Product data sheet

LFP0500-B5CMC

LFP Cubic

LEVEL SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
LFP0500-B5CMC	1071111

2077391 included in delivery

Other models and accessories ➜ www.sick.com/LFP_Cubic

Detailed technical data

Features

Medium	Fluids
Measurement	Switch, Continuous
Design	Remote amplifier, length of cable 2 m
Probe type	Rod probe
Probe length	500 mm
Process pressure	–1 bar ... 10 bar
Process temperature	–20 °C ... +100 °C
RoHS certificate	✓
IO-Link	✓
cULus certificate	✓

Performance

Accuracy of sensor element	± 5 mm [1]
Reproducibility	≤ 2 mm
Resolution	< 2 mm
Response time	< 400 ms
Dielectricity constant	≥ 5 for rod probe / cable probe ≥ 1.8 with coaxial tube
Conductivity	No limitation
Maximum level change	≤ 500 mm/s
Deactivated area at process connection	25 mm [2]
Deactivated area at end of probe	≥ 10 mm [1]
MTTF	194.3 years (EN ISO 13849-1)
Display	✓

[1] With water under reference conditions.

[2] With parameterized container with water under reference conditions, otherwise 40 mm.

Electronics

Communication interface	IO-Link
Supply voltage	12 V DC ... 30 V DC [1]
Power consumption	≤ 100 mA at 24 V DC without output load
Initialization time	≤ 5 s
Protection class	III
Connection type	M12 round connector x 1, 8-pin
Length of cable	2 m
Output signal	1 x PNP + 3 x PNP/NPN + 4 mA ... 20 mA / 0 V ... 10 V
Output load	4 mA ... 20 mA < 500 Ohm at Uv > 15 V, 4 mA ... 20 mA < 350 Ohm at Uv > 12 V, 0 V ... 10 V > 750 Ohm at Uv 14 ≥ V
Hysteresis	Min. 2 mm, free adjustable
Output current	< 100 mA
Inductive load	< 1 H
Capacitive load	100 nF
Enclosure rating	IP67: EN 60529
Temperature drift	< 0.1 mm/K
Lower signal level	3.8 mA ... 4 mA
Upper signal level	20 mA ... 20.5 mA
EMC	EN 61326-2-3, 2014/30/EU

[1] All connections are polarity protected. All outputs are overload and short-circuit protected.

Mechanics

Wetted parts	1.4404, PTFE FKM
Process connection	¾" NPT
Housing material	Plastic PBT
Max. probe load	≤ 6 Nm
Material coaxial cable	PVC
Length coaxial cable	2 m

Ambient data

Ambient operating temperature	–20 °C ... +60 °C
Ambient temperature, storage	–40 °C ... +80 °C
Ambient temperature coaxial cable	–20 °C ... +60 °C

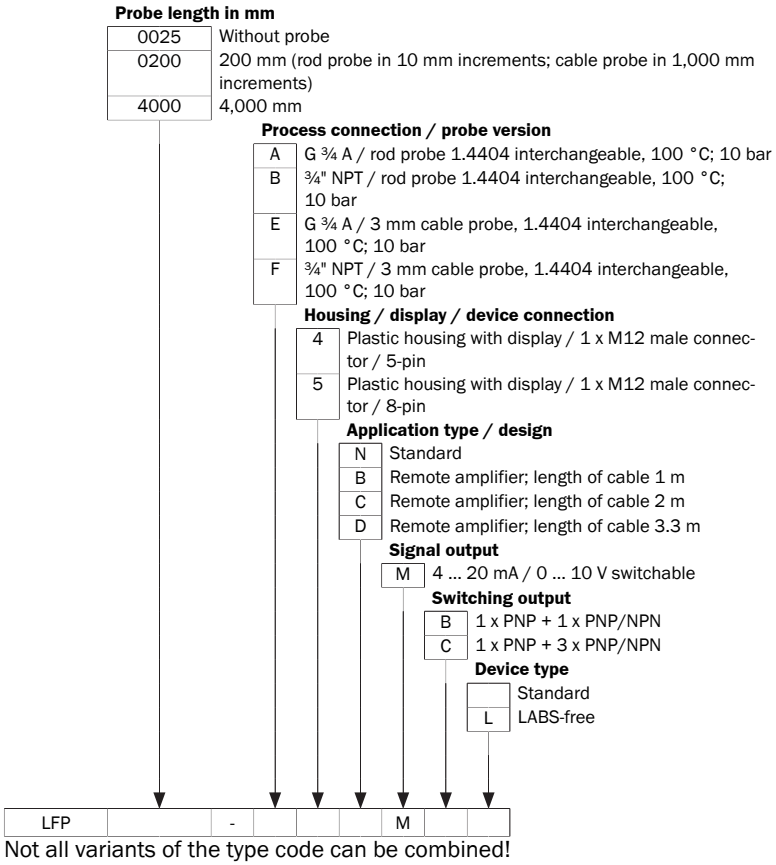
Classifications

ECLASS 5.0	27200513
ECLASS 5.1.4	27200513
ECLASS 6.0	27200513
ECLASS 6.2	27200513
ECLASS 7.0	27200513
ECLASS 8.0	27200513
ECLASS 8.1	27200513

ECLASS 9.0	27200513
ECLASS 10.0	27200513
ECLASS 11.0	27200513
ECLASS 12.0	27200513
ETIM 5.0	EC001447
ETIM 6.0	EC001447
ETIM 7.0	EC001447
ETIM 8.0	EC001447
UNSPSC 16.0901	41113710

Type code

Type code

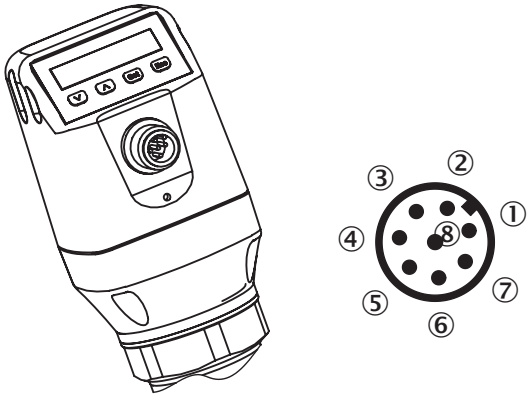


Not all variants of the type code can be combined!

Dependence between length of coaxial cable and probe length

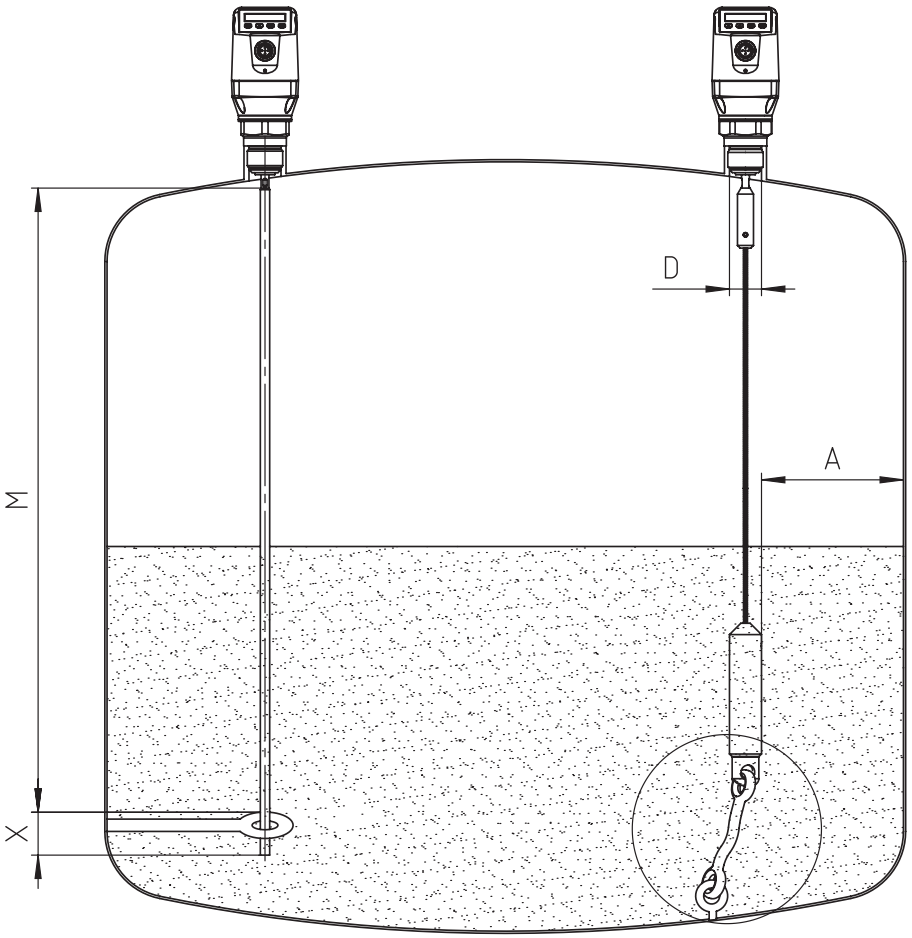
Length of coaxial cable (mm)	Max. probe length (mm) foam mode deactivated	Max. probe length (mm) foam mode active
1000	4,000	2000
2000	3,000	1500
3300	1,000	500

Connection type



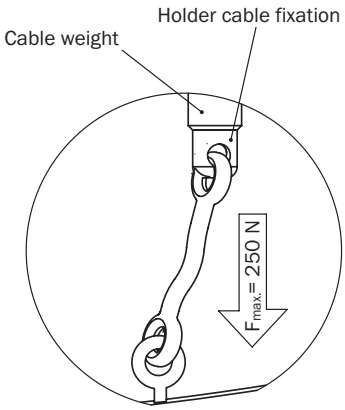
① L^+: Supply voltage
② Q_2: Switching output 2, PNP/NPN
③ M: Ground, reference ground for current-/voltage output
④ C/Q_1: Switching output 1, PNP/IO-Link-communication
⑤ Q_3: Switching output 3, PNP/NPN
⑥ Q_4: Switching output 4, PNP/NPN
⑦ Q_A: Analog current-/voltage output
⑧ No function

Instruction for installation

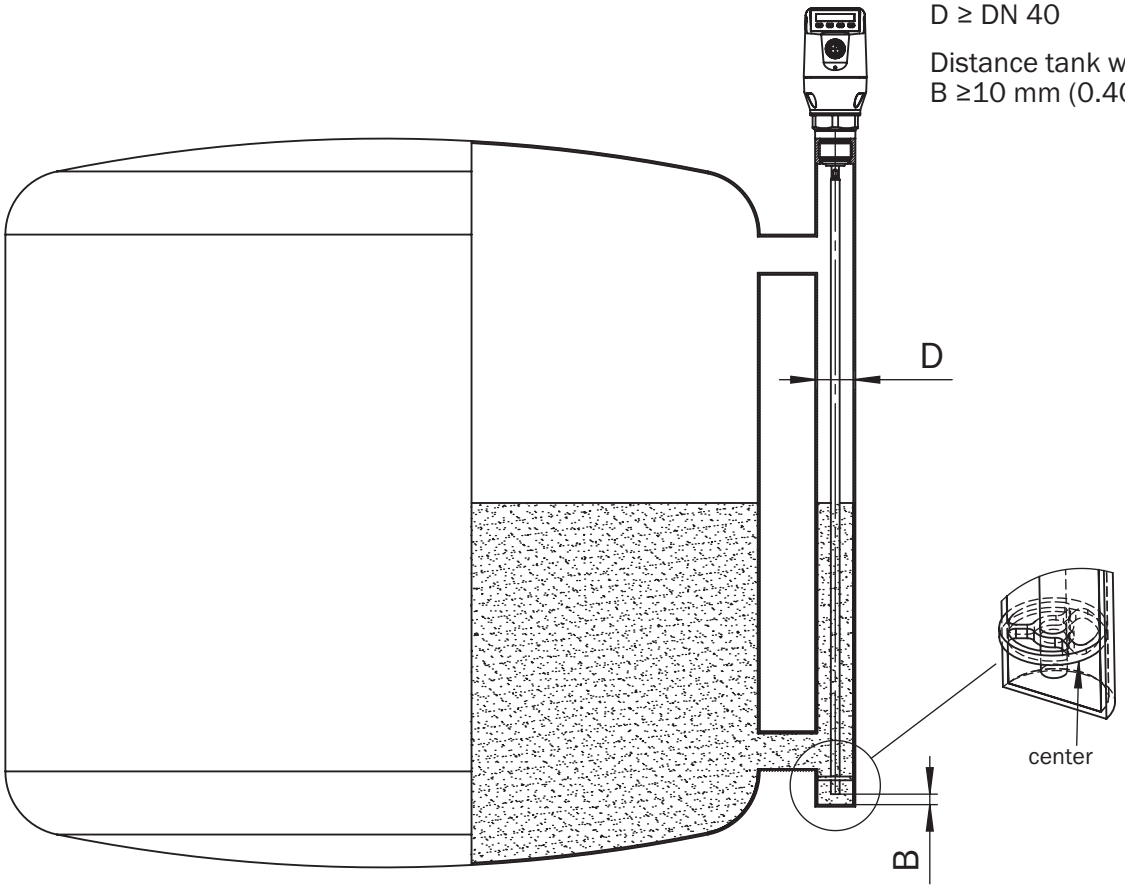


Mono rod probe mounted in metal tank
M = Measuring range
X = Inactive area at probe end
No measurement possible

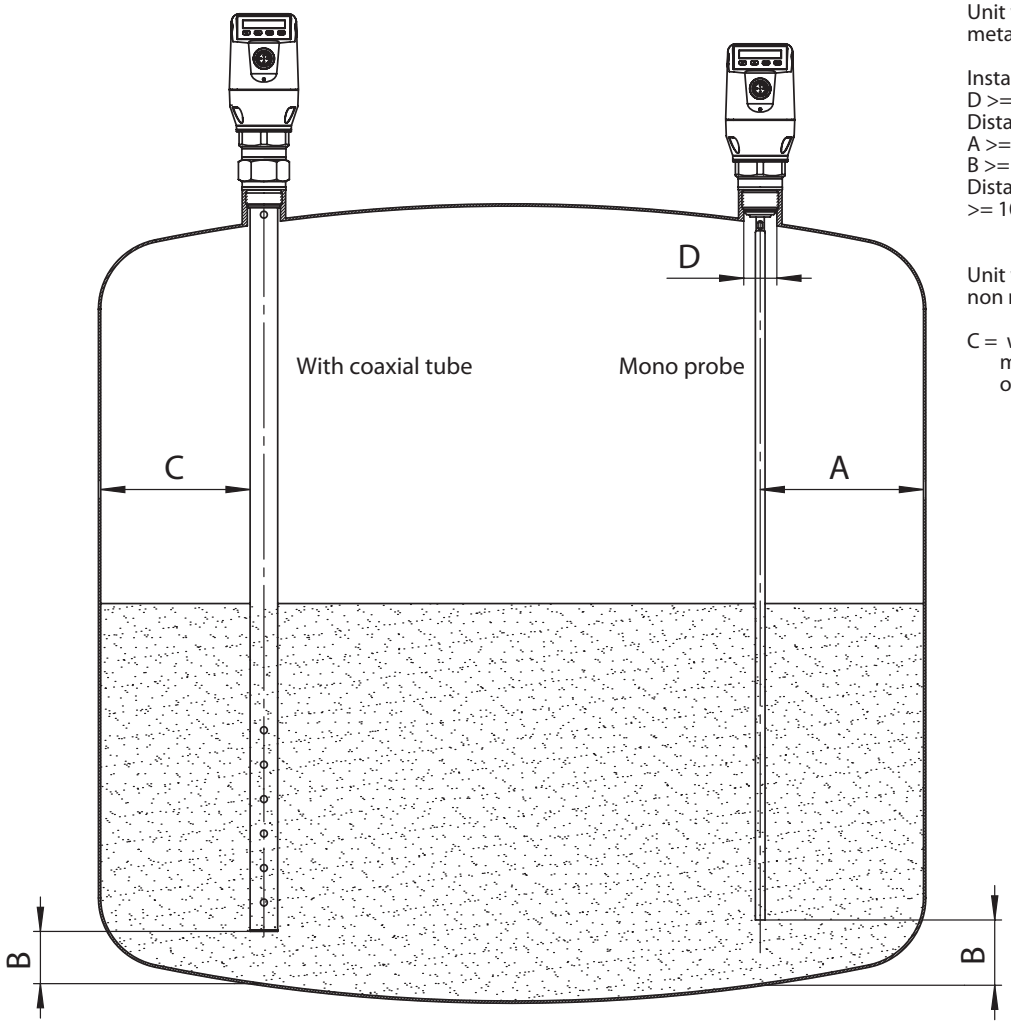
Rope probe mounted in metal tank
Installation in nozzle:
D ≥ DN 25 (1")
Distance tank wall/tank bottom:
A ≥ 50 mm (1.97")
Distance to other tank fittings:
≥ 100mm (3.94")



Installation in a metal immersion tube or metal bypass



Installation in a metal tank



Unit with mono probe mounted in metal tank

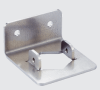
Installation in nozzle:
D >= DN 25 (1")
Distance tank wall/tank bottom:
A >= 50 mm (1.97")
B >= 10 mm (0.40")
Distance to other tank fittings >= 100mm (3.94")

Unit with coaxial tube for metal and non metal tank

C = with a coaxial tube there are no minimum distances to the tank wall or to other tank fittings required

Recommended accessories

Other models and accessories ➜ www.sick.com/LFP_Cubic

	Brief description	Type	Part no.
Spare parts			
	Spare probe for LFP Cubic, probe length 1000 mm, material 1.4404/316L, diameter 7 mm	BEF-ER-SN1000-LFPC	2065700
	Spare probe for LFP Cubic, probe length 2000 mm, material 1.4404/316L, diameter 7 mm	BEF-ER-SN2000-LFPC	2065701
	Spare coaxial cable for LFP Cubic separate amplifier, length 2 m	CBL-CX-002000-LFPC	2077793
Mounting brackets and plates			
	Mounting bracket, stainless steel 1.4301 (AISI 304), mounting hardware included	BEF-FL-304LFP-HLDR	2077391

	Brief description	Type	Part no.
Others			
	• **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A28-020VA6XLEAX	2096243
	• **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A28-050VA6XLEAX	2096244
	• **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 8-wire, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A18-020UA5XLEAX	2095652
	• **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 8-wire, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A18-050UA5XLEAX	2095653
	• **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 10 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A28-100VA6XLEAX	2096245
	• **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 10 m, 8-wire, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A18-100UA5XLEAX	2095654
	• **Connection type head A:** Female connector, M12, 8-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Zones with chemicals, Uncontaminated zones	YG2A28-020VA6XLEAX	2096218
	• **Connection type head A:** Female connector, M12, 8-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 8-wire, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YG2A18-020UA5XLEAX	2095779
	• **Connection type head A:** Female connector, M12, 8-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Zones with chemicals, Uncontaminated zones	YG2A28-050VA6XLEAX	2096219

	Brief description	Type	Part no.
	• **Connection type head A:** Female connector, M12, 8-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 8-wire, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YG2A18-050UA5XLEAX	2095780
	• **Connection type head A:** Female connector, M12, 8-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 10 m, 8-wire, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YG2A18-100UA5XLEAX	2095781
	• **Connection type head A:** Female connector, M12, 8-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 0.5 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Zones with chemicals, Uncontaminated zones	YG2A28-C50VA6XLEAX	2145694
	• **Connection type head A:** Female connector, M12, 8-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 3 m, 8-wire, PVC • **Description:** Sensor/actuator cable, shielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A28-030VA6XLEAX	2145695

Recommended services

Additional services ➜ www.sick.com/LFP_Cubic

	Type	Part no.
Function Block Factory		
• **Description:** The Function Block Factory is an engineering tool for creating device and environment-specific function blocks that enable IO-Link sensors to be integrated into programmable logic controllers. The Function Block Factory supports common programmable logic controllers (PLCs) of various manufacturers such as Siemens, Beckhoff, Rockwell Automation B&R and more. More information on the FBF can be found here . • **Provision:** Customers can obtain access to the Function Block Factory and the license via https://fbf.cloud.sick.com.	Function Block Factory	On request

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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