



































PROXIMITY SENSORS




PRODUCTS AT A GLANCE

Inductive proximity sensors, inductive safety switches,
capacitive proximity sensors, magnetic proximity sensors

SICK
Sensor Intelligence.

Material to be detected	Product family		Housing			Material				Properties			Sensing range				
			Cylindrical threaded	Cylindrical smooth	Rectangular	Stainless steel	Metal	VISTAL™	Plastic	IP 69K	PTFE-coating	High-pressure resistant	Standard sensing range	Extended sensing range	Triple sensing range		
Inductive proximity sensors 																	
<div>Metal</div> 		IMM	■	■		■	■			■		■	■	■			
		IME	■				■						■	■	■		
		IMB	■			■				■				■			
		IMF	■			■				■				■			
		IMI	■			■				■					■		
		IMN	■				■						■				
		IMA	■				■								■		
		IMP	■				■					■	■				
		SAM	■				■							■			
		IQM			■				■					■			
		IQY			■				■						■		
		IQB			■			■							■		
		IQV			■		■							■			
		IQG			■				■	■					■		
		IQL			■				■						■		
Inductive safety switches 																	
<div>Metal</div> 		IN3000 Direct	■			■	■						■				
		IN4000 Direct			■		■						■				
		IN4000 Standard	■		■	■	■			■			■				
Capacitive proximity sensors 																	
<div>Powders, granules, liquid, solid</div> 		CM	■						■	■			■				
		CM PTFE	■						■		■		■				
		CQ			■				■				■				
Magnetic proximity sensors 																	
<div>Magnet</div> 		MM	■			■	■						■				
		MM Namur	■				■						■				
		MQ			■			■					■				

	Electrical wiring				Switching output				Sensing range S _n													Page
	DC 2-wire	AC/DC 2-wire	DC 3-wire	DC 4-wire	NAMUR output	Analog output	Semiconduc- tor (OSSD)	IO-Link	10	20	30	40	50	60	70	80	90	100	110	120		
			■					■	4 mm												→ 4	
	■		■	■					20 mm												→ 4	
	■		■	■				■	20 mm												→ 5	
			■	■					20 mm												→ 5	
			■						40 mm												→ 5	
					■				15 mm												→ 6	
						■			0 mm ... 40 mm												→ 6	
			■	■					3 mm												→ 7	
				■				■	10mm												→ 7	
			■						3 mm												→ 8	
			■						4 mm												→ 8	
			■						8 mm												→ 8	
			■	■					7 mm												→ 9	
			■	■					40 mm												→ 9	
		■	■	■					60 mm												→ 9	
							■		22 mm												→ 10	
							■		45 mm												→ 11	
							■		30 mm												→ 11	
				■					25 mm												→ 12	
				■					8 mm												→ 13	
			■	■					25 mm												→ 13	
			■						120 mm												→ 14	
					■				120 mm												→ 15	
			■						60 mm												→ 15	

	 <p>IMM</p>	 <p>IME</p>	
	<p>Miniature sensors for industrial applications</p>	<p>The economic standard for use in industrial environments</p>	

Technical data overview

Housing	Cylindrical smooth housing / Cylindrical thread design	Cylindrical thread design	
Thread size	M4 x 0.5 M5 x 0.5	M8 x 1 M12 x 1 M18 x 1 M30 x 1.5	
Diameter	Ø 3 mm Ø 4 mm Ø 6.5 mm	-	
Sensing range S_n	0.6 mm ... 4 mm	1 mm ... 38 mm	
Electrical wiring	DC 3-wire	DC 2-wire / DC 3-wire	
Housing material	Stainless steel (V2A)	Nickel-plated brass	
Enclosure rating	IP 68 / IP 69K / IP 67	IP 67	

At a glance

- Types: M4 to M5, diameter from 3 mm to 6.5 mm
- Extended sensing ranges: 0.6 mm to 4 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 ready
- Extremely compact, lightweight, and space-saving









- 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



Detailed information



→ www.sick.com/IMM

→ www.sick.com/IME

 <p>IMB</p>	 <p>IMF</p>	 <p>IMI</p>
The rugged standard for use in harsh ambient conditions	The economic standard for use in the food industry	Robust full metal sensors for use in the food industry
Cylindrical thread design	Cylindrical thread design	Cylindrical thread design
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	M12 x 1 M18 x 1 M30 x 1.5
-	-	-
2 mm ... 20 mm DC 2-wire / DC 3-wire / DC 4-wire	2 mm ... 20 mm DC 3-wire / DC 4-wire	6 mm ... 40 mm DC 3-wire
Stainless steel (V2A) IP 68, IP 69K	Stainless steel (V4A) IP 68, IP 69K	Stainless steel (V4A) IP 68, IP 69K
<ul style="list-style-type: none"> • 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 • Optical adjustment indicator, IO-Link-ready • Resistant to oils and cooling lubricants; suitable for use outdoors 	<ul style="list-style-type: none"> • Types: M8 to M30 • Extended sensing ranges: 2 mm to 20 mm • Electrical configuration: DC 3-/4-wire • Enclosure rating: IP 68, IP 69K • Temperature range: -40 °C to +100 °C • Food-compatible stainless-steel housing, plastic sensing face • Optical adjustment indicator, IO-Link-ready • Resistant to industrial cleaning agents, Ecolab-certified 	<ul style="list-style-type: none"> • Types: M8 to M30 • Triple sensing ranges: 6 mm to 40 mm • Electrical configuration: DC 3-wire • Enclosure rating: IP 68, IP 69K • Temperature range: -25 °C to +85 °C • Food-compatible stainless-steel housing, stainless steel sensing face • Sensing face made of food-compatible stainless steel • Resistant against cleaning agents 
→ www.sick.com/IMB	→ www.sick.com/IMF	→ www.sick.com/IMI

	 IMN	 IMA	
	NAMUR sensors for explosive zones	Analog sensors with triple sensing range for use in industrial environments	

Technical data overview			
Housing	Cylindrical thread design		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
Sensing range S_n	1 mm ... 15 mm		4 mm ... 40 mm
Electrical wiring	-		-
Housing material	Nickel-plated brass		Nickel-plated brass
Enclosure rating	IP 67		IP 67

At a glance			
	<ul style="list-style-type: none">• Types: M8 to M30• Sensing ranges: 1 mm to 15 mm• NAMUR according to DIN EN 60947-5-6• Enclosure rating: IP 67• Temperature range: -20 °C to +70 °C• Nickel-plated brass housing; plastic sensing face• ATEX device category 1G and 2G• Suitable for applications in explosion-hazardous areas 	<ul style="list-style-type: none">• Types: M8 to M30• Extended detection ranges: 0 mm to 40 mm• Analog output signal 0 V ... 10 V and 4 mA ... 20 mA• Enclosure rating: IP 67• Temperature range: -25 °C to +75 °C• Nickel-plated brass housing; plastic sensing face• High resolution and repeatability• Distance control and continuous position detection 	

Detailed information	→ www.sick.com/IMN	→ www.sick.com/IMA	
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IMP

High-pressure-resistant sensors for hydraulic applications



SAM

The simple and intelligent way of speed monitoring

Cylindrical thread design

M5 x 0.5

M8 x 1

M12 x 1

M14 x 1.5

1 mm ... 3 mm

DC 3-wire / DC 4-wire

Stainless steel (V2A / V4A)

IP 68

Cylindrical thread design

M18 x 1

M30 x 1.5

7 mm / 10 mm

DC 4-wire

Nickel-plated brass

IP 67

- Types: M5, M8, M12 and M14
- Extended sensing ranges: 1 mm to 3 mm
- Electrical configuration: DC 3- and 4-wire
- Enclosure rating: IP 68
- Temperature range: -25 °C to +100 °C
- Stainless steel housing with active surface made from stable high-performance ceramic
- Pressure resistant up to 500 bar, gas-tight front
- Expected service life of up to 1 million pressure cycles







→ www.sick.com/IMP

- Types: M18 and M30
- Sensing ranges: up to 10 mm flush
- Speed and acceleration monitoring
- Monitoring range: 6 to 12,000 pulses/min. and 0.1 to 2 pulses/sec.²
- Switching and pulse output
- Intelligent start-up delay
- Speed monitoring can be flexibly configured via two thresholds
- Flexible sensor settings, monitoring, extended diagnostics, and visualization thanks to IO-Link






→ www.sick.com/SAM



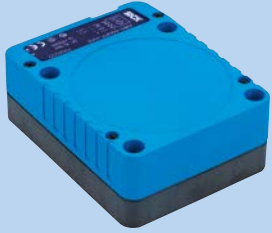



				
	IQM	IQY	IQB	
	Rectangular miniature sensors for use in industrial environments	Slim rectangular housings for use in industrial environments	Small rectangular housings for use in industrial environments	



Technical data overview

Housing	Rectangular	Rectangular	Rectangular	
Dimensions	8 mm x 16 mm x 4 mm 10 mm x 30 mm x 6 mm	8 mm x 8 mm x 40 mm 5 mm x 5 mm x 25 mm	10 mm x 28 mm x 16 mm 12 mm x 40 mm x 26 mm	
Sensing range S_n	1.5 mm / 3 mm	0.8 mm ... 4 mm	2 mm ... 8 mm	
Electrical wiring	DC 3-wire	DC 3-wire	DC 3-wire / DC 4-wire	
Housing material	PA6-GF30	Nickel-plated brass / VISTAL™	VISTAL™	
Enclosure rating	IP 67	IP 67 / IP 68	IP 68	


At a glance

	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	
Detailed information	→ www.sick.com/IQM	→ www.sick.com/IQY	→ www.sick.com/IQB	

		
<p>IQV</p> <p>Flat rectangular housings for use in industrial environments</p>	<p>IQG</p> <p>Compact rectangular housings for use in harsh ambient conditions</p>	<p>IQL</p> <p>Large rectangular housings for use in industrial environments</p>
<p>Rectangular 20 mm x 32 mm x 8 mm 25 mm x 50 mm x 10 mm</p> <p>7 mm / 5 mm DC 3-wire / DC 4-wire GD Zn</p> <p>IP 67</p>	<p>Rectangular 40 mm x 40 mm x 66 mm 40 mm x 40 mm x 132 mm 40 mm x 40 mm x 118 mm</p> <p>20 mm / 40 mm DC 3-wire / DC 4-wire PA 66</p> <p>IP 67, IP 68, IP 69K</p>	<p>Rectangular 80 mm x 40 mm x 105 mm 80 mm x 40 mm x 112 mm</p> <p>60 mm / 50 mm AC/DC 2-wire / DC 3-wire / DC 4-wire PPE</p> <p>IP 65 / IP 67</p>
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Type: 40 mm x 40 mm • Extended sensing ranges: 15 mm to 40 mm • Electrical configuration: DC 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 	<ul style="list-style-type: none"> • 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 
<p>→ www.sick.com/IQV</p>	<p>→ www.sick.com/IQG</p>	<p>→ www.sick.com/IQL</p>

		
	IN3000 Direct	
	Safe, non-contact position monitoring	

Technical data overview		
Housing	Cylindrical thread design	
Thread size	M12 x 1 M18 x 1 M30 x 1.5	
Dimensions (W x H x D)	-	
Safety integrity level	SIL2 (IEC 61508), SILCL2 (EN 62061)	
Category	Applicable up to category 3 (EN ISO 13849)	
Performance level	PL d (EN ISO 13849)	
Actuator coding level	Uncoded (EN ISO 14119)	
Type of output	Semiconductor	
Number of safe outputs	2	
Connection type	Plug connector, M12, 4-pin	
Flexi-Loop-ready	✓	

At a glance		
	<ul style="list-style-type: none">• Response range of up to 15 mm• LED status indicator• Up to performance level PL d (EN ISO 13849), SILCL2 (EN 62061), SIL2 (IEC 61508)• Flexi Loop-compatible M12 plug connector 	



Detailed information	→ www.sick.com/IN3000_Direct	
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IN4000 Direct

Safe, non-contact position monitoring



IN4000 Standard





Safe, non-contact position monitoring

	Rectangular	Cylindrical thread design / Rectangular
	-	M18 x 1 M30 x 1.5
	40 mm x 40 mm x 66 mm	40 mm x 40 mm x 66 mm
	SIL3 (IEC 61508), SILCL3 (EN 62061)	SIL3 (IEC 61508)
	Category 4 (EN ISO 13849)	Category 4 (EN ISO 13849)
	PL e (EN ISO 13849)	PL e (EN ISO 13849)
	Uncoded (EN ISO 14119)	Uncoded (EN ISO 14119)
	Semiconductor (OSSD)	Semiconductor, pulsed
	2	1
	Plug connector, M12, 4-pin	Plug connector, M12, 4-pin
	✓	-
	<ul style="list-style-type: none"> • 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 / Cat. 4 (EN ISO 13849) • Flexi Loop-compatible M12 plug connector 	<ul style="list-style-type: none"> • One clocked safety output for direct connection of sensors to a safety controller • IP67 or IP69K enclosure rating • Response range up to 15 mm • LED status indicator • Up to performance level PL e (EN ISO 13849) • Safe series connection of sensors possible
		
	→ www.sick.com/IN4000_Direct	→ www.sick.com/IN4000_Standard

		
	CM	
	Tried-and-tested sensors for object detection and fill level detection	


Technical data overview		
Housing	Cylindrical thread design	
Thread size	M12 x 1 M18 x 1 M30 x 1.5	
Dimensions (W x H x D)	-	
Sensing range S_n	8 mm ... 25 mm	
Electrical wiring	DC 4-wire / AC 2-wire	
Housing material	Plastic	
Enclosure rating	IP 67 / IP 68 / IP 69K	

At a glance		
	<ul style="list-style-type: none">• Cylindrical housing in M12, M18, and M30 models• Detects powders, granulates, liquids, and solids• High electromagnetic compatibility• Electrical configuration: DC 2 and 4-wire• Supply voltage: 10 V DC to 36 V DC• Optical adjustment indicator• Sensing ranges of up to 25 mm• Enclosure rating: IP 65, IP 68, IP 69K 	
Detailed information	→ www.sick.com/CM	

 <p>CM PTFE</p>	 <p>CQ</p>
<p>Sensors in cylindrical PTFE-housing that withstand tough environments</p>	<p>Reliable capacitive proximity sensors enclosed in a rectangular housing</p>
<p>Cylindrical thread design M18 x 1</p> <p>-</p> <p>8 mm DC 4-wire PTFE IP 67</p>	<p>Rectangular -</p> <p>16 mm x 39.5 mm x 12 mm 28 mm x 46 mm x 5.5 mm 35 mm x 69.5 mm x 15 mm 6 mm ... 25 mm DC 3-wire / DC 4-wire Plastic IP 67 / IP 68</p>
<ul style="list-style-type: none"> • M18 - metric housing • Detects powders, granulates, liquids, and solids • Extremely high electromagnetic compatibility • Electric version: DC, 4-conductor • Supply voltage: 10 V ... 36 V DC • Short-circuit protection (pulsed) • Housing material made from PTFE • IP 67 protection class 	<ul style="list-style-type: none"> • Rectangular housing • Detects powders, granulates, liquids, and solids • Extremely high electromagnetic compatibility • Electric version: DC, 4-conductor • Supply voltage: 10 V ... 36 V DC • Short-circuit protection (pulsed) 
<p>→ www.sick.com/CM_PTFE</p>	<p>→ www.sick.com/CQ</p>

	 MM	
	Magnetic proximity sensors in common M8, M12, and M18 cylindrical housing	

Technical data overview		
Housing	Cylindrical thread design / cylindrical	
Thread size	M8 x 1 M12 x 1 M18 x 1	
Housing	-	
Sensing range S _n	45 mm ... 120 mm	
Electrical wiring	DC 3-wire	
Magnetic field sensitivity, min.	0.4 mT ... 1 mT	
Housing material	Nickel-plated brass / V4A	
Enclosure rating	IP 67	


At a glance		
	<ul style="list-style-type: none">• Types: M8 to M18• Sensing range: up to 120 mm• Electrical configuration: DC 3-wire• Enclosure rating: IP 67• Temperature range: -25 °C to +75 °C• Nickel-plated brass housing; plastic sensing face• Reliable detection of permanent magnets through non-ferromagnetic materials such as stainless steel, aluminum, plastic or wood• Solves high-temperature applications by installing the permanent magnet in the high-temperature area and the sensor behind an insulated area 	
Detailed information	→ www.sick.com/MM	


MM Namur

 NAMUR magnetic proximity sensors in a cylindrical housing
for explosive areas

MQ

Magnetic proximity sensors in a rectangular housing

	Cylindrical thread design	Rectangular
	M12 x 1 M18 x 1	-
	-	10.3 mm x 37 mm x 16 mm 10.3 mm x 28 mm x 16 mm
	60 mm ... 120 mm	≤ 60 mm
	-	DC 3-wire
	≤ 0.4 mT ... ≤ 1 mT	1 mT
	Nickel-plated brass / Stainless steel V4A (1.4404, 316L)	VISTAL™
	IP 67	IP 68
	<ul style="list-style-type: none"> • Types: M12 to M18 • Sensing range: up to 120 mm • Electrical configuration: NAMUR • Enclosure rating: IP 67 • Temperature range: -25 °C to +70 °C • Nickel-plated brass housing; plastic sensing face • Reliable detection of permanent magnets through non-ferromagnetic materials such as stainless steel, aluminum, plastic or wood • NAMUR design for usage in explosion-hazardous areas 	<ul style="list-style-type: none"> • Type: 10 mm x 28 mm x 16 mm • Sensing ranges: up to 60 mm • Electrical configuration: DC, 3-wire • Enclosure rating: IP 67, IP 68 • Temperature range: -25 °C to +75 °C • Tough VISTAL™ housing • Reliable detection of permanent magnets through non-ferromagnetic materials such as stainless steel, aluminum, plastic or wood • Solves high-temperature applications by installing the permanent magnet in the high-temperature area and the sensor behind an insulated area
		
	→ www.sick.com/MM_Namur	→ www.sick.com/MQ

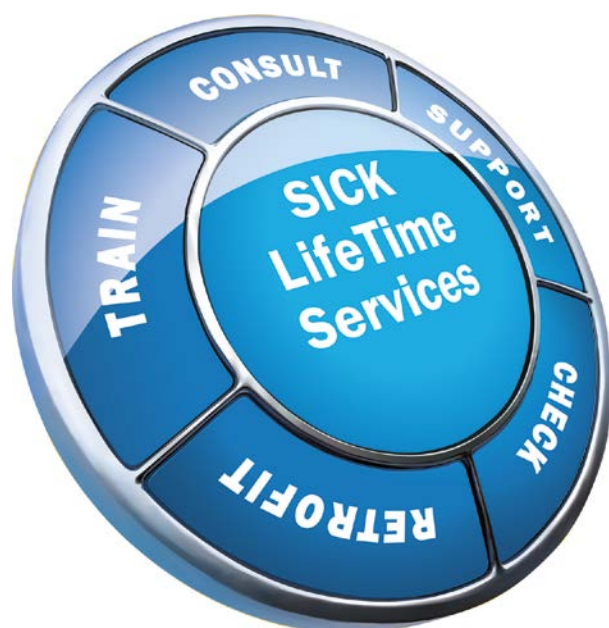
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SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 7,400 employees and over 50 subsidiaries and equity investments as well as numerous agencies 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.

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Detailed addresses and further locations → www.sick.com