



# MZ2Q-CSSPSKQ0

MZ2Q-C

CYLINDER SENSORS

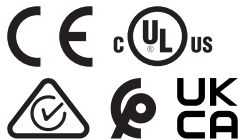
**SICK**  
Sensor Intelligence.



### Ordering information

| Type          | part no. |
|---------------|----------|
| MZ2Q-CSSPSKQ0 | 1042240  |

Other models and accessories → [www.sick.com/MZ2Q-C](http://www.sick.com/MZ2Q-C)



### Detailed technical data

#### Features

|                                    |                                      |
|------------------------------------|--------------------------------------|
| <b>Cylinder type</b>               | C-slot                               |
| <b>Preferred manufacturer slot</b> | SMC<br>Bimba<br>Schunk               |
| <b>Detection zone</b>              | 0 mm ... 50 mm                       |
| <b>Cylinder types with adapter</b> | SMC rail ECDQ2<br>SMC rail CDQ2      |
| <b>Housing length</b>              | 19.5 mm                              |
| <b>Switching output</b>            | 2 x PNP                              |
| <b>Output function</b>             | 2 x N/O contact                      |
| <b>Electrical wiring</b>           | DC 4-wire                            |
| <b>Enclosure rating</b>            | IP67 <sup>1)</sup>                   |
| <b>Adjustment</b>                  |                                      |
| Teach-in control panel             | Teaching in switching points 1 and 2 |

<sup>1)</sup> According to EN 60529.

#### Mechanics/electronics

|                                         |                          |
|-----------------------------------------|--------------------------|
| <b>Detection zone</b>                   | 0 mm ... 50 mm           |
| <b>Supply voltage</b>                   | 12 V DC ... 30 V DC      |
| <b>Power consumption</b>                | Typ. 20 mA, without load |
| <b>Voltage drop</b>                     | ≤ 2.2 V                  |
| <b>Continuous current I<sub>a</sub></b> | ≤ 100 mA                 |
| <b>Protection class</b>                 | III                      |
| <b>Hysteresis, typ.</b>                 | 1 mT                     |
| <b>Reproducibility</b>                  | ≤ 0.1 mT <sup>1)</sup>   |

<sup>1)</sup> Supply voltage U<sub>B</sub> and constant ambient temperature T<sub>a</sub>.

|                                                 |                                                                                        |
|-------------------------------------------------|----------------------------------------------------------------------------------------|
| <b>Reverse polarity protection</b>              | Yes                                                                                    |
| <b>Short-circuit protection</b>                 | Yes                                                                                    |
| <b>Status indicator LED</b>                     | Yes                                                                                    |
| <b>Teach-In</b>                                 | Yes                                                                                    |
| <b>Power-up pulse protection</b>                | Yes                                                                                    |
| <b>Ambient operating temperature</b>            | -20 °C ... +75 °C                                                                      |
| <b>Shock and vibration resistance</b>           | 30 g, 11 ms / 10 ... 55 Hz, 1 mm                                                       |
| <b>EMC</b>                                      | According to EN 60947-5-2                                                              |
| <b>Connection type</b>                          | Cable with connector M12, 4-pin, with knurled nut, 0.3 m                               |
| <b>Connection type Detail</b>                   |                                                                                        |
| Conductor cross section                         | 0.08 mm <sup>2</sup>                                                                   |
| Cable diameter                                  | Ø 2.6 mm                                                                               |
| Bending radius                                  | With fixed installation > 5 x cable diameter<br>For flexible use > 10 x cable diameter |
| Cable outlet                                    | Axial                                                                                  |
| <b>Control elements connection cable</b>        |                                                                                        |
| Connection type                                 | Cable, 4-wire, 0.1 m                                                                   |
| <b>Control elements connection cable detail</b> |                                                                                        |
| Conductor size                                  | 0.08 mm <sup>2</sup>                                                                   |
| Cable diameter                                  | Ø 2.3 mm                                                                               |
| Bending radius                                  | With fixed installation > 5 x cable diameter<br>For flexible use > 10 x cable diameter |
| Cable outlet                                    | Axial                                                                                  |
| <b>Material</b>                                 |                                                                                        |
| Housing                                         | Plastic                                                                                |
| Cable                                           | PUR                                                                                    |
| <b>UL File No.</b>                              | NRKH.E181493 & NRKH7.E181493                                                           |

<sup>1)</sup> Supply voltage  $U_B$  and constant ambient temperature  $T_a$ .

## Safety-related parameters

|                                     |           |
|-------------------------------------|-----------|
| <b>MTTF<sub>D</sub></b>             | 799 years |
| <b>DC<sub>avg</sub></b>             | 0%        |
| <b>T<sub>M</sub> (mission time)</b> | 20 years  |

## Certificates

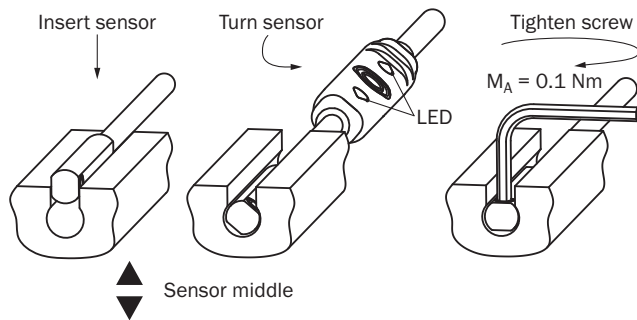
|                                           |   |
|-------------------------------------------|---|
| <b>EU declaration of conformity</b>       | ✓ |
| <b>UK declaration of conformity</b>       | ✓ |
| <b>ACMA declaration of conformity</b>     | ✓ |
| <b>Moroccan declaration of conformity</b> | ✓ |
| <b>China-RoHS</b>                         | ✓ |
| <b>cULus certificate</b>                  | ✓ |

## Classifications

|                   |          |
|-------------------|----------|
| <b>ECLASS 5.0</b> | 27270104 |
|-------------------|----------|

|                       |          |
|-----------------------|----------|
| <b>ECLASS 5.1.4</b>   | 27270104 |
| <b>ECLASS 6.0</b>     | 27270104 |
| <b>ECLASS 6.2</b>     | 27270104 |
| <b>ECLASS 7.0</b>     | 27270104 |
| <b>ECLASS 8.0</b>     | 27270104 |
| <b>ECLASS 8.1</b>     | 27270104 |
| <b>ECLASS 9.0</b>     | 27270104 |
| <b>ECLASS 10.0</b>    | 27270104 |
| <b>ECLASS 11.0</b>    | 27270104 |
| <b>ECLASS 12.0</b>    | 27274301 |
| <b>ETIM 5.0</b>       | EC002544 |
| <b>ETIM 6.0</b>       | EC002544 |
| <b>ETIM 7.0</b>       | EC002544 |
| <b>ETIM 8.0</b>       | EC002544 |
| <b>UNSPSC 16.0901</b> | 39122230 |

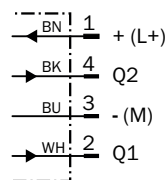
### Installation note



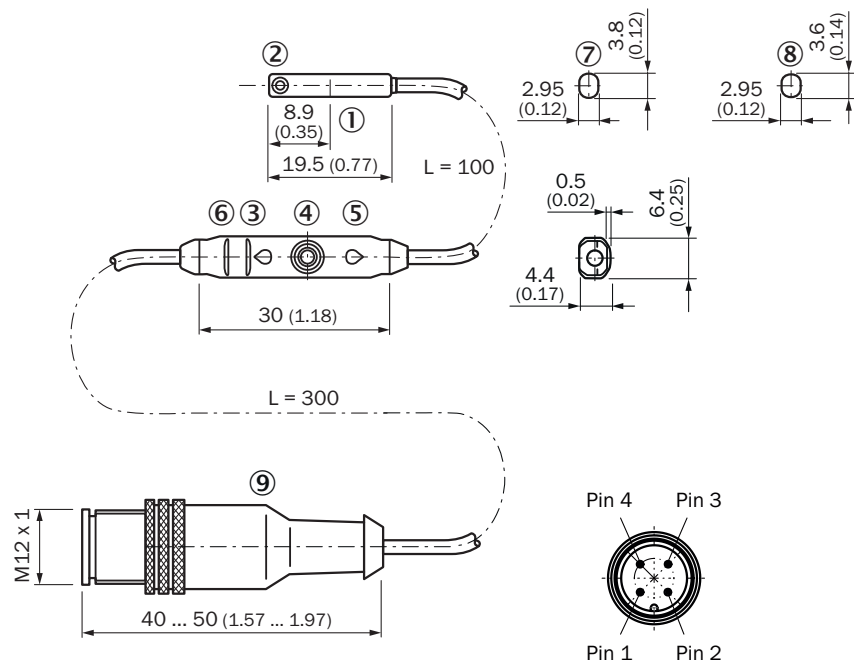
### Connection type



## Connection diagram Cd-032



## Dimensional drawing Cable with M12 male connector



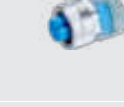
Dimensions in mm (inch)

- ① Center of sensor element
- ② Fixing screw SW 1.3
- ③ Display LED
- ④ Teach-in button
- ⑤ Display LED
- ⑥ ribbing for cable ties
- ⑦ For SMC/ Bimba cylinder (MZ2Q-CSxxxx)
- ⑧ For festo cylinder (MZ2Q-CFxxxx)
- ⑨ Connection

### Recommended accessories

Other models and accessories → [www.sick.com/MZ2Q-C](http://www.sick.com/MZ2Q-C)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                 | Type            | part no. |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------|
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                                                                   |                 |          |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 1 mm ... 130 mm, ambient temperature min -30 °C max 80 °C</li> <li><b>Material:</b> Stainless steel, Aluminum</li> <li><b>Details:</b> Stainless steel, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul> | BEF-KHZ-RC1-130 | 2077686  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 12 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>                             | BEF-KHZ-RC-12   | 2077673  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 1 mm ... 25 mm, ambient temperature min -30 °C max 80 °C</li> <li><b>Material:</b> Stainless steel, Aluminum</li> <li><b>Details:</b> Stainless steel, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>  | BEF-KHZ-RC1-25  | 2077685  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 16 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>                             | BEF-KHZ-RC-16   | 2077672  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 20 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>                             | BEF-KHZ-RC-20   | 2077671  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 25 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>                             | BEF-KHZ-RC-25   | 2077670  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 32 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>                             | BEF-KHZ-RC-32   | 2077669  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 40 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>                             | BEF-KHZ-RC-40   | 2077668  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 50 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>                             | BEF-KHZ-RC-50   | 2077667  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 63 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>                             | BEF-KHZ-RC-63   | 2077666  |

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Type               | part no. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |          |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>                                                                                                                                                                          | DOS-1204-G         | 6007302  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>                                                                                                                                                                            | DOS-1204-W         | 6007303  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>                                                                                                                                                                            | STE-1204-G         | 6009932  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, angled, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>                                                                                                                                                                              | STE-1204-W         | 6022084  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                   | YF2A14-020VB3XLEAX | 2096234  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                   | YF2A14-050VB3XLEAX | 2096235  |
|   | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                     | YG2A14-020VB3XLEAX | 2095895  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                     | YG2A14-050VB3XLEAX | 2095897  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Note:</b> Only suitable for PNP sensors</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul> | YI2A14-020VB3XLEAX | 2096222  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Note:</b> Only suitable for PNP sensors</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul> | YI2A14-050VB3XLEAX | 2096223  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                   | YG2A14-C60VB3XLEAX | 2145709  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> </ul>                                                                                                                             | YG2A14-010VB3XLEAX | 2145710  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Type               | part no. |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
|  | <ul style="list-style-type: none"> <li>• <b>Application:</b> Zones with chemicals, Untaminated zones</li> <li>• <b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Note:</b> Only suitable for PNP sensors</li> <li>• <b>Application:</b> Zones with chemicals, Untaminated zones</li> </ul> | YI2A14-C60VB3XLEAX | 2145719  |
|                                                                                   | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Note:</b> Only suitable for PNP sensors</li> <li>• <b>Application:</b> Zones with chemicals, Untaminated zones</li> </ul>                                                                          | YI2A14-010VB3XLEAX | 2145720  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Note:</b> Only suitable for PNP sensors</li> <li>• <b>Application:</b> Zones with chemicals, Untaminated zones</li> </ul>                                                                          | YI2A14-030VB3XLEAX | 2145721  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Untaminated zones</li> </ul>                                                                                                                            | YF2A14-C60VB3XLEAX | 2145707  |
|                                                                                   | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-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> 1 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Untaminated zones</li> </ul>                                                                                                                              | YF2A14-010VB3XLEAX | 2145708  |



## 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)