



LFP4000-F4BMB

LFP Cubic

TDR LEVEL SENSOR

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
LFP4000-F4BMB	1072023

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

Illustration may differ



Detailed technical data

Features

Medium	Fluids
Measurement	Switch, Continuous
Design	Remote amplifier, length of cable 1 m
Probe type	Cable probe
Probe length	4,000 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

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	Round connector M12 x 1, 5-pin
Length of cable	1 m
Output signal	1 x PNP + 1 x PNP/NPN + 4 mA ... 20 mA / 0 V ... 10 V
Output load	4 mA ... 20 mA < 500 Ohm at U _v > 15 V, 4 mA ... 20 mA < 350 Ohm at U _v > 12 V, 0 V ... 10 V > 750 Ohm at U _v 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	1 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

Dimensional drawing (Dimensions in mm (inch))



Connection type



- ① L⁺: Supply voltage, brown
- ② Q_A: Analog current-/voltage output, white
- ③ M: Ground, reference ground for current-/voltage output, blue
- ④ C/Q₁: Switching output 1, PNP/IO-Link-communication, black
- ⑤ Q₂: Switching output 2, PNP/NPN, grey

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:
 $D \geq \text{DN } 25 \text{ (1")}$
 Distance tank wall/tank bottom:
 $A \geq 50 \text{ mm (1.97")}$
 Distance to other tank fittings:
 $\geq 100 \text{ mm (3.94")}$



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 \geq DN 25 (1")

Distance tank wall/tank bottom:

A \geq 50 mm (1.97")

B \geq 10 mm (0.40")

Distance to other tank fittings


\geq 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 cable probe for LFP Cubic, length 2 m	BEF-ER-SS2000-LFPC	2078194
	Spare cable probe for LFP Cubic, length 4 m	BEF-ER-SS4000-LFPC	2078195
	Spare cable probe for LFP Cubic, length 6 m	BEF-ER-SS6000-LFPC	2082147
	Spare coaxial cable for LFP Cubic, separate amplifier, length 1 m	CBL-CX-001000-LFPC	2077792

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket, stainless steel 1.4301 (AISI 304), mounting hardware included	BEF-FL-304LFP-HLDR	2077391

Recommended services

Additional services → www.sick.com/LFP_Cubic

	Type	Part no.
Function Block Factory		
<ul style="list-style-type: none"> • Description: The Function Block Factory supports common programmable logic controllers (PLCs) from various manufacturers, such as Siemens, Beckhoff, Rockwell Automation and B&R. More information on the FBF can be found <a _blank"="" href="https://fbf.cloud.sick.com target=">here. • Note: You can configure your function block at <a _blank"="" href="https://fbf.cloud.sick.com target=">Function Block Factory. As a login please use your SICK ID. 	Function Block Factory	On request

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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.”

WORLDWIDE PRESENCE:

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