

Technical data sheet

Diffuse sensor with background suppression

Part no.: 50129390

HT3C.V/4P-200-M8

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For illustration purposes only



Technical data

Basic data

Series	3C
Operating principle	Diffuse reflection principle with background suppression
Application	Detection of high-gloss or polished surfaces Detection of transparent objects

Special version

Special version	V-optics
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Optical data

Black-white error	< 10% up to 100 mm
Operating range	Guaranteed operating range
Operating range, white 90%	0.015 ... 0.15 m
Operating range, gray 18%	0.015 ... 0.13 m
Operating range, black 6%	0.015 ... 0.11 m
Operating range limit	0.015 ... 0.15 m (typical operating range)
Adjustment range	20 ... 150 mm
Working range	30 ... 70 mm
Beam path	Focused
Light source	LED, Red
Wavelength	633 nm
Transmitted-signal shape	Pulsed
LED group	Exempt group (in acc. with EN 62471)
Type of light spot geometry	Round
Light beam exit	Front 11° angle
Focus	Fixed
Focal distance	150 mm

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 ... 15 mA

Outputs

Number of digital switching outputs	2 Piece(s)
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Switching outputs

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

Switching output 1

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

Switching output 2

Assignment	Connection 1, pin 2
Switching element	Transistor, PNP
Switching principle	Dark switching

Time behavior

Switching frequency	1,000 Hz
Response time	0.5 ms
Readiness delay	300 ms
Response jitter	166 μ s

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 ²
Thread size	M8
Type	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
Plastic housing	PC-ABS
Lens cover material	Plastic / PMMA
Net weight	20 g
Housing color	Red
Type of fastening	Through-hole mounting Via optional mounting device
Recommended tightening torque for M3 fastening	0.9 N·m
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
Approvals	c UL US
Standards applied	IEC 60947-5-2

Electrical connection

Connection 1

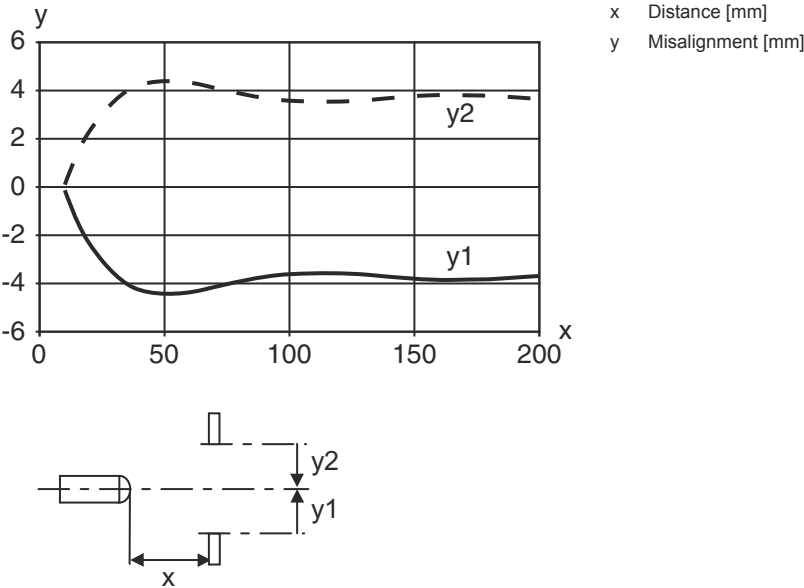
Function	Signal OUT
	Voltage supply
Type of connection	Cable with connector
Cable length	200 mm
Sheathing material	PUR
Cable color	Black
Wire cross section	0.2 mm²
Thread size	M8
Type	Male
Material	Metal
No. of pins	4 -pin

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



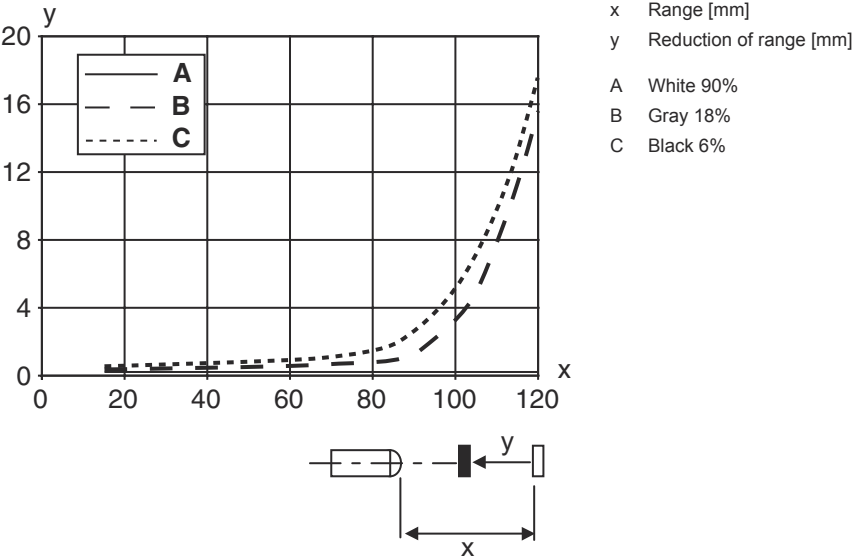
Diagrams

Typ. response behavior (white 90 %)



Diagrams

Typ. black/white behavior



Operation and display

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 ODT3C: Distance diffuse sensor with background suppression
d	Light type n/a: red light I: infrared light
EE	Light source n/a: LED L1: laser class 1 L2: laser class 2 PP: Power PinPoint® LED
f	Preset range (optional) n/a: operating range acc. to data sheet xxxF: Preset range [mm] 2M: operating range of 2 meters
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 HF: Suppression of HF illumination (LED)

Part number code

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)

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. 5kOhm 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	Application: Chemical resistant Connection 1: Connector, M8, Axial, Female, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC
	50130871	KD U-M8-4W-V1-050	Connection cable	Application: Chemical resistant Connection 1: Connector, M8, Angled, Female, 4 -pin Connector, LED: No 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	Contains: 2x M3 x 16 screw, 2 M3 x 20 screws, 2x position washers 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 website in the Download tab of the article detailed page.