SICK innovations

THE INNOVATIONS MAGAZINE

Issue 2024/2025

EDITORIAL

In an age in which regular technological breakthroughs are not only expected but virtually assumed, it's vital to look beyond our own backyard. The challenges we now face in connection with industrial automation not only call for adaptation, but also continuing advances and innovation. But what does innovation mean at SICK?

SICK is a highly innovative company. And we have to be, as the dynamics on our markets call for rapid solutions. The digitalization of automation has created a steadily growing demand for sensor solutions and new technologies. In order to further expand our leading global position, we're making sizeable investments in research and development: across the Group, the number of R&D staff grows year after year, helping us translate innovative ideas into marketable solutions. Convinced of the added value that Artificial Intelligence (AI) can deliver when combined with sensors, we began investing in AI research early on, and over the past few years, have particularly focused on expertise in connection with software, AI and digitalization.

Innovation is far more than inventing new solutions or technologies. It is the key that unlocks a firm's potential and bolsters its ability to respond to changing market conditions. It means understanding customers' needs today, but also anticipating the requirements of tomorrow. In this regard, we gain valuable impulses from our intensive dialogues with customers, universities and research institutes. For us, this means we have a twofold responsibility: on the one hand, we need to continuously improve our solutions and processes; on the other, we need to support our customers' own innovation processes. After all, their success is also our success.

Your

Dr. Niels Syassen
Member of Technology & Digitalization Executive Board, SICK AG

UNLEASH THE POWER OF YOUR DATA

The digital revolution has been changing all of our lives for years. But the digitalization of industrial production processes still creates many questions for companies. These include: “What do I need to consider? “When will it pay off for me?” And in particular: “How do I implement it effectively?” A particularly important aspect of this is selecting the right partner, one who can support you with implementation and has expertise in three areas: sensors, integration, and data processing. Because these areas are closely intertwined and influence each other, they need to be tailored to one another.

Generating the data at the field level

When implementing digitalization, it is sometimes forgotten that the best connection and the nicest dashboard are pointless if its foundation, i.e. the generation of data, is unreliable. SICK not only has a comprehensive portfolio of sensors, but also a deep understanding of processes and applications. Our experts will advise you when selecting and installing the sensors to ensure that you are actually measuring what really needs to be measured.

Interface between OT and IT

SICK offers a multitude of technologies and tools for ensuring a problem-free integration of the data into your control systems. Why? Because which integration options are useful depends on the application, location, and type of measurement. The issue of cybersecurity also plays an important role. SICK is guided in this respect by the international series of standards IEC 62443 “Industrial communication networks – Network and system security”. This series of standards also provides a foundation for the development of products.

Data analysis and provision

To monitor and improve your processes, you need meaningful and valuable data on which to base your decisions. Our portfolio of digital solutions has been specially developed to provide you with these insights. Learn more about digital solutions and how we can add value for you as well at:
www.sick.com/digitalsolutions

PRODUCT INNOVATIONS: START BENEFITTING FROM THE ADVANTAGES OF INTELLIGENT SENSORS TODAY WITH SICK

Detection sensors

Automation light grids

Fork sensors

Inductive proximity sensors

Photoelectric sensors

Safety

Safety distance sensors

Safety controllers

Safety laser scanners

Safety switches

Safety systems

LiDAR and radar sensors

LiDAR sensors

Radar sensors

Machine vision and identification

Image-based code readers

Machine vision

Mobile handheld scanners

Motion control sensors

Inertial sensors

Measuring wheel encoders

Motor feedback systems

Process sensors

Level sensors

Pressure sensors

Network and connection technology

Integration products

Systems

Object detection systems

Quality control systems

Robot guidance systems

Track and trace systems

Digital services and software

SICK SensorApps

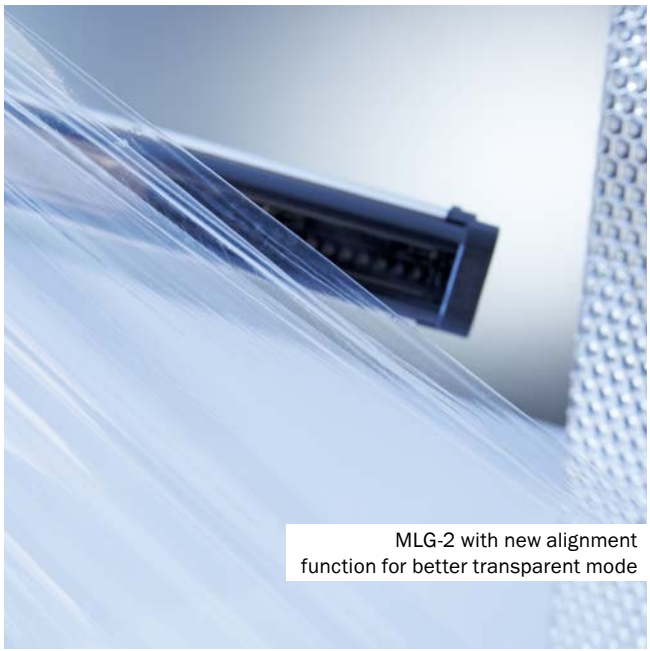
Application software

Automation light grids

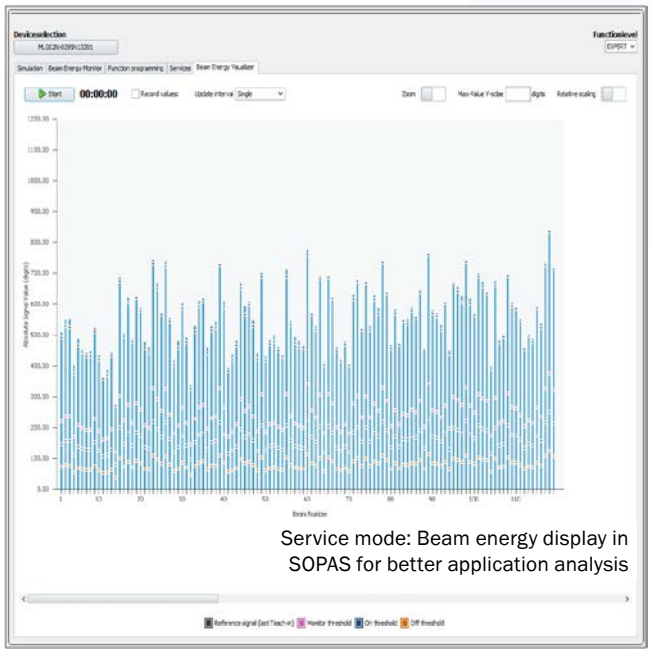
MLG-2 Extension

Flexible use for length, width and height measurements

- Material Teach to compare two transparent materials
- Cybersecurity: MLG-2 is based on the IEC 62-443 standard
- Alignment function has been improved for better recognition of transparent objects
- Two new ranges up to 3 m at 2.5 mm beam spacing and 14.5 m from 5 mm beam spacing



MLG-2 with new alignment function for better transparent mode



Service mode: Beam energy display in SOPAS for better application analysis

Product description

MLG-2 with new functions. The MLG-2 measuring automation light grids from SICK offer solutions for a variety of applications in logistics and factory automation. The device variants MLG-2 Prime, MLG-2 Pro and MLG-2 ProNet are used in demanding applications. In battery production, the smallest holes are detected; with the new Material Teach function, the light grid can even measure the positions of items on transparent objects. The MLG-2 family has been adapted to the cybersecurity standards of the future. Thanks to the pre-installed solutions of the SOPAS ET configuration software, even better "remote control" customer service can now be guaranteed over long distances. The MLG-2 ProNet has modern industrial interfaces such as Profinet, EtherCat and Ethernet IP so that beam data can be evaluated in a customer-oriented manner in every PLC.

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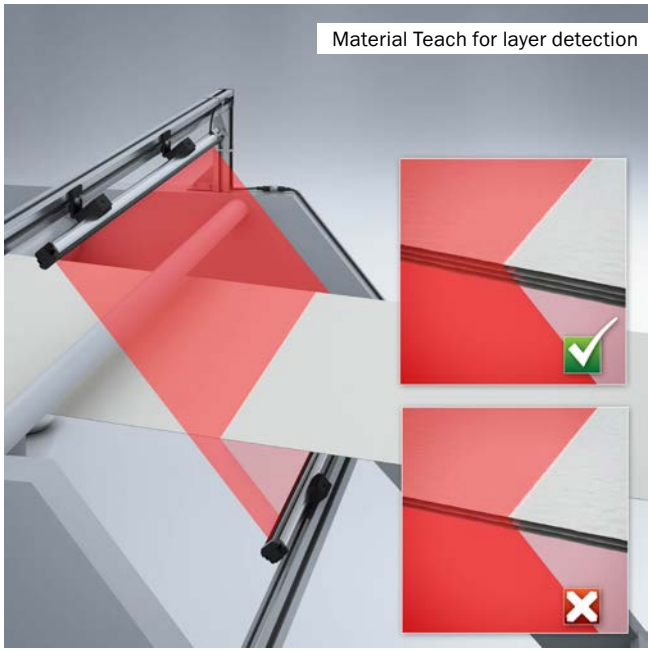
Application examples


Hole detection in the battery industry


Material Teach for layer detection

Technical data at a glance

Sensor principle	Sender/receiver
Operating range	3 m with 2.5 mm beam spacing 14.5 m from 5 mm beam spacing
Beam spacing	2.5 mm / 5 mm / 10 mm / 20 mm / 25 mm / 30 mm / 50 mm
Detection height	140 mm ... 3140 mm
Enclosure rating	IP65, IP67
Ambient operating temperature	-30 °C ... +55 °C
Interfaces	Analog, RS-485, IO-Link, PROFINET, PROFIBUS, EtherCAT, EtherNet/IP, CANopen

Selected products

Beam spacing	Detection height	Interface	Operating range	Type	Part no.
2.5 mm	145 mm	ProfiNet	3 m	MLG02N-0145N13301	1145508
2.5 mm	145 mm	RS-485	3 m	MLG02A-0145I13301	1145507
5 mm	895 mm	RS-485	14.5 m	MLG05A-0895I11401	1145506
5 mm	895 mm	ProfiNet	14.5 m	MLG05N-0895N11401	1145505
10 mm	3140 mm	IO-Link	8 m	MLG10A-3140R10801	1112038

IO-Link

→ www.sick.com/MLG-2

For more information, simply enter the link or scan the QR code.

Fork sensors

UFW

Easy and reliable web edge detection

- Ultrasonic technology detects films regardless of their optical properties (color, pattern, glossiness)
- Sender and receiver in a single housing
- Resolution of 0.01 mm and repeatability of 0.1 mm
- Switchable analog output between current (4-20 mA) and voltage (0-10 V)

Three LEDs and a clear guiding mark on the housing render the material's position visually.

Product description

The UFW fork sensor from SICK makes non-contact web edge guiding possible. Thanks to ultrasonic technology, the UFW detects a multitude of materials with great precision and is therefore ideally suited for applications with transparent films or light-sensitive materials. The compact housing designs (30 mm and 60 mm fork width) allow space-saving installation. Calibration is simple to perform using a teach-in button. Three LEDs indicate at a glance the position of the web material within the fork. Furthermore, the IO-Link communication interface opens up numerous possibilities for fine adjustment, analyses and monitoring.

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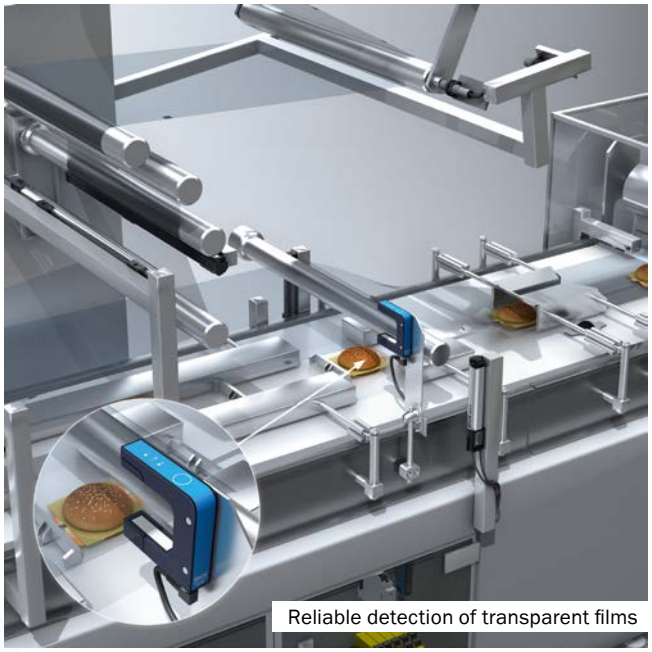
Application example



Reliable detection of transparent films

Technical data at a glance

Functional principle	Ultrasonic detection principle
Dimensions (W x H x D)	23.5 mm x 67 mm x 67.5 mm
Fork width	30 mm / 60 mm
Fork depth	43 mm / 73 mm
Detection area	12 mm / 40 mm
Repeatability	± 0.1 mm
Resolution	0.01 mm
Adjustment	Teach-in button, cable (One Point Adjustment, Two Point Adjustment, analog output: current/voltage, rising/falling)
Teach-in mode	One Point Adjustment
IO-Link	Two Point Adjustment
Analog output	IO-Link V1.1 COM3 (230.4 kBaud)
	Current output (4 mA ... 20 mA) / voltage output (0 V ... 10 V)

Selected products

Fork width	Fork depth	Detection area	Enclosure rating	Type	Part no.
30 mm	43 mm	12 mm	IP67	UFW3-43B717ZZZ	6086479
60 mm	73 mm	40 mm	IP65	UFW6-73B717IZZ	6086480
30 mm	43 mm	12 mm	IP65	UFW3-43B717IZZ	6086478
60 mm	73 mm	40 mm	IP67	UFW6-73B717ZZZ	6086481

IO-Link

→ www.sick.com/UFW

For more information, simply enter the link or scan the QR code.

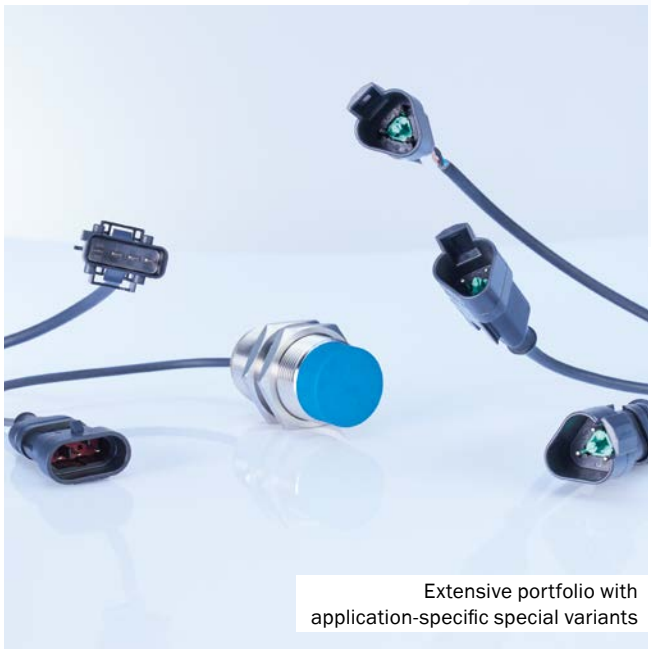
Inductive proximity sensors

IMG

Inductive standard sensors for economical use in outdoor applications

- Types: M12, M18, M30
- Extended sensing ranges: 4 to 20 mm
- Temperature range: –40 to +85 °C
- Enclosure rating: IP67, IP68, IP69K
- For harsh environments and demanding weather conditions with high humidity, extreme temperatures or constant vibration

High availability and long service life thanks to rugged design according to enclosure ratings IP68 and IP69K



Extensive portfolio with application-specific special variants

Product description

The IMG inductive proximity sensor precisely detects metallic objects even in harsh usage environments. In price-sensitive mobile applications and automation solutions, it is suitable as a switch for end position determination of speed measurement. Using the IMG, fault-free processes can be ensured even with high temperature fluctuations. The fully-encapsulated sensor is impervious to mechanical shocks as well as vibrations and with its IP69K rating is protected against water as well as oils, coolants and all kinds of contamination. This makes the IMG an economical solution for challenging outdoor uses and machine construction. Thanks to plug and play, the sensor can also be commissioned quickly.

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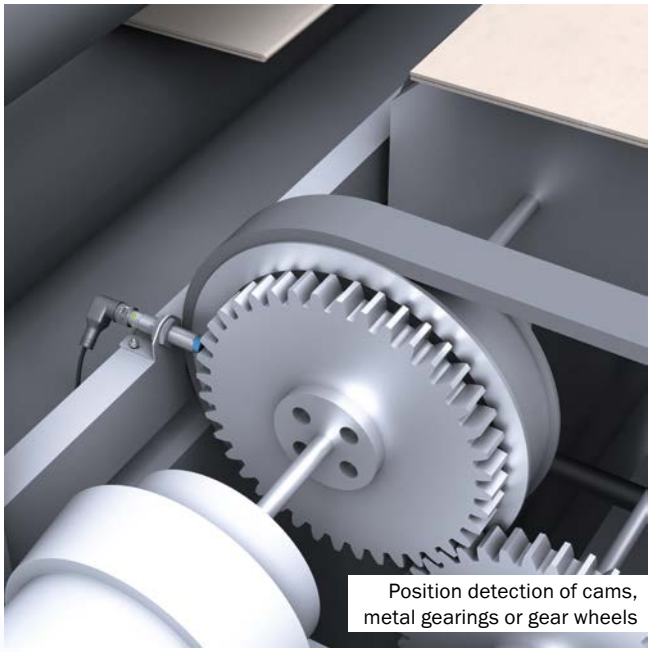
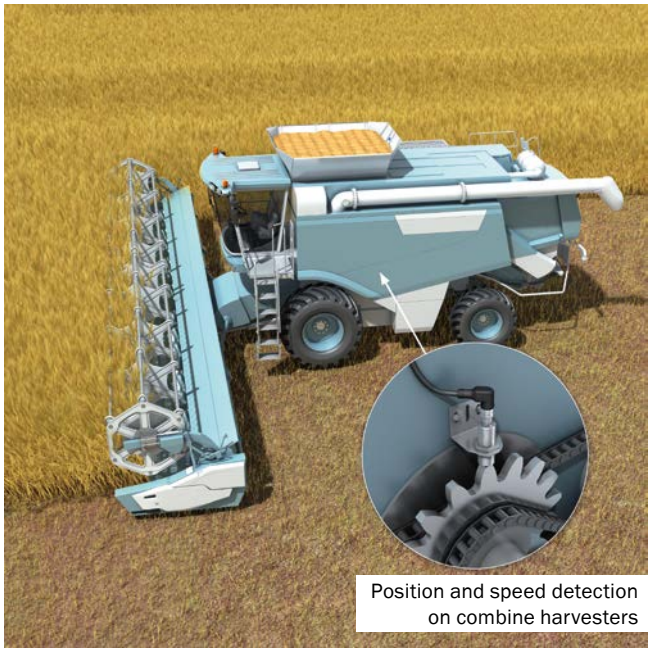
Application examples



Position detection of cams, metal gearings or gear wheels



Position and speed detection on combine harvesters

Technical data at a glance

Housing	Metric
Threaded housing sizes	M12, M18, M30
Sensing range Sn	4 mm ... 20 mm (depending on type)
Electrical configuration	DC 3-wire
Connection types	M12 connector or PUR cable 2 m
Enclosure rating	IP67, IP68, IP69K
Ambient temperature	–40 °C ... +85 °C
Housing material	Nickel-plated brass housing and nuts, LCP sensing face
Special features	Resistant to oil and cooling lubricants; suitable for use outdoors

Selected products

Size	Sensing range	Mounting	Switching output	Type	Part no.
M12	4 mm	flush	PNP, N/O	IMG12-04BPSZC0S	1094334
M12	8 mm	non-flush	PNP, N/O	IMG12-08NPSZC0S	1135516
M18	8 mm	flush	PNP, N/O	IMG18-08BPSZC0S	1135566
M18	12 mm	non-flush	PNP, N/O	IMG18-12NPSZC0S	1135572
M30	20 mm	non-flush	PNP, N/O	IMG30-20NPSZC0S	1135621

→ www.sick.com/IMG

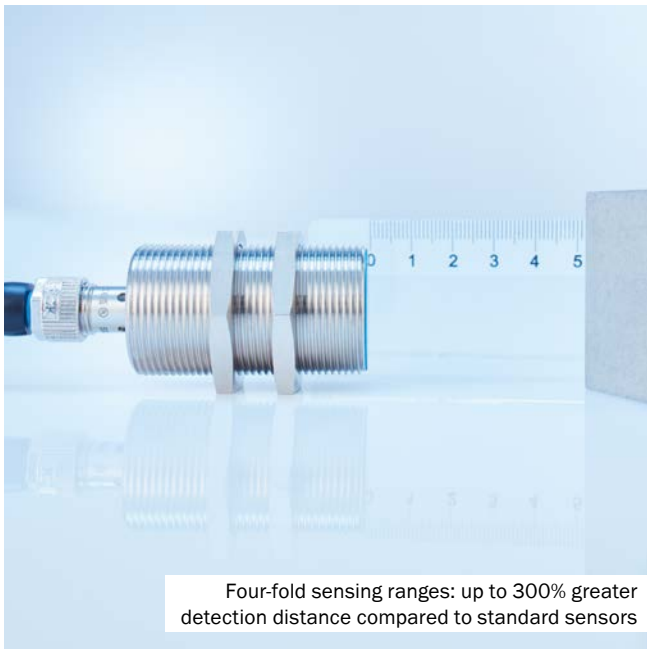
For more information, simply enter the link or scan the QR code.

Inductive proximity sensors

IMX

Inductive sensors with a quadruple sensing range for large distances in industrial environments

- Large sensing ranges: 4 mm to 50 mm
- Smaller installation space than larger standard sensors with comparable sensing ranges
- Reduced risk of mechanical damage due to greater mounting distance from the target object
- Quick and easy commissioning thanks to visual adjustment indicator



Four-fold sensing ranges: up to 300% greater detection distance compared to standard sensors

Detection from a safe distance reduces the risk of collisions and mechanical damage

Product description

Significantly greater sensing range: IMX offers four times the operating distance of conventional sensors, setting a new standard for inductive proximity sensors. Sensing ranges of up to 50 mm ensure a higher process performance - making IMX ideal for applications that were previously inconceivable with inductive sensors. In space-critical applications, IMX sensors save installation space by using smaller designs. At the same time, the greater distance reduces mechanical damage. The rugged, durable design ensures less downtimes, stable processes and high plant availability.

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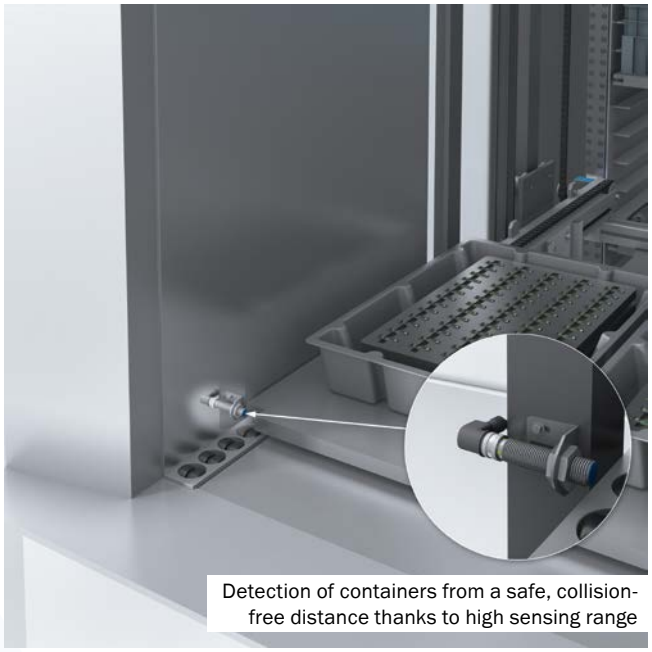
Application examples



Detection of containers from a safe, collision-free distance thanks to high sensing range

Detection in confined spaces at the same distance as standard sensors, but with up to two smaller sensor sizes

Technical data at a glance

Design	M8 to M30
Extended sensing ranges	4 mm to 50 mm
Enclosure rating	IP68
Temperature range	–25 to +75 °C
Housing material	Nickel-plated brass housing, plastic sensing face (LCP)
Special features	4-fold sensing ranges, resistant to oil and cooling lubricants, visual adjustment indicator

Selected products

Thread size	Sensing range Sn, Installation type	Switching output	Connection type	Type	Part no.
M8	4 mm, quasi-flush	PNP, NO	male connector M12, 4-pin	IMX08-04BPSZC0S	1107435
	8 mm, non-flush	PNP, NO	male connector M12, 4-pin	IMX08-08NPSZC0S	1107436
M12	9 mm, quasi-flush	PNP, NO	cable, PUR, 3-wire, 2 m	IMX12-09BPSZU2S	1107445
	16 mm, non-flush	PNP, NO	male connector M12, 4-pin	IMX12-16NPSZC0S	1107438
M18	14 mm, quasi-flush	PNP, NO	cable, PUR, 3-wire, 2 m	IMX18-14BPSZU2S	1107447
	30 mm, non-flush	PNP, NO	male connector M12, 4-pin	IMX18-30NPSZC0S	1107441
M30	25 mm, quasi-flush	PNP, NO	cable, PUR, 3-wire, 2 m	IMX30-25BPSZU2S	1107449
	50 mm, non-flush	PNP, NO	male connector M12, 4-pin	IMX30-50NPSZC0S	1107443

→ www.sick.com/IMX

For more information, simply enter the link or scan the QR code.

Photoelectric sensors

G6S

Way above the standard – the economic way to business class

- Low-price and user-friendly solution for countless applications
- PinPoint LEDs (with visible red light and infrared light)
- Superior optical performance and robustness thanks to the 5th generation ASIC from SICK
- Quick mounting and high durability thanks to the metal inserts with M3 thread

PinPoint LED technology for easy sensor alignment and reliable object detection

Easy-to-adjust potentiometer for quick installation and commissioning

Product description

The G6S photoelectric sensors extend the G6 products with variants with improved functional characteristics. The sensors in miniature housings offer PinPoint LED, metal inserts for mounting, large and bright indicator LEDs, user-friendly adjustment knobs, IP67 enclosure ratings, as well as the very latest ASIC technology from SICK. G6S can therefore be used to reliably solve various detection tasks, for example in logistics processes or in paper and print processing.

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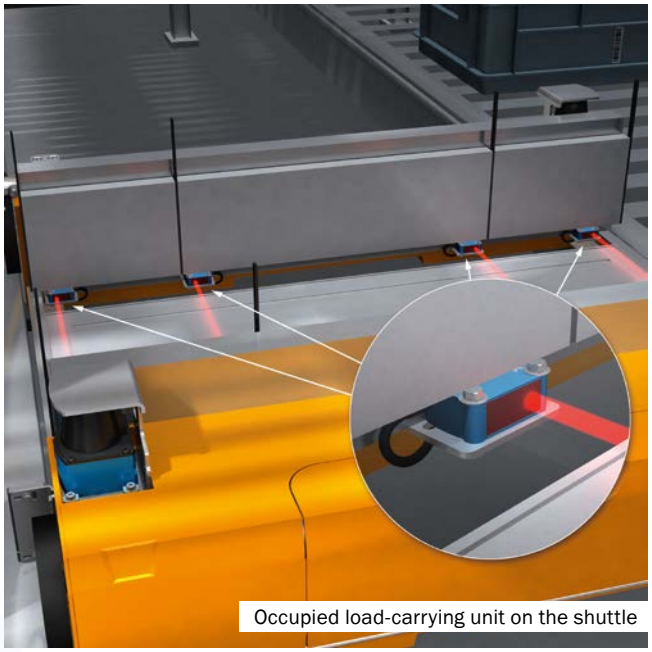
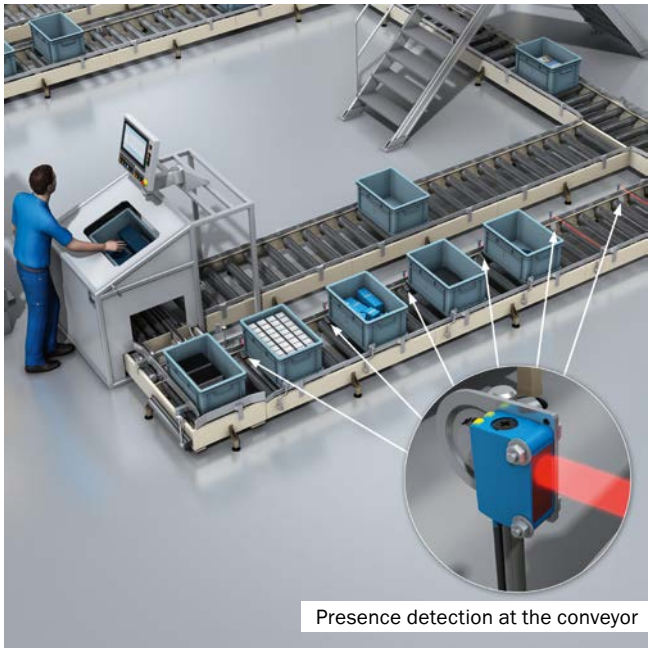
Application examples



Occupied load-carrying unit on the shuttle



Presence detection at the conveyor

Technical data at a glance

Dimension (W x H x D)	12 mm x 31.6 mm x 21 mm
Type of light	Visible red light (PinPoint LED) Infrared light (LED)
Ambient operating temperature	–30 °C ... +55 °C
Housing material	Plastic, ABS
Enclosure rating	IP67 (EN 60529)

Selected products

Functional principle	Sensing range max.	Light spot size (distance)	Switching frequency	Type	Part no.
Photoelectric proximity sensor, background suppression	400 mm	Ø 4.8 mm (150 mm)	1 kHz	GTB6SP-22A1116EZ-ZZZ1ZZZZZZZZZ1	1141176
Photoelectric proximity sensor Energetic	900 mm	Ø 4.4 mm (200 mm)	500 Hz	GTE6SP-22A1146EZ-ZZZ1ZZZZZZZZZ1	1135463
Photoelectric retro-reflective sensor	6 m	Ø 11.5 mm (350 mm)	1 kHz	GLD6SP-22A1217EZ-ZZZ1ZZZZZZZZZ1	1135402
Through-beam photoelectric sensor	20 m	Ø 473.8 mm (10 m)	1 kHz	GSE6SP-22A1217EZ-ZZZ1ZZZZZZZZZ1	1135346

→ www.sick.com/G6

For more information, simply enter the link or scan the QR code.

Photoelectric sensors

W10

Easy to install. Easy to operate. The one photoelectric proximity sensor for all applications.

- The world's first photoelectric sensor with touchscreen display
- Two housing variants for standardized mounting
- Sturdy design with 316L stainless steel housing and IP69k protection rating
- MultiMode functions such as speed, standard, and precision mode, foreground and background suppression, and teach options

Intuitive touchscreen display

High performance thanks to a precise laser triangulation system with line scanning

Product description

The W10 photoelectric proximity sensor's ease of use, sturdy design and performance make it ideal for precise object detection in demanding environments. The touchscreen display is intuitive to use, allowing parameters to be set quickly. Situation-dependent teach-ins allow convenient sensor adaptation to individual applications. The fact that various MultiMode functions and configurations, such as foreground and background suppression, are combined in a single sensor allows success in a wide range of applications.

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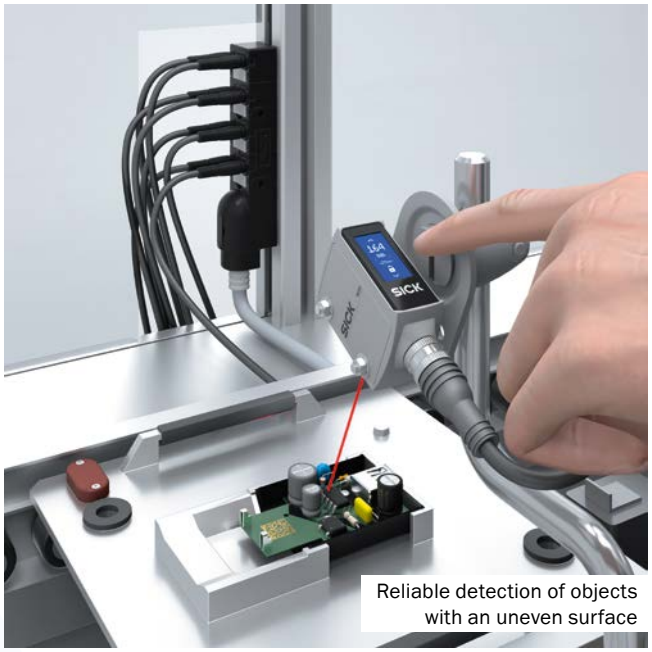
Application examples



Reliable detection of objects with an uneven surface

Leading edge detection of foods at high conveyor belt speeds

Technical data at a glance

Dimensions (W x H x D)	18 mm x 57 mm x 42.2 mm
Functional principle detail	Background suppression, foreground suppression, MultiMode
Adjustment	Touchscreen display
Light source	Laser
Type of light	Visible red light
Switching frequency	275 Hz, 100 Hz, 30 Hz
Resolution	1 mm
Enclosure rating	IP67, IP69
Housing material	Stainless steel
Ambient operation temperature	–10 °C ... +55 °C
Communication interface	IO-Link

Selected products

Object distance (min.)	Object distance (max.)	Housing	Type	Part no.
25 mm	400 mm	Hybrid	WTM10L-241612D0-A00ZWZZZZZZZZ1	1133544
25 mm	400 mm	Rectangular	WTM10L-241612D0A-00ZVZZZZZZZZ1	1133545
25 mm	700 mm	Hybrid	WTM10L-241611D0A-00ZWZZZZZZZZ1	1133546
25 mm	700 mm	Rectangular	WTM10L-241611D0A-00ZVZZZZZZZZ1	1133547

IO-Link

→ www.sick.com/W10

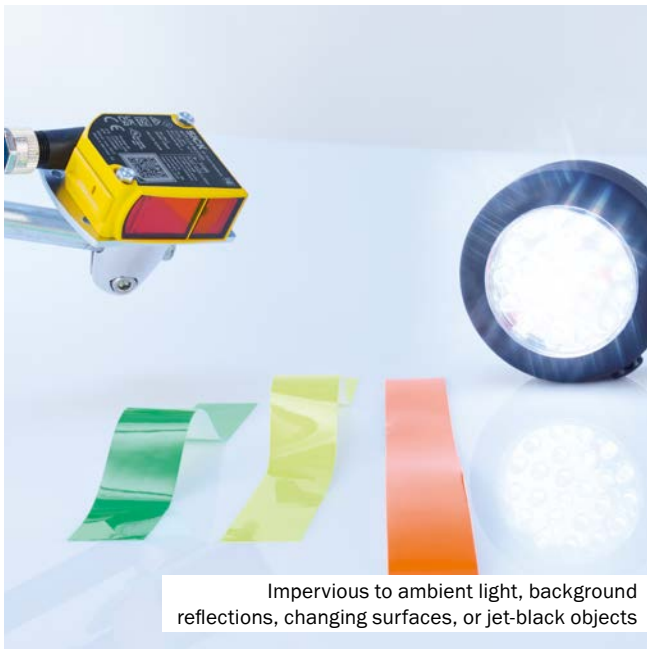
For more information, simply enter the link or scan the QR code.

Safety distance sensors

WTT12-S

Safety sensor for muting and fall edge detection up to SIL 1 and PL c

- Safe detection: Meets requirements of SIL 1 and PL c
- Long sensing ranges: 150 mm to 2,000 mm
- Color-insensitive sensor with time-of-flight technology
- Push button for quick configuration teach-in
- Compact VISTAL® housing in enclosure rating IP67



Impervious to ambient light, background reflections, changing surfaces, or jet-black objects

WTT12-S sensors provide flexible mounting options and are easy to parameterize

Product description

The WTT12-S safety sensor is well-suited for simple reliable detection of objects in mobile and stationary applications. The sensor reliable detects fall edges by means of optical time-of-flight measurement. This is how the WTT12-S allows your automated guided vehicle or service robot to travel safely. The sensor also safely detects incoming machine parts and workpieces thanks to muting. Quick parameterization and standard M12 plug connectors make the WTT12-S easy to put into operation. And thanks to its rugged housing, the sensor can be used in countless applications, even in harsh environments. This ensures efficient, safe and productive processes in intralogistics.

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Application examples

Access protection for personnel safety at picking stations

Cliff detection for professional service robots in public areas

Technical data at a glance

Safety-related detection zone	150 mm ... 2000 mm
Safety integrity level	SIL 1 (IEC 61508)
Performance level	PL c (EN ISO 13849)
Dimensions (W x H x D)	20 mm x 49.6 mm x 44.2 mm
Light source	Laser
Type of light	Visible red light
Enclosure rating	IP67
Housing material	VISTAL®
Adjustment	Teach-in button

Selected products

Functional principle detail	Type	Part no.
Object between sensor and reference object or reference surface	WTT12S-M2569	1136647
Absence of reference object or reference surface	WTT12S-C2569	1136898

→ www.sick.com/WTT12-S

For more information, simply enter the link or scan the QR code.

Safety controllers

Flexi Mobile

The safety controller for mobile robots

- Space-saving integration without control cabinet thanks to robust housing
- Reliable electrical installation with rectangular plug connectors
- TÜV-certified function blocks for rapid development
- High productivity even in confined spaces by means of safe motion functions
- Simple configuration via Safety Designer software

Robust, shock- and vibration-resistant aluminum housing for space-saving integration without control cabinet

TÜV-certified function blocks with pre-developed safety functions for fast engineering

Product description

The safety controller Flexi Mobile is the answer to safety requirements for dynamic mobile robots. With the robust aluminum housing and a smart installation concept, you can integrate Flexi Mobile into AGVs and AMRs in a space-saving manner. An additional control cabinet is no longer necessary. Certified function blocks ensure a high level of efficiency right from the mobile robot engineering stage. Configuration, commissioning and diagnostics are quick and easy using the intuitive Safety Designer software. The Flexi Mobile's safety functions, specially developed for mobile robots, enable high productivity in automation processes - both indoors and outdoors.

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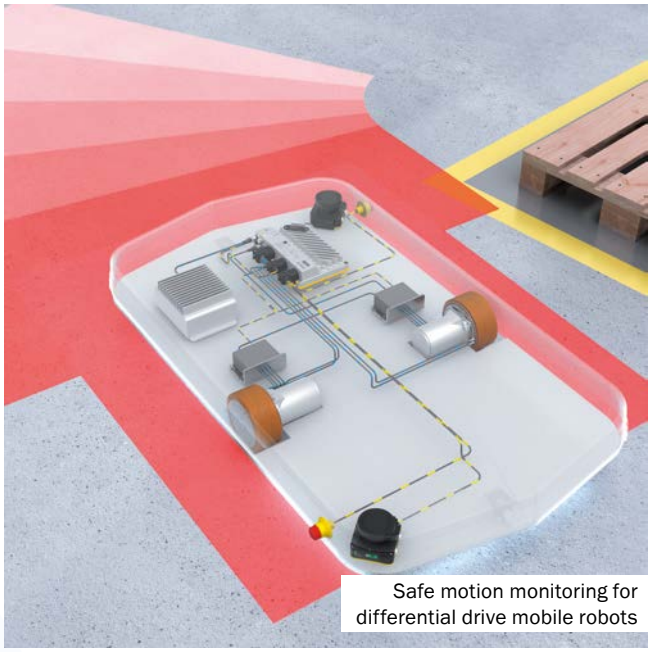
Application examples



Safe motion monitoring for differential drive mobile robots

Integration without control cabinet thanks to robust housing - also for outdoor applications

Technical data at a glance

Application	Indoor and outdoor
Enclosure rating	IP66 / IP67 / IP69 (EN 60529) and IP69K (ISO 20653)
Performance level	PL e (ISO 13849-1), AgPL e (ISO 25119)
Configuration	Safety Designer
Drive safety functions	Safe stop 1 (SS1) Safe stop 2 (SS2) Safe operating stop (SOS) Safe speed monitoring (SSM) Safely-limited speed (SLS) Safe direction (SDI) Safe brake control (SBC) Safe cam (SCA) Safely-limited position (SLP)

Selected products

Safety inputs	Safety outputs	Number of connectable A/B incremental encoders (non-safety)	Communication interface	Type	Part no.
28	12	2	Modbus® TCP SLMP	FLM3-CPUN100A01	1117015
36	20	2		FLM3-CPUN100A02	1117018
28	12	2	Modbus® TCP SLMP CANopen	FLM3-CPUN100A03	1118655
36	20	2		FLM3-CPUN100A04	1118656

→ www.sick.com/Flexi_Mobile

For more information, simply enter the link or scan the QR code.

Safety laser scanners

microScan3 Pro I/O

The rugged safety laser scanner – extremely intelligent

- Very high machine availability thanks to safeHDDM® scanning technology
- Time-saving commissioning and diagnostics thanks to intuitive Safety Designer software
- NEW: Local I/Os combined with Ethernet interface - perfect for complex applications

With up to 128 configurable fields and monitoring cases, the sensor settings can be flexibly adapted to the respective application

Product description

The microScan3 safety laser scanner stands for the protection of very different applications: from stationary to mobile, from simple to complex. The innovative safeHDDM® scanning technology makes the microScan3 extremely resistant, even to dust and ambient light, and delivers high-precision measurement data. It increases the productivity and availability of machines. The different variants of the microScan3 can be integrated simply and safely into countless networks. In addition, the safety laser scanner offers standardized connectivity for time-saving commissioning. The microScan3 combines high performance and innovation with user-friendliness and a wide range of diagnostic options with its Safety Designer configuration software. Thanks to different variants, the microScan3 also safeguards your application and is a suitable successor product if you are currently using the S3000, for example.

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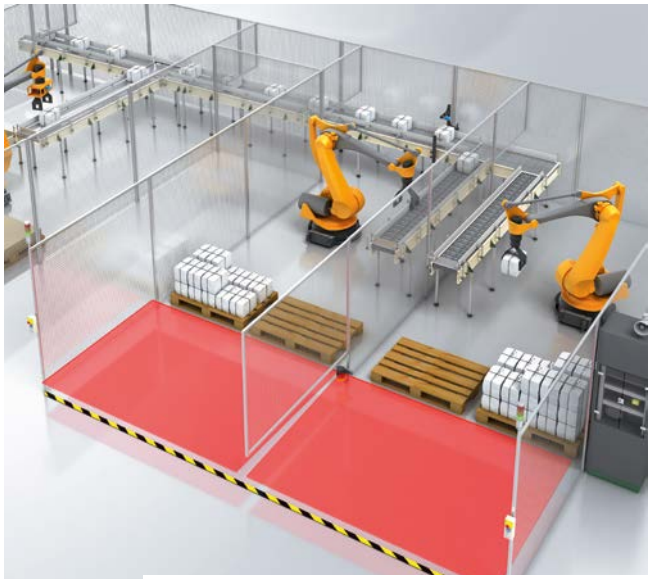
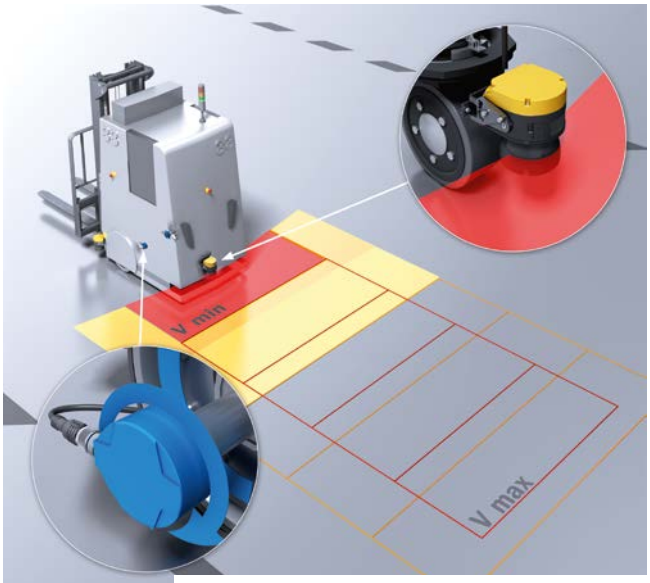
Application examples



Safeguarding several hazardous areas of a palletizer station with just one safety laser scanner



Adaptive protective field adjustment of the safety laser scanner by means of speed monitoring

Technical data at a glance

Protective field range	4 m	5.5 m	9 m
Number of fields	128		
Number of simultaneously monitored fields	8		4
Application	Indoor		
Number of monitoring cases	128		
Scanning angle	275°		
PLC integration	Local inputs and outputs (I/O)		
Outputs	4 OSSD pairs		
Measured data output	Ethernet		

Selected products

Protective field range	Type	Part no.
9 m	MICS3-CCAZ90AN1P01	1133822
5.5 m	MICS3-CCAZ55AN1P01	1133820
4 m	MICS3-CCAZ40AN1P01	1133818

→ www.sick.com/microScan3

For more information, simply enter the link or scan the QR code.

Safety switches

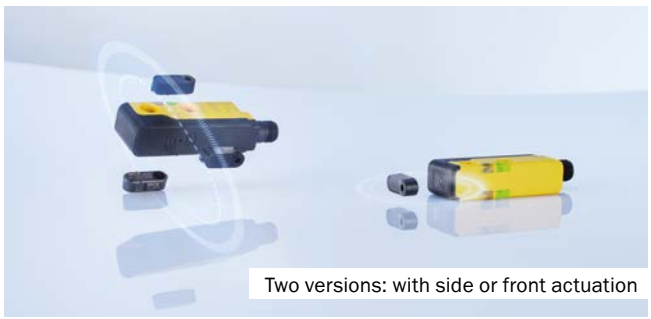
safeIDS

RFID safety switch for safe identification and flexible processes

- Flexible processes with safe object identification and safe case differentiation up to PL e
- Safe transmission of identification data via IO-Link Safety
- Can read more than 1000 uniquely coded tags
- Variable use of machine modules thanks to safe identification

Simple connection to IO-Link Safety Master via M12 plug connector and 4-pin standard cable

safeIDS reliably recognizes over 1000 tags and offers fully automatic process change without acknowledgement



Two versions: with side or front actuation

Product description

The safeIDS RFID safety switch offers a high level of flexibility in manufacturing processes up to performance level e. Together with an IO-Link Safety master and a safety controller, the safeIDS allows safe object and position detection. The safety switch is easy to install and commission. Thanks to the IO-Link Safety communication interface, you obtain not only safe identification data but also continuous diagnostics data. This makes fast process changes with an automatic restart of the machine possible. Flexible production right down to batch size 1 can thereby be achieved, for example for robot applications.

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Application examples

safeIDS offers automated tool change thanks to safe detection of variable tags on machine parts

In the multi-stage processing of workpieces, safeIDS reliably detects slides on conveyor belts

Technical data at a glance

Sensor principle	RFID
Safety level	PL e, SIL 3
Actuator coding level	High coding level (EN ISO 14119) Medium coding level (EN ISO 14119) Low coding level (EN ISO 14119)
Type of output	IO-Link Safety
Connection type	Male connector, M12, 4-pin, A-coded
Active sensor surface	Front / Top (depending on type)

Selected products

Safe switch on distance S_{ao}	Active sensor surfaces	Active sensor surface	Type	Part no.
7 mm	1	Front	SE1-SS1A20	1132197
10 mm	3	Top	SE1-ST1A20	1132196

IO-Link safety

→ www.sick.com/safeIDS

For more information, simply enter the link or scan the QR code.

Safety systems

End-of-Arm-Safeguard

Collision protection around the gripper for safe human-robot collaboration

- Builds trust in HRC applications: End-of-Arm-Safeguard stops the robot movement before a collision occurs
- Higher robot speeds possible in many collaborative applications
- Significantly reduced effort for force and pressure measurements in accordance with ISO/TS 15066
- Seamless integration and intuitive configuration

Faster cobots thanks to protection of the tool and workpiece area

More usable workspace as a result of fence-free, focused protective measures

Product description

End-of-Arm-Safeguard is an innovative safety system for collaborative robot applications. The system provides a protective field around the robot tool, reduces the risk of crushing injuries and enables safe working in the immediate proximity of the robot. Thanks to the contactless technology, the robot stops before a collision occurs. This boosts operator confidence and increases productivity. With its small protective field, End-of-Arm-Safeguard offers a safety solution exactly where it is needed, creating more space for man and machine. The system is designed for the e-Series from Universal Robots. It is installed directly on the robot flange. Configuration is carried out via the UR Teach Pendant.

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Application example

Close human-robot collaboration, e.g., in pick and place or machine tending applications

Technical data at a glance

Safety-related parameters	PL c (ISO 13849-1) Category 2 (ISO 13849-1)
Principle of operation	Time-of-flight measurement
Protective field length	100 mm ... 550 mm
Detection zone	Close range: 50 mm ... 100 mm Far range: 550 mm ... 700 mm
Protective field angle	14°
Enclosure rating (IEC 60529)	IP54 (IEC 60529)

Selected products

Short description	Type	Part no.
Package consisting of EOAS sensor; two-part EOAS flange incl. screw set; cable for power supply, 4 m; Ethernet cable for data connection, 4 m	EOAS170T-1A040AZA1	1121300
EOAS sensor unit	EOAS170T-P01	1129419

→ www.sick.com/End-of-Arm-Safeguard

For more information, simply enter the link or scan the QR code.

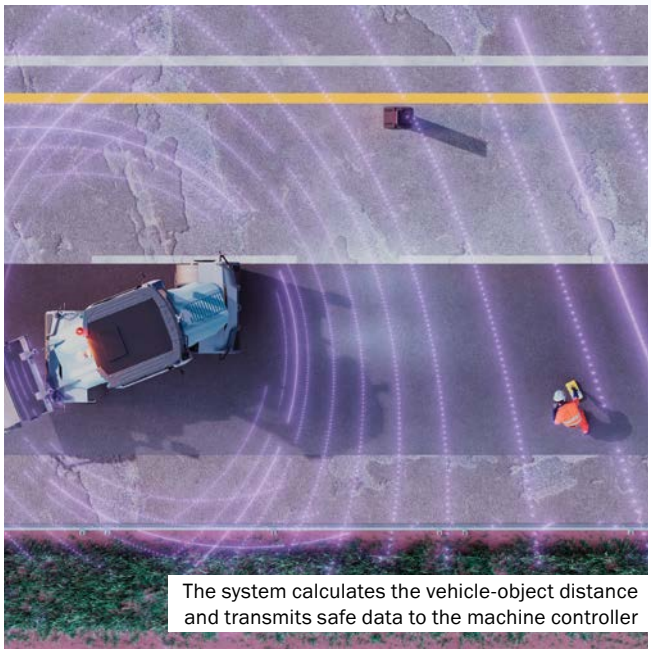
Safety systems

Safe Brake Assist

Safe collision avoidance for mobile machines in outdoor applications

- Protect people and objects in the path of the machine
- Save time and money when integrating the system with the help of SICK experts
- Calculation of the travel path reduces false triggerings and makes it possible to precisely navigate narrow spaces

The Intelligent braking control allows situation-adapted braking of mobile machines



The system calculates the vehicle-object distance and transmits safe data to the machine controller

Product description

The ISO 13849-certified Safe Brake Assist safety system prevents collisions with people and infrastructure in outdoor areas. It does so using 3D LiDAR sensors that continuously measure the distance between the vehicle and potential obstacles along the vehicle's path based on vehicle movement data. This ensures a safe and smooth operation even under demanding ambient conditions such as vapour, heat or rain. Thanks to the adaptive braking control feature, the system only applies the brakes in case of an imminent collision with people or the road infrastructure, e.g. guardrails. The result: Safe Brake Assist increases the availability of construction and agricultural machinery, saves costs, and relieves the driver. SICK experts assist with integrating the system into your vehicle.

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Application example

Active collision avoidance for road rollers

Technical data at a glance

Technology	2 x multiScan 136 (3D LiDAR sensor)| 1 x Application Processing Unit (industrial PC for data processing) 2 x DC-DC voltage converter (voltage converter for on-board power) 2 x Ethernet cable (data cable - sensors to IPC)
Working range	2.0 m ... 4.0 m safety related (6 % remission) @ 10kLux; 50 m (MOR) 2.0 m ... 5.7 m safety related (6 % remission) @ 100kLux; 10000 m (MOR) 2.0 m .... 12 m (10 % remission)
Field of view	Horizontal: ≤ 180° in application / 360° (max.) Vertical: 65° [+22.5° to -42.5°, DIN 70000]
Output signal frequenz	20 Hz
Performance Level	PL b (ISO 13849)
IP protection class	Processing Unit: IP65 Sensor: IP69K

Selected products

Description	Type	Part no.
Safety system	Safe Brake Assist	on request

→ www.sick.com/Safe_Brake_Assist

For more information, simply enter the link or scan the QR code.

Safety systems

Safe Robotics Area Protection

Open access for safe productivity

- Free, safe access to cooperative robot applications for optimal work processes and high productivity
- New: Easy integration in ABB robots thanks to sBot Speed – ABB
- New: Safeguarding UR robots with two safety laser scanners: sBot Stop2 – URCap and sBot Speed2 – URCap

Easy configuration of sBot Speed - ABB thanks to the intuitive graphical interface of the microScan3 Configuration Tool - ABB

Safeguarding the environment with two safety laser scanners: sBot Stop2 - URCap and sBot Speed2 - URCap

Product description

The Safe Robotics Area Protection safety systems from SICK are a starting point for safe human-robot interaction and enable cooperative and freely-accessible robot applications. The system comprises hardware as well as software or functional logic with tested safety functions. Not only generic but also manufacturer-specific variants are available, for example for Universal Robots, ABB, FANUC, KUKA and Yaskawa. Thanks to the detailed documentation and robot-specific settings, these variants can be easily integrated into robot control systems and, in part, configured directly via the robot hardware. Safe Robotics Area Protection ensures less downtime, optimized work processes and therefore an increase in productivity.

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Application examples


Save time during commissioning thanks to the intuitive configuration software for UR and ABB


Protection of palletizer stations

Technical data at a glance

Safety Task	Hazardous area protection
Application	Robot
Safety level	PL d

Selected products

Variant	Robot controller	Stopping process of the robot	Safety laser scanner	Type	Part no.
sBot Stop2 - URCap	Universal Robots: UR3e, UR5e, UR10e, UR16e, UR20 und UR30	stop only	2x nanoScan3 Core I/O	SYS/BOT-URST4ESU-A02NS3	1137604
sBot Speed2 – URCap		with speed reduction	2x nanoScan3 Pro I/O	SYS/BOT-URSP4ESU-A02NS3	1137605
sBot Speed PROFINET - ABB	ABB: SWIFTI CRB 1100, SWIFTI CRB 1300, GoFa CRB 15000	with speed reduction	microScan3 Core - PROFINET	SYS/BOT-ABPN4P-CWI01MS3	1141109
sBot Speed2 PROFINET - ABB			2x microScan3 Core - PROFINET	SYS/BOT-ABPN4P-CWI02MS3	1141110
sBot Speed I/O - ABB			microScan3 Pro I/O	SYS/BOT-ABIO4P-CWI01MS3	1141111
sBot Speed2 I/O - ABB			2x microScan3 Pro I/O	SYS/BOT-ABIO4P-CWI02MS3	1141112

→ **www.sick.com/Safe_Robotics_Area_Protection**
For more information, simply enter the link or scan the QR code.

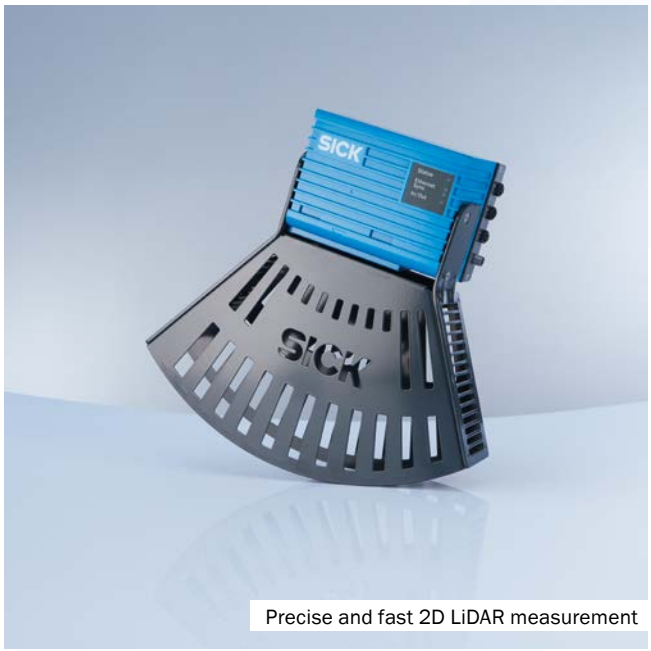
LiDAR sensors

LMS4000 with SICK Nova

The all-rounder for various applications

- Configurable industrial image processing on SIM2x00
- SICK Nova with a variety of plug-in tools and fast customization
- Great depth of field for long distances and large objects
- High ambient light robustness for demanding environmental conditions

Turnkey solutions for positioning and quality control



Precise and fast 2D LiDAR measurement

Product description

The 2D LiDAR sensor LMS4000 is combined with the Sensor Integration Machine SIM2x00 and SICK Nova. The result is a robust, high-performance machine vision system for precise Quality Inspection - even under demanding environmental conditions. The user-friendly web interface with intuitive 2D and 3D viewer makes point-and-click configuration quick and easy. Nova LMS4000 enables quality inspections in a wide range of applications, e.g. for the correct condition, processing or assembly of components. Cracks or other damages are detected accurately, the filling level or completeness is determined and the volume flow is calculated. Larger objects and distances of several meters are unproblematic.

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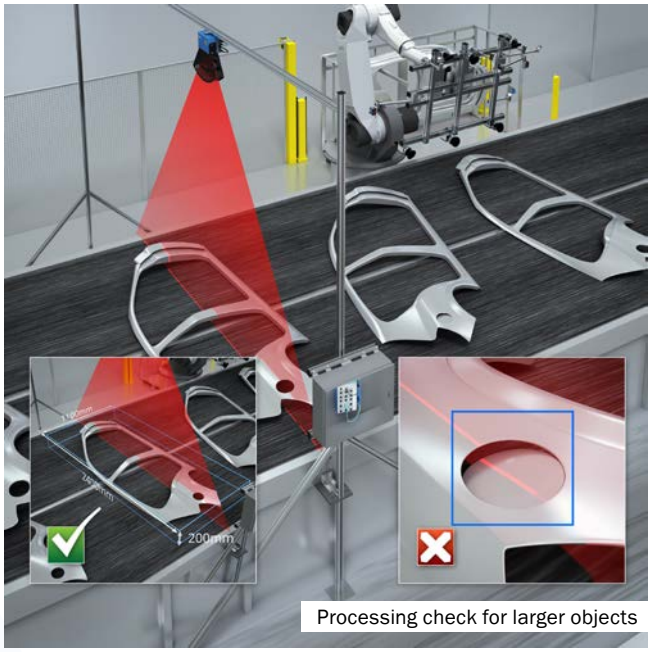
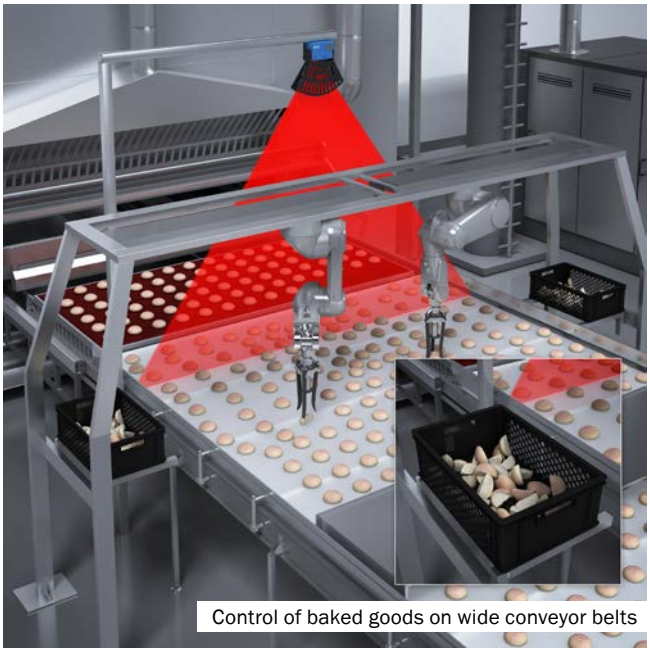
Application examples



Processing check for larger objects


Control of baked goods on wide conveyor belts

Technical data at a glance

Angular resolution	1/12°
Scanning frequency	600 Hz
Measuring accuracy	Systematic : ± 1 mm (typical) Statistical : 1.5 mm ... 9 mm
Light source	Visible red light, laser class 2
SICK Nova licenses	Presence Inspection Quality Inspection

Selected products

Function	Working range	Utilization	Pre-installed	Type	Part no.
Data streaming	0.7 m ... 3 m	Standard objects and gloss	Standard firmware	LMS4111R-13000	1091423
	0.7 m ... 3 m	Highest accuracy and dark objects	Standard firmware	LMS4121R-13000	1091393
	0.5 m ... 5.5 m	Ready for immediate use High evaluation speed	Standard firmware	LMS4124R-13000S01	1116198
Data evaluation	–	Ready for immediate use High evaluation speed	Nova LMS4000 SensorApp Quality Inspection License	SIM2500-2AX1G10 NOVA LMS4000 QI	1143300
	–	High evaluation speed	–	SIM2000-2P04G10	1081902
	–	Standard evaluation speed	–	SIM2500-2P03G10	1092673

→ www.sick.com/LMS4000

For more information, simply enter the link or scan the QR code.

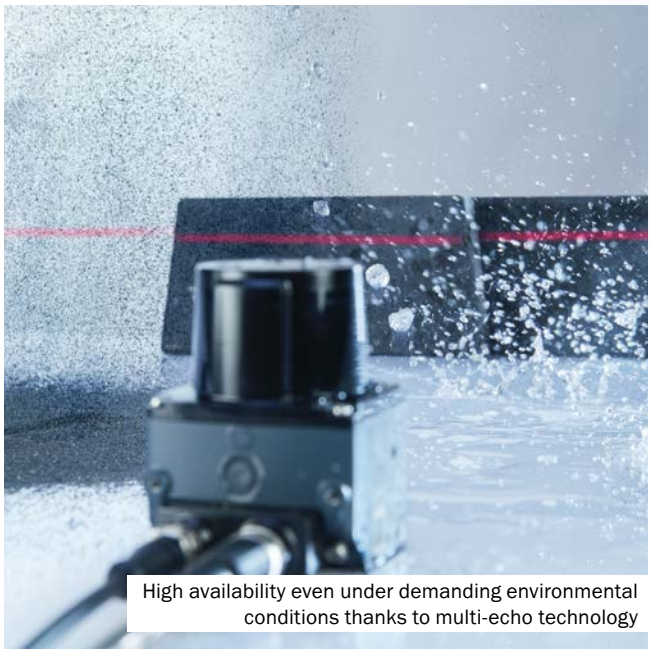
LiDAR sensors

picoScan100 with 2D Object Detection

High-performance and cost-effective in compact housing

- Precise measurement data and flexible 2D object detection with up to 48 fields
- Large working: range up to 75 m; angular resolution up to 0.05°
- Complete coverage of surroundings with the HDDM+ multi-pulse measurement method
- Scan frequency: 15 Hz to 50 Hz for fast response times

picoScan100: now available with 2D object detection



High availability even under demanding environmental conditions thanks to multi-echo technology

Product description

With its long range, fine angular resolution and high sensitivity, the picoScan100 2D LiDAR sensor sets new standards. The sensor is now also available with 2D object detection. This allows up to 48 fields to be flexibly created and monitored. The sensor also reliably detects small and dark objects. The field status can be output via digital outputs or Ethernet. This enables numerous applications such as collision avoidance for AMR (Autonomous Mobile Robots). The measurement data of the sensor is extremely precise and can be transmitted via various communication interfaces. The compact picoScan100, which is equipped with multi-echo technology, has a robust housing and ensures reliable measurement results in indoor and outdoor applications, even under harsh environmental conditions. Available in three versions (Core, Prime and Pro), the picoScan100 can also be customized with additional features to meet individual requirements.

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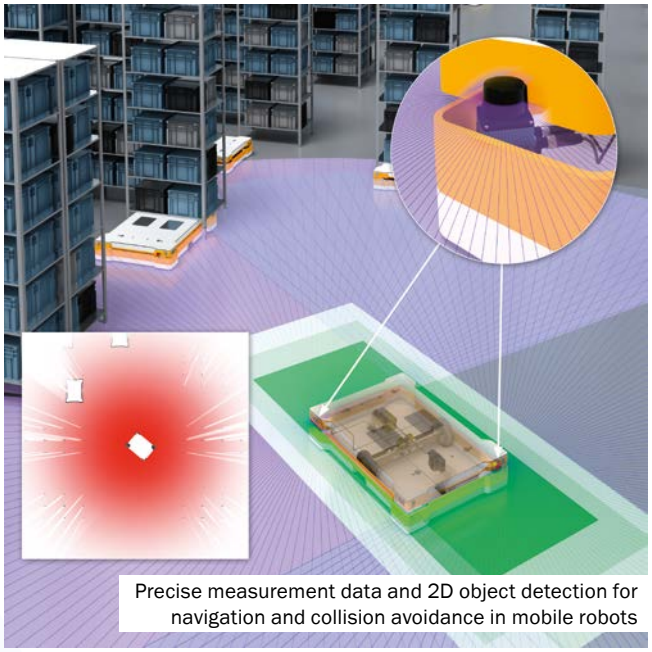
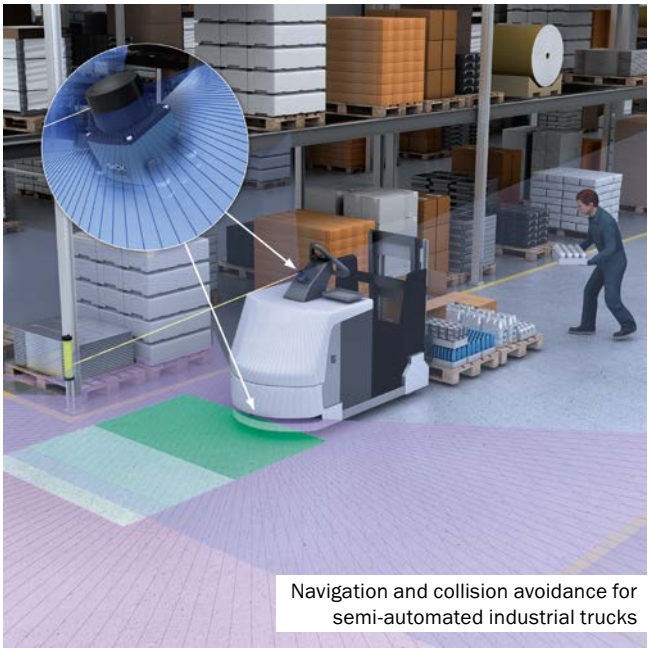
Application examples



Precise measurement data and 2D object detection for navigation and collision avoidance in mobile robots



Navigation and collision avoidance for semi-automated industrial trucks

Technical data at a glance

Number of fields	48
Number of monitoring cases	48
Number of simultaneous monitoring cases	up to 48
Response time	typ. 50 ms
Field status output	via up to 6 digital outputs and Ethernet telegrams
Parameterization	Web server and Ethernet telegram
Range (90% remission)	PRO: 75 m PRIME: 47 m CORE: 25 m
Opening angle	276°
Scan frequency	15 Hz ... 50 Hz
Angular resolution	1° ... 0.05°

Selected products

Integrated application	Working range	System plug	Digital add-ons	Type	Part no.
2D Object Detection	0.05 m ... 25 m	6 I/O (2130754)	no	picoScan150 Core w/o Add-On	1142269
2D Object Detection + Measurement data output	0.05 m ... 25 m	6 I/O (2130754)	except for Dynamic Sensing Profiles package	picoScan150 Core-2	1142270
	0.05 m ... 60 m	6 I/O (2130754)	except for Dynamic Sensing Profiles package	picoScan150 Prime-2	1142272
	0.05 m ... 120 m	6 I/O (2130754)	all	picoScan150 Pro-2	1142273

→ www.sick.com/picoScan100

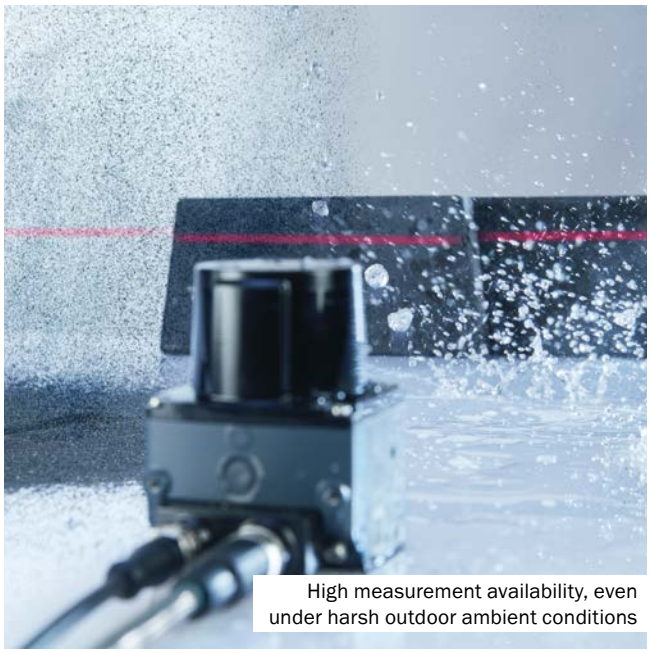
For more information, simply enter the link or scan the QR code.

LiDAR sensors

picoScan100 with LiDAR-LOC

Full localization solution in one compact device

- High-performance 2D LiDAR with on-device natural contour localization
- Enables highly accurate and robust navigation
- Plug-and-play solution with minimal integration effort



High measurement availability, even under harsh outdoor ambient conditions

Gap-free environment perception with HDDM+

Product description

With an industry-proven localization software integrated into the 2D LiDAR sensor, the picoScan150-LOC is a full localization solution in one compact device. It can be used for demanding localization and navigation tasks in industry applications both indoors and outdoors. The picoScan150-LOC, available in three variants (Core, Prime and Pro) is the ideal choice for automating your mobile robot fleet or for tracking your manual forklifts. Thanks to its multi-echo technology the picoScan150-LOC reliably detects small and dark objects even under harsh ambient conditions and delivers exact measurement data.

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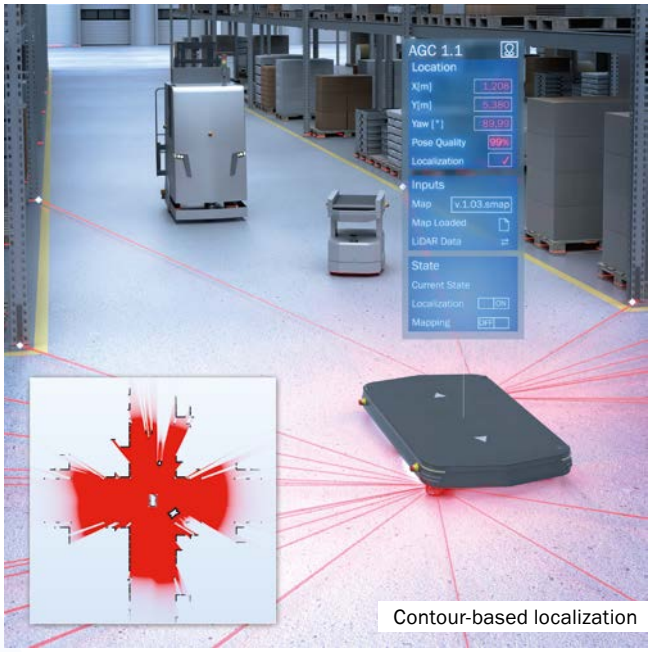
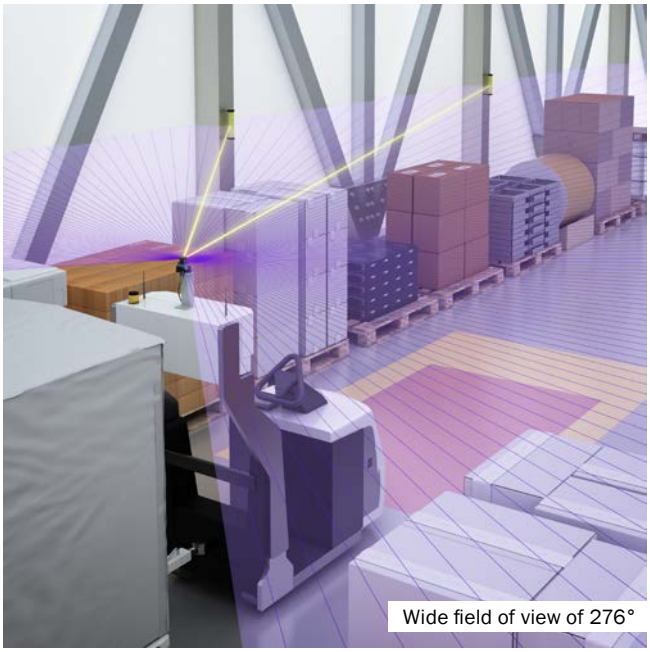
Application examples



Contour-based localization


Wide field of view of 276°

Technical data at a glance

Integrated application	LiDAR-LOC 2 Virtual Line Navigation CODE-LOC Output of measurement data
Output data LiDAR-LOC	Position (x, y, direction angle)
Speed LiDAR-LOC	≤ 3 m/s, translatory ≤ 90 °/s, rotatory
Localization accuracy	Typ. < 10 mm, position Typ. < 0.25°, orientation

Selected products

Working range	Angular resolution	Scanning Frequency	Type	Part no.
0.05 m ... 25 m	0.25° / 0.33° / 1°	15 Hz / 25 Hz	PICS150-01000 LOC Core	1141395
0.05 m ... 60 m	0.05°/ 0.1°/ 0.125° / 0.25° / 0.33° / 0.5° / 1°	15 Hz / 20 Hz / 25 Hz / 30 Hz / 40 Hz / 50 Hz	PICS150-01000 LOC Prime	1141396
0.05 m ... 120 m	0.05° / 0.1° / 0.125° / 0.25° / 0.33° / 0.5°	15 Hz / 20 Hz / 25 Hz / 30 Hz / 40 Hz / 50 Hz	PICS150-01000 LOC Pro	1141397

→ www.sick.com/picoScan100

For more information, simply enter the link or scan the QR code.

Radar sensors

RMS2000

2D radar sensor for reliable object detection in especially harsh weather conditions

- Modern FMCW radar technology
- Integrated digital inputs and outputs as well as Ethernet interface
- Sensor parameterization via web browser
- Enclosure ratings: IP67 and IP69
- Base frequency of 61 GHz with a bandwidth of 500 MHz

Reliable detection of objects even under harsh environmental and weather conditions

Internal field evaluation or measurement data via Ethernet

Product description

The RMS2000 radar sensor detects objects very reliably, even under especially harsh ambient and weather conditions, e.g., in strong rain or snowfall, thick fog, or high dust loads. Detection fields can be flexibly configured in the working range of the sensor. This enables the RMS2000 to simultaneously and very accurately detect distances, angles and speeds of objects. Depending on the parameterization of the device, detections classified as relevant can be signaled via the digital outputs, or measurement data transmitted via the Ethernet interface for further use.

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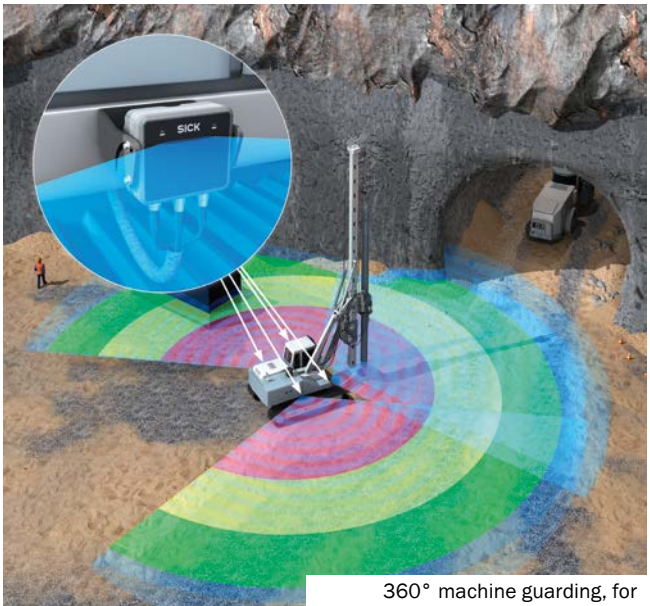
Application examples

Rear guarding for vehicles in opencast mining



360° machine guarding, for example during a drilling operation

Technical data at a glance

Working range	0.4 m ... 200 m
Aperture angle	horizontal ± 60°; vertical ± 4°
Speed range	± 60 m/s
Interfaces	Ethernet ✔
Function	Parameterization, Data output
Data transmission rate	10/100 Mbit/s
Digital inputs	2 (digital)
Digital outputs	4 (digital)
Ambient operating temperature	–40 °C ... +65 °C

Selected products

Working range	Speed range	Radio approval	Type	Part no.
0.4 m ... 100 m	± 30 m/s	ETSI-Variant	RMS2731C-636111	1128853
1.6 m ... 200 m	± 60 m/s	FCC-Variant	RMS2831C-636511	1129091
1.6 m ... 200 m	± 60 m/s	Japan-Variant	RMS2831C-636011	1129090

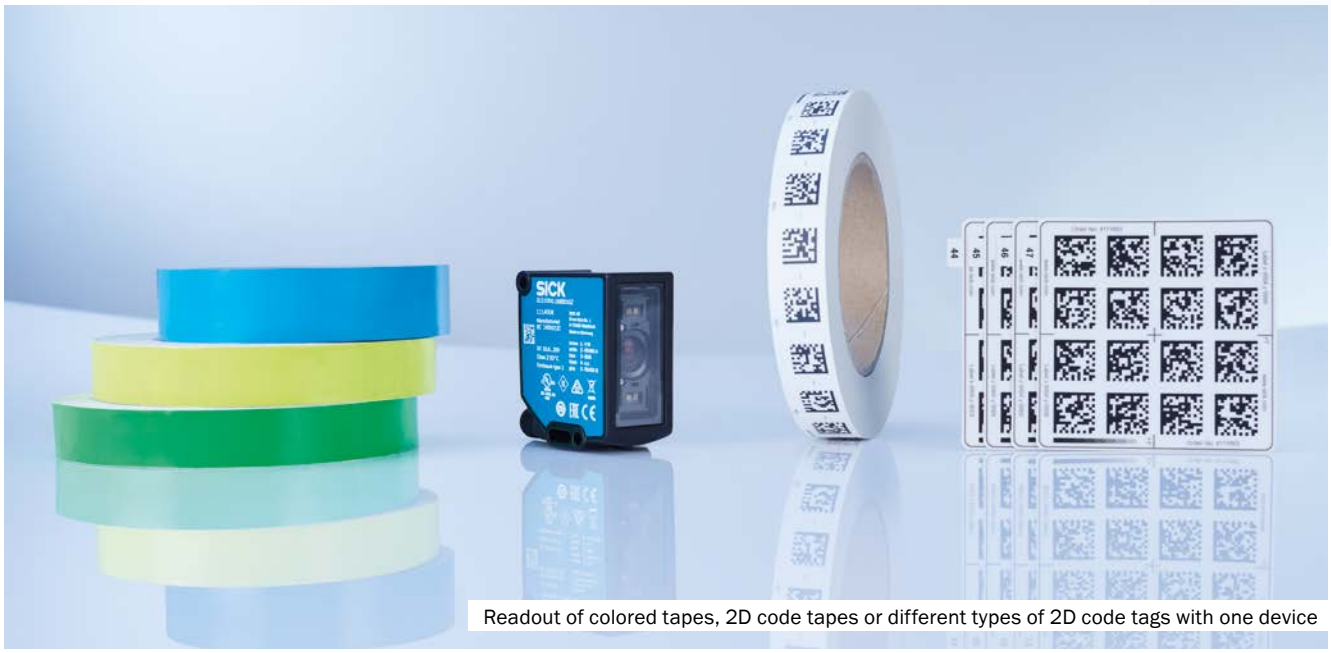
➜ www.sick.com/RMS2000
For more information, simply enter the link or scan the QR code.

Image-based code readers

GLS100

Flexible line guidance and grid localization by detecting color tapes and 2D codes

- 160 x 120 mm field of view enables multiple codes or three lines to be detected in parallel
- Continuous acquisition of the x, y and z coordinates and angle
- Small curve radius of ≥ 0.5 m
- Full solution package for excact code localization with the CODE-LOC localization software



Readout of colored tapes, 2D code tapes or different types of 2D code tags with one device

Product description

The cost-effective GLS100 sensor automatically navigates and localizes automated guided vehicles (AGVs) or mobile platforms. The integrated camera reliably detects and decodes colored tapes or tracks for optical line guidance as well as various types of 2D codes. These include QR codes, Data Matrix single codes and multicodes as well as code tapes. The 2D codes can also be applied in the form of a grid. A higher-level controller – e.g. in the form of a PLC – re-localizes and repositions the AGV based on the data made available by the device. Thanks to the detection of colored tracks and 2D codes, the GLS100 provides a flexible solution and enhancement options for navigating automated guided vehicle (AGV) systems.

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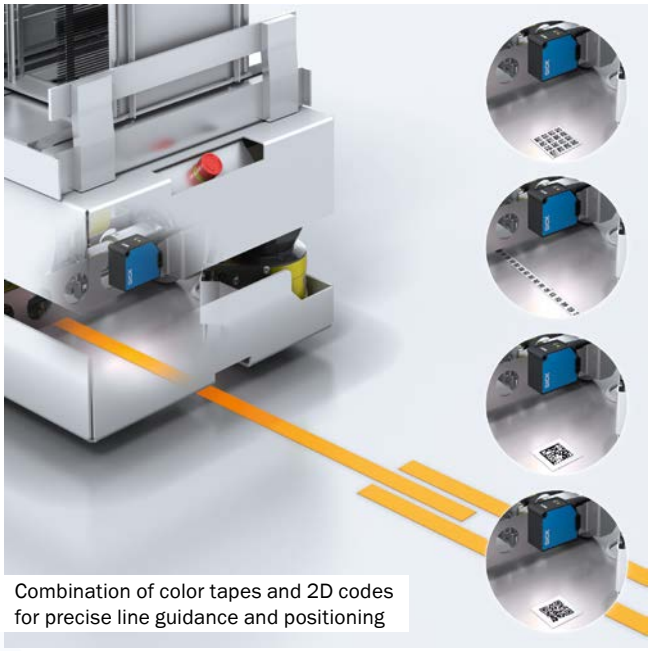
Application examples



Combination of color tapes and 2D codes for precise line guidance and positioning

Grid localization of QR bots

Technical data at a glance

Reading distance	100 mm [1]
Light source	Internal illumination, 2 x LED, visible, amber, 590 nm, ± 80 nm Internal illumination, 2 x LED, visible, cyan, 500 nm, ± 40 nm
Overrun speed	≤ 3.5 m/s
Repeatability (position)	± 0.1 mm (3 sigma) with the SICK MultiCode label ± 1 mm (3 sigma) when using color tapes
Angular accuracy (azimuth)	± 0.1° (3 sigma) with the SICK MultiCode label ± 2° (3 sigma) when using color tapes
Enclosure rating	IP65
Housing	Zinc diecast
Ambient operating temperature	0 °C ... +50 °C
Connection type	1 x M12, 5-pin plug
Communication interface	CANopen, Serial Modbus RTU

[1] ± 30 mm with the SICK MultiCode label; ± 10 mm when using color tracks

Selected products

Communication interface	Type	Part no.
CANopen	GLS100L-1MEB1FZ	1141629
Serial Modbus RTU	GLS100L-1MEB1GZ	1141627

→ www.sick.com/GLS100

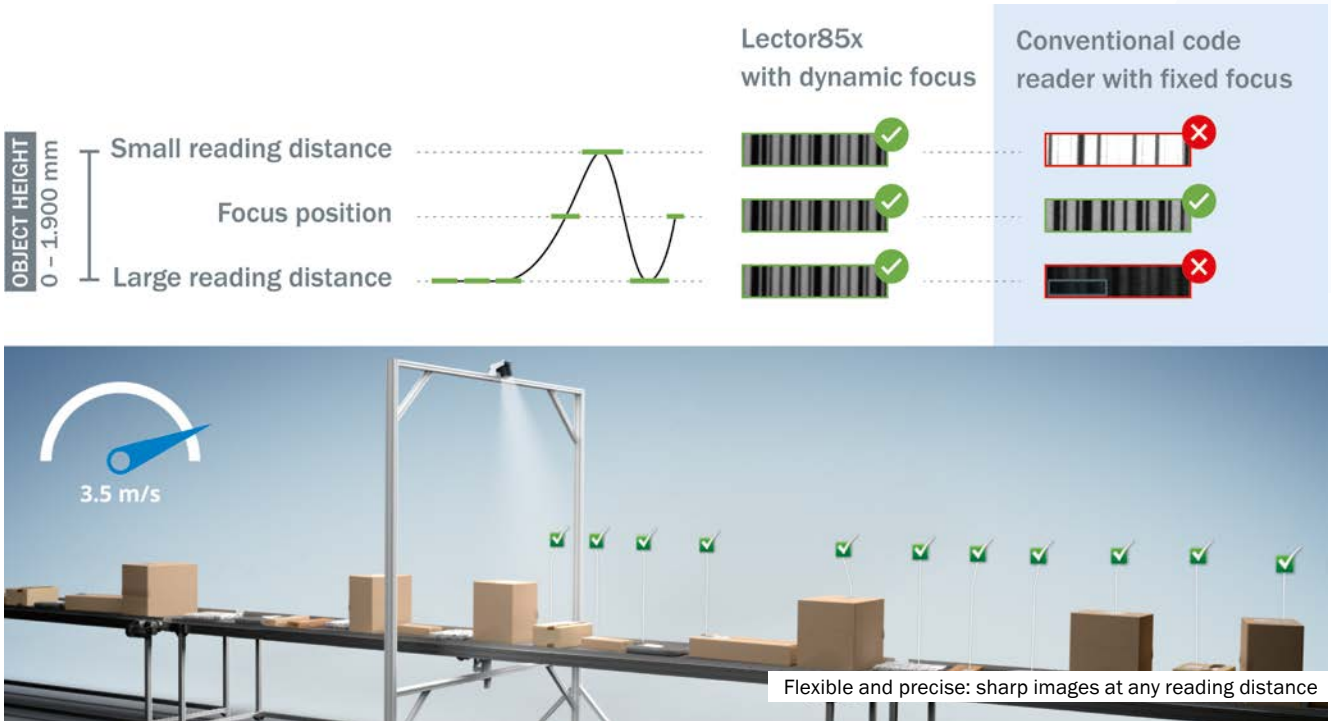
For more information, simply enter the link or scan the QR code.

Image-based code readers

Lector85x Dynamic Focus

1D and 2D code identification using a camera for wide fields of view and large reading distances

- Delivers sharp, well-illuminated images regardless of reading distance, reading angle, or code resolution
- Automatically adjusts the lens focus to different object dimensions
- Enables precise code reading in dynamic environments, reducing error rates



Flexible and precise: sharp images at any reading distance

Product description

The camera resolution of up to 12 megapixels, the 32 integrated high-performance LEDs, and the dynamic focus ensure crystal-clear images – regardless of the reading distance, reading angle or code resolution. The dimensions of the objects to be identified often vary and therefore also the reading distance to the code. Thanks to the dynamic focus adjustment, the focus position of the camera lens adapts to the respective reading height. As as result, the image created is always sharp and well illuminated. Codes at different heights are read reliably and processed quickly, regardless of the camera distance.

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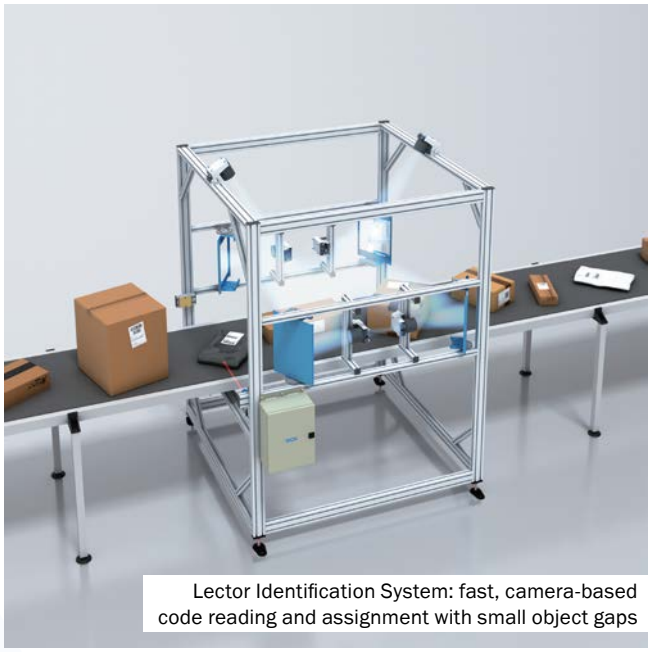
Application examples



Lector Identification System: fast, camera-based code reading and assignment with small object gaps

Efficient loading and unloading checks directly at the loading gate

Technical data at a glance

Focus	Stable focus (manually) / dynamic focus control (depending on type)
Sensor type	CMOS matrix sensor, grayscale values
Sensor resolution	2,464 px x 2,048 px (5 Mpixel) 4,096 px x 2,176 px (9 Mpixel) 4,096 px x 3,008 px (12 Mpixel)
Scanning frequency	30 Hz / 20 Hz / 15 Hz (depending on type)
Enclosure rating	IP65
Interfaces	Ethernet, EtherNet/IP, PROFINET, CAN, seriell (RS-232 and RS-422), USB 2.0

Selected products

Sensor resolution	Lens	Illumination color	Communication interface	Type	Part no.
4096 px x 2176 px (9 Mpixel)	Focal length 25 mm Aperture 5.6	white	Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8509R-1ME-KEXAF2SXXXX	1144348
4096 px x 2176 px (9 Mpixel)	Focal length 25 mm Aperture 5.6	white	Ethernet, CAN, Serial, USB	V2D8509R-1MEKEX-AL2SXXXX	1144112
4096 px x 3008 px (12 Mpixel)	Focal length 25 mm Aperture 5.6	white	Ethernet, EtherNet/IP™, CAN, Serial, USB, PROFINET	V2D8512R-1ME-KEXAF2SXXXX	1144349
4096 px x 3008 px (12 Mpixel)	Focal length 25 mm Aperture 5.6	white	Ethernet, CAN, Serial, USB	V2D8512R-1MEKEX-AL2SXXXX	1134045

→ www.sick.com/Lector85x

For more information, simply enter the link or scan the QR code.

Machine vision

Inspector83x

AI-powered quality control made stress-free

- Teach from examples with AI-powered Intelligent Inspection toolset
- Measure with rule-based Quality Inspection
- Intuitive web UI with SICK Nova, SICK AppSpace, and HALCON support
- High-speed and high-resolution with Quad-core CPU and 5 MP imager

The high-speed CPU and on-board AI accelerator provide impressively rapid analysis

Use color imaging to sort, detect defects, or verify quality - all via a simple web UI

Product description

Put an end to wasted material or faulty products. Put an end to long setup times or expensive reconfiguration when the product is changed. Put an end to complicated integration or data trapped on the shop floor. The Inspector83x is designed to make quality control easy and efficient. The cutting-edge AI technology enables non-expert users to rapidly solve vision applications such as quality assurance, defect detection, and sorting directly on the device by simply teaching it by examples. The high-speed vision sensor provides an easy way to inspect every single part, every detail, every time. Connected, reliable, intelligent – stress-free

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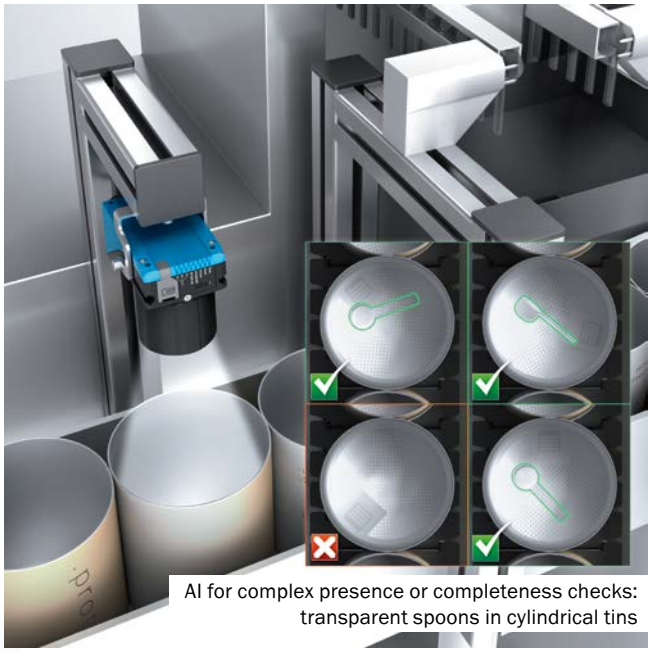
Application examples



AI for complex presence or completeness checks: transparent spoons in cylindrical tins

Quality control and verification of labels: OCR, code reading and AI anomaly detection

Technical data at a glance

Technology	2D snapshot
Expansion options	The SICK Nova Tool plug-in enables customer-specific or new tools to be added. Development and customization of the tools is supported by SICK AppSpace and SICK AppStudio.
SensorApp	Nova InspectorP
Sensor resolution	2,464 px x 2,048 px (5.1 Mpixel)
Working distance	200 mm ... 2,500 mm, depends on lens used
Optical focus	Adjustable focus (manually)
Illumination	Integrated
Fieldbus	EtherNet/IP™ Dual Port, PROFINET Dual Port
Dimensions (L x W x H)	108 mm x 63.1 mm x 84.5 mm

Selected products

License included	Focal length	Sensor type	Type	Part no.
Quality Inspection License	8 mm	CMOS Color	V2D8305P-1CCIBXAF1SXXXX	1144163
Intelligent Inspection License	8 mm	CMOS Color	V2D8305P-1CCIBXAF1SXXXX	1144164
Intelligent Inspection License	–	CMOS Color	V2D8305P-1CCXXXAF0SXXXX	1144162
Intelligent Inspection License	12 mm	CMOS Color	V2D8305P-1CCICXAF1SXXXX	1142976
Quality Inspection License	12 mm	CMOS monochrome	V2D8305P-1MCICXAF1SXXXX	1140202

→ **www.sick.com/Inspector83x**

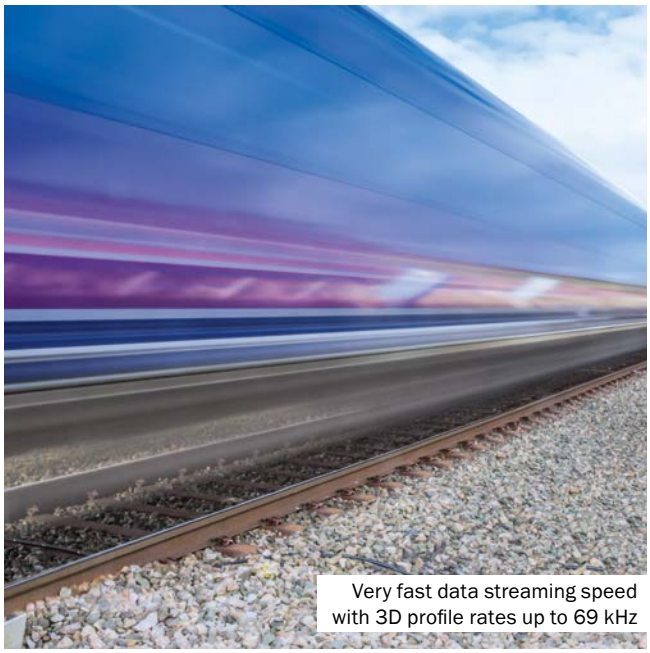
For more information, simply enter the link or scan the QR code.

Machine vision

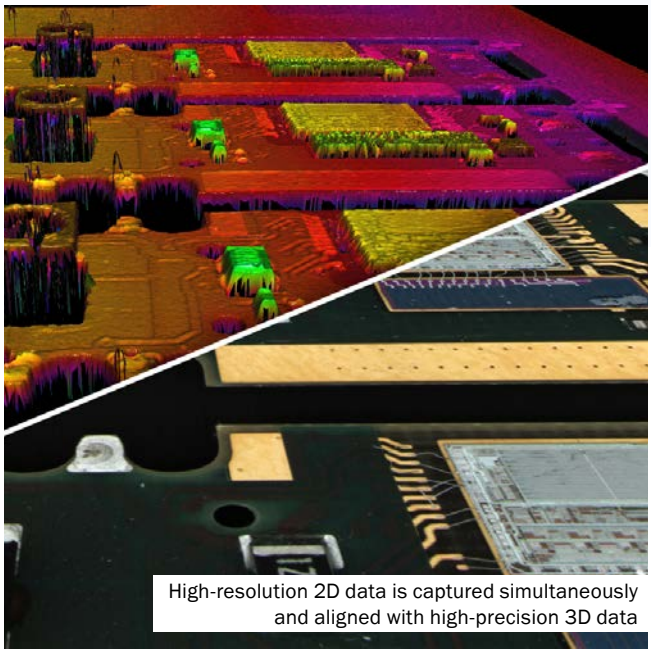
Ranger3 High-speed and Color Variant

Superior 3D performance in a small package powered by ROCC technology

- 2.5 Gbit/s network interface option
- 3D profiles at up to 69 kHz
- 2D line scan in 5120 pixels, RGB color and grayscale
- 3D, reflective, and scattered light measurement data from one device



Very fast data streaming speed with 3D profile rates up to 69 kHz



High-resolution 2D data is captured simultaneously and aligned with high-precision 3D data

Product description

Fast got faster. Highly accurate and with an unmatched measurement speed, the Ranger3 streaming cameras can be configured for a wide range of needs. Powered by our unique 3D sensor tailored for demanding vision applications, Ranger3 serves as a key component in inspection systems worldwide. The camera extracts the true 3D shape of an object, regardless of its contrast or color and as a result, improves quality for a multitude of products. The next generation Ranger3 enables even higher speed and RGB high-resolution line scan functionality. Cost-effective integration is guaranteed through GigE Vision and GenICam compliance. Ranger3 offers big 3D performance in a small housing.

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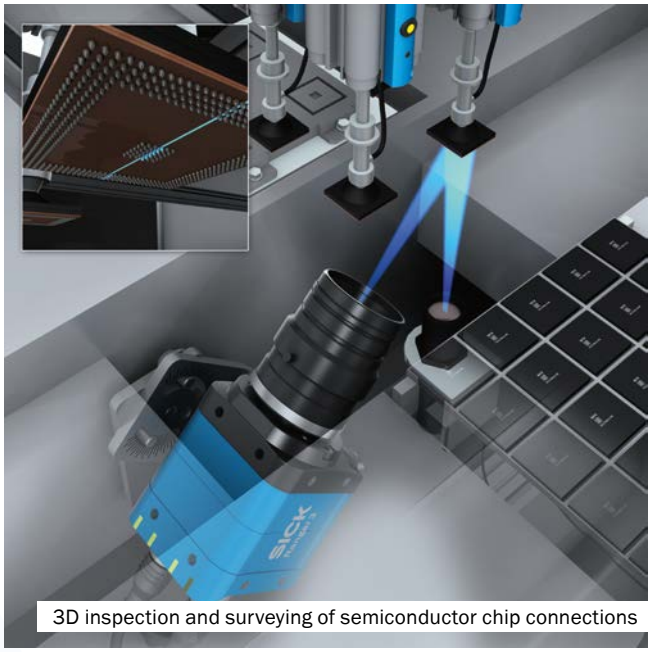
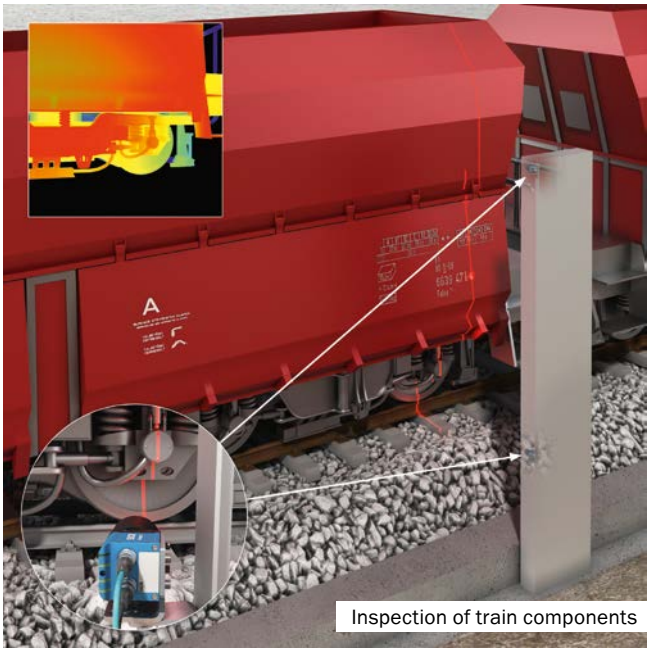
Application examples



3D inspection and surveying of semiconductor chip connections



Inspection of train components

Technical data at a glance

Technology	3D triangulation
Product category	Streaming, flexible
Shutter technology	Global-Shutter
Example field of view	Free of choice by lens selection
Exposure mode	Linear, HDR
Illumination	To be ordered separately as accessories
Data synchronization	Free running, encoder triggered, external triggering
Spectral range	400 nm - 950 nm
Lens	C-mount, 1" optical format, to be ordered separately as accessories

Selected products

Sensor resolution	Line scan resolution	Scan/Frame rate	Network interface	Type	Part no.
2,560 px x 832 px	4 x 5120 px | RGB and monochrome	69,000 3D profiles/s, in AOI, 7,000 3D profiles/s, full frame	2.5 Gbit/s	V3DR3-80CT31111	1141150
2,560 px x 832 px	–	46,000 3D profiles/s, in AOI, 7,000 3D profiles/s, full frame	1 Gbit/s	V3DR3-60NE31111	1091560
2,560 px x 832 px	–	20,000 3D profiles/s, in AOI, 2,500 3D profiles/s, full frame	1 Gbit/s	V3DR3-40NE31111	1105757
1,536 px x 832 px	–	20,000 3D profiles/s, in AOI, 1,500 3D profiles/s, full frame	1 Gbit/s	V3DR3-30NE31111	1109564

→ www.sick.com/Ranger3

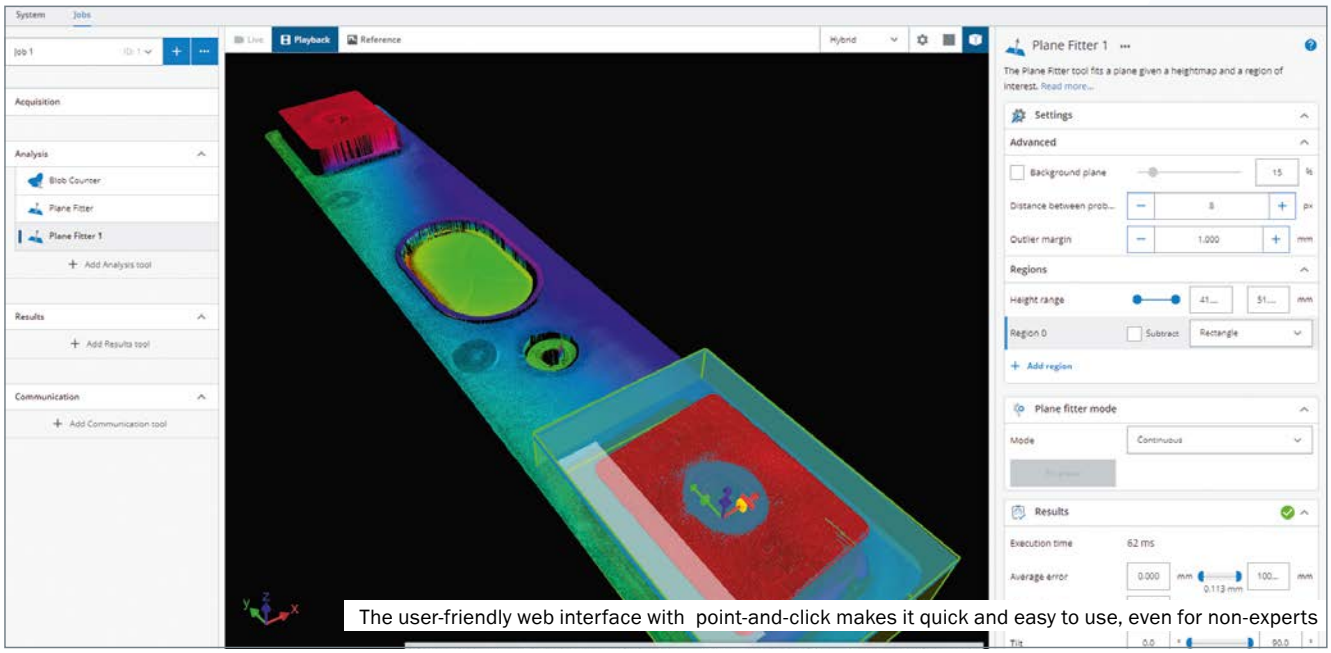
For more information, simply enter the link or scan the QR code.

Machine vision

Ruler3000 with SICK Nova

Machine vision made easy – the fast way to high-performance 3D

- The CMOS sensor from SICK with ROCC technology for superior 3D performance
- 3D profiles at up to 46 kHz in reduced ROI
- Accurate 3D, reflectance, and scattered light measurements in one device
- Tools for presence, measuring and quality inspection
- Easy-to-use interface in web browser



The user-friendly web interface with point-and-click makes it quick and easy to use, even for non-experts

Product description

SICK Nova enables the easy use of 2D and 3D streaming cameras, and offers user friendly solutions for quality control applications. SICK Nova is the foundation software for configurable machine vision solutions in a broad array of industries and quality control applications. Featuring a user-friendly web interface, SICK Nova supports experts and non-experts alike so they can quickly and easily handle even the most challenging applications. The combination of Ruler3000 3D camera connected to SIM2x00 Sensor Integration Machine running SICK Nova enables an easy-to-use solution. The Ruler3000 provides superior 3D data at high speed for detailed quality assurance. The numerous versions of Ruler3000 offer a solution for a wide range of challenges and can deliver accurate measurement values down to 0.8 µm in height with a resolution of 3200 data points per profile.

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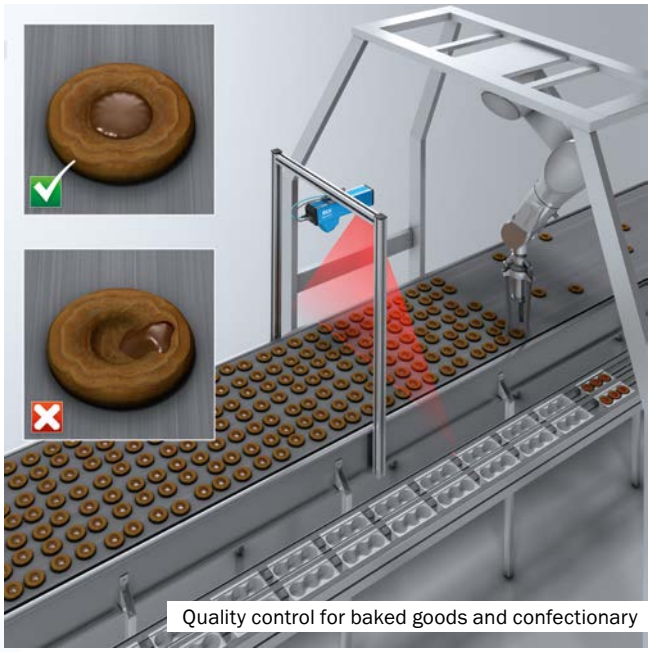
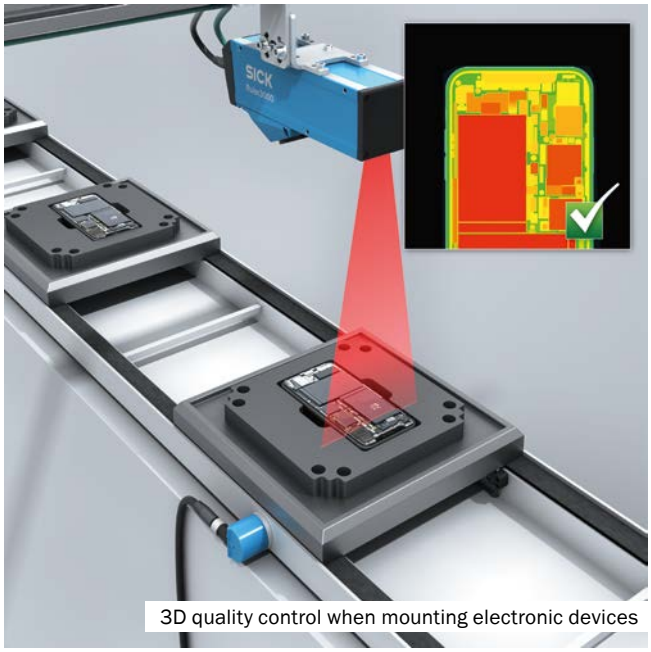
Application examples



Quality control for baked goods and confectionary



3D quality control when mounting electronic devices

Technical data at a glance

Technology	3D laser triangulation
Product category	Configurable
Expansion options	The SICK Nova Tool plug-in enables customer-specific or new tools to be added
Scan/frame rate	46,000 3D profiles/s, In reduced ROI
Data points/profile	3,200

Selected products

Hardware included	SICK SensorApp preinstalled	License included	Required hardware not included	Type	Part no.
SIM2500	Yes, Nova SIM 3D	Quality Inspection License	Ruler3000	SIM2500-2AX1G10 Nova Ruler3000 QI	1140241

SICK APP SPACE

→ www.sick.com/Ruler3000

For more information, simply enter the link or scan the QR code.

Machine vision

Visionary-B Two

Rugged and smart – 3D snapshot solution for harsh outdoor conditions

- Resolution of the depth and color map: 1,024 px x 576 px; up to 30 images per second
- Switchable field of view sizes: 130° x 105°, 90° x 60°
- Enclosure ratings: IP67, IP69K
- GigE Vision
- Computing capacities for depth map calculation and software programs

Especially reliable thanks to the rugged, vibration- and shock-resistant sensor design

Also available as a variant with AI accelerator

Product description

The smart Visionary-B Two 3D camera solves assistance and automation tasks. It is especially rugged and therefore suitable for harsh environments, for example for use on mobile machines or in outdoor areas of industrial plants. Using the principle of stereoscopy, the Visionary-B Two calculates distances, e.g., to objects. The camera provides 3D and color data at up to 30 images per second. This device allows you to switch between two field of view sizes: 130° x 105° or 90° x 60° – with no change in resolution. Visionary-B Two offers spare computing capacities for installation, programming and running application-specific software. The GigE Vision interface standard allows flexible and easy integration of the sensor in machines.

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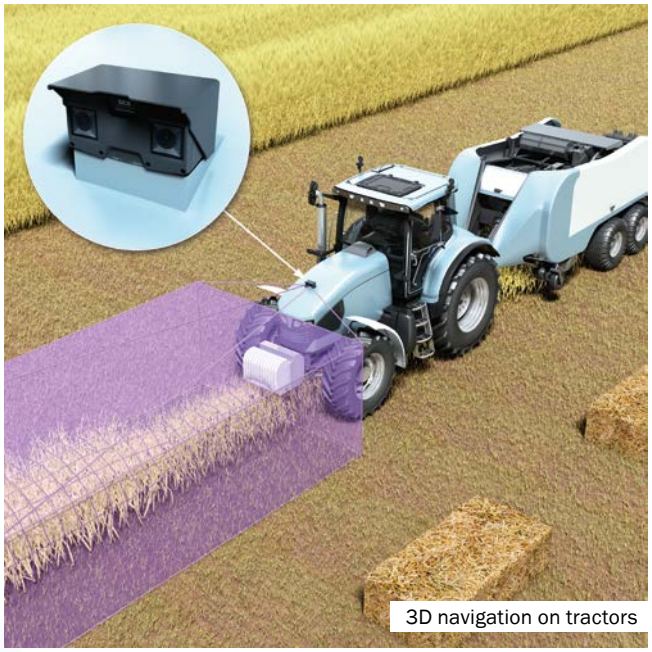
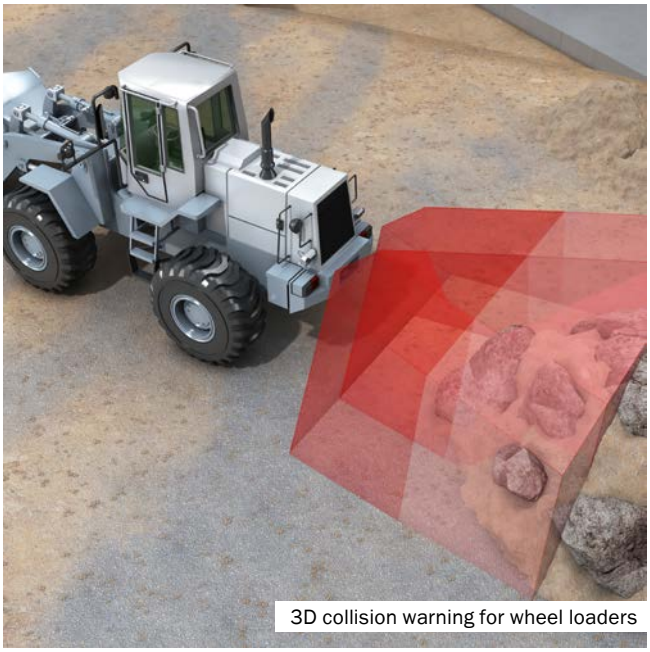
Application examples



3D navigation on tractors



3D collision warning for wheel loaders

Technical data at a glance

Technology	3D stereoscopy
Working distance	0.28 m ... 16 m | 0.65 m ... 37 m
Detection angle	130° x 105° | 90° x 60°
Pixel count	1,024 px x 576 px
Scan/frame rate	≤ 30 fps
Enclosure rating	IP67, IP69K
Data output	Depth map 2D image (RGB) IMU (Inertial Measurement Unit) Intrinsic camera parameters
Electromagnetic compatibility (EMC)	Agricultural and forestry machinery / EN ISO 14982 Earth-moving and building construction machinery / EN 13766 Industrial trucks / EN 12895

Selected products

Processor	AI accelerator	Ambient operating temperature	Type	Part no.
1.4 GHz, 4 × ARM Cortex A72	no	–40 °C ... +60 °C	V3S146-1AAAAAA	1133032
	yes	–40 °C ... +55 °C	V3S146-1ABBBAA	1141229

SICK APP SPACE

→ www.sick.com/Visionary-B_Two

For more information, simply enter the link or scan the QR code.

Mobile handheld scanners

IDM with UltraCap

Mobile 1D and 2D code identification for standard and industrial applications

- Only 50 minutes charging time
- Short-term availability thanks to one-minute fast charge
- UltraCap™ is more cost-effective than conventional lithium-ion batteries
- Lasts 25 times longer than conventional lithium-ion batteries and reduces electronic waste

IDM UltraCap supercapacitator

Quickly deployable

Durable and sustainable

Product description

The UltraCap™ supercapacitor serves as a battery-free voltage supply and is compatible with all IDM cable-free mobile handheld scanners. It is characterized by its long service life and thereby lowers the operating costs of the mobile handheld scanner. At the same time, it produces less electronic waste than battery-operated devices. UltraCap™ is not a hazardous good and is therefore unproblematic to send. Moreover, the supercapacitor is easy to replace. It is also possible to retrofit battery-operated solutions with the UltraCap™.

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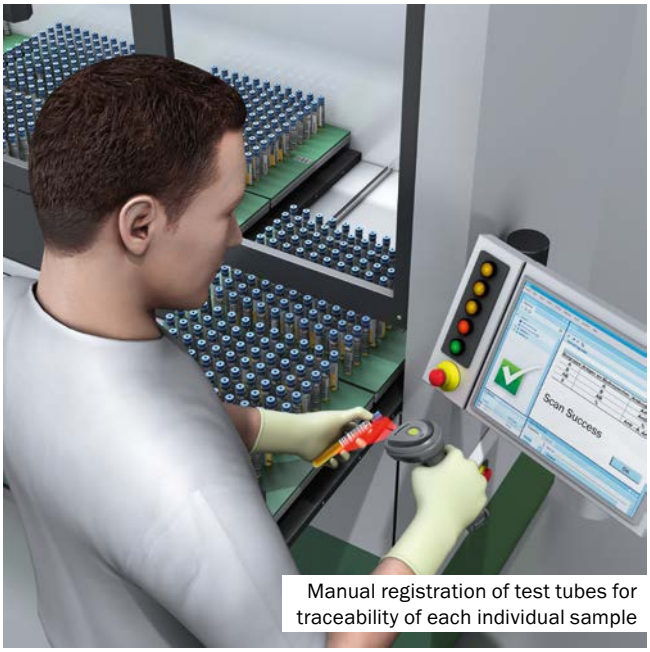
Application examples

Identification of 1D and 2D codes on cardboard packaging



Manual registration of test tubes for traceability of each individual sample

Technical data at a glance

Battery power	UltraCap™: Über 4200 Scans mit voller Ladung
Ambient operating temperature	–20 °C ... +50 °C
Protection class	IP41, IP42, IP52, IP65
Shock resistance	50 drops from 2 m height on concrete
USB	✔
Bluetooth	✔
Seriell	✔ / RS-232 TTL
Ethernet	✔ , TCP/IP, optional over external connection module
PROFINET	✔ , optional over external fieldbus module
EtherCAT®	✔ , optional over external fieldbus module
PROFIBUS DP	✔ , optional over external fieldbus module

Selected products

Application	Readable code structures	Reading distance	Type	Part no.
Standard application	1D-Codes, Stacked	20 mm ... 850 mm	IDM241E-411S RS232 Set	1144322
Industrial application	1D-Codes, Stacked	20 mm ... 850 mm	IDM161E-411S USB Set	1144318
Standard application	1D-Codes, Stacked	20 mm ... 850 mm	IDM141E-411S USB Set	1144324
Industrial application	1D-Codes, 2D-Codes, Stacked	30 mm ... 400 mm	IDM261E-411S RS232 Set	1144316

→ www.sick.com/IDM

For more information, simply enter the link or scan the QR code.

Inertial sensors

TMS/TMM88D Pro

Inclination sensor for high precision in dynamic applications

- Superior signal quality and quick response time thanks to innovative and powerful adaptive sensor fusion algorithm
- High accuracy up to 0.1° for dynamic movements
- Can withstand the harshest conditions thanks to completely encapsulated electronics and high enclosure rating
- Interfaces: CANopen, SAE J1939

Flexible configuration via CANopen or SAE J1939

Product description

The inclination sensors from the TMS/TMM Dynamic product family are setting new standards with respect to signal quality and response time. Thanks to an intelligent sensor fusion filter, not only are they extremely quick to respond – they are also highly precise, even when influenced by external accelerations. The foundation for this is a six-axis inertial measurement unit (IMU), consisting of an acceleration sensor and a gyroscope that is based on MEMS technology. Various configuration options enable the dynamic inclination sensors to be flexibly adapted to the application. The rugged design with enclosure ratings up to IP69 is able to withstand even the harshest ambient conditions.

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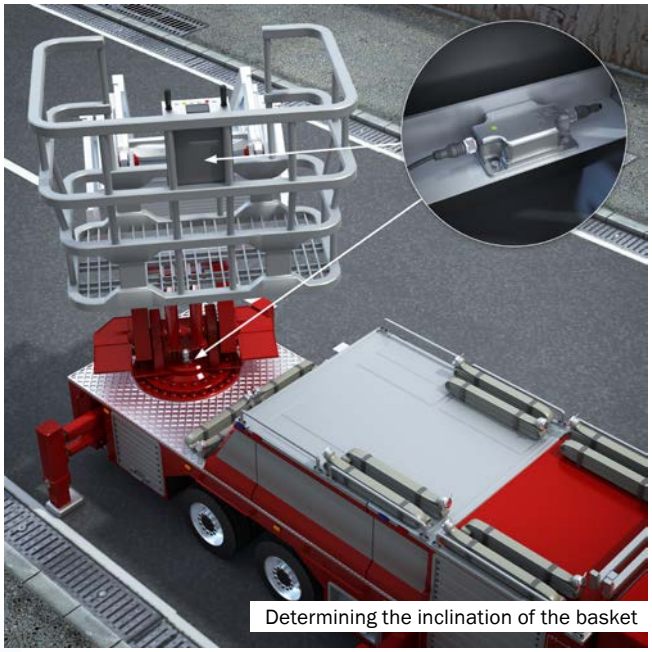
Application examples



Determining the inclination of the basket

Leveling the excavator arm

Technical data at a glance

Static measurement accuracy	± 0.1°
Dynamic measurement accuracy	± 0.25°
Additional information	Acceleration Angular rate
Interfaces	CANopen SAE J1939
Supply voltage	7.5 V DC ... 36 V DC
Housing material	Die-cast zinc

Selected products

Number of axis	Interface	Type	Part no.
1	CANopen	TMS88D-MCI360A	1139499
2	CANopen	TMM88D-MCI090A	1139501
1	SAE J1939	TMS88D-MJI360A	1139503
2	SAE J1939	TMM88D-MJI090A	1139504

→ www.sick.com/TMS_TMM88_Dynamic

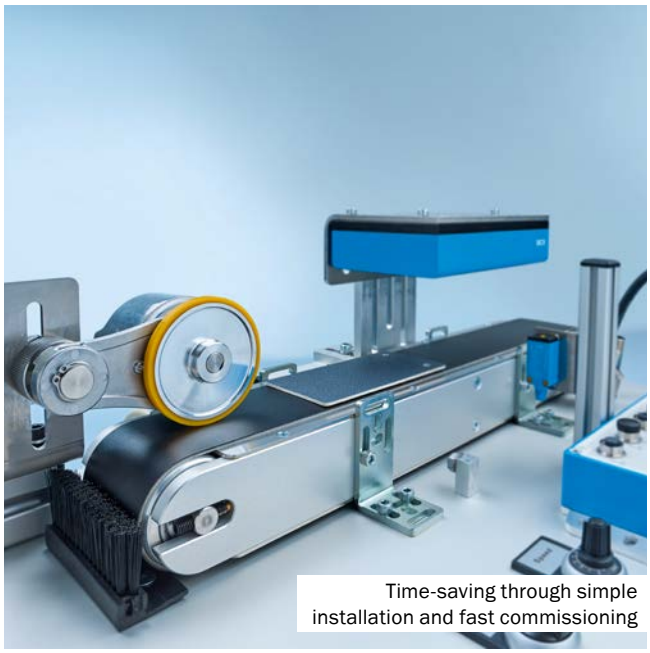
For more information, simply enter the link or scan the QR code.

Measuring wheel encoders

MWS075

Compact measuring wheel encoder with high flexibility and easy installation

- Compact, space-saving measuring wheel system with low installation depth - axle spacing 63.5 mm
- All available encoder interfaces can be selected
- Contact pressure manually adjustable in one step from 0 to 15 N
- 14 mm spring travel enables uniform contact pressure and compensation for unevenness on the measurement surface



Time-saving through simple installation and fast commissioning

Individual combinations thanks to a wide selection of encoders, interfaces, and measuring wheels

Product description

The MWS075 measuring wheel encoder from SICK precisely measures dynamic linear surface movements using direct contact. It is customizable and supports all available encoder interfaces and measuring wheel interfaces, thereby allowing it to be seamlessly integrated into the application environment. The intelligent design combines compactness with flexibility and measurement accuracy. A manually adjustable contact pressure ensures precise and repeatable measurements of speed and position. The rugged spring arm has a spring travel of ± 5 mm and a maximum contact pressure of 15 N. The patented spring travel limiter protects the MWS075 from overload. The measuring wheel encoder enables accurate measurement results, system longevity, and reliability in a variety of industrial sectors.

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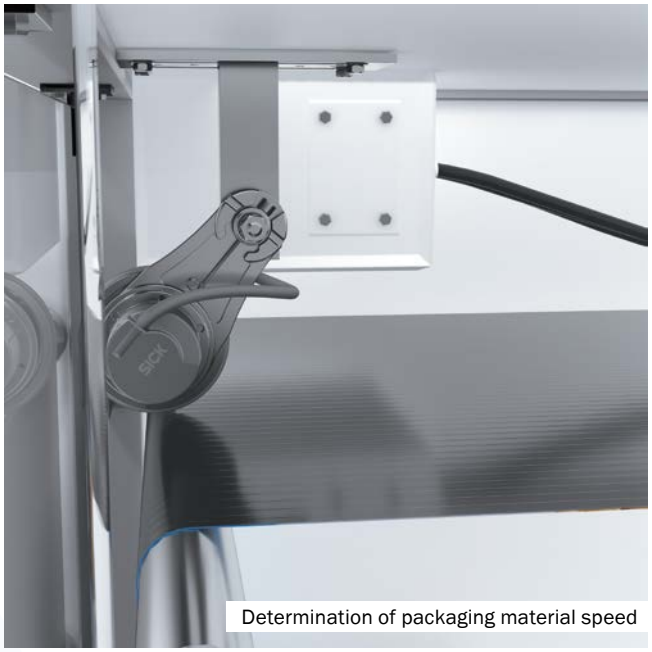
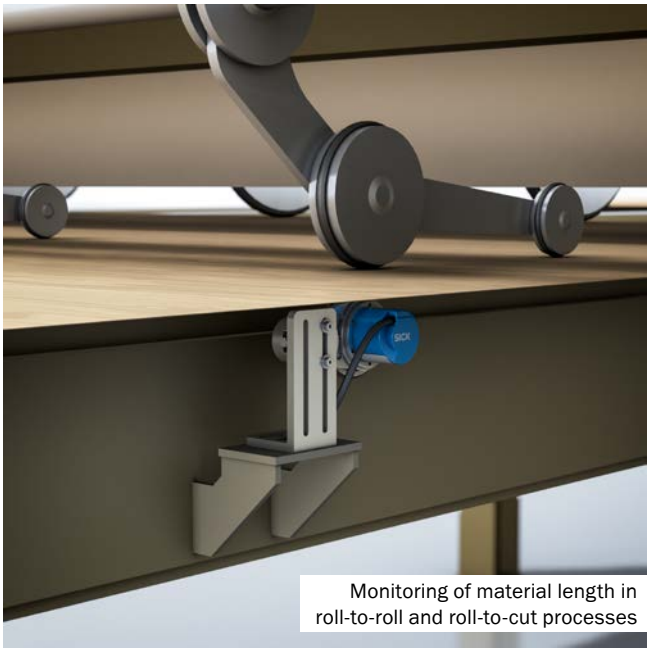
Application examples



Determination of packaging material speed



Monitoring of material length in roll-to-roll and roll-to-cut processes

Technical data at a glance

Recommended pretension	15 N
Max. permissible working area for the spring (continuous operation)	± 3 mm
Operating temperature range	-20 °C ... +85 °C -35 °C ... +95 °C (on request)
Measuring wheel circumference	200 mm, 300 mm
Measuring wheel surface	O-Ring, studded, ridged, smooth
Encoder communication interface	Incremental, SSI, CANopen, IO-Link, EtherCAT®, EtherNet/IP™, PROFINET
Measuring increment (resolution in mm/pulse)	0.001 ... 500 mm/pulse

Selected products

Communication interface	Measuring wheel circumference	Measuring wheel surface	Measuring increment (resolution in mm/pulse)	Type	Part no.
Incremental, HTL /Push pull	200 mm	O-ring	0.1 mm/pulse	MWS075-12C1112102000	1145882
Incremental, TTL/RS422	200 mm	O-ring	0.1 mm/pulse	MWS075-12C121L102000	1145886
Incremental, programmable	300 mm	O-ring	programmable	MWS075-22B252C110000	1145883
IO-Link, programmable	200 mm	O-ring	programmable	MWS075-12M2A-QC114x12	1145880
PROFINET, programmable	300 mm	O-ring	programmable	MWS075-22N2AN-F118x12	1145884

IO-Link

→ www.sick.com/MWS075

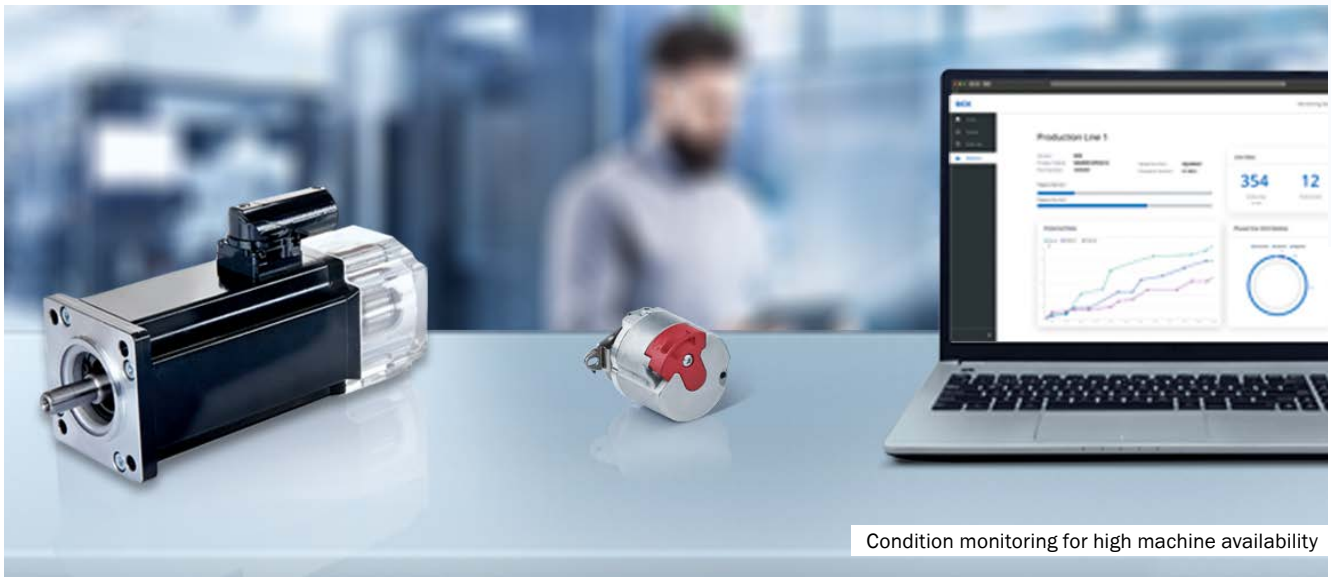
For more information, simply enter the link or scan the QR code.

Motor feedback systems

EDS/EDM35

Safe absolute position with HIPERFACE DSL® for demanding servo applications

- Precise motor feedback system for single-cable servo motors with HIPERFACE DSL®
- Mechatronic multiturn for maintenance-free, battery-free detection of the multiturn position
- Condition monitoring via mission time histogram as well as vibration and humidity measurement in the sensor



Condition monitoring for high machine availability

Product description

The digital HIPERFACE DSL® interface has played a significant role in shaping drive technology over recent years. EDS/EDM35 motor feedback systems come with HIPERFACE DSL® and ensure outstanding performance for high-precision servo drives used in safety applications. Fitted with a standardized mechanical interface, they are highly flexible. EDS/EDM35 systems have a newly developed optical scanning system with dual-channel scanning and are highly resistant to shocks and vibrations. Features such as safe singleturn absolute positioning and electronic type labels EDS/EDM35 make them the ideal solution for a wide range of applications, for example in the packaging and machine tool industries.

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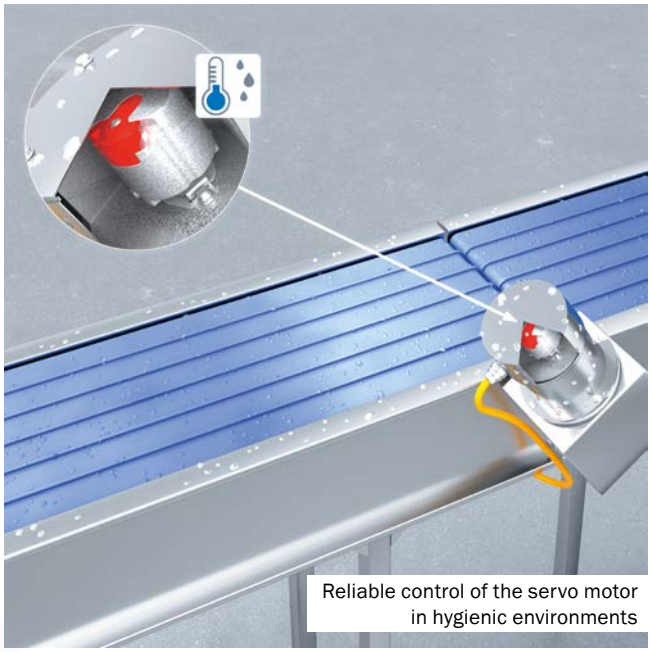
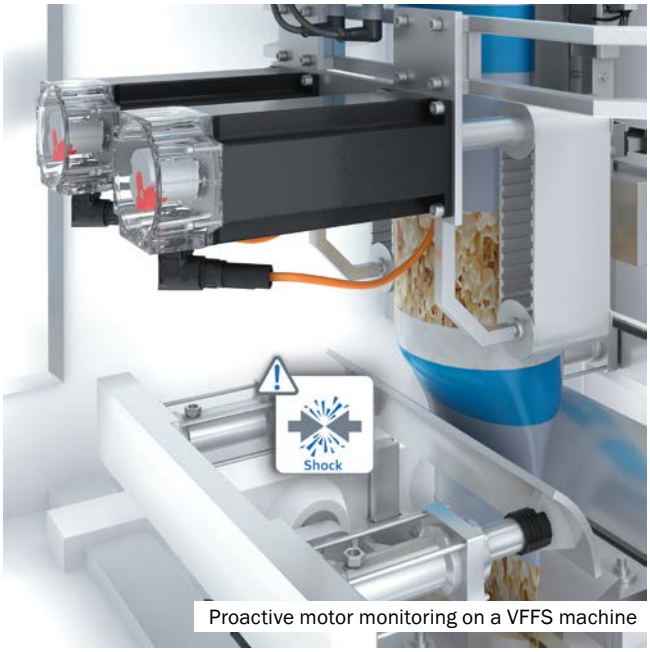
Subject to change without notice

Application examples



Reliable control of the servo motor in hygienic environments



Proactive motor monitoring on a VFFS machine

Technical data at a glance

Communication interface	HIPERFACE DSL®
Resolution per revolution	24 bit
System accuracy	± 25"
Safety integrity level	SIL 2 (IEC 61508), SILCL3 (IEC 62061)
Performance level	PL d (EN ISO 13849-1)
Operating temperature range	-40 °C ... +115 °C
Vibration measuring range	± 50g
Vibration analysis	Attributes Kurtosis, a-RMS, Peak to peak

Selected products

Model	Safety system	Air humidity and vibration measurement	Type	Part no.
Absolute Singleturn	–	✔	EDS35-0ZF0A024A	1137493
Absolute Multiturn	–	✔	EDM35-0ZF0A024A	1137494
Absolute Multiturn	✔	–	EDM35-2KF0A024A	1090735
Absolute Singleturn	✔	–	EDS35-2KF0A024A	1090734

→ www.sick.com/EDS_EDM35

For more information, simply enter the link or scan the QR code.

Motor feedback systems

ELS/ELM35

Absolute motor feedback system with BISS C for servo applications

- The standardized BiSS C interface, facilitates integration in numerous automation applications with no additional effort
- 36 mm housing diameter, 22 mm length, and 6 mm blind hollow shaft diameter allow it to be installed even in small servo motors
- Withstands heavy loads due to rugged housing and high mechanical tolerances within the bearing-free system

Virtually maintenance-free thanks to mechanical, battery-free multiturn gearbox

Product description

The ELS/ELM35 motor feedback system is a cost-effective solution for drive technology that is characterized by its high availability and simple integration. With its magnetic principle of operation and a 24-bit singleturn resolution, the system delivers precise position data. Thanks to the mechanical 12-bit multiturn gearbox, the device does not need a battery and is virtually maintenance-free. Thanks to its compact design and the rugged housing, the ELS/ELM35 is ideal for controlling mobile applications and small servo motors. And the digital BiSS C interface, which is widely used globally, ensures a fast data transmission. Furthermore, the device is quickly mounted and is easy to use both during commissioning and in operation.

8017031/2024-10-23
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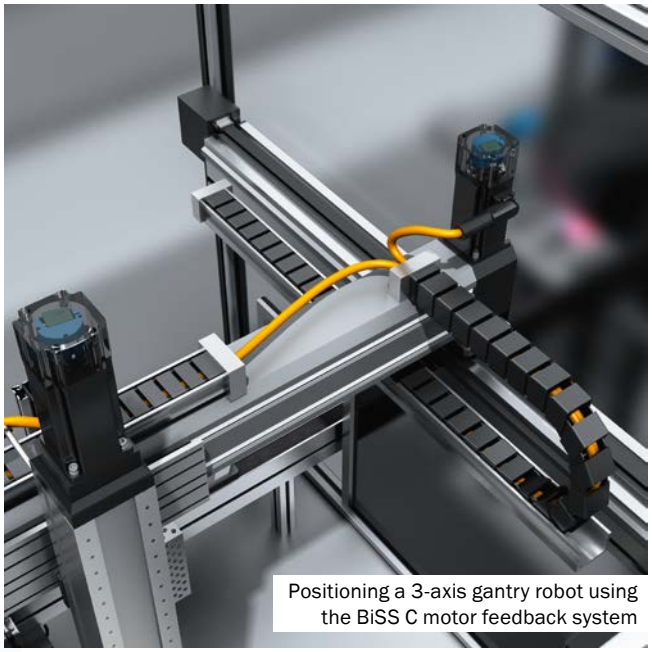
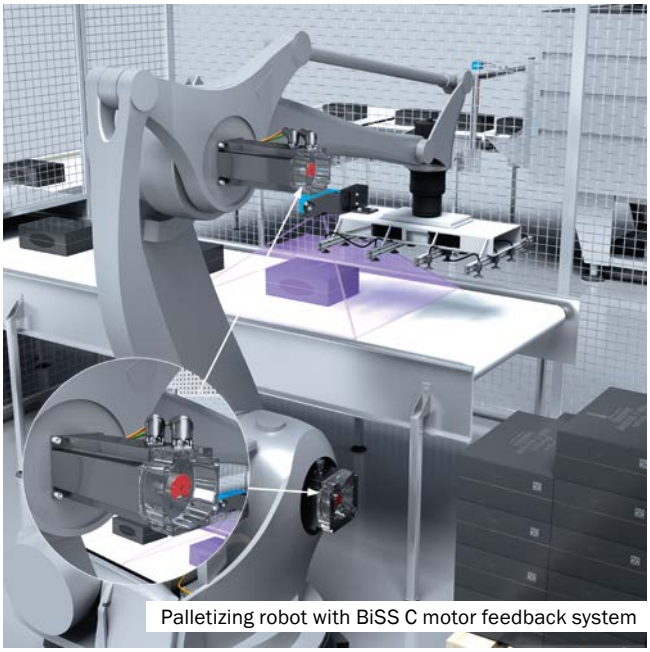
Application examples



Positioning a 3-axis gantry robot using the BiSS C motor feedback system



Palletizing robot with BiSS C motor feedback system

Technical data at a glance

Type	For integration
Model	Absolute Singleturn / Absolute Multiturn (depending on type)
Communication interface	BiSS C
Resolution per revolution	24 bit
Mechanical interface	Blind hollow shaft, 6 mm
Available memory area	2,048 Byte

Selected products

Communication interface	Model	Type	Part no.
BiSS C	Absolute Singleturn	ELS35-0CA0A024A	1133558
BiSS C	Absolute Multiturn	ELM35-0CA0A024A	1133559

→ www.sick.com/ELS_ELM35

For more information, simply enter the link or scan the QR code.

Level sensors

LFC Full Stainless Steel Variants

Flexible and straightforward point level measurement - the economic solution

- Easy plug-and-play sensor for quick commissioning
- Maintenance-free point level measurement saves time and money
- Short cleaning cycles thanks to easy-to-clean sensor design
- Hygienic design minimizes contamination risk

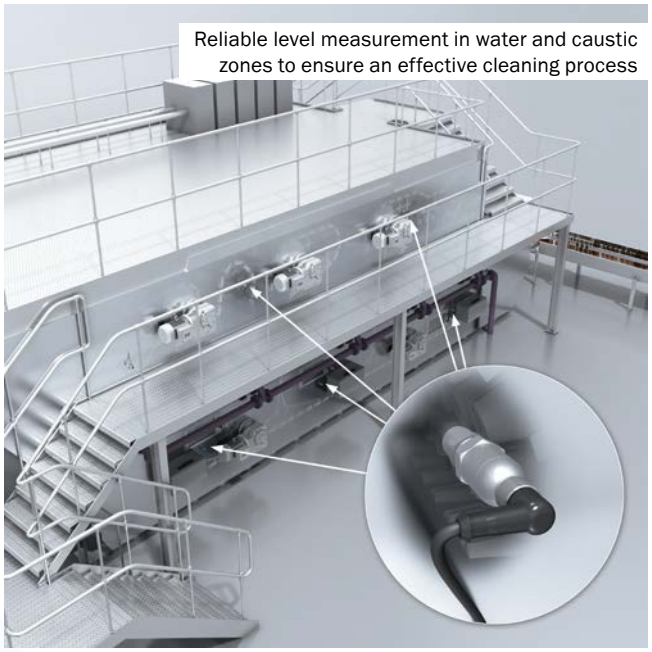
Reliable detection even of challenging media such as foam

Product description

The LFC capacitive level switch is a flexible, simple and cost-effective solution for point level measurement in fluid media. When measuring containers or for dry-run protection in piping, the LFC features particularly high performance. The level switch is easy to install and is characterized by a compact design and long service life. It is also very easy to clean. The sensor can be parameterized for almost any media by means of IO-Link. Its EHEDG and 3-A certified hygienic design and the option of using it at process temperatures up to +135 °C also make it very suitable for CIP and SIP applications. The LFC can easily display or blank foam and deposits.

8017031/2024-10-23

Application example



Reliable level measurement in water and caustic zones to ensure an effective cleaning process

Technical data at a glance

Measurement principle	Capacitive level switch
Detection principle	Contact
Medium	Liquids
Measurement	Switch
Process temperature	–20 °C ... +100 °C, +135 °C for max. 1 h
Process pressure	–1 bar ... 64 bar (depending on type)
Output signal	2 x PNP/NPN, IO-Link
Accuracy of sensor element	Approx. 1 mm

Selected products

Process connection	Type	Part no.
G ½" PN 25, DIN 3852-A / 316L	LFC-XXSBTE	6086408
G ½ A PN25, ISO0228-1, for hygienic thread adapter / 316L (RA < 0.76 µm)	LFC-XXSGTE	6086409
½" NPT PN25, ASME B1.20.1 / 316L	LFC-XXSNTE	6086410

IO-Link

→ www.sick.com/LFC

For more information, simply enter the link or scan the QR code.

Level sensors

LXRC

Radar sensor with IO-Link – user-friendly, precise and reliable

- 80 GHz free-space radar with ± 2 mm accuracy
- Flexible use in a variety of tank sizes and designs
- Plug and play: commissioning without calibration
- Uncomplicated parameterization via IO-Link or Bluetooth

Universal solution for liquids and bulk materials, impervious to dust, vapor and vacuum

Product description

The LXRC free-space radar makes it possible to continuously measure the level of liquids and bulk materials. The 80 GHz signal is especially focused and measures at distances up to 15 m with no dead zones and with a consistently high performance – for a dependable process supply. The LXRC does not need to be calibrated before operation. Thanks to its compact design and non-contact measurement technology, it can be installed with little effort even in applications with limited installation space. Individual parameterization is possible via app or SOPAS ET. Thanks to IO-Link and optional Bluetooth, the level sensor is ideal for modern production environments. The operational status of the sensor can also be viewed from a distance via the 360-degree status display with color indications.

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Application example

Continuous level measurement for wood processing

Technical data at a glance

Measurement principle	Free space radar 80 GHz
Detection principle	Non-contact
Medium	Liquids, Bulk materials
Measurement	Continuous, Switch
Process temperature	–40 °C ... +130 °C
Process pressure	–1 bar ... 16 bar
Measurement range	0 m ... 15 m
Accuracy of sensor element	+/- 2 mm
Output signal	4...20 mA, PNP/NPN, IO-Link
Bluetooth	Optional

Selected products

Process connection	Probe type	360° Status LED	Bluetooth	Type	Part no.
G 3/4, PN16, DIN3852-A	Thread with integrated horn antenna made from PEEK	✔	✔	LXRC-1XXXFXXAAMAAB	6085703
3/4" NPT, PN16, ASME B1.20.1		–	✔	LXRC-1XXXGXXAAEXAB	6085700
G 1, PN16, DIN3852-A	Thread with integrated horn antenna made from PTFE	✔	–	LXRC-1XXXJXXABMAAX	6085689
1" NPT, PN16, ASME B1.20.1		–	–	LXRC-1XXXKXXABEXAX	6085686

IO-Link

→ www.sick.com/LXRC

For more information, simply enter the link or scan the QR code.

Level sensors

LXRH

Radar sensor for hygienic applications – precise, reliable and user-friendly

- 80 GHz free-space radar with ± 2 mm accuracy
- Flexible use in a variety of tank sizes and designs
- Plug and play: commissioning without calibration
- Uncomplicated parameterization via IO-Link or Bluetooth

For hygienic food-processing and pharmaceutical applications – thanks to hygienic design and adapter concept (FDA, EHEDG)

Product description

The LXRH free-space radar makes it possible to continuously measure the level of liquids and bulk materials in hygiene applications. The sensor performs non-contact measurement. Thanks to the hygienic design, the adapters, and a special sealing concept, the sensor meets the stringent requirements of the FDA and EHEDG. Its high precision and scanning range of 15 m with no dead zone make the sensor ideal for storage tanks, process vessels and mixing, filling and dosing systems in the food and pharmaceutical industries. The non-contact measurement principle also simplifies installation. No calibration is required. Parameterization is possible via IO-Link and via Bluetooth and app even with mobile devices. The 360-degree status LED and color coding make it possible to read the operational status of the sensor even from a distance.

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Application example

Continuous non-contact level measurement for food processing

Technical data at a glance

Measurement principle	Free space radar 80 GHz
Detection principle	Non-contact
Medium	Liquids, Bulk materials
Measurement	Continuous, Switch
Process temperature	–40 °C ... +130 °C
Process pressure	–1 bar ... 16 bar
Measurement range	0 m ... 15 m
Accuracy of sensor element	+/- 2 mm
Output signal	4...20 mA, PNP/NPN, IO-Link
Bluetooth	Optional

Selected products

Process connection	M12 plug	360° status LED	Bluetooth	Type	Part no.
G 1, PN16, ISO228-1	Stainless Steel	–	–	LXRH-1XXXMXXA7EXAX	6085719
		–	✔	LXRH-1XXXMXXA7EXAB	6085721
	Plastic	✔	–	LXRH-1XXXMXXA7MAAX	6085720
		✔	✔	LXRH-1XXXMXXA7MAAB	6085722

IO-Link

→ www.sick.com/LXRH

For more information, simply enter the link or scan the QR code.

Pressure sensors

PFT-2

Pressure transmitter for the sophisticated measurement of gases, liquids and viscous media

- Relative pressure measuring ranges: 0 bar ... 0.4 bar to 0 bar ... 100 bar
- Threaded and flush-mounted process connections
- Fully welded stainless steel measurement cell (piezoresistive sensor element)
- Durable and safe, even when used in corrosive media

Manifold variants for operation in diverse applications

Product description

The electronic PFT-2 pressure transmitter precisely measures pressures in liquids and gases. The device is characterized by its high-quality measurement technology and is ideally suited for demanding measuring tasks in industrial applications. In addition to devices with threaded connections, there are also types with a flush-mounted diaphragm. These diverse variants cover a large range of applications, in particular the measurement of viscous or pasty media.

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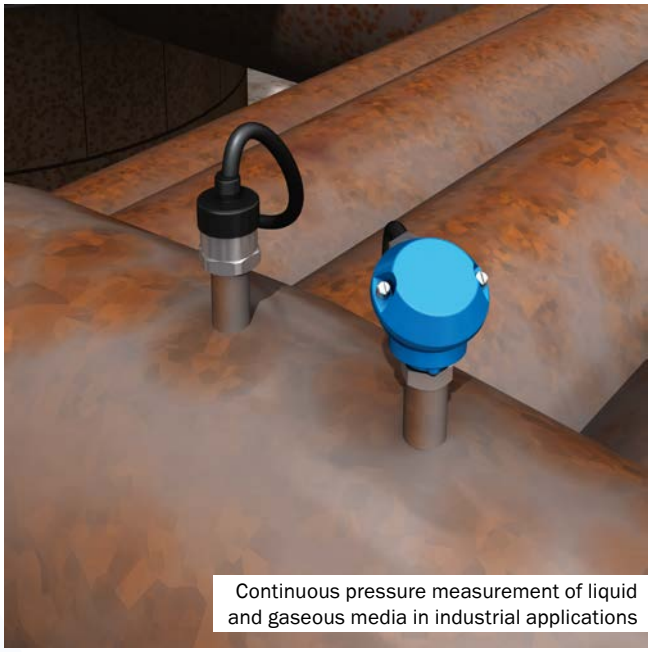
Subject to change without notice

Application examples



Continuous pressure measurement of liquid and gaseous media in industrial applications

Hydrostatic level measurement

Technical data at a glance

Medium	Liquid, gaseous
Pressure type	Gauge pressure
Accuracy	≤ ± 0.5 % of the span
Output signal	4 mA ... 20 mA (2-wire)
Process temperature	-40 °C ... +100 °C
Connection type	Round connector M12 x 1, 4-pin
Supply voltage	12 V DC ... 35 V DC
Enclosure rating	IP66 / IP67

Selected products

Measuring range pressure	Process connection	Seal	Type	Part no.
0 bar ... 10 bar	G 1/2" flush-mounted	FKM	PFT-2LUGM	6087725
	G 1/2" external thread + G 1/4" internal thread	–	PFT-2DNGM	6087765
0 bar ... 25 bar	G 1/2" flush-mounted	FKM	PFT-2LUIM	6087726
0 bar ... 0,4 bar	G 1" flush-mounted	EPDM	PFT-23QCM	6087745
0 bar ... 1 bar	G 1" flush-mounted	FKM	PFT-2C5DM	6087738

→ www.sick.com/PFT-2

For more information, simply enter the link or scan the QR code.

Integration products

SIM800

Cost-effective. Flexible. Intelligent.

- Programmable ARM-based SIM
- Ethernet TCP/IP, serial RS-232, digital inputs and outputs
- Can be combined with the Hermes SMEMA Connect SensorApp
- IP65 protection class
- LEDs for status display and diagnostics

Multiple connection options for flexible solutions

Simply switch to the Hermes standard with the Hermes SMEMA Connect plug-and-play SICK SensorApp

Product description

The SIM800 is a cost-effective, programmable, ARM-based Sensor Integration Machine with Ethernet TCP/IP and RS-232 interfaces. In combination with the Hermes SMEMA Connect plug-and-play sensor app, the SIM800 enables a seamless transition to the Hermes standard for OEMs. The compact, robust IP65 design ensures easy installation and quick device replacement; clearly visible LEDs improve diagnostics.

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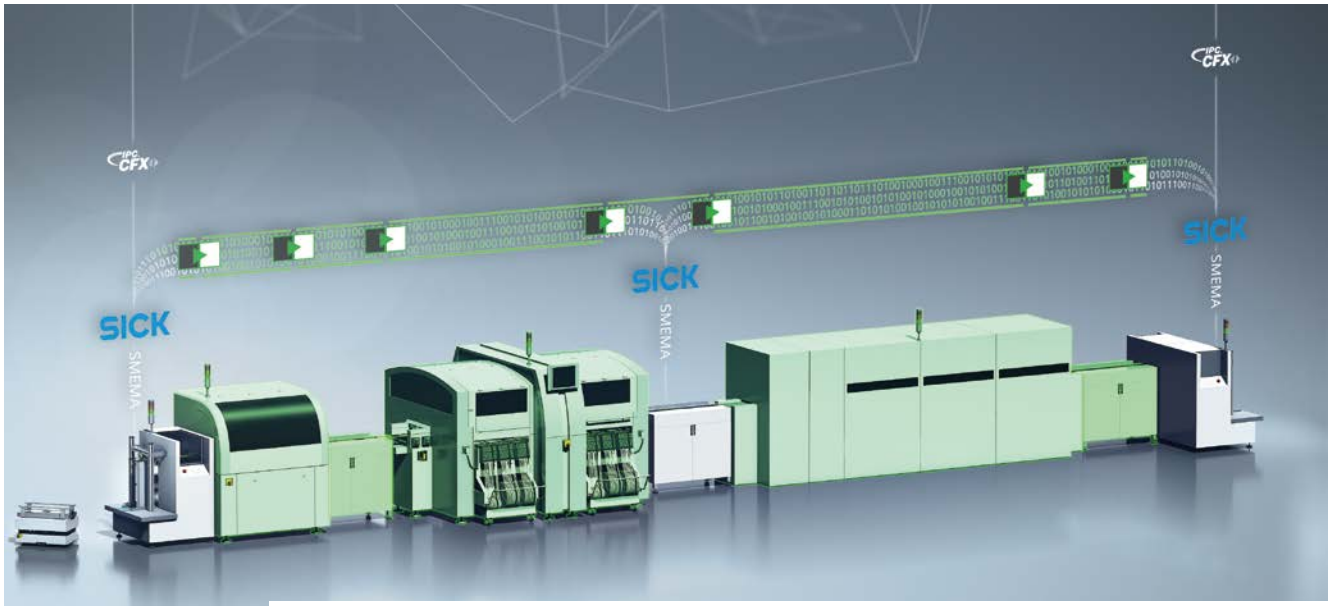
Application example



Manufacturer-independent integration of machines with SMEMA interface in SMT lines with the Hermes standard

Technical data at a glance

Connections	Power: 1 (M12, 5-pin plug, A-coded) Serial, I/O: 1 (15-pin D-Sub HD socket, with seal) Input: 1 (M12, 5-pin socket, A-coded) Ethernet: 2 (M12, 4-pin socket, D-coded)
Processor	Single-core 64-bit Arm® Cortex®-A53 Dual-core Arm® Cortex®-R5F
Memory	512 MB
Flash memory	5 GB
Protection class	IP65
Ambient temperature in operation	–35 °C ... +50 °C

Selected products

Description	Type	Part no.
SIM800	SIM800-000	1136446

SICK APP SPACE

→ www.sick.com/SIM800

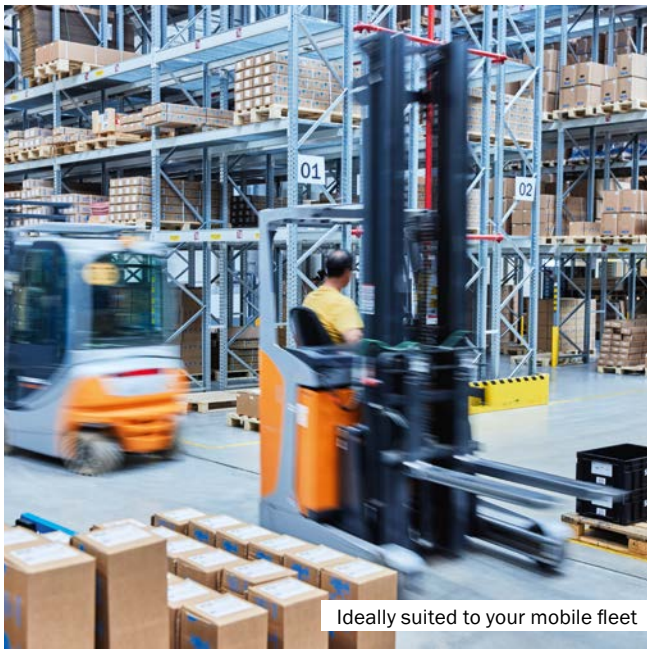
For more information, simply enter the link or scan the QR code.

Integration products

CDE100

Easy conversion of Ethernet-based products to CAN bus and vice versa

- Conversion of Ethernet messages to CAN messages and vice versa
- Multiple CAN frames per TCP transmission
- CAN bus complies with CAN 2.0 B specification
- Configuration of CAN/ETH settings via SOPASair
- Configurable CAN communication baud rate and CAN software termination



Ideally suited to your mobile fleet


CDE100 enables sensor integration into the CAN bus network

Product description

The CDE100 can be used to convert data from any Ethernet-based product to CAN bus and vice versa while being protocol agnostic on the CAN bus side. By converting sensor data from CAN bus to Ethernet format it is possible to expand the range of sensors and hardware interfaces in the system. At the same time, it significantly reduces the wiring between additional processing units like IPCs, gateways, LiDAR sensors, encoders, and inclination and magnetic proximity sensors. Therefore, the CDE100 is often used for operator assist systems, windrow guidance, and machine process applications in heavy machinery, forklifts, and AGVs.

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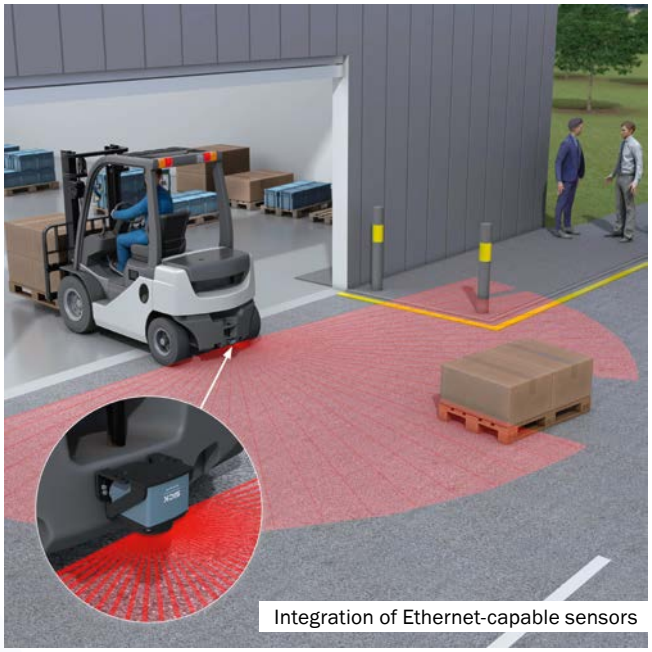
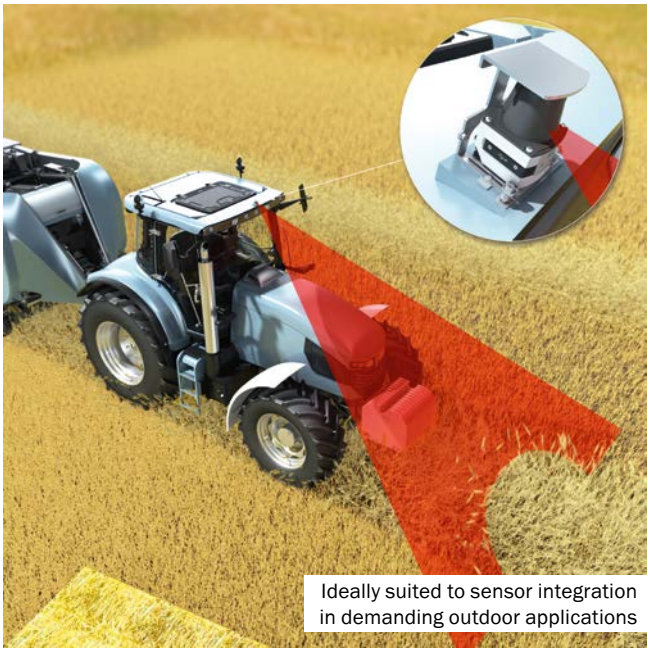
Application examples



Integration of Ethernet-capable sensors



Ideally suited to sensor integration in demanding outdoor applications

Technical data at a glance

Enclosure rating	IP67 (IEC 60529:1989+AMD1:1999+AMD2:2013)
Ethernet data transmission rate	10/100 Mbit/s
CAN bus data transmission rate	1 Mbit/s, adjustable
Power consumption	1.8 W

Selected products

Configuration interface	Optical indicators	Communication interface	Type	Part no.
REST API Web-Interface	5 LEDs (Statusanzeige)	Ethernet, CAN-Bus	CDE100	1134028

→ www.sick.com/CDE100

For more information, simply enter the link or scan the QR code.

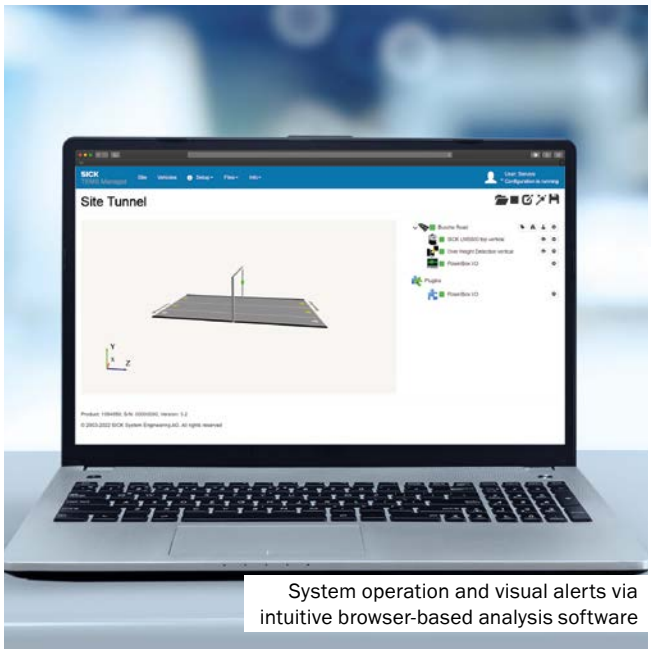
Object detection systems

Overheight Detection System

Overheight detection for vehicles including alerts and lane assignment

- Browser-based user interface
- Intuitive analysis software
- Output values: time stamp, lane information, vehicle height, system status
- Connectivity via diverse interfaces as well as mobile radio
- Digital I/O for triggering a camera or display panel

High flexibility in location without installation in the road surface



System operation and visual alerts via intuitive browser-based analysis software

Product description

The Overheight Detection System (OHD) is an object detection system that reliably detects overheight vehicles thereby avoiding hazardous situations. Thanks to digital inputs and outputs, the immediate alert can be combined with cameras and display panels. The incorporated LiDAR sensor with weather protection hood and the TDC-E-Gateway combine to create a compact solution that is versatile to mount and set up. Depending on the application, measurement of the vehicle height, lane assignment, and setting of customer-specific limit values can be implemented.

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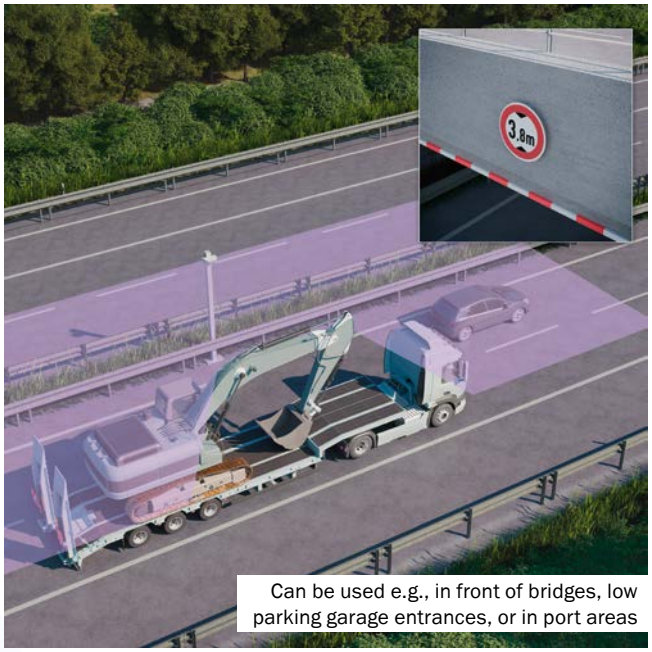
Application example



Can be used e.g., in front of bridges, low parking garage entrances, or in port areas

Technical data at a glance

Installation position	Vertical: Overhead or at the side Horizontal: At the side
Minimum detectable object	Horizontal mounting: • ø100 mm at 5 m distance • ø250 mm at 15 m distance Vertical mounting: • ø250 mm at 30 km/h driving speed • ø500 mm at 120 km/h driving speed
Interfaces	TCP/IP, Digital I/O, GSM, MQTT

Selected products

Network coverage	Type	Part no.
Europe, Middle East, Africa, Asia Pacific	OHD5001-GC	1125136
North America and Latin America	OHD5001-AC	1133092

→ www.sick.com/Overheight_Detection_System

For more information, simply enter the link or scan the QR code.

Quality control systems

Pallet Integrity Inspection System

Contactless pallet control for fast and reliable detection of various defects

- 3D cameras and dual line lasers (safety class 2) enable scanning during throughput
- Customizable limits for each defect type and individual pallet elements
- Intuitive software operation
- Warning messages and notifications

User interface of the Pallet Integrity Inspection System

Heavy-duty variant of the system (PAIS-E4H0)

Product description

The Pallet Integrity Inspection System is a non-contact quality control system based on 3D cameras that can detect damage such as missing parts, cracks and projecting nails on Euro pallets. Thanks to its modular construction, it is possible to quickly and precisely scan the top, side, bottom or inside of unloaded and loaded pallets according to requirements. Based on the reliable assessment of the pallet quality, the pallet can be repaired or replaced in order to avoid accidents and damage to goods. Replacing manual inspections speeds up workflows and ensures a high productivity in downstream processes.

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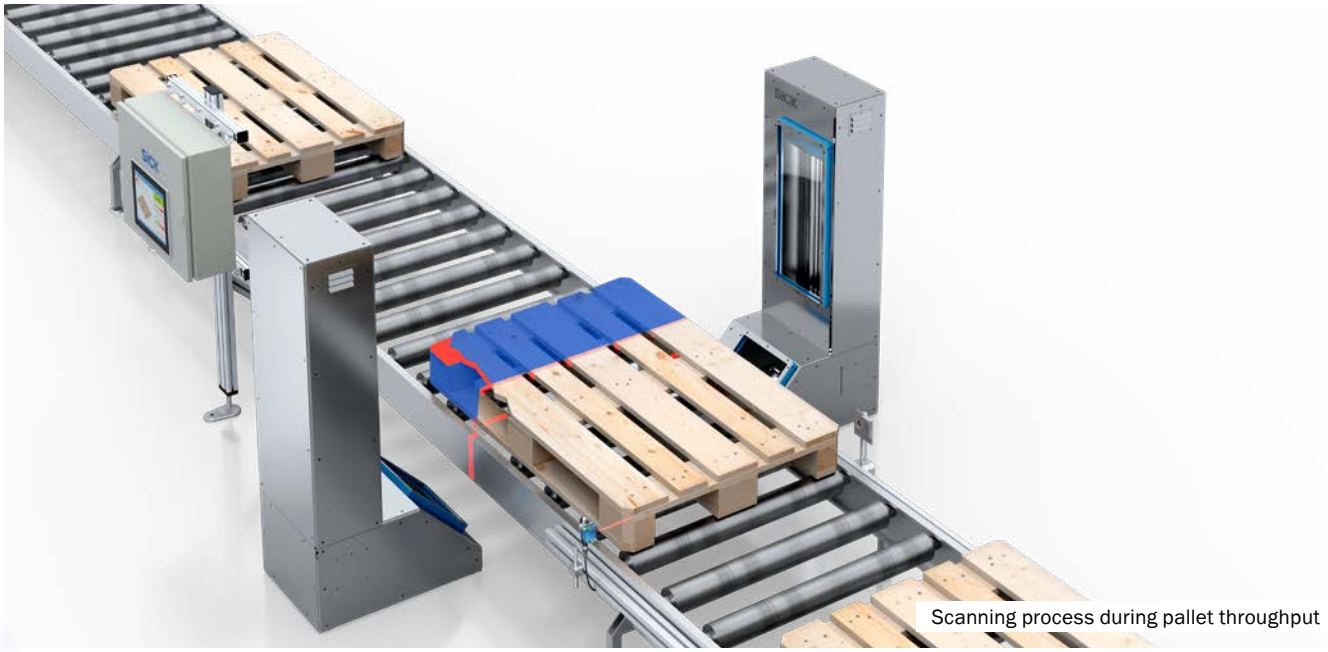
Application example



Scanning process during pallet throughput

Technical data at a glance

Scannable pallet types	EUR 1200 x 800 mm
Technology	3D laser triangulation
Conveyor speed	≥ 0.5 m/s, recommended
3D profile resolution	Up to 0.6 mm/px
Minimum detectable defect	>3 mm

Selected products

Variant	Housing	Number of cameras	Supported pallet type	Type	Part no.
Heavy-duty	✔	4	Euro pallet	PAIS-E4H0	1139347
Light	–	4	Euro pallet	PAIS-E4L0	1144858
Bottom-only	✔	2	Euro pallet	PAIS-E2H0	1144856

→ **www.sick.com/Pallet_Integrity_Inspection_System**

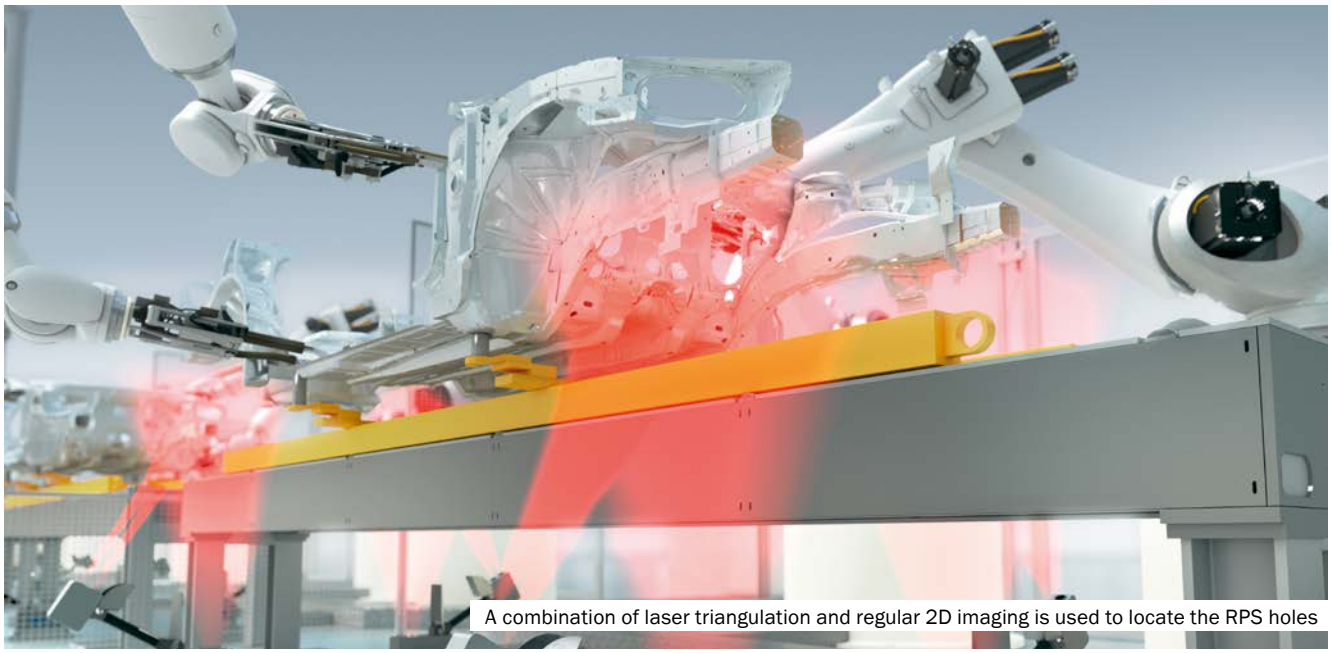
For more information, simply enter the link or scan the QR code.

Robot guidance systems

Body Position System

Contactless vehicle body position detection to improve automotive manufacturing

- Increased production flexibility – more car types can be produced on the same line
- Reduced cycle time per car body for faster production
- Low maintenance expense by minimizing wear and tear on mechanical clamping devices
- Integrated redundancy allows system operation even if one camera module is non-functional



A combination of laser triangulation and regular 2D imaging is used to locate the RPS holes

Product description

The robot guidance Body Positioning System is a contactless camera-based system for high-precision localization of vehicle bodies. The system measures reference points (RPS) on car bodies and transmits them to the robot. Based on the data the robot performs various applications according to actual car position with high precision. BPS is technologically advanced replacement for mechanical devices currently used in skid carrier-based car production. Any number of different types of vehicles can be processed fully automatically in just one production line. This solution brings the automotive industry more production flexibility as well as reducing production cycle time.

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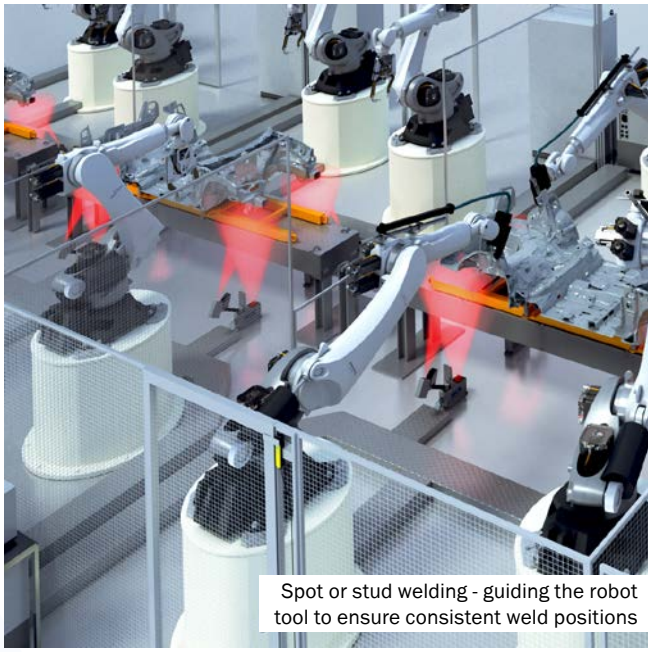
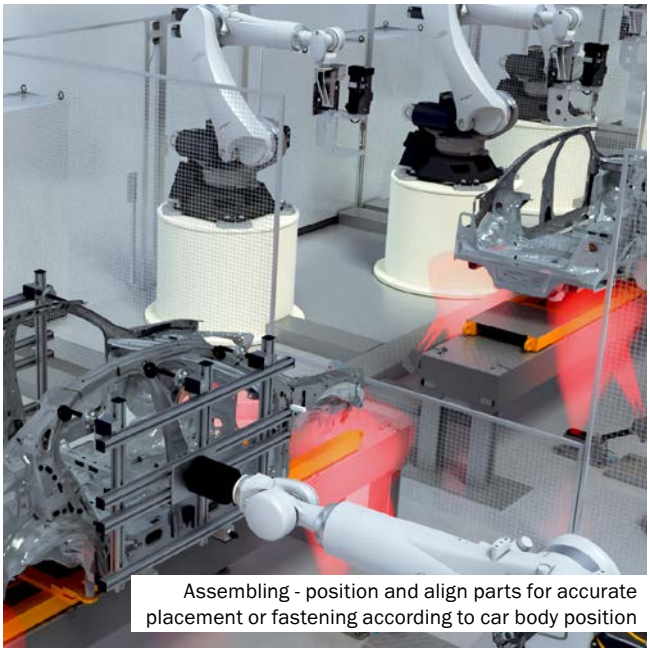
Application examples



Spot or stud welding - guiding the robot tool to ensure consistent weld positions



Assembling - position and align parts for accurate placement or fastening according to car body position

Technical data at a glance

Working distance	800 mm, 1000 mm, 1200 mm
Field of view (B x H)	120 x 160 mm; 120 x 220 mm; 120 x 280 mm
Cycle time	1.8 - 2 s
Supply voltage	24 V DC ± 10 %
Ambient temperature, operation (BPS including electrical cabinet)	0 °C ... +45 °C permissible relative air humidity: 0 % ... 90 % (non-condensing)
Interfaces	TCP/IP, Profinet
Enclosure rating	IP65

Selected products

Description	Working distance	Field of view (B x H)	Type	Part no.
Base BPS5400 system with 0.8 m triangulation Geometry - 4 camera modules and 2 lasers	800 mm	120 x 160 mm	BPS5400-842	1141899
Base BPS5400 system with 1 m triangulation Geometry - 4 camera modules and 2 lasers	1000 mm	120 x 220 mm	BPS5400-1042	1141900
Base BPS5400 system with 1.2 m triangulation Geometry - 4 camera modules and 2 lasers	1200 mm	120 x 280 mm	BPS5400-1242	1141901

→ www.sick.com/Body_Position_System

For more information, simply enter the link or scan the QR code.

Robot guidance systems

PALLOC

Flexible automation of depalletizing with 3D color vision based on deep learning

- Localization function based on deep learning ensures reliable depalletizing
- Pre-calibrated camera with embedded neural network processing allows fast commissioning
- Combination of 3D and color images enables even tightly stacked or mixed-size boxes to be accurately located

Reliable robot automation removes the need for manual depalletizing

Quick and easy integration into the robot controller

Product description

The PALLOC robot guidance system makes it easy to locate boxes of various sizes and appearances with high accuracy. The 3D color camera delivers up to 30 full-frame images per second with sub-millimeter resolution. These 3D and color images ensure that the individual boxes and layers can be detected and measured in an accurate and reproducible way. The camera has a pre-installed and pre-trained deep learning neural network localization algorithm that allows it to locate virtually unlimited variations of boxes. PALLOC reports the position coordinates of the boxes to the robot, allowing it to pick them one-by-one or several at the time, in a configurable picking order.

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Application example

PALLOC handles any type of box

Technical data at a glance

Part size	> 100 x 100 mm at a distance of 1.2 m > 250 x 250 mm at a distance of 3.5 m
Working distance	1.2 m ... 3.5 m
Localization accuracy	< +/- 5 mm and < +/- 1° (typical)
Part localization time	1 s
Robot Interface	Ethernet TCP/IP
User Interface	Web server

Selected products

Description	Type	Part no.
Robot automated depalletizing	PALLOC-VS	1139985

→ www.sick.com/PALLOC

For more information, simply enter the link or scan the QR code.

Track and trace systems

Ident Gate System

Reliable identification of delivered goods directly at the loading gate

- Automatic capture of shipping labels thanks to combination of RFID and camera
- Seamless traceability of goods due to simple integration into the customer's existing ERP or WMS systems
- Increased throughput through automated loading process
- Cost-efficient solution thanks to modularity and easy commissioning

Automatic and technology-independent capture of the transport label

Immediate data synchronization and visual feedback directly at the loading gate

Product description

The Ident Gate System automatically identifies inbound goods directly at the loading dock based on shipping labels. The track and trace system detects the shipping labels as soon as the worker drives through the gate – without stopping – with a loaded pallet. The acquired data are compared with the available order details thanks to the direct ERP connection. A visual loading and status check indicates to the personnel whether the data matches.
The Ident Gate System has a modular structure and can be individually adapted. To round off the concept, selected identification technologies such as RFID, 1D and 2D, or even hybrid solutions can be combined with functions for measuring or classifying the containers

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Application examples

Reliable goods identification and comparison with higher-level system for fast and consistent loading processes

Identification of goods deliveries on pallets and special load carriers independently of the industrial truck

Technical data at a glance

Industries	CEP & Freight / Contract Logistics / Storage, Handling & Sortation / Distribution & Fulfillment / Food, Beverage & Consumer Care / Automotive
Code types	1D, 2D, RFID
Load carrier	All common pallet types, single or stacked Special load carriers
Solutions	Camera technology (Lector85x) RFID technology Hybrid solution of camera and RFID technology
Extension options	Display, signal lamp, controller, Wifi, ERP connection
Modular solution approach	Can be upgraded to include additional tasks and technologies such as volume, side clearance or contour control

Selected products

Technology	Transport width	Pallet	Type	Part no.
RFID	up to 5,000 mm	single	Ident Gate 101-1	1145930
RFID	up to 5,000 mm	stacked	Ident Gate 101-2	1145931
Camera	up to 3,000 mm	single	Ident Gate 201-1	1145932
Camera	up to 3,000 mm	stacked	Ident Gate 201-2	1145933
Hybrid	up to 3,000 mm	single	Ident Gate 301-1	1145934
Hybrid	up to 3,000 mm	stacked	Ident Gate 301-2	1145935

→ www.sick.com/Ident_Gate_System

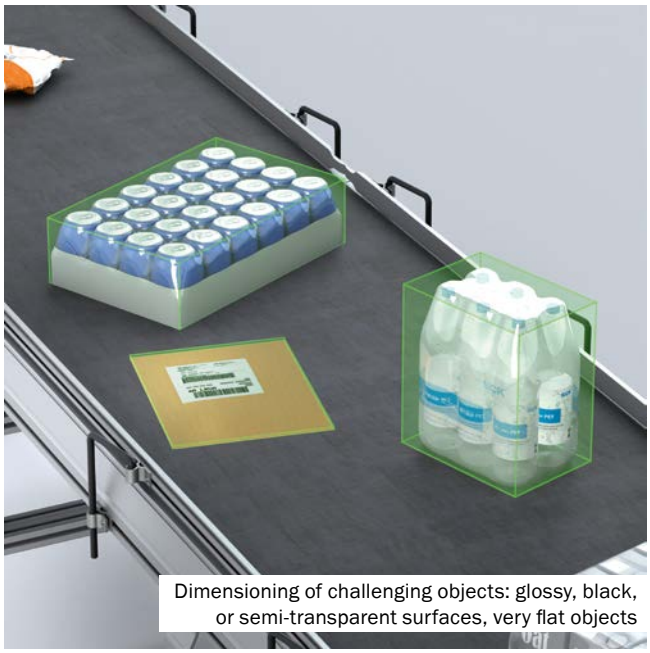
For more information, simply enter the link or scan the QR code.

Track and trace systems

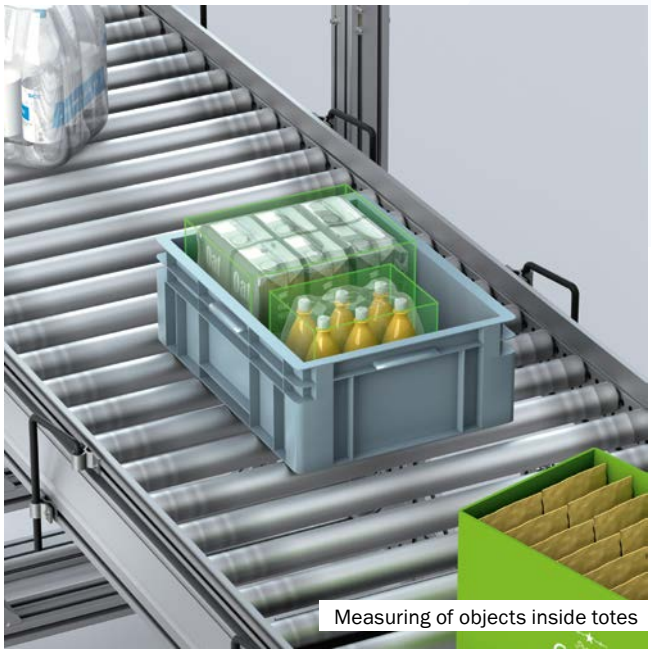
VMV Dimensioning System

Dimensioning of a wide variety of objects using 3D snapshot technology

- Fast dimensioning at variable conveyor speeds with 3D snapshot technology
- Dimensioning of challenging objects thanks to AI-supported software modules
- Process automation by recording the position and rotation the data for transfer to downstream process steps (e.g., sorting robots) using RGB images



Dimensioning of challenging objects: glossy, black, or semi-transparent surfaces, very flat objects



Measuring of objects inside totes

Product description

The VMV Dimensioning System track and trace system measures the exact length, width and height of objects. There is a suitable system variant for both static and dynamic processes. The 3D snapshot technology generates a 3D point cloud in a single measurement operation. This is used to precisely determine the dimensions, corner coordinates, and angle of rotation of the object. The 3D camera also captures an RGB image, which is used for result optimization and documentation. Additional AI-based software modules are available for particularly challenging objects such as semi-transparent surfaces.

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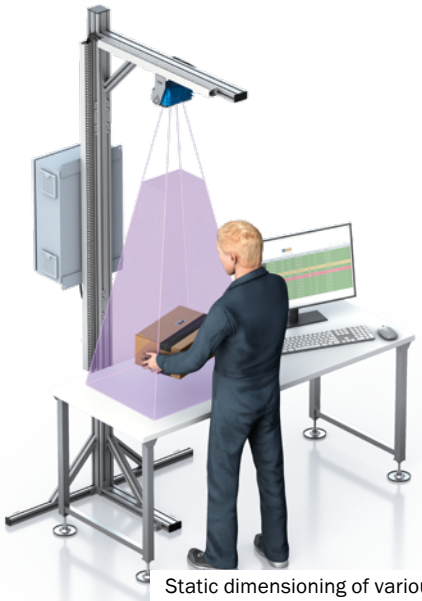
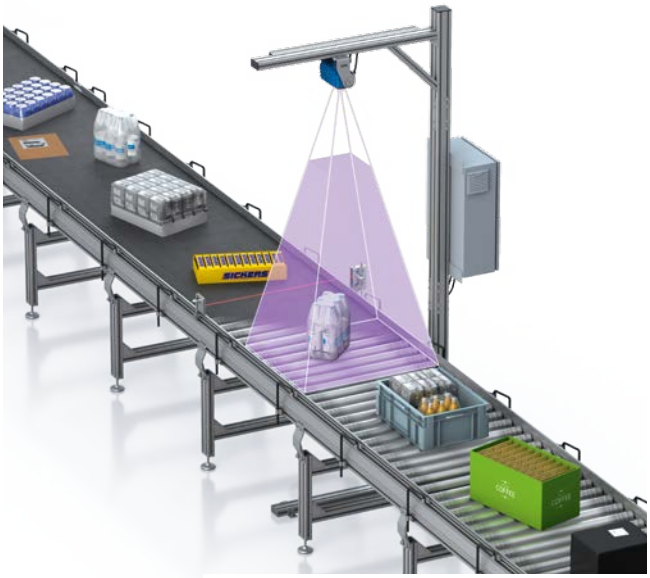
Application examples



Static dimensioning of various objects



Dynamic dimensioning of various object types

Technical data at a glance

Minimum object size	40 mm x 40 mm x 10 mm ... 100 mm x 100 mm x 50 mm
Maximum object size	700 mm x 500 mm x 400 mm ... 1200 mm x 1000 mm x 800 mm
Accuracy of object dimensioning	± 5 mm x ± 5 mm x ± 2 mm ... ± 10 mm x ± 10 mm x ± 5 mm
Ambient operating temperature	0 °C ... +40 °C, Variant with up to +50 °C possible
Ambient temperature, storage	–20 °C ... +70 °C

Selected products

Object movement	Conveyor type	Conveyor speed	Type	Part no.
dynamic	Belt conveyor, roller conveyor	0.0 m/s - 2.0 m/s	VMV4100	on request
static	Arbitrary (non-reflective or transparent)	–	VMV4100 Static	on request

→ www.sick.com/VMV_Dimensioning_System

For more information, simply enter the link or scan the QR code.

SICK SensorApps

3D Object Detection

Flexibly customizable collision avoidance for mobile platforms

- Detection of forks close to the ground from up to 3 m away
- Long range – objects can be detected from up to 9 m away
- Flexibly customizable with 16 freely configurable detection fields
- High-level image dynamics, ideal for mobile applications

Higher AGV speeds due to early detection of objects

Saves mobile platform computing power as the app runs directly on the sensor

Product description

Using the 3D Object Detection SensorApp, collisions between AGVs or AMRs can be effectively avoided. The software solution processes 3D raw data, detects objects, and can classify these as obstacles. Up to 16 detection fields can be configured via the intuitive-to-use web interface. The detection fields can be combined into groups that can be activated according to the application. When an object is detected in a field, digital outputs are switched. These signals can be used to control the speed of the AGVs or AMRs. The app runs directly on the sensor and is therefore ideally matched to the hardware. This ensures fast response times and allows trouble-free operation.

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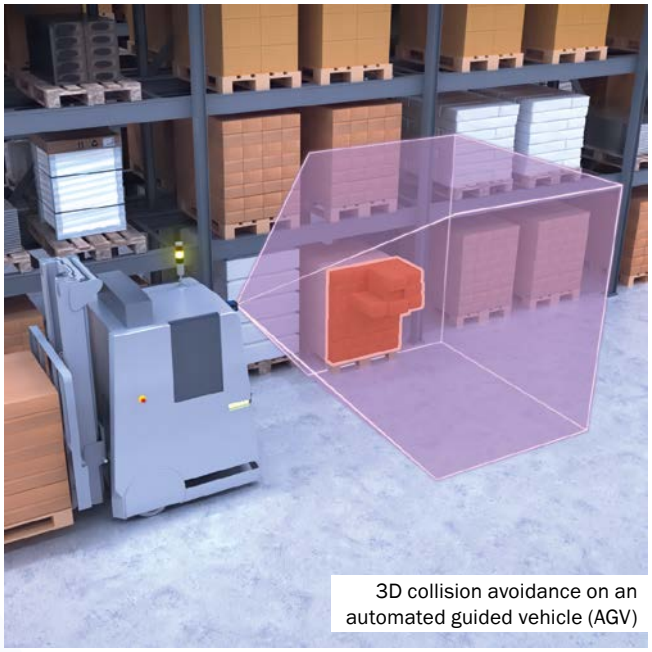
Application examples



3D collision avoidance on an automated guided vehicle (AGV)

Avoiding collisions between AGV systems and suspended objects

Technical data at a glance

Task	Three-dimensional object detection for collision avoidance of automated guided vehicles
Working distance	200 mm ... 9,000 mm
Number of simultaneously monitored fields	≤ 16
Object resolution	The minimum object size can be configured individually for each field.
Detection Example values for an object of size 4 cm x 4 cm	At 90% remission factor, successful detection up to at least 6 m At 31% remission factor, successful detection up to at least 5 m At 5% remission factor, successful detection up to at least 2 m
Response time	For 6 fields, ≥ 100 ms
Pixel count	512 px x 424 px

Selected products

Scope of delivery	Ground filter	Type	Part no.
Software + license	no	3D Object Detection Core	1135686
Software + license	yes	3D Object Detection Prime	1140729
Software + license + sensor	no	V3S145-1AAAABA OD Core	1137062
Software + license + sensor	yes	V3S145-1AAAABA OD Prime	1142558

→ www.sick.com/3D_Object_Detection

For more information, simply enter the link or scan the QR code.

SICK SensorApps

SICK ConnectX

Connects the field level and IoT using standardized IT protocols

- SICK ConnectX collects and harmonizes different sensor data for IIoT applications, such as Field Analytics, Asset Hub, or non-SICK customer solutions
- Integrating sensors into higher-level networks using open protocols (e.g., MQTT) for an end-to-end-solution
- Simple data configuration via intuitive UI

The software for your sensor data integration

Product description

SICK ConnectX is a standard software and the bridge from the field to the I4.0/IoT level. Data from the field level can be collected, pre-processed and made available to IoT applications in the desired manner using various open or proprietary protocols (CoLa, IO-Link, MQTT). The communication is bi-directional. Users configure the entire data flow with the help of an intuitive user interface. This also offers options for pre-processing and aggregation of data flows.

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Application example

Technical data at a glance

Description	Data flows can be configured intuitively with the SICK ConnectX software. The data formats commonly used in the industry can be converted, pre-processed and connected with a user interface
Host devices	• Sensor Integration Machines • Windows • Linux • Docker
IT/OT protocols	MQTT, HTTP
Available sensor interfaces	Ethernet, IO-Link

Selected products

Version	Type	Part no.
Demo version: Unlimited number of sensors for 30 minutes	SICK ConnectX	1138170
Up to 16 sensors	SICK ConnectX Pro license	1138326
Up to 64 sensors	SICK ConnectX Premium license	1138327
Unlimited number of sensors	SICK ConnectX Enterprise license	1138052

→ **www.sick.com/SICK_ConnectX**

For more information, simply enter the link or scan the QR code.

Application software

Incoming Goods Suite

Modular software solution for recording and processing incoming goods

- Reliable and efficient processing of parcels
- Immediate notification for the shipment recipient
- Complete overview of recorded packages with detailed shipment data (incl. storage)
- Efficient processing of clarification cases and reduced search times

Digital overview of goods receipt

Reliable registration of incoming goods immediately up on receipt

Product description

The software-based Incoming Goods Suite solution uses the shipment number to simply and reliably record packages and shipments. It recognizes important information such as the parcel delivery company and category (e.g. duty-free goods or express shipments) so the shipments can be immediately sorted or promptly further processed. Additional process data such as date, time and location of shipment handover is saved. The recorded information creates transparency about the actual status when goods are being received. This enables processes to be optimized, disruptions in downstream processes to be avoided, and the costs associated with searching for and clarifying shipments to be reduced.

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Application example

Simple recording of packages and shipments for fast sorting and greater transparency upon receipt of goods

Technical data at a glance

Scope of delivery	Incoming Goods Application (Server software) 2x Mobile computer (Scanner) incl. accessories Operator Assistance App (Scanner software)
Features	Package registration Storage assignment Daily dashboard Package receipt overview Package search Package announcement Email notification service
Supported CEP service providers (standard)	DHL / DPD / FedEx / GLS / GO! Express & Logistics / Hermes / TNT / trans-o-flex / UPS / Additional individually extendable
Access	Web browser (recommended: Chrome, Edge)
Operating environment	Customer's own Linux system (Debian)
Scanner connection	Wifi

Selected products

Description	Type	Part no.
Solution for efficient processing of incoming goods	Incoming Goods Suite (IGS)	on request

→ www.sick.com/Incoming_Goods_Suite

For more information, simply enter the link or scan the QR code.

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Modernization
Utilizing potential

Training
Targeted strengthening of skills

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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 11,900 employees and over 50 subsidiaries and equity investments, as well as numerous international agencies, SICK is always close to its customers. An extensive range of products and services creates the ideal 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.

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