



the sensor people





Figure can vary

Part no.: 50133592 HT3C/2N-M8 Diffuse sensor with background suppression











Contents

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- Dimensioned drawings
- Electrical connection
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Technical data

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Operating principle Optical data Black-white error Operating range Operating range Operating range, white 90% Operating range, pray 18% Operating range limit Operating range O		20
Optical data Black-white error		
Black white error Cperating range Guaranteed operating range Quaranteed operating ra	Operating principle	Diffuse reflection principle with background suppression
Black white error Cperating range Guaranteed operating range Quaranteed operating ra	Ontical data	
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Switching principle Switching output 2 Assignment Connection 1, pin 2 Switching element Transistor , NPN Switching principle Dark switching	Assignment	Connection 1, pin 4
Switching output 2 Assignment Connection 1, pin 2 Switching element Transistor , NPN Switching principle Dark switching	Switching element	Transistor , NPN
Assignment Connection 1, pin 2 Switching element Transistor , NPN Switching principle Dark switching Timing	Switching principle	Light switching
Switching element Transistor , NPN Switching principle Dark switching Timing	Switching output 2	
Switching principle Dark switching Timing	Assignment	Connection 1, pin 2
Timing	Switching element	Transistor , NPN
	Switching principle	Dark switching
Switching frequency 1,000 Hz	Timing	
	Switching frequency	1,000 Hz



Response time	0.5 ms
Readiness delay	300 ms
Response jitter	166 µs

onnection		
Connection 1		
Function	Signal OUT Voltage supply	
Type of connection	Connector	
Thread size	M8	
Туре	Male	
Material	Metal	
No. of pins	4 -pin	

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	10 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

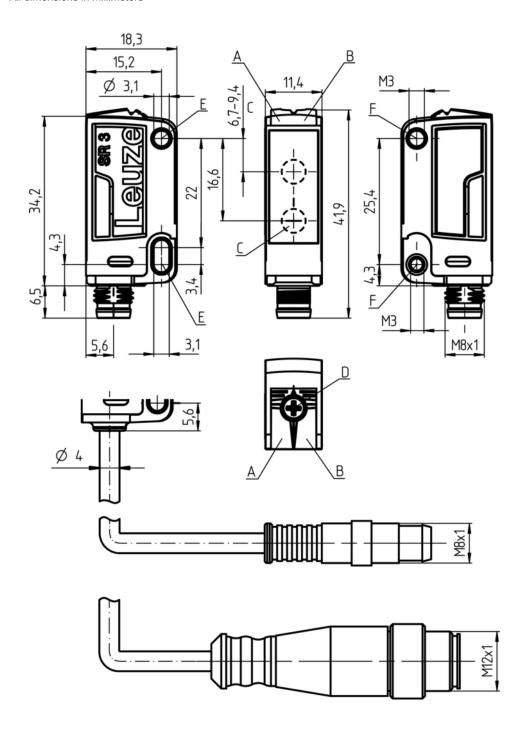
Certifications	
Degree of protection	IP 67 IP 69K
Protection class	III
Certifications	c UL US
Standards applied	IEC 60947-5-2

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



- A Green LED
- B Yellow LED
- C Optical axis
- D Multiturn potentiometer
- E Mounting sleeve (standard)
- F Threaded sleeve (3C.B series)



Electrical connection

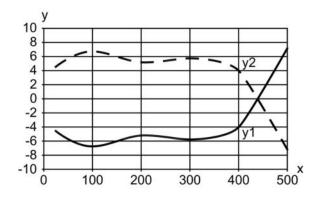
Connection 1	
Function	Signal OUT Voltage supply
Type of connection	Connector
Thread size	M8
Туре	Male
Material	Metal
No. of pins	4 -pin
Encoding	

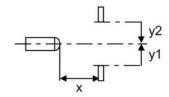
Pin	Pin assignment
1	V+
2	OUT 2
3	GND
4	OUT 1



Diagrams

Typ. response behavior (white 90 %)

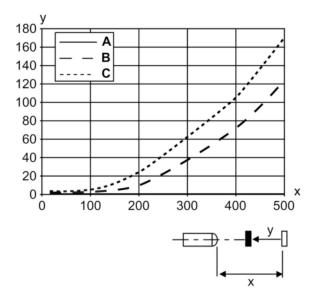




- Distance [mm] Misalignment [mm]



Typ. black/white behavior



Range [mm] Reduction of range [mm]

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

Operation and display

LEDs

LED	Display	Meaning
1	Green, continuous light	Ready
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 l: 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 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
Н	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
К	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)

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- 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

Connection technology - Connection cables

Part no.	Designation	Article	Description
50130850	KD U-M8-4A- V1-050	Connection cable	Connection 1: Connector, M8, Axial, Female, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC
50130871	KD U-M8-4W- V1-050	Connection cable	Connection 1: Connector, M8, Angled, Female, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC

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.