

## Technical data sheet

### Capacitive sensor

Part no.: 50135740

LCS-1Q40P-F20PNO-K003PM08

#### Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Circuit diagrams
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Figure can vary



## Technical data

### Basic data

Series	LCS-1
Switching distance $S_n$	1 ... 20 mm
Assured switching distance	20 mm

### Characteristic parameters

MTTF	195 years
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### 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 $S_r$ )	5 %
Rated operating current	100 mA

### Outputs

Number of digital switching outputs	1 Piece(s)
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### Switching outputs

Type	Digital switching output
Voltage type	DC

### Switching output 1

Assignment	Connection 1, pin 4
Switching element	Transistor, PNP
Switching principle	NO (normally open)

### Time behavior

Switching frequency	100 Hz
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### Connection

Number of connections	1 Piece(s)
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### Connection 1

Function	Signal OUT
	Voltage supply
Type of connection	Connector
Cable length	300 mm
Sheathing material	PUR
Cable color	Black
Thread size	M8
Type	Male
Material	Plastic
No. of pins	3 -pin

### 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
Plastic housing	Polybutylene (PBT)
Sensing face material	Plastic, Polybutylene (PBT)
Cover material	Plastic, Polybutylene (PBT)
Net weight	33 g
Housing color	Black

### Operation and display

Type of display	LED
Number of LEDs	2 Piece(s)
Operational controls	Multiturn potentiometer (20 turns)
Function of the operational control	Sensitivity adjustment
Switching distance, adjustable	Yes

### Environmental data

Ambient temperature, operation	-5 ... 85 °C
Ambient temperature, storage	-25 ... 85 °C

### Certifications

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

### Correction factors

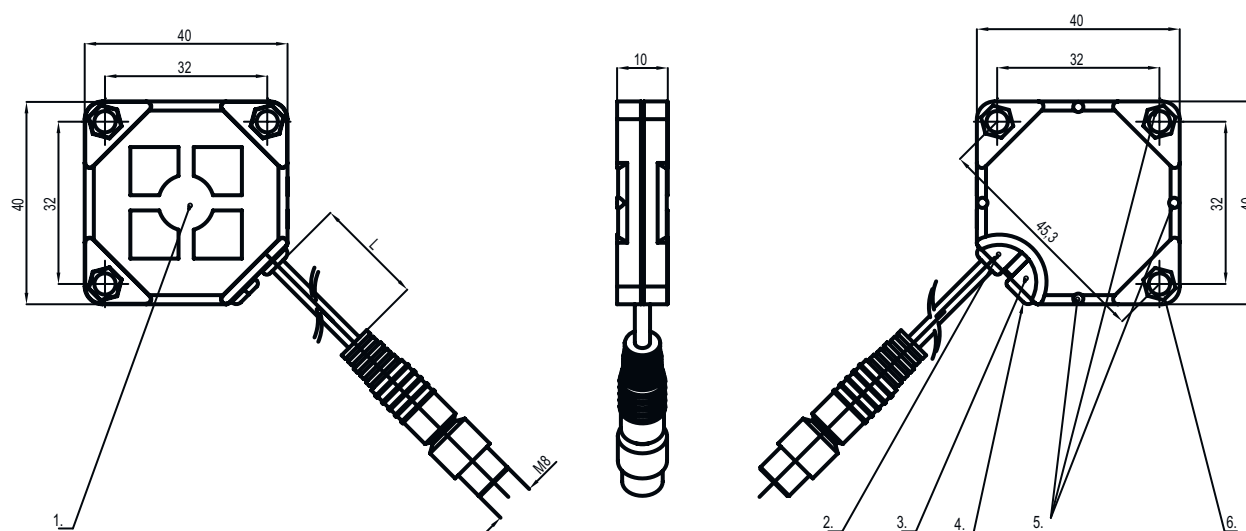
Acetone	0.75
Acrylic resin	0.1 ... 0.25
Alcohol	0.85
Ammonia	0.7 ... 0.85
Aniline	0.4
Gasoline	0.1
Celluloid	0.15
Liquid chlorine	0.1
Ebonite	0.15
Epoxy resin	0.15 ... 0.35
Crude oil	0.05
Ethanol	0.85
Ethylene glycol	0.93
Freon R22 and 502 (liquid)	0.35
Grain	0.15 ... 0.3
Glass	0.2 ... 0.55
Glycerin	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

## Technical data

Customs tariff number	85365019
ECLASS 5.1.4	27270102
ECLASS 8.0	27270102
ECLASS 9.0	27270102
ECLASS 10.0	27270102
ECLASS 11.0	27270102
ECLASS 12.0	27274201
ECLASS 13.0	27274201
ETIM 5.0	EC002715
ETIM 6.0	EC002715
ETIM 7.0	EC002715
ETIM 8.0	EC002715

## Dimensioned drawings

All dimensions in millimeters



- |  |                        |
|--|------------------------|
| 1 Active surface                       | 4 Potentiometer        |
| 2 Green LED, operating voltage display | 5 Mounting: cable tie  |
| 3 Yellow LED, function indicator       | 6 Mounting: 3xM3 screw |

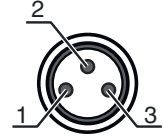
## Electrical connection

### Connection 1

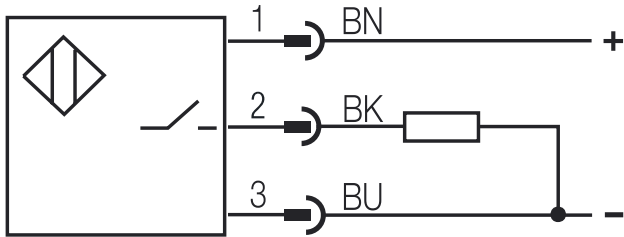
Function	Signal OUT
	Voltage supply
Type of connection	Connector
Cable length	300 mm
Sheathing material	PUR
Cable color	Black
Thread size	M8
Type	Male
Material	Plastic
No. of pins	3 -pin

# Electrical connection

Pin	Pin assignment	Conductor color
1	+10...30 V DC	Brown
2	OUT	White
3	GND	Blue



# Circuit diagrams



# Operation and display

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**

<b>LCS</b>	<b>Operating principle</b> LCS: capacitive sensor
<b>A</b>	<b>Series</b> 1: series 1 "Extended" 2: series 2 "Advanced"
<b>BBB</b>	<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
<b>C</b>	<b>Housing material</b> B: Brass M: metal P: plastic/PBT T: PTFE
<b>DDD</b>	<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
<b>E</b>	<b>Output function</b> B: NC and NO contact N: NPN P: PNP

## Part number code

<b>FF</b>	<b>Switching</b> NC: Normally closed contact NO: normally open contact NP: programmable
<b>G</b>	<b>Connection cable</b> K: Cable n/a: no cable
<b>HHH</b>	<b>Cable length</b> 020: length 2,000 mm 003: length 300 mm n/a: no cable
<b>I</b>	<b>Cable material</b> P: PUR T: PTFE V: PVC
<b>JJJ</b>	<b>Electrical connection</b> M08: M8 connector, 3-pin M12: M12 connector, 4-pin (plug)
<b>KK</b>	<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 website at <a href="http://www.leuze.com">www.leuze.com</a> .

## 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.