



# GM901 Carbon Monoxide Gas Analyzers

CO MEASUREMENT FOR EMISSION MONITORING  
AND PROCESS CONTROL

In-situ Gas Analyzers

**SICK**  
Sensor Intelligence.



It is generally accepted that measuring carbon dioxide levels is a crucial activity. SICK once again proves the supplier of choice in this field, thanks to the high-performance solution it offers as part of its product portfolio: the GM901 in-situ gas analyzer. With its wide range of applications, this represents a virtually indispensable component when it comes to emissions monitoring and process control – and for just some of the proof of its capabilities, look no further than the over 1,000 installations in which it features worldwide.

### Functionality and areas of application

The GM901 gas analyzer operates with exceptional efficiency. Thanks to its innovative in-situ measuring technology, it can be installed directly at the measuring site in question. Its straightforward installation, commissioning, and project planning methods keep costs down and save time – as do its low maintenance requirements.

The GM901 in-situ gas analyzer's strengths come to the fore no matter where it is installed – power plants, coal processing facilities, cement industry systems, waste incineration plants, chemical industry systems, or even food industry facilities. And it is even designed primarily for difficult measuring tasks such as high dust loads, overpressure, critical flow profiles or high measuring gas concentrations.

## Product versions

The GM901 in-situ gas analyzer is available with a measuring probe and in a cross duct version:

### GM901 – version with measuring probe

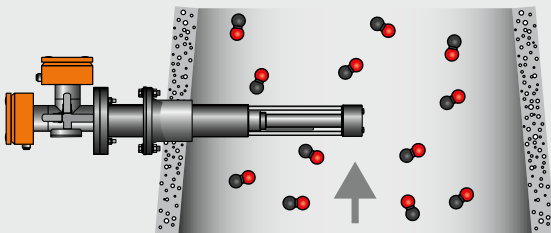


#### System components

- Sender and receiver
- T-piece with beam splitter
- GPP measuring probe (gas permeable probe, verifiable using test gases) or GMP measuring probe (open aperture, purge air unit necessary)
- Evaluation unit

#### Optional components

- PROFIBUS interface
- Optical alignment unit, CO test cells, flange plate, PT100 sensor
- Purge air unit for GMP probe, for protecting sender and receiver



### GM901 – cross duct version

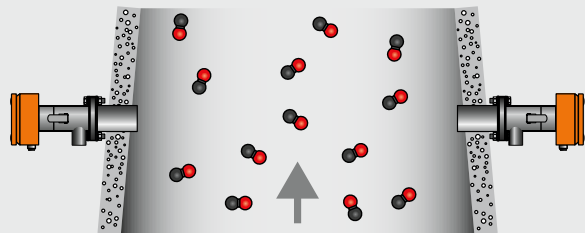


#### System components

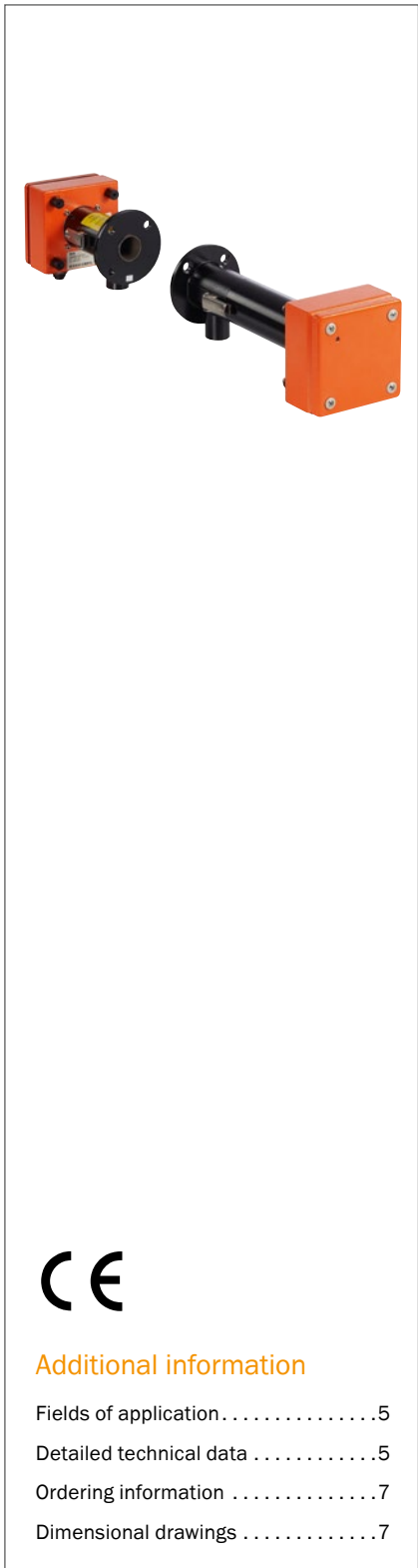
- Sender and receiver
- Evaluation unit

#### Optional components

- PROFIBUS interface
- Optical alignment unit, CO test cells, flange plate, PT100 sensor
- Purge air unit for protecting sender and receiver



# CO MEASUREMENT FOR EMISSION MONITORING AND PROCESS CONTROL



**Product description**

The GM901 gas analyzer is available as a cross-duct or probe type. As a result, it is suited to a broad range of applications – even for difficult measuring tasks

such as high dust loads, overpressure, critical flow profiles or high measuring gas concentrations.

**At a glance**

- Representative measurement across the duct
- Operation via evaluation unit
- Short response times
- Verifiable with gas-filled cuvette; gas testable probe with test gas

**Your benefits**

- Measurement results in real time due to in-situ measurement
- Fast and simple installation and commissioning
- Easy, user-friendly operation
- Economical due to low maintenance

→ [www.mysick.com/en/GM901](http://www.mysick.com/en/GM901)  
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

## Fields of application

- Optimization of all kinds of combustion processes
- CO monitoring in coal mills
- Process monitoring in food industry
- Control of small boiler facilities
- Optimization of biomass combustion plants
- Roasting processes

## 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.

### GM901 Cross-duct system

<b>Description</b>	Cross-duct version
<b>Measured values</b>	CO
<b>Maximum number of measurands</b>	1
<b>Measurement principles</b>	Gas filter correlation
<b>Length of measuring path</b>	0.5 m ... 8 m
<b>Measuring ranges</b>	CO 0 ... 500 ppm / 0 ... 20,000 ppm Relative to 1 m measuring path
<b>Response time</b>	5 s ... 360 s
<b>Accuracy</b>	± 5 % Of measuring range full scale
<b>Process temperature</b>	≤ +250 °C With extended calibration: ≤ +430 °C
<b>Process pressure</b>	≤ 30 hPa Depending on purge air supply
<b>Process gas humidity</b>	Non-condensing
<b>Ambient temperature</b>	–20 °C ... +55 °C
<b>Conformities</b>	TUEV type-examination
<b>Electrical safety</b>	CE
<b>Enclosure rating</b>	IP 65
<b>Power supply</b>	Voltage 115 V / 230 V Frequency 50 Hz / 60 Hz Power consumption ≤ 75 W
<b>Test functions</b>	Manual span check with gas-filled cuvette

### Sender

<b>Description</b>	Sender unit of the cross-duct measuring system
<b>Dimensions (W x H x D)</b>	150 mm x 169 mm x 240 mm
<b>Weight</b>	3 kg Including purge air fixture

### Receiver

<b>Description</b>	Receiver unit of the cross-duct measuring system
<b>Dimensions (W x H x D)</b>	150 mm x 169 mm x 404 mm
<b>Weight</b>	3 kg Including purge air fixture

## GM901 evaluation unit; steel sheet enclosure

<b>Description</b>	The evaluation unit serves as user interface and is responsible for data processing and output as well as control and monitoring functions
<b>Enclosure rating</b>	IP 65 / NEMA 4x
<b>Analog outputs</b>	1 output: 0/4 ... 20 mA, 500 $\Omega$ Electrically isolated
<b>Analog inputs</b>	1 input: 0 ... 20 mA, 100 $\Omega$
<b>Digital outputs</b>	2 relay contacts: 150 V AC, 1 A, 60 W / 125 V DC, 1 A, 30 W
<b>Digital inputs</b>	1 input: 5 V, 2 mA
<b>Interfaces</b>	RS-232 (service interface)
<b>Bus protocol</b>	CAN (internal system bus) PROFIBUS DP (option)
<b>Indication</b>	LC display Status LEDs: "Operation", "Service", "Warning" and "Malfunction"
<b>Input</b>	Arrow keys Functional keys
<b>Model</b>	Steel sheet enclosure
<b>Dimensions (W x H x D)</b>	200 mm x 346 mm x 97.5 mm
<b>Weight</b>	4.3 kg
<b>Power supply</b>	
Voltage	115 V / 230 V
Frequency	50 Hz / 60 Hz
Power consumption	$\leq 50$ W

## Connection unit

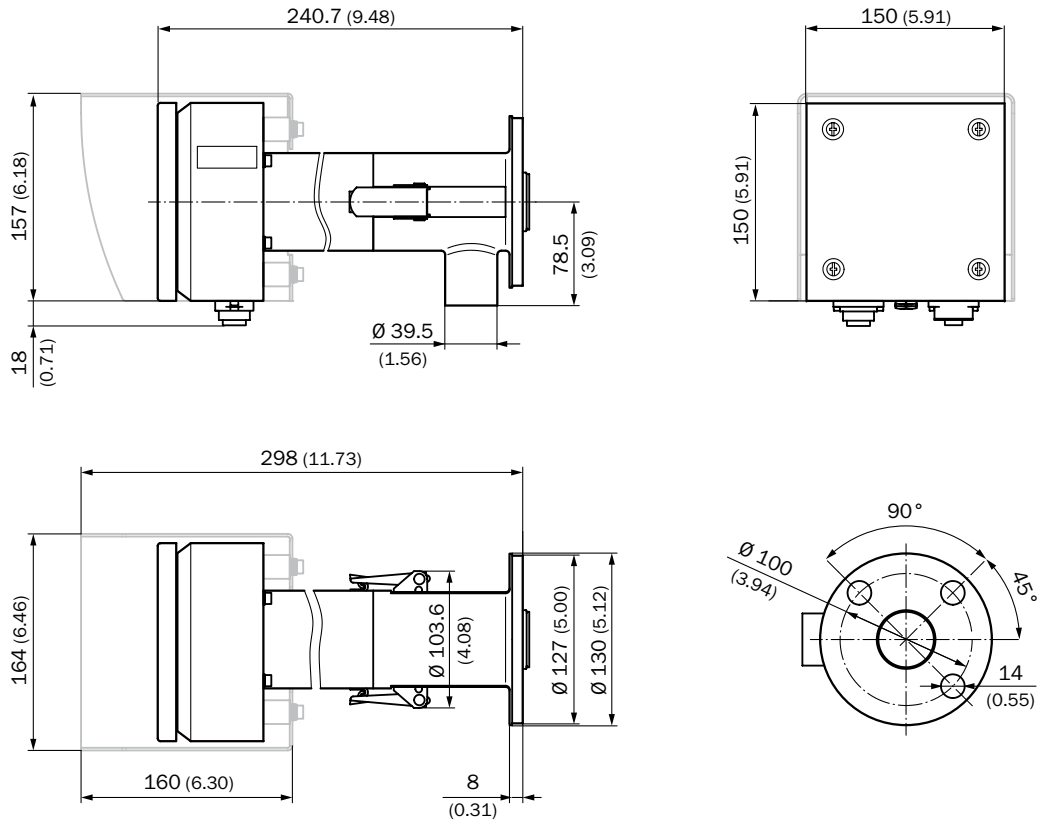
<b>Description</b>	To lengthen the internal CAN-Bus connection with cable provided by the customer
<b>Bus protocol</b>	CAN (internal system bus)
<b>Dimensions (W x H x D)</b>	175 mm x 110.5 mm x 175 mm
<b>Weight</b>	$\leq \pm 3$ kg
<b>Power supply</b>	
Voltage	115 V / 230 V
Frequency	50 Hz / 60 Hz
<b>Integrated components</b>	Integrated 24 V power supply for sender/receiver unit

## Ordering information

Our regional sales organization will help you to select the optimum device configuration.

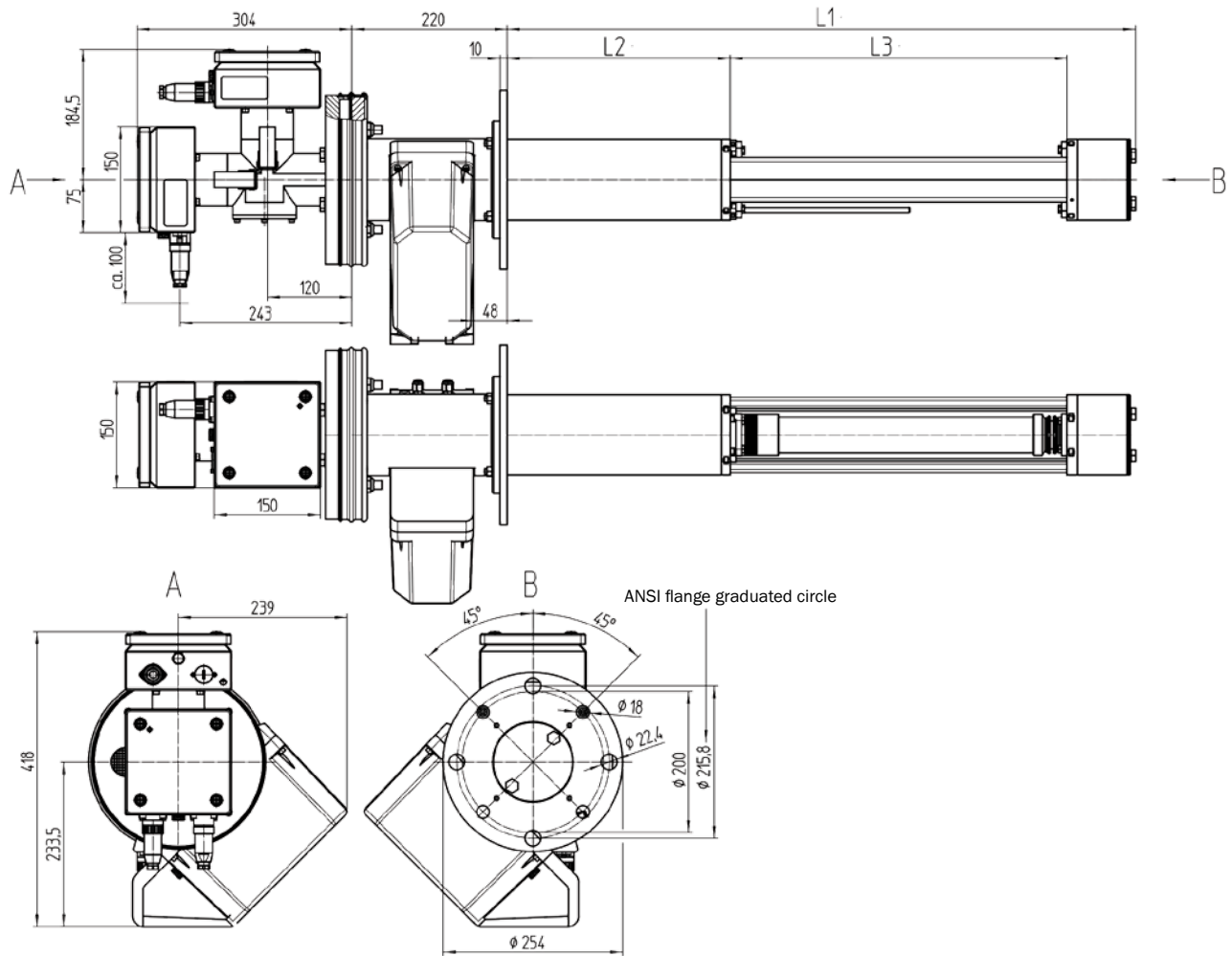
## Dimensional drawings (Dimensions in mm (inch))

GM901 sender and receiver unit





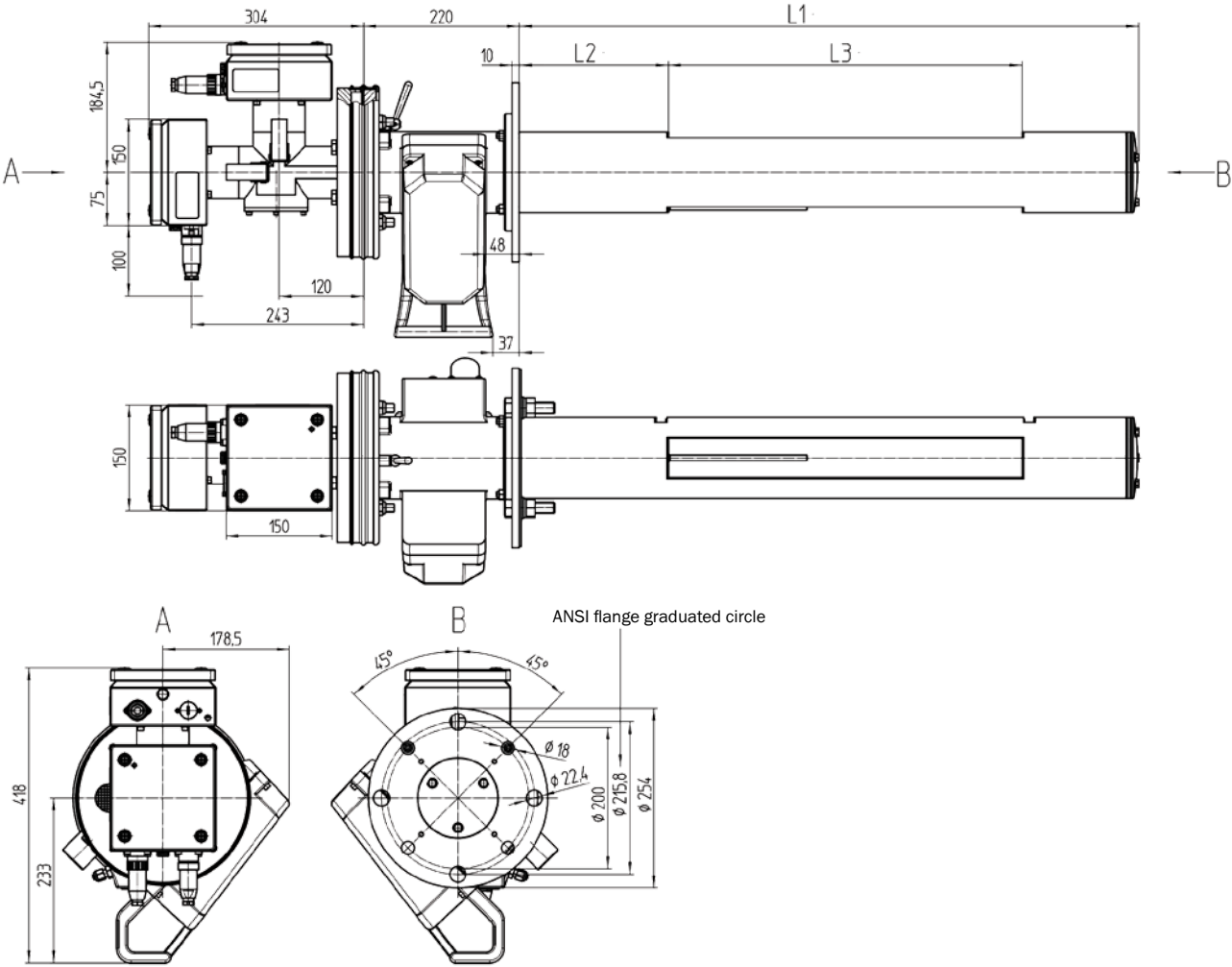
Sender receiver, T adapter piece and gas testable probe (GPP)



GPP measuring probes		Measuring gap L3 (active measuring path)	
Probe length, nominal	L1	227	477
	L2	566	316
1,100	890		
Application-specific lengths available on request			

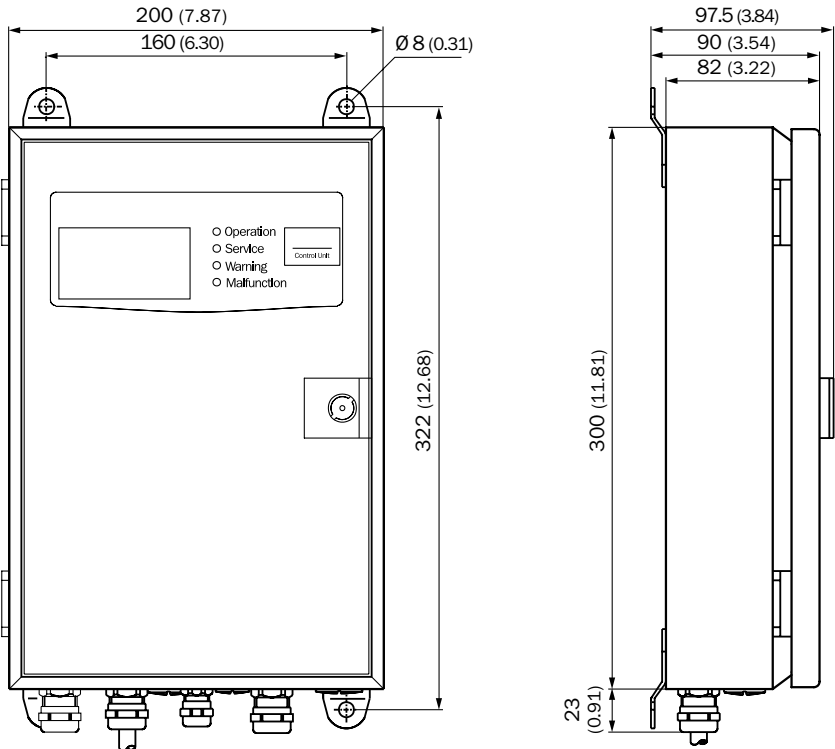


Sender, Empfänger, T-Stück und offene Messlanze (GMP)

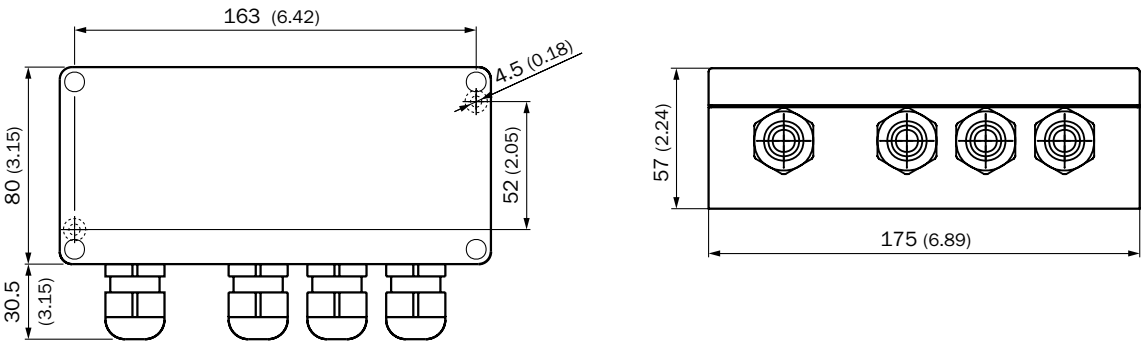


GMP measuring probes		Measuring gap L3 (active measuring path)	
		250	500
Probe length, nominal	L1	L2	
1,100	876	461	211
All dimensions in mm Application-specific lengths available on request			

Evaluation unit; steel sheet enclosure

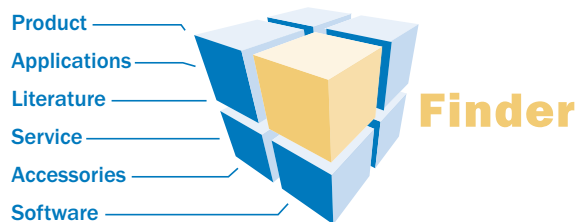


Connection unit



## WWW.MYSICK.COM – SEARCH ONLINE AND ORDER

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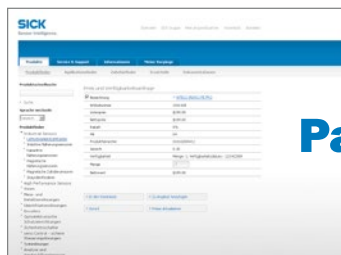
**Product Finder:** We can help you to quickly target the product that best matches your application.

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**Literature Finder:** Go directly to the operating instructions, technical information, and other literature on all aspects of products from SICK.

These and other “Finders” at → [www.mysick.com](http://www.mysick.com)

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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.”

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