

Technical data sheet Contrast sensor

Part no.: 50148500

KRT3CL1.3S2/4T



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Technical data



Special version Special version Teach input Time function Optical data Operating range Beam path Light source Wavelength Laser class 1, IEC 60825-1:2014 / EN 60825-1:2	Series	3C	
Special version Teach input Time function Optical data Time function Operating range 60 mm ± 20 mm Beam path Focused Light source Laser, Red Wavelength 655 mm Laser class 1, IEC 60825-1:2014 / EN 60825-1:20	Series	3C	
Optical data Operating range 60 mm ± 20 mm Beam path Focused Light source Laser, Red Wavelength 655 mm Laser class 1, IEC 60825-1:2014 / EN 60825-1:2014+A11:2021 Max. laser power 0.0027 W Transmitted-signal shape Pulsed Pulse duration 5 μs Light spot size [at sensor distance] 0.5 mm x 1 mm [60 mm] Light spot size [at sensor distance] Vertical Type of light spot geometry Oval Light beam exit Front Focus Fixed Measurement data Repeatability 0.05 mm Electrical data Protective circuit Polarity reversal protection Short circuit protected Performance data Supply voltage U _B 12 30 V, DC, Incl. residual ripple Open-circuit current 0 25 mA Inputs Number of teach inputs 1 Piece(s) Teach inputs Voltage type DC Switching voltage Delay 10 ms Input resistance 15,000 Ω Teach input 1 Function Keyboard lockout Setting the pulse stretching Teach-in Active switching state High Teach process Static 2-point Outputs Number of digital switching outputs 1 Piece(s) Switching outputs Voltage type DC	Special version		
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Switching current, max.100 mASwitching voltagehigh: ≥(U _B -2V)	Number of digital switching outputs		
Switching voltage high: ≥(U _B -2V)	Number of digital switching outputs Switching outputs	DC	
	Number of digital switching outputs Switching outputs Voltage type		
low: ≤ 2 V	Number of digital switching outputs Switching outputs Voltage type Switching current, max.	100 mA	

	Switching output 1	
	Switching element	Transistor, PNP
	Switching principle	Light switching
ime b	ehavior	
Switchi	ng frequency	4,000 Hz
Respon	se time	0.125 ms
Readine	ess delay	300 ms
Respon	se jitter	35 µs
Conne	ction	
Coni	nection 1	
Func		Signal OUT
		Teach input
		Voltage supply
Type	of connection	Cable
Cable	e length	2,000 mm
Numl	per of conductors	4 -wire
Mecha	nical data	
Design		Cubic
Dimens	ion (W x H x L)	11.4 mm x 34.2 mm x 18.3 mm
Housing	g material	Plastic
Plastic	housing	PC-ABS
ens co	ver material	Plastic / PMMA
Net wei	ght	50 g
Housing	g color	Red
Гуре of	fastening	Via optional mounting device
Compat	ibility of materials	ECOLAB
Operat	ion and display	
Type of	display	LED
Number	of LEDs	2 Piece(s)
Operati	onal controls	Teach button
Functio	n of the operational control	Setting the pulse stretching
		Switching-threshold adjustment
		Teach-in
Enviro	nmental data	
Ambien	t temperature, operation	-40 55 °C
	t temperature, storage	-40 70 °C
Certific	cations	
Degree	of protection	IP 67
	•	IP 69K
Protecti	on class	III
Cortific	ations	c UL US
CELLIIIC		

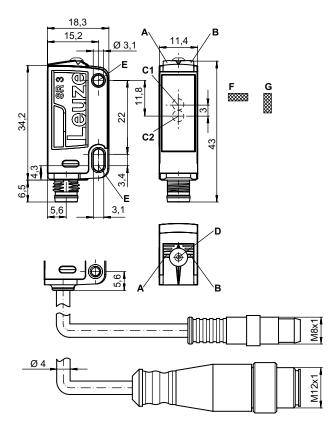
Technical data



Customs tariff number	85365019
ECLASS 5.1.4	27270906
ECLASS 8.0	27270906
ECLASS 9.0	27270906
ECLASS 10.0	27270906
ECLASS 11.0	27270906
ECLASS 12.0	27270906
ECLASS 13.0	27270906
ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
ETIM 8.0	EC001820

Dimensioned drawings

All dimensions in millimeters



- Green LED
- Yellow LED
- C1 Optical axis (receiver)
- C2 Optical axis (transmitter)
- Teach button
- Mounting sleeve
- Light spot orientation horizontal
- Light spot orientation vertical

Electrical connection



Connection 1

Function	Signal OUT
	Teach input
	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
Conductor color	Conductor assignment
Brown	V+
White	Teach-in
Blue	GND
Black	OUT 1

Operation and display

Display LED 1	Display LED 2	Meaning
Green, continuous light	Off	Operational readiness
Green, flashing, 3 Hz	Yellow, flashing, 3 Hz	Teach event active
Green, flashing, 15 Hz	Yellow, flashing, 15 Hz	Teach error
Green, continuous light	Yellow, continuous light	Mark detected

Part number code

Part designation: KRT3C A.BCDD/EF-G

KRT3C	Operating principle KRT3C: Contrast sensor
Α	Light type M: LED, multicolor W: White light L1: laser class 1
В	Light spot orientation L: vertical Q: horizontal
С	Control button 3: teach-in via button
DD	Teach mode S1: Static 1-point teach S2: Static 2-point teach D2: Dynamic 2-point teach
E	Switching output/function OUT 1/IN: Pin 4 or black conductor 2: NPN transistor output, light switching 4: PNP transistor output, light switching 6: push-pull switching output, PNP light switching, NPN dark switching L: IO-Link / light switching (PNP)/dark switching (NPN)
F	Switching output / function OUT 2/IN: pin 2 or white conductor G: Push-pull switching output, PNP dark switching, NPN light switching T: teach-in via cable

Part number code



G

Electrical connection

n/a: cable, standard length 2000 mm, 4-wire

M8: M8 connector, 4-pin (plug) 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug) 200-M8: cable, length 200 mm with M8 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).



ATTENTION! LASER RADIATION - CLASS 1 LASER PRODUCT



The device satisfies the requirements of IEC 60825-1:2014 / EN 60825-1:2014+A11:2021 safety regulations for a product of laser class 1 and complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

- Observe the applicable statutory and local laser protection regulations.
- The device must not be tampered with and must not be changed in any way. There are no user-serviceable parts inside the device. Repairs must only be performed by Leuze electronic GmbH + Co. KG.

Further information

• 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
50105546	BT 3B	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
O S	50117829	BTP 200M-D12	Mounting system	Design of mounting device: Protection hood Fastening, at system: For 12 mm rod Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal
	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 website in the Download tab of the article detailed page.