



Part no.: 50135768
LCS-1M18M-N15PNC-M12
Capacitive sensor



Figure can vary

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Technical data

| Basic data | |
|--|---|
| Series | LCS-1 |
| Switching distance S_n | 2 ... 15 mm |
| Assured switching distance | 15 mm |
| Electrical data | |
| Protective circuit | Polarity reversal protection Short circuit protected |
| Performance data | |
| Supply voltage U_B | 10 ... 30 V , DC |
| Residual ripple | 0 ... 10 % , From U_B |
| Open-circuit current | 15 mA |
| Temperature drift, max. (in % of S_r) | 20 % |
| Repeatability, max. (in % of S_r) | 2 % |
| Rated operating current | 100 mA |
| Outputs | |
| Number of digital switching outputs | 1 Piece(s) |
| Switching outputs | |
| Type | Digital switching output |
| Voltage type | DC |
| Switching output 1 | |
| Assignment | Connection 1, pin 2 |
| Switching element | Transistor , PNP |
| Switching principle | NC (normally closed) |
| Timing | |
| Switching frequency | 100 Hz |
| Connection | |
| Number of connections | 1 Piece(s) |
| Connection 1 | |
| Type of connection | Connector |
| Function | Signal OUT Voltage supply |
| Thread size | M12 |
| Type | Male |
| Material | Plastic |
| No. of pins | 4 -pin |
| Encoding | A-coded |
| Mechanical data | |
| Design | Cylindrical |
| Thread size | M18 x 1 mm |
| Dimension (\varnothing x L) | 18 mm x 88.5 mm |
| Type of installation | Non-embedded |
| Housing material | Metal Stainless steel , V2A |
| Sensing face material | Plastic , Polybutylene (PBT) |

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| | |
|----------------|--|
| Cover material | Plastic , Polybutylene (PBT)/polyamide (PA 12) |
| Net weight | 47 g |

Operation and display

| | |
|-------------------------------------|------------------------------------|
| Type of display | LED |
| Number of LEDs | 2 Piece(s) |
| Operational controls | Multiturn potentiometer (12 turns) |
| Function of the operational control | Sensitivity adjustment |
| Switching distance, adjustable | Yes |

Environmental data

| | |
|--------------------------------|---------------|
| Ambient temperature, operation | -25 ... 85 °C |
|--------------------------------|---------------|

Certifications

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

Correction factors

| | |
|----------------------------|---------------|
| Acetone | 0.75 |
| Acrylic resin | 0.1 ... 0.25 |
| Alcohol | 0.85 |
| Ammonia | 0.7 ... 0.85 |
| Aniline | 0.4 |
| Gasoline | 0.1 |
| Celluloid | 0.15 |
| Liquid chlorine | 0.1 |
| Ebonite | 0.15 |
| Epoxy resin | 0.15 ... 0.35 |
| Crude oil | 0.05 |
| Ethanol | 0.85 |
| Ethylene glycol | 0.93 |
| Freon R22 and 502 (liquid) | 0.35 |
| Grain | 0.15 ... 0.3 |
| Glass | 0.2 ... 0.55 |
| Glycerin | 0.98 |
| Rubber | 0.15 ... 0.9 |
| Wood, wet | 0.6 ... 0.85 |
| Wood, dry | 0.1 ... 0.4 |
| Carbon dioxide | 0 |
| Air | 0 |
| Marble | 0.5 |
| Flour | 0.05 |
| Melamine resin | 0.25 ... 0.55 |
| Milk powder | 0.2 |
| Nylon | 0.2 ... 0.3 |
| Oil-containing paper | 0.25 |
| Paper | 0.1 |

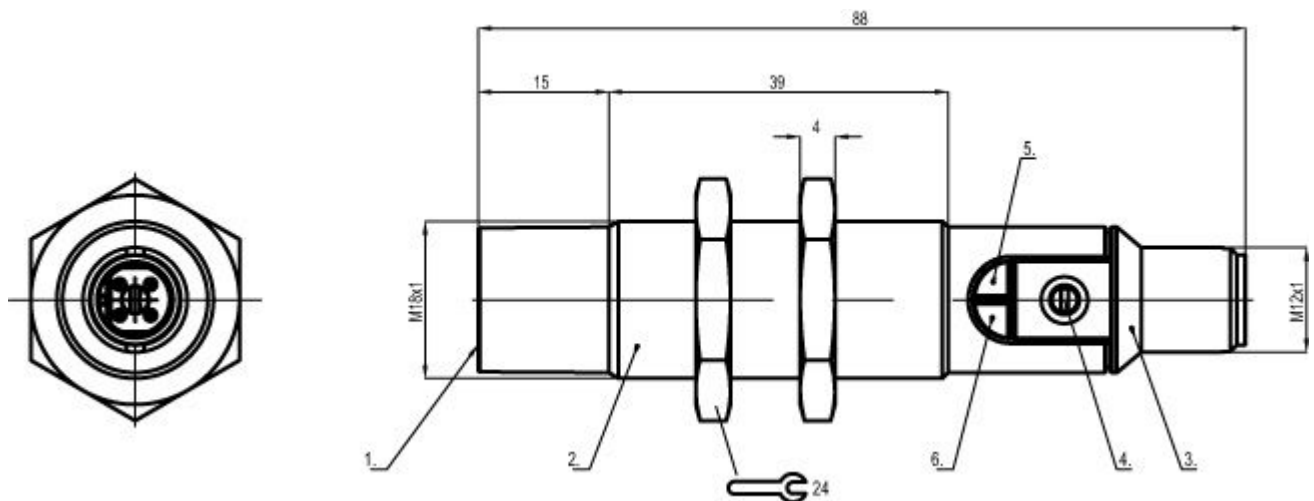
| | |
|-----------------|--------------|
| Polyamide | 0.3 |
| Polyester resin | 0.15 ... 0.5 |
| Pressboard | 0.1 ... 0.3 |
| PTFE | 0.1 |
| Quartz glass | 0.2 |
| Salt | 0.35 |
| Sand | 0.15 ... 0.3 |
| Water | 1 |
| Cement dust | 0.25 |
| Sugar | 0.15 |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0 | 27270102 |
| eCl@ss 9.0 | 27270102 |
| ETIM 5.0 | EC002715 |
| ETIM 6.0 | EC002715 |

Dimensioned drawings

All dimensions in millimeters



- 1 Active surface
- 2 Housing
- 3 Cover
- 4 Potentiometer
- 5 Green LED, operating voltage display
- 6 Yellow LED, function indicator

Electrical connection

| | |
|---------------------|-----------|
| Connection 1 | |
| Type of connection | Connector |

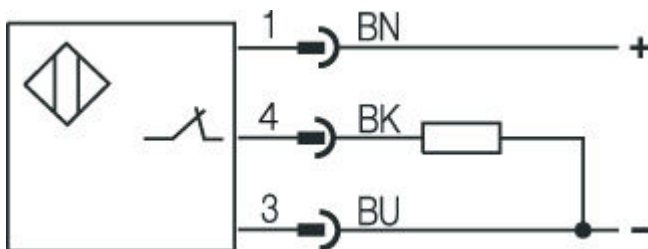
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| Connection 1 | |
|--------------|------------------------------|
| Function | Signal OUT Voltage supply |
| Thread size | M12 |
| Type | Male |
| Material | Plastic |
| No. of pins | 4 -pin |
| Encoding | A-coded |

| Pin | Pin assignment | Conductor color |
|-----|----------------|-----------------|
| 1 | +10...30 V DC | Brown |
| 2 | n.c. | - |
| 3 | GND | Blue |
| 4 | OUT | Black |



Circuit diagrams



Operation and display

LEDs

| LED | Display | Meaning |
|-----|--------------------------|----------------------------------|
| 1 | Green, continuous light | Ready |
| 2 | Yellow, continuous light | Switching output/switching state |

Part number code

Part designation: LCS-ABBBC-DDDEFF-GHHHIJJJ KK

| | |
|-----|--|
| LCS | Operating principle: LCS: capacitive sensor |
| A | Series: 1: series 1 "Extended" 2: series 2 "Advanced" |
| BBB | Design: M12: series with M12 x 1 external thread M18: series with M18 x 1 external thread M30: series with M30 x 1.5 external thread Q40: series in cubic design, length 40 mm Q54: series in cubic design, length 54 mm |

| | |
|-----|--|
| C | Housing material: B: brass M: metal P: plastic/PBT T: PTFE |
| DDD | Measurement range / type of installation: F03: typ. range limit 3.0 mm / embedded installation F04: typ. range limit 4.0 mm / embedded installation F05: typ. range limit 5.0 mm / embedded installation F06: typ. range limit 6.0 mm / embedded installation F08: typ. range limit 8.0 mm / embedded installation F10: typ. range limit 10.0 mm / embedded installation F15: typ. range limit 15.0 mm / embedded installation F20: typ. range limit 20.0 mm / embedded installation N06: typ. range limit 6.0 mm / non-embedded installation N08: typ. range limit 8.0 mm / non-embedded installation N15: typ. range limit 15.0 mm / non-embedded installation N25: typ. range limit 25.0 mm / non-embedded installation N30: typ. range limit 30.0 mm / non-embedded installation |
| E | Output function: B: NC and NO contact N: NPN P: PNP |
| FF | Switching: NC: normally closed contact NO: normally open contact NP: programmable |
| G | Connection cable: K: cable n/a: no cable |
| HHH | Cable length: 020: length 2,000 mm 003: length 300 mm n/a: no cable |
| I | Cable material: P: PUR T: PTFE V: PVC |
| JJJ | Electrical connection: M08: M8 connector, 3-pin M12: M12 connector, 4-pin (plug) |
| KK | Special equipment: L: IO-Link interface T: teach-in n/a: no special equipment |

Note

A list with all available device types can be found on the Leuze electronic 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.


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Accessories

Connection technology - Connection cables

| | Part no. | Designation | Article | Description |
|---|----------|--------------------|------------------|---|
|  | 50130654 | KD U-M12-4A-P1-020 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PUR |
|  | 50130657 | KD U-M12-4A-P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PUR |

Mounting technology - Other

| | Part no. | Designation | Article | Description |
|--|----------|-------------|---------|---|
|  | 50132729 | AC D18M-CS | Clamp | Contains: 2x M24 mounting nut Diameter, inner: 18 mm Design of mounting device: Mounting clamp Fastening, at system: Screw type, Through-hole mounting Mounting bracket, at device: insertable, Clampable with limit stop Type of mounting device: Clampable, With limit stop Material: Metal |