



## TIC501 Pro

RELIABLE COUNTING AND CLASSIFICATION WITH ONE SENSOR  
OVER SEVERAL LANES

Profiling systems

**SICK**  
Sensor Intelligence.

# EFFICIENT, SAFE, AND ENVIRONMENTALLY-FRIENDLY SENSORS FOR PERFECT TRAFFIC MANAGEMENT

Modern road traffic management is all about safety, efficiency, and a sound environmental approach. Every road user wants to see a smooth flow of traffic without any hold-ups, accidents or long queues and wants to avoid having to worry about seeking out that one elusive parking space. Proper coordination of the various systems involved in traffic data collection, transmission, and processing, as well as traffic control, plays a vital role in effective traffic management. Rugged sensor solutions constitute the foundations of a reliable system for monitoring and controlling traffic.

SICK has extensive experience in developing smart sensor solutions for traffic management. Its broad range of innovative and reliable products, combined with a global service and sales structure, makes SICK the market and technology leader in many areas of traffic data collection.





## TIC501 Pro PROFILING SYSTEM: OUTSTANDING PERFORMANCE ACROSS EVERY LANE!

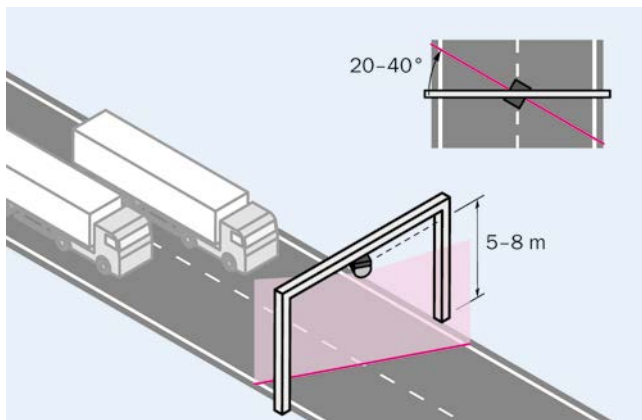


The TIC501 Pro is a very flexible system, which can be easily integrated into any traffic management system. It can accurately differentiate between up to 30 different vehicle classes simultaneously across several lanes, regardless of vehicle speed. It can also count the number of vehicles with high precision, even if they are frequently switching lanes. The Traffic Controller TIC uses laser measurement data to build a 3D model of the vehicle in question, which is then used to determine the vehicle class. The sensors are mounted either above the road on a portal or to the side on a gallows or pole depending on how many lanes need to be monitored. No components need to be built into the road surface and no road blocks are required as part of the installation process, which means that there shouldn't be any traffic disruptions.

The TIC501 Pro is the perfect choice for managing and analyzing multi-lane, free-flowing traffic.

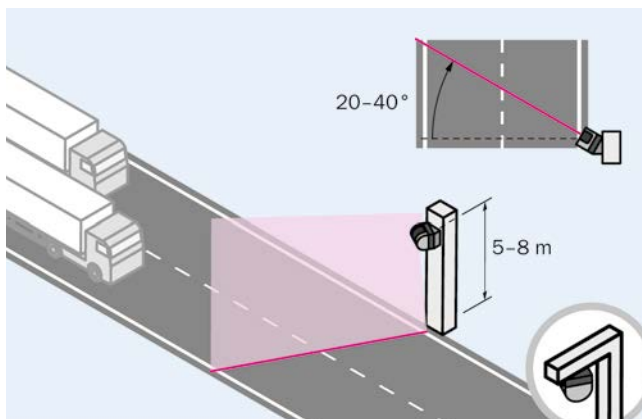
# THE TIC501 PRO CAN BE INSTALLED ON POLES, GALLOWES, OR PORTALS.

A key feature of the TIC501 Pro is how easy it is to mount and install. The laser scanners, connected to the Traffic Controller TIC, are mounted either on a portal above the traffic lane or to the side on a pole or gallows.



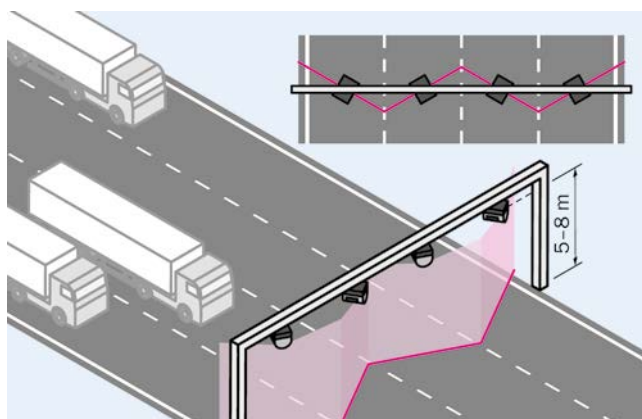
## Above the road: covering two lanes of traffic simultaneously

Designed to be used for multi-lane, free-flowing traffic, one sensor can cover and monitor two lanes simultaneously. This reduces installation and commissioning costs.



## To the side of the road: no costs involved in constructing portals or installing road blocks

Now even easier and more flexible: the laser scanners can be mounted to the side on a gallowes or pole. This means that there are no costs for constructing portals or installing road blocks. Installing the laser scanners to the side, five to eight meters above the road surface, ensures outstanding measurement precision and protection against tampering.



## Above several lanes of traffic: continuous data collection

Up to four laser scanners can be connected to a Traffic Controller TIC in order to monitor several lanes of traffic. This means that traffic data can be collected without interruption.

# UNBEATABLE WHEN IT COMES TO ROAD TRAFFIC

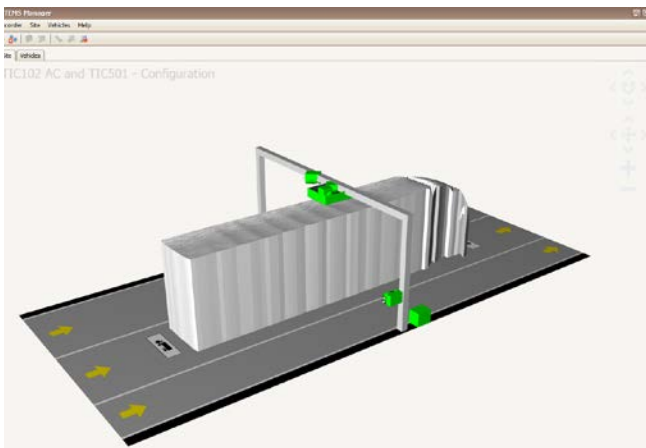


## The TIC Pro family: perfectly combining innovation

The name SICK is synonymous with innovation in terms of the development of laser scanners. The new multi-echo technology means that your measurement applications will continue to run perfectly, whatever the weather. It also increases the reliability and accuracy of the data being captured.

The TIC Pro family consists of the following systems: TIC1xx Pro and TIC501 Pro. The TIC1xx Pro is used all over the world to classify and count vehicles for electronic toll collection on roads with multiple lanes. The system can be combined with an additional LMS511 Traffic laser scanner for counting axles.

The TIC501 Pro is the perfect choice for managing and analyzing traffic. Both systems are based on laser scanner technology and can be optimally combined. They have the same interface and identical configuration software. This makes installing both systems simultaneously on roads with multiple lanes easy.



## A matter of minutes

Installing and commissioning the two systems takes just a few minutes since no components need to be built into the road surface. The installation assistant safely completes the commissioning process, and automatic calibration when the traffic is in full flow makes the set-up process a breeze.

# RELIABLE COUNTING AND CLASSIFICATION WITH ONE SENSOR OVER SEVERAL LANES



## Product description

The TIC501 Pro (Traffic Information Collector) profiling system is designed for traffic management and statistical applications in multi-lane, free-flowing traffic. The mounting position of the system components can be adapted easily to the local conditions, which allows the TIC501 Pro to be installed above the lane, between two lanes or next to the road on street lamps

and poles. One TIC501 Pro can detect several lanes at the same time, reducing the installation and commissioning costs. The intuitive user interface guides the operator through the commissioning process in just a few steps. The measurement results are then displayed directly as a 3D point cloud, including the classification result.

## At a glance

- Ultra-precise vehicle counting and classification in free-flowing traffic
- Maximum mounting flexibility: mounting above and at the side of the road possible
- Detects multiple lanes at the same time
- Highly precise counting, even for vehicles changing the lanes
- Classification of up to 30 different vehicle categories
- Easy to install and commission

## Your benefits

- Installation next to the road removes costs associated with gantries and lane closures
- One TIC501 Pro can monitor several lanes at once, reducing overall costs
- Quick, easy and cost-effective mounting since no work is required on the road surface
- Temporary lane changes, for example in construction areas, do not require the TIC501 Pro to be repositioned, allowing continuous operation
- Long maintenance intervals and short installation times reduce operating costs
- Intuitive graphical user interface allows quick and easy operation
- Fast implementation thanks to TCP/IP interface

## Additional information

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→ [www.mysick.com/en/TIC501\\_Pro](http://www.mysick.com/en/TIC501_Pro)

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



## Detailed technical data

The exact device specifications and performance data of the product may deviate from the information provided here, and depend on the application in which the product is being used and the relevant customer specifications.

### Profiling system TIC501 Pro

#### General notes

<b>Items supplied</b>	Laser scanner LMS511 Traffic Traffic Controller with TIC-Software incl. USB Stick with TEMS Manager, TEMS Info Sample-Client, source code for TEMS Info Sample-Client and manuals
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#### Features

<b>Integrated application</b>	Vehicle counting, vehicle classification
<b>Scanner design</b>	1-scanner solution
<b>Vehicle data</b>	Vehicle class (selectable category systems with up to 30 classes) Lane assignment Confidence level for all vehicle datas Point cloud
<b>Number of covered lanes</b>	Up to 3 lanes per LMS511 Traffic

#### Performance

<b>Counting accuracy</b>	> 99.8 % (overhead detection of 2 lanes with one LMS511 Traffic)
<b>Classification accuracy</b>	Typ. 96 % (for TLS8+1, overhead detection of 2 lanes with one LMS511 Traffic)

#### Interfaces

<b>Data protocol</b>	TEMS Info Interface (TCP/IP Interface) WCF TEMS Manager (configuration software)
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#### Mechanics/electronics

<b>Installation position</b>	Overhead or laterally
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### 2D laser scanner LMS511 Traffic

#### General notes

<b>Description</b>	Configured laser scanner for profiling systems used for traffic applications. Complete specifications can be found under the standard resolution LMS511-10100 PRO (1046135).
<b>Note on use</b>	Not suitable for personnel protection

#### Features

<b>Field of application</b>	Outdoor
<b>Version</b>	Mid Range
<b>Variant</b>	PRO
<b>Resolution power</b>	Standard Resolution
<b>Light source</b>	Infrared (905 nm)
<b>Laser class</b>	1, eye-safe (IEC 60825-1 (2007-6))
<b>Field of view</b>	190°
<b>Heating</b>	Yes
<b>Amount of evaluated echoes</b>	5
<b>Fog correction</b>	Yes



## Interfaces

<b>Ethernet</b>	✓
Function	Host
Data transmission rate	10/100 Mbit
Protocol	TCP/IP, OPC
<b>Optical indicators</b>	5 LEDs (additional 7-segment display)

## Mechanics/electronics

<b>Electrical connection</b>	4 x M12 circular plug-in connector
<b>Supply voltage</b>	24 V DC
<b>Power consumption</b>	22 W, + 55 W heating (typical)
<b>Housing color</b>	Gray (RAL 7032)
<b>Enclosure rating</b>	IP 67 (EN 60529, Section 14.2.7)
<b>Protection class</b>	III (EN 60529, Section 14.2.7)
<b>Weight</b>	3.7 kg
<b>Dimensions (L x W x H)</b>	160 mm x 155 mm x 185 mm

## Ambient data

<b>Object remission</b>	2 % ... > 1,000 % (reflectors)
<b>Electromagnetic compatibility (EMC)</b>	EN 61000-6-2:2005, EN 61000-6-3 (2007-03)
<b>Vibration resistance</b>	EN 60068-2-6 (1995-04)
<b>Shock resistance</b>	EN 60068-2-27 (1993-03), EN 60068-2-29 (1993-04)
<b>Ambient operating temperature</b>	-30 °C ... +50 °C
<b>Storage temperature</b>	-30 °C ... +70 °C
<b>Ambient light safety</b>	70,000 lx

## Traffic Controller TIC

### General notes

<b>Note on use</b>	Receipt and filtering of sensor data Processing for TIC vehicle data Output of vehicle and diagnostic data via the user interface
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### Features

<b>Field of application</b>	Indoor
<b>Internal memory</b>	32 GB

## Interfaces

<b>Operator interface</b>	Ethernet-Connector LAN 1 of the Traffic Controller TIC
<b>Sensor interface</b>	Ethernet-Connector LAN 2 of the Traffic Controller TIC
<b>Optical indicators</b>	LED status and function display
<b>Data protocol</b>	TEMS Info Interface (TCP/IP Interface) WCF TEMS Manager (configuration software)
<b>NTP synchronization</b>	✓

## Mechanics/electronics

<b>Supply voltage</b>	24 V DC (9 V DC ... 25 V DC)
<b>Power consumption</b>	10 W (typical)
<b>Enclosure rating</b>	IP 20



<b>Weight</b>	0.7 kg
<b>Housing dimensions (W x D x H)</b>	161 mm x 108.2 mm x 32 mm
<b>Fixing</b>	Screwable

#### Ambient data

<b>Electromagnetic compatibility (EMC)</b>	EN 55024, EN 55022 Class A
<b>Ambient temperature operation</b>	-20 °C ... +70 °C
<b>Ambient storage temperature</b>	-40 °C ... +80 °C

#### Ordering information

##### Profiling system TIC501 Pro

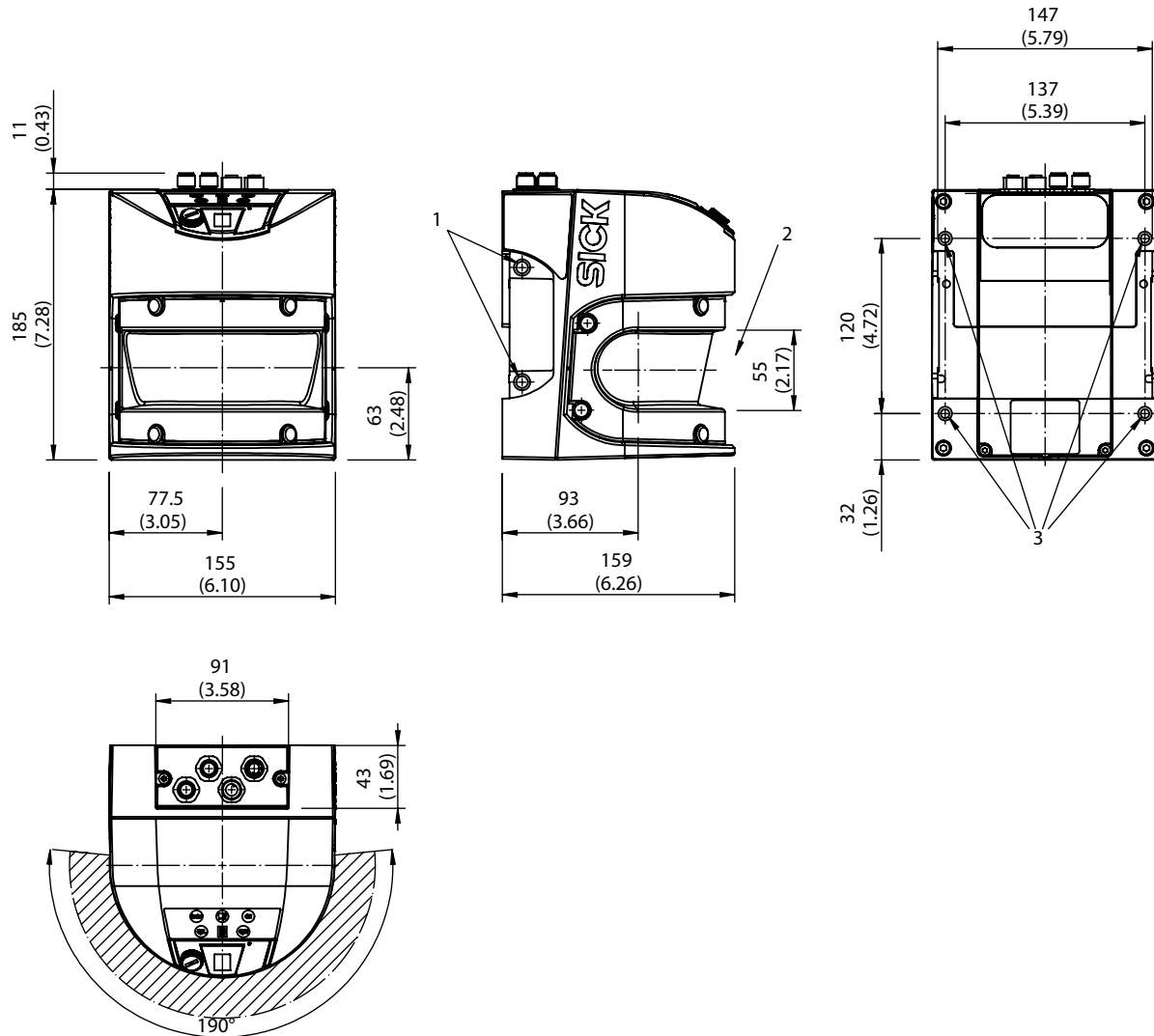
Items supplied	Integrated application	Model name	Part no.
Laser scanner LMS511 Traffic Traffic Controller with TIC-Software incl. USB Stick with TEMS Manager, TEMS Info Sample-Client, source code for TEMS Info Sample-Client and manuals	Vehicle counting, vehicle classification	TIC501 Pro	1069322

#### System components

Model name	Part no.
LMS511 Traffic	1064730
Traffic Controller TIC	1068275

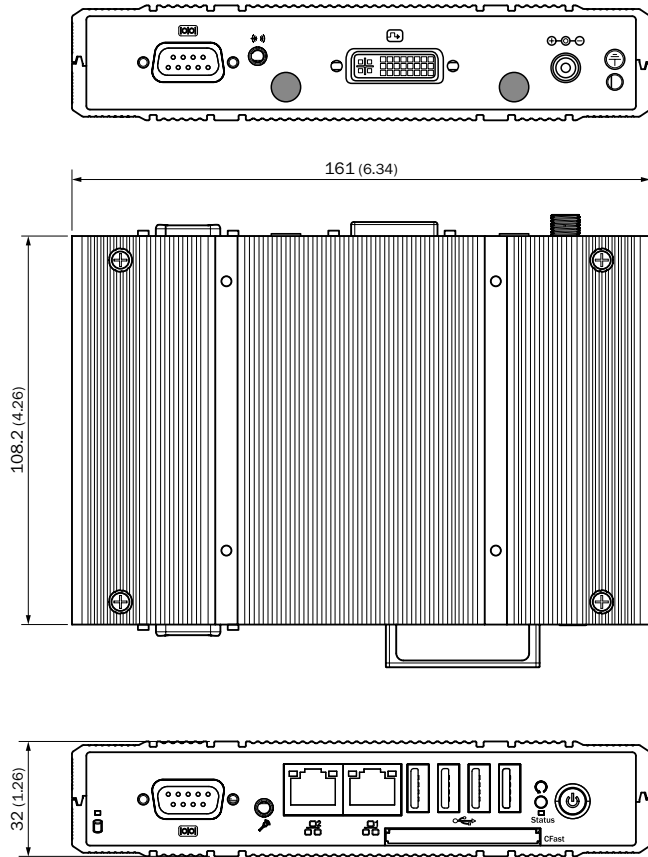
## Dimensional drawings (Dimensions in mm (inch))

2D laser scanner LMS511 Traffic



- ① 4 screw holes M8 x 9
- ② Do not obstruct front window
- ③ 4 screw holes M6 x 8

## Traffic Controller TIC








## Accessories

### Mounting systems

#### Device protection (mechanical)

Figure	Brief description	Model name	Part no.
	Weather hood (180°), vertical mounting	Weather hood	2063050


#### Mounting brackets and mounting plates

Figure	Brief description	Model name	Part no.
	Mounting bracket for LMS5xx (for retrofitting, if 2018303 is already in use)	Mounting bracket	2059271
	Mounting kit for wall-mounting (adjustment bracket)	Mounting kit	2018303
	1 piece, mounting bracket for direct mounting, from the rear, on wall or machine, not adjustable	Mounting kit 1	2015623
	1 piece, mounting bracket for rear mounting on wall or machine, adjustable longitudinal and lateral axes, only in conjunction with mounting kit 1 (2015623)	Mounting kit 2	2015624
	1 piece, mounting bracket for rear mounting on wall, floor, or machine, adjustable longitudinal and lateral axes, only in conjunction with mounting kit 1 (2015623) and 2 (2015624)	Mounting kit 3	2015625

### Other mounting accessories



Figure	Brief description	Model name	Part no.
	Strap for mast bracket (sold by meter)	Clamping strap	5306222
	Strap lock	Clamping strap lock	5306221

### Terminal and alignment brackets





Figure	Brief description	Model name	Part no.
	Pole bracket requires additionally adapter bracket (2059271) or mounting set (2018303)	Alignment bracket	2018304

### Connection systems

#### Modules and gateways

Figure	Brief description	Model name	Part no.
	Outdoor Ethernet-Switch, 8 ports, operating temperature range -40 °C ... +75 °C	Ethernet-Switch	6043482
	Indoor Ethernet-Switch, 8 ports, operating temperature range 0 °C ... +55 °C	Ethernet-Switch	6033013

#### Plug connectors and cables

Figure	Brief description	Model name	Part no.
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: cable Cable: shielded, 5 m	Connecting cable (female connector-open)	6036159
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: cable Cable: shielded, 20 m	Connecting cable (female connector-open)	6042564
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: cable Cable: shielded, 10 m	Connecting cable (female connector-open)	6042565
	Head A: male connector, M12, 4-pin, straight Head B: male connector, RJ45, straight Cable: Ethernet, shielded, 30 m	Connection cable (male connector-male connector)	6045311
	Head A: male connector, RJ45 Head B: male connector, RJ45 Cable: Ethernet, unshielded, 3 m	Ethernet data cable	6026083
	Head A: male connector, M12, 4-pin, straight, D-coded Head B: male connector, RJ45, 8-pin, straight Cable: Ethernet, shielded, 5 m	SSL-2J04-G05ME	6034415
	Head A: male connector, M12, 4-pin, straight, D-coded Head B: male connector, RJ45, 8-pin, straight Cable: Ethernet, PUR, shielded, 10 m	SSL-2J04-G10ME	6030928
	Head A: male connector, M12, 4-pin, straight, D-coded Head B: male connector, RJ45, 8-pin, straight Cable: Ethernet, PUR, shielded, 20 m	SSL-2J04-G20ME	6036158

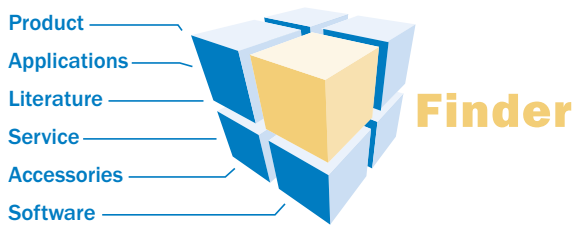






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## SERVICES FOR MACHINES AND SYSTEMS: SICK LifeTime Services

Our comprehensive and versatile LifeTime Services are the perfect addition to the comprehensive range of products from SICK. The services range from product-independent consulting to traditional product services.



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Safe and professional



**Product & System Support**  
Reliable, fast and on-site



**Verification & Optimization**  
Safe and regularly inspected



**Upgrade & Retrofits**  
Easy, safe, economical



**Training & Education**  
Practical, focused and professional

## SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 6,500 employees and over 50 subsidiaries and equity investments as well as numerous representative offices worldwide, we are always close to our customers. 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 various 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 round out 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:

Australia, Austria, Belgium/Luxembourg, Brazil, Czech Republic, Canada, China, Denmark, Finland, France, Germany, Great Britain, Hungary, India, Israel, Italy, Japan, Mexico, Netherlands, Norway, Poland, Romania, Russia, Singapore, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Turkey, United Arab Emirates, USA

Detailed addresses and additional representatives → [www.sick.com](http://www.sick.com)