



C4P-EA16511D00

deTec

SAFETY LIGHT CURTAINS

SICK
Sensor Intelligence.



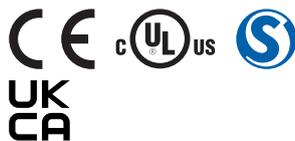
Illustration may differ

Ordering information

| Note | Resolution | Scanning range | Protective field height | System part | Type | Part no. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------------------|-------------|----------------|----------|
| The system plug has to be ordered separately. For details, see "Accessories". The system plug has to be ordered separately. For details, see "Accessories". | 14 mm | 20 m | 1,650 mm | Receiver | C4P-EA16511D00 | 1220118 |

The system plug has to be ordered separately. For details, see "Accessories".

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



Detailed technical data

Features

| | |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sub product family | deTec4 |
| Application | Normal industrial environment |
| System part | Receiver |
| Resolution | 14 mm |
| Scanning range | 20 m |
| Protective field height | 1,650 mm |
| Response time | 19 ms (Uncoded) 42 ms (code 1 or code 2) |
| Synchronization | Optical synchronisation |
| End cap with integrated LED | ✓ |
| Items supplied | Receiver Test rod with diameter corresponding to the resolution of the safety light curtain Safety instruction Mounting instructions Operating instructions for download |

Safety-related parameters

| | |
|---------------------------------------------------------------------------|--------------------------|
| Type | Type 4 (IEC 61496-1) |
| Safety integrity level | SIL 3 (IEC 61508) |
| Category | Category 4 (ISO 13849-1) |
| Performance level | PL e (ISO 13849-1) |
| PFH_p (mean probability of a dangerous failure per hour) | |

| | |
|-------------------------------------------|----------------------------------------|
| Single device | 15.3×10^{-9} |
| Cascade with one guest | 30.5×10^{-9} |
| Cascade with two guest devices | 45.6×10^{-9} |
| T_M (mission time) | 20 years (ISO 13849-1) |
| Safe state in the event of a fault | At least one OSSD is in the OFF state. |

Functions

| | |
|------------------------------------------------------------|---|
| Protective operation | ✓ |
| Automatic calibration of the protective field width | ✓ |
| Beam coding | ✓ |
| Restart interlock | ✓ |
| External device monitoring (EDM) | ✓ |
| Cascading | ✓ |
| Smart presence detection | ✓ |
| Reduced resolution | ✓ |
| Dynamic protective field width during operation | ✓ |
| Differentiation between person and material | |
| 2-signal muting | ✓ |
| Smart Box Detection | ✓ |

Interfaces

| | |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| System connection | Depending on system plug (M12 male connector, 5-pin or 8-pin) |
| Extension connection | Depending on system plug (without extension connection or with M12 female connector, 5-pin) |
| Configuration method | DIP switch on system plug |
| Display elements | LEDs |
| Display of the synchronization status of the upper and lower beams | ✓ |
| LEDs | ✓ |
| Application diagnostic output (ADO) | ✓ |
| IO-Link | ✓ |
| Near Field Communication (NFC) | ✓ |

Electrical data

| | |
|------------------------------------------------|--------------------------------------------------------------------------------------|
| Protection class | III (IEC 61140) |
| Supply voltage V_S | 24 V DC (19.2 V ... 28.8 V) |
| Ripple | ≤ 10 % |
| Power consumption typical | 4.92 W (DC) |
| Output signal switching devices (OSSDs) | |
| Type of output | 2 PNP semiconductors, short-circuit protected, cross-circuit monitored ¹⁾ |
| ON state, switching voltage HIGH | 24 V DC (V _S - 2.25 V DC ... V _S) |

¹⁾ Applies to the voltage range between -30 V and +30 V.

| | |
|--------------------------------------------|----------------------------------------------------------|
| OFF state, switching voltage LOW | ≤ 2 V DC |
| Current-carrying capacity per OSSD | ≤ 500 mA |
| Application diagnostic output (ADO) | |
| Type of output | PNP semiconductor, short-circuit protected ¹⁾ |
| Output voltage HIGH (active) | ≥ V _s - 3 V |
| Output voltage LOW (deactivated) | High resistance |
| Output current HIGH (active) | ≤ 100 mA |

¹⁾ Applies to the voltage range between -30 V and +30 V.

Mechanical data

| | |
|-------------------------|---------------------------|
| Dimensions | See dimensional drawing |
| Housing material | Aluminum extruded profile |

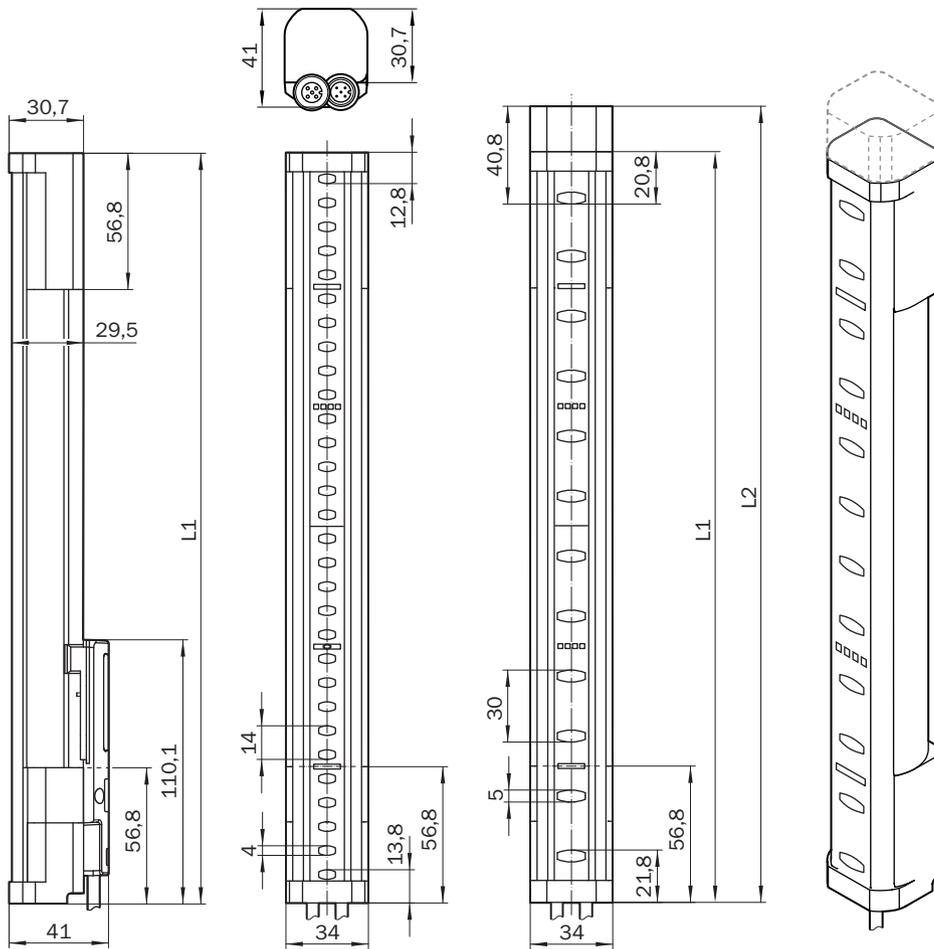
Ambient data

| | |
|--------------------------------------|--------------------------------------|
| Enclosure rating | IP65 (IEC 60529) IP67 (IEC 60529) |
| Ambient operating temperature | -30 °C ... +55 °C |
| Storage temperature | -30 °C ... +70 °C |
| Air humidity | 15 % ... 95 %, Non-condensing |
| Vibration resistance | 5 g, 10 Hz ... 55 Hz (IEC 60068-2-6) |
| Shock resistance | 10 g, 16 ms (IEC 60068-2-27) |

Classifications

| | |
|-----------------------|----------|
| ECLASS 5.0 | 27272704 |
| ECLASS 5.1.4 | 27272704 |
| ECLASS 6.0 | 27272704 |
| ECLASS 6.2 | 27272704 |
| ECLASS 7.0 | 27272704 |
| ECLASS 8.0 | 27272704 |
| ECLASS 8.1 | 27272704 |
| ECLASS 9.0 | 27272704 |
| ECLASS 10.0 | 27272704 |
| ECLASS 11.0 | 27272704 |
| ECLASS 12.0 | 27272704 |
| ETIM 5.0 | EC002549 |
| ETIM 6.0 | EC002549 |
| ETIM 7.0 | EC002549 |
| ETIM 8.0 | EC002549 |
| UNSPSC 16.0901 | 46171620 |

Dimensional drawing (Dimensions in mm (inch))



| Protective field height | L1 | L2 |
|-------------------------|---------------|---------------|
| 300 (11.81) | 313 (12.32) | 332 (13.07) |
| 450 (17.72) | 463 (18.23) | 482 (18.98) |
| 600 (23.62) | 613 (24.13) | 632 (24.88) |
| 750 (29.53) | 763 (30.04) | 782 (30.79) |
| 900 (35.43) | 913 (35.94) | 932 (36.69) |
| 1,050 (41.34) | 1,063 (41.85) | 1,082 (42.6) |
| 1,200 (47.24) | 1,213 (47.75) | 1,232 (48.5) |
| 1,350 (53.15) | 1,362 (53.62) | 1,381 (54.37) |
| 1,500 (59.06) | 1,512 (59.53) | 1,531 (60.28) |
| 1,650 (64.96) | 1,662 (65.43) | 1,681 (66.18) |
| 1,800 (70.87) | 1,812 (71.34) | 1,831 (72.09) |
| 1,950 (76.77) | 1,962 (77.24) | 1,981 (77.99) |
| 2,100 (82.68) | 2,112 (83.15) | 2,131 (83.9) |

Recommended accessories

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

| | Brief description | Type | Part no. |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------|
| Connection modules | | | |
|  | IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A | IOLA2US-01101 (SiLink2 Master) | 1061790 |
|  | Connector for connecting an IO-Link master and up to 2 muting sensors to a safety light curtain or a multiple light beam safety device | IO-Link connector | 2092757 |
|  | Connector for connecting 2 muting sensors and a muting lamp to a safety light curtain or a multiple light beam safety device | Muting connector | 2092758 |
| Muting accessories | | | |
|  | Sensor bracket G6 and P250 | BEF-2KHAAAKU1 | 2113145 |
|  | Universal holder for round steel arms and muting arms, for mounting sensors or reflectors | BEF-KHS-N01 | 2044953 |
|  | Muting arm bracket for deTec safety light curtain or deTem safety multibeam sensor | Muting arm bracket | 2106455 |
|  | Muting arm, long | Muting arm, long | 2111923 |
|  | Muting arm, short | Muting arm, short | 2111924 |
| Reflectors | | | |
|  | Rectangular, screw connection, 51 mm x 61 mm, PMMA/ABS, Screw-on, 2 hole mounting | P250 | 5304812 |
| Terminal and alignment brackets | | | |
|  | 4 pieces, FlexFix bracket for 2 devices (e.g. sender and receiver), can be aligned ± 15°, including M5 screw, plastic | BEF-1SHABPKU4 | 2066614 |
|  | 4 pieces, QuickFix bracket for 2 devices (e.g. sender and receiver), plastic | BEF-3SHABPKU4 | 2098710 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, A-coded • Connection type head B: Male connector, M12, 5-pin, A-coded • Connection type head C: Female connector, M12, 5-pin, A-coded • Description: T-piece for simultaneous connection to sender and receiver, splits the cable from the control cabinet to the sender and receiver • Note: 5-pin | DSC-1205T000025KM0 | 6030664 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, A-coded • Connection type head B: Female connector, M12, 8-pin, A-coded • Connection type head C: Male connector, M12, 8-pin, A-coded • Description: T-distributor for simultaneous connection to sender and receiver, splits the cable from the control cabinet between the sender and receiver • Note: 8-pin | DSC-1208T000025KM0 | 6058647 |

| | Brief description | Type | Part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Zones with oils and lubricants, Drag chain operation, Robot | YF2A15-020UB5XLEAX | 2095617 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Zones with oils and lubricants, Drag chain operation, Robot | YF2A15-050UB5XLEAX | 2095618 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 10 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Zones with oils and lubricants, Drag chain operation, Robot | YF2A15-100UB5XLEAX | 2095619 |
|  | <ul style="list-style-type: none"> 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: Zones with oils and lubricants, Drag chain operation, Robot | YF2A18-050UA5XLEAX | 2095653 |
|  | <ul style="list-style-type: none"> 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: Zones with oils and lubricants, Drag chain operation, Robot | YF2A18-100UA5XLEAX | 2095654 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Male connector, M12, 5-pin, straight, A-coded Signal type: Sensor/actuator cable Cable: 2 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Zones with oils and lubricants, Drag chain operation, Robot | YF2A15-020UB5M2A15 | 2096009 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Male connector, M12, 5-pin, straight, A-coded Signal type: Sensor/actuator cable Cable: 5 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Zones with oils and lubricants, Drag chain operation, Robot | YF2A15-050UB5M2A15 | 2096010 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Male connector, M12, 5-pin, straight, A-coded Signal type: Sensor/actuator cable Cable: 10 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Zones with oils and lubricants, Drag chain operation, Robot | YF2A15-100UB5M2A15 | 2096011 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, straight, A-coded Connection type head B: Male connector, M12, 8-pin, straight, A-coded Signal type: Sensor/actuator cable Cable: 2 m, 8-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Zones with oils and lubricants, Drag chain operation, Robot | YF2A18-020UA5M2A18 | 2096033 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, straight, A-coded Connection type head B: Male connector, M12, 8-pin, straight, A-coded Signal type: Sensor/actuator cable Cable: 5 m, 8-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Zones with oils and lubricants, Drag chain operation, Robot | YF2A18-050UA5M2A18 | 2096034 |

| | Brief description | Type | Part no. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight, A-coded • Connection type head B: Male connector, M12, 8-pin, straight, A-coded • Signal type: Sensor/actuator cable • Cable: 10 m, 8-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Zones with oils and lubricants, Drag chain operation, Robot | YF2A18-100UA5M2A18 | 2096035 |
|  | <ul style="list-style-type: none"> • 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: Zones with oils and lubricants, Drag chain operation, Robot | YF2A18-020UA5XLEAX | 2095652 |
| Photoelectric sensors | | | |
| | <ul style="list-style-type: none"> • Sensing range max.: 0.15 m ... 12 m 0.15 m ... 10 m • Functional principle: Photoelectric retro-reflective sensor • Functional principle detail: With minimum distance to reflector (dual lens system) • Switching output: PNP • Switching mode: Light/dark switching • Connection type: Male connector M12, 4-pin • Light source: PinPoint LED • Adjustment: None | GL10-P4151 | 1069860 |
|  | <ul style="list-style-type: none"> • Sensing range max.: 0.03 m ... 6 m • Functional principle: Photoelectric retro-reflective sensor • Connection type: Cable with M12 male connector, 4-pin • Type of light: Visible red light • Adjustment: Potentiometer • Housing: Rectangular | GL6-P0211S49 | 1070568 |
| | <ul style="list-style-type: none"> • Sensing range max.: 20 mm ... 950 mm • Functional principle: Photoelectric proximity sensor • Functional principle detail: Background suppression • Switching output: PNP • Switching mode: Light switching • Connection type: Male connector M12, 4-pin • Light source: PinPoint LED • Adjustment: Potentiometer | GTB10-P4411S01 | 1066852 |
|  | <ul style="list-style-type: none"> • Sensing range max.: 5 mm ... 500 mm • Functional principle: Photoelectric proximity sensor • Connection type: Cable with M12 male connector, 4-pin, 300 mm • Type of light: Infrared light • Adjustment: Potentiometer • Housing: Rectangular | GTB6-P7441S56 | 1077541 |
| Safety switching amplifier | | | |
|  | <ul style="list-style-type: none"> • Applications: Output expansion module for OSSDs • Compatible sensor types: Safety sensors with OSSDs • Connection type: Front connector with spring terminals • Restart interlock: no • External device monitoring (EDM): Via path • Outputs: 2 enabling current paths (safe), 1 feedback current path (for use as external device monitoring, not safe) • Housing width: 18 mm | RLY3-OSSD100 | 1085343 |
|  | <ul style="list-style-type: none"> • Applications: Output expansion module for OSSDs • Compatible sensor types: Safety sensors with OSSDs • Connection type: Front connector with spring terminals • Restart interlock: no • External device monitoring (EDM): Via path • Outputs: 4 enabling current paths (safe), 1 feedback current path (for use as external device monitoring, not safe), 1 signaling current path (not safe) • Housing width: 28 mm | RLY3-OSSD400 | 1099971 |

| | Brief description | Type | Part no. |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|
| SP1 system plug | | | |
|  | <ul style="list-style-type: none"> • System plug: SP1 • Connection type: Male connector M12, 5-pin • Extension connection: – | SP1-1000 | 2076832 |
|  | <ul style="list-style-type: none"> • System plug: SP1 • Connection type: Male connector M12, 5-pin • Extension connection: Female connector M12, 5-pin | SP1-1100 | 2076833 |
|  | <ul style="list-style-type: none"> • System plug: SP1 • Connection type: Male connector M12, 8-pin • Extension connection: – | SP1-1200 | 2076834 |
|  | <ul style="list-style-type: none"> • System plug: SP1 • Connection type: Male connector M12, 8-pin • Extension connection: Female connector M12, 5-pin | SP1-1300 | 2076835 |
| SP2 system plug | | | |
|  | <ul style="list-style-type: none"> • System plug: SP2 • Connection type: Male connector M12, 5-pin • Extension connection: – | SP2-2000 | 2093097 |
|  | <ul style="list-style-type: none"> • System plug: SP2 • Connection type: Male connector M12, 5-pin • Extension connection: Female connector M12, 5-pin | SP2-2100 | 2093098 |
|  | <ul style="list-style-type: none"> • System plug: SP2 • Connection type: Male connector M12, 8-pin • Extension connection: – | SP2-2200 | 2093099 |
|  | <ul style="list-style-type: none"> • System plug: SP2 • Connection type: Male connector M12, 8-pin • Extension connection: Female connector M12, 5-pin | SP2-2300 | 2093100 |
| Sensor Integration Gateway | | | |
|  | <ul style="list-style-type: none"> • Further functions: Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions • Connection CONFIG: 1 x M8, 4-pin female connector, USB 2.0 (USB-A) • Logic editor: yes • Communication interface: IO-Link, USB, Ethernet, PROFINET, REST API • Product category: IO-Link Master | SIG200-0A0412200 | 1089794 |
|  | <ul style="list-style-type: none"> • Description: The SIG200 Sensor Integration Gateway is an IO-Link master with 4 configurable ports through which the IO-Link devices or standard inputs or standard outputs can be connected to a PLC or cloud application using the REST API. • Further functions: Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions • Connection CONFIG: 1 x M8, 4-pin female connector, USB 2.0 (USB-A) • Logic editor: yes • Communication interface: IO-Link, USB, Ethernet, EtherNet/IP™, REST API • Product category: IO-Link Master | SIG200-0A0512200 | 1089796 |
|  | <ul style="list-style-type: none"> • Further functions: Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions • Connection CONFIG: 1 x M8, 4-pin female connector, USB 2.0 (USB-A) • Logic editor: yes • Communication interface: IO-Link, USB, Ethernet, REST API • Product category: IO-Link Master | SIG200-0A0G12200 | 1102605 |

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