Technical data sheet
Capacitive sensor
Part no.: 50135744
LCS-1Q54P-F10PNC-K020P

For Illustration purposes only

Contents

Technical data

Leuze

Basic data

Series	LCS-1
Switching distance S_n	1 ... 10 mm

Characteristic parameters

MTTF	1,080 years

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	200 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, PNP
Switching principle	NC (normally closed)

Time behavior

Switching frequency	100 Hz

Connection

Number of connections	1 Piece(s)

Connection 1

Function	Signal OUT
	Voltage supply
Type of connection	Cable
Cable length	2,000 mm
Sheathing material	PUR
Number of conductors	3 -wire
Wire cross section	0.14 mm²

Mechanical data

Design	Cubic
Dimension (W x H x L)	54 mm x 20.3 mm x 5.5 mm
Type of installation	Embedded/flush
Housing material	Plastic
Plastic housing	Polypropylene (PP)
Sensing face material	Plastic, Polypropylene (PP)
Cover material	Plastic
Net weight	40 g

Operation and display

Type of display	LED
Number of LEDs	2 Piece(s)
Operational controls	Multiturn potentiometer (11 turns)
Function of the operational control	Sensitivity adjustment
Switching distance, adjustable	Yes

Environmental data

Ambient temperature, operation	-25 ... 70 °C

Certifications

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

Correction factors

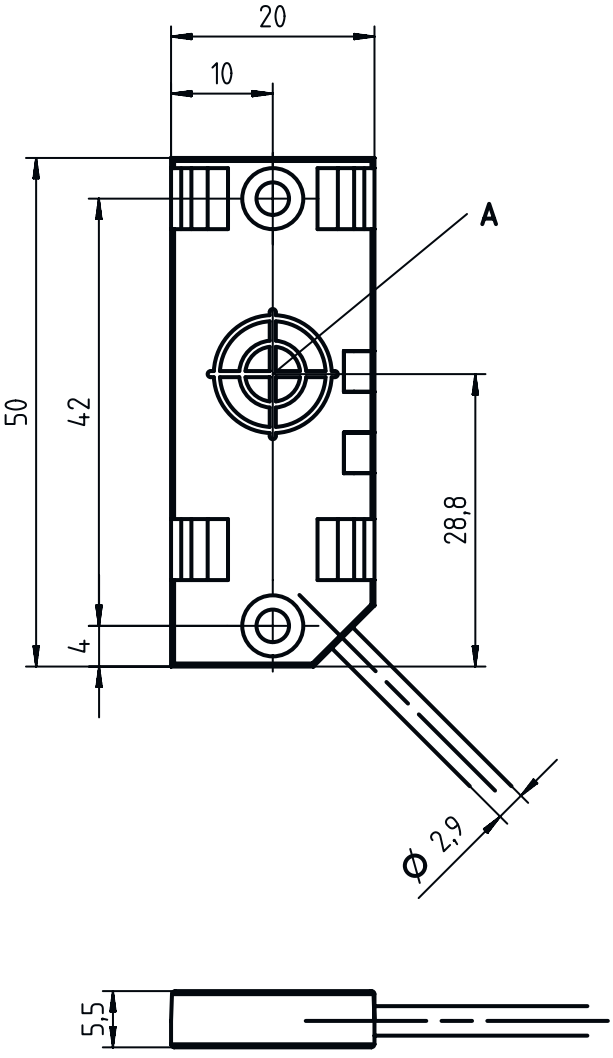
Acetone	0.75
Acrylic resin	0.1 ... 0.25
Alcohol	0.85
Ammonia	0.7 ... 0.85
Aniline	0.4
Gasoline	0.1
Celluloid	0.15
Liquid chlorine	0.1
Ebonite	0.15
Epoxy resin	0.15 ... 0.35
Crude oil	0.05
Ethanol	0.85
Ethylene glycol	0.93
Freon R22 and 502 (liquid)	0.35
Grain	0.15 ... 0.3
Glass	0.2 ... 0.55
Glycerin	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
ECLASS 14.0	27274201
ECLASS 15.0	27274201
ECLASS 16.0	27274201
ETIM 5.0	EC002715
ETIM 6.0	EC002715
ETIM 7.0	EC002715
ETIM 8.0	EC002715
ETIM 9.0	EC002715
ETIM 10.0	EC002715
UNSPSC 26.08	39122230

Dimensioned drawings

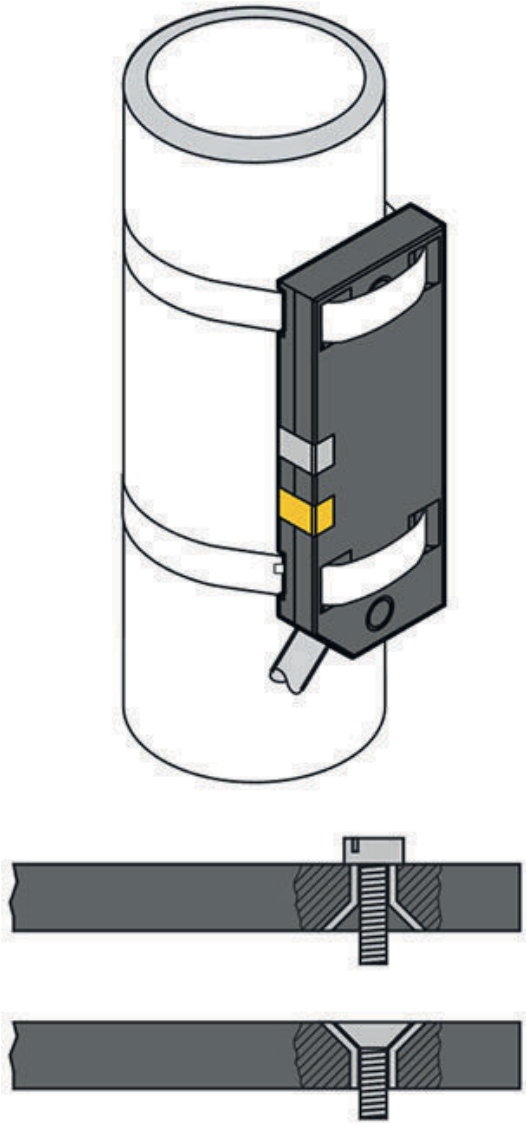
All dimensions in millimeters



A Active surface

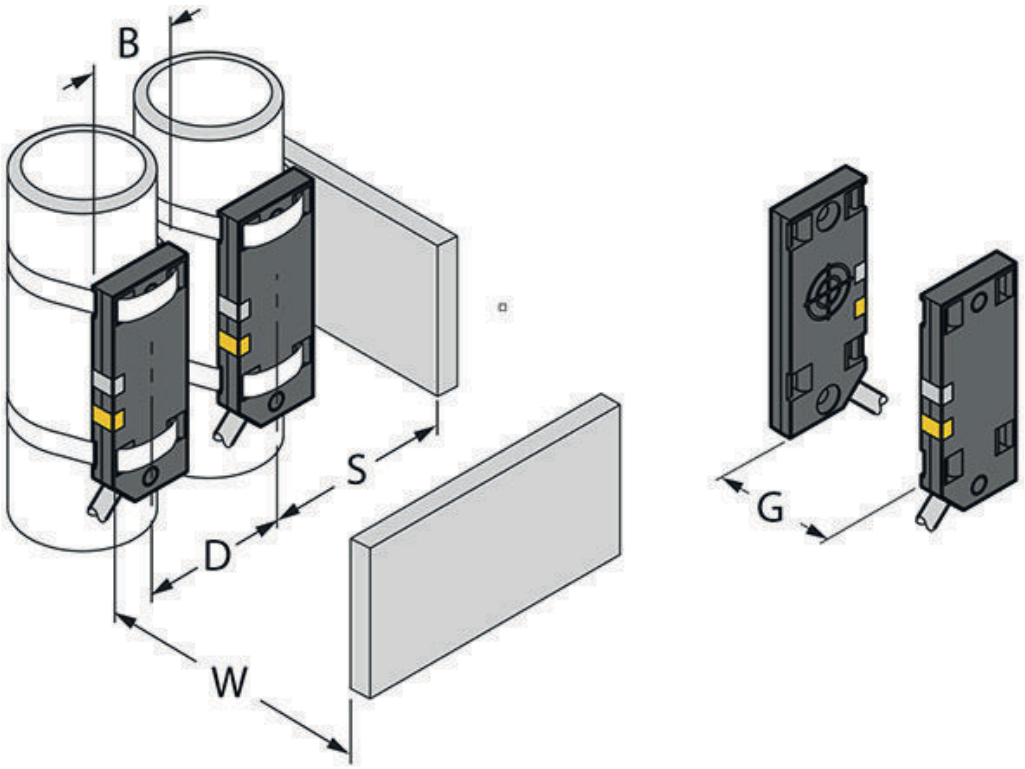
Dimensioned drawings

Mounting variants



Dimensioned drawings

Mounting distances



B	Ø 20 mm, diameter of the active surface	S	30 mm
D	40 mm	W	30 mm
G	60 mm		

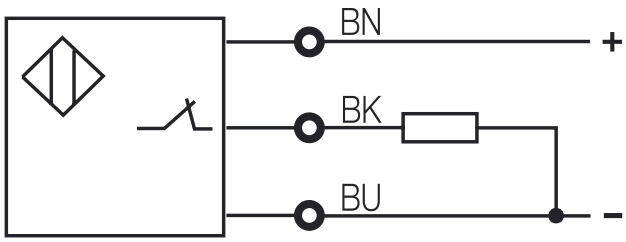
Electrical connection

Connection 1

Function	Signal OUT
	Voltage supply
Type of connection	Cable
Cable length	2,000 mm
Sheathing material	PUR
Number of conductors	3 -wire
Wire cross section	0.14 mm²

Conductor color	Conductor assignment
Brown	10 - 30 V DC
Black	OUT
Blue	GND

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**

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/flush installation F04: typ. range limit 4.0 mm / embedded/flush installation F05: typ. range limit 5.0 mm / embedded/flush installation F06: typ. range limit 6.0 mm / embedded/flush installation F08: typ. range limit 8.0 mm / embedded/flush installation F10: typ. range limit 10.0 mm / embedded/flush installation F15: typ. range limit 15.0 mm / embedded/flush installation F20: typ. range limit 20.0 mm / embedded/flush installation N06: typ. range limit 6.0 mm / non-embedded/non-flush installation N08: typ. range limit 8.0 mm / non-embedded/non-flush installation N10: Typ. range limit 10.0 mm / non-embedded/non-flush installation N15: typ. range limit 15.0 mm / non-embedded/non-flush installation N25: typ. range limit 25.0 mm / non-embedded/non-flush installation N30: typ. range limit 30.0 mm / non-embedded/non-flush 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

Part number code

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 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.

NOTE

- The specified minimum distances have been checked with a standard switching distance. If the sensitivity of the sensor is changed using a potentiometer, this data sheet information is no longer valid.