



Part no.: 50135742
LCS-1Q40P-F20BNP-K020P
Capacitive sensor



Figure can vary

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Technical data

Basic data	
Series	LCS-1
Switching distance S_n	1 ... 20 mm
Assured switching distance	20 mm
Characteristic parameters	
MTTF	195 years
Electrical data	
Protective circuit	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)	5 %
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, conductor 2
Switching element	Transistor , Push-pull
Switching principle	Normally closed contact (NC)/normally open contact (NO)
Timing	
Switching frequency	100 Hz
Connection	
Number of connections	1 Piece(s)
Connection 1	
Type of connection	Cable
Function	Signal OUT Voltage supply
Cable length	2,000 mm
Sheathing material	PUR
Number of conductors	3 -wire
Wire cross section	0.14 mm ²
Mechanical data	
Design	Cubic
Dimension (W x H x L)	40 mm x 40 mm x 10 mm
Type of installation	Embedded
Housing material	Plastic , Polybutylene (PBT)
Sensing face material	Plastic , Polybutylene (PBT)
Cover material	Plastic , Polybutylene (PBT)

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Net weight	48 g
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Operation and display

Type of display	LED
Number of LEDs	2 Piece(s)
Operational controls	Multiturn potentiometer (20 turns)
Switching distance, adjustable	Yes

Environmental data

Ambient temperature, operation	-5 ... 85 °C
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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

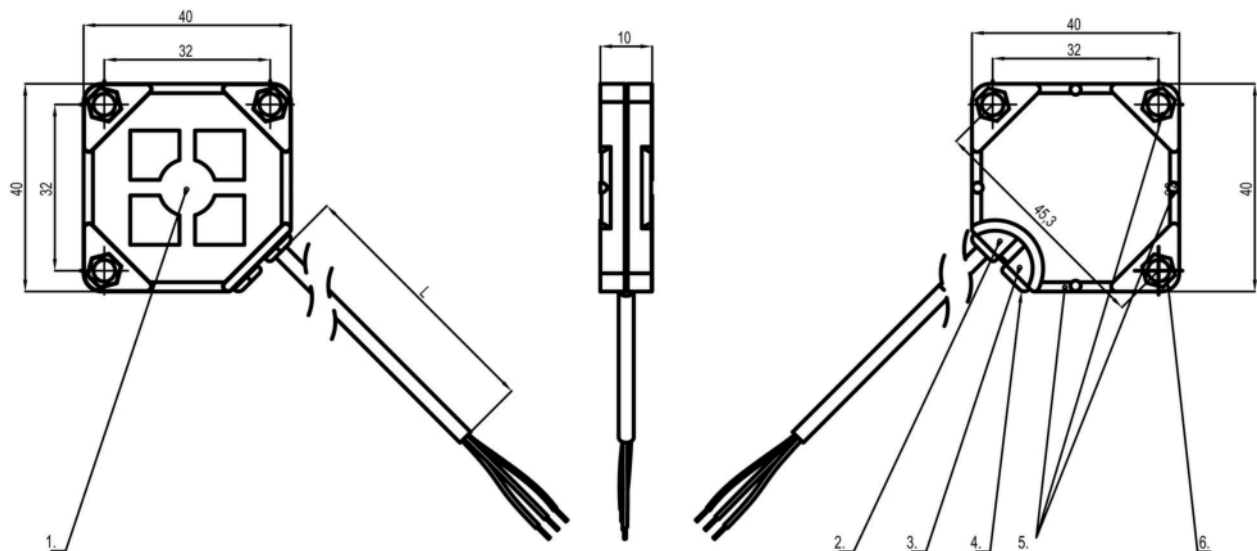
Pressboard	0.1 ... 0.3
PTFE	0.1
Quartz glass	0.2
Salt	0.35
Sand	0.15 ... 0.3
Water	1
Cement dust	0.25
Sugar	0.15

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 Green LED, operating voltage display
- 3 Yellow LED, function indicator
- 4 Potentiometer
- 5 Mounting: cable tie
- 6 Mounting: 3xM3 screw

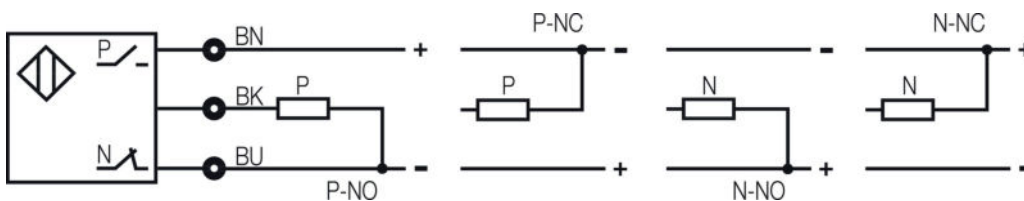
Electrical connection

Connection 1	
Type of connection	Cable

Connection 1	
Function	Signal OUT Voltage supply
Cable length	2,000 mm
Sheathing material	PUR
Cable color	
Number of conductors	3 -wire
Wire cross section	0.14 mm ²

Conductor color	Conductor assignment
Brown	VIN
Black	OUT
Blue	VIN

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-GHHHIJJ 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.