



# LFP0500-B4CMB

LFP Cubic

LEVEL SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

| Type          | part no. |
|---------------|----------|
| LFP0500-B4CMB | 1071101  |

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

Illustration may differ



## Detailed technical data

## Features

|                            |                    |
|----------------------------|--------------------|
| <b>Medium</b>              | Fluids             |
| <b>Measurement</b>         | Switch, Continuous |
| <b>Design</b>              | Remote amplifier   |
| <b>Probe type</b>          | Rod probe          |
| <b>Probe length</b>        | 500 mm             |
| <b>Process pressure</b>    | -1 bar ... 10 bar  |
| <b>Process temperature</b> | -20 °C ... +100 °C |

## Performance

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

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

<sup>2)</sup> With parameterized container with water under reference conditions, otherwise 40 mm.

## Electronics

|                                |                                                                                                 |
|--------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Communication interface</b> | IO-Link                                                                                         |
| <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>Connection type</b>         | Round connector M12 x 1, 5-pin                                                                  |
| <b>Length of cable</b>         | 2 m                                                                                             |
| <b>Output signal</b>           | 1 x PNP + 1 x PNP/NPN + 4 mA ... 20 mA / 0 V ... 10 V                                           |
| <b>Output load</b>             | 4 mA ... 20 mA < 350 Ohm at U <sub>v</sub> > 12 V, 0 V ... 10 V > 750 Ohm at U <sub>v</sub> ≥ V |
| <b>Hysteresis</b>              | ≥ 2 mm <sup>2)</sup>                                                                            |
| <b>Output current</b>          | < 100 mA                                                                                        |
| <b>Inductive load</b>          | < 1 H                                                                                           |
| <b>Capacitive load</b>         | 100 nF                                                                                          |
| <b>Enclosure rating</b>        | IP67 (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                                                                               |

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

<sup>2)</sup> Freely adjustable.

## Mechanics

|                               |                                              |
|-------------------------------|----------------------------------------------|
| <b>Wetted parts</b>           | Stainless steel 1.4404 / 316L<br>PTFE<br>FKM |
| <b>Process connection</b>     | ¾" NPT                                       |
| <b>Housing material</b>       | Plastic PBT                                  |
| <b>Max. probe load</b>        | ≤ 6 Nm                                       |
| <b>Material coaxial cable</b> | PVC                                          |

## Ambient data

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

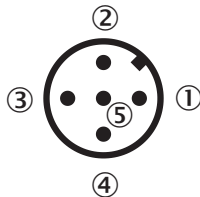
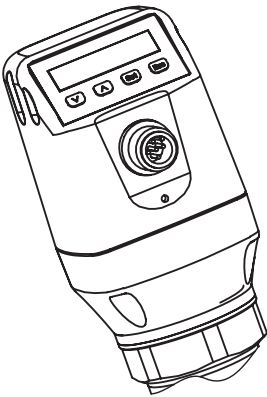
## Certificates

|                                                                              |   |
|------------------------------------------------------------------------------|---|
| <b>EU declaration of conformity</b>                                          | ✓ |
| <b>UK declaration of conformity</b>                                          | ✓ |
| <b>ACMA declaration of conformity</b>                                        | ✓ |
| <b>Moroccan declaration of conformity</b>                                    | ✓ |
| <b>China RoHS</b>                                                            | ✓ |
| <b>cULus certificate</b>                                                     | ✓ |
| <b>IO-Link</b>                                                               | ✓ |
| <b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</b> | ✓ |

Classifications

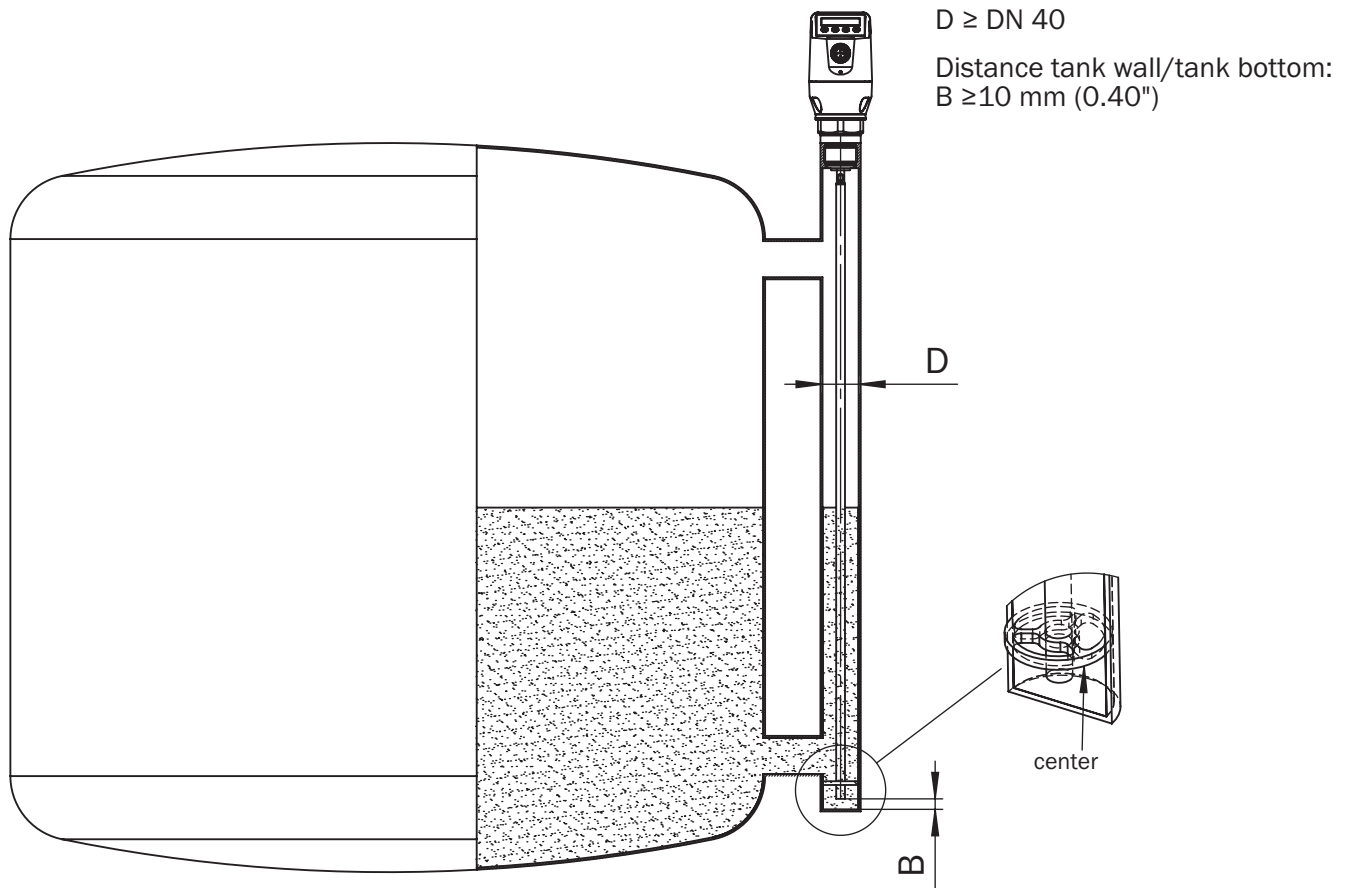
|                       |          |
|-----------------------|----------|
| <b>ECLASS 5.0</b>     | 27200513 |
| <b>ECLASS 5.1.4</b>   | 27200513 |
| <b>ECLASS 6.0</b>     | 27200513 |
| <b>ECLASS 6.2</b>     | 27200513 |
| <b>ECLASS 7.0</b>     | 27200513 |
| <b>ECLASS 8.0</b>     | 27200513 |
| <b>ECLASS 8.1</b>     | 27200513 |
| <b>ECLASS 9.0</b>     | 27200513 |
| <b>ECLASS 10.0</b>    | 27200513 |
| <b>ECLASS 11.0</b>    | 27200513 |
| <b>ECLASS 12.0</b>    | 27200513 |
| <b>ETIM 5.0</b>       | EC001447 |
| <b>ETIM 6.0</b>       | EC001447 |
| <b>ETIM 7.0</b>       | EC001447 |
| <b>ETIM 8.0</b>       | EC001447 |
| <b>UNSPSC 16.0901</b> | 41113710 |

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 Installation in a metal immersion tube or metal bypass



### Instruction for installation Installation in a metal tank



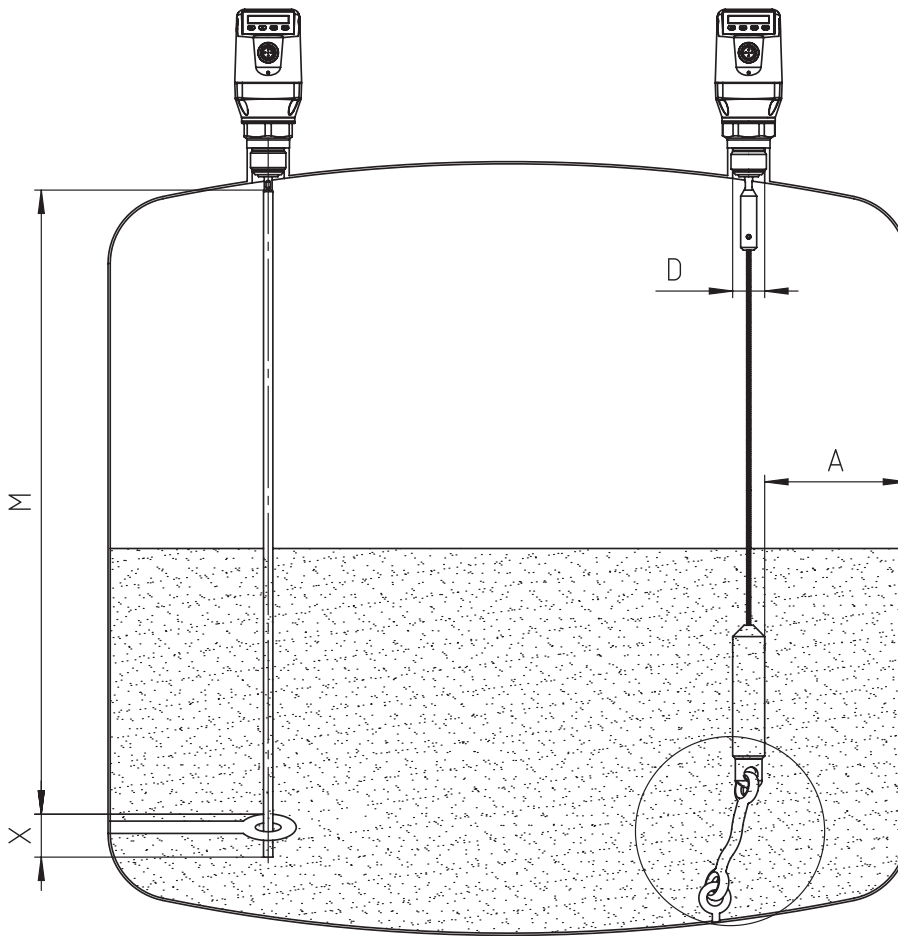
Unit with mono probe mounted in metal tank

Installation in nozzle:  
 $D \geq DN 25 (1")$   
 Distance tank wall/tank bottom:  
 $A \geq 50 \text{ mm } (1.97")$   
 $B \geq 10 \text{ mm } (0.40")$   
 Distance to other tank fittings  
 $\geq 100 \text{ mm } (3.94")$

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

## 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:

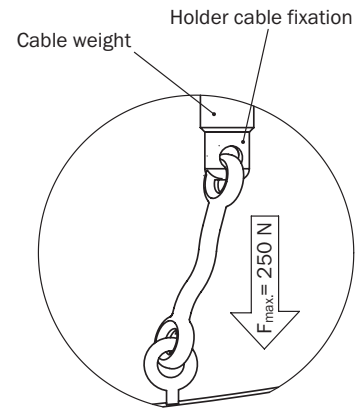
D ≥ DN 25 (1")

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. |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Mounting systems |                                                                                                                                                                                                                                                        |                    |          |
|                  | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel 1.4301 (AISI 304)</li> <li><b>Items supplied:</b> Mounting hardware included</li> </ul> | BEF-FL-304LFP-HLDR | 2077391  |
|                  | <ul style="list-style-type: none"> <li><b>Description:</b> Spare probe for LFP Cubic, probe length 1000 mm, material 1.4404/316L, diameter 7 mm</li> </ul>                                                                                             | BEF-ER-SN1000-LFPC | 2065700  |
|                  | <ul style="list-style-type: none"> <li><b>Description:</b> Spare probe for LFP Cubic, probe length 2000 mm, material 1.4404/316L, diameter 7 mm</li> </ul>                                                                                             | BEF-ER-SN2000-LFPC | 2065701  |

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Type               | part no. |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |          |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                         | YG2A15-020VB5XLEAX | 2096215  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                         | YG2A15-050VB5XLEAX | 2096216  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                        | YG2A15-100VB5XLEAX | 2096217  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>  | YF2A15-020UB5XLEAX | 2095617  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>  | YF2A15-050UB5XLEAX | 2095618  |
|   | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF2A15-100UB5XLEAX | 2095619  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>    | YG2A15-020UB5XLEAX | 2095772  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>    | YG2A15-050UB5XLEAX | 2095773  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>   | YG2A15-100UB5XLEAX | 2095774  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                       | YF2A15-020VB5XLEAX | 2096239  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> </ul>                                                                                                                               | YF2A15-050VB5XLEAX | 2096240  |

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Type               | part no. |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
|    | <ul style="list-style-type: none"> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul> | YF2A15-100VB5XLEAX | 2096241  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                     | YG2A15-C60UB5XLEAX | 2145540  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 3 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                       | YG2A15-030UB5XLEAX | 2145543  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 1 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                       | YG2A15-010UB5XLEAX | 2145541  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                                          | YG2A15-C60VB5XLEAX | 2145573  |
|   | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 1 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                                            | YG2A15-010VB5XLEAX | 2145574  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 3 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                                            | YG2A15-030VB5XLEAX | 2145575  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                                        | YF2A15-C60VB5XLEAX | 2145570  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 3 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                                          | YF2A15-030VB5XLEAX | 2145572  |
|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CBL-CX-002000-LFPC | 2077793  |

## 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.”**

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)