C: diffuse reflection sensor with background suppression LS3C: throughbeam photoelectric sensor transmitter LE3C: throughbeam photoelectric sensor receiver PRK3C: retro-reflective photoelectric sensor with polarization filter
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]

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6 / 8

GG	**Equipment:** n/a: standard A: autocollimation principle (single lens) for positioning tasks B: housing model with two M3 threaded sleeves, brass F: permanently set range L: long light spot S: small light spot T: autocollimation principle (single lens) for highly transparent bottles without tracking TT: autocollimation principle (single lens) for highly transparent bottles with tracking V: V-optics XL: extra long light spot X: extended model
H	**Operating range adjustment:** n/a with HT: range adjustable via 8-turn potentiometer n/a with retro-reflective photoelectric sensors (PRK): operating range not adjustable 1: 270° potentiometer 3: teach-in via button 6: auto-teach
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 6: push-pull switching output, PNP light switching, NPN dark switching G: push-pull switching output, PNP dark switching, NPN light switching L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching) 8: activation input (activation with high signal) X: pin not used 1: IO-Link / light switching (NPN) / dark switching (PNP)
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 6: push-pull switching output, PNP light switching, NPN dark switching G: push-pull switching output, PNP dark switching, NPN light switching W: warning output X: pin not used 8: activation input (activation with high signal) 9: deactivation input (deactivation with high signal) T: teach-in via cable
K	**Electrical connection:** n/a: cable, standard length 2000 mm, 4-wire 5000: cable, standard length 5000 mm, 4-wire M8: M8 connector, 4-pin (plug) M8.3: M8 connector, 3-pin (plug) 200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug) 200-M8.3: cable, length 200 mm with M8 connector, 3-pin, axial (plug) 200-M12: cable, length 200 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.

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)

- 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

- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C

Accessories

Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	50060511	BT 3	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
	50117255	BTU 200M-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 M3 screws Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal

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

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8 / 8