

SICKinnovations

INNOVATIONS MAGAZINE

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EDITORIAL



Our everyday life has changed during the past twenty years. We take photos with our smartphone, send them all around the world at the click of a button, and pay for our purchases using our smartwatch. We use technology as a matter of course to make our everyday life more convenient, simple and fast.

That is what we aim to do for you too, our customers, and for your business. We don't just develop for the sake of it, but rather concentrate on the technologies and solutions that give you added value. When doing so, we rely on our core business – sensors. At the same time we utilize the possibilities of the virtual world to deliver solutions for your specific automation needs. Solutions that we ourselves didn't think were possible.

Sensor Intelligence. is therefore not just a slogan for us. Sensor Intelligence. epitomizes our clear focus on sensor technology as a data provider for a safe and efficient work environment as well as a meaningful and sustainable use of the resources that are available to us today.

In this issue of SICKinnovations, we would like to give you an overview of the intelligent sensor solutions we have developed to meet this challenge. These solutions combine our 75 years of experience in almost all industries with our extensive IT expertise in capturing, linking and further processing data thereby making your processes more transparent, flexible and efficient.

Yours,

Dr. Niels Syassen Member of the Executive Board with responsibility for Technology & Digitalization

SICKinnovations

DIGITAL TRANSFORMATION

Digital transformation affects us all. The changes digital technologies are making to society as a whole are an ongoing process. Industrial companies are facing enormous opportunities, which at the same time represent major challenges.

Examples of these are networked and highly efficient production processes and new digital business models resulting from the fusion of the operational manufacturing level with the IT level. You are not alone.



Sensors - data makes it all possible

The basis for digitalization or an I4.0 solution in industrial environments is data. This data is generated in machines and plants by means of sensors. Intelligent sensors from SICK can generate this data and pre-process it if necessary, meaning even more valuable information is generated from it. Artificial intelligence, which is growing in importance in industrial automation, offers the possibility of solving more challenging tasks and adapting quickly to changing conditions.

Machines – digital industrial automation, safe and protected

A high degree of automation characterizes digital transformation and the machines and plants it involves. Automatic guided vehicle systems (AGV systems/AGCs) are used to move manufacturing goods between machines, warehouses, the shipping department, etc. Robots are used to load and unload machines automatically or to work in collaboration with workers in individual production steps. In addition to the pure automation functions, personal safety also plays an important role here.

Operations – transparency and efficiency with digital solutions

With data come solutions. Digital services and software solutions are based on the sensor data. Thanks to their use on the shop floor, meaning in direct production environments, the individual process and manufacturing sequences become transparent and can then be optimized. The goal is to make your production processes more efficient and reduce downtime, therefore saving costs.



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



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Small photoelectric sensors

W12L

Strong performance in rugged metal housing for demanding detection tasks

- Precise detection of small objects due to exact light spot of the laser variants
- Universal application possibilities thanks to MultiMode function
- Reliable detection of challenging objects such as very dark or sloping objects thanks to ApplicationSelect mode
- Simple parameterization with BluePilot on device or via customer-friendly IO-Link user interface



Product description

The W12L photoelectric sensors can be used nearly anywhere for exact object detection in demanding environments. The sensors are insensitive to shocks and vibrations thanks to their zinc die cast housing. IO-Link and BluePilot allow for fast and simple parameterization. Numerous functions such as background or foreground suppression ensure extremely reliable detection of very dark objects and make the W12L resistant to interference. Condition-based maintenance based on sensor and diagnostic data reduces costs and increases efficiency.







Technical data overview

Dimensions (W x H x D)	15.6 mm x 49.5 mm x 43.1 mm
Light source	Laser
Type of light	Visible red light
Enclosure rating	IP66 (EN 60529) IP67 (EN 60529) IP69 (EN 60529)
Housing material	Metal zinc diecast

Selected products

Adjustment	Sensing range min. / max.	Light spot size (distance)	Switching frequency	Туре	Article no.
	15 mm / 400 mm	0.17 mm x 0.1 mm (100 mm)	2500 Hz	WTB12L-24161720A00	1126040
40 mm / 350 mm	32 mm x 1.2 mm (100 mm)	1000 Hz	WTB12V-24161120A00	1125930	
reach-rum aujustment	urn adjustment 50 mm / 1200 mm	2.2 mm x 1.2 mm (300 mm)	1000 Hz	WTM12L-24161120A00	1125113
	20 mm / 150 mm	2.8 mm x 1.25 mm (120 mm)	2500 Hz	WTF12L-24162820A00	1126060
Teach-in button	0 m / 20 m	1.5 mm x 1.2 mm (1000 mm)	2500 Hz	WLA12L-24162130A00	1126037

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





→ www.sick.com/W12



Compact photoelectric sensors

The reliable sensors in dusty environments and for applications with long sensing range

- Reduced downtime thanks to high reliability and operating reserve, especially in dirty environments
- Additional front LED provides information on the status of received light beam
- M12 male connector, cable and connection chamber
- DC and AC/DC voltage supply
- Optionally with time delay



Product description

The G20 sensors enable reliable object detection over longer distances and are particularly well-suited for use in dusty environments thanks to the high operating reserve. They are compact, economical and offer an excellent price-performance ratio. The additional front LED and the rotary switches facilitate commissioning and operational checks. The light/dark switching, adjustable sensitivity and configurable signal delay make the photoelectric sensors flexible for use in numerous applications. They are also fully compatible with each other in terms of mounting, as DC and AC/DC devices are available in the same design and with different mechanical mounting options.





Presence detection at induction lines and transfer points

Technical data overview

Dimensions (W x H x D)	23.5 mm x 74.5 mm x 52.5 mm 23.5 mm x 74.5 mm x 63 mm
Light source	LED
Type of light	Visible red light / Infrared light
Enclosure rating	IP67 (EN 60529)
Housing material	Plastic ABS

Selected products

				_	
Functional principle	Voltage type	Sensing range min. / max.	Connection type	Туре	Article no.
Photoelectric proximity	DC	0.005 m / 3 m	Male connector M12, 4-pin	GTB20G-24111160ZZZ	1119840
suppression	AC/DC	0.005 m / 3 m	Terminal connection, 5 terminals	GTB20M-QLRC1160ZZZ	1119846
Photoelectric	DC	0.03 m / 20 m	Male connector M12, 4-pin	GLD20G-24112170ZZZ	1119870
retro-reflective sensor	AC/DC	0.03 m / 20 m	Cable, 5-wire, 2 m	GLD20G-1IRC2170ZZZ	1119873
Through-beam photoelectric sensor	DC	0 m / 120 m	Male connector M12, 4-pin	GSE20G-24112170ZZZ	1119877



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→ www.sick.com/G20



MultiTask photoelectric sensors

Roller Sensor Bar

Flexible conveyor belt sensor for detecting irregular leading edges

- Housing length: 200 mm to 1,200 mm (7.87" 47.24")
- Beam separation: 50 mm to 200 mm (1.97" 7.87")
- Significantly decrease installation costs with a tool-free installation using a spring-loaded end cap
- IO-Link provides individual beam break information which can be used for product alignment



and beam spacing between 50mm – 200 mm (1.97" - 7.87")





Product description

The Roller Sensor Bar conveyor sensor is designed to be mounted between rollers and is an elegant, simple solution for reliable detection of objects with irregular leading edges. Sensing performance is optimized through the ability to configure length and beam spacing to the mm. By mounting the Roller Sensor Bar between the rollers, object catch points can be removed thereby decreasing conveyor downtime due to jams. The spring-loaded assembly of the Roller Sensor Bar, which can be mounted in the factory rather than in the field, decreases installation costs by more than half. Commissioning costs are reduced by eliminating the need to teach and align the sensor.





Technical data overview

Light source	LED
Type of light	Infrared light
Enclosure rating	IP67 (EN 60529)
Housing material	Metal Aluminum (anodised)

Selected products

Sensing range min. / max.	Length of sensor bar	Number of beams	Connection type	Туре	Article no.
	200 mm	2	Cable with connector M12, 4-pin, with knurled nut	RSB1-0200B060070BA4EZZZZZ	1126611
	458 mm	3	Cable with male connector M8, 4-pin, snap	RSB1-0458C115114BA5DZZZZZ	1126184
2 mm / 300 mm	500 mm	3	Cable with connector M8, 4-pin, with knurled nut	RSB1-0500C125125FP3CZZZZZ	1127674
	614 mm	6	Cable with connector RJ12, 6-pin	RSB1-0614F100057KHA1ZZZZZZ	1125706
	1,200 mm	8	Cable with connector M8, 4-pin, with knurled nut	RSB1-1200H134131FP3EZZZZZ	1126613





www.sick.com/Roller_Sensor_Bar



Fiber-optic sensors

The smart solution for challenging detection tasks

- Response time up to 16 µs
- Sensing range up to 20 m (through-beam system); up to 1.4 m (proximity system)
- OLED display with text display in various languages
- Reliable detection of transparent objects thanks to continuous threshold adaptation
- Stand-alone version with IO-Link



nsor settings can be adjusted directly in the system, optical feedback via display and status LEDs

Parallel use: several fiber optic amplifiers can be networked in one application via internal bus communication

Product description

With the WLL80 opto-electronic fiber optic amplifier, SICK is creating a new generation of amplifiers for the flexible integration of fiber optics in confined spaces. The intelligent WLL80 features IO-Link and can make processes even more efficient with various Smart Tasks. Thanks to IP54, it is protected from dust and spray water during operation. Continuous threshold adaptation ensures good performance in the long term with minimal maintenance requirements. In addition to a fast response time and high detection range, it is characterized by flexible and user-friendly parameterization via the OLED display or IO-Link. Whether as a single or bus version, the WLL80 is suitable for a wide range of applications thanks to its extensive fiber optics portfolio.





Technical data overview

Dimensions (W x H x D)	10.5 mm x 33.2 mm x 79.9 mm
Light source	LED
Type of light	Visible red light
Switching frequency	Up to 31.2 kHz
Enclosure rating	IP54 (EN 60529)
Housing material	Plastic PC
Communication interface	IO-Link

Selected products

Communication interface	Device type detail	Connection type	Туре	Article no.
IO-Link	Standalone system	Cable, 4-wire, 2 m	WLL80P-1HT6Y1DZA71Z1Z1	6076722
E	Dece unit	Cable, 5-wire, 2 m	WLL80P-1IU2Y1DMZZZZ1Z1	6076717
	Base unit	Male connector M8, 4-pin	WLL80P-22TGY1DMZZZZ1Z1	6076715
-	-	Cable, 3-wire, 2 m	WLL80P-1GU2Y1DEZZZZ1Z1	6076720
Expansion unit	Male connector M8, 4-pin	WLL80P-22TGY1DEZZZZ1Z1	6076719	

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

→ www.sick.com/WLL80







Condition Monitoring sensors Multi Physics Box

Condition Monitoring sensors for vibration, shock, and temperature monitoring

- 3-axis vibration (± 8 g) and shock detection (up to 200 g) via MEMS elements
- Vibration limit values according to ISO 10816-3
- Intuitive data interpretation thanks to pre-processed values even in the frequency range
- Can be adapted by means of configurable threshold values for vibration, shock and temperature values





Product description

The Multi Physics Box Condition Monitoring sensor allows for continuous condition-based monitoring of, for example, motors, pumps, conveyor systems or fans. It measures vibrations, shocks, and temperature, thereby providing indications of potential faults and machine failures. If the measured values exceed the individually configurable thresholds, an alert is output. For vibration values, the vibration monitoring thresholds for machines according to ISO 10816-3 can be implemented via a multi-stage alert. The sensor can be integrated into the machine or system via IO-Link or a simple alarm-based switching signal. Whether on-site or in conjunction with a Cloud Service: The Multi Physics Box creates a data foundation that can be used to avoid unplanned downtime and effectively lower costs.



Technical data overview

Vibration: Number of axis	3
Vibration: Measuring range	±8g
Vibration: Frequency range	0.78 Hz 3,200 Hz
Contact temperature: Measuring range	-40 °C +80 °C
Shock: Measuring range	10 g 200 g

Selected products

Condition monitoring	Connection type	Housing material	Communication interface	Туре	Article no.
Vibration, shock, and temperature	Cable with connector M12, with knurled nuts	Stainless steel	IO-Link	MPB10-VS00VSIQ00	1123926





→ www.sick.com/Multi_Physics_Box



Capacitive proximity sensors

Smart and rugged capacitive sensors

- Cylindrical housing in M18 and M30 models
- Sensing ranges of up to 25 mm
- Material differentiation or derivation of the distance value possible
- Quick installation thanks to visual adjustment indicator and universal mounting systems





Product description

The CMB capacitive proximity sensors detect objects and levels regardless of color, reflectance and gloss of the surfaces. In the process, they detect powdery, granulated, liquid and solid materials – even through non-metallic walls made of plastic or glass, for example. The proven and rugged sensors are cost efficient and feature extremely high electromagnetic compatibility (EMC), which prevents switching errors and reduces downtime. Thanks to the IO-Link interface, different parameterizations can be performed and detailed data read out. This makes the CMB devices suitable for more complex applications and enables predictive maintenance.



Technical data overview

Housing	Cylindrical thread design
Thread size	M18 x 1 M30 x 1.5
Sensing range S	8 mm 25 mm
Housing material	Plastic
Enclosure rating	IP67, IP68, IP69K
Connection	Cable / male connector
Electrical wiring	DC 4-wire
Communication interface	IO-Link

Selected products

Thread size	Sensing range S _n	Installation type	Connection type	Туре	Article no.
M30 x 1.5	0 mm 25 mm	Non-flush	Male connector M12, 4-pin	CMB30-25NPPEC0SA00	6080644
M18 x 1	0 mm 12 mm	Non-flush	Male connector M12, 4-pin	CMB18-12NPPECOSA00	6080640
M30 x 1.5	0 mm 16 mm	Flush	Male connector M12, 4-pin	CMB30-16BPPEW2SA00	6080641
M18 x 1	0 mm 8 mm	Flush	Male connector M12, 4-pin	CMB18-08BPPECOSA00	6080638

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

→ www.sick.com/CMB







Fork sensors

UFS

Slim, intelligent, intuitive to operate – universal solution for label detection

- Space-saving installation thanks to the slim housing
- Waste reduction, as more labels fit on the liner due to detection of very small gaps (from 1 mm)
- Quick and easy commissioning thanks to direct feedback of the Quality of Teach or Run via bar display
- Reduces downtimes, as teach-in and adjustments can be made during the running process via IO-Link



With a lower flank height of only 5.5 mm, the UFS is significantly narrower than comparable ultrasonic fork sensors



Fast commissioning: the bar display enables the parameterization of the UFS to suit the respective application

Product description

The innovative, small UFS fork sensor from SICK allows space-saving installation, for example directly on the dispensing edge of a labeling machine. Thanks to ultrasonic technology, the UFS reliably detects a variety of labels on carrier material – regardless of their color, pattern, marking, transparency level and gloss level. It flawlessly detects even very small label gaps of just 1 mm in size. And the display shows its actual operating reserve at a glance. The IO-Link communication interface also opens up numerous possibilities such as fine adjustment, analyses and monitoring, e.g., for automatic reporting of a web tear, as well as teach-in and sensor configuration during the running process.



Technical data overview

Functional principle	Ultrasonic detection principle
Fork width	2.6 mm
Fork depth	43 mm
MDO	Label size: 2 mm Label gap: 1 mm
Switching frequency	1.1 kHz
Response time	440 µs
Connection type	Male connector M8, 4-pin Cable with M8 male connector, 4-pin Cable open end, 4-wire
Communication interface IO-Link	IO-Link

Selected products

Communication interface	Switching output	Connection type	Туре	Article no.
IO-Link		Male connector M8, 4-pin	UFS3-37B417	6075473
	Push-pull: PNP/NPN	Cable with M12 male connector, 4-pin	UFS3-37B517	6075476
		Cable open end, 4-wire	UFS3-37B117	6075479
	PNP	Male connector M8, 4-pin	UFS3-37P417	6075474
	NPN	Male connector M8, 4-pin	UFS3-37N417	6075475







Array sensors

AS30 extended FoV

More flexibility and efficient communication

- New Variant with big measurement range of 165 mm and up to 8 detectable edges
- Teach-in of defined edges possible
- Various operating modes provide the right defaults for every application
- Repeatability of 0.15 mm



Product description

The AS30 array sensor operates on the proximity scanning principle. It detects even the slightest differences in grayscale values within the field-of-view. Positioning of, for example, a paper web based on the web edge or a contrast line is only one of many possible applications. Widths, diameters, and gaps can also be detected. In reflector mode, the AS30 can even detect transparent materials.



Technical data overview

Functional principle	Web guiding Positioning Width measurement Center point measurement Multi-edge
Sensing distance 100 mm	100 mm
Measurement range	165 mm
Reproducibility	0.15 mm
MDO	2 mm
Analog output QA 4 mA 20 mA	4 mA 20 mA
Communication interface	IO-Link

Selected products

Sensing distance	Measuring range	Principle of operation	MDO	Туре	Article no.
100 mm	165mm	Multi-edge: Detection and evaluation of up to 8 edges	2mm	AS30-MBM834I320A00	1118222

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

→ www.sick.com/AS30







Displacement measurement sensors **OD2000**

Efficient all-rounder for precise distance measurements

- Large measuring range of up to 1,200 mm
- High measuring frequency of up to 7.5 kHz
- OLED display for easy parameterization on the sensor
- IO-Link interface for configuration, e.g. with SOPAS
- Adjustable analog output (mA/V) and digital output



IO-Link enables signal transmission and power supply with a single cable

Product description

The compact OD2000 displacement measurement sensor is a very economical stand-alone solution for accurate distance measurement. The universally applicable sensor is suitable for a wide variety of applications with distances of up to 1,200 mm. Using high-precision triangulation, it detects even the smallest differences in height in the micrometer range. Due to top values in terms of linearity and repeatability as well as a measuring frequency of up to 7.5 kHz, the OD2000 delivers reliable distance data on virtually any surface. Thanks to the plug and play concept, the sensor can be integrated very quickly. In addition, configuration via the OLED display on the sensor or via IO-Link interface and software is extremely convenient.

for precise and reliable distance measurement







Technical data overview

Measuring range	25 mm 1,200 mm
Repeatability	0,1 μm, 0,2 μm, 10 μm, 20 μm, 100 μm
Output time	≥ 0.1333 ms
Measuring frequency	≤ 7.5 kHz
Digital output	2 x PNP/NPN, selectable
Type of light	Visible red light
Laser class	1/2
IO-Link	✓ , IO-Link V1.1
Analog output	Current output / voltage output
Ambient temperature, operation	–10 °C +50 °C, Operating temperature at V $_{\rm S}$ = 24 V

Selected products

Laser class	Measuring range	Typ. light spot size (distance)	Туре	Article no.
4	25 mm 35 mm	Ø 50 µm (30 mm)	OD2000-0301T15	6074380
1	40 mm 60 mm	Ø 70 µm (50 mm)	OD2000-0501T15	6074381
	100 mm 600 mm	Ø 600 µm (350 mm)	0D2000-3502T15	6074384
2	200 mm 1,200 mm	Ø 1 mm (700 mm)	OD2000-7002T15	6074385
	70 mm 420 mm	Ø 500 µm (245 mm)	0D2000-2452T15	6074383

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

→ www.sick.com/0D2000



8017031/2022-10-06 Subject to change without notice



Mid range distance sensors

DT35-S

Safe distance sensor for a wide range of applications

- Measuring range from 0.05 m to 8.5 m
- Safe analog and digital output
- IO-Link interface
- Certification up to Performance Level b allows flexible use of DT35-S for the protection of persons and capital goods



Product description

With DT35-S, SICK offers a safe distance sensor for the protection of capital goods and people up to performance level b. Thanks to its long range, DT35-S can be used for safe presence monitoring in intralogistics and for precise, safe lift height detection in industrial vehicles. With its compact housing and features such as analog and digital output, DT35-S works reliably even where space is limited and increases your productivity. The safe measurement data output via IO-Link enables efficient processes - from commissioning to diagnostics and maintenance. In combination with the Flexi Soft safety controller and additional safety sensors, applications up to Performance Level d can be realized.







Presence control for muting

Technical data overview

Examples of application

Measuring range	50 mm 8,500 mm, 90 % Remission
Minimum response time	15 ms
Type of analog output	Current output
Digital output	1 2 x push-pull: PNP/NPN
Communication interface	IO-Link
Light source	Laser, red

Selected products

Laser class	Туре	Article no.
1	DT35S-B15551	1122103
2	DT35S-B15251	1122104

→ www.sick.com/Dx35







Safety light curtains deTec4 Smart Box Detection

Because we take safety to the next level

- The reliable object pattern recognition without external signals or devices ensures a cost-effective and compact machine design
- Increase the level of automation and process transparency of your systems with IO-Link
- Easy commissioning and configuration without the need for software saves you time and money
- NFC diagnosis and smartphone app



Product description

The outfeed area for rectangular boxes on packaging machines contains hazardous points. These were previously protected using mechanical tunnel systems. Using the deTEc4 safety light curtain and its intelligent Smart Box Detection function, however, the safety distance can be reduced to the point where the mechanical tunnel systems for protecting the machine can be shortened or even eliminated. With the help of the object pattern detection functionality of the deTec4, boxes can be transported on a conveyor belt in or out of a hazardous point without any shutdowns occurring. The deTec protective field located above this remains activated at all times as the box passes through. No teach-in of different carton heights is required.



Technical data overview

Safety level	Type 4, PL e, SIL3, SILCL3
Resolution	14 mm
Protective field height	300 mm 2,100 mm
Enclosure rating	IP65, IP66, IP67
Ambient operating temperature	-30 °C +55 °C

Selected products

Resolution	Scanning range	Protective field height	Performance Level	Туре	Article no.
14 mm	2.5 m	300 mm	PL e (ISO 13849-1)	C4P-SA03011C00 C4P-EA03011C00	1220097 1220639
		900 mm	PL e (ISO 13849-1)	C4P-SA09011C00 C4P-EA09011C00	1220101 1220643
	20 m	1,500 mm	PL e (ISO 13849-1)	C4P-SA15011A00 C4P-EA15011C00	1220092 1220105
		2,100 mm	PL e (ISO 13849-1)	C4P-SA21011A00 C4P-EA21011C00	1220096 1220108





→ www.sick.com/deTec



Safety multibeam scanners

scanGrid2

Worldwide revolutionary safety solution for line-guided small vehicles

- The world's first LiDAR multibeam scanner with safe solid state technology
- Perfectly designed for the requirements of line-guided AGCs: PL c, 1.1 m scanning range, 150° scanning angle
- Compact only 43 mm high
- Diagnostic data and clone function for configuration via the Safety Assistant app and the Safety Designer software







You can use the clone function of the Safety Assistant app to copy the configuration to all other devices

Product description

With scanGrid2, SICK is offering an economical safety solution for small, line-guided AGCs (automated guided carts): The world's first LiDAR multibeam scanner with safe solid state technology. Thanks to its excellent price-performance ratio, large fleets of AGCs can not only offer efficient protection up to performance level c, but can also be made more productive. scanGrid2 enables the elimination of mechanical barriers as well as higher driving speeds and heavier loads on the AGCs. Its compact design and smart functions also ensures quick and simple installation, configuration and diagnostics. Simply revolutionary.





Secondary protection for frontal collision avoidance

Technical data overview

Safety level	Type 2, PL c, SIL1, SILCL1
Protective field range	1.1 m
Warning field range	4 m
Scanning angle	150°
Number of fields	8/16
Number of monitoring cases	4/8
Resolution (can be configured)	50 mm, 70 mm, 150 mm, 200 mm
Integration in the control system	Local inputs and outputs (I/O) / CANopen
Measured data output	None / via CANopen
Configuration and diagnostics interface	USB 2.0 type C (Safety Designer) NFC (Safety Assistant app)

Selected products

Safety level	Protective field range	Number of fields	Integration in the control system	Туре	Article no.
Type 2, PL c, SIL1, SILCL1	1.1 m (At a resolution of 70 mm)	8	Local inputs and outputs (I/O)	SG2-AAA00011IA0000	1101561
		16	CANopen	SG2-AAA00011CB0000	1109414



→ www.sick.com/scanGrid2



Safety camera sensors

safeVisionary2

Safe 3D environment perception opens up new dimensions

- Solve your safety applications simply and efficiently with the safe 3D environment perception
- Use precise 3D measurement data additionaly for automation tasks, e.g., contour-based navigation for your mobile vehicles
- Benefit from the user-friendly configuration, commissioning and diagnostics
- Compact shock and vibration resistant design with enclosure rating IP65 / IP67



Outstanding 3D measurement data for automation tasks

Space saving integration thanks to compact design

Product description

With its safeVisionary2, SICK is opening up new dimensions in safety technology. The 3D time-of-flight camera allows a safe three-dimensional environment perception which you can use to increase the safety and efficiency of your applications. Thanks to the precise measurement data, the camera also reliably solves automation tasks thus eliminating the need for you to purchase additional hardware components. safeVisionary2 has a compact, rugged design and can be versatilely and reliably employed for everyday industrial use.





Technical data overview

Protective field range	≤ 2 m ≤ 4 m in increased range mode
Warning field range	≤ 7.3 m
Distance measuring range	≤ 16 m
Number of simultaneous protective fields	2
Number of monitoring cases	8
Dimensions (H x W x D)	70 mm × 80 mm × 77 mm
Field of view	68° x 42° (protective field evaluation) 68° x 58° (measurement data)
Frame rate	30 fps
Pixel count	512 x 424 Pixel
Safety level	Type 2, PL c, SIL1, SILCL1

Selected products

Description	Туре	Article no.
Safe 3D time-of-flight camera	V3SA2-ABBABBAAN1	1116398



→ www.sick.com/safeVisionary2



Safety radar sensors

safeRS3

Safe radar systems for hazardous area protection in harsh environments

- Modular system for adjusting to your protection tasks up to performance level d/category 3/SIL 2, in accordance with ISO 13849-1 and IEC 62061
- Extended hazardous area protection thanks to threedimensional protective field
- Very high machine and plant productivity, even under harsh ambient conditions
- Quick and easy commissioning



The system consists of an evaluation unit and a sensor



sparks and extreme temperatures

Product description

The safeRS and safeRS3 safe radar systems are electro-sensitive 3D protective devices for safe personal detection with very high machine productivity. They protect stationary applications in accordance with PL d or SIL 2 in line with ISO 13849-1 and IEC 62061. A radar system consists of an evaluation unit and up to 6 sensors which enable switchover to a protected mode as soon as a person enters the protected area. The high resistance to dirt, dust clouds, wood chips, plastic particles and sparks as well as the insensitivity to ambient light such as solar radiation or infrared waves enables reliable operation, even under the toughest ambient conditions. The radar systems stand out due to their rugged sensor housing and quick and easy commissioning.



Technical data overview

Protective field range	0.5 m 5 m
Application	Indoor / Outdoor
Detection method	FMCW radar for motion detection
Response time	≤ 100 ms
Integration in the control system	Local inputs and outputs (I/O) PROFINET PROFIsafe
Safety level	PL d, SIL2

Selected products

Radar sensors

Variant	Protective field range	Protective fields	Field of view	Туре	Article no.
safeRS3	0.5 m 5 m	4	10° 100°, adjustable in 10° intervals (horizontal plane) 20° (vertical plane)	SRA3-AAR150BKZI	6080599

Control unit

Variant	Integration in the control system	Туре	Article no.
Control unit for safeRS3	Local inputs and outputs (I/O), PROFINET PROFIsafe	SRA3-AAC100ZPUI	6080601
Control unit for safeRS3	Local inputs and outputs (I/O)	SRA3-AAC100ZANI	6080600



→ www.sick.com/safeRS_safeRS3



Safety locking devices

flexLock

RFID-monitored safety locking device with 180° actuation radius

- Innovative design: Open locking head with 180° actuation radius, rounded housing, bright LEDs (visible from three sides)
- Makes machine integration easier thanks to the flexible entry point of the actuator into the locking head – even for applications with small door radii
- PL e for door and locking monitoring with low or high coding
- Able to be used in hazardous areas that are not fully visible thanks to escape release



180° actuation radius for easy machine integration

ounded design for machines where easy cleaning is a requirement

Product description

The flexLock safety locking device with RFID monitoring is characterized by an infinitely variable actuation radius of 180°. It thus offers a high level of flexibility for the safety locking function of doors and flaps – even with small door radii. The clearly visible LEDs show the device status continuously at all viewing angles. The open locking head and the rounded housing of the flexLock allow for easy cleaning. In addition, the high offset tolerance ensures easy mounting and high system availability, even when the door is lowered. Variants for personal or process protection are well suited for use in a wide range of applications up to PL e. The optional escape release allows the locking device to be unlocked from the hazardous area.





 $\ensuremath{\mathsf{flexLock}}$ is tolerant to interference and therefore can be mounted close to each other



Technical data overview

Bauart 4 (EN ISO 14119)
Low coding level (EN ISO 14119) High coding level (EN ISO 14119)
Self-monitoring semiconductor outputs (OSSDs)
Power to release / power to lock
3.150 N (EN ISO 14119) 2.790 N (EN ISO 14119) 2.700 N (EN ISO 14119)
-/ 🗸
Plug connector, M12, 8-pin
V

Selected products

Locking principle	Coding	Auxiliary release	Escape release	Туре	Article no.
Power to release	Uniquely coded	yes	no	FXL1-SPBUSA00	1101320
Power to release	Universally coded	yes	no	FXL1-SPBMSA00	1101321
Power to lock	Uniquely coded	no	no	FXL1-SPLUAA00	1101324
Power to release	Universally coded	yes	yes	FXL1-SPEMSA00	1120828



→ www.sick.com/flexLock



Sensor Integration Gateway

SIG350

The universal IO-Link master with IIoT competence

- 8 IO-Link ports (M12; 5-pin; A-coded; Class A/B)
- Current carrying capacity up to 16 A at max. 4 A per port for US and UA
- PROFINET, EtherNet/IP and EtherCAT available
- REST API, MQTT and OPC UA IIoT protocols can be used



across several masters (daisy chaining)



Two parallel communication channels – communication to the control and to cloud applications



Product description

The SIG350 Sensor Integration Gateway is an IO-Link master that bundles and controls sensor communication via 8 IO-Link ports. The SIG350 allows for seamless integration and loss-free data transmission from the sensor to the cloud – and with reduced cabling work. The ports can be loaded with a maximum of 4 A in order to be able to integrate actuators with higher power requirements. The PROFINET, EtherNet/IP and EtherCAT industrial protocols are available for network communication. Thanks to IO-Link even during operation, an integrated web server allows for intuitive configuration of the IO-Link master as well as the connected sensors. Data exchange with cloud solutions is possible via the REST API, MQTT and OPC UA IIoT interfaces.


Technical data overview

IO-Link Master
PROFINET, EtherCAT [®] , EtherNet/IP [™]
REST API, MQTT, OPC UA
≤ 16 A
8 x M12
A/B
Web server integrated
16, configurable
-25 °C +70 °C
Plastic (Valox 553)
IP67 In fastened condition

Selected products

Fieldbus protocol	lloT protocols	Туре	Article no.
EtherCAT®	REST API, MQTT, OPC UA	SIG350-0006AP100	6076924
EtherNet/IP™	REST API, MQTT, OPC UA	SIG350-0005AP100	6076923
PROFINET	REST API, MQTT, OPC UA	SIG350-0004AP100	6076871

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

→ www.sick.com/SIG350







Sensor Visualization

Flexible visualization solution for simple and complex sensor applications

- Intuitive operation via large multi-touch display
- Programmable and configurable human machine interface
- Simple installation with VESA mount, wall mount, or panel mount kit for mounting into the front of the enclosure of switch cabinets and panels
- Time-saving, seamless integration into the SICK portfolio





Product description

The Sensor Integration Display is a programmable, intelligent human machine interface. Customized user interfaces can be created using the SICK AppStudio development environment. Using SID160 Pro, it is also possible to create web-based user interfaces. This makes the intuitive touch display the perfect human machine interface for configuring and monitoring the status of SICK sensors and systems, for visualizing measurement data, and for data processing. The base devices are suitable for simple applications, the higher performance and more open Pro variants for more complex ones. The Sensor Integration Display thereby ensures more process transparency in the spirit of Industry 4.0.





Data integration and visualization in a smart shelf

2D-LiDAR-based shelf monitoring at the smart shelf

Technical data overview

Supported products	Programmable devices / Devices with integrated web server / program- mable devices / Devices with integrated web server / SICK AppEngine / SICK Analytics Solutions
Processor	Intel® CoreTM Coffee Lake-S i5-8500T Tj 100°C
Random Access Memory	16 GB RAM
Ethernet	✓ (2)
USB	✓ (4)
Serial	✔ , RS-232, RS-422, RS-485
Memory card	1 x M.2 Key E slot 1 x full-size mini card slot
Resolution	1.366 px x 768 px
Brightness	Typ. 400 cd/m ²
Enclosure rating	Front side: IP65

Selected products

Display size	Operating system	Processor	Туре	Article no.
15,6 ″	Windows® 10 IoT Enterprise 2019 LTSC	Intel [®] CoreTM Coffee Lake-S, i5-8500T Tj 100°C	SID160 Pro	1125534





Software for Integration SICK Augmented Reality Assistant

Troubleshooting and data visualization with augmented reality

- Augmented reality-supported troubleshooting and data visualization
- Intuitive app for mobile end devices such as smartphones and tablets
- Application-specific range of functions thanks to different packages
- User-specific display customization possible in the SARA app



Quick display of relevant data by scanning the marker



Product description

The SICK Augmented Reality Assistant (SARA) enables visualization of sensor data directly where the sensor is used. The SARA app brings together recorded sensor data and the real environment on the screen of the mobile end device. Data visualization speeds up troubleshooting and facilitates commissioning, for example by displaying warning fields and sites of object detection.



Technical data overview

Supported products	nanoScan3 microScan3 TiM3xx TiM4xx TiM7xx LMS5xx
Language	German, English
Supported end devices	IOS (version 14 or higher), iPadOS (version 14 or higher), Android (version 9.0 or higher)

Selected products

Description	Туре	Article no.
The SARA Base Package is the foundation of the SICK Augmented Reality Assistant and must be purchased once per installation.	SARA Base Package	on request
The floating license is not tied to a specific person. As soon as a user logs in, one floating license is blocked from the license pool. One license is required for the maximum number of parallel users.	SARA Floating Licence	on request
The SARA LiDAR Package is a supplement to the SARA Base Package with additional functions in connection with LiDAR devices. It is used to visualize the field of view and the configured warning and alarm fields.	SARA LiDAR Package	on request



→ www.sick.com/SICK_Augmented_Reality_Assistant For more information, please enter the link or scan the QR code.



Digital Solutions for Integration Filling Level Monitoring

Efficient material replenishment thanks to early notification on mobile devices

- Increased total machine uptime due to early material replenishment
- Relief of machine staff through automatic level monitoring
- Transparent level monitoring at all times thanks to cloud-based dashboard
- More efficient planning of operational work steps thanks to transparent level monitoring



informed of all levels at all times, maximizing the total operating time of your machines



As a machine operator, you are automatically notified of critical levels, for example by a smartwatch

Product description

The Filling Level Monitoring Digital Solution for Integration sends notifications to mobile devices as soon as levels fall below limit values. Notification is automatic and is accompanied by an acoustic signal and vibration. This ensures that material is refilled on time and downtime is avoided. Machine staff no longer has to check fill levels manually, making production processes more efficient. Thanks to this technology, work interruptions are also a thing of the past. The cloud-based dashboard provides an overview of all levels at all times.



Selected products

Description	Туре	Article no.
Digital Solutions for Integration	Filling Level Monitoring	on request
Sensor Integration Machine	SIM1012-0P0G200	1098146
Mid range distance sensor	DT35-B15251	1057652



→ www.sick.com/Filling_Level_Monitoring



Digital Services for Integration Monitoring Box

Analytical processing of status and application data

- Transparent insights into the productivity and availability of devices and plants at any time
- Optimized alignment of operating parameters and application settings
- Quick and tailored action thanks to user-defined notifications
- Simple and quick installation without programming knowledge



Pre-defined data models and data processing

Browser-based dashboard for data visualization

Product description

The Monitoring Box from SICK is a digital solution for continuous monitoring of status of devices and plants, as well as the application itself. Its combination of historic and real-time data enables transparent insights into violations of the limit values and changes in status. The analyzed data is used to produce diagnoses, statistics and forecasts that enable predictive and tailored maintenance. Devices and plants can also be operated in the high power range and resources can be utilized efficiently. As a smart extension of existing product solutions from SICK, the Monitoring Box increases the productivity of industrial applications in a targeted way.



Technical data overview

AOS LIDAR
FLOWSIC200
FTMg
LMS1xx, LMS5xx
MCS200HW, MCS300P
MERCEM300Z
microScan3
outdoorScan3
VICOTEC320, VICOTEC450
VISIC100SF, VISIC50SF
and many more

Selected products

Connected Sensor, System, Analyzer	Task	Zielanwendung	Туре	Article no.
MERCEM300Z	Health status monitoring	Condition Monitoring	Monitoring Box MERCEM300Z Basic	1613798
VICOTEC450	Health status monitoring	Condition Monitoring	Monitoring Box VICOTEC450 Basic	1614432
FTMg	Monitoring and analyzing compressed air	Condition Monitoring and Data Analytics	Monitoring Box FTMg Premium	1617432
outdoorScan3	Monitor and analyze object detections and health status	Condition Monitoring, Data Analytics and Predictive Maintenance	Monitoring Box outdoorScan3 Premium	1615508
BAS	Monitor and analyze object detections	Condition Monitoring and Data Analytics	Monitoring Box BAS Basic	1617437



→ www.sick.com/Monitoring_Box



Product description

The Master Data Analyzer Vision track-and-trace system captures the dimensions, weight as well as 1D and 2D codes of objects and creates object images in a single operation. The integrated 3D snapshot technology enables very fast recording of object dimensions with a highly precise resolution. Thanks to the Visionary-S 3D vision sensor, it is possible to precisely collect master data within seconds and transfer that data directly to the host. The system automatically detects new objects and starts measuring – without the need for operators to intervene. The Master Data Analyzer Vision also impresses with its rugged design, simple and intuitive operation, and maintenance-free mechanism.



objects including image acquisition

Technical data overview

Accuracy of object coverage	Typ. \pm 5 mm x \pm 5 mm x \pm 2 mm (Cubic objects) Typ. \pm 5 mm x \pm 5 mm x \pm 5 mm (known shapes) Irregular objects: accuracy depents on object shape
Minimum object size	40 mm x 40 mm x 10 mm
Maximum object size	600 mm x 500 mm x 400 mm (up to) 800 mm x 500 mm x 200 mm
Output data	Maximum dimensions (length, width, height) of Minimum Bounding Box, volume (of Minimum Bounding Box), code data, Weight, custom fields (up to 6), Status

Selected products

Handheld scanner	Color image properties	Reading field size for code reading	Code types for high reading speed (recommendation)	Туре	Article no.
No	Standard resolution (1 mpx)	Standard FOV	1D	MDAV-L632	on request
Yes	Standard resolution (1 mpx)	Standard FOV	1D	MDAV-L632_HH	on request
No	High resolution (6 mpx), Cropped to object (optional)	Standard FOV * 3,5	1D, 2D	MDAV-L654-IC	on request
Yes	High resolution (6 mpx), Cropped to object (optional)	Standard FOV * 3,5	1D, 2D	MDAV-L654-HH-IC	on request



→ www.sick.com/Master_Data_Analyzer_Vision



Tag localization TAG-LOC System smartLog

Exact localization, tracking and management of assets

- Real time tracking of materials attached to e.g. trolleys
- Automatic attaching / detaching of materials on a e.g. trolley which is used for the transportation
- Production progress milestone monitoring & alarming
- Integrated E2E solution from sensing hardware to SAP Global Track and Trace (GTT)



 Image: Control of the set of the se

Product description

The Tag-LOC system is a localization system for industrial applications. It determines the exact location and storage sites of assets such as vehicles, workpieces, materials, etc. in real time. The position data can be used to track and trace the assets, enabling continuous monitoring of goods movements and material flow. In addition, the Asset Analytics software from SICK visualizes and evaluates the recorded data. Depending on the application requirements, the Tag-LOC system can be combined with identification technologies such as RFID and LiDAR. This makes it possible to extensively automate production and logistics processes.





Technical data overview

Interfaces	REST API MQTT
Configuration software	Asset Analytics
Localization accuracy	Typ. 300 mm, position
Output data	Position data Context data Visualization
Ambient temperature, operation	-20 °C +60 °C

Selected products

Locating accuracy	Interfaces	Output data	Туре	Article no.
Typ. 300 mm, position	REST API, MQTT	Position data Context data Visualization	Tag-LOC	on request



→ www.sick.com/Tag-LOC_System



Driver assistance systems

Drive Assist System

Integrated collision avoidance for industrial trucks

- Simple implementation of tailored warning strategies and interruptions into the control system
- Reliable object recognition regardless of shape and surface even when strongly affected by ambient light
- Intelligent pre-processing of data directly at the sensor without additional hardware or software
- CANopen and web-based interfaces



perception for tailored warning strategies



Abstraction of data through the segmentation of the field of view

Product description

With the Drive Assist System (DAS), it is possible to implement integrated warning strategies for collision avoidance and to support the driver. The system offers 270-degree environment perception, which can be adapted to the specific use of the vehicle. The protective area, and therefore the necessary distance between the vehicle and the object, can be determined precisely by reading out polar coordinates. The direct integration of the DAS into the control of the industrial trucks makes it possible to implement various alarms and control interruptions, such as reducing speed or stopping the vehicle.



Technical data overview

Vehicle	Forklift trucks
Areas of application	Indoor and outdoor (8 m)
Monitoring area	Vehicle rear, vehicle front or side
Functions	Polar coordinate output
Items supplied	2D-LiDAR-Sensor TiM881P

Selected products

Description	Туре	Article no.
Drive Assist System	DAS	on request



→ www.sick.com/Drive_Assist_System



Gateway systems

Cloud Command Link System

Networking of industrial appliances and automated guided vehicle systems

- Efficient communication between conveyor systems, loading and unloading stations, gates and work stations as well as AMRs, AGCs, AGVs
- Wireless communication via mobile network or WiFi
- User-defined real-time warnings and remote access via the customer VPN server or SICK Remote Service Connect
- Support from standardized interfaces



Bidirectional communication between fixed appliances and Automated Guided Vehicles (AGV)



Easy configuration and rapid connection to the existing infrastructure through open end-to-end IIoT architecture

Product description

The Cloud Command Link System is a gateway system for bidirectional communication between fixed appliances, such as work stations, conveyor systems, automatic doors, gates and automated guided vehicle systems. Task signals are sent to and from the system in order to navigate with the AMRs that are connected to the cloud or to activate storage systems, for example. In addition, airlocks and loading and unloading stations can be retrofitted with sensors from SICK in order to connect and control them with a mobile platform. For AGVs, AGCs and AMRs, customer-specific cloud connectors are preinstalled for rapid connection to the existing infrastructure.





Conversion of job signals from workstations to automated guided vehicle systems

Technical data overview

24 V DC (9 V DC 36 V DC)
IP20 (according to DIN EN 60529)
Euromap63 MQTT OPC-UA REST API WebSocket
Mobile communication (4G) WLAN WPAN LAN
Europe, Middle East, Africa, APAC without Japan
6 analog inputs (configurable, current and voltage), 6 digital inputs/ outputs (configurable), 2 additional digital inputs, 2 additional digital outputs
Web-Interface REST API
-20 °C +70 °C

Selected products

Description	Туре	Article no.
Cloud Command Link System	CCL	on request



→ www.sick.com/Cloud_Command_Link_System For more information, please enter the link or scan the QR code.



Profiling systems

Conveyor Hotspot Detection System

Fully automatic detection of overheated bulk materials on conveyor systems

- Fire prevention through early detection of overheated materials
- Targeted warnings in the case of a variety of bulk materials with different temperature limits
- Optimal retrofitting through simple integration
- Minimal operating and maintenance costs
- Ready for use at all times no matter what the weather



fully automatically the temperature of conveyed goods



Optionally, the system can be extended by a Bulkscan® LMS511 enabling the measurement of the volume flow

Product description

The Conveyor Hotspot Detection System expertly deploys thermal imaging cameras to detect fire hazards at an early stage of transporting flammable materials. The system continuously and fully automatically measures the temperature of the transported material and sends a signal to the higher-level system to, for example, stop the conveyor belt should the limit values be exceeded. Optionally, a Bulkscan[®] LMS511 enables expansion of the system to meet additional requirements, such as measuring the volume flow and the bulk material's height, calculating the bulk material's center of gravity, and monitoring operation of the conveyor belt to prevent derailment.



Technical data overview

Temperature measurement range	0 °C to 500 °C
Output data	Alarms, alarm data, temperature data, system status
Items supplied	Infrared camera TDC-E Various accessories

Selected products

Description	Туре	Article no.
Conveyor Hotspot Detection System	CHD	on request



→ www.sick.com/Conveyor_Hotspot_Detection_System For more information, please enter the link or scan the QR code.



Motor feedback systems rotary HIPERFACE®

Upgrade motor feedback systems into the digital world

- Simple upgrade of the motor to a digital interface without adjusting the motor design
- The compact design enables simple integration into the motor assembly area.
- Thanks to the external temperature input, additional temperature values can be transmitted via the HIPERFACE-DSL[®] protocol – additional cabling is not required





Product description

Digital interfaces are currently a huge trend. SICK, one of the pioneers in this market, is providing an opportunity for transforming existing motor feedback systems with HIPERFACE® into the digital world with the sCon® interface converter. The sCon® converts HIPERFACE® signals into HIPERFACE-DSL® signals and can be combined with SES/SEM70, SES/SEM90 and STS motor feedback systems from SICK. The interface converter scores points with its compact design, which facilitates integration into the motor assembly area. It also has an external temperature input for measuring the winding temperature.



Technical data overview

Communication interface	HIPERFACE DSL®
Safety system	-
Connection type	Male connector, 4-pin, output Male connector, 8-pin, Input

Selected products

Communication interface	Temperature range	Connection type	Туре	Article no.
HIPERFACE DSL®	-30 °C +115 °C	Male connector, 4-pin	AD-HF2DSL02	2123676



→ www.sick.com/sCon



Motor feedback systems rotary HIPERFACE® **STS**

Perfect for use where others reach their limits

- Non-contact and bearing-free measurement of speed and position
- Resolutions up to 12,672 measurement steps per revolution
- Accuracy of up to ± 0.05°
- Increase in dynamics and PSDI times due to the elimination of mechanical components, such as belts



The absolute motor feedback system operates completely contactlessly and free of wear and tear



The STS saves valuable installation space inside the direct drive

Product description

The trend toward highly dynamic drive systems has clearly strengthened in recent years. The STS absolute motor feedback system ensures maximum flexibility and precision when measuring the position and speed of hollow shaft motors and direct drives. The non-contact magnetic measurement principle works without causing wear. A scalable measurement system, the STS adapts to different hollow shaft diameters of the application. In addition, the STS scores points with its particularly flat design and compact dimensions, making it the ideal solution for tight installation situations. Thanks to the standardized HIPERFACE® interface, the motor feedback system can be easily integrated into nearly any industrial environment.





Technical data overview

Communication interface	HIPERFACE DSL®
Sine/cosine periods per revolution	70 158
Safety system	-
Mechanical interface	Through hollow shaft
Connection type	Male connector, 8-pin
Available memory area	128 Byte

Selected products

Shaft diameter	Communication interface	System accuracy	Sine/cosine periods per revolution	Туре	Article no.
30 mm	HIPERFACE DSL®	± 0.09°	70	STS030-HN030-AK22	1121155
65 mm	HIPERFACE DSL®	± 0.06°	128	STS065-HN065-AK22	1121158
84 mm	HIPERFACE DSL®	± 0.054	158	STS084-HN084-AK22	1121159



→ www.sick.com/STS



Incremental encoders

DGS80

Rugged incremental encoder with large hollow shaft diameters

- Large hollow shaft diameters and a wide range of collets eliminate the need for special couplings and allow for quick and easy integration
- Reduction of installation time thanks to the easy-to-mount clamping ring and the stator couplings
- Easy integration into control systems thanks to large supply voltage range
- Compact and space-saving design



Product description

The DGS80 is an incremental encoder with large hollow shaft diameters up to 42 mm. It can be used in countless industrial automation applications. Combined with the many connection options of the DGS80, its supply voltage range of 5 V to 30 V facilitates integration into most control systems. The incremental encoder is characterized by quick and easy installation: This is made possible by its compact design, the clamping ring for speedy mounting, the universal stator couplings and the large selection of collets that simplify mounting on shafts of different size.





DGS80 enables speed feedback from rotating AC motors – and prevents bearing currents with insulated collets

Technical data overview

Pulses per revolution	0 8,192
Shaft diameter	30 mm ¹⁾ 42 mm ¹⁾
Connection type	Male connector, M23, 12-pin, radial Male connector, M12, 8-pin, radial Male connector, MS, 10-pin, radial Cable, 8-wire, radial
Communication Interface detail	TTL / RS-422 HTL / Push pull
Enclosure rating	IP65
Operating temperature range	-25 °C +85 °C

¹⁾ Collets (shaft reducer) available as accessories to reduce shaft sizes under 30 mm / 42 mm.

Selected products

Shaft diameter	Communication interface			Туре	Article no.
30 mm	4.5 V 30 V, TTL/RS-422	Male connector, M12, 8-pin, radial	1,024	DGS80B-TSHC01024	1118684
30 mm	4.5 V 30 V, HTL/Push pull	Male connector, MS, 10-pin, radial	2,048	DGS80B-TSL402048	1118691
30 mm	4.5 V 30 V, TTL/RS-422	Cable, 8-wire, radial, 1.5 m	8,192	DGS80B-TSHK08192	1118683
42 mm	4.5 V 30 V, TTL/RS-422	Male connector, M12, 8-pin, radial	4,096	DGS80B-TYHC04096	1118735
42 mm	4.5 V 30 V, HTL/Push pull	Male connector, MS, 10-pin, radial	5,000	DGS80B-TYH405000	1118718



→ www.sick.com/DGS80



Bearingless encoders



Economic and non-contact angle measurement and position detection

- Angle measuring range 0° ... 360°
- 12-bit resolution (corresponds to 0.09°)
- IO-Link 1.1 and up to 3 digital outputs
- Comprehensive process data and intelligent diagnostic functions





Product description

The MAS magnetic angle sensor is an especially economical solution for angle measurement and position detection. Its space-saving, two-part design consisting of magnet and sensor ensures high flexibility in use. The MAS measurement principle is based on the so-called Hall effect and enables non-contact and thus wear-free angle detection. This prevents faults and minimizes service work. Thanks to IO-Link, the sensor is easy to configure and can be monitored proactively via diagnostic data.





Technical data overview

Dimensions (W x H x D)	47 mm x 47 mm x 10 mm
Measuring range	0° 360°
Resolution	12 bit
Electrical wiring	DC 5-wire
Repeatability	< 0,3°
Working distance	1.5 mm 4 mm
Communication interface	IO-Link

Selected products

Switching output	Connection type	Туре	Article no.
3 x PNP or IO-Link mode 2 x PNP	Cable, with male connector, M12, 5-pin, 1 m	MASQ47-36PEKU1SA10	1113979

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

→ www.sick.com/MAS







Laser surface motion sensors

SPEETEC 1D

Captures motion. Without contact.

- Non-contact measurement of speed, length and position without measuring elements
- Optical sensors avoid damage to, and contamination of the surfaces being measured
- Slip-free measurement increases the measurement accuracy
- Configuration interface allows application and sensor diagnostics as well as parameterization



The PGT-14 programming unit allows access to all parameterization and diagnostic functions via SOPAS ET



The integrated logic functions make it possible to measure the length of piece goods using an external probe. Actions can also be triggered on piece goods.

Product description

The wear-and-tear and maintenance-free SPEETEC 1D laser surface motion sensor detects the movements of object surfaces without contacting them. This detection requires no scale or measuring elements. The laser Doppler effect based technology enables the SPEETEC 1D to measure the speed, length, movement direction and position of objects on almost any surfaces. The non-contact measurement method used by the sensor makes it particularly suitable for applications with soft or sensitive surfaces that would be damaged by tactile measurement. The SPEETEC 1D is also ideal for encoder applications with fast and dynamic processes that are unsuitable for encoders. The sensor can be monitored and logic functions configured via an interface.





Technical data overview

Nominal measuring distance	50 mm
Direction of movement	1D, x-direction
Laser class	1 (IEC 60825-1:2014)
Wavelength/Type of light	850 nm invisible infrared light
Supply voltage	12 V 30 V
Connection type	Male connector, M12, 8-pin, A-coded
Measuring increment (resolution in µm/pulse)	4 2,000

Selected products

Communication interface	Measuring increment (resolution)	Programmable	Туре	Article no.
TTL / RS-422	100 µm/pulse	yes	NCV50B-11CCP100100	1121431



→ www.sick.com/SPEETEC_1D



RFID RFU61x IO Link

smALL-IN-ONE

- Scanning range up to 0.5 m
- Versatile application possibilities due to small size
- Quick and low-cost installation thanks to direct connection option for trigger sensors
- Simple connection with M12 cable for IO-Link variant



Product description

The RFU61x is the smallest read/write device in the UHF portfolio from SICK. It is perfectly suited for IoT applications directly on the workpiece or component. The RFU61x therefore rounds out the UHF product portfolio from SICK by enabling continuous identification along the entire value chain. The interfaces of the RFU61x enable direct connection of a trigger sensor, whereby the RFU61x can be used as a remote, self-supporting unit. Thanks to the integrated process logic, data can be processed directly in the RFU61x and passed onto the controller or IT systems.



Technical data overview

Product category	RFID read/write device with integrated antenna
Frequency band	UHF (860 MHz 960 MHz)
Version	Short Range
Read range	≤ 0.5 m
USB	✓
IO-Link	✔ , IO-Link V1.1
Weight	313 g

Selected products

Interface	Radio approval	Туре	Article no.
IO-Link	European Union*	RFU610-10700	1115779

* All member states of the European Union, EEA-EFTA states (Liechtenstein, Iceland, Norway), Switzerland, Turkey.

→ www.sick.com/RFU61x





Fixed mount barcode scanners **CLV61x IO-Link**

Reliable Decoding, Simple Integration

- Fast and inexpensive installation thanks to direct connection option for trigger sensors with the IO-Link device variants
- Compact design enables installation even in applications with limited space
- Flexible interface concept for easy integration into your control environment
- The right device variant with optimized reading field for every application





Product description

The CLV61x stationary barcode scanner impresses with its compact design and can be easily integrated even in confined spaces. The versatile communication interfaces enable the scanner to be used in a wide variety of applications. For example, the integrated CAN bus networks several barcode scanners to form a master/slave system. In intralogistics, the CLV61x with appropriate connection technology such as the CDF600 fieldbus module or an IO-Link master is the perfect choice for your container identification. The flexible concept offers easy connection to all common fieldbus and Industrial Ethernet interfaces and direct configuration from the control environment.



Technical data overview

Optical focus	Fixed focus
Aperture angle	≤ 50°
Scanning frequency	400 Hz 1,000 Hz
Code resolution	0.35 mm 0.5 mm
Reading distance	25 mm 330 mm
IO-Link	✓, V1.1
USB	✓
Weight	260 g

Selected products

Interface	Scanning method	Optical focus	Reading field	Туре	Article no.
IO-Link	Line scanning	Fixed focus	Side	CLV615-I2150	1118927

→ www.sick.com/CLV61x





Image-based code readers Lector62x Cold Store

Perfect sight - in any light

- Stable reading performance even at -35 °C thanks to cold storage device variants
- Intelligent decoding algorithms for high throughput, even with highly reflective or contaminated codes
- Variable illumination concept and optical accessories ensure reliable reading even in changing light conditions and on reflective surfaces
- Automated setup wizard makes commissioning faster and more cost-effective



Product description

The Lector62x is a compact image-based code reader for the reliable detection of 1D, 2D, and stacked codes as well as plain text. Its high-performance DPM decoder can read even lasered or dot-peened codes perfectly – even in the case of low contrast levels, contamination, or poor code quality. Thanks to the powerful illumination concept with bi-color LEDs, the Lector62x is particularly immune to ambient light. This ensures reliable code reading even in changing light conditions. The compact housing with swivel connector makes it the ideal code reader for production lines where space is tight.





Technical data overview

Focus	teach auto focus
Sensor resolution	1,280 px x 1,024 px
Scanning frequency	50 Hz
Reading distance	70 mm 1,500 mm
Enclosure rating	IP65
Exchangeable lens and illumination	-
PROFINET	V
EtherCAT®	\checkmark , optional over external fieldbus module
Serial	✔ , RS-232, RS-422
CAN	v
CANopen	V
PROFIBUS DP	✓ , optional over external fieldbus module
Ethernet	✔ , TCP/IP
EtherNet/IP™	V
Weight	170 g

Selected products

Lens (Focal length)	Code resolution	Reading distance	Туре	Article no.
Integrated, 9.6 mm	≥ 0.05 mm	70 mm 1,500 mm	V2D621R-2MCFBB6	1125187
Integrated, 17.1 mm	0.25 mm	300 mm 1,500 mm	V2D621R-2MCFFB6	1125188







2D machine vision

InspectorP Rack Fine Positioning P621

Fine positioning solution for single- and double-deep racking

- Save rack space to maximize storage capacity with highprecision positioning
- Handle near and far range in double-deep racking with only one sensor
- Allows using only holes for positioning, even with challenges such as stains or reflections
- New: Cold store option available



Product description

The InspectorP Rack Fine Positioning is an easy-to-use yet flexible vision sensor that guides fine positioning of stacker cranes, or other automated storage and retrieval systems, in X and Y. The large measurement range allows for double-deep racking using the same sensor for both near and far range. Racks are reliably located using drilled holes only or reflectors, even with challenges such as stains or reflections. InspectorP Rack Fine Positioning offers plug-and-play simplicity out of the box by including pre-assembled illumination, pre-focused optics and pre-installed software.


Easy to use and flexible vision sensor for fine positioning of automated storage and retrieval systems in the x- and y-direction



storage bay even in double deep applications for pallets

Technical data overview

Sensor	CMOS matrix sensor, grayscale value	
Sensor resolution	1,280 px x 1,024 px (1.3 Mpixel)	
Optical focus	Adjustable focus (electric)	
Operator interfaces	Web-Interface	
Ethernet	✓, TCP/IP, FTP, HTTP	
PROFINET	V	
Configuration software	Web-Interface, PLC interface	
Dimensions	71 mm x 43 mm x 35,6 mm	

Selected products

Lens	Working distance (typical)	Cold storage applications	Туре	Article no.
17 mm	50 mm 1,950 mm	Yes	V2D621P-2MCFFB6S01	1121695
9.6 mm	50 mm 350 mm	Yes	V2D621P-2MCFBB6S01	1121694
17 mm	50 mm 1,950 mm	No	V2D621P-2MSFFB5S51	1118466
9.6 mm	50 mm 350 mm	No	V2D621P-2MSFBB5S51	1118465

→ www.sick.com/InspectorP_Rack_Fine_Positioning For more information, please enter the link or scan the QR code.







SICK AppSpace Artificial Intelligence **Deep Learning**

Artificial intelligence for SICK sensors

- Fast, automatic, reliable decision-making by sensors, even for complex tasks
- Reduces development time and expense: image analyses are trained using example images
- No additional hardware and software is required thanks to the cloud training
- Interference takes place directly on programmable SICK products





Sensors with deep learning solutions

Product description

Deep Learning from SICK breaks new ground in industrial automation. With its user-friendly operation, Deep Learning makes it possible to train artificial neural networks for SICK sensors in the cloud with little effort using example images. The sensors can then evaluate and sort objects in line with customized criteria on-site - in machines or systems - even if the natural appearance of the objects varies.





according to year ring pattern



Anomaly detection for complex applications with unpredictable defects

Technical data overview

Technology	Classification of images based on artificial neural networks
Language	English
Supported browsers	Google Chrome (version 80 or higher)

Selected products

Task	Supported products	Туре	Article no.
Classification of images using a neural network previously created with the SICK product dStudio	InspectorP61x InspectorP62x InspectorP63x InspectorP64x InspectorP65x SIM1012 SIM4000	Deep Learning Classification License	1614850
Training of neural networks for classifying images	SIM1012 InspectorP61x	dStudio	dstudio. cloud.sick. com



→ www.sick.com/Deep_Learning



SICK AppSpace SensorApps Intelligent Inspection Anomaly Detection

2D machine vision solution powered by deep learning

- Anomaly detection based on Deep Learning detects even unpredictable defects
- Complete configuration (labeling, training, evaluation) on the device
- No additional hardware or software required
- Runs on the InspectorP 2D vision sensor family



Product description

The deep learning-powered Intelligent Inspection SensorApp from SICK enables powerful anomaly detection and object classification that is not possible with rule-based machine vision. The combination of an example-based approach with on-device training and user-friendly interface paves the way for simplified solution development. The anomaly detection and classification tools ensure that inspected items fulfill required quality and sorting demands, which helps to improve yield, reduce waste and increase customer satisfaction. In addition, all traditional rule-based machine vision software tools from Quality Inspection SensorApp are included.



Technical data overview

Task	Anomaly detection Classification Quality inspection Presence inspection Measuring, 2D
Technology	2D snapshot Image analysis Deep Learning
Language	English, German
Supported products	InspectorP61x InspectorP62x InspectorP63x InspectorP64x InspectorP65x
Supported browsers	Google Chrome (version 80 or higher)

Selected products

Product description	Туре	Article no.
The Intelligent Inspection Upgrade License makes it possible to productively use the tools contained in the SICK SensorApp Intelligent Inspection when installed on certain SICK products.	Intelligent Inspection Upgrade License	1128698



→ www.sick.com/Intelligent_Inspection



SICK AppSpace SensorApps **3D Belt Pick**

Conveyor belt picking made simple in all dimensions

- Running stand-alone on TrispectorP1000 and on SIM and Ruler3000 bundle
- Fast and easy commissioning
- Provides 3D coordinates and measurements of products on conveyor belts
- Reliable height-based detection



Application-centric user interface



Product description

The 3D Belt Pick SensorApp from SICK is specialized for locating and measuring products on a conveyor belt. Working with 3D vision in your robot guidance projects both increases the reliability of your picking process and preserves the quality of the handled products. For each detected product, the SensorApp reports, among other metrics, the location, height and orientation of the product to the robot picking system. The 3D Belt Pick SensorApp features a plug-in concept which makes it easy to extend the SensorApp with new robot communication protocols and custom-ized image processing.





End-of-line packaging: Palletizer

Technical data overview

Task	3D object localization on production lines
Technology	3D line scanning
Language	English
Supported products	V3T12P-MR32A7S50 V3T12P-MR32A8S50 V3T13P-MR62A7S50 V3T13P-MR62A8S50
Minimum screen resolution	1,366 рх х 768 рх
Supported browsers	Google Chrome (version 49 or higher)

Selected products

Working distance	Example FoV	Window material		Туре	Article no.
430 mm 1,445 mm	1200 x 345 mm	Glass	Up to 1680 mm	Ruler3120+SIM1012	1128736
291 mm 1,091 mm 540 x 200 mm	Plastic	Up to 660 mm	TrispectorP1060 S50	1106182	
	Glass	Up to 660 mm	TrispectorP1060 S50	1106181	
141 mm 541 mm 270 x 100 mm	Plastic	Up to 330 mm	TrispectorP1030 S50	1106180	
	270 X 100 mm	Glass	Up to 330 mm	TrispectorP1030 S50	1106177



→ www.sick.com/3D_Belt_Pick



2D LiDAR sensors

Makes details visible thanks to high angular resolution

- Precise detail recognition for outdoor automation
- Enables accelerated processes thanks to high measuring speed with high angular resolution
- Reliable availability and performance, even under difficult ambient conditions
- Low maintenance costs even under high mechanical loads



HDDM+ and multi-echo technology for reliable measurement data even in adverse ambient conditions

With an angular resolution of up to 0.02°, the sensor clearly detects fine details and structures at a distance of up to 100 meters

Product description

The LRS4000 is a powerful 2D LiDAR sensor. It sets the benchmark for advanced outdoor automation by detecting particularly fine details and structures. In addition to its high angular resolution, the LRS4000 offers an outstanding frequency resolution ratio: This makes it possible to create more intelligent and reliable dynamic applications, and even accelerate them. The gap-free field of view offers complete flexibility with up to 360°. Rugged components ensure reliable performance and availability under nearly any conditions. Take advantage of excellent measurement performance, flexibility and durability: The LRS4000 – key technology from SICK for your outdoor automation needs.





Technical data overview

Working range	0.2 m 130 m
Aperture angle	360°
Enclosure rating	IP65, IP67
Color	Gray (RAL 7042)
Scanning frequency	12.5 Hz, 25 Hz
Ethernet	✓, TCP/IP, UDP/IP
Dimensions (L x W x H)	151.9 mm x 150 mm x 126.7 mm

Selected products

Working range	Connection type	Scanning frequency	Туре	Article no.
0.2 m 130 m	3 x M12	12.5 Hz 25 Hz	LRS4581R-230001	1098855



→ www.sick.com/LRS4000



Flow sensors **FTMg**

Flow sensor with energy measurement

- Measures compressed air and non-corrosive gases such as argon, helium, carbon dioxide and nitrogen
- Visualization of compressed air consumption via the FTMg monitoring app from SICK
- Measurement of gas flow and temperature as well as process pressure and energy consumption with only one sensor
- New: Nominal width measuring tube DN 40 and DN 50



standards according to DIN or ISO possible



Product description

The FTMg energy consumption flow meter measures gas flow and temperature as well as the process pressure, making it a cost-saving multi-talent. With high measurement dynamics and low pressure loss, it measures non-corrosive gases with extreme efficiency. The contrast-rich color display enables easy operation of the FTMg and allows for representation of several measured values as a process diagram. Internal data logging over seven days and integrated static evaluation help detect even the smallest leaks in a pneumatic system. PoE also enables simple web-based connection to a PC or a cloud to make energy consumption more transparent. All measurement data can be transmitted via IO-Link or with switching and analog signals.





Technical data overview

Calorimetric (flow, temperature), piezoresistive (pressure)
Compressed air (air quality ISO 8573-1:2010 [3:4:4]), helium, argon, nitrogen, carbon dioxide
1x analog output 4 mA 20 mA + 1x digital/analog output (PNP, NPN, push-pull, 4 mA 20 mA / switchable), frequency pulse output + 1x digital output (PNP, NPN, push-pull, switchable), IO-Link V1.1 (COM3) OPC UA, MQTT, integrated web server
DN 15, DN 20, DN 25, DN 40, DN 50

Selected products

Nominal width measuring tube	Output signal	Туре	Article no.
DN 20	1x analog output 4 mA 20 mA + 1x digital/analog output (PNP, NPN, push-pull, 4 mA 20 mA / switchable), frequency pulse output + 1x digital output (PNP, NPN, push-pull, switchable), IO-Link V1.1 (COM3)	FTMG-ISD20AXX	1100212
DN 25	OPC UA, MQTT, integrated web server	FTMG-ESD25AXX	1100216
DN 40	1x analog output 4 mA 20 mA + 1x digital/analog output (PNP, NPN, push-pull, 4 mA 20 mA / switchable), frequency pulse output + 1x digital output (PNP, NPN, push-pull, switchable), IO-Link V1.1 (COM3)	FTMG-ISN40SXX	1122523
DN 50	OPC UA, MQTT, integrated web server	FTMG-ESR50SXX	1120116





→ www.sick.com/FTMg
For more information, please enter the link or scan the QR code.



Fluid sensors

T-Easic® FTS

Clever dry-run protection in pumps

- Flow monitoring and temperature measurement in one sensor
- Optimized for water and oil; teach-in option of other liquids
- Industrial design in VISTAL[®] housing with 180°-rotatable OLED display
- Stainless steel hygienic variant, completely CIP-/SIP-capable, process temperatures up to 150 °C



Save time during mounting due to mounting adapter and T-connectors





Product description

The T-Easic[®] FTS thermal flow sensor measures flow and temperature of liquids in accordance with the calorimetric principle. Available as an industrial variant with VISTAL[®] housing and display or as a hygienic stainless-steel variant, the T-Easic[®] FTS is suitable for a wide range of applications. Depending on the requirements, the sensor features two digital outputs for limit value monitoring, a pulse output for volume recording or an analog output for continuous recording of measured values. A special feature is integrated empty pipe detection for optimal dry-run protection in pumps. Parameterization can be done via IO-Link or the display. Media taught-in at the factory such as oil and water accelerate commissioning; other liquids can be calibrated quickly and easily.





Technical data overview

Measurement principle	Calorimetric measurement process
Medium	Water and oil-based liquids
Output signal	2 push-pull digital outputs (Q2 configurable for IO-Link; Q2 configurable as pulse output / digital input) for flow and temperature 2 push-pull digital outputs (Q1 configurable for IO-Link; Q2 configurable as analog output (4 20 mA) / pulse output / digital input) for flow and temperature

Selected products

Version	Output signal	Probe length	Process connection	Туре	Article no.
Hygienic version	2 push-pull digital outputs (Q2 configurable for IO-Link; Q2 configurable as pulse output / digital input) for flow and temperature	60 mm	Without process connection (adapter needed for installation)	FTS-H060F04A	1091148
Industrial version	2 push-pull digital outputs (Q2 configurable for IO-Link; Q2 configurable as pulse output / digital input) for flow and temperature	200 mm	Without process connection (adapter needed for installation)	FTS-1200F14A	1091145
Hygienic version	2 push-pull digital outputs (Q1 configurable for IO-Link; Q2 configurable as analog output (4 20 mA) / pulse output / digital input) for flow and temperature	100 mm	Without process connection (adapter needed for installation)	FTS-H100F04B	1114233
Industrial version	2 push-pull digital outputs (Q1 configurable for IO-Link; Q2 configurable as analog output (4 20 mA) / pulse output / digital input) for flow and temperature	100 mm	Permanently installed clamping ring (only in conjunction with SICK T-connectors)	FTS-I101F14B	1114954





→ www.sick.com/T-Easic_FTS

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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 11,000 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents, and preventing damage to the environment.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the customers need. In application centers in Europe, Asia, and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes SICK a reliable supplier and development partner.

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

That is "Sensor Intelligence."

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Detailed addresses and further locations → www.sick.com





