


























# INDUCTIVE PROXIMITY SENSORS




PRODUCTS AT A GLANCE

Inductive proximity sensors, inductive safety switches

**SICK**  
Sensor Intelligence.

Product family		Housing			Housing material				Special features								
		Cylindrical threaded	Cylindrical smooth	Rectangular	Stainless steel	Metal	VISTAL®	Plastic	Analog output	IO-Link	Smart Task	Triple sensing range	Quadruple sensing range	Resistant against coolants and lubricants	Resistant against cleaning products	Double film sensors	Speed monitoring
<b>Inductive proximity sensors</b>																	
	IME	■			■	■						■	■				
	IMB	■			■					■				■			
	IMM	■	■		■					■		■					
	IMR	■		■		■		■				■					
	IMI	■			■					■				■	■		
	IMS	■			■									■	■		
	IM AC	■				■											
	IMF	■			■					■				■			
	IMN	■				■											
	IMA	■				■				■		■					
	IMP	■			■												
	IMC	■		■	■			■		■	■			■			
	IDF	■			■					■				■		■	
	SAM	■				■				■							■
	IQG			■				■									
	IQB			■				■				■					
	IQL			■		■		■									
	IQM			■				■									
	IQY			■		■		■				■					
	IQV			■		■											
<b>Inductive safety switches</b>																	
	IME2S	■				■											
	IQB2S			■				■									
	IN4000 Direct			■		■											

Special features						Electrical wiring				Sensing range S <sub>n</sub>								Page
Visual adjustment indicator	High pressure resistant	Welding field-resistant	Reduction factor 1	Sensing face made of stainless steel	ATEX certified	DC 2-wire	AC/DC 2-wire	DC 3-wire	DC 4-wire	10	20	30	40	50	60	70	80	
						■		■	■	38 mm								→ 4
■						■		■	■	20 mm								→ 4
■								■		6 mm								→ 4
		■	■					■	■	75 mm								→ 5
■				■				■		40 mm								→ 5
								■		20 mm								→ 5
							■			15 mm								→ 5
■								■	■	20 mm								→ 6
					■	■				15 mm								→ 6
										0 mm ... 40 mm								→ 6
	■							■	■	3 mm								→ 7
■										20 mm								→ 7
									■	4 mm								→ 7
									■	10 mm								→ 7
						■		■	■	40 mm								→ 8
								■	■	8 mm								→ 8
							■	■	■	60 mm								→ 8
								■		3 mm								→ 9
								■		4 mm								→ 9
								■	■	7 mm								→ 9
									■	15 mm								→ 10
									■	4 mm								→ 11
									■	20 mm								→ 11

	 <p><b>IME</b></p>	 <p><b>IMB</b></p>	 <p><b>IMM</b></p>	
	The economic standard for use in industrial environments	The rugged standard for use in harsh ambient conditions	Miniature sensors for industrial applications	

## Technical data overview

Housing	Cylindrical thread design	Cylindrical thread design	Cylindrical smooth housing / Cylindrical thread design
Thread size	M8 x 1 M12 x 1 M18 x 1 M30 x 1.5	M8 x 1 M12 x 1 M18 x 1 M30 x 1.5	M4 x 0.5 M5 x 0.5
Dimensions	-	-	-
Diameter	Ø 8 mm ... Ø 30 mm	Ø 8 mm ... Ø 30 mm	Ø 3 mm ... Ø 6.5 mm
Sensing range $S_n$	1 mm ... 38 mm	2 mm ... 20 mm	0.6 mm ... 6 mm
Housing material	Brass / Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Enclosure rating	IP67 IP65	IP68, IP69K	IP67

## At a glance

- Types: M8 to M30
- Extended sensing ranges: 1.5 mm to 38 mm
- Electrical configuration: DC 3-/4-wire, DC 2-wire
- Enclosure rating: IP 67
- Temperature range: -25 °C to +75 °C
- Nickel-plated brass housing; plastic sensing face
- Triple sensing range



- Types: M8 to M30
- Extended sensing ranges: 2 mm to 20 mm
- Electrical configuration: DC 3-/4-wire, DC 2-wire
- Enclosure rating: IP 68, IP 69K
- Temperature range: -40 °C to +100 °C
- Rugged stainless-steel housing; plastic sensing face
- IO-Link and visual adjustment indicator
- Resistant to oils and cooling lubricants; suitable for use outdoors



- Types: M4 to M5, diameter from 3 mm to 6.5 mm
- Extended sensing ranges: 0.6 mm to 6 mm
- Electrical configuration: DC 3-wire
- Enclosure rating: IP 67
- Temperature range: -25 °C to +70 °C
- Rugged stainless-steel housing; plastic sensing face
- IO-Link and visual adjustment indicator
- Extremely compact, lightweight, and space-saving

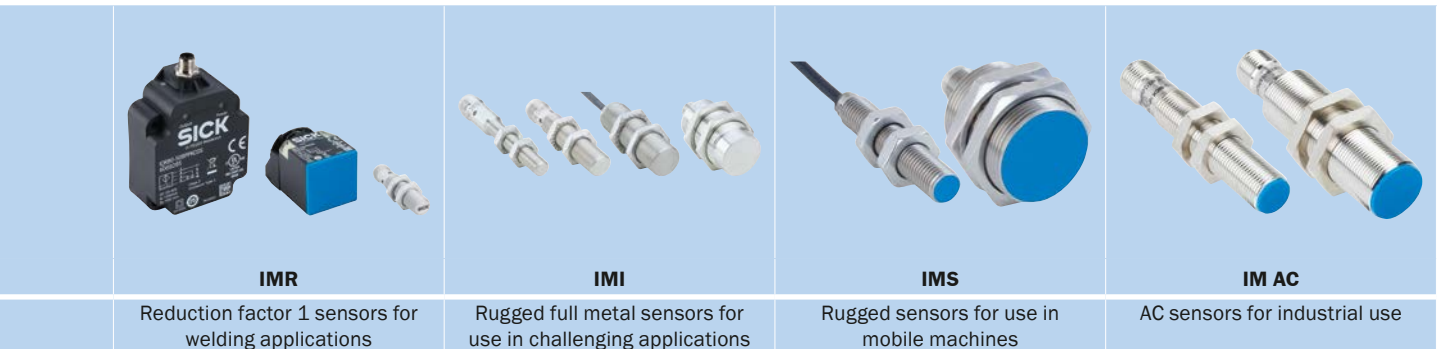


Detailed information




→ [www.sick.com/IME](http://www.sick.com/IME)

→ [www.sick.com/IMB](http://www.sick.com/IMB)




→ [www.sick.com/IMM](http://www.sick.com/IMM)






	Cylindrical thread design / rectangular	Cylindrical thread design	Cylindrical thread design	Cylindrical thread design
	M8 M12 M18 M30	M8 x 1 M12 x 1 M18 x 1 M30 x 1.5	M12 x 1 M18 x 1 M30 x 1.5	M12 x 1 M18 x 1 M30 x 1.5
	40 mm x 40 mm x 65 mm 80 mm x 40 mm x 114 mm	-	-	-
	8 mm ... 30 mm 2 mm ... 75 mm	Ø 8 mm ... Ø 30 mm 2 mm ... 40 mm	Ø 12 mm ... Ø 30 mm 4 mm ... 20 mm	Ø 12 mm ... Ø 30 mm 2 mm ... 15 mm
	PTFE coating / plastic	Stainless steel V2A / Stainless steel V4A	Stainless steel V2A / Stainless steel V4A	Brass
	IP68	IP68, IP69K	IP68, IP69K	IP67

<ul style="list-style-type: none"> <li>Types: M8 to M30, 40 x 40 mm and 80 x 80 mm</li> <li>Increased sensing range: up to 75 mm</li> <li>Electrical configuration: DC 3- and 4-conductor</li> <li>Enclosure rating: IP68</li> <li>Temperature range: -30° C to +85° C</li> <li>PTFE coating for cylindrical thread designs</li> <li>Reduction factor 1 for all metals</li> <li>Triple sensing range</li> </ul> 	<ul style="list-style-type: none"> <li>Types: M8 to M30</li> <li>Large sensing ranges: 2 mm to 40 mm</li> <li>Enclosure rating: IP68, IP69K</li> <li>Temperature range: -25 °C to +85 °C</li> <li>Option of rugged housing or housing suitable for the food industry made completely out of stainless steel</li> <li>IO-Link and visual adjustment indicator</li> <li>Resistant against oils, cooling lubricants and cleaning products</li> </ul> 	<ul style="list-style-type: none"> <li>Thread sizes: M12 to M30</li> <li>Large sensing ranges: 4 mm to 20 mm</li> <li>Electrical configuration: DC, 3-wire</li> <li>Enclosure rating: IP68, IP69K</li> <li>Ambient temperature: -40 °C to +100 °C</li> <li>Rugged stainless-steel housing; plastic sensing face</li> <li>Load dump protection and high electromagnetic compatibility of 100 V/m</li> <li>E1 type approval</li> </ul> 	<ul style="list-style-type: none"> <li>Types: M12 to M30</li> <li>Simple sensing ranges: 2 to 15 mm</li> <li>Electrical configuration: AC 2-wire, AC/DC 2-wire</li> <li>Enclosure rating: IP67</li> <li>Temperature range: -25 °C to 75 °C</li> <li>Nickel-plated brass housing; plastic sensing face</li> </ul> 
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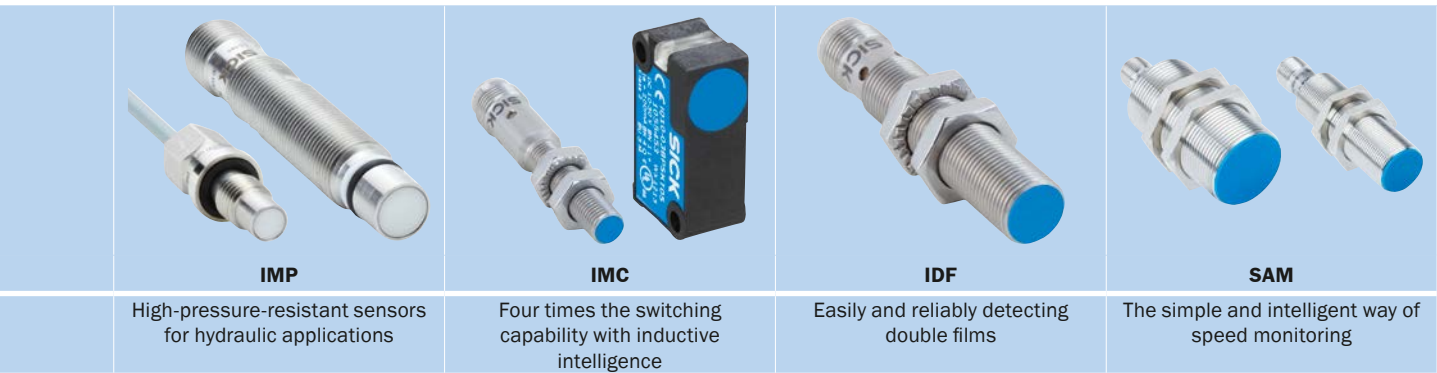
→ [www.sick.com/IMR](http://www.sick.com/IMR)      → [www.sick.com/IMI](http://www.sick.com/IMI)      → [www.sick.com/IMS](http://www.sick.com/IMS)      → [www.sick.com/IM\\_AC](http://www.sick.com/IM_AC)

		
<b>IMF</b>	<b>IMN</b>	<b>IMA</b>
The economic standard for use in the food industry	NAMUR sensors for explosive zones	Analog sensors with up to 2 x detection range for use in industrial environments


Technical data overview			
<b>Housing</b>	Cylindrical thread design	Cylindrical thread design	Cylindrical thread design
<b>Thread size</b>	M8 x 1 M12 x 1 M18 x 1 M30 x 1.5	M8 x 1 M12 x 1 M18 x 1 M30 x 1.5	M8 x 1 M12 x 1 M18 x 1 M30 x 1.5
<b>Dimensions</b>	-	-	-
<b>Diameter</b>	Ø 8 mm ... Ø 30 mm	Ø 8 mm ... Ø 30 mm	Ø 8 mm ... Ø 30 mm
<b>Sensing range S<sub>n</sub></b>	2 mm ... 20 mm	1 mm ... 15 mm	4 mm ... 40 mm
<b>Housing material</b>	Stainless steel V4A	Brass	Brass
<b>Enclosure rating</b>	IP68, IP69K	IP67	IP67

At a glance			
	<ul style="list-style-type: none"> <li>• Types: M8 to M30</li> <li>• Extended sensing ranges: 2 mm to 20 mm</li> <li>• Electrical configuration: DC 3-/4-wire</li> <li>• Enclosure rating: IP 68, IP 69K</li> <li>• Temperature range: -40 °C to +100 °C</li> <li>• Food-compatible stainless-steel housing, plastic sensing face</li> <li>• Optical adjustment indicator, IO-Link-ready</li> <li>• Resistant to industrial cleaning agents, Eco-lab-certified</li> </ul>	<ul style="list-style-type: none"> <li>• Types: M8 to M30</li> <li>• Sensing ranges: 1 mm to 15 mm</li> <li>• NAMUR according to DIN EN 60947-5-6</li> <li>• Enclosure rating: IP 67</li> <li>• Temperature range: -20 °C to +70 °C</li> <li>• Nickel-plated brass housing; plastic sensing face</li> <li>• ATEX device category 1G and 2G</li> <li>• Suitable for applications in explosion-hazardous areas</li> </ul>	<ul style="list-style-type: none"> <li>• Types: M8 to M30</li> <li>• Extended detection ranges: 0 mm to 40 mm</li> <li>• Analog output signal 0 V ... 10 V and 4 mA ... 20 mA</li> <li>• Enclosure rating: IP 67</li> <li>• Temperature range: -25 °C to +75 °C</li> <li>• Nickel-plated brass housing; plastic sensing face</li> <li>• High resolution and repeatability</li> <li>• Distance control and continuous position detection</li> <li>• Triple sensing range</li> </ul>
			




Detailed information	<a href="http://www.sick.com/IMF">→ www.sick.com/IMF</a>	<a href="http://www.sick.com/IMN">→ www.sick.com/IMN</a>	<a href="http://www.sick.com/IMA">→ www.sick.com/IMA</a>
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IMP	IMC	IDF	SAM
High-pressure-resistant sensors for hydraulic applications	Four times the switching capability with inductive intelligence	Easily and reliably detecting double films	The simple and intelligent way of speed monitoring
Cylindrical thread design	Cylindrical thread design / rectangular	Cylindrical thread design	Cylindrical thread design
M5 x 0.5 M8 x 1 M12 x 1 M14 x 1.5	M8 x 1 M12 x 1 M18 x 1 M30 x 1.5	M8 x 1 M12 x 1	M18 x 1 M30 x 1.5
-	10 mm x 28 mm x 16 mm 12 mm x 40 mm x 26 mm	-	-
Ø 5 mm ... Ø 14 mm 1 mm ... 3 mm	Ø 8 mm ... Ø 30 mm 2 mm ... 20 mm	Ø 8 mm / Ø 12 mm 2 mm / 4 mm	Ø 18 mm / Ø 30 mm 7 mm / 10 mm
Phynox Stainless steel V2A Stainless steel V4A	Stainless steel V2A / plastic	Stainless steel V2A	Brass
IP68	IP68 / IP69K / IP68	IP68, IP69K	IP67

<ul style="list-style-type: none"> <li>• Types: M5, M8, M12 and M14</li> <li>• Extended sensing ranges: 1 mm to 3 mm</li> <li>• Electrical configuration: DC 3- and 4-wire</li> <li>• Enclosure rating: IP 68</li> <li>• Temperature range: -25 °C to +100 °C</li> <li>• Stainless steel housing with active surface made from stable high-performance ceramic</li> <li>• Pressure resistant up to 500 bar, gas-tight front</li> <li>• Expected service life of up to 1 million pressure cycles</li> </ul> 	<ul style="list-style-type: none"> <li>• Types: M8 to M30; IQ10 and IQ12</li> <li>• Four programmable switching points or windows at an Sn of up to 20 mm</li> <li>• Freely programmable output function</li> <li>• Enclosure rating: IP 68, IP 69K</li> <li>• Temperature range: -40 °C to +75 °C</li> <li>• Rugged stainless-steel or VISTAL housing</li> <li>• Logic, counter, time measurement, or temperature monitoring function</li> <li>• IO-Link 1.1</li> </ul> 	<ul style="list-style-type: none"> <li>• Sizes: M8 and M12</li> <li>• Detection of metallic double films</li> <li>• Electrical configuration: DC, 4-conductor</li> <li>• Temperature range: -25 °C ... +70 °C</li> <li>• Enclosure rating: IP68</li> <li>• Detection regardless of the gripper position</li> <li>• Teach-in via cable or IO-Link</li> </ul> 	<ul style="list-style-type: none"> <li>• Types: M18 and M30</li> <li>• Sensing ranges: up to 10 mm flush</li> <li>• Speed and acceleration monitoring</li> <li>• Monitoring range: 6 to 12,000 pulses/min. and 0.1 to 2 pulses/sec.<sup>2</sup></li> <li>• Switching and pulse output</li> <li>• Intelligent start-up delay</li> <li>• Speed monitoring can be flexibly configured via two thresholds</li> <li>• Flexible sensor settings, monitoring, extended diagnostics, and visualization thanks to IO-Link</li> </ul> 
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→ [www.sick.com/IMP](http://www.sick.com/IMP)      → [www.sick.com/IMC](http://www.sick.com/IMC)      → [www.sick.com/IDF](http://www.sick.com/IDF)      → [www.sick.com/SAM](http://www.sick.com/SAM)

		
<b>IQG</b>	<b>IQB</b>	<b>IQL</b>
Compact rectangular housings for use in harsh ambient conditions	Small rectangular housings for use in industrial environments	Large rectangular housings for use in industrial environments

## Technical data overview

Housing	Rectangular	Rectangular	Rectangular
<b>Dimensions</b>	40 mm x 40 mm x 66 mm 40 mm x 40 mm x 118 mm 40 mm x 40 mm x 132 mm	10 mm x 28 mm x 16 mm 12 mm x 40 mm x 26 mm	80 mm x 105 mm x 40 mm 80 mm x 92 mm x 40 mm
<b>Sensing range S<sub>n</sub></b>	20 mm / 40 mm	2 mm ... 8 mm	60 mm / 50 mm
<b>Housing material</b>	Plastic	Plastic	Plastic / Zinc diecast
<b>Enclosure rating</b>	IP67, IP68, IP69K	IP68	IP65 / IP67

## At a glance

- Type: 40 mm x 40 mm
- Extended sensing ranges: 20 mm to 40 mm
- Electrical configuration: DC 2-/3-/4-wire
- Enclosure rating: IP 68, IP 69K
- Temperature range: -25 °C to +85 °C
- Plastic housing
- Push-lock mounting system
- Sensor head can be rotated in five directions



- Types: 10 mm x 16 mm x 28 mm or 12 mm x 26 mm x 40 mm
- Extended sensing ranges: 2 mm to 8 mm
- Electrical configuration: DC 3-/4-wire
- Enclosure rating: IP 68
- Temperature range: -25 °C to +75 °C
- Tough VISTAL™ housing
- Small version with 270° output state display
- Triple sensing range



- Type: 80 mm x 80 mm
- Longer sensing ranges: 50 mm to 60 mm
- Electrical configuration: DC 3-/4-wire, or AC/DC 2-wire
- Enclosure rating IP 65 or IP 67
- Temperature range: -25 °C to +80 °C
- Plastic housing
- Programmable N/O or N/C function
- Sensing range setting via potentiometer



Detailed information	→ <a href="http://www.sick.com/IQG">www.sick.com/IQG</a>	→ <a href="http://www.sick.com/IQB">www.sick.com/IQB</a>	→ <a href="http://www.sick.com/IQL">www.sick.com/IQL</a>
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**IQM**

Rectangular miniature sensors for use in industrial environments



**IQY**

Slim rectangular housings for use in industrial environments



**IQV**

Flat rectangular housings for use in industrial environments

Rectangular  
8 mm x 16 mm x 4 mm  
10 mm x 30 mm x 6 mm

1.5 mm / 3 mm  
Plastic  
IP67

Rectangular  
8 mm x 40 mm x 8 mm  
5 mm x 25 mm x 5 mm

0.8 mm ... 4 mm  
Plastic / Brass  
IP67 / IP68

Rectangular  
20 mm x 32 mm x 8 mm  
25 mm x 50 mm x 10 mm

7 mm / 5 mm  
Zinc diecast / Aluminum  
IP67

- Types: 8 mm x 16 mm x 4 mm or 10 mm x 30 mm x 6 mm
- Extended sensing ranges: 1.5 mm to 3 mm
- Electrical configuration: DC 3-wire
- Enclosure rating: IP 67
- Temperature range: -20 °C to +70 °C
- Plastic housing
- Flat, space-saving and light design



→ [www.sick.com/IQM](http://www.sick.com/IQM)

- Types: 5 mm x 5 mm x 25 mm or 8 mm x 8 mm x 40 mm
- Extended sensing ranges: 0.8 mm to 4 mm
- Electrical configuration: DC 3-wire
- Enclosure rating: IP 67 or IP 68
- Temperature range: -25 °C to +75 °C
- Tough VISTAL™ housing
- Thin version with 270° output state display
- Triple sensing range



→ [www.sick.com/IQY](http://www.sick.com/IQY)

- Types: 20 mm x 32 mm x 8 mm or 25 mm x 50 mm x 10 mm
- Extended sensing ranges: 5 mm to 7 mm
- Electrical configuration: DC 3-/4-wire
- Enclosure rating: IP 67
- Temperature range: -25 °C to +70 °C
- Metal housing, plastic sensing face
- Flat housing made of robust metal



→ [www.sick.com/IQV](http://www.sick.com/IQV)



**IME2S**

Safe and easy position monitoring up to PL d

**Technical data overview**

Sensor principle	Inductive
Safety integrity level	SIL2 (IEC 61508), SILCL2 (EN 62061)
Category	Category 2 (ISO 13849-1)
Performance level	PL d (ISO 13849-1)
Actuator coding level	Uncoded (EN ISO 14119)
Type of output	Semiconductor (OSSD)
Number of safe outputs	2
Connection type	Male connector M12, 4-pin / Cable with M12 male connector, 4-pin / Cable, 4-wire

**At a glance**

- Types: M12 to M30
- Increased response ranges: 4 mm to 15 mm
- Two OSSD safety outputs
- Enclosure rating: IP67
- Temperature range: -25 °C to +70 °C
- Nickel-plated brass housing, plastic sensing face
- Up to performance level PL d (EN ISO 13849)
- Connection variants: M12 male connector, cable or cable with M12 male connector



Detailed information

→ [www.sick.com/IME2S](http://www.sick.com/IME2S)



**IQB2S**

Safe and easy position monitoring up to PL d



**IN4000 Direct**

Safe, non-contact position monitoring

Inductive  
SIL2 (IEC 61508), SILCL2 (EN 62061)  
Category 2 (ISO 13849-1)  
PL d (ISO 13849-1)  
Uncoded (EN ISO 14119)  
Semiconductor (OSSD)

2

Cable with M12 male connector, 4-pin / male connector M8, 4-pin / Cable, 4-wire

Inductive  
SIL3 (IEC 61508), SILCL3 (EN 62061)  
Category 3 (EN ISO 13849)  
PL e (EN ISO 13849)  
Uncoded (EN ISO 14119)  
Semiconductor (OSSD)

2

Plug connector, M12, 4-pin

- Rectangular type: 12 mm x 26 mm x 40 mm
- Response range: 4 mm
- Two OSSD safety outputs
- Enclosure rating: IP67
- Temperature range: -25 °C bis +70 °C
- Rugged VISTAL® housing
- Up to performance level PL d (EN ISO 13849)
- Connection variants: M8 male connector, cable or cable with M12 male connector



→ [www.sick.com/IQB2S](http://www.sick.com/IQB2S)

- Two OSSD safety outputs for direct connection of sensors to a single safety controller
- Response range of up to 20 mm
- LED status indicator
- Up to performance level PL e (EN ISO 13849)
- Flexi Loop-compatible M12 plug connector



→ [www.sick.com/IN4000\\_Direct](http://www.sick.com/IN4000_Direct)

## SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 10,000 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its 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.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the 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 SICK a reliable supplier and development partner.

Comprehensive services round out the offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**That is “Sensor Intelligence.”**

### **Worldwide presence:**

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → [www.sick.com](http://www.sick.com)