



# LFP0200-B4NMB

LFP Cubic



THORNE &  
**DERRICK**  
INTERNATIONAL

LEVEL SENSORS

Thorne & Derrick  
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[www.heatingandprocess.com](http://www.heatingandprocess.com)

**SICK**  
Sensor Intelligence.



Illustration may differ



IO-Link



### Ordering information

| Type          | Part no. |
|---------------|----------|
| LFP0200-B4NMB | 1057092  |

Other models and accessories → [www.sick.com/LFP\\_Cubic](http://www.sick.com/LFP_Cubic)

### Detailed technical data

#### Features

|                            |                    |
|----------------------------|--------------------|
| <b>Medium</b>              | Fluids             |
| <b>Measurement</b>         | Switch, Continuous |
| <b>Design</b>              | Standard           |
| <b>Probe type</b>          | Mono rod probe     |
| <b>Probe length</b>        | 200 mm             |
| <b>Process pressure</b>    | -1 bar ... 10 bar  |
| <b>Process temperature</b> | -20 °C ... +100 °C |
| <b>GOST approval</b>       | ✓                  |
| <b>RoHS certificate</b>    | ✓                  |
| <b>IO-Link</b>             | ✓                  |
| <b>CULus certificate</b>   | ✓                  |

#### Performance

|                                         |                                                                |
|-----------------------------------------|----------------------------------------------------------------|
| <b>Accuracy of sensor element</b>       | ± 5 mm <sup>1)</sup>                                           |
| <b>Repeatability</b>                    | ≤ 2 mm                                                         |
| <b>Resolution</b>                       | < 2 mm                                                         |
| <b>Response time</b>                    | < 400 ms                                                       |
| <b>Dielectricity constant</b>           | ≥ 5 for mono rod probe / rope probe<br>≥ 1.8 with coaxial tube |
| <b>Conductivity</b>                     | No limitation                                                  |
| <b>Maximum level change</b>             | ≤ 500 mm/s                                                     |
| <b>Deactivated area at end of probe</b> | 10 mm <sup>1)</sup>                                            |

<sup>1)</sup> With water under reference conditions.

|             |                              |
|-------------|------------------------------|
| <b>MTTF</b> | 194.3 years (EN ISO 13849-1) |
|-------------|------------------------------|

<sup>1)</sup> With water under reference conditions.

## Electronics

|                              |                                                                                                                                                         |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Supply voltage</b>        | 12 V DC ... 30 V DC <sup>1)</sup>                                                                                                                       |
| <b>Power consumption</b>     | ≤ 100 mA at 24 V DC without output load                                                                                                                 |
| <b>Initialization time</b>   | ≤ 5 s                                                                                                                                                   |
| <b>Protection class</b>      | III                                                                                                                                                     |
| <b>Electrical connection</b> | Round connector M12 x 1, 5-pin                                                                                                                          |
| <b>Output signal</b>         | 4 mA ... 20 mA, 0 V ... 10 V automatic switching depending on the load., 1 PNP transistor output (Q1) and 1 PNP / NPN transistor output (Q2) switchable |
| <b>Output load</b>           | 4 mA ... 20 mA < 500 Ohm at U <sub>v</sub> > 15 V, 4 mA ... 20 mA < 350 Ohm at U <sub>v</sub> > 12 V, 0 V ... 10 V > 750 Ohm at U <sub>v</sub> 14 ≥ V   |
| <b>Hysteresis</b>            | Min. 2 mm, free adjustable                                                                                                                              |
| <b>Signal voltage HIGH</b>   | V <sub>s</sub> - 2 V                                                                                                                                    |
| <b>Signal voltage LOW</b>    | ≤ 2 V                                                                                                                                                   |
| <b>Output current</b>        | < 100 mA                                                                                                                                                |
| <b>Inductive load</b>        | < 1 H                                                                                                                                                   |
| <b>Capacitive load</b>       | 100 nF                                                                                                                                                  |
| <b>Enclosure rating</b>      | IP 67: EN 60529                                                                                                                                         |
| <b>Temperature drift</b>     | < 0.1 mm/K                                                                                                                                              |
| <b>Lower signal level</b>    | 3.8 mA ... 4 mA                                                                                                                                         |
| <b>Upper signal level</b>    | 20 mA ... 20.5 mA                                                                                                                                       |
| <b>EMC</b>                   | EN 61326-2-3, 2014/30/EU                                                                                                                                |

<sup>1)</sup> All connections are polarity protected. All outputs are overload and short-circuit protected.

## Mechanics

|                           |              |
|---------------------------|--------------|
| <b>Wetted parts</b>       | 1.4404, PTFE |
| <b>Process connection</b> | ¾" NPT       |
| <b>Housing material</b>   | Plastic PBT  |
| <b>Max.probe load</b>     | ≤ 6 Nm       |

## Ambient data

|                                      |                   |
|--------------------------------------|-------------------|
| <b>Ambient operating temperature</b> | -20 °C ... +60 °C |
| <b>Ambient storage temperature</b>   | -40 °C ... +80 °C |

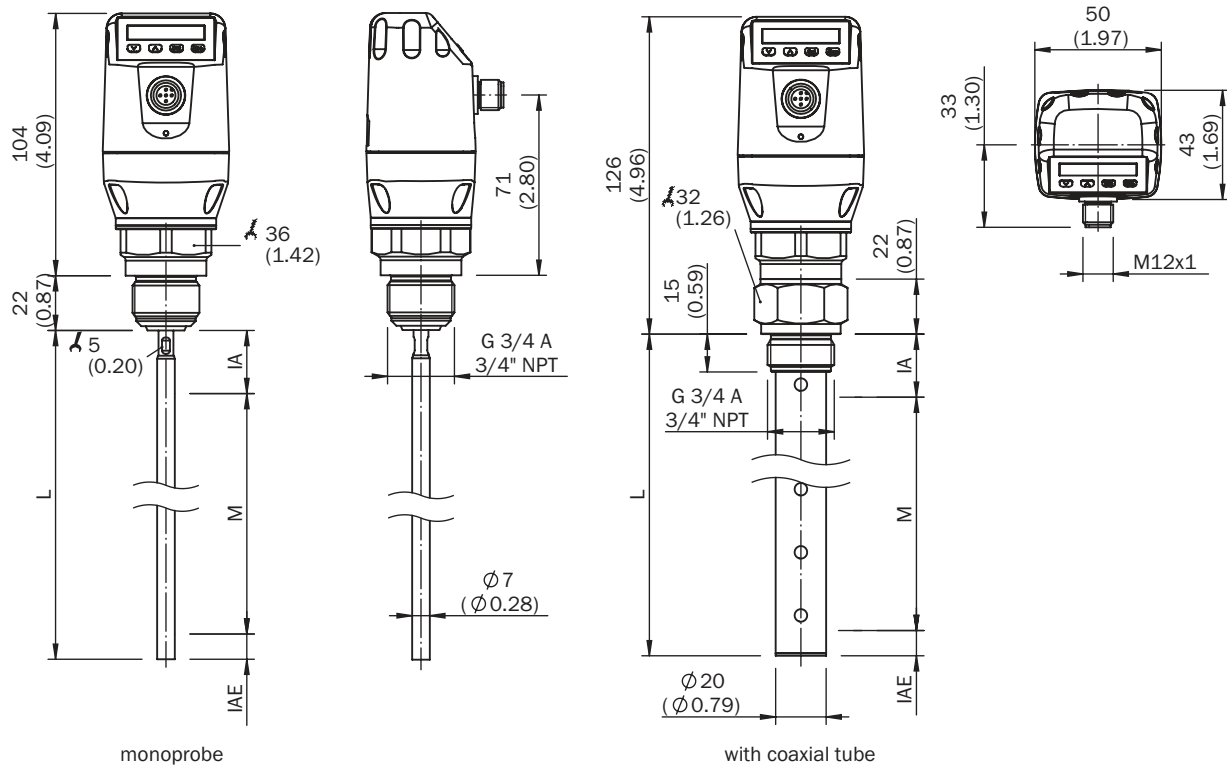
## Classifications

|                     |          |
|---------------------|----------|
| <b>ECI@ss 5.0</b>   | 27371813 |
| <b>ECI@ss 5.1.4</b> | 27371813 |
| <b>ECI@ss 6.0</b>   | 27371813 |
| <b>ECI@ss 6.2</b>   | 27371813 |
| <b>ECI@ss 7.0</b>   | 27371813 |
| <b>ECI@ss 8.0</b>   | 27371813 |
| <b>ECI@ss 8.1</b>   | 27371813 |
| <b>ECI@ss 9.0</b>   | 27371813 |

|                       |          |
|-----------------------|----------|
| <b>ETIM 5.0</b>       | EC001447 |
| <b>ETIM 6.0</b>       | EC001447 |
| <b>UNSPSC 16.0901</b> | 41113710 |

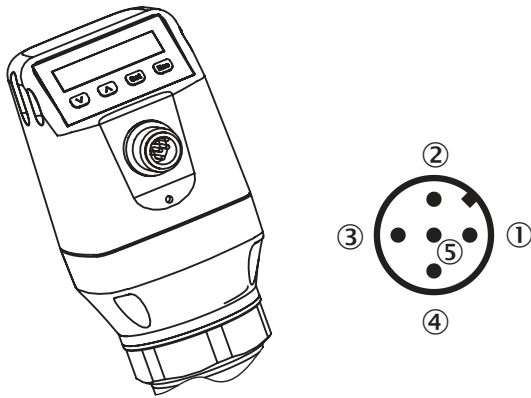
### Dimensional drawing (Dimensions in mm (inch))

Dimensional drawing: mono rod probe



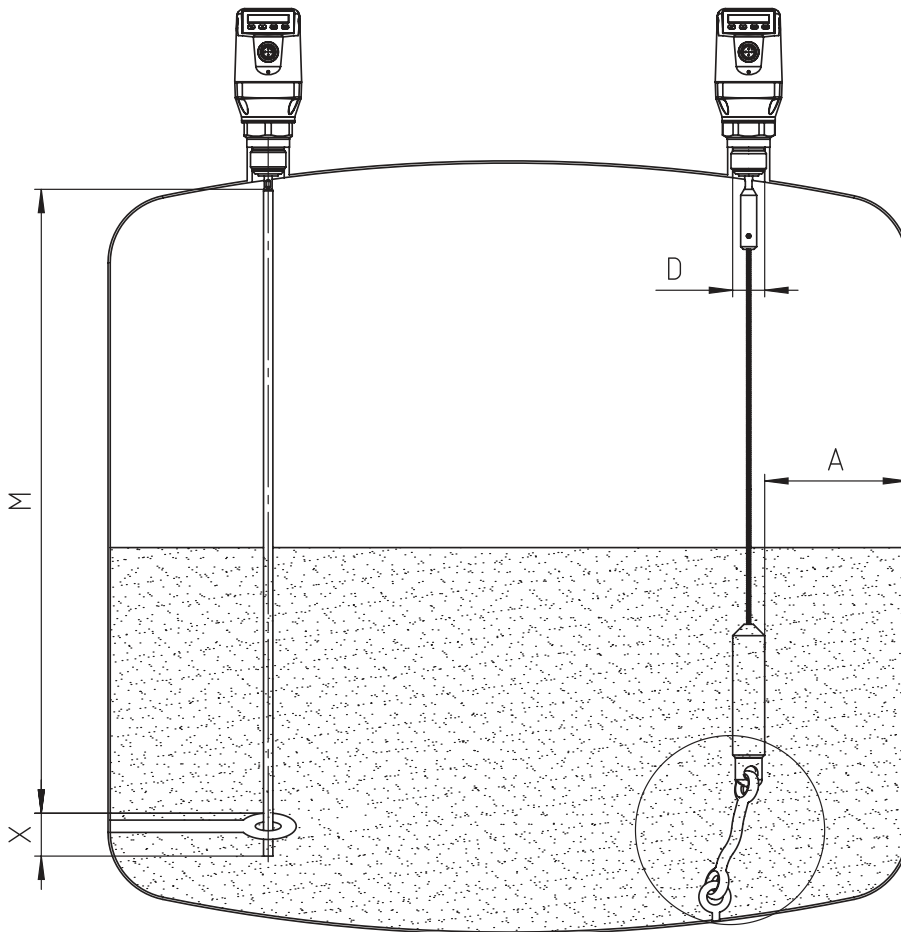
- ① M: measuring range
- ② L: Probe length
- ③ IA: Inactive area at process connection 25 mm (0.98")
- ④ IAE: Inactive area at probe end 10 mm (0.39")

## Connection type



- ① L<sup>+</sup>: Supply voltage, brown
- ② Q<sub>A</sub>: Analog current/voltage output, white
- ③ M: Ground, reference ground for current-/voltage output, blue
- ④ C/Q<sub>1</sub>: Switching output 1, PNP/IO-Link-communication, black
- ⑤ Q<sub>2</sub>: Switching output 2, PNP/NPN, grey

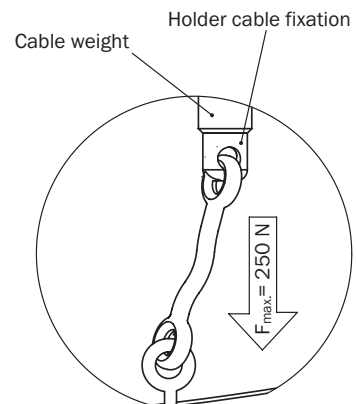
## Instruction for installation

**Mono rod probe mounted in metal tank**

M = Measuring range  
 X = Inactive area at probe end  
 No measurement possible

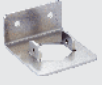
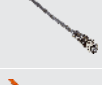
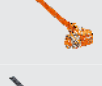
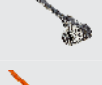
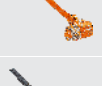
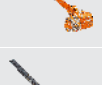
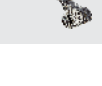
**Rope probe mounted in metal tank**

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



### Recommended accessories

Other models and accessories → [www.sick.com/LFP\\_Cubic](http://www.sick.com/LFP_Cubic)

|                                                                                     | Brief description                                                                                                             | Type               | Part no. |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Flanges                                                                             |                                                                                                                               |                    |          |
|    | Process connection adapter G 3/4 to G1                                                                                        | BEF-HA-G1BSP1-LFP1 | 2067603  |
|    | Weld-in flange G 3/4"                                                                                                         | BEF-FL-GEWG34-LFP1 | 2082150  |
| Mounting brackets and mounting plates                                               |                                                                                                                               |                    |          |
|    | Mounting bracket, mounting hardware included                                                                                  | BEF-FL-304LFP-HLDR | 2077391  |
| Plug connectors and cables                                                          |                                                                                                                               |                    |          |
|    | Head A: female connector, M12, 5-pin, straight<br>Head B: cable<br>Cable: PVC, unshielded, 2 m                                | DOL-1205-G02M      | 6008899  |
|    | Head A: female connector, M12, 5-pin, straight<br>Head B: cable<br>Cable: drag chain use, PUR, halogen-free, unshielded, 2 m  | DOL-1205-G02MC     | 6025906  |
|   | Head A: female connector, M12, 5-pin, straight<br>Head B: cable<br>Cable: PVC, unshielded, 5 m                                | DOL-1205-G05M      | 6009868  |
|  | Head A: female connector, M12, 5-pin, straight<br>Head B: cable<br>Cable: drag chain use, PUR, halogen-free, unshielded, 5 m  | DOL-1205-G05MC     | 6025907  |
|  | Head A: female connector, M12, 5-pin, straight<br>Head B: cable<br>Cable: PVC, unshielded, 10 m                               | DOL-1205-G10M      | 6010544  |
|  | Head A: female connector, M12, 5-pin, straight<br>Head B: cable<br>Cable: drag chain use, PUR, halogen-free, unshielded, 10 m | DOL-1205-G10MC     | 6025908  |
|  | Head A: female connector, M12, 5-pin, angled<br>Head B: cable<br>Cable: PVC, unshielded, 2 m                                  | DOL-1205-W02M      | 6008900  |
|  | Head A: female connector, M12, 5-pin, angled<br>Head B: cable<br>Cable: drag chain use, PUR, halogen-free, unshielded, 2 m    | DOL-1205-W02MC     | 6025909  |
|  | Head A: female connector, M12, 5-pin, angled<br>Head B: cable<br>Cable: PVC, unshielded, 5 m                                  | DOL-1205-W05M      | 6009869  |
|  | Head A: female connector, M12, 5-pin, angled<br>Head B: cable<br>Cable: drag chain use, PUR, halogen-free, unshielded, 5 m    | DOL-1205-W05MC     | 6025910  |
|  | Head A: female connector, M12, 5-pin, angled<br>Head B: cable<br>Cable: PVC, unshielded, 10 m                                 | DOL-1205-W10M      | 6010542  |
|  | Head A: female connector, M12, 5-pin, angled<br>Head B: cable<br>Cable: drag chain use, PUR, halogen-free, unshielded, 10 m   | DOL-1205-W10MC     | 6025911  |

|                                                                                   | 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  |

## SICK AT A GLANCE

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