



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



Figure can vary

## Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Circuit diagrams
- Operation and display
- Part number code
- Notes

## Technical data

<b>Basic data</b>	
Series	LCS-1
Switching distance $S_n$	1 ... 20 mm
Assured switching distance	20 mm
<b>Characteristic parameters</b>	
MTTF	195 years
<b>Electrical data</b>	
Protective circuit	Short circuit protected
<b>Performance data</b>	
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
<b>Outputs</b>	
Number of digital switching outputs	1 Piece(s)
<b>Switching outputs</b>	
Type	Digital switching output
Voltage type	DC
<b>Switching output 1</b>	
Assignment	Connection 1, conductor 2
Switching element	Transistor , Push-pull
Switching principle	Normally closed contact (NC)/normally open contact (NO)
<b>Timing</b>	
Switching frequency	100 Hz
<b>Connection</b>	
Number of connections	1 Piece(s)
<b>Connection 1</b>	
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 <sup>2</sup>
<b>Mechanical data</b>	
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)

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

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

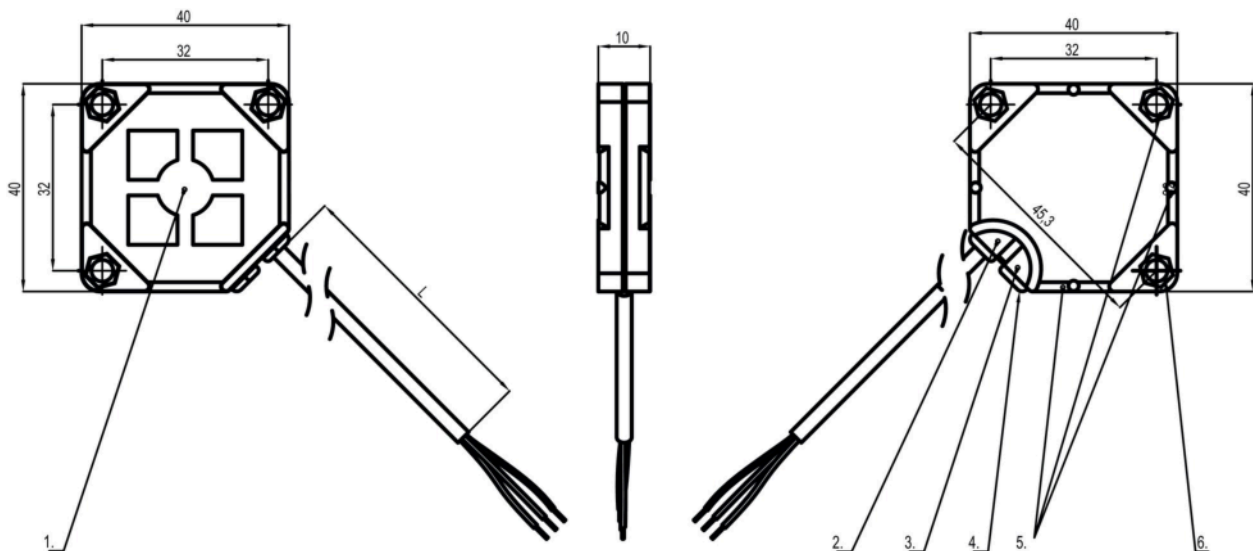
Pressboard	0.1 ... 0.3
PTFE	0.1
Quartz glass	0.2
Salt	0.35
Sand	0.15 ... 0.3
Water	1
Cement dust	0.25
Sugar	0.15

#### 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

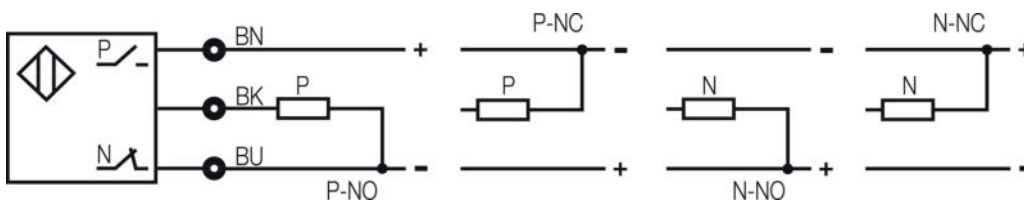
<b>Connection 1</b>	
Type of connection	Cable

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

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 <sup>2</sup>

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	<b>Operating principle:</b> LCS: capacitive sensor
A	<b>Series:</b> 1: series 1 "Extended" 2: series 2 "Advanced"
BBB	<b>Design:</b> 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	<b>Housing material:</b> B: brass M: metal P: plastic/PBT T: PTFE

DDD	<b>Measurement range / type of installation:</b> 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	<b>Output function:</b> B: NC and NO contact N: NPN P: PNP
FF	<b>Switching:</b> NC: normally closed contact NO: normally open contact NP: programmable
G	<b>Connection cable:</b> K: cable n/a: no cable
HHH	<b>Cable length:</b> 020: length 2,000 mm 003: length 300 mm n/a: no cable
I	<b>Cable material:</b> P: PUR T: PTFE V: PVC
JJJ	<b>Electrical connection:</b> M08: M8 connector, 3-pin M12: M12 connector, 4-pin (plug)
KK	<b>Special equipment:</b> 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](http://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.