

Technical data sheet

Contrast sensor

Part no.: 50148489

KRT3CM.L3S2/4T-200-M8



For illustration purposes only

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Technical data

Basic data

| | |
|--------|----|
| Series | 3C |
|--------|----|

Special version

| | |
|-----------------|---------------|
| Special version | Teach input |
| | Time function |

Optical data

| | |
|--------------------------------------|--------------------------------------|
| Operating range | 14.5 mm ± 2 mm |
| Beam path | Focused |
| Light source | LED, RGB |
| Wavelength | B: 470 nm |
| | G: 525 nm |
| | R: 640 nm |
| Transmitted-signal shape | Pulsed |
| LED group | Exempt group (in acc. with EN 62471) |
| Light spot size [at sensor distance] | 1.5 mm x 4 mm [14.5 mm] |
| Light spot orientation | Vertical |
| Type of light spot geometry | Rectangular |
| Light beam exit | Front |
| Focus | Fixed |

Measurement data

| | |
|---------------|---------|
| Repeatability | 0.02 mm |
|---------------|---------|

Electrical data

| | |
|--------------------|------------------------------|
| Protective circuit | Polarity reversal protection |
| | Short circuit protected |

Performance data

| | |
|----------------------|----------------------------------------|
| Supply voltage U_B | 12 ... 30 V, DC, Incl. residual ripple |
| Residual ripple | 0 ... 15 %, From U_B |
| Open-circuit current | 0 ... 25 mA |

Inputs

| | |
|------------------------|------------|
| Number of teach inputs | 1 Piece(s) |
|------------------------|------------|

Teach inputs

| | |
|-------------------|-----------------------------|
| Voltage type | DC |
| Switching voltage | high: ≥8V |
| | low: ≤ 2 V or not connected |
| 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 |
| Switching current, max. | 100 mA |
| Switching voltage | high: ≥(U_B -2V) |
| | low: ≤ 2 V |

Switching output 1

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

Time behavior

| | |
|---------------------|-----------|
| Switching frequency | 10,000 Hz |
| Response time | 0.05 ms |
| Readiness delay | 300 ms |
| Response jitter | 20 μs |

Connection

Connection 1

| | |
|--------------------|----------------------|
| Function | Signal OUT |
| | Teach input |
| | Voltage supply |
| Type of connection | Cable with connector |
| Cable length | 200 mm |
| Thread size | M8 |
| Type | Male |
| Material | Metal |
| No. of pins | 4 -pin |

Mechanical data

| | |
|----------------------------|------------------------------|
| Design | Cubic |
| 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 | Via optional mounting device |
| Compatibility of materials | ECOLAB |

Operation and display

| | |
|-------------------------------------|--------------------------------|
| Type of display | LED |
| Number of LEDs | 2 Piece(s) |
| Operational controls | Teach button |
| Function of the operational control | Setting the pulse stretching |
| | Switching-threshold adjustment |
| | Teach-in |

Environmental data

| | |
|--------------------------------|---------------|
| Ambient temperature, operation | -40 ... 60 °C |
| Ambient temperature, storage | -40 ... 70 °C |

Certifications

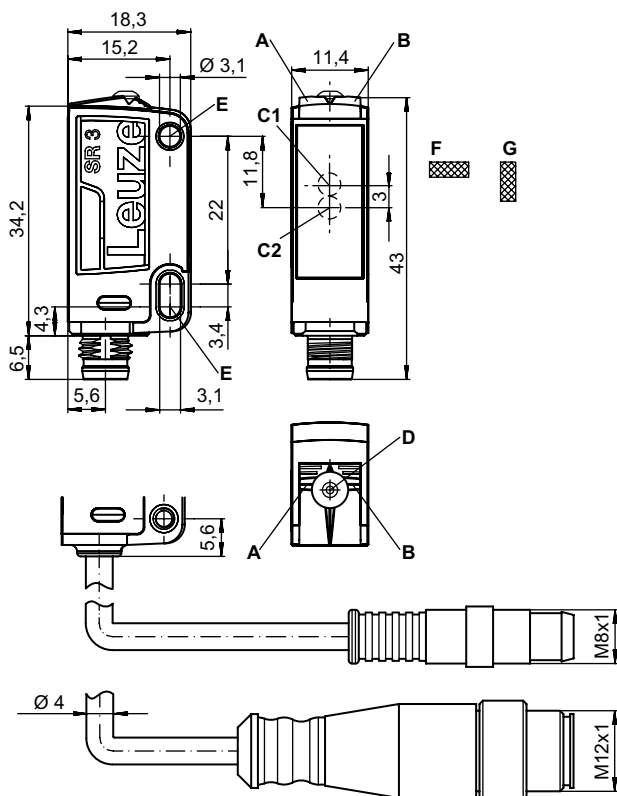
| | |
|----------------------|------------------|
| Degree of protection | IP 67 |
| | IP 69K |
| Protection class | III |
| Approvals | c UL US |
| Standards applied | EN IEC 60947-5-2 |

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 |
| ECLASS 14.0 | 27270906 |
| ECLASS 15.0 | 27270906 |
| ECLASS 16.0 | 27270906 |
| ETIM 5.0 | EC001820 |
| ETIM 6.0 | EC001820 |
| ETIM 7.0 | EC001820 |
| ETIM 8.0 | EC001820 |
| ETIM 9.0 | EC001820 |
| ETIM 10.0 | EC001820 |
| UNSPSC 26.08 | 39121528 |

Dimensioned drawings

All dimensions in millimeters



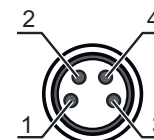
- A Green LED
- B Yellow LED
- C1 Optical axis (receiver)
- C2 Optical axis (transmitter)
- D Teach button
- E Mounting sleeve
- F Light spot orientation horizontal
- G Light spot orientation vertical

Electrical connection

Connection 1

| | |
|--------------------|---------------------------------------------|
| Function | Signal OUT Teach input 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 |

| Pin | Pin assignment |
|-----|----------------|
| 1 | V+ |
| 2 | Teach-in |
| 3 | GND |
| 4 | 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 |
| A | Light type M: LED, multicolor W: White light L1: laser class 1 |
| B | Light spot orientation L: vertical Q: horizontal |
| C | 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! | |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <ul style="list-style-type: none"> ⌘ 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). |

Further information

- 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 |



Accessories

| Part no. | Designation | Article | Description |
|----------|-------------|---------|-------------|
|----------|-------------|---------|-------------|

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 | |
|-------------------------------------------------------------------------------------|-------------|--------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 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 | 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.