INDUSTRY GUIDE

Efficient Solutions for the Automotive and Parts Supplier Industries

Achieving more with intelligent sensors

SICK
Sensor Intelligence.

The all-in-one provider for complex applications

For top production performance

As a leading developer and manufacturer of intelligent sensor technology worldwide, SICK plays a vital role in the optimization of industrial processes – throughout the world.

From the photoelectric sensor to high-tech 3D vision systems – our solutions help provide safe, fast and cost-effective production.
Our mission is to optimize the quality of our sensors continuously in order to prevent machine failures and reduce downtime.
Fast conversion times increase productivity, which is always our primary goal in the development of our sensor solutions.

SICK stands for automation and profits from decades of practical experience and expertise in just about every industry – this is what Sensor Intelligence is all about.

Contents

We deliver Sensor Intelligence.

SICK sensor solutions for industrial automation are the result of exceptional dedication and experience. From development all the way to service: The people at SICK are committed to investing all their expertise in providing with the very best sensors and system solutions possible.

A company with a culture of success

Approximately 5,000 people are on staff, with products and services available to help SICK sensor technology users increase their productivity and reduce their costs. Founded in 1946 and headquartered in Waldkirch, Germany, SICK is a global sensor specialist with more than 50 subsidiaries and representations worldwide. Our exemplary corporate culture fosters an optimum work-life balance, thus attracting the best employees from all over the world. SICK is one of the best employers – we have been among the winners of the prestigious German “Great Place to Work” award for many years in succession.

Innovation for the leading edge

SICK sensor systems simplify and optimize processes and allow for sustainable production. SICK operates thirteen research and development centers all over the world. Co-designed with customers and universities, our innovative sensor products and solutions are made to give a decisive edge. With an impressive track record of innovation, we take the key parameters of modern production to new levels: reliable process control, safety of people and environmental protection.

A corporate culture for sustainable excellence

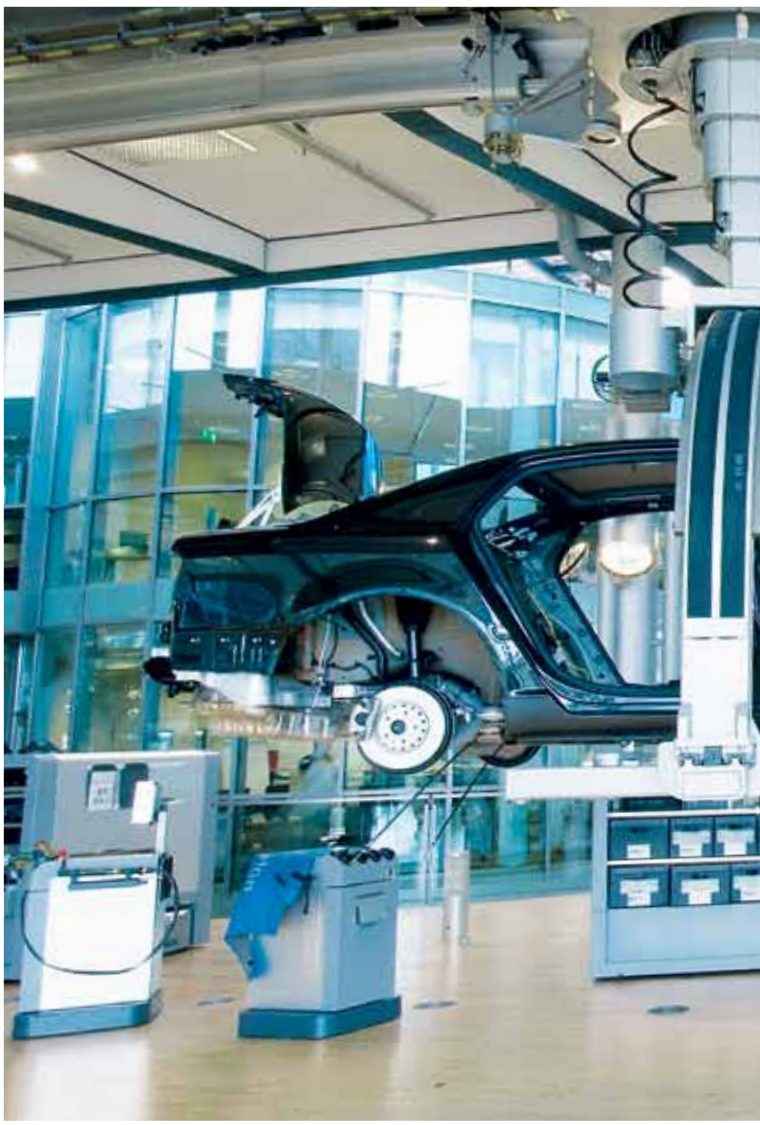
SICK is backed by a holistic, homogeneous corporate culture. We are an independent company. And our sensor technology is open to all system environments. The power of innovation has made SICK one of the technology and market leader – sensor technology that is successful in the long term.

Sensor Intelligence for all requirements

SICK is a renowned expert in many industries, and is entirely familiar with the critical challenges they face. While speed, accuracy and availability take center stage in all industries, technical implementations vary greatly. SICK puts its vast experience to use to provide with precisely the solution you need.

For applications worldwide

Hundreds of thousands of installations and applications go to prove that SICK knows the different industries and their processes inside out. This tradition of uncompromising expertise is ongoing: As we move into the future, we will continue to design, implement and optimize customized solutions in our application centers in Europe, Asia and North America. You can count on SICK as a reliable supplier and development partner.



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For your specific industry

With a track record of proven expertise in a great variety of industries, SICK has taken quality and productivity to new heights. The automotive, pharmaceutical, electronics and solar industries are just a few examples of sectors that benefit from our know-how. In addition to increasing speed and improving traceability in warehouses and distribution centers, SICK solutions provide accident protection for automated guided vehicles. SICK system solutions for analysis and flow measurement of gases and liquids enable environmental protection and sustainability in, for example, energy production, cement production or waste incineration plants.

For performance across the board

SICK provides the right technology to respond to the tasks involved in industrial automation: measuring, detecting, monitoring and controlling, protecting, networking and integrating, identifying, positioning. Our development and industry experts continually create groundbreaking innovation to solve these tasks.

www.sick.com/Industries

For safety and productivity: SICK LifeTime Services

SICK LifeTime Services is a comprehensive set of high-quality services provided to support the entire life cycle of products and applications from system design all the way to upgrades. These services increase the safety of people, boost the productivity of machines and serve as the basis for our customers' sustainable business success.

Benefit from an array of services

Each of our products and solutions is accompanied by a comprehensive range of services tuned precisely to the requirements of the product or solution – along its entire life cycle. Backed by extensive industry know-how and more than sixty years of experience, LifeTime Services stand for maximum availability and an exceptional service life of our products and solutions.

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Training & Education

- User training
- Seminars
- WebTraining

Product & System Support

- Commissioning
- Spare parts and repairs
- Remote support
- Hotline

Verification & Optimization

- Barcode checks
- Consulting/Engineering service
- Inspection
- Maintenance
- Accident analysis
- Stop time measurement
- Noise measurement

Consulting & Design

- System inspection
- Risk assessment
- Safety concepts
- Feasibility studies
- Software and hardware design

Upgrade & Retrofits

- Machine conversion
- Sensor upgrades
- Sensor replacements
- Retrofitting of technology

www.sick.com/service

Challenges for the automotive and parts supplier industries

Sensor solutions for the overall production process

As an independent and world-leading developer and manufacturer of intelligent sensor systems, SICK has been shaping the automotive industry for decades. Whether on a large or a small scale, SICK's "Sensor Intelligence“ helps make production safer, faster and more flexible. Hazards and sources of errors (such as the installation of incorrect components) are detected and eliminated. Intelligent safety sensors ensure optimum safety for people and machines. A variety of Auto-ID technologies support the tracing of installed components.

This is where SICK uses its comprehensive industry and sensor expertise to produce ideal solutions.

Safety

Flexible processes and the interaction between man and machine present special challenges for safety technology in the automotive industry.
SICK offers the widest portfolio of safety solutions: marked by a high degree of integration in its controls and accompanied by an extensive range of services that includes consulting, commissioning, training and additional education.

Quality control

SICK offers the matching solution for all quality control applications: photoelectric proximity switches to check that components are present in the assembly process, displacement sensors for precise measurement of components, vision sensors to identify components and 3D vision systems for high-end testing. This ensures that the high quality level demanded is achieved.

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Track & Trace

From the smallest supplier part to the complete body: SICK offers complete solutions over the entire production process. With ID*pro* (see page 74), stationary code reading systems, mobile bar code scanners and RFID interrogators with transponders developed specially for the automotive industry are easy to integrate into industrial networks.

Flexible Automation

The demand for an increasing number of vehicle types and the multitude of individual customer requirements dictate the need for enhanced flexibility and also efficient production. Sensors and solutions from SICK play a decisive role in meeting this requirement.

Sensor solutions for the automotive and parts supplier industries


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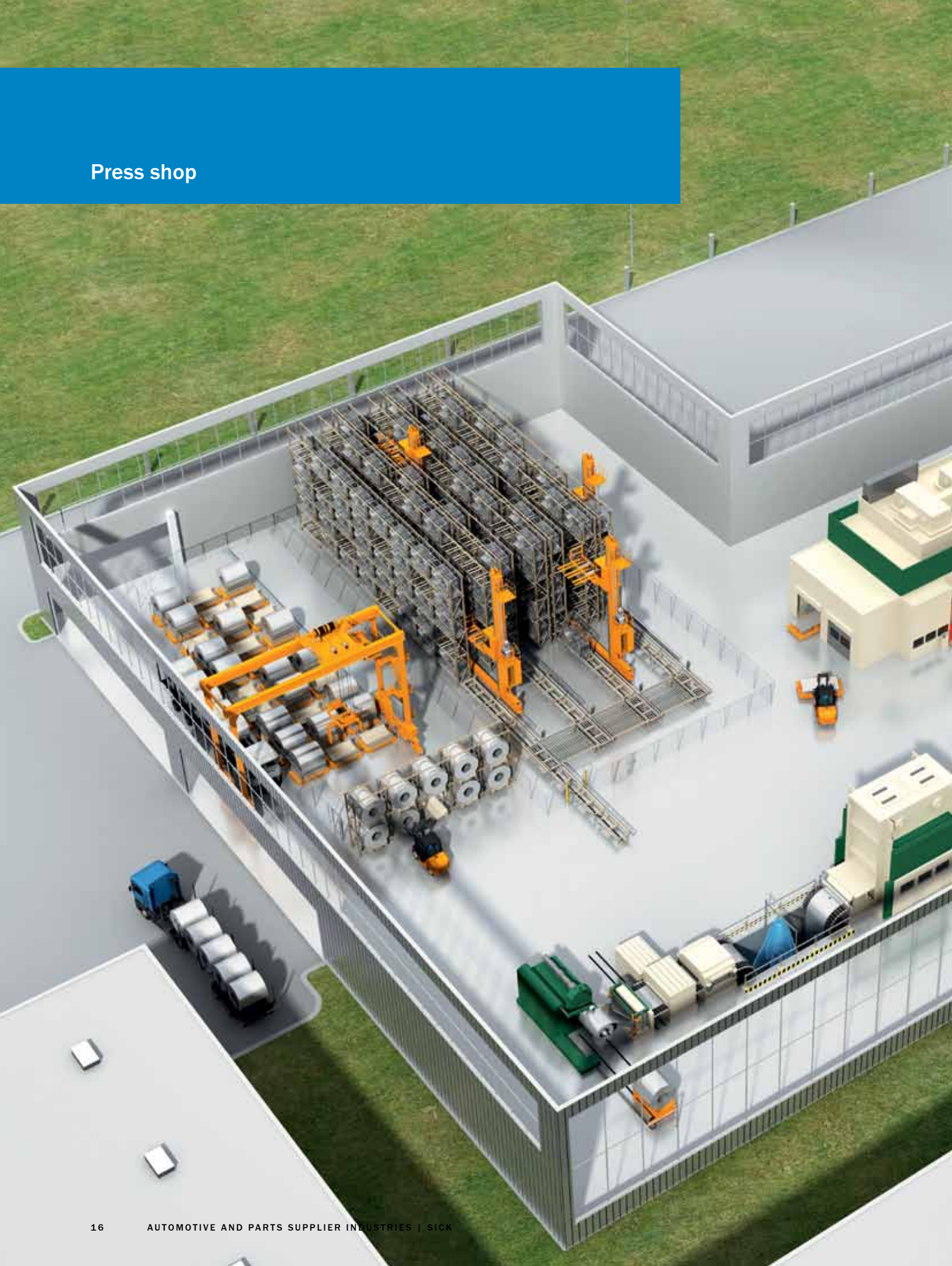
The following pages contain example applications to demonstrate the use of SICK products in different phases of production.

Press shop



Focus 1:
Coil and body parts storage

Position detection of the crane gripper
The sheet metal coil is stored in the press shop. The A3M60 absolute encoder is used to record the linear position of the crane gripper in the vertical direction.
Its innovative magnetic multiturn scanning enables the A3M60 to supply the absolute position of the crane gripper virtually maintenance-free.

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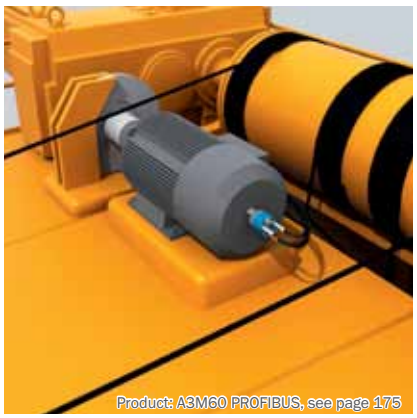

Safe end position monitoring
The emergency shutdown of the Rubber Tyred Gantry Crane (RTG) takes place when the IN4000 Direct inductive safety switch detects the metal vane without contact and therefore wear-free. If the RTG moves beyond a defined area, which is signaled by the IN4000 Direct.

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Storage space positioning for storage and retrieval systems
Storage and retrieval systems can navigate with the help of Inspector PI50 vision sensors and pre-defined markers. Any shape can be taught as a marker (the rack geometry, for example). The mark taught is detected precisely, time after time. This enables fine positioning of the vehicle.

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Access protection at an automated material transportation system

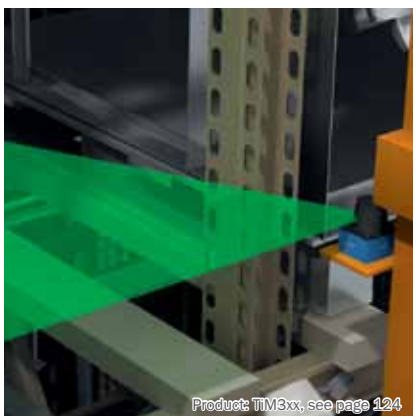
Access to the storage must be protected, on the one hand to prevent entry and exit of loaded pallets activating the photoelectric safety switch, and, on the other to reliably detect persons entering the hazardous area. This is done using M4000 multiple light beam safety devices and WL27 muting sensors. The UE403 muting evaluation unit offers a wide range of configurable muting features.

Access protection with interlocking at high-bay warehouse

The i10Lock safety locking device locks the door to the work cell. It interlocks until all dangerous movements are stopped safely. Only then can the door be opened to carry out maintenance work, for example.

Checking storage space occupancy in storage and retrieval systems

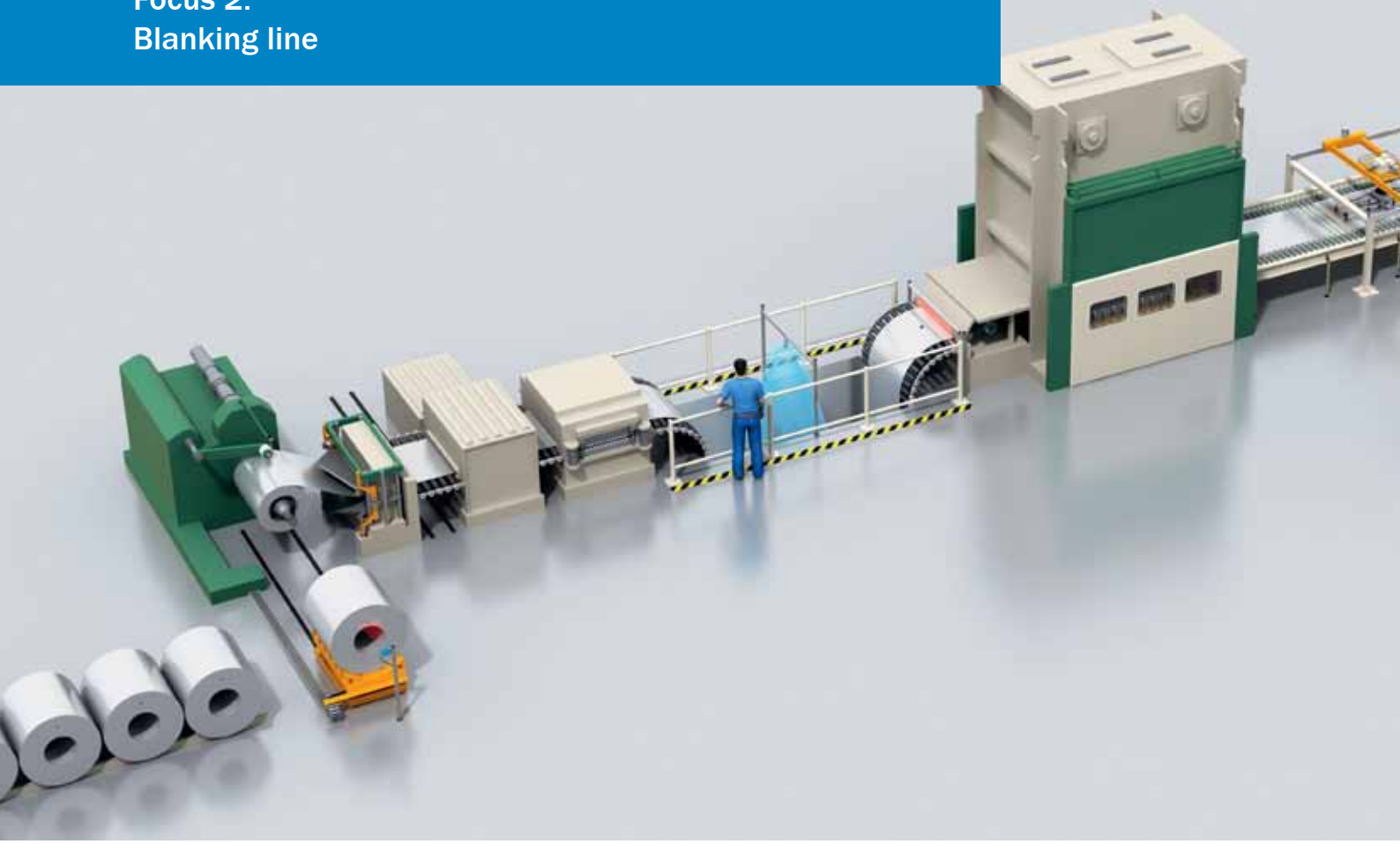
Before the sheet coil can be stored, the TiM3xx laser measuring sensor checks whether the assigned shelf is free. Due to its compact design, it is possible to mount the TiM3xx in a variety of positions.



Positioning of storage and retrieval systems with end position monitoring

High-precision absolute positioning is achieved using the DL100 Hi long-range distance sensor. The sensor generates the measured values, clock-synchronized with the control command. The ISD400 optical data transmission system replaces the field bus cabling to the storage and retrieval system and thus enables wear-free and low-maintenance system operation. The multitude of field bus versions allows easy integration of the ISD400 into a variety of different networks. The i110R safety position switch stops the storage and retrieval system as soon as the end position is exceeded.

Focus 2:
Blanking line



Identifying the sheet metal coil

Over the entire manufacturing process, it must be possible to trace and uniquely identify the production material. Important information such as type of material, sheet thickness, sheet width and additional parameters and properties are contained in the bar codes.

The CLV650 bar code scanner with oscillating mirror is versatile due to its long reading distance and the availability of versions with autofocus or dynamic focus, and also on account of its high reliability.

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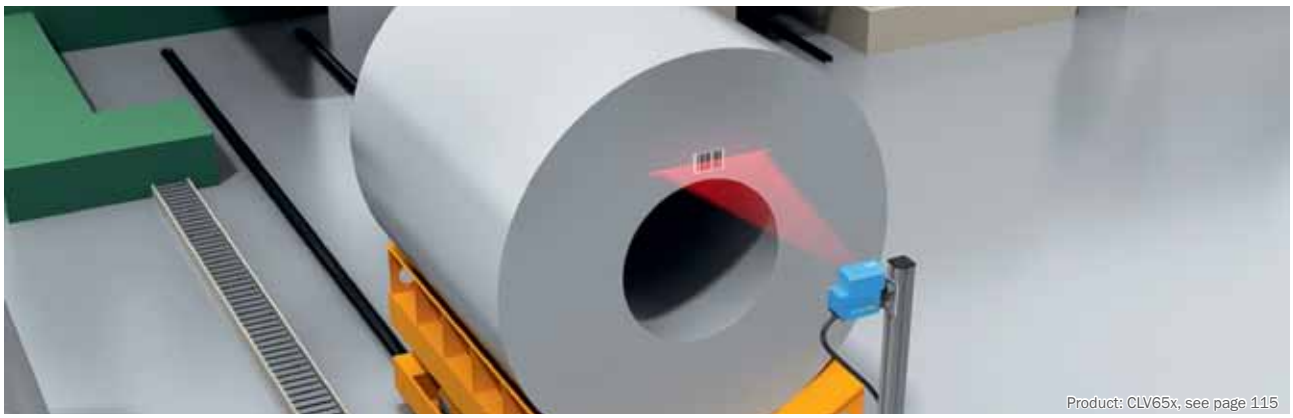

Product: CLV65x, see page 115

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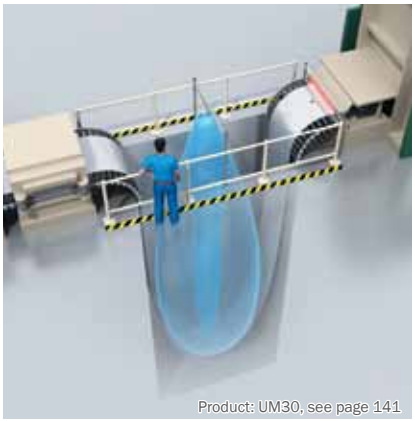
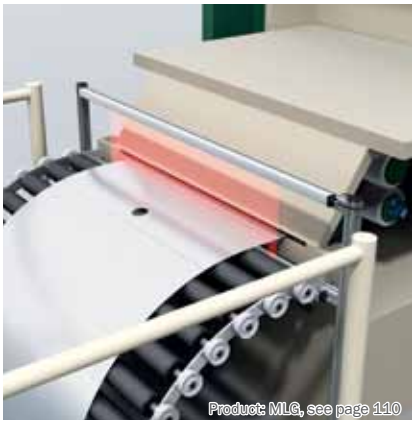
Loop control system

The loop control system enables the separation of processes such as uncoiling and cutting of the sheet metal. The sag of the sheet metal is determined continuously by the UM30 non-contact ultrasonic sensor. These values are used to control the retraction speed of the sheet metal.



Weld detection and measurement of the sheet removal speed

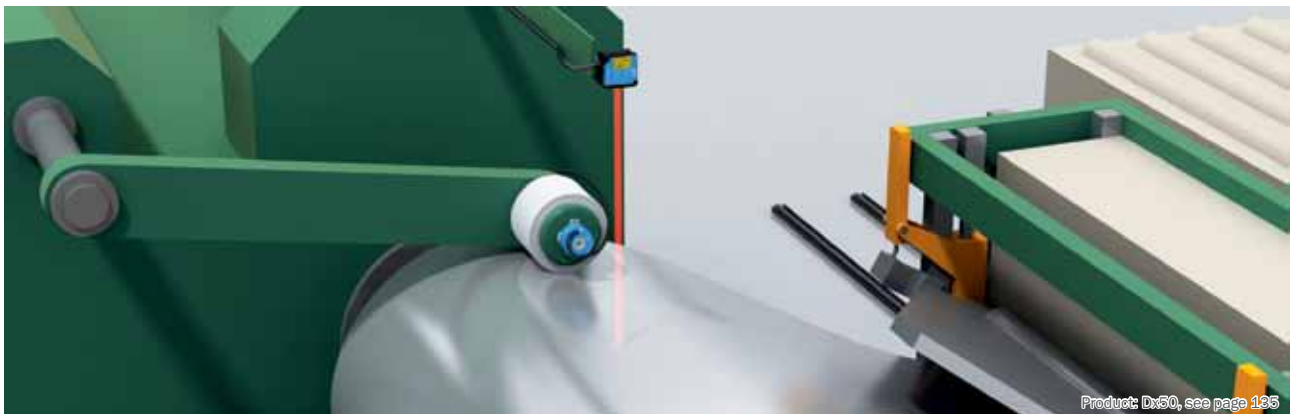
The MLG automation light grid detects a hole less that 15 mm that marks the weld of the coil. The DFS60 incremental encoder determines the speed of the sheet metal. The information from both sensors signals the position of the weld and serves to control the downstream system/plate shears.



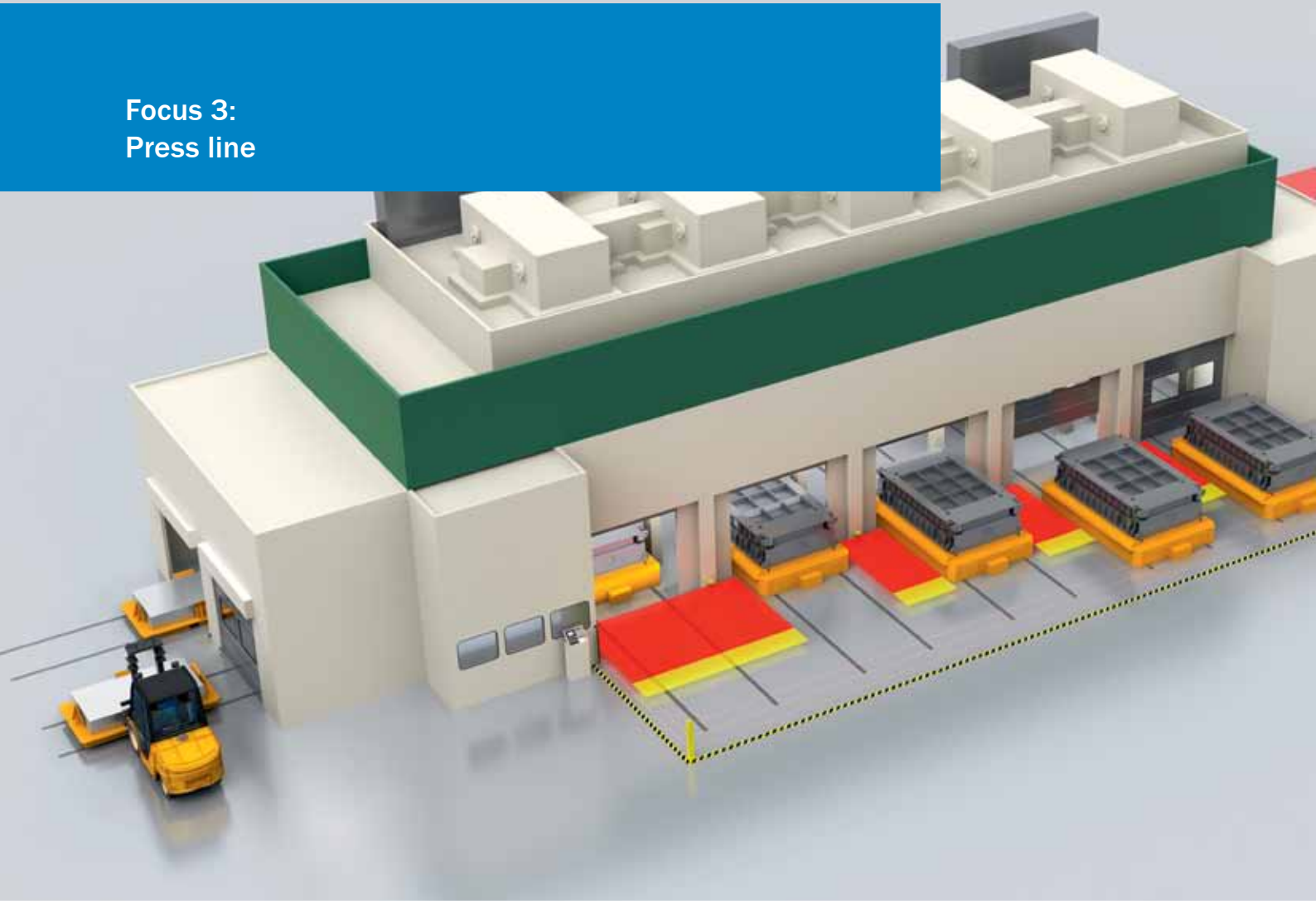
Sheet coil uncoiling

To ensure a constant feed of material, the uncoiling speed of the sheet coil must be regulated. The DT50 distance sensor measures the radius of the sheet coil over the entire uncoiling process.

The DFS60 incremental encoder uses a friction roller to measure the uncoiling speed of the sheet metal. The measured values from both sensors are used to control the uncoiling speed and initiate automatic coil change.

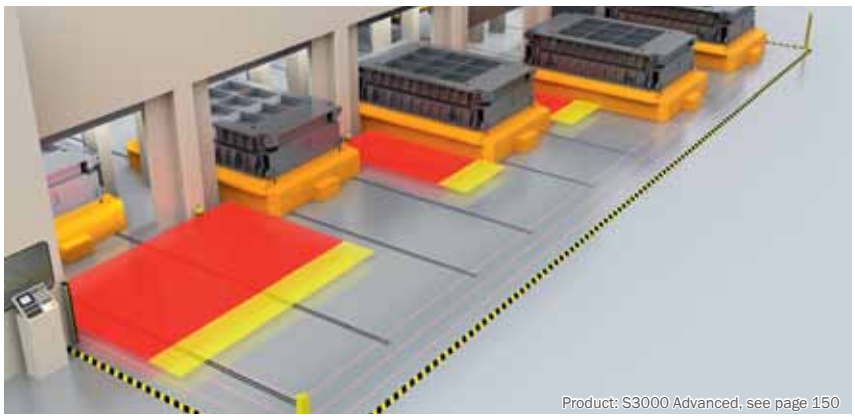


Focus 3:
Press line



Access protection

The M4000 multiple light beam safety device uses a deflector mirror to protect three sides of the change area for press tools. The interruption of one or more beams stops a dangerous movement, such as a press table. The S3000 safety laser scanner protects the area in front of the press between two tool gates If a person or object is present in this area, it is not possible to withdraw or extend the press tools.



Product: S3000 Advanced, see page 150

Safe position monitoring of the tool changer

The i110R safety position switch detects the movement of the press table into the gate area. Pressing the switch activates the protective fields of the S3000 safety laser scanners at the gates.

Product: i110R, see page 165

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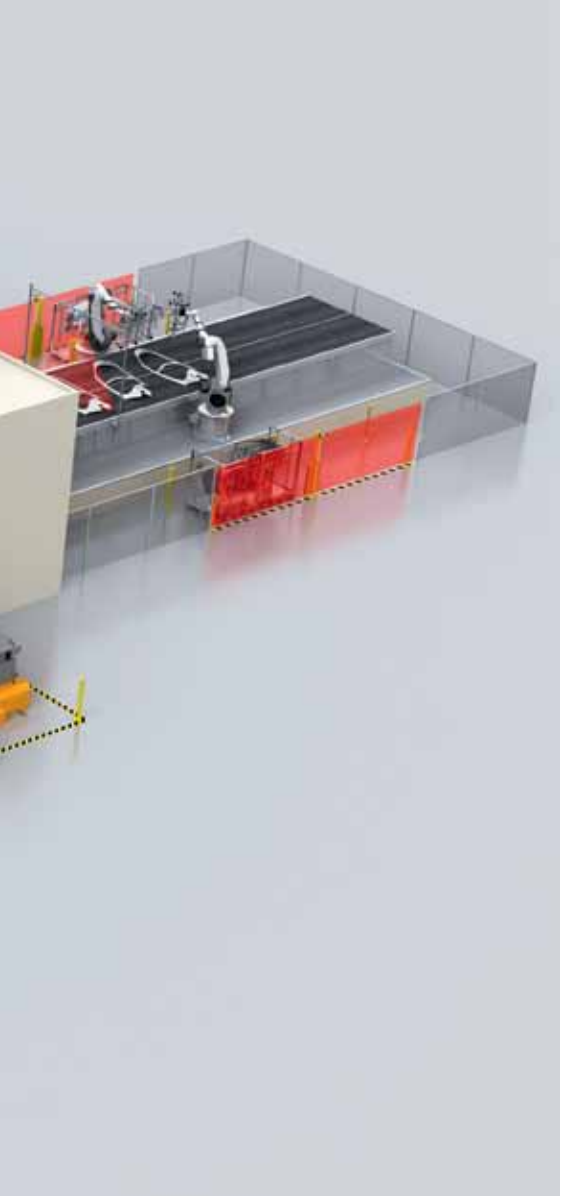
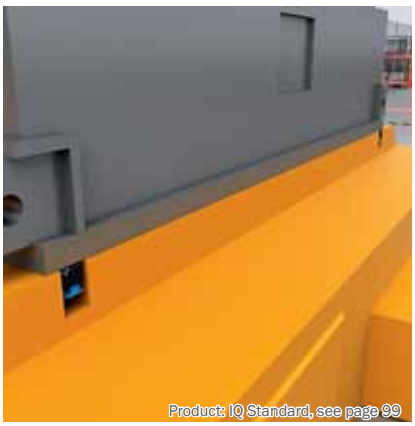


Part detection in a crossbar robot
The WT12L-2 small photoelectric sensor checks whether the part is located in the gripper of the robot and whether the part has been removed from the press tool. This prevents mechanical damage to the press.

Presence detection of the press tool
IQ40 inductive proximity sensors signal the correct position of the tool on the press table so that automatic locking can be performed.

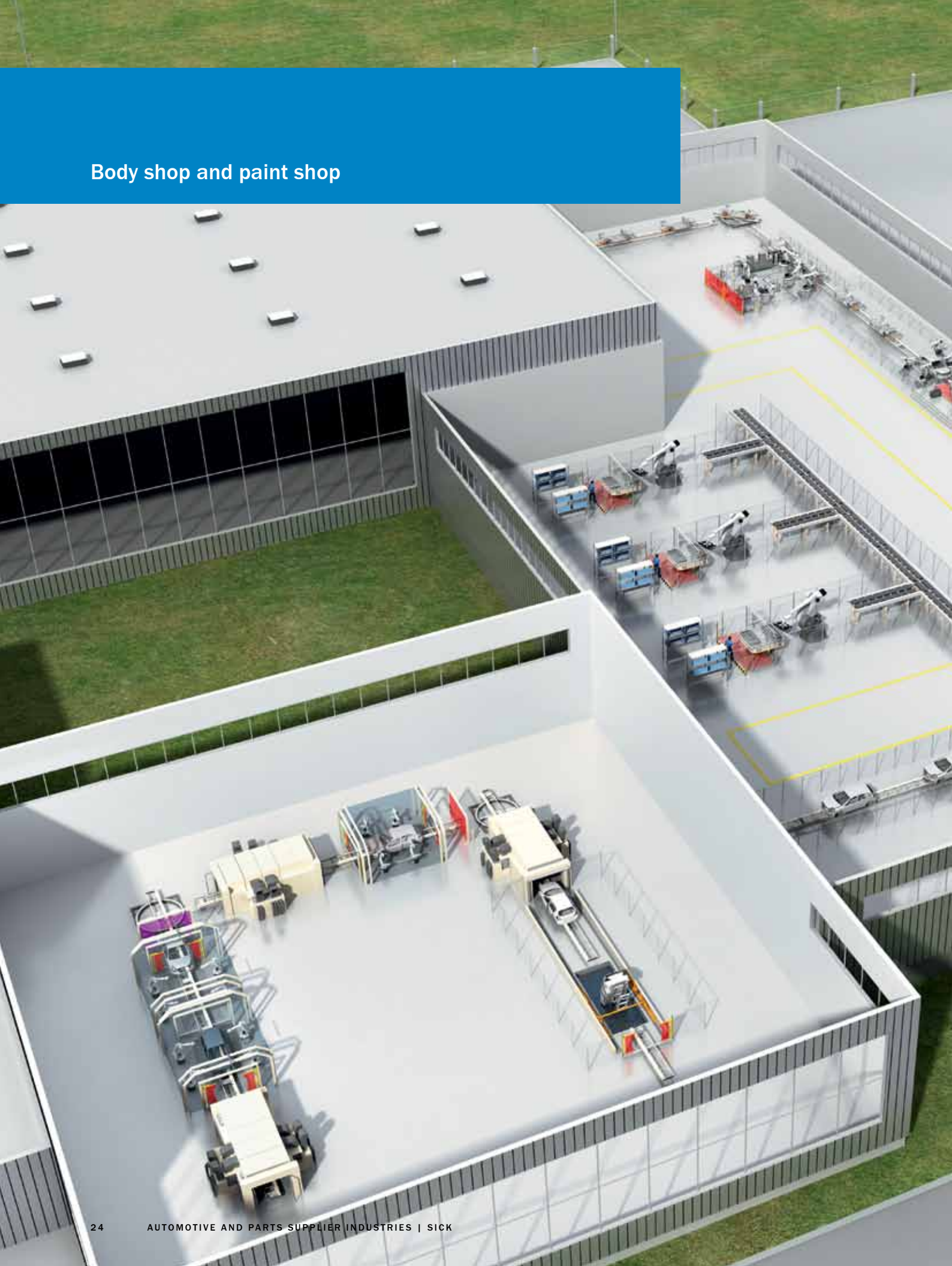


Positioning the transfer carriage for sheet metal feeding
The transfer carriage brings the sheets to the pick up point. The DL100 Hi distance sensor handles the highly precise, highly dynamic positioning process. This makes for "smooth" deceleration and acceleration and prevents the sheets from slipping.

Lifting gate monitoring with non-contact safety switch
The lifting gate of the press is monitored using the non-contact T4000 safety switch. No wear can occur; the safe transponder technology handles the detection process. When the door is closed, the automatic press process commences.

Double sheet control during sheet feeding
Two OD displacement sensors determine the thickness of the sheet with an accuracy of ± 10 µm and signal deviations in thickness and double sheets.
The measured values of the sensors are evaluated by averaging the difference and thus allow customer-specific calculation of the data.

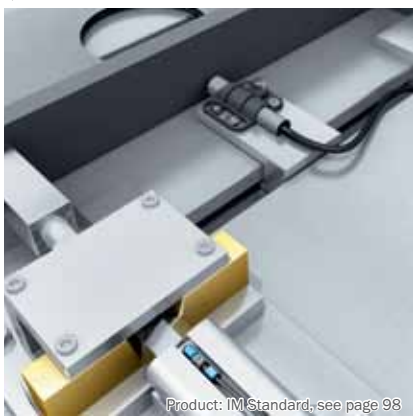
Body shop and paint shop

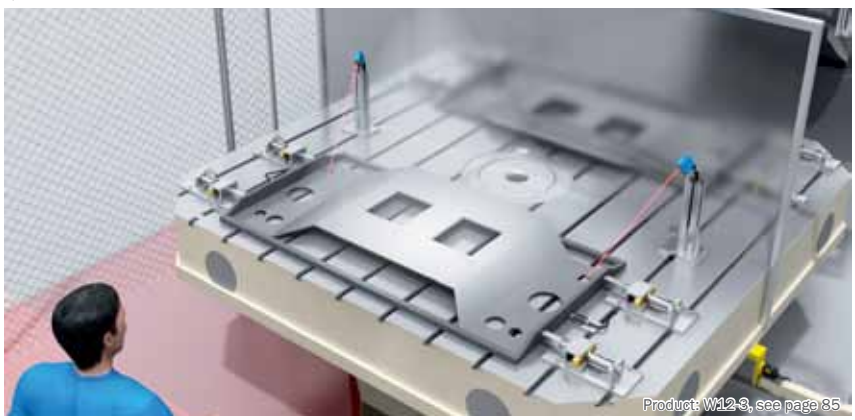


Focus 1:
Body parts

Presence detection for car body parts
Cylindrical IME inductive proximity sensors are used to precisely detect the presence of inserted parts.

Type check for car body parts
Besides the presence of parts, additional features such as holes, boreholes or cutouts must be detected for type testing. The Inspector vision sensor detects several parts simultaneously. Several features can be taught and a variety of testing tasks defined. W12 small photoelectric sensors with pinpoint technology use a small light spot to detect even the smallest gaps without the limiting laser class. When all parts are inserted correctly and completely, the turntable is enabled for further processing.


Product: IM Standard, see page 98


Product: W12-3, see page 85

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Access protection at turntable

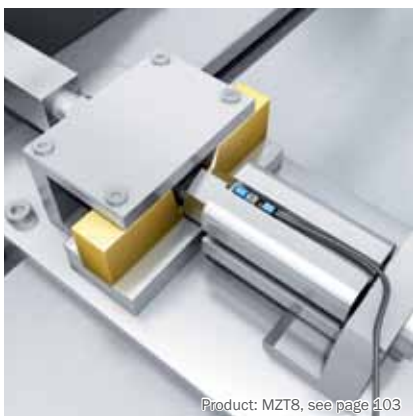
Both the clamping cylinder and the rotary motion of the table can represent a hazard to the worker. Safety locking devices are installed to eliminate these hazards. A C4000 safety light curtain monitors access. Its high resolution enables extremely short safety distances.

Safe position monitoring at a turntable

The end position of the turntable is detected safely and wear-free using the T4000 non-contact safety switch. The robot starts when the work area has been released.

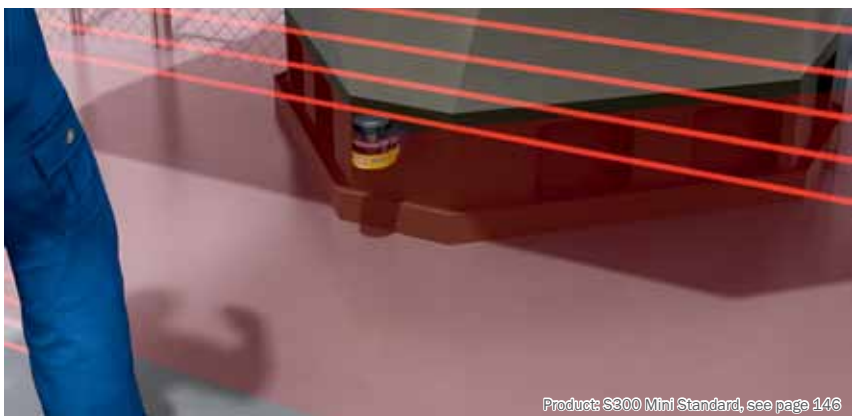
Monitoring of clamping cylinders

When the working area has been enabled, the clamping cylinders must first be introduced to fix the parts. The MZT8 magnetic cylinder sensor precisely detects the position of the clamping cylinder with short strokes. It is optimized for the smallest cylinder size and has a precise switching point.



Presence detection behind a light curtain for hazardous area protection

The S300 Mini safety laser scanner for area monitoring prevents someone from standing behind the light curtain and a start of the dangerous movement. Automatic restart is possible when the hazardous area is exited.



Focus 2a:
Automatic robot cell

Access protection with differentiation between people and material

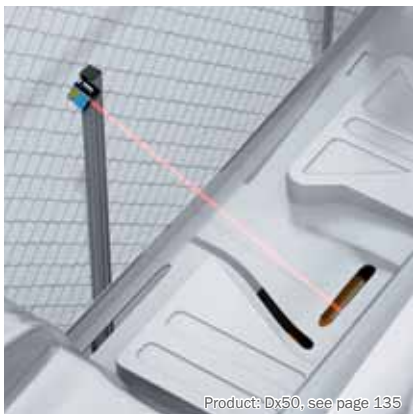
The robots in the production cells work automatically and at high speed. A person who enters the hazardous area must be reliably detected and all dangerous movements stopped immediately. The C4000 Fusion safety light curtain can differentiate between different skid structures so that car bodies can move in at any time. Additional sensors to initiate muting and swing doors are not required.

This solution considerably reduces the costs for planning, fitting and operation.

Part check using distance sensors

Different variants of sheets are checked in the robot cells during operation. The DS50 distance sensor detects small holes or sheet forms even at a large distance and can therefore be installed outside of the working area of the robots. It has a laser class 1 light spot.

Product: C4000 Fusion, see page 158



Product: Dx50, see page 135

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Traceability of parts

The identification, and so to the traceability of parts over the entire production process is quite a challenge.
The LECTOR®62x image-based code reader directly identifies marked parts with an extremely high scanning performance. Thanks to the ID*pro* technology from SICK, a large number of network integrations, such as PROFINET and EtherNet/IP are available.

Part detection

Two redundant receiver arrays are used to check that the side panels are present. The W27-3 MultiPac compact photoelectric sensor has been developed specially to detect complex objects such as bright metal parts. The powerful LED produces a highly visible light spot and makes for easy alignment.

Flow measurement for welding gun cooling

Welding guns must have a continual supply of cooling water to prevent overheating. The throughput must be monitored in this context. The FFU ultrasonic flow sensor measures this is precisely; without any moving parts, and it is rugged enough for use in rough environments.

Weld cap tests

Weld caps for spot welding are polished regularly and replaced after a certain period of use based on wear. If the weld caps are too short, there is a risk of the cooling water circuit in the welding gun opening. This would result in longer downtime.
The Inspector vision sensor measures the length of the weld caps during operation so that the weld caps only need be replaced if the minimum length is not reached. The result is reduced material costs and shorter downtime.

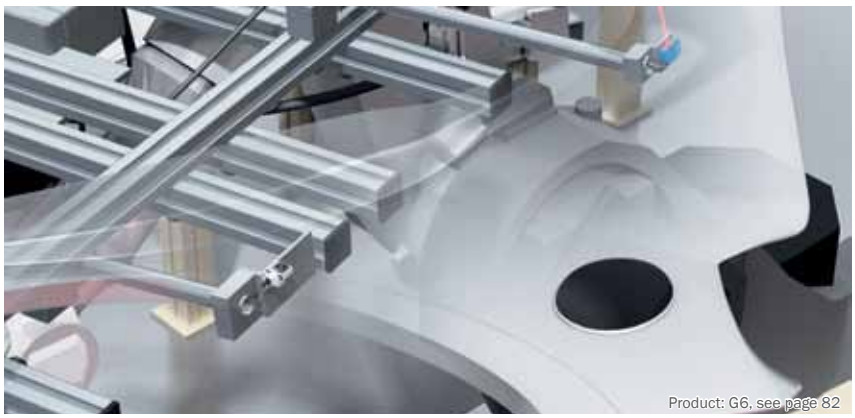
Focus 2b:
Automatic robot cell

Access protection for a robot cell

The rugged i10 Lock safety locking device locks the door to the work cell and ensures that all process steps are completed before the door can be opened. When the door is open, the i10 Lock prevents start-up of the system. The door must be closed for the system to restart.

Part detection in the robot gripper

Inductive sensors, photoelectric proximity sensors and magnetic cylinder sensors monitor pickup of the metal parts by the gripper. Flat inductive proximity sensors such as the IQ Flat or photoelectric proximity sensors in miniature or small design have optimal properties for part detection and take up little space in the gripper. The MZ2Q magnetic cylinder sensors monitor two switching points. In this way, with the opening and closing of the gripper cylinder can be monitored using only one sensor.



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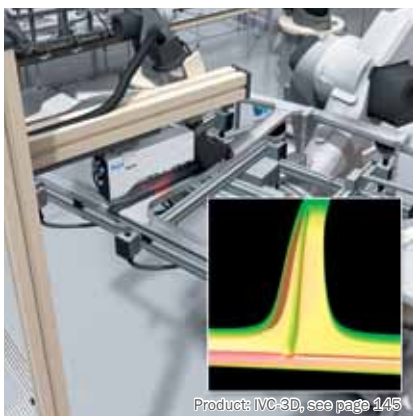
Pick up of body in white parts for mounting

The robots grip the parts autonomously out of the rack. The vision system finds the gripping position and provides an output to the robot to move to the corresponding location, irrespective of the position tolerances in the rack. The parts are inserted into machine with high accuracy for further processing. Device replacement is an easy operation: the vision system has integrated tools for calibration and communication with the robot. The calibration image is used to determine the robot's position.

Glue inspection

The inline quality inspection for glue – from applying the glue to the glue quantity check and up to checking for bubbles – is one of the main tasks in the glueing process. The IVC-3D smart camera enables reliable implementation of sophisticated 3D contour checks.



Product: IVC-3D, see page 145

Hazardous area protection on material racks

The S3000 safety laser scanner can also monitor large areas. In this way, two areas, each with independent applications, simultaneous protective fields can be monitored using only one sensor. The S3000 has an integrated PROFINET interface and can thus communicate directly with the safety controllers. By using an M4000 multiple light beam safety device to guard the rear zone, interaction of the robot is detected safely and the work area protected effectively.

Product: S3000 PROFINET IO Advanced, see page 151

Focus 3:
Reworking station

Positioning the car body in the reworking station

After the robot cells, manual reworking, like production of special versions or corrections can be performed. The skids with the car body are detected by IQ40 inductive proximity sensors and positioned accordingly. Upon entry and exit of the car body, the information for the safety controllers and/or safety laser scanners are then transferred. In this way, it is possible to monitor and switch the protective fields.

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Hazardous area protection at the reworking station

The areas around the car body are monitored using S3000 safety laser scanners. Thanks to their protective field range of 7 m, only two scanners are required for full protection of the work area.

By using the simultaneous protective fields, it is possible to monitor two independent hazard zones at the same time.

Protective fields are active in front of and behind the body; when a worker enters the area, dangerous movements in adjacent robot cells are stopped.

When the worker enters the protective field parallel to the body, this prevents further transport of the car body.

Product: S3000 PROFINET IO Advanced, see page 151

Car body identification

The car body is identified reliably using UHF RFID technology at any production step. The RFID transponder – suspended in the wheel arch – is read at the reworking station at quite a distance as it passes.

The required manual work steps are output on the basis of the information automatically written to the transponder during production.

Product: RFU63x, see page 121

Focus 4:
Lift station

Access protection with differentiation between people and material

In the course of the production process, the bodies are lifted or lowered to different transport levels. The M4000 multiple light beam safety device prevents entry of a person into the hazardous area. The distinction between people and machine is made using WL27 muting sensors. The UE403 muting evaluation unit offers a wide range of configurable muting features. The result is a flexible, highly-available and safe muting solution.

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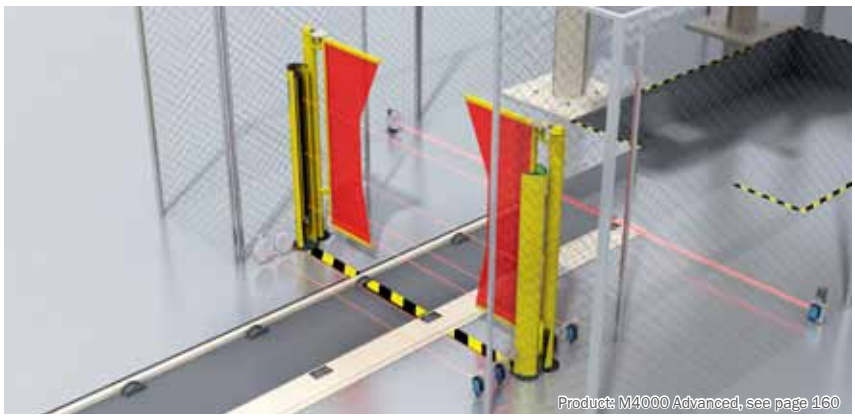

Product: M4000 Advanced, see page 160

Skid detection at the lift station entry

The skid with the body is detected prior to entering the lift using the WL27-3 Reflex Array compact photoelectric sensor. The photoelectric sensor produces a line, which is used to detect the different skids. As a result, the position tolerances are compensated by up and down movement of the skid on the roller conveyor.

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Product: W27-3 Reflex Array, see page 90

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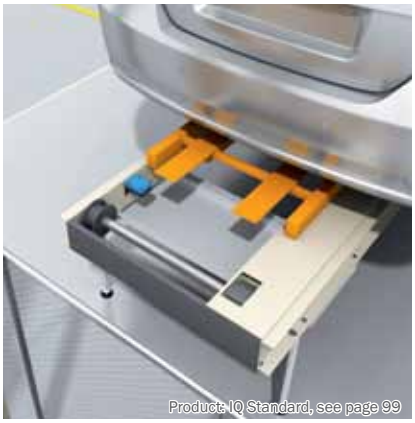
Skid detection at the lift station exit

At the exit of the lift, the position of the skid is monitored using an IQ80 inductive proximity sensor. This ensures that the skid has exited the area of the lifter. The large detection area of the IQ80 compensates for position tolerances and reliably detects the different skids.

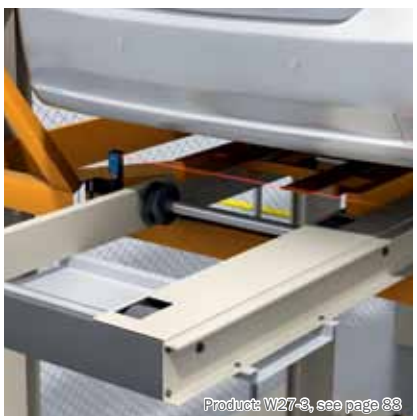


Safe position monitoring and overflow protection

The IN4000 non-contact safety switch detects the metal of the lift and safely deactivates the lifting motion in an emergency. Safe over-run detection prevents damage to the system and thereby prevents longer downtime.

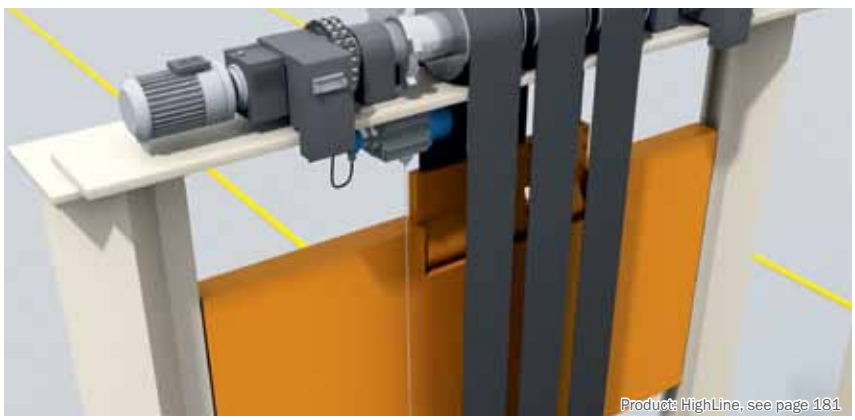
Vehicle protrusion monitoring

When lifting the vehicle, it is essential to rule out contact that could cause damage to the body. The WTB27-3 compact photoelectric sensor detects the position of the skid and recognizes any protrusion of the vehicle.



Positioning the height of the lift

Distance sensors with reflectors or wire draw encoders are used for measuring the height position of the lift. The BTF wire draw encoder determines the direct position and speed at the drive control of the lift using a variety of selectable interfaces.



Focus 5:
Final inspection

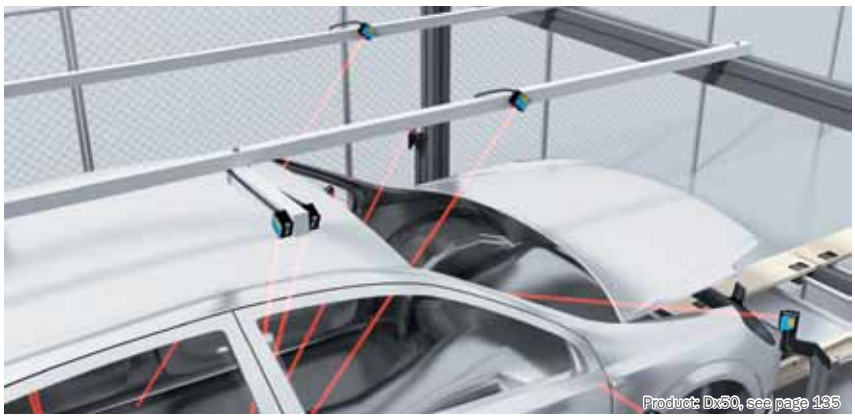
Quality check using vision sensors
The Inspector vision sensor checks for cut-outs, holes and gaps at several points on the body. The Inspector switches modes to perform a variety of testing tasks at different test positions on the body.

Quality check using distance sensors
Mid-range distance sensors can also be used to check for long distances at poorly accessible points. The DT50 with laser class 1 offers the smallest light spot size and high measuring accuracy for a variety of materials.

▼


Product: Inspector, see page 143

▼


Product: Dx50, see page 135

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Subject to change without notice

Car body identification

The car body is identified reliably using UHF RFID technology at any production step. The RFID transponder – suspended in the wheel arch – is read in the inspection station at quite a distance in the current process. The required testing tasks are output on the basis of the information written to the transponder automatically during production.

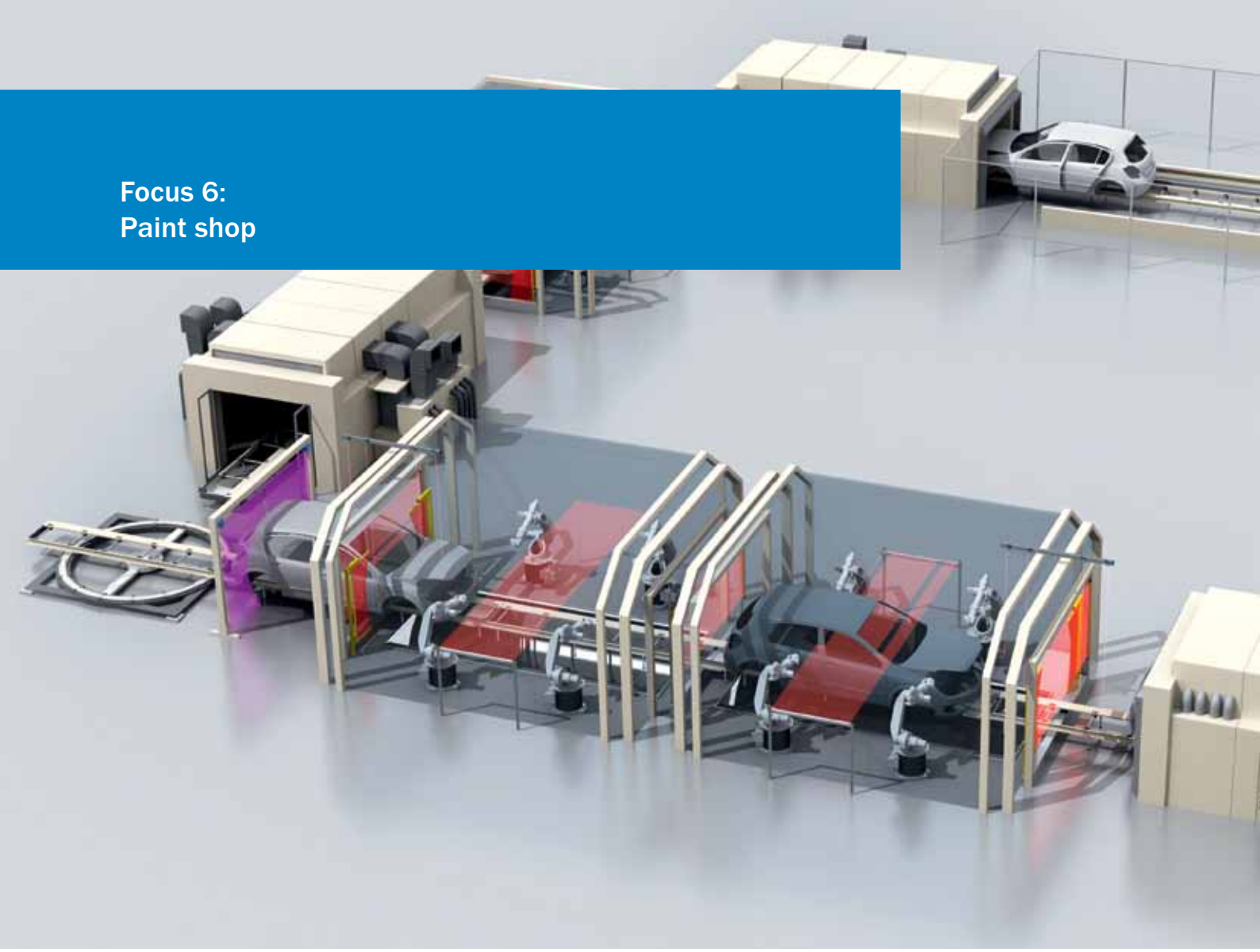
Product: RFU63x, see page 121

Quality check using photoelectric sensors

The WTB27-3 MultiPac compact photoelectric sensors were developed specially for use with a reflective, bright surfaces. Two independent receiver arrays provide redundant detection, which enables even the most complex applications to be solved reliably and ensures high system availability.

Product: W27-3 MultiPac, see page 89

Focus 6:
Paint shop



Collision prevention through car body measurement

The body types are checked again when they enter the painting line.

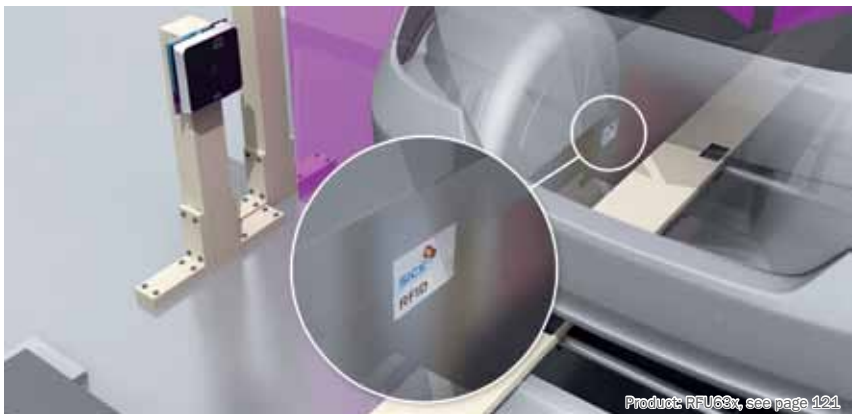
At the same time, all closures (hood, trunk) and the door are checked for the correct position. This is done by comparing the previous teached-in profiles and contours with the current measuring data from the LMS500 laser measuring sensor. Scanning the contour prevents the robot from colliding with a vehicle and ensures that the paint is applied safely in a smooth coat.

▼

Car body positioning in the painting cabin ▸
The correct positioning of the body in the painting cabin is performed using the MLG automation light grid. The body is identified in this way, and the robots are synchronized in parallel according to the pattern (distance between A and B columns).

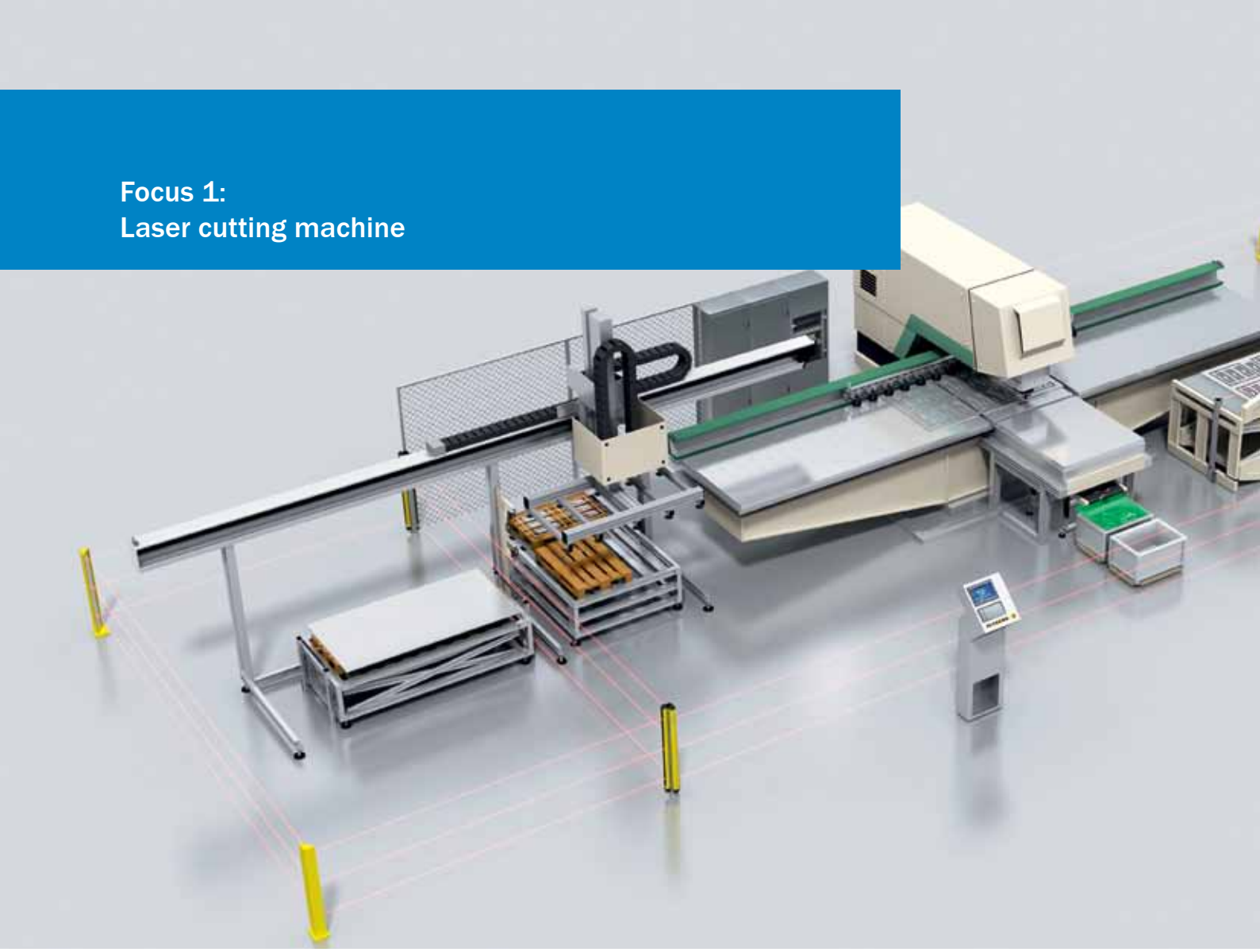
Access protection with differentiation between people and material ▸
C4000 safety light curtains are used to separate cells in the paint line. Versions of the C4000 product family satisfy the requirements according to ATEX II, category 3G/3D for use in explosive atmospheres. SICK also offers solutions for ATEX II, category 2G/2D designs.
DS50 distance sensors are used outside the painting cabin to mute the safety light curtains. The DS50 allows safe detection due to its large scanning range and low color dependence.

Car body identification
The car body is identified on the basis of the RFID UHF transponder prior to painting to ensure that the correct color is applied to the corresponding body.
The RFID transponder label was developed especially for use under rugged conditions and withstands temperatures of more than 200 °C during the painting process.
▾



Final assembly

Focus 1:
Laser cutting machine



Checking for double sheets
Two OD displacement sensors measure the thickness of the sheet. This solution reliably detects double sheets.
The OD system as an integrated evaluation unit for analyzing the measurement signals. The results are transferred to the control in the form of digital signals.

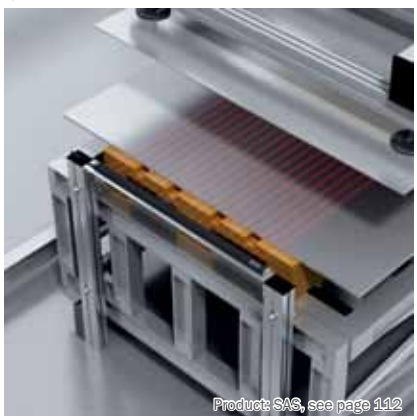
Top end position at the scissor lift table
The scissor lift table raises the stack of sheets for pick up of the single sheets. The SAS smart light grid enables precise detection of the top edge irrespective of the size of the sheet.

Protrusion monitoring in the material box
The TiM3xx laser measuring sensor is used to check the protrusion.
The TiM3xx signals the maximum filling level and the material box must be replaced.

▼


Product: OD Precision, see page 138

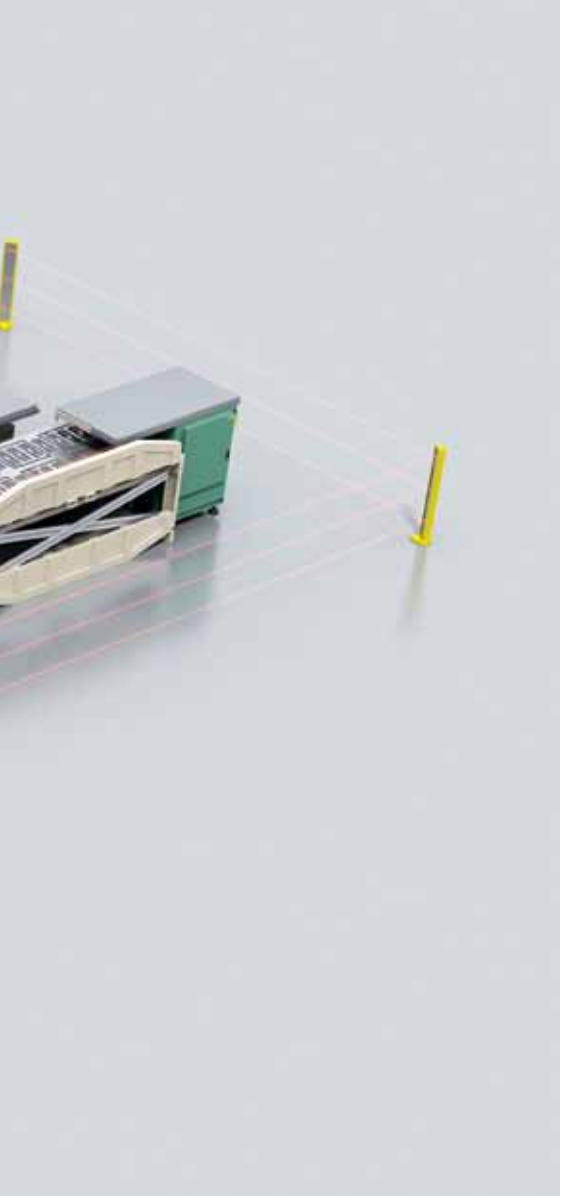
▼


Product: SAS, see page 112

▼


Product: TiM3xx, see page 124

8009329/2012-05
Subject to change without notice



Hazardous point protection for personnel and process protection

The robust i10 Lock safety locking device locks the door to the machine and ensures that all process steps are completed after the requested stop before the door can be opened. When the door is open, the i10 Lock prevents start-up of the machine. The door must be closed for the system to restart.

Multi-side access protection the separation of work areas.

Several M4000 multiple light beam safety devices and reflection columns are used to define separate safety zones. The loading area can be used and monitored independently of the work area. The integrated alignment aids on the M4000 ensure easy commissioning and alignment.

End position detection

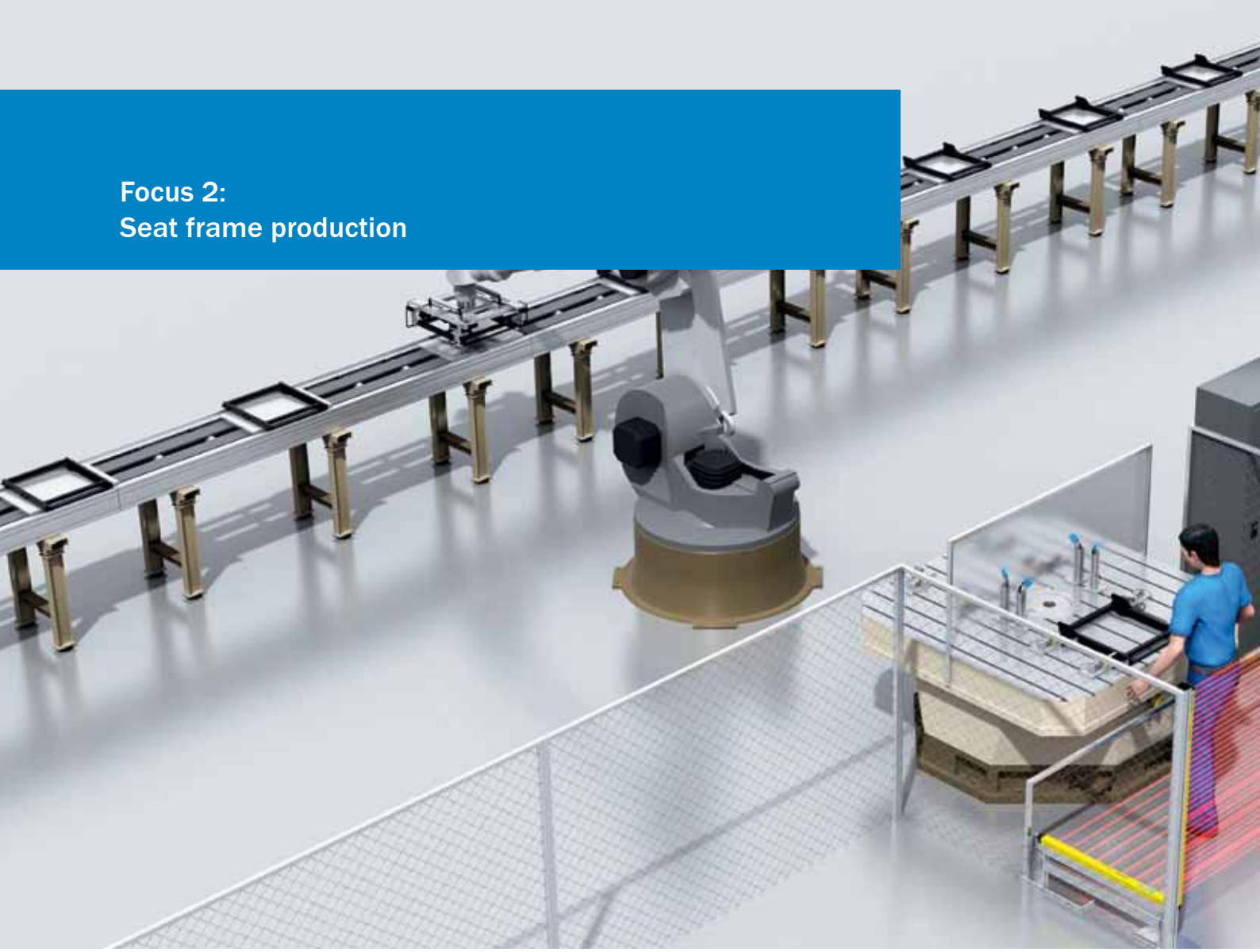
The stamped sheet panels removed by an automatic linear system. IME inductive proximity sensors are used to detect the end the position of the system.

Safe control solution

The modular Flexi Soft safety controller is responsible for complete monitoring of all safety functions of the laser cutting machine.
All the functions, such as safety switch, emergency stop pushbutton and opto-electronic safety equipment are easy to connect and interconnect.

Gateways for all conventional field bus systems are available.

Focus 2:
Seat frame production



Presence and type checking for seat underframe parts

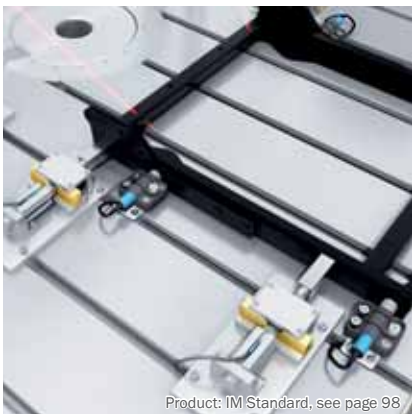
Besides the presence of parts, additional features such as holes, boreholes and cutouts must be detected at the turntable for type testing. The WTB12-3 small photoelectric sensor is used for quality assurance and type testing. The pin-point technology produces a highly visible light spot, which simplifies alignment and enables precise detection.

Product: W12-3, see page 85

Presence check for parts

Cylindric IME inductive proximity sensors are used to precisely detect parts and check that they are present.

Mountings developed especially for the IME ensure fast and precise replacement of damaged sensors.



Product: IM Standard, see page 98

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Subject to change without notice

Emergency stop pushbuttons

Emergency stop pushbuttons are indispensable at worker's workplaces and enable a person to stop the system immediately in an emergency. The robust ES21 emergency stop pushbutton is available in a variety of designs and switch combinations.

Product: ES21, see page 170

Safe position monitoring of the turntable

The i110P safety position switch is used to monitor the rotating motion of the turntable. When the interposition of the turntable is reached, the robot is enabled.


Product: i110P, see page 164

Monitoring of clamping cylinders

The MZ2Q magnetic cylinder sensor verifies the position of the clamping sensor. Using two switching points, this can be monitored both in the open and closed states with only one cylinder sensor. The monitoring function can thus be implemented even on the smallest clamping cylinders in confined spaces.


Product: MZ2Q-T, see page 102

Hazardous point protection with hand and presence detection

The turntable is protected using a vertically attached C4000 safety light curtain. To ensure presence detection, a second C4000 is mounted horizontally. Both safety light curtains are interconnected.


Product: C4000 Standard, see page 157

Focus 3:
Seat installation

Access protection with differentiation between people and material

The C4000 Fusion safety light curtain can be used to teach a variety of skid contours. This enables car bodies to be move in at any time. If a worker enters the safety zone, however, production is stopped. Additional muting sensors and swing doors are not required.

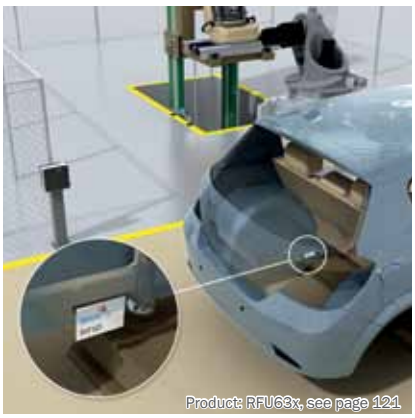
Car body identification

An RFID transponder is attached to ensure consistent recording of all production steps; its data are read by reliably by the RFU630 UHF interogator. This is done at quite a large distance during the running process. This ensures that the correct type of seat is installed.

▼

Product: C4000 Fusion, see page 158

▼



Product: RFU63x, see page 121

8009329/2012-05
Subject to change without notice

Remote access protection with differentiation between people and material

The M4000 multiple light beam safety device detects when a person enters the hazardous area and stops the dangerous movement.
The UE403 muting evaluation unit offers a remote muting solution with a variety of configurable features.
The result is a flexible, highly-available and safe muting solution.

Collision prevention at robot grippers

The WTB12 small photoelectric sensor checks whether the seat is at the correct position so that the robot can grip it accurately. This prevents any collision between the robot and the seat.

Component identification

Each car seat possesses a code number. This number and along with other data, such as assembly date, vehicle type, etc. are contained in an RFID tag. This tag is located under the material of the seat. The data it contains are read using the RFH63x RFID interrogator.

Together with the body identification, this ensures unique traceability over the entire production cycle.

Height measurement when seat is supplied

A lifter brings the seats to the work area of the robot. The seats are brought to a defined height where the robot can grip them accurately. To check the horizontal position of the lifter, the BCG19 wire draw encoder is used.

Focus 4:
Assembly of printed circuit boards for instrument panels

Identifying printed circuit boards

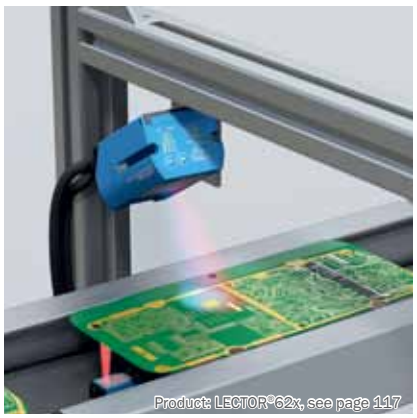
The LECTOR®620 image-based code reader identifies the printed circuit board depending on the 1D or 2D codes applied.

The LECTOR®620 can read both types of codes in both directions due to its extremely compact housing design. The integrated laser aiming line makes it particularly user-friendly.

Flexible and complete safety solution

Safety doors must remain closed until the dangerous movements in a process or of ther machine have been stopped. The i14 Lock electro-mechanical safety switch prevents unprotected access to the machine and is integrated into the machine control via the Flexi Classic safety controller. Pick-and-place machines are becoming more and more complex due to their increasing modularity. The Flexi Classic system is ideally equipped to meet the requirements of the future. The ES21 emergency stop push-button is indispensable for machines with dangerous movements allow the machine to be stopped.

▼



Product: LECTOR®62x, see page 117

▼

Product: Flexi Soft, see page 172

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Subject to change without notice

Reliable detection of irregularly shaped printed circuit boards

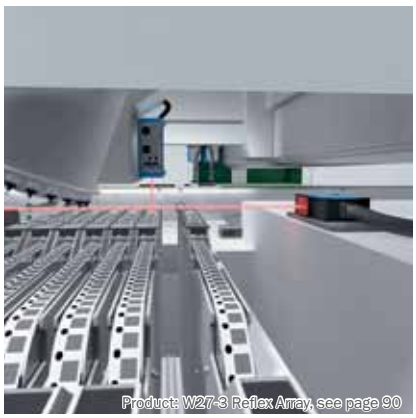
Printed circuit boards often have cutouts, large holes or roundings. These can cause difficulties during optical detection. The modified miniature WTV4-3 photoelectric line sensor uses a light beam to solve this task and provides accurate edge detection. This sensor is ideal for use under difficult conditions and helps to reduce overall operating costs.

3D inspection at high speed

The amount of solder paste specified and applied is checked at a high throughput rate and with a high resolution. The Ranger 3D camera offers a z-axis resolution of 5 µm at a speed of 90 cm²/s. 3D inspection solutions from SICK support high production rates.

Monitoring the feeder clips

Fast and reliable monitoring of closed feeder clips at feeders is possible with only one WL27-3 Reflex Array compact photoelectric sensor. The 50-mm line detects any deviation from the correct position, thus preventing damage to the placement head and enhancing machine availability.

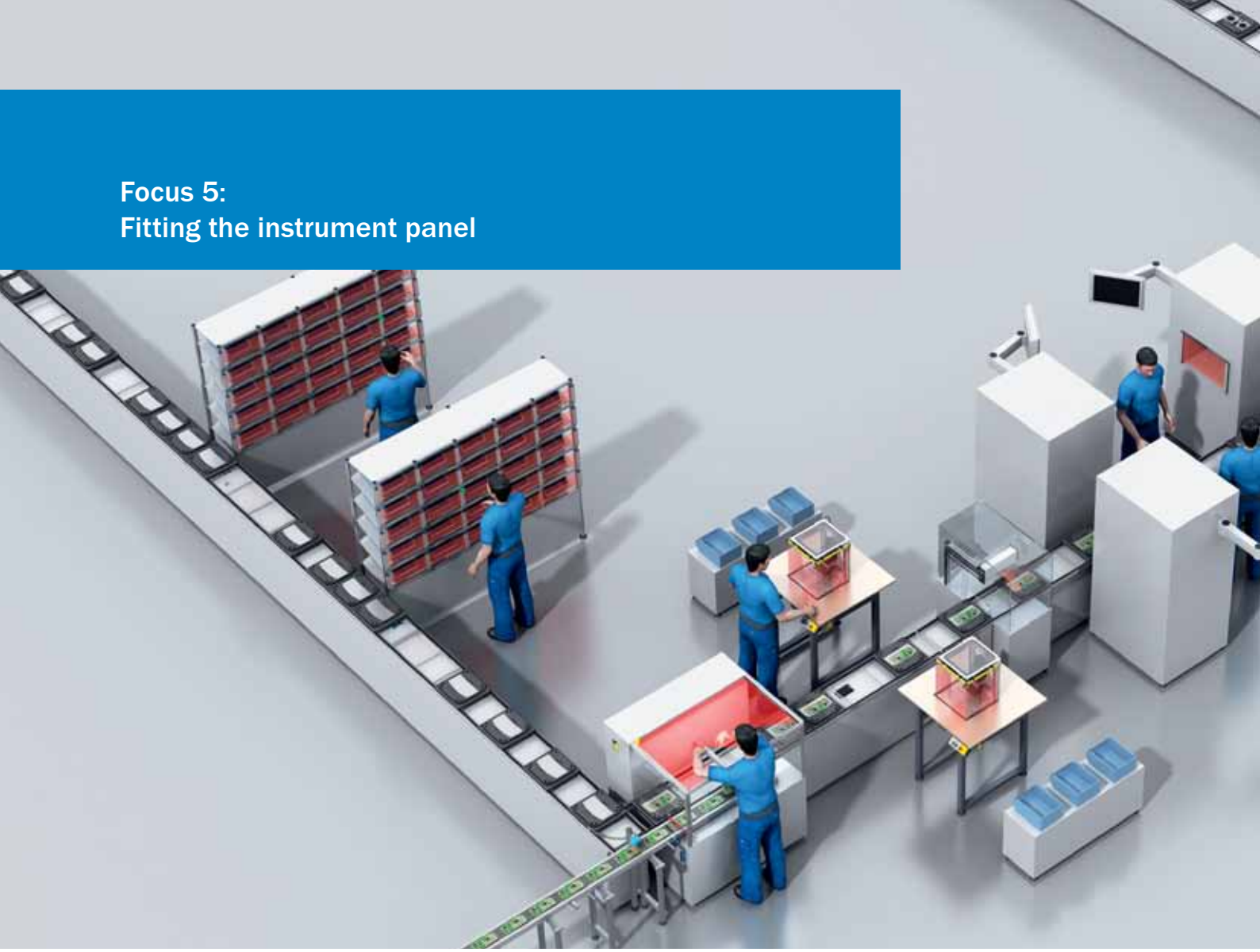


Mobile identification of placement material

SICK's hand-held scanners demonstrate their strengths when equipping the feeder. Reconstruction algorithms reduce the manual input.

Codes are identified fast with more than 500 scans per second. IDM hand-held scanners are available with Bluetooth or WLAN and have PS/2, USB or RS-232 interfaces.

Focus 5:
Fitting the instrument panel



Protection for the handling robot

Handling robots work at high speeds. In the past, it was necessary to use tall protective enclosures for these robots as a means of personal protection.

The V300 safety camera system at the top, permits the accessibilty to the point of operation, for easier replenishment and maintenance work.

The small machine size reduces freight costs when transporting the machine.

Detecting printed circuit boards

The WLL180T fiber-optic sensor in combination with the LL3-TS fibers is ideal for detecting the front edges of printed circuit boards on conveyor belts. This system supplies the position data of the printed circuit boards quickly and reliably. The DFS60 incremental encoder transfers the position of the conveyor for synchronization of both sensor signals.


Product: V300 Work Station Extended, see page 152


Product: WLL180T, see page 94

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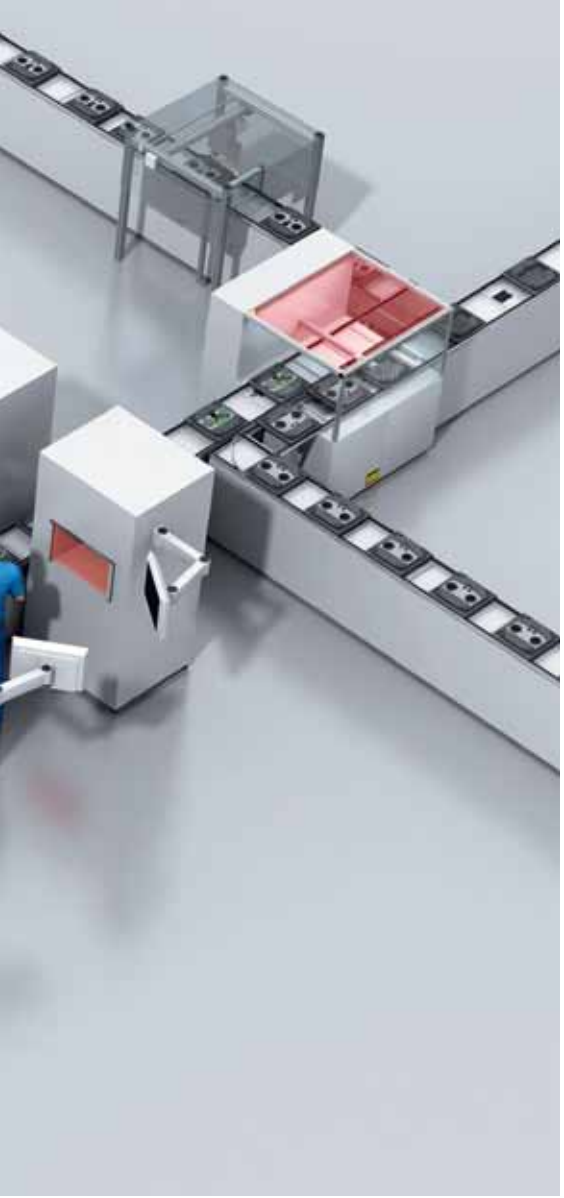
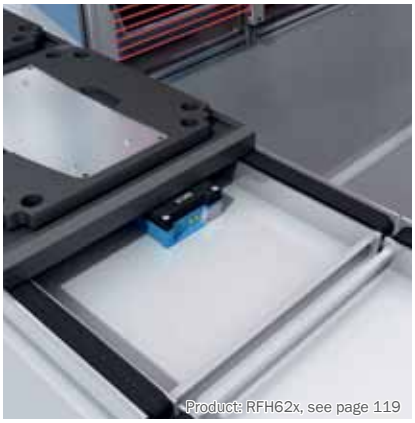
Subject to change without notice



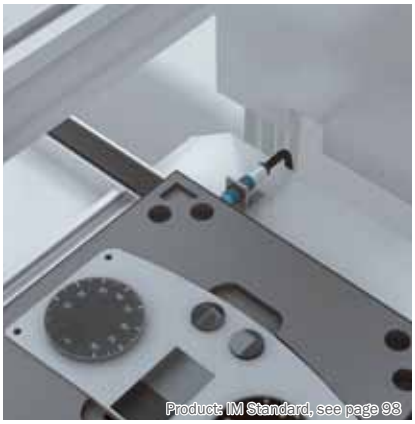
Traceability of products in the production process

The RFID transponder ensures traceability to all assembly stations. Product information and derived individual production commands on the transponders can be both read and written using the RFH620 interrogators at a frequency of 13.56 MHz.



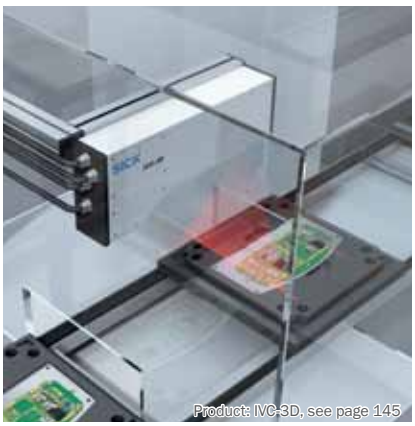
Positioning tool carriers

The IME12 inductive proximity sensor monitors the tool carrier in various production stations along the production line and ensures precise positioning.



Assembly test with 3D camera

During final testing and prior to integrating the printed circuit board into the housing, the IVC-3D smart camera ensures that even the smallest components are mounted correctly both onto the printed circuit board and the housing. Errors are indicated immediately.



Protection of small presses

The miniTwin safety light curtain allows implementation of an economic, U-shaped set-up with bind-zone-free, over-corner fitting capability to protect the hazardous point. Combined with the Flexi Soft safety controller and certified function blocks, the press operates in automatic mode.

Worker guidance using pick-to-light light grids

The PLG automation light grid with integrated 360° LED leads the worker to the correct pickup shelf. The sender-receiver setup in the device and the reflector on the rear side ensure simple fitting and connection. Worker access is detected by the light grid and signaled to the control system.

Focus 6:
Dashboard assembly

Traceability of products in the production process

When installing instrument panels into the dashboards, comprehensive traceability and identification of the components is a complex task for the sensors. The CLV6xx laser-based bar code scanners can identify vehicle components like the dashboard with high scanning accuracy.

Thanks to the ID*pro* platform, a wide range of network integration is available (e.g., PROFINET, EtherNet IP as well as a common operating concept). The integrated cloning concept ensures high availability.

Mobile identification

The instrument panels are identified with IDM160 hand-held scanners. Their reconstruction algorithms reduce manual input. Codes are quickly identified with more than 500 scans per second. The IDM hand-held scanners are available with Bluetooth or WLAN and have PS/2, USB or RS-232 interfaces.


Product: CLV65x, see page 115


Product: IDM160, see page 123

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Subject to change without notice

Positioning the dashboard in the work station

The reliable, non-contact IME12 inductive proximity sensor signals the suspended conveyor when the dashboard has reached a working position in the station. Checking of the installation of the instrument panel then starts.

Checking the installation of the instrument panel

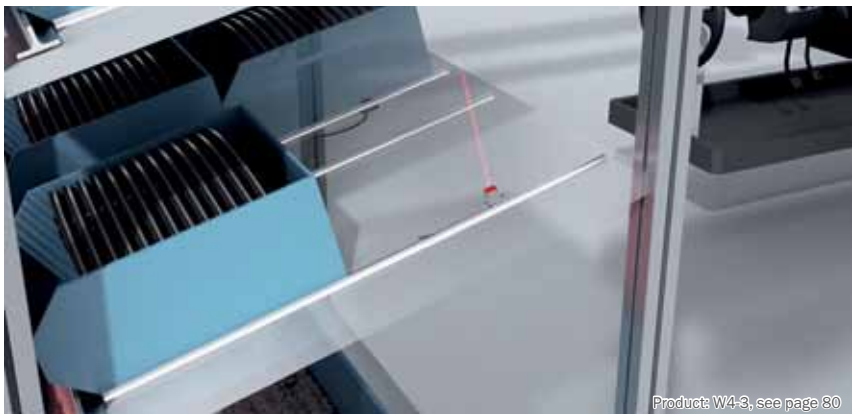
A quality check must be carried out on installed elements. Here, the Inspector vision sensor checks various features of the instrument panel, such as its position and the presence of small components.

Worker guidance at a small component shelf

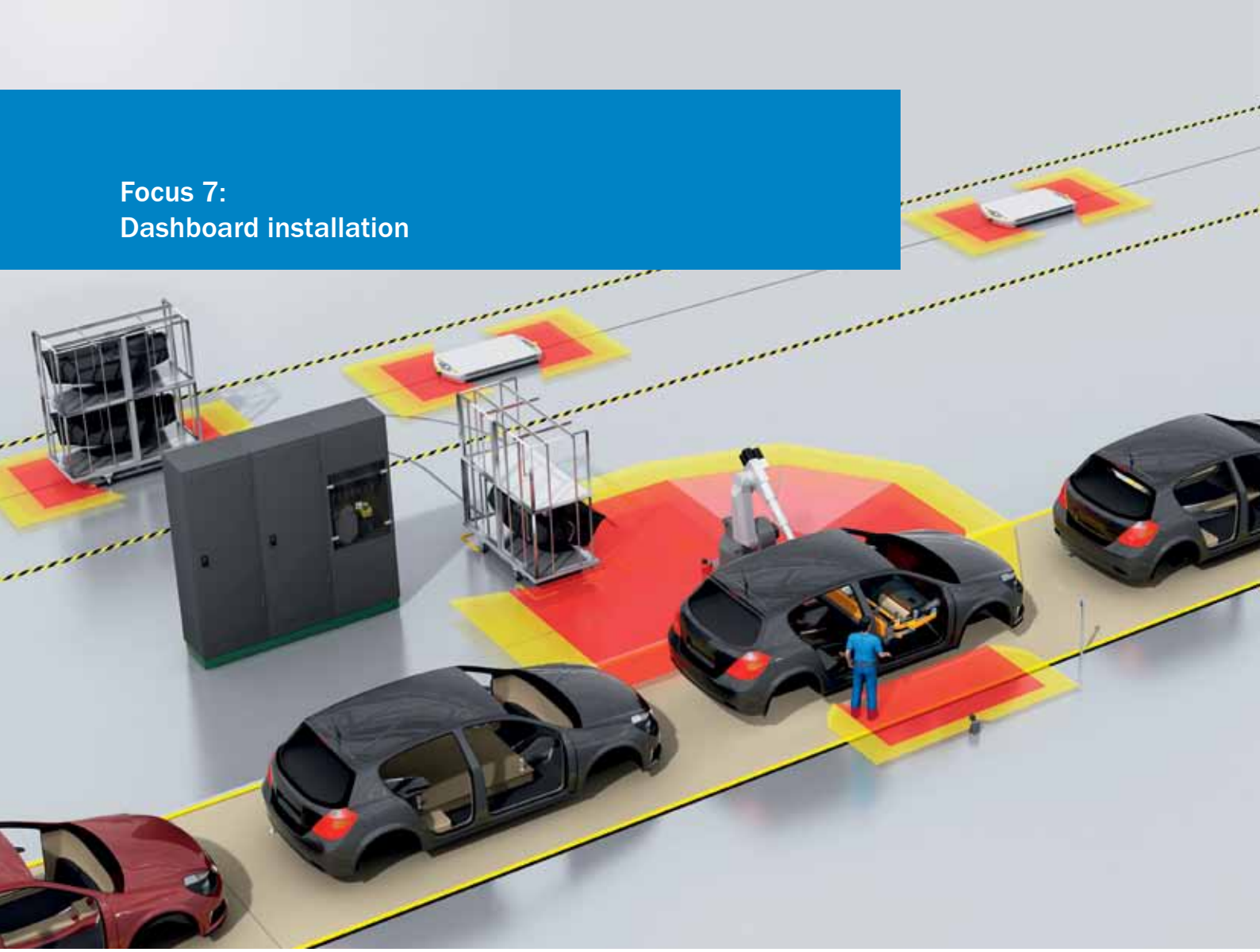
Pickup of small components from the shelf is implemented using the PLG automation light grid. It is equipped with an integrated 360° job LED and guides the worker to the correct pickup shelf.

Checking of storage space occupancy

In order to be able to signal empty shelves in the component rack, cylindrical photoelectric sensors or miniature photoelectric sensors are installed on the base of the shelves. The sensors are characterized by their small housings and wide variety of mounting options. This enables optimal, flash installation on the base.



Focus 7:
Dashboard installation



Collision prevention during pickup of the instrument panels

During final assembly of the panels, Dx50 or Dx35 distance sensors continuously measure the distance to the dashboard throughout the entire gripping process.
If a previously taught minimum distance to the dashboard is violated, the robot reduces its speed of movement.
This eliminates collisions between the component and the robot.

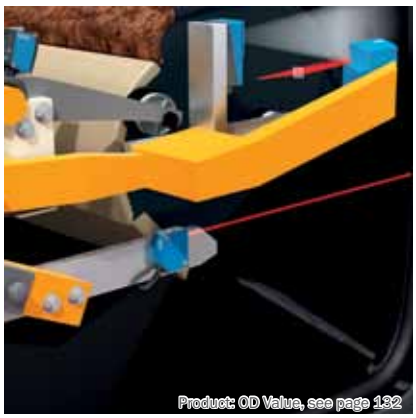
▼

Product: Dx35, see page 134

Precise distance measurement for robot guidance

When installing the dashboard, the OD Value displacement sensor positions the robot precisely. Simple sensor teach-in makes commissioning faster and more cost-effective. The compact, stand-alone design saves space and reduces the need for cabling.

▼


Product: OD Value, see page 132

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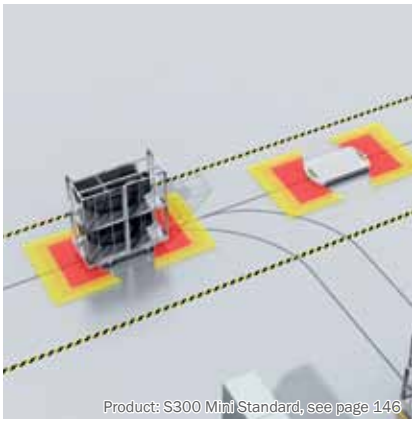
Subject to change without notice

Mobile hazardous area protection on transport vehicles

Flexible material transportation to the production line is carried out with automated guided vehicles (AGV). The S300 Mini safety laser scanner has a compact design, which allows perfect integration into small vehicles. The S300 Mini detects persons and objects that are in the path of an automated guided vehicle without contact. In this way, the mechanical damage experienced with switch panels and bumpers can be ruled out.



Inline quality testing in the position

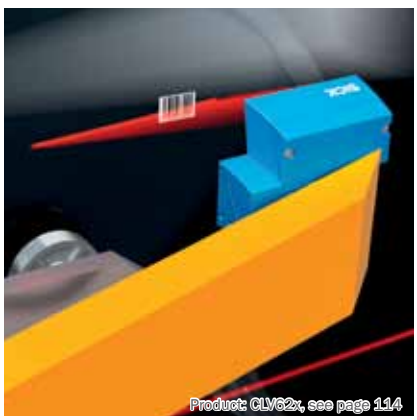
The Inspector vision sensor checks whether important labels (such as safety notes for airbags) are present and aligned correctly. The component to be tested is easily taught using a camera image and the relevant test features defined by the software.

Positioning the dashboard

For the robot to install the dashboard at the correct position in the car body, the PI50 Inspector vision sensor is taught a given characteristic shape in the body. When the robot approaches the position, the PI50 vision sensor detects the shape and outputs the correct data for positioning to the robot.

Traceability of products

The CLV6xx bar code scanner mounted on the group identifies the bar code located on the dashboard. This ensures that the correct dashboard with the equipment required by the customer is installed into the appropriate body. Full traceability is ensured.



Focus 8:
Windshield installation

Access protection

The windshield is installed fully automatically using robots. A person entering the cell must be detected reliably. Car bodies that move in must be able to pass unhindered. IQ40 inductive proximity sensors are used to detect the body. This activates the protective field in the S3000 safety laser scanner with the taught contour.

Additional safety locking devices, such as swing flaps, are not needed.

▼

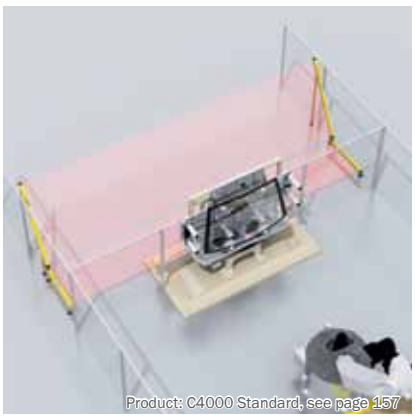
Product: S3000 PROFINET IO Advanced, see page 151

Hazardous point protection at a turntable

The area in front of the turntable is protected by a cascaded C4000 safety light curtain. The turntable stops as soon as the light curtain is interrupted.

A second light curtain performs presence detection. This increases productivity, as manual resetting is no longer required.

▼



Product: C4000 Standard, see page 157

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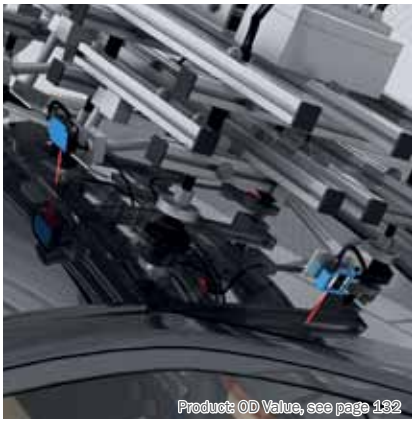
Subject to change without notice

Robot guidance for installation of windshields

The robot takes the windshield from the turntable. Four W12 small photoelectric sensors ensure that the gripper is positioned precisely and that the windshield is picked up without tension. The robot then travels to the approximate position over the windshield cutout in the body. It moves its gripper over the installation point until the OD short range distance sensors (displacement) register the exact distance. The windshield is then inserted precisely.



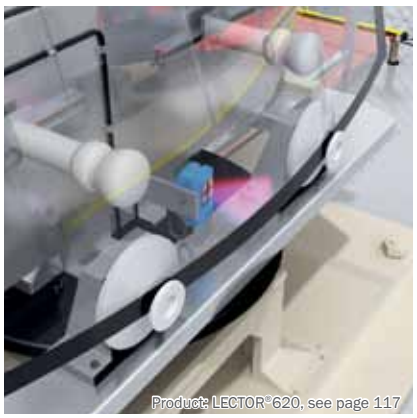
Fine positioning the body

The body must be precisely located at a predefined position for the robot to install the windshield.

The IQ80 inductive proximity sensor signals when the pusher plate approaches the defined position. This signal reduces the speed of the pusher plate. The WF*next* fork sensor detects that the exact position has been reached.

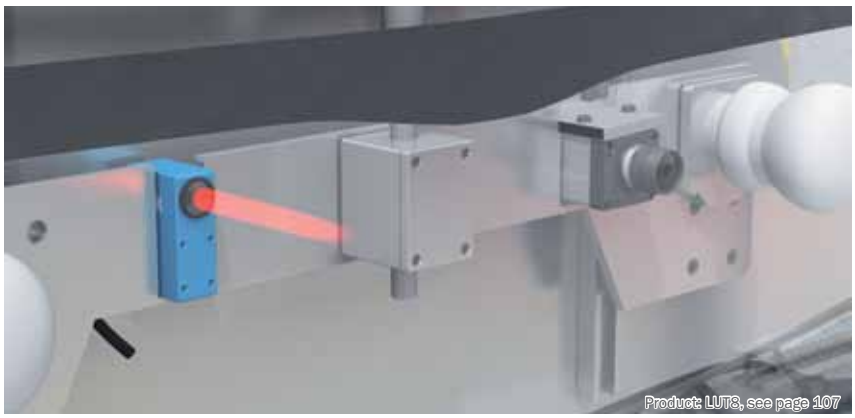
Code identification on windshield

Prior to installation, it must be checked that the correct windshield has been selected for the relevant type of vehicle. The LECTOR®620 image-based code reader reads the 2D code applied to the windshield and forwards the signal to start the installation process to the robot controller.

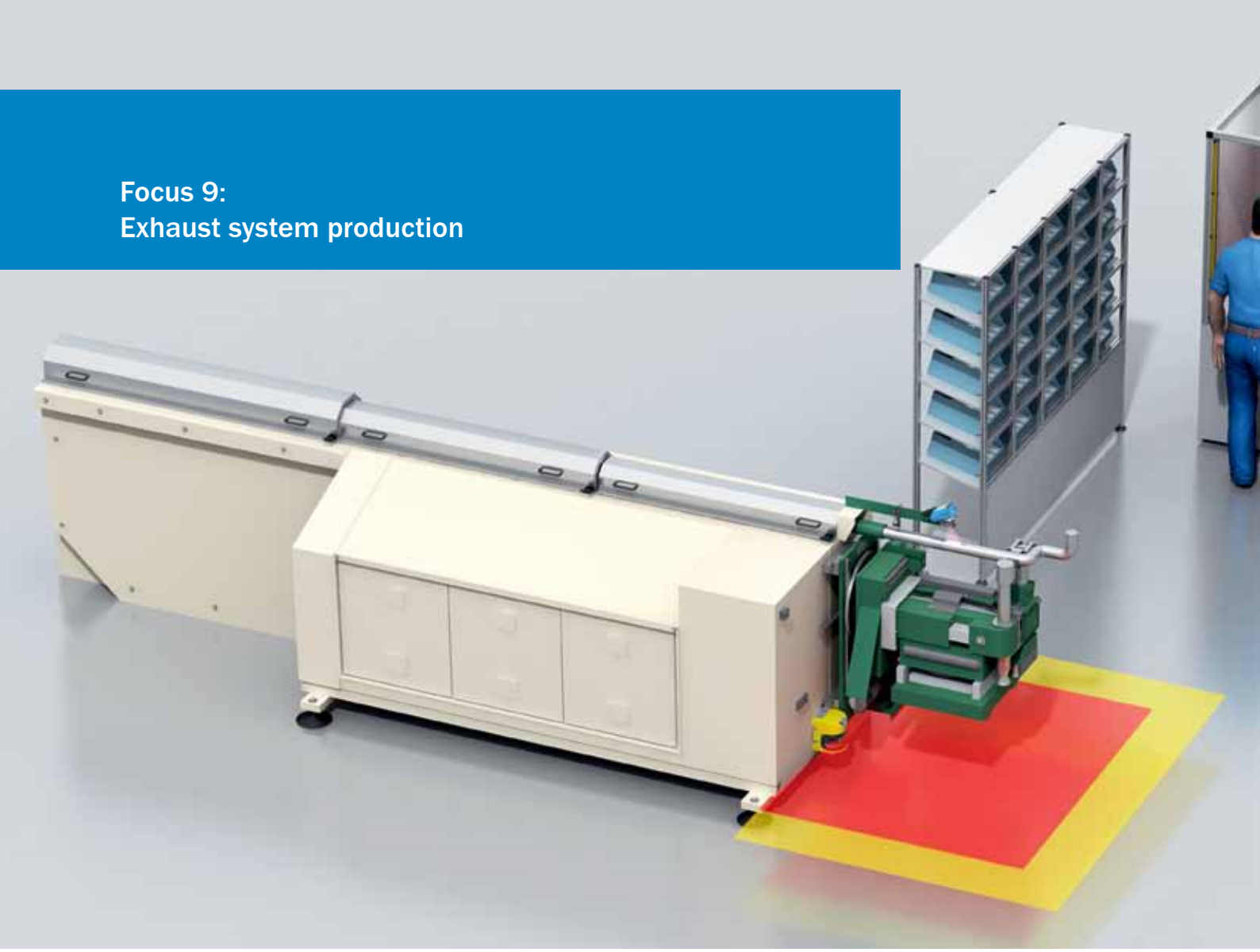


Quality checking the windshield

Before the windshield is installed, an additional check must be carried out to establish that it has the desired properties. The IVC-2D smart camera checks whether the windshield has a heating wire. The LUT luminescence sensor detects whether a protective coating against UV light is present. The UV-sensitive LUT sensor is calibrated so that the path of the sensor beam goes through the windshield onto the mark. If the windshield is not coated, the beam can detect the mark through the glass unhindered. If the glass has a UV coating, on the other hand, the LUT beam is interrupted.



Focus 9:
Exhaust system production



Hazardous point protection at small presses

The miniTwin safety light curtain protects the access to the small press. Thanks to its small size, variable fixing concept and avoidance of blind zones, it ideally matches the machine design.

In combination with the Flexi Classic safety controller, it is easy to configure and integrate further safety functions like the ES21 emergency stop pushbutton into the machine.

▼

Product: miniTwin4, see page 154

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Reliable component detection for direct part marking

Pipes have a 2D code for identification purposes. This code is dot-peened onto the surface to prevent it becoming damaged and illegible in further work steps. The LECTOR®620 image-based code reader with diffusor lighting reliably reads the code on curved and reflective surfaces.

Non-contact detection

The IME12 inductive proximity sensor signals when the pipe is at the correct position to start the processing sequence.
The sensor is non-contact and therefore free of wear.

Dynamic hazardous area protection

The hazardous movement of the machine and the material being formed present a hazard to an operator at a tube bending machine. This hazardous area is protected by an S3000 safety laser scanner. Protective and warning fields S3000 according to the dangerous movement are configured in the S3000.

These are switched via the machine controller.

Monitoring the protective hood

The protective hood above the pipe feeder on the bending machine is monitored using the non-contact RE13 magnetic safety switch. Its wide response range compensates the RE13 position tolerances and door offset.

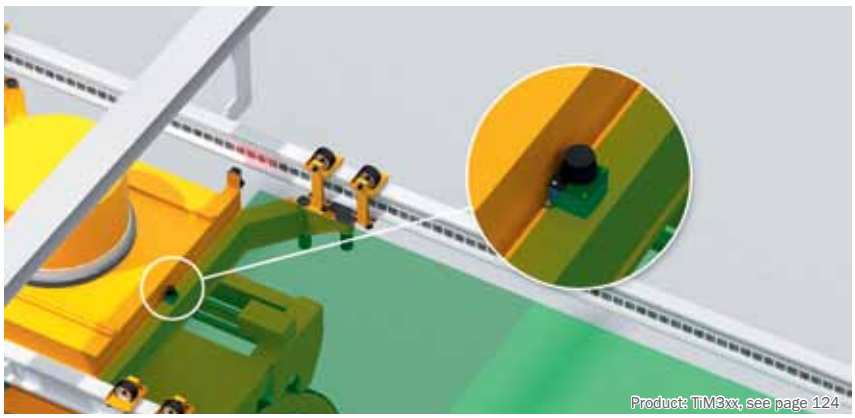
Focus 10:
Marriage line

Collision protection on electric overhead conveyors

The marriage joins the body and the chassis (including the power train). TiM3xx laser sensors ensure the correct distance between the overhead conveyors.

The TiM3xx has three switching points per field set that can be assigned to specified distances.

As a result, two warning zones can be used to decelerate and stop the overhead conveyors.



Vertical positioning in the electrical overhead conveyor

The electrical overhead conveyor brings the bodies to designated workplaces. The BCG wire draw encoder ensures that the height position is approached accurately. Eliminating the coupling between the encoder and mechanism enables highly accurate measurements.

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Identification of the mounting skid

Before the marriage, correct chassis is checked including power train is connected to the car body. To do this, the RFH630 Interrogator identifies an RFID transponder installed permanently in the mounting skid. The information stored in the RFID transponder enables unique assignment of the mounting skid to the corresponding production job.

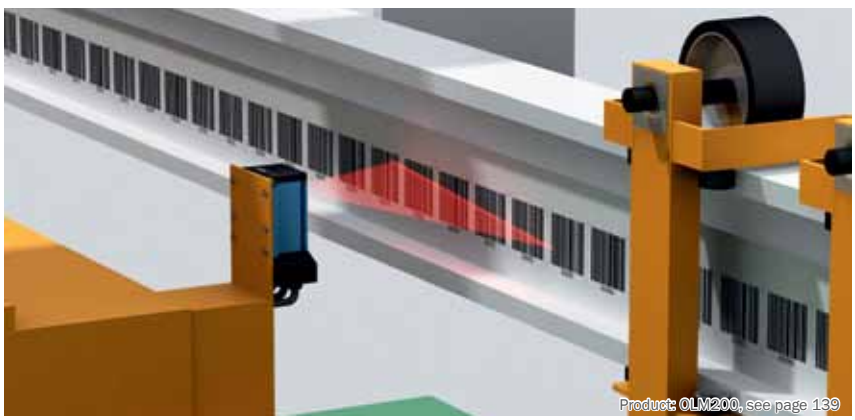
Positioning the height of the scissor lift table

The scissor lift table brings the power train with the chassis to the correct height position for installation on the car body.
The compact BKS wire draw encoder measures the height accurately and passes this on the scissor lift table controller table via the SSI interface.

Linear positioning in electrical overhead conveyors

The OLM200 linear measurement sensor enables highly precise and slip-free determination of the position of the individual overhead conveyors. It can calculate the position of the overhead conveyors. from the reference bar code paths at a speed of up to 10 m per second.

The complete elimination of moving parts and the rugged metal housing enhance the availability and service life of the sensor. A wide variety of versions is available for field buses such as PROFIBUS, PROFINET, EtherNet/IP, CANopen, SSI and RS-485.



Mobile hazardous area protection

A S3000 Professional and S3000 Remote safety laser scanner is used to protect the automated guided vehicle with a scissor lift table against collision with persons, vehicles and material. The configurable protective and warning fields are activated dynamically according to the speed or curve traveled.

Focus 11:
Wheel assembly

Traceability of wheels

The omni-directional OPS400 code reading system identifies wheels prior to automatic assembly and ensures that the correct wheels are mounted on the vehicle. The OPS400's two scan lines move crosswise over the wheel and thereby detect the bar code independently of its orientation.

Automatic wheel separating on conveyor belts

The WLR zone control sensor controls the wheel feed to the assembly station. The sensor is designed for so-called "Accumulating roller conveyors". It is equipped with solenoids. The conveyor is divided into segments with a WLR with adjacent reflectors at the end of each section. The internal logic of the sensors ensures a controlled material flow to start or stop wheel feeding to the defined segments.

Product: OPS400, see page 126

Product: WLR, see page 104

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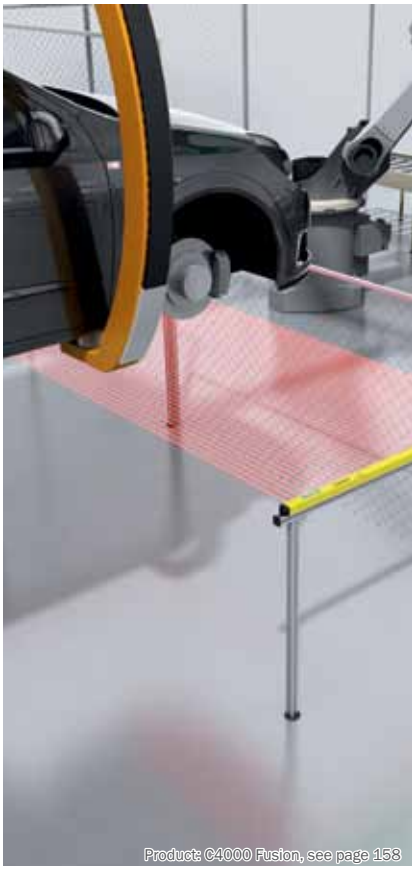
Subject to change without notice

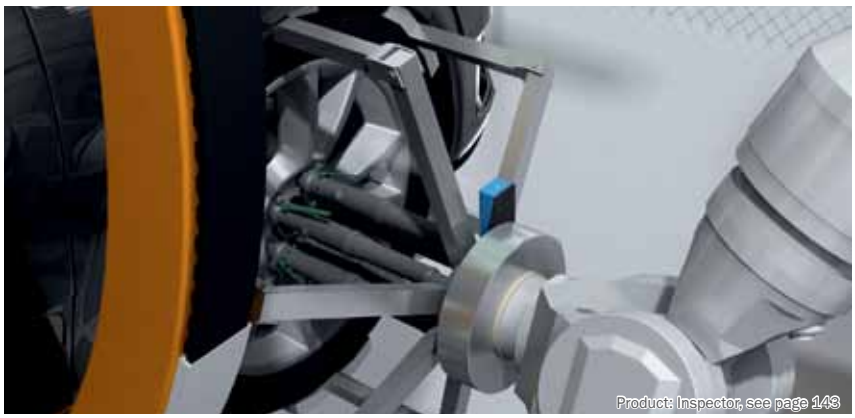
Rugged hazardous area protection

To protect the crushing/pinching point between the car body and a fence, the C4000 safety light curtain is mounted horizontally below the entry area. Interfering objects that hang down from the vehicle (for example, installation worksheets, cables, etc.) can be hidden easily by reducing the resolution and do not result in a deactivation. Persons, on the other hand, are safely detected.



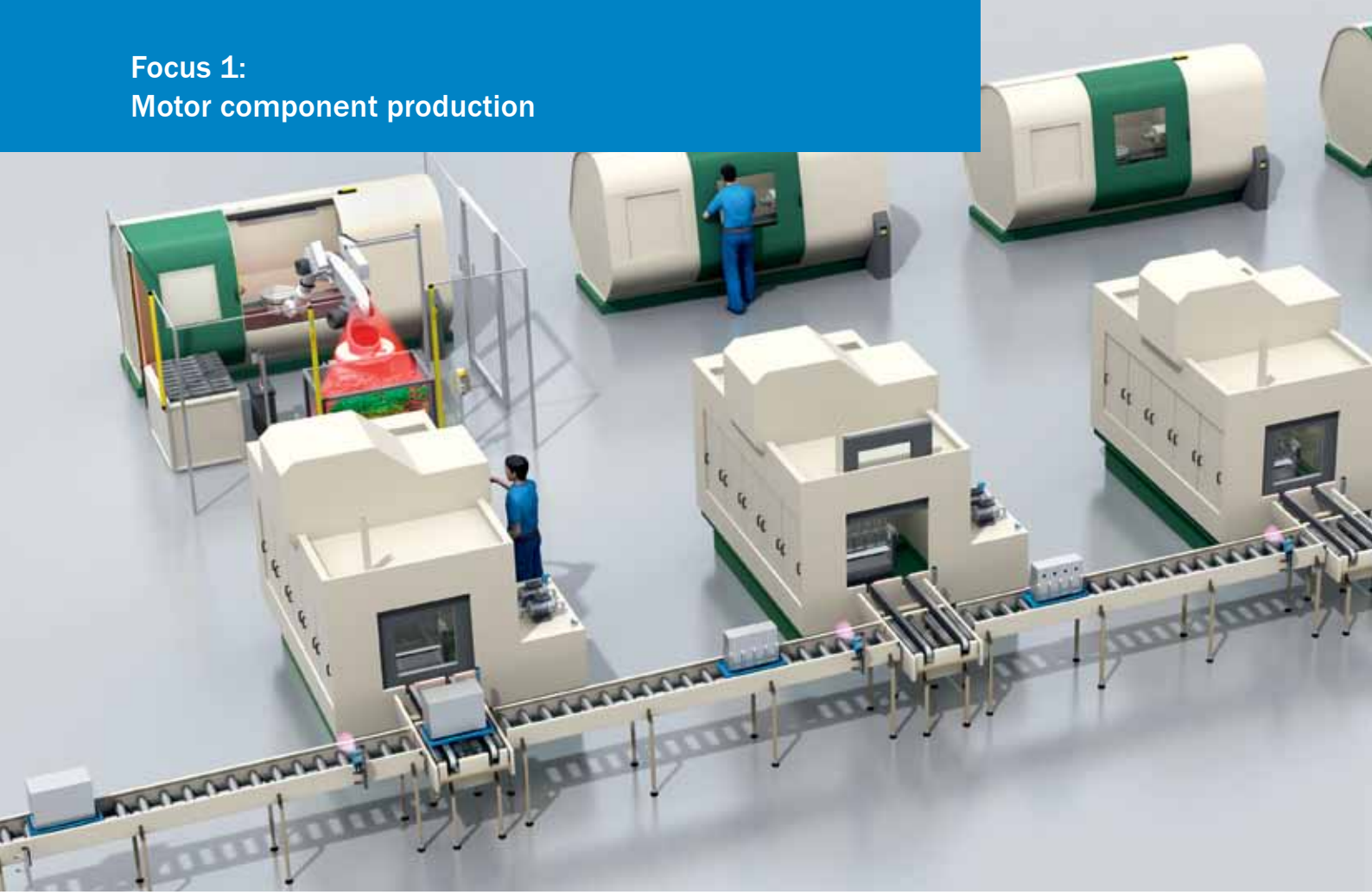
Sensor-controlled robot guidance

The unique gripping position of the tire is transferred to the robot by the Inspector PI50 vision sensor. Taught-in patterns for screw holes in the wheels are precisely detected with a high level of repeat accuracy. As a result, the robot is able to approach the defined position with the utmost precision. The information can be sent to the robot control for positioning either via digital outputs or per Ethernet protocol.



Powertrain

Focus 1:
Motor component production

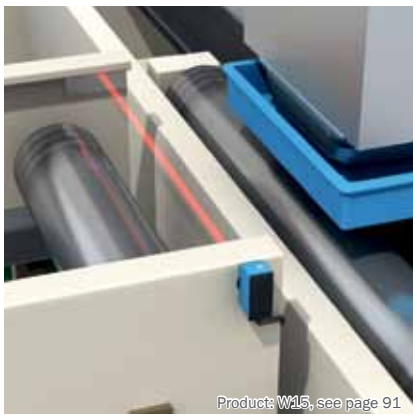


Transport control on the conveyor system
The presence of material carriers in the segments of the conveyor system must be reliably detected for transport control. This is done using the WL15 small photoelectric sensor. It is designed for flexible mounting using M18 front mounting plastic nuts and snap ring or side attachment.

Optical inline quality checking
For full quality checking, correct processing of the motor block must be checked. The Inspector vision sensor checks that the holes and cutouts are present and correct. The precise light spot of the WT12L-2 reflection photoelectric sensor detects even the smallest holes on the motor block.

Identification of the motor block
The required information for product tracing is contained in the dot-peened 2D codes on the cylinder heads. The codes are located on the bright polished surface and must nevertheless be identified. The LECTOR®620 image-based code reader performs this task reliably.

▼



Product: W15, see page 91

▼

Product: W12-2Laser, see page 84

▼

Product: LECTOR®62x, see page 117

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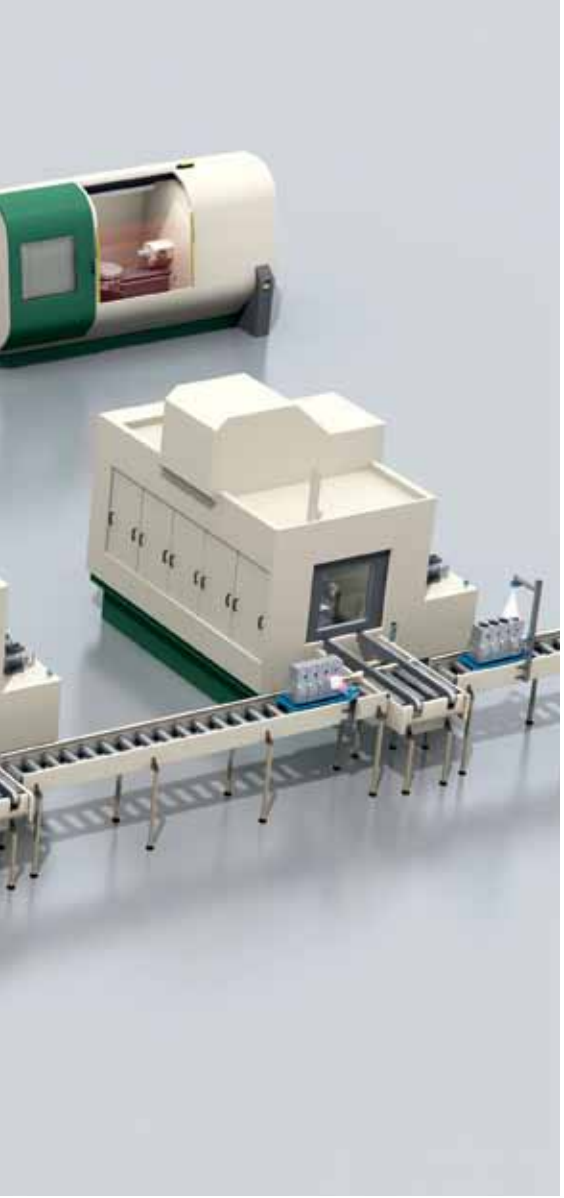


Hazardous point protection

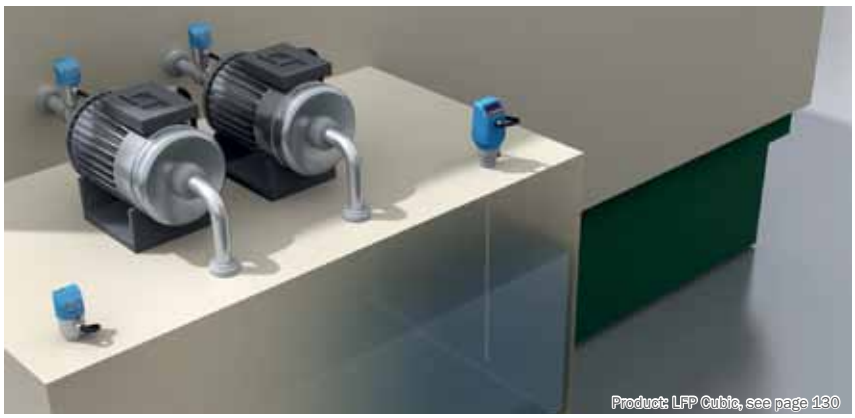
At the machine tool, it must be checked whether door of the machine housing is closed. The i10 Lock safety locking device performs this task reliably. The door opening is monitored using a miniTwin safety light curtain when closed. The narrow design of the light curtain ideally matches the machine design and protects it against contamination and damages.

Precise component measurement

Quality checking of the connecting rod is carried out directly at the set down position. Two OD short range distance sensors (displacement) determine the difference between set and actual values of the connecting rod and signal deviations in height.
The OD has an integrated evaluation unit. Digital signals handle system integration. The IVC-2D smart camera performs an additional quality test. The shape of the current connecting rod is compared to the dataset taught for an ideal connecting rod.

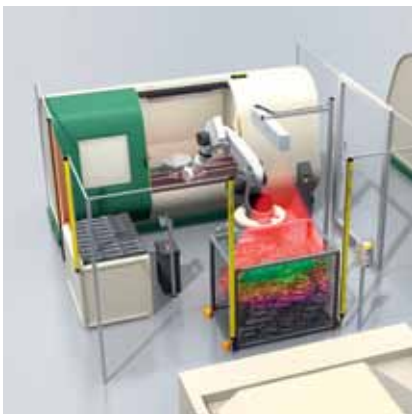
Monitoring the cooling lubricant

For complete process control, the fill level, pressure and temperature of the cooling lubricant must be monitored. The LFP Cubic level sensor is used to measure the level. Its TDR technology enables the LFP to sense the fill level independent of the medium, installation conditions and tank material. Continuous limit and level applications are possible using only one device. The PBS pressure switch performs pressure measurement after emptying the tank with a pump. The PBS is used to monitor and measure pressures in liquids and gases. The TBS temperature sensor signals any overheating of the cooling lubricant.



Part location in boxes

Connecting roads are delivered in boxes as bulk parts. They must be removed from the boxes and isolated for additional processing. The PLB vision system supplies the robot with the necessary information to take the parts out of the box individually. The connecting rods are then placed into the machine at the specified position and aligned accordingly.



Focus 2a:
Palletizing station

Access protection at roller conveyors

The motor blocks are transported to the automatic palletizer via roller conveyors.
The M4000 multiple light beam safety device with muting function to differentiate between people and machine reliably safeguards access to the conveyor system.

Access protection at a robot cell

Prior to accessing the robot cell, a stop request must be issued. Current processes are completed. The door is then unlocked and access permitted. When the door is open, the i10 Lock safety locking device prevents start-up of the system. All safety functions in the cell are performed by the Flexi Classic modular safety controller. Corresponding modules can be used to configure access protection for muting functions.

▼

Product: M4000 Advanced, see page 160

▼

Product: i10 Lock, see page 163

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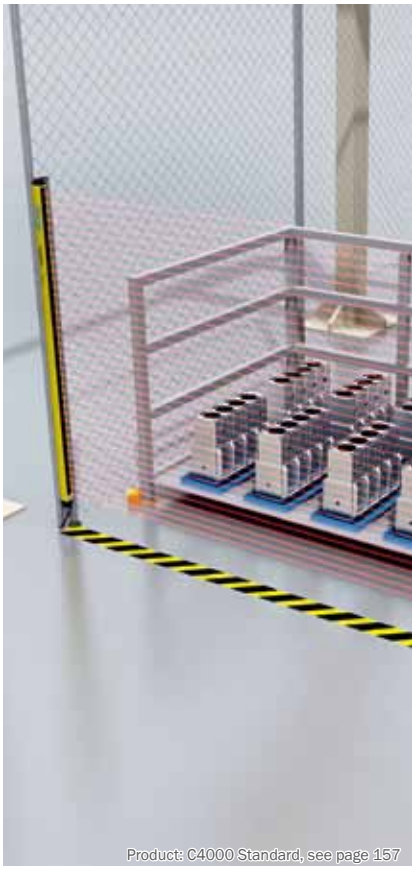
Hazardous area protection on rack station ▸
A fork lift truck replaces full racks with empty ones. Only when the fork lift truck exits the hazardous area, do the C4000 safety light curtains release the work area for automatic palletizing.



Robot guidance using laser measuring sensors
The gantry robot grips the motor block that arrive on the roller conveyor and places them onto the rack. The LMS400 laser measuring sensor measures the bright, partially sharp-edged surfaces of the motor blocks. The robot controller uses this data to calculate the gripping position of the motor block.
▾

Rack identification
The CLV6xx bar code scanner reads the identification number of the rack that contains the motor block pallets. This ensures traceablilty of the various batches. The CLV6xx receives the start signal for rack identification from the IQ40 inductive proximity sensor.
▾

Focus 2b:
Motor assembly

Mobile hazardous area protection and track guidance

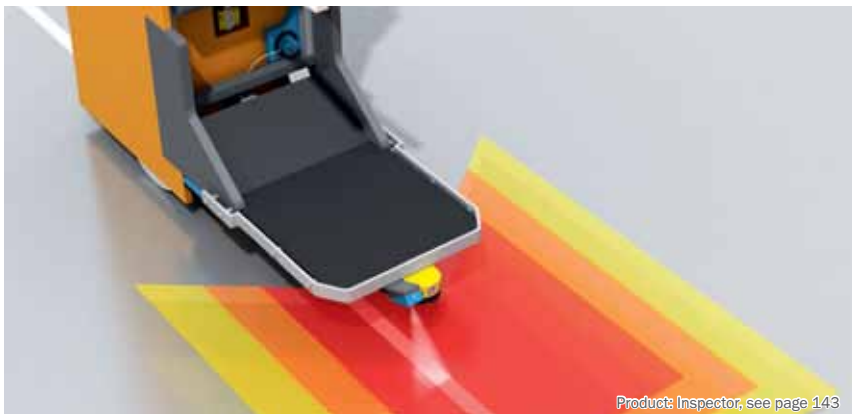
S300 Mini safety laser scanners protect automated guided vehicles (AGV) against collisions with persons, other vehicles and the materials on the floor in both directions of travel. Protective and warning fields are configured for different speeds, both for the forward and backward motions for various speeds are activated as appropriate using the Flexi Soft safety controller.

The PI50 Inspector vision sensor follows the marked track and outputs signals to the vehicle control.

Measurement of the vehicle speed

The route of the automated guided vehicle (AGV) is stipulated by the higher-level control system. The DFS60 incremental encoder determines the speed of the wheels of the AGV. This is information is used to control the safety laser scanners.

▼



Product: Inspector, see page 143

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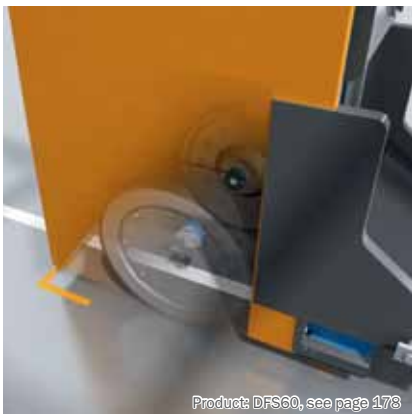

Product: DFS60, see page 178

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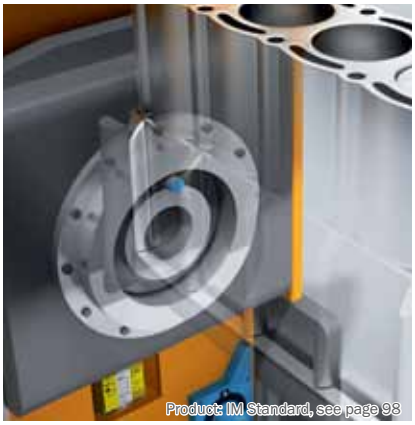
Monitoring the adhesive layer

The glue applied to the motor parts is enhanced with luminophores, which the I40 LUT Inspector vision sensor detects. As a result, it is possible to detect whether enough glue has been applied at the correct point.

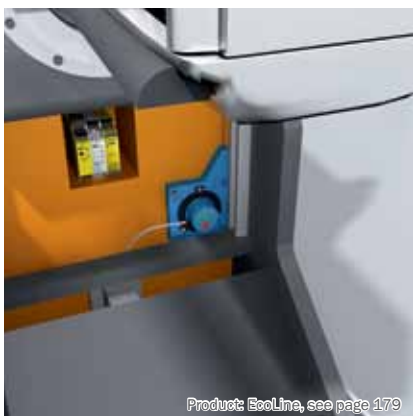
Checking presence

The IME12 inductive proximity sensor checks that the motor block is present and monitors correct pickup by the automated guided vehicle (AGV). The precise switching point ensures that the motor block is located at the correct position and does not slip during transport in the AGV.



Measurement of the fork lift height

The BCG08 EcoLine wire draw encoder determines the lift height of the automated guided vehicle and forwards this to the vehicle controller. The BCG08 EcoLine is available with different interfaces and can be integrated easily into all major industrial networks.



Work station identification

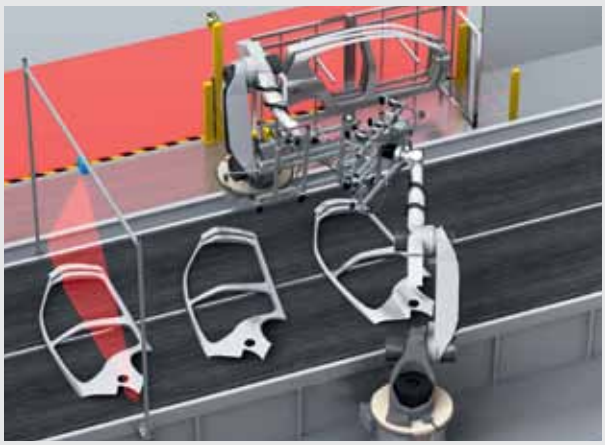
An automated guided vehicle (AGV) travels to a variety of work stations. The RFH620 RFID interrogator reads the ID number of the work station coded in the RFID transponder and forwards this to the system. The RFID technology is non-contact and therefore free of wear even in rough environments.

Intelligent sensors for efficient use of robots

SICK offers a wide range of innovative, optical sensors with a variety of measuring technologies, such as triangulation, time-of-flight measurement, digital image processing or 3D laser triangulation. This wide range offers a high degree of flexibility for generating, preparing and transferring measured data and thus provides an optimal solution to any given requirements for robot guidance.

- **Comprehensive industry expertise:**
  prerequisite for the solution of complex tasks in your industry
- **Large selection of measurement technologies:**
  brings high flexibility for application solutions
- **Sensors with intelligent algorithms:**
  measurement data are determined quickly and independently of external influences

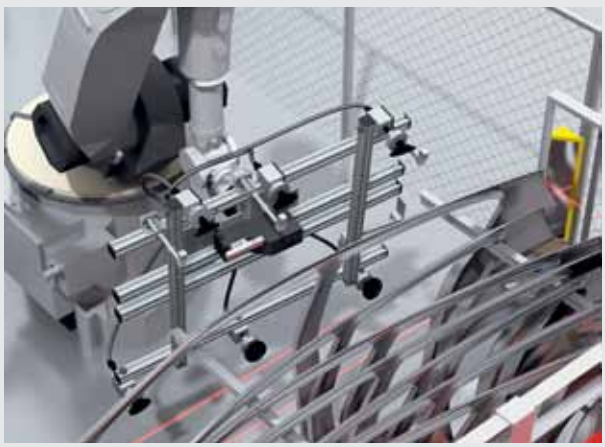
Cover a large measuring range with just one sensor



Position detection of objects

The information from a laser measuring sensor is used to calculate the position of objects on the conveyor. This allows the robot to align its gripper. The intelligent laser measurement technology allows coverage of a wide measuring range up to 3 m using only one sensor. This enables the detection of larger raw body parts, without interference among sensors and without the need for costly data link.

Determining the grip position for an object in a defined area



Pick up of body in white parts for mounting

The robots grip the parts autonomously out of the rack. The vision system finds the gripping position and guides the robot to the corresponding location, regardless of the position tolerances in rack. The parts are inserted into the machine with pin-point accuracy for additional processing.
Device replacement is an easy operation: the vision system has integrated tools for calibration and communication with the robot. The calibration image is used to determine the robot position.

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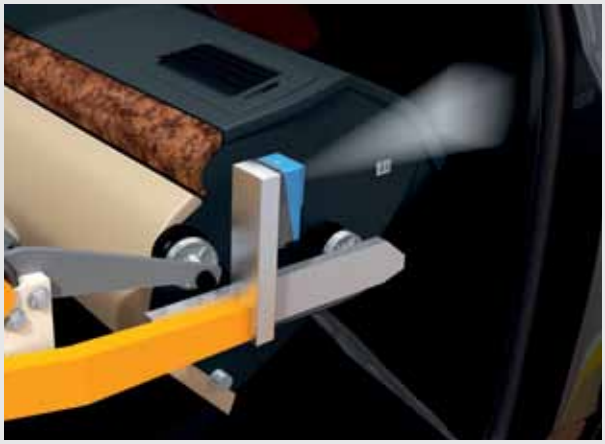
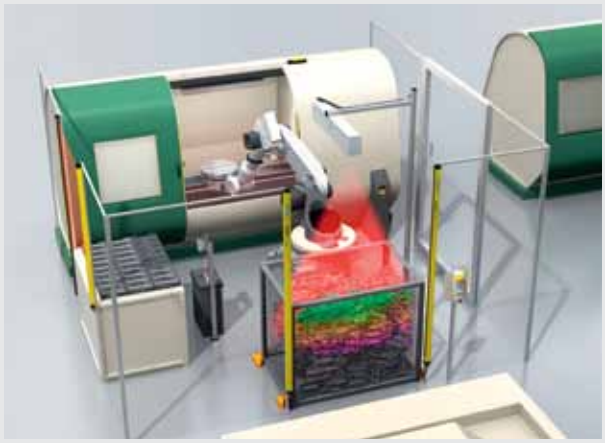
Flexible fine positioning without interrupting the process



Installing the dashboard

The vision sensor guides the robot to the exact installation position and compensates for deviations between the body and the pusher plate.
Flexible sensors enable the robot to correct the current installation position using the previously taught optimal installation position. It is not necessary to interrupt the process.
A variety of object types (e.g., holders for dashboards) can be taught and detected.

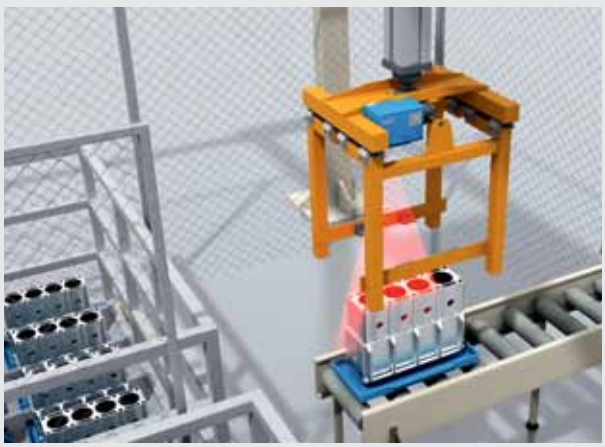
Intelligent navigation support for automated component handling



Localization of parts in boxes

Connecting rods are delivered in boxes as bulk parts. The intelligent software of the vision system compares the contents of the box with the CAD data taught, detects the connecting rod that can gripped best and transfers the relevant position data to the robot.
Parts that are too close to the edge are marked as ungrippable. This prevents damage to the gripper and to the box.
As a result, boxes with parts can be emptied automatically.

Powerful algorithms for fault-free detection



Automatic palletizing of motor blocks

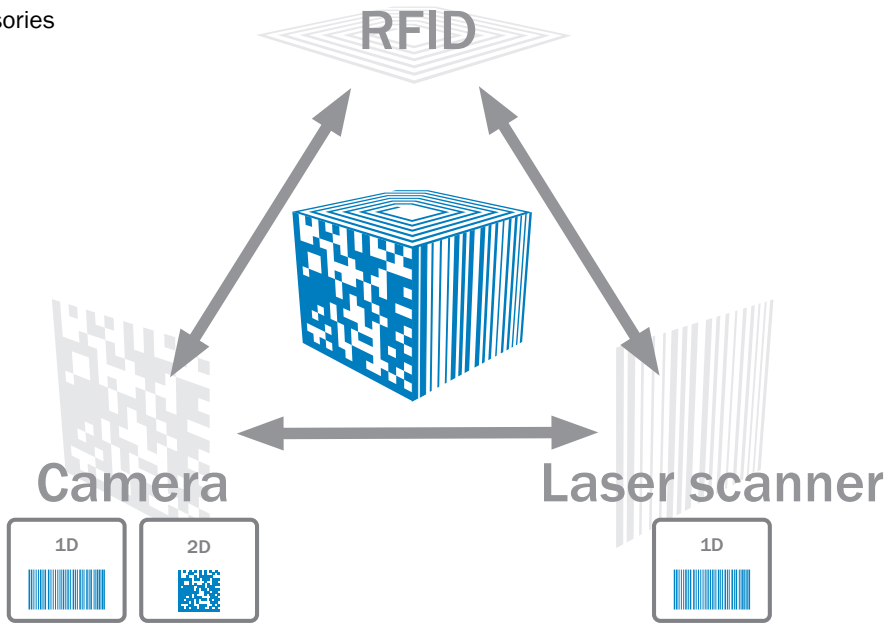
The laser measuring sensor transfers the data for the robot control, independent of optical interference (e.g., varying daylight or nighttime conditions). The sensor is insensitive to colored backgrounds and is therefore also able to detect highly reflective surfaces. By using the patented Fast Signal Processing (FSP) based on phase time-of-flight measurement, it is able to detect even the smallest details at high speed.

Future-proof investment in the right solution

IDpro represents SICK's expertise in all three automatic identification technologies: laser scanner, camera and RFID. All IDpro devices are compatible and exchangeable via our uniform IDpro platform. To help you choose the ideal identification technology, we will provide you with comprehensive, objective information.

IDpro – At A Glance

Interchangeable:
Identification solution with
- Identical wiring technique
- Identical user interface
- Identical accessories



IDpro – Your Benefits

- Security of investment thanks to the option of switching between technologies with the same connectivity
- Reduced integration effort due to uniform IDpro platform
- Easy commissioning thanks to the standardized operating concept with a single operation software
- Fast and flexible exchange thanks to standardized connectivity
- Highest system availability through storage of parameters when replacing devices
- Low storage effort, low storage costs due to reduced component variety and accessory parts
- Cross-technology, comprehensive and objective information from a single source

www.sick-idpro.com

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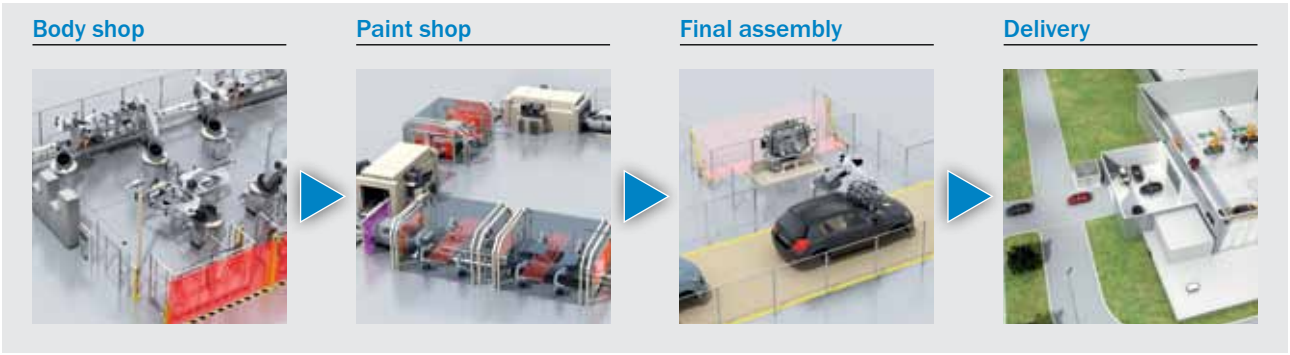
From the body shop to final delivery: clear-cut, reliable identification of the vehicle over the entire production process.

The greater the individuality of the vehicle equipment, the more information the automobile manufacturer must collect, process and evaluate during production. RFID solutions from SICK bring new potential for controlling and tracking complex processes.



RFID Interrogator:
RFU630 with UHF technology

Transponder label:
Rugged, temperature-stable and low-cost RFID label

Car body identification from SICK – Your benefits:

Process safety:
- Highest reading speeds
- Consistent technology simplifies maintenance

Cost saving:
- Eliminates data transfer and media changes between systems
- Prevents mistaken vehicles due to system changes in the production

Transparency:
- Safe identification with a transponder label directly on the vehicle
- Flexible utilization of transponder for reading and writing

Easy to retrofit:
- Integrates into existing production system and replaces existing technologies

Versatile product range for industrial automation

From the simple acquisition task to the key sensor technology in a complex production process: with every product from its broad portfolio, SICK offers a sensor solution that best combines cost effectiveness and safety.

www.sick.com/products

Photoelectric sensors

- Miniature photoelectric sensors
- Small photoelectric sensors
- Compact photoelectric sensors
- Fiber-optic sensors and fibers
- Cylindrical photoelectric sensors
- Zone control

Proximity sensors

- Inductive proximity sensors
- Capacitive proximity sensors
- Magnetic proximity sensors

Magnetic cylinder sensors

- Analog position sensors
- Sensors for T-slot cylinders
- Sensors for C-slot cylinders
- Sensor adapters for other cylinder types

Identification solutions

- Bar code scanners
- Image-based code readers
- Hand-held scanners
- RFID

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Detection and ranging solutions

- Laser measurement technology

System solutions

- Volume measurement systems
- Code reading systems
- Dimension weighing scanning systems

Fluid sensors

- Level sensors
- Pressure sensors
- Flow sensors
- Temperature sensors

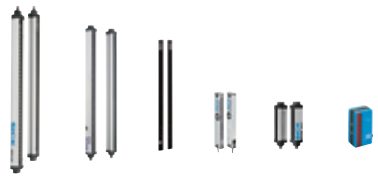
Registration sensors

- Contrast sensors
- Color sensors
- Luminescence sensors
- Fork sensors
- Array sensors

Distance sensors

- Short range distance sensors (displacement)
- Mid range distance sensors
- Long range distance sensors
- Linear measurement sensors
- Ultrasonic sensors
- Double sheet detector
- Optical data transmission
- Position finders

Automation light grids



- Advanced automation light grids
- Standard automation light grids
- Smart light grids

Vision

- Vision sensors
- Smart cameras
- 3D cameras
- Vision systems

Opto-electronic protective devices

- Safety laser scanners
- Safety camera systems
- Safety light curtains
- Multiple light beam safety devices
- Single-beam photoelectric safety switches
- Mirror and device columns
- Upgrade kits

Safety switches

- Electro-mechanical safety switches
- Non-contact safety switches
- Safety command devices

sens:Control – safe control solutions

- Safety relays
- Safety controllers
- Network solutions

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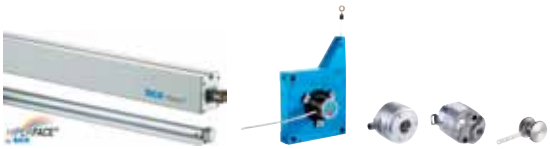
Motor feedback systems

- Interfaces: incremental, HIPERFACE® and HIPERFACE DSL®
- Safety motor feedback systems
- Rotary and linear motor feedback systems for asynchronous, synchronous motors, and linear motors

Encoders



- Rotary incremental encoders
- Rotary absolute encoders
- Wire draw encoders
- Absolute linear encoders

Analyzers and systems

- Gas analyzers
- Dust measuring devices
- Analyzer systems
- Liquid analyzers
- Data acquisition systems
- Tunnel sensors

Gas flow measuring devices

- Gas flow meters
- Mass flow meters
- Volume flow meters

At a glance

- Best-in-class performance in terms of background suppression, detection of critical objects, and immunity to ambient light
- Quick and easy commissioning using a precise 5-turn potentiometer, control cable or teach function
- Best background suppression in its class
- PinPoint LED for the brightest light spot in its class
- IO-Link (depending on type)

Your benefits

- Cost-effective machine integration, even in tight spaces
- Application versatility due to reliable detection of shiny, transparent or jet-black objects
- IO-Link or teach-in pushbuttons enable sensors to be quickly commissioned. This saves time and inconvenience later on
- Robust mounting due to M3 threaded metal sockets for a long service life
- High immunity to ambient light reduces downtime caused by false trips
- Clearly visible light spot simplifies sensor alignment
- Minimal maintenance thanks to high-performance sensor for challenging object detection

→ **www.mysick.com/en/W4-3**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/W4-3

- **Housing material:** Plastic
- **Switching output:** PNP

Sensor principle	Detection principle	Sensing range, max.	Switching mode	Setting	Connection	Model name	Part no.
Photoelectric proximity sensor	Background suppression	3 mm ... 50 mm [1]	Light-switching	Adjustable, potentiometer 5 revolutions	M8 plug, 4-pin	WTV4-3P2271	1046644
		4 mm ... 150 mm [1]			M8 plug, 3-pin	WTB4-3P2161	1028099
Photoelectric retro-reflective sensor	Dual lens	0.01 m ... 4 m [2]	Light-/dark-switching	None/fixed	M8 plug, 4-pin	WL4-3P2230	1028147

[1] Object with 90% remission (based on standard white to DIN 5033).
[2] PL80A.

Accessories

Accessory category	Brief description	Dimensions (L x W x H)	Material	Model name	Part no.
Mounting brackets/ plates	Mounting bracket	–	Stainless steel 1.4571	BEF-W4-A	2051628
				BEF-W4-B	2051630
Reflectors	Reflector, rectangular	15 mm x 38 mm	PMMA/ABS	PL20A	1012719

At a glance

- Best background suppression sensor in its class
- Photoelectric retro-reflective sensor for transparent objects reliably detects all known objects
- Universal use of PinPoint technology in all models
- BGS proximity sensor with laser-like light spot for precise detection tasks
- Reliable setting via 5-turn potentiometer, teach-in pushbutton, teach-in via cable or IO-Link

Your benefits

- Application versatility due to reliable detection of shiny, transparent or jet-black objects
- IO-Link or teach-in pushbuttons enable sensors to be quickly commissioned. This saves time and inconvenience later on
- Very simple and fast alignment as the sharp and intensive light spot is highly visible, even in bright light conditions, thanks to PinPoint technology
- Robust mounting due to M3 threaded metal sockets for a long service life
- BGS sensors with a laser-like light spot reduce costs and eliminate the need for additional protective measures by replacing laser sensors

→ **www.mysick.com/en/W4S-3**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/W4S-3

- **Housing material:** Plastic
- **Switching output:** PNP
- **Connection:** M8 plug, 4-pin

Sensor principle	Detection principle	Sensing range, max.	Switching mode	Setting	Model name	Part no.
Photoelectric proximity sensor	Background suppression	4 mm ... 150 mm [1]	Light-switching	Adjustable, teach, cable	WTB4S-3P2264	1042034
		4 mm ... 120 mm [1]	Light-/dark-switching	Adjustable, potentiometer 5 revolutions	WTB4S-3P2231	1042057
Photoelectric retro-reflective sensor	Autocollimation	0 m ... 4 m [2]	Light-/dark-switching	None/fixed	WL4S-3P2230	1042066

[1] Object with 90% remission (based on standard white to DIN 5033).

[2] PL80A.

Accessories

Accessory category	Brief description	Dimensions (L x W x H)	Material	Model name	Part no.
Mounting brackets/ plates	Mounting bracket	–	Stainless steel 1.4571	BEF-W4-A	2051628
				BEF-W4-B	2051630
Reflectors	Reflector, rectangular	15 mm x 38 mm	PMMA/ABS	PL20A	1012719

At a glance

- PinPoint LED for an extra bright, precise light spot
- Robust metal inserts with inner thread
- SICK ASIC technology - the result of decades of experience with photoelectric sensors
- Large, user-friendly setting screws
- Bright, large-sized indicator LEDs
- IP 67 enclosure rating

Your benefits

- Easy alignment and precise object detection due to a highly visible PinPoint light spot
- Quick and easy mounting and high durability due to threaded metal inserts
- SICK-ASIC technology provides high performance and excellent reliability
- Easy to adjust due to large, user-friendly setting screws
- Easy to monitor due to extra bright, large-sized indicator LEDs
- Easy installation with SICK accessories

→ **www.mysick.com/en/G6**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/G6

- **Switching mode design:** PNP
- **Switching mode:** Light-/dark-switching
- **Connection:** M8 plug, 4-pin

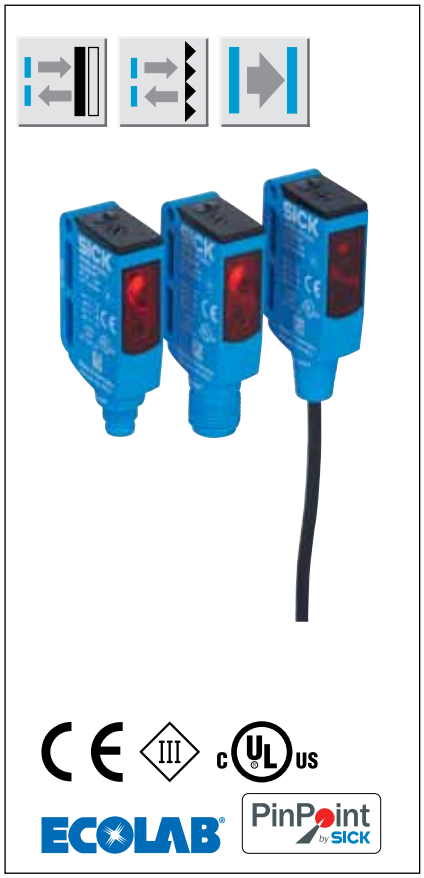
Sensor principle	Detection principle	Sensing range, max.	Model name	Part no.
Photoelectric proximity sensor	Energetic	≤ 300 mm [1]	GTE6-P4211	1050710
	Background suppression	5 mm ... 250 mm [1]	GTB6-P4211	1052438
Photoelectric retro-reflective sensor	Dual lens	≤ 7.2 m [2]	GL6-P4111	1050706
Through-beam photoelectric switch	–	0 m ... 15 m	GSE6-P4111	1052446

[1] Object with 90% remission (based on standard white to DIN 5033).

[2] PL80A.

Accessories

Accessory category	Brief description	Dimensions (L x W x H)	Material	Model name	Part no.
Terminal and alignment brackets	Universal terminal systems	–	Steel, zinc-coated	BEF-KHS-L01	2023057
Reflectors	Reflector, rectangular	37 mm x 56 mm	PMMA/ABS	PL40A	1012720



At a glance

- High performance in ultra-robust VISTAL™ housing
- PinPoint LED for highly visible and precise light spot
- Two emitter LEDs for best-in-class background suppression
- Variable mounting with M3 or M4 hole pattern
- Wide range of facilities for connecting

Your benefits

- Robustness with the VISTAL™ housing
- Best-in-class performance
- Wide variance in connection, mounting, and optics

→ **www.mysick.com/en/W9-3**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/W9-3

- **Switching mode:** Light-/dark-switching
- **Connection:** M12 plug, 4-pin

Sensor principle	Detection principle	Sensing range, max.	Switching output	Setting	Model name	Part no.
Photoelectric proximity sensor	Background suppression	20 mm ... 350 mm [1]	PNP	Adjustable, potentiometer 5 revolutions	WTB9-3P2461	1049049
			NPN		WTB9-3N2461	1049053
Photoelectric retro-reflective sensor	Autocollimation	0 m ... 4 m [2]	PNP	None/fixed	WL9-3P2430	1049062
			NPN		WL9-3N2430	1049073
Through-beam photoelectric switch	–	0 m ... 10 m	PNP		WSE9-3P2430	1049077
			NPN		WSE9-3N2430	1049080

[1] Object with 90% remission (based on standard white to DIN 5033).
[2] PL80A.

Accessories

Accessory category	Brief description	Dimensions (L x W x H)	Material	Model name	Part no.
Mounting brackets/plates	Mounting bracket	–	Steel, zinc-coated	BEF-WN-W9-2	2022855
Reflectors	Reflector, rectangular	37 mm x 56 mm	PMMA/ABS	PL40A	1012720

At a glance

- Best-in-class laser performance in a metal housing
- Teflon® coating available
- Precise autocollimation optics
- Adjustable focus on photoelectric retro-reflective sensors
- High switching frequency of 2.5 kHz
- Connection via cable or rotatable plug
- Mounting options with through holes, blind holes, oblong holes, and dovetail
- Laser protection class 1 or 2

Your benefits

- Reliable detection thanks to superior chip technology combined with innovative laser technology
- Laser technology for a bright, small, and precise light spot, enabling quick and easy sensor alignment
- Universal application possibilities due to a wide range of products in a robust metal housing - also available with Teflon® coating
- Laser protection class 1 or 2 for dependability in all usage cases
- Resistance to optical interference factors from the industrial environment
- Easy installation using SICK accessories

→ **www.mysick.com/en/W12-2_Laser**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/W12-2_Laser

- **Switching output:** PNP, NPN
- **Switching mode:** Light-switching, dark-switching
- **Setting:** Adjustable, potentiometer
- **Connection:** M12 plug, 5-pin

Sensor principle	Detection principle	Sensing range, max.	Model name	Part no.
Photoelectric proximity sensor	Background suppression	30 mm ... 200 mm [1]	WT12L-2B530	1018250
Photoelectric retro-reflective sensor	Autocollimation	0 m ... 18 m [2]	WL12L-2B530	1018252

[1] Object with 18% remission (based on standard white to DIN 5033).
[2] PL80A.

Accessories

Accessory category	Brief description	Dimensions (L x W x H)	Material	Model name	Part no.
Mounting brackets/plates	Mounting bracket	–	Stainless steel	BEF-WG-W12	2013942
Reflectors	Reflector, rectangular	37 mm x 56 mm	PMMA/ABS	PL40A	1012720

At a glance

- Best-in-class optical performance due to superior OES technology
- Autocollimation optics with photoelectric retro-reflective sensors
- Background and foreground suppression with second emitter LED on proximity sensors
- Highly visible, precise PinPoint light spot and high-energy IR transmitters
- Robust metal housing with optional Teflon® coating
- Connection via cable or rotatable plug
- Mounting options with through holes, blind holes, oblong holes, and dovetail
- IO-Link communication available (optional)

Your benefits

- Reliable detection thanks to superior chip technology and high resistance to optical interference factors from the industrial environment
- PinPoint technology for a bright, small, and precise light spot, enabling quick and easy sensor alignment
- Universal application possibilities due to a wide range of products in a robust metal housing - designed for industrial environments
- Remote diagnostics and maintenance using IO-Link reduces overall downtime (optional)
- Maximum sensor versatility with minimum time spent on mounting and installation
- Easy installation using SICK accessories

→ **www.mysick.com/en/W12-3**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/W12-3

- **Switching mode:** Light-/dark-switching
- **Connection:** M12 plug, 4-pin

Sensor principle	Detection principle	Sensing range, max.	Setting	Switching output	Model name	Part no.
Photoelectric proximity sensor	Background suppression	20 mm ... 350 mm [1]	Adjustable, potentiometer 5 revolutions	NPN	WTB12-3N2431	1041416
				PNP	WTB12-3P2431	1041411
		30 mm ... 700 mm [1]	Adjustable, potentiometer 5 revolutions, sensing range preset to 200 mm	PNP	WTB12-3P2461S02	1055582
Photoelectric retro-reflective sensor	Autocollimation	0 m ... 7 m [2]	Adjustable, potentiometer 5 revolutions	PNP	WL12-3P2431	1041436
				NPN	WL12-3N2431	1041440
Through-beam photoelectric switch	–	0 m ... 20 m		PNP	WSE12-3P2431	1041459
				NPN	WSE12-3N2431	1041462

[1] Object with 90% remission (based on standard white to DIN 5033).
[2] PL80A.

Accessories

Accessory category	Brief description	Dimensions (L x W x H)	Material	Model name	Part no.
Mounting brackets/plates	Mounting bracket	–	Stainless steel	BEF-WG-W12	2013942
Reflectors	Reflector, rectangular	37 mm x 56 mm	PMMA/ABS	PL40A	1012720

At a glance

- Robust die-cast zinc housing with IP 69K protection class
- Operating elements protected by a hood
- High ambient light immunity of the proximity sensors
- Switchable: PNP/NPN and light-/dark-switching
- DC and AC/DC versions with UL approval
- Optional: test input, time delays, contamination signaling at the alarm output, and front-screen heating, also available in a high-power version
- M12 plug or M16 screw connection: rotatable about 90°

Your benefits

- Metal housing and IP 69K enclosure rating for very high stability and a long service life
- Very high level of "optical" robustness in the case of ambient light and when devices are mounted opposite one another
- High availability due to the high operating reserve of the photoelectric retro-reflective sensor and through-beam photoelectric switch
- Prevention and reduction of condensation water on the front screen in the event of temperature fluctuations due to standard or high-power front-screen heating
- Mounting compatibility due to identical design for DC and DC/AC devices

→ **www.mysick.com/en/W24-2**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/W24-2

- **Switching output:** NPN, PNP
- **Switching mode:** Light-/dark-switching, light-/dark-switching
- **Connection:** M12 plug, 4-pin

Sensor principle	Detection principle	Sensing range, max.	Setting	Model name	Part no.
Photoelectric proximity sensor	Background suppression	100 mm ... 1,200 mm [1]	–	WT24-2B440	1016934
Photoelectric retro-reflective sensor	–	0 m ... 22 m [2]	Adjustable, sensitivity control	WL24-2B430	1017860

[1] Object with 90% remission (based on standard white to DIN 5033).

[2] PL80A.

Accessories

Accessory category	Brief description	Material	Model name	Part no.
Mounting brackets/plates	Mounting bracket	Stainless steel (1.4301)	BEF-WN-W24	2015248
Reflectors	Reflector, round	PMMA/ABS	C110A	5304549

At a glance

- 2 mm diameter light spot at a distance of 400 mm
- Precise and adjustable background suppression
- Laser LED with visible red light
- Simple sensing range adjustment via potentiometer
- UL approval
- Laser class 1

Your benefits

- Highly precise detection of very small parts up to a distance of 400 mm due to 2 mm light spot
- Highly visible red light for better alignment and quick commissioning
- Extremely vibration-resistant and hence more immune to ambient conditions

→ **www.mysick.com/en/W27-2_Laser**
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Ordering information

Additional device versions at www.mysick.com/en/W27-2_Laser

Sensor principle	Detection principle	Sensing range, max.	Switching output	Switching mode	Connection	Model name	Part no.
Photoelectric proximity sensor	Background suppression	100 mm ... 800 mm [1]	PNP	Light-/dark-switching	M12 plug, 4-pin	WT27K-2F430	1059239

[1] Object with 90% remission (based on standard white to DIN 5033).

Accessories

Accessory category	Brief description	Material	Model name	Part no.
Mounting brackets/plates	Mounting bracket	Steel, zinc-coated	BEF-WN-W27	2009122

At a glance

- Variants with PinPoint technology: intense visible red emitter LED with consistent light spot
- Long sensing ranges of up to 2,500 mm with IR LED
- Precise background suppression with no sensing range drift
- Universal voltage supply (DC, DC/AC)
- Ambient temperature: –40 °C ... +60 °C
- IO-Link provides access to sensor information and optimizes operating processes

Your benefits

- Quick and easy commissioning due to a highly visible red light spot provided by a PinPoint LED
- PinPoint technology can replace laser proximity sensors in some applications, eliminating the need for laser safety measures, and the service life of the PinPoint LED is double that of laser diodes
- Operational safety in ambient light, with optical reflections and when devices are mounted opposite one another
- Very high availability thanks to high operating reserve with long scanning ranges
- Extremely resistant to vibrations and largely immune to ambient conditions
- Reliable operation at temperatures down to –40 °C

→ **www.mysick.com/en/W27-3**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/W27-3

- **Switching output:** PNP
- **Switching mode:** Light-/dark-switching
- **Connection:** M12 plug, 4-pin

Sensor principle	Detection principle	Sensing range, max.	Light spot	Model name	Part no.
Photoelectric proximity sensor	Background suppression	30 mm ... 2,000 mm [1]	Ø 12 mm @ 800 mm	WTB27-3P2461	1044163
			Ø 5 mm @ 500 mm	WTB27-3P2461S24	1045976
Photoelectric retro-reflective sensor	Dual lens	0.1 m ... 19 m [2]	Ø 60 mm @ 6 m	WL27-3P2461	1044166
Through-beam photoelectric switch	–	0 m ... 35 m	Ø 600 mm @ 25 m	WSE27-3P2430	1027790

[1] Object with 90% remission (based on standard white to DIN 5033).

[2] PL80A.

Accessories

Accessory category	Brief description	Dimensions (L x W x H)	Material	Model name	Part no.
Mounting brackets/plates	Mounting bracket	–	Steel, zinc-coated	BEF-WN-W27	2009122
Reflectors	Reflector, rectangular	80 mm x 80 mm	PMMA/ABS	PL80A	1003865

At a glance

- Two complete and independent receiver systems
- HighPower LED, extremely high light intensity
- Application-specific software
- Maximum sensing range: 500 mm
- Quick and easy commissioning thanks to clearly visible red light spot

Your benefits

- Maximum operational safety with a low investment: due to the extremely reliable, redundant detection of objects (shiny, glossy, irregular) without any interruption to the signal
- Reduced mechanical effort: one installation position for the sensor, no mechanical adjustment required during product changeover

→ **www.mysick.com/en/W27-3_MultiPac**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/W27-3_MultiPac

Sensor principle	Detection principle	Sensing range, max.	Switching output	Switching mode	Connection	Model name	Part no.
Photoelectric proximity sensor	Background suppression	30 mm ... 500 mm [1]	PNP	Light-/dark-switching	M12 plug, 4-pin	WTB27-3P2483	1056384

[1] Object with 90% remission (based on standard white to DIN 5033).

Accessories

Accessory category	Brief description	Material	Model name	Part no.
Mounting brackets/plates	Mounting bracket	Steel, zinc-coated	BEF-WN-W27	2009122

At a glance

- Detection of objects > 10 mm at a height of 40 mm regardless of location
- Scanning range for detection from 0 m to max. 3.5 m
- Minimum distance of 0.5 m between sensor and reflector
- PinPoint technology for intensive red light
- Automatic adjustment of the switching threshold when there is contamination

Your benefits

- Detection within the 50 mm detection area regardless of location (MDO: > 12 mm) or 24 mm detection area (MDO: > 5 mm)
- Reduces the installation work required by up to 50% compared to light grids or multiple photoelectric sensors
- PinPoint technology and the optical alignment aid enables quick and easy commissioning
- Increased availability due to automatic adjustment of the switching threshold

→ **www.mysick.com/en/W27-3_Reflex_Array**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/W27-3_Reflex_Array

Sensor principle	Sensing range, max.	Switching output	Switching mode	Setting	Connection	Model name	Part no.
Reflex array sensor	0 m ... 4.5 m [1] 0 ... 2 m [2]	PNP	Light-/dark-switching	Manually adjustable, via teach-in pushbutton	Cable with plug, M12, 4-pin	WL27-3P3402S13	1046538

[1] PL80A.

[2] PL40A.

Accessories

Accessory category	Brief description	Dimensions (L x W x H)	Material	Model name	Part no.
Mounting brackets/plates	Mounting bracket	–	Steel, zinc-coated	BEF-WN-W27	2009122
Reflectors	Reflector, rectangular	80 mm x 80 mm	PMMA/ABS	PL80A	1003865

At a glance

- Mounting flexibility: M18 front mount using plastic nut or snap ring, side mounting with 24.1 mm hole distance
- Flush mounting using the snap ring
- Transparent housing rear
- Variant with best-in-class background suppression and PinPoint LED
- High immunity to ambient light
- Clearly visible status LED

Your benefits

- Completely compatible with many competitor models, making it easy to install and integrate into existing systems
- Flush mounting with a snap ring reduces installation time and prevents interruptions to the material flow on conveyor systems
- Clearly visible status LED reduces mounting time and simplifies fault diagnosis
- Reliable object detection due to best-in-class background suppression and a high immunity to ambient light
- Customer-specific adaptations reduce material and labor costs

→ **www.mysick.com/en/W15**
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Ordering information

Additional device versions at www.mysick.com/en/W15

- **Housing material:** Plastic
- **Connection:** M12 plug, 4-pin

Sensor principle	Detection principle	Sensing range, max.	Switching output	Switching mode	Model name	Part no.
Photoelectric proximity sensor	Background suppression	4 mm ... 200 mm [1]	PNP	Light-/dark-switching	WTB15-P2431	1044305
			NPN		WTB15-N2431	1044306
Photoelectric retro-reflective sensor	Dual lens	0.035 m ... 5 m [2]	PNP		WL15-F2433	1043319
Through-beam photoelectric switch	–	0 m ... 5 m	PNP, NPN	Dark-switching	WSE15-A2430	1043327

[1] Object with 90% remission (based on standard white to DIN 5033).

[2] PL80A.

Accessories

Accessory category	Brief description	Dimensions (L x W x H)	Material	Model name	Part no.
Reflectors	Reflector, rectangular	37 mm x 56 mm	PMMA/ABS	PL40A	1012720

At a glance

- Laser emitter LED in cylindrical M18 housing
- Laser class 1
- Fast response times
- Axial or radial optics output
- Durable metal housing
- IP67 enclosure rating
- Small visible light spot for detecting small objects

Your benefits

- Cost-effective laser sensor in a cylindrical M18 housing lowers installation costs
- Time-saving installation and commissioning due to clearly visible light spot
- Laser class 1 does not require any enhanced safety measures or labeling, which lowers installation costs
- Quick response time ensures reliable object detection at high speeds, which increases the machine's throughput

→ **www.mysick.com/en/V18_Laser**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/V18_Laser

- **Housing material:** Metal
- **Switching output:** PNP
- **Switching mode:** Light-/dark-switching
- **Connection:** M12 plug, 4-pin

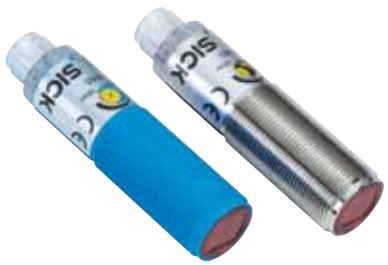
Sensor principle	Detection principle	Sensing range, max.	Setting	Model name	Part no.
Photoelectric proximity sensor	Energetic	0 mm ... 400 mm [1]	Adjustable, electronically via control input C (0 V), manually via teach-in pushbutton	VTE18L-4P324	6027418
Photoelectric retro-reflective sensor	Dual lens	0.1 m ... 35 m [2]		VL18L-4P324	6027430
Through-beam photoelectric switch	–	0 m ... 60 m	Adjustable, potentiometer, 270°	VSE18L-4P324	6027931

[1] Object with 90% remission (based on standard white to DIN 5033).

[2] P250F.

Accessories

Accessory category	Brief description	Dimensions (L x W x H)	Material	Model name	Part no.
Mounting brackets/plates	Mounting bracket	–	Steel, zinc-coated	BEF-WN-M18	5308446
Reflectors	Reflector, rectangular	37 mm x 56 mm	PMMA/ABS	PL40A	1012720



At a glance

- Cost-effective cylindrical M18 sensor
- Large scanning ranges of 100 mm, 400 mm, 800 mm (photoelectric proximity sensor), 6 m (photoelectric retro-reflective sensor), and 20 m (through-beam photoelectric switch)
- Bright status display with 360° visibility
- A comprehensive product portfolio opens up a wide range of applications
- High switching frequencies of up to 1,000 Hz
- Available in metal and plastic housing
- Optical axis available either as axial or radial (90°)

Your benefits

- Cost-effective cylindrical M18 sensor lowers installation costs
- Brightly lit red emitter LED simplifies alignment and saves mounting time
- Bright status display with 360° visibility enables quick and easy troubleshooting and thus reduces maintenance costs and time
- The flat, smooth front screen reduces the accumulation of dust and dirt. This ensures reliable operation and reduces both maintenance and costs

→ **www.mysick.com/en/V180-2**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/V180-2

- **Optical axis: Axial**
- **Switching output:** PNP
- **Switching mode:** Light-/dark-switching
- **Setting:** Adjustable, potentiometer, 270°
- **Connection:** M12 plug, 4-pin

Sensor principle	Detection principle	Sensing range, max.	Housing material	Model name	Part no.
Photoelectric proximity sensor	Background blanking	1 mm ... 450 mm [1]	Metal	VTE180-2P42442	6041807
			Plastic	VTE180-2P42447	6037484
Photoelectric retro-reflective sensor	Dual lens	0.05 m ... 7 m [2]	Metal	VL180-2P42431	6041819
			Plastic	VL180-2P42436	6037496
Through-beam photoelectric switch	–	0 m ... 28 m	Metal	VSE180-2P42432	6041823

[1] Object with 90% remission (based on standard white to DIN 5033).

[2] PL80A.

Accessories

Accessory category	Brief description	Dimensions (L x W x H)	Material	Model name	Part no.
Mounting brackets/plates	Mounting bracket	–	Steel, zinc-coated	BEF-WN-M18	5308446
Reflectors	Reflector, rectangular	37 mm x 56 mm	PMMA/ABS	PL40A	1012720

At a glance

- Selectable response time up to 16 µs
- Scanning range up to 20 m, sensing range up to 1,400 mm
- Bus-compatible with anti-interference
- 2 x 4-digit digital display
- Adjustable hysteresis
- Rotatable display screen
- High-resolution signal processing
- Programmable time delays

Your benefits

- Reliable, rapid process detection
- Workpieces are detected reliably, even under the most difficult of ambient conditions such as dust or spray mist
- No mutual effects from fiber-optic cable heads mounted in close proximity on account of bus communication
- Easy monitoring of process parameters
- Hysteresis can be adapted to suit the application, e.g., when detecting tiny or transparent objects
- Easy-to-read display, even under difficult installation conditions

→ **www.mysick.com/en/WLL180T**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/WLL180T

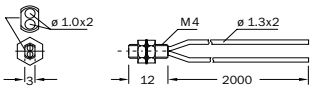
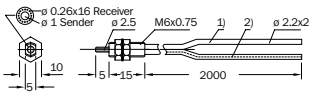
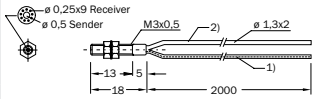
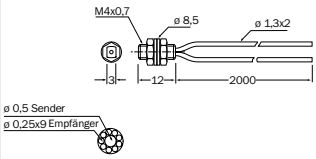
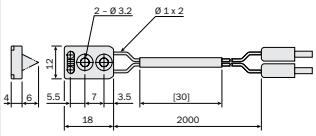
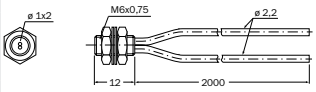
- **Setting:** Teach-in pushbutton, cable, +/- increment button, manual

Device type	Type of light	Sensing range, max.	Switching output	Connection	Model name	Part no.
Stand-alone	Visible red light	0 m ... 20 m, through-beam system [1) 2)]	NPN	M8 plug, 4-pin	WLL180T-N434	6039096
			PNP		WLL180T-P434	6039095
	Infrared light	0 mm ... 1,000 mm, through-beam system [1) 3)]			WLL180T-P474	6039618
Base unit [4)]	Visible red light	0 m ... 20 m, through-beam system [1) 2)]	NPN	Cable, 4-wire, 2 m	WLL180T-L432	6039099
			PNP		WLL180T-M432	6039097
Expansion unit			NPN	Cable, 2-wire, 2 m	WLL180T-E232	6039100
			PNP		WLL180T-F232	6039098

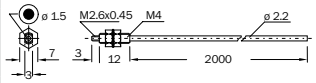
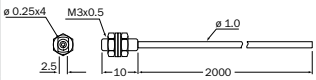
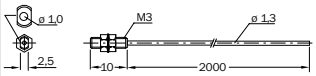
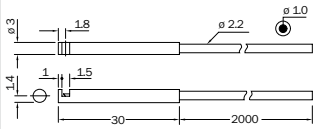
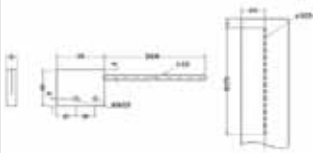
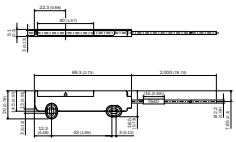
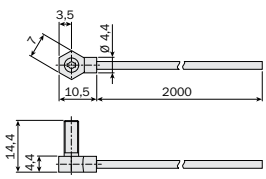
[1)] Scanning range with 8 ms response time. Scanning range reduction with shorter response time (see tables LL3/WLL180T).
[2)] LL3-TX01.
[3)] LL3-TW01.
[4)] Connection of up to 15 expansion units.

Accessories

Accessory category	Brief description	Enclosure rating	Cable outlet	Material, sheath	Material	Length of cable	Model name	Part no.
Mounting brackets/ plates	Mounting bracket	–	–	–	Steel, zinc-coated	–	BEF-WLL170	5306574
Other mounting accessories	Rail end cap for block mounting	–	–	–	–	–	BF-EB01-W190	5313011
Plug connectors and cables	Plug connector, cable socket, M8 plug, 4-pin	IP 67	Straight	PVC	–	2 m	DOL-0804-G02M	6009870
			Angled	PVC	–	2 m	DOL-0804-W02M	6009871

Type and Model name	Features	WLL180 – scanning distance in [mm]	Minimum bend radius	Minimum object size	LL3 length	Part no.
LL3-DM01 	• Standard design • M4 mounting sleeve	Response time 16 µs **75** Response time 70 µs **255** Response time 250 µs **420**	R25 mm	Ø 0.015 mm	2 m	5308071
LL3-DB01 	• Coaxial cable • M6 mounting sleeve	Response time 16 µs **90** Response time 70 µs **280** Response time 250 µs **500**	R25 mm	Ø 0.015 mm	2 m	5308074
LL3-DT01 	• Coaxial cable • M3 mounting sleeve	Response time 16 µs **40** Response time 70 µs **130** Response time 250 µs **200**	R15 mm	Ø 0.015 mm	2 m	5308076
LL3-DM02 	• Coaxial cable • M4 mounting sleeve	Response time 16 µs **40** Response time 70 µs **130** Response time 250 µs **200**	R15 mm	Ø 1.3 mm	2 m	5308077
LL3-DC38 	• Fix focus • Flat housing 18 x 12 x 4 mm • V-optic • Solar cell detection	Response time 16 µs **6** Response time 70 µs **6** Response time 250 µs **6**	R25 mm	Ø 0.02 mm	2 m	5322472
LL3-DK67 	• Super flexible • M6 mounting sleeve	Response time 16 µs **90** Response time 70 µs **300** Response time 250 µs **500**	R2 mm	Ø 0.015 mm	2 m	5313025

Other models available at www.mysick.com

Type and Model name	Features	WLL180 – scanning distance in [mm]	Minimum bend radius	Minimum object size	LL3 length	Part no.
LL3-TB01 	• Standard design • M4 mounting sleeve	Response time 16 µs **300** Response time 70 µs **950** Response time 250 µs **1700**	R30 mm	Ø 0.5 mm	2 m	5308050
LL3-TR02 	• Flexible fibers • M3 mounting sleeve	Response time 16 µs **60** Response time 70 µs **175** Response time 250 µs **330**	R4 mm	Ø 0.1 mm	2 m	5308053
LL3-TM01 	• Smallest end sleeve • M3 mounting sleeve	Response time 16 µs **220** Response time 70 µs **680** Response time 250 µs **1200**	R25 mm	Ø 0. mm	2 m	5308068
LL3-TS08 	• Integrated 90 degree deflection • Mounting sleeve Ø 3 mm	Response time 16 µs **170** Response time 70 µs **500** Response time 250 µs **1000**	R25 mm	Ø 0. mm	2 m	5308061
LL3-TS14 	• Fiber cell • Housing size 19 x 25 x 5 mm • Mounting sleeve Ø 3 mm	Response time 16 µs **130** Response time 70 µs **400** Response time 250 µs **800**	R25 mm	Ø 0.5 mm	2 m	5313039
LL3-TS40 	• Fiber cell 40 mm high • Housing size 69.3 x 20 x 5.1 mm • Mounting sleeve Ø 3 mm	Response time 16 µs **100** Response time 70 µs **700** Response time 250 µs **1700**	R2 mm	Ø 0.4 mm	2 m	5323971
LL3-TV07 	• Integrated right angle lens • Extremely flexible fibers • Housing size 8 x 10.5 x 14.4 mm	Response time 16 µs **340** Response time 70 µs **1000** Response time 250 µs **1800**	R2 mm	Ø 0.4 mm	2 m	5322548

Other models available at www.mysick.com

At a glance

- Precise sensing ranges due to ASIC technology
- Robust design with a high tightening torque and hot melt molding
- Sizes M08 to M30 available
- Sensing ranges from 1.5 mm to 20 mm
- IP 67 protection class
- Temperature range –25 ... +70 °C
- DC, AC, and AC/DC versions available
- Customer-specific variants available

Your benefits

- Increased machine availability
- Reduced mechanical damage
- Cost reductions due to longer service life
- High resistance to shocks and vibrations

→ **www.mysick.com/en/IM_Standard**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/IM_Standard

- **Housing material:** Nickel-plated brass
- **Installation type:** Flush
- **Output function:** N/O
- **Switching output:** PNP
- **Connection:** M12 plug, 4-pin
- **Housing design:** Standard

Housing	Sensing range (mm)	Model name	Part no.
M12 x 1	2 mm	IME12-02BPSZC0S	1040732
	4 mm	IME12-04BPSZC0S	1040764
M18 x 1	5 mm	IME18-05BPSZC0S	1040934
	8 mm	IME18-08BPSZC0S	1040966

Accessories

Accessory category	Brief description	Material	Model name	Part no.
Mounting brackets/plates	Mounting bracket	Steel, zinc-coated	BEF-WN-M12	5308447
			BEF-WN-M18	5308446

Class 2
LISTED 87LL

At a glance

- Longer sensing ranges up to 60 mm
- DC, AC, and AC/DC versions available
- Wide range of housing and mounting options
- Connecting cable, plug connection or terminal compartment
- Customer-specific variants available

Your benefits

- Increased machine availability
- Reduced mechanical damage
- Cost reductions due to longer service life
- Quick and easy installation

→ **www.mysick.com/en/IQ_Standard**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/IQ_Standard

- **Output function:** Complementary
- **Switching mode:** PNP

Installation type	Housing	Sensing range	Connection	Model name	Part no.
Flush	40 mm x 40 mm x 118 mm	15 mm	Terminal connection	IQ40-15BPP-KK1	6025814
	40 mm x 40 mm x 66 mm	20 mm	M12 plug, 4-pin	IQ40-20BPPKC0K	6037072
Non-flush	40 mm x 40 mm x 118 mm	20 mm	Terminal connection with M20 screw connection	IQ40-20NPP-KK1	6025815
	40 mm x 40 mm x 66 mm	40 mm	M12 plug, 4-pin	IQ40-40NPPKC0K	6037073

At a glance

- Magnetic positioning sensor for pneumatic and hydraulic cylinders with T-slot
- Output signal: analog, 4 ... 20 mA current and 0 ...10 V voltage (in one sensor)
- Maximum accuracy: 0.05 mm resolution, 0.1 mm repeatability, 0.3 mm linearity, 1 ms measurement rate
- Electric setting of zero point and end point via teach pushbutton (optional)
- Various lengths available from 32 - 256 mm

Your benefits

- Maximum flexibility with measuring ranges of 32 mm, 64 mm, 96 mm, 128 mm, 160 mm, 192 mm, 224 mm, 256 mm
- Measuring range can be customized using the teach function
- Insertion of the sensor into the slot from above makes mounting easy
- Freely selectable installation direction, enabling optimized cabling
- Minimal blind zones and therefore no loss of stroke, for optimized application solutions
- Easy commissioning thanks to "In-range" display
- The sensor features a current and voltage output of 4 ... 20 mA and 0 ... 10 V, which reduces the amount of variants and therefore storage costs

→ **www.mysick.com/en/MPS**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/MPS

Slot	Output function	Connection	Measuring range	Model name	Part no.
T-slot	Analog	Cable with plug, M8, 4-pin	32 mm	MPS-032TSTP0	1045666
			64 mm	MPS-064TSTP0	1045668
			96 mm	MPS-096TSTP0	1045670
			128 mm	MPS-128TSTP0	1045672
			192 mm	MPS-192TSTP0	1047728
			256 mm	MPS-256TSTP0	1050551

Accessories

Accessory category	Brief description	Material	Model name	Part no.
Brackets for cylinder sensors	For profile cylinders/tie rod cylinders	Zinc die-cast	BEF-KHZ-PT1	2022702
	For dove-tail groove cylinders	Aluminum	BEF-KHZ-ST1	2022703
	For SMC rails ECDQ2 (T-/C-slot)		BEF-KHZ-TT1	2046439
	For SMC rails CDQ2 (T-/C-slot)		BEF-KHZ-TT2	2046440

At a glance

- Magnetic cylinder sensor for pneumatic and hydraulic cylinders with C-slot
- Easy adjustment of 2 switching points via teach-in pushbutton
- Detection zone up to 50 mm stroke
- "Drop-in" mounting from above
- Sensor fully recessed in the slot
- Versions for Festo and SMC C-slots

Your benefits

- One sensor, two switching points: reduces commissioning time and costs
- Reduces sensor and cable mounting requirements by half – saves time, space, and costs
- Maximum flexibility: detection zone up to 50 mm stroke
- Suitable for precise pneumatic applications due to simple and precise definition of two switching points

→ **www.mysick.com/en/MZ2Q-C**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/MZ2Q-C

- **Slot:** C-slot
- **Switching mode:** PNP
- **Output function:** N/O
- **Connection:** Cable with plug, M12, 4-pin

Festo slot	SMC slot	Model name	Part no.
–	I	MZ2Q-CSSPSKQ0	1042240
I	–	MZ2Q-CFSPSKQ0	1042244

Accessories

Accessory category	Brief description	Material	Model name	Part no.
Brackets for cylinder sensors	For profile cylinders/tie rod cylinders	Zinc die-cast	BEF-KHZ-PT1	2022702
	For dove-tail groove cylinders	Aluminum	BEF-KHZ-ST1	2022703

At a glance

- Magnetic cylinder sensor for pneumatic and hydraulic cylinders with T-slot
- Easy adjustment of 2 switching points via teach-in pushbutton
- Detection zone up to 50 mm stroke
- Insertion of the sensor into the slot from above makes mounting easy
- Sensor fully recessed in the slot
- For all commonly used cylinders with T-slots, e.g., Festo or SMC, and can be applied to various cylinder types such as roundbody, tie rod, profile or dove-tail groove cylinders using adapters

Your benefits

- One sensor, two switching points: reduces commissioning time and costs
- Maximum flexibility: detection zone up to 50 mm stroke
- Suitable for precise pneumatic applications due to simple and precise definition of two switching points
- Insertion of the sensor into the slot from above makes mounting easy

→ **www.mysick.com/en/MZ2Q-T**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/MZ2Q-T

Slot	Switching mode	Output function	Connection	Model name	Part no.
T-slot	PNP	N/O	Cable with plug, M12, 4-pin, with knurled screws	MZ2Q-FTZPS-KQ0	1041323

Accessories

Accessory category	Brief description	Material	Model name	Part no.
Brackets for cylinder sensors	For profile cylinders/tie rod cylinders	Zinc die-cast	BEF-KHZ-PT1	2022702
	–	Plastic, nickel silver	BEF-KHZ-RT1-25	5311171
			BEF-KHZ-RT1-63	5311172
	For dove-tail groove cylinders	Aluminum	BEF-KHZ-ST1	2022703

At a glance

- Magnetic cylinder sensor for all conventional pneumatic cylinders with T-slots
- Housing length 24 mm
- Sensor element at the tip of the housing
- GMR-ASIC technology from SICK: precise switching point, low hysteresis
- Enclosure rating: IP 68/IP 69K (PUR) or IP 67/IP 69K (PVC)
- Captive screw
- LED function indicator
- For all commonly used cylinders with T-slots, e.g., Festo or SMC, and can be applied to various cylinder types such as roundbody, tie rod, profile or dove-tail groove cylinders using adapters

Your benefits

- Shortest sensor on the market, making it ideal for applications with short-stroke cylinders
- Sensor element at the tip of the sensor – makes piston detection possible without stroke loss
- Captive fixing screw enables reliable and optimized commissioning
- Time-saving "single-handed mounting" with a 1/4 turn
- Flexible mounting using a hex key or flathead screwdriver
- Extremely robust housing concept, rated for IP67, IP68, and IP69K, prolonging the sensor life time

→ **www.mysick.com/en/MZT8**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/MZT8

- **Output function:** N/O

Switching output	Overrun distance, typical	Connection	Model name	Part no.
NPN	3 mm	Cable, 3-wire	MZT8-03VNS-KU0	1044934
		Cable with plug, M8, 3-pin	MZT8-03VNS-KP0	1044932
PNP	3 mm	Cable, 3-wire	MZT8-03VPS-KU0	1044469
		Cable with plug, M8, 3-pin	MZT8-03VPS-KP0	1044458
		Cable with plug, M8, 3-pin, with knurled screws	MZT8-03VPS-KR0	1044459
		Cable with plug, M12, 3-pin	MZT8-03VPS-KQ0	1044460
	9 mm	Cable, 3-wire	MZT8-28VPS-KU0	1048049
		Cable with plug, M8, 3-pin	MZT8-28VPS-KP0	1048048
		Cable with plug, M8, 3-pin, with knurled screws	MZT8-28VPS-KR0	1048050
		Cable with plug, M12, 3-pin	MZT8-28VPS-KQ0	1048051

Accessories

Accessory category	Brief description	Material	Model name	Part no.
Brackets for cylinder sensors	For profile cylinders/tie rod cylinders	Zinc die-cast	BEF-KHZ-PT1	2022702
	For roundbody cylinders	Plastic, nickel silver	BEF-KHZ-RT1-25	5311171
			BEF-KHZ-RT1-63	5311172
	For dove-tail groove cylinders	Aluminum	BEF-KHZ-ST1	2022703

At a glance

- Sensor, logic, and control unit (solenoid valve/motor actuation) product variants in one housing
- Housing design adapted to suit roller conveyor modules
- Modular structure - with or without solenoid valve or motor actuation, with or without logic

Your benefits

- Easy commissioning thanks to an all-in-one solution: sensor + logic + control unit (solenoid valve/ motor actuation) in one housing
- The special slimline housing enables space-saving mounting below the conveying level, providing protection against damage and a longer service life
- The ideal standalone solution, saving on cabling, simplifying control, and permitting the clearly structured, modular expansion of conveyor systems
- Controlled flow of goods by means of starting/stopping within a conveyor belt - easy, reliable, and with reduced costs

→ **www.mysick.com/en/WLR**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/WLR

- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Foreground suppression
- **Switching output:** PNP
- **Switching mode:** Light-switching
- **Setting:** Adjustable, sensitivity control
- **Connection:** M12 plug, 4-pin

Actuator control	Logic	Sensing range, max.	Model name	Part no.
Solenoid valve, normally open	Single feed, single release	250 mm ... 500 mm	WLR1-P710	1025298
Motorized rollers	Single feed, single release, sleep mode, awake mode		WLR2-P610S01	1041621

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Mounting plates, steel, zinc-coated	BEF-WN-WTR	2017417
Plug connectors and cables	Cable socket, M12 plug, 4-pin, angled, 5 m, PVC/PUR	DOL-1204-W05ME	6020398

At a glance

- One color can be saved
- 12.5 mm sensing range
- 1.5 kHz switching frequency
- Color tolerance (precise, medium, coarse) can be set
- Static object teach-in via control cable or control panel
- Compact housing

Your benefits

- Easy integration into existing machines – even in places where space is limited
- Quick and easy commissioning saves time and costs
- High evaluation flexibility due to different color tolerances

→ **www.mysick.com/en/CSM1**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/CSM1

Sensing range [1]	Sensing range tolerance	Light spot size	Light spot direction	Output (channel)	Switching mode	Model name	Part no.
12.5 mm	± 2 mm	1.5 mm x 6.5 mm	Lengthwise	1 color	PNP	CSM1-P1114	1022569

[1] From front edge field of view.

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Mounting bracket	BEF-WN-W9-2	2022855
Plug connectors and cables	Cable socket, M12 plug, 4-pin, straight, 2 m, PVC	DOL-1204-G02M	6009382

At a glance

- One (CS8-1) or four (CS8-4) colors can be saved
- 12.5 mm or 60 mm sensing range
- Fast response time up to 85 µs
- High color resolution
- Bar graph display shows the correlation of the colors
- Extremely precise light spot and high geometric resolution
- Metal housing with two light exits (interchangeable)

Your benefits

- Identify and store up to four colors reliably. The sensor does not have to be reprogrammed in the event of a conversion, which reduces the machine downtimes.
- High process reliability: the exact assignment of colors in ensured by the high color resolution
- The precise light spot enables continuous and constant object detection
- Easy process monitoring, since the bar graph display indicates the color quality and hence the detection reliability
- High evaluation flexibility due to different color tolerances
- Fast response times for reliable detection, even at very high speeds
- Detection reliability is not affected by varying temperatures

→ **www.mysick.com/en/CS8**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/CS8

- **Switching mode:** PNP

Output (channel)	Switching frequency [1]	Response time [2]	Connection type	Sensing range [3]	Sensing range tolerance	Light spot size	Light spot direction	Model name	Part no.
1 color	1 kHz/ 3 kHz/ 6 kHz, adjustable	500 µs/ 160 µs/ 85 µs	M12 plug, 5-pin	12.5 mm	± 3 mm	2 mm x 4 mm	Lengthwise	CS81-P1112	1028224
				60 mm	± 9 mm	13 mm x 13 mm	–	CS81-P3612	1028225
4 colors	0.5 kHz/ 1 kHz/ 3.5 kHz, adjustable	1,000 µs/ 500 µs/ 145 µs	M12 plug, 8-pin	12.5 mm	± 3 mm	2 mm x 4 mm	Lengthwise	CS84-P1112	1028226
				60 mm	± 9 mm	13 mm x 13 mm	–	CS84-P3612	1028227

[1] With a light/dark ratio of 1:1.

[2] Signal delay time with resistive load.

[3] From front edge field of view.

Accessories

Accessory category	Brief description	Model name	Part no.
Terminal and alignment brackets	Plate G for universal clamp	BEF-KHS-G01	2022464
	Plate K for universal clamp	BEF-KHS-K01	2022718
Plug connectors and cables	Cable socket, M12 plug, 5-pin, straight, 2 m, PVC	DOL-1205-G02M	6008899
	Cable socket, M12 plug, 8-pin, straight, 2 m, PVC, shielded	DOL-1208-G02MA	6020633

At a glance

- Robust metal housing
- Simple sensitivity setting in 8 stages
- Visualization of the luminescence intensity by means of bar graph display
- Sensing ranges can be selected with interchangeable lenses
- Additional optical filters suppress background luminescence
- Fiber-optic cable connection (with 20 mm lens)
- Switching and analog output

Your benefits

- Clearly defined sensitivity stages simplify adjustment and enable the clear assignment of the setting in the case of different materials
- Continual process control through visualization of the luminescence intensity
- Filters ensure that background luminescence is reliably suppressed, ensuring greater process reliability
- Interchangeable lenses for different sensing ranges increase flexibility

→ **www.mysick.com/en/LUT8**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/LUT8

- **Light sender:** UV LED (average service life of 100,000 h at T_u = +25 °C, wavelength: 375 nm)
- **Receiving filters:** KV 418 (standard)
- **Receiving range:** 450 nm ... 750 nm

Sensing range [1]	Operating range	Light spot size	Model name	Part no.
50 mm	20 mm ... 70 mm	5 mm x 15 mm	LUT8U-11301	1047043
		Ø 6 mm	LUT8U-11701	1047048

[1] From front edge field of view.

Accessories

Accessory category	Brief description	Model name	Part no.
Terminal and alignment brackets	Plate K for universal clamp	BEF-KHS-K01	2022718
	Universal clamp for attachment of bars	BEF-KHS-KH1	2022726
Plug connectors and cables	Cable socket, M12 plug, 5-pin, straight, 2 m, PVC	DOL-1205-G02M	6008899

At a glance

- Simple teach-in
- Operating range up to 250 mm
- Versions with IO-Link
- Visualization of the luminescence intensity by means of bar graph display
- 3 modes: high speed (6.5 kHz), standard (2.5 kHz), high resolution (500 Hz)
- Additional optical filters suppress background luminescence
- Fiber-optic cable connection (with 20 mm lens)
- Switching and analog output

Your benefits

- Simple sensitivity adjustment via teach-in for optimum adaptation to the application
- Long sensing distance tolerance results in fewer mechanical height adjustments of the sensor on the machine
- Using IO-Link, the sensor can be configured by the central control system, enabling cost-effective process data collection and diagnostics
- Continual process control through visualization of the luminescence intensity
- Filters ensure that background luminescence is reliably suppressed, ensuring greater process reliability
- Interchangeable lenses for different sensing ranges and the second light emission increase flexibility
- High detection reliability safeguards the process and reduces downtime
- Speed or high resolution. You can select the right mode for every application.

→ **www.mysick.com/en/LUT9**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/LUT9

- **Light sender:** UV LED (average service life of 100,000 h at T_u = +25 °C, wavelength: 375 nm)
- **Receiving filters:** KV 418 (standard)
- **Receiving range:** 450 nm ... 750 nm

Sensing range [1]	Operating range	Light spot size	Model name	Part no.
90 mm	30 mm ... 110 mm	12 mm x 12 mm	LUT9U-11406	1047051
150 mm	50 mm ... 250 mm	5 mm x 12 mm	LUT9U-11606	1047414

[1] From front edge field of view.

Accessories

Accessory category	Brief description	Model name	Part no.
Terminal and alignment brackets	Plate K for universal clamp	BEF-KHS-K01	2022718
	Universal clamp for attachment of bars	BEF-KHS-KH1	2022726
Plug connectors and cables	Cable socket, M12 plug, 5-pin, straight, 2 m, PVC	DOL-1205-G02M	6008899

At a glance

- Laser, infrared, red light or ultrasonic variants
- Very fast response times (up to 100 µs)
- A wide range of different designs
- Simple and accurate adjustment via teach-in or manually via "+"/"–" pushbuttons
- Sturdy aluminum housing

Your benefits

- Minimum installation time: quick and easy mounting since the sender and receiver are combined in a single housing
- Thanks to a wide range of fork sizes and detection principles (IR-LED, red light LED, laser, and ultrasonic), you will always find the right sensor for the most diverse applications
- A highly visible light spot in the laser and red light versions make these sensors quick and easy to adjust
- The high switching frequency ensures reliable performance at high speeds
- High immunity to ambient light provides a high level of operational safety
- The sturdy aluminum housing meets the requirements for use in harsh industrial conditions

→ **www.mysick.com/en/WF**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/WF

- **Light sender:** LED, infrared
- **Switching mode:** PNP/NPN
- **MDO:** 0.2 mm
- **Setting:** Manual ("+"/"–" pushbutton)

Fork width	Fork depth	Model name	Part no.
30 mm	42 mm	WF30-40B410	6028431
50 mm	59 mm	WF50-60B410	6028440
80 mm	59 mm	WF80-60B410	6028441

Accessories

Accessory category	Brief description	Model name	Part no.
Plug connectors and cables	Cable socket , M8 plug, 4-pin, straight, 2 m, PVC	DOL-0804-G02M	6009870

At a glance

- Can be programmed by the user or pre-programmed by SICK
- Various scanning ranges up to 8.5 m
- Monitoring heights of over 3 m and up to 240 beams possible
- Resolutions of 10/20/30/50 mm and customer-specific resolutions possible
- External teach-in for optimum sensitivity settings
- Short response time < 3 ms
- Up to 6 PNP/NPN switching outputs and two switching inputs
- PROFIBUS, CANopen, analog outputs, RS-485

Your benefits

- MLG light grids are robust, resistant, and powerful
- Light grid status information to avoid interrupting operation
- Customer-oriented solution based on modular beam separations improves operational safety
- Integrated PROFIBUS, CANopen bus systems, analog outputs, and RS-485 interfaces reduce cabling time and costs
- A fully modular system guarantees the optimum solution for the customer
- With the MLG, the system integrator can offer a solution with the end customer in mind
- Robust metal housing can cope with harsh environments and reduces downtime
- Integrated software program minimizes mounting work, since no additional connection box is required

→ **www.mysick.com/en/MLG**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/MLG

Operating range [1]	Connection type	Switching output	Monitoring height	Beam separation	Model name	Part no.
5 m	M12 plug, 8-pin	3 x PNP	280 mm	20 mm	MLG2-0280F8112	1023585
			290 mm	10 mm	MLG1-0290F812	1022166
			440 mm		MLG1-0440F812	1022294
			580 mm	20 mm	MLG2-0580F812	1023555
			700 mm	50 mm	MLG5-0700F812	1022175
	M12 plug, 5-pin	1 x PNP	140 mm	10 mm	MLG1-0140F511	1024259
			140 mm	20 mm	MLG2-0140F511	1024306
			280 mm	20 mm	MLG2-0280F511	1023372
			590 mm	10 mm	MLG1-0590F511	1025650

[1] Opening angle ± 3°.

Accessories

Accessory category	Brief description	Model name	Part no.
Adapters/distributors (without cable)	T-distributor, 1x M12 plug, 5-pin and 2x M12 sockets, 5-pin	SBO-02G12-SM	6029305
	T-distributor, 1x M12 plug, 8-pin and 2x M12 sockets, 8-pin	SBO-02F12-SM	6029306
Terminal and alignment brackets	Mounting kit 1, can be rotated, swivel mount, for all protective field heights in a small housing	BEF-2SMKEAKU4	2019649
Plug connectors and cables	Configuration cable, 2 m, PVC	DSL-8D04-G02M	2023695
	Cable socket, M12, 5-pin, straight, 2 m, PVC	DOL-1205-G02M	6008899
	Cable socket, M12, 8-pin, straight, 2 m, PVC, screened	DOL-1208-G02MA	6020633
	Connection cable, M12, 8-pin, straight plug/straight socket, 2 m, PUR halogen-free, screened	DSL-1208-G02MAC	6030121
	Connection cable, M12, 5-pin, straight plug/straight socket, 5 m, PUR halogen-free	DSL-1205-G05MC	6029282

At a glance

- 360° visible job LED
- Scanning range up to 2 m
- Flexible monitoring heights from 120 mm to 420 mm
- Immune to reflected and ambient light
- Switchable job LED: permanently lit or flashing
- Optically confirms correct access
- Bus connection possible

Your benefits

- The integrated job LED reduces the order picker's search time
- Low mounting costs thanks to the clever mounting concept
- High availability thanks to an integrated polarizing filter
- Robust aluminum housing ensures that sensor damage is kept to a minimum and helps save repair costs
- Reflective tape on the sensor cuts out additional mounting and cabling costs

→ **www.mysick.com/en/PLG**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

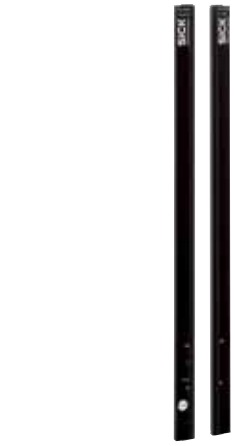
Additional device versions at www.mysick.com/en/PLG

- **Beam separation:** 30 mm
- **Switching output:** 1 x PNP (Q)
- **Connection type:** Short cable (0.28 m) with M12 plug, 4-pin

Monitoring height	Model name	Part no.
120 mm	PLG3-120F431	1028953
210 mm	PLG3-210F431	1028548
270 mm	PLG3-270F431	1029130
360 mm	PLG3-360F431	1029131
420 mm	PLG3-420F431	1029132

Accessories

Accessory category	Brief description	Model name	Part no.
Terminal and alignment brackets	Rod mounting clip for round profiles	BEF-RD30-PLG	2040541
Reflectors	Triple reflector 150 mm x 18 mm x 8 mm, material: PMMA/ABS, with polarization effect, carrier material is white	PL150	5315548
Plug connectors and cables	Cable socket, M12, 4-pin, straight, 2 m, PVC	DOL-1204-G02M	6009382
	Cable socket, M12, 4-pin, straight, 5 m, PVC	DOL-1204-G05M	6009866



At a glance

- Variable monitoring lengths from 120 mm to 600 mm (in 160 mm increments)
- Configuration via teach-in pushbutton - without a PC
- Simple teach-in setup
- Maximum scanning range of 4 m
- Response time 18 ms
- 25 mm resolution possible with 40 mm beam separation
- Highly immune to sunlight up to 150,000 lx
- Small blind zone < 11 mm

Your benefits

- Small, slim, and sleek design enables easy integration into applications
- Capacitive teach-in pushbutton and LEDs make commissioning easier for complex solutions
- Slim and flat models offer flexible mounting options and optimize space while reducing damage
- Customized preset configurations or flexible configuration via teach-in pushbutton - without a PC
- Optical synchronization eliminates the need to lay cables, thus saving time
- The teach-in pushbutton and auto-muting enable Plug & Play. The alignment aid and the "Click & Go" principle also enable faster installation

→ **www.mysick.com/en/SAS**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

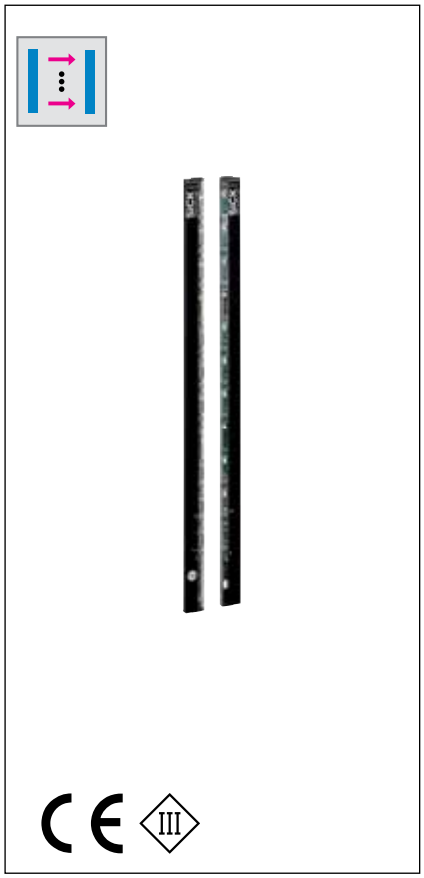
Additional device versions at www.mysick.com/en/SAS

- **Optical light emission:** Slim
- **Operating range:** 3 m

Monitoring height	Switching output	Model name	Part no.
120 mm	NPN	SAS4-S012N3PS1T00	1047009
	PNP	SAS4-S012P3PS1T00	1047364
280 mm	NPN	SAS4-S028N3PS1T00	1207707
	PNP	SAS4-S028P3PS1T00	1047063
440 mm	NPN	SAS4-S044N3PS1T00	1207708
	PNP	SAS4-S044P3PS1T00	1045019
600 mm	NPN	SAS4-S060N3PS1T00	1207709
	PNP	SAS4-S060P3PS1T00	1047587

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Mounting bracket for mounting on the face sides. The mounting kit consists of 4 x BEF-SLG1. This set is for light grids up to a monitoring height of 600 mm.	BEF-SLG-SET2	2056518
Terminal and alignment brackets	Bracket	VZA-SLG	2048519
Plug connectors and cables	Cable socket, M8, 4-pin, straight, 2 m, PUR halogen-free	DOL-0804-G02MC	6025894
	Cable socket, M8, 4-pin, straight, 5 m, PUR halogen-free	DOL-0804-G05MC	6025895



At a glance

- Variable monitoring heights from 120 mm to 440 mm
- No commissioning necessary – Plug & Play function
- Maximum scanning range of 3 m
- Response time 18 ms
- 25 mm resolution possible with 40 mm beam separation
- Job LEDs along the entire length of the sensor
- Green job LEDs for correct picking and red job LEDs for picking errors
- Can be connected to bus systems

Your benefits

- Highly visible job LEDs can be seen from any position
- Picking error display for order picking improves quality
- Plug & Play function saves time
- Automatic teach-in when turned on
- Slim and flat models offer flexible mounting options and optimize shelf space while reducing damage
- Quick and cost-effective installation thanks to optical synchronization – no need to wire the sender and receiver together
- Auto-muting, the teach-in pushbutton, and an alignment aid ensure a longer operating time

→ **www.mysick.com/en/SPL**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/SPL

- **Switching output:** PNP
- **Operating range:** 1.5 m

Optical light emission	Monitoring height	Model name	Part no.
Flat	120 mm	SPL-F120PPS1W04	1046128
	280 mm	SPL-F280PPS1W04	1046764
	440 mm	SPL-F440PPS1W04	1046314
Slim	120 mm	SPL-S120PPS1W04	1046127
	280 mm	SPL-S280PPS1W04	1046763
	440 mm	SPL-S440PPS1W04	1046312

Accessories

Accessory category	Brief description	Model name	Part no.
Plug connectors and cables	Cable socket, M8, 4-pin, straight, 2 m, PVC	DOL-0804-G02M	6009870
	Cable socket, M8, 4-pin, straight, 5 m, PVC	DOL-0804-G05M	6009872

At a glance

- CAN, Ethernet TCP/IP, PROFINET, and EtherNet/IP on board. No additional Ethernet gateway required (for "Ethernet" connection type)
- SMART620 code reconstruction
- Highly flexible sorting and filter functions
- Configuration with SOPAS, the configuration tool for all new SICK products
- High scanning frequency of up to 1,200 Hz
- Compact design
- Advanced remote diagnostics and network monitoring functions available via Ethernet
- IP 65 enclosure rating

Your benefits

- High reading rate of damaged, dirty, and partially covered bar codes using SMART620 code reconstruction technology
- Less programming time required for the control system, since data can be transmitted to the control system in the desired format
- No additional Ethernet gateway required with Ethernet variants, thus lowering costs
- The CLV62x scanner can be used as a multiplexer in any CAN scanner network from SICK – no additional multiplexers necessary
- Real-time code identification, even at very high conveyor speeds
- Compact design and easy operation enable installation in places with limited space

→ **www.mysick.com/en/CLV62x**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

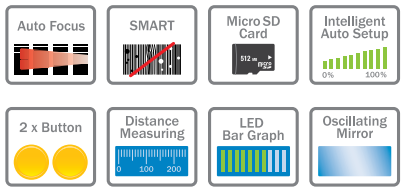
Additional device versions at www.mysick.com/en/CLV62x

- **Focus:** Fixed focus
- **Version:** CLV620 mid range
- **Connection type:** Ethernet
- **Scanner design:** Line scanner

Reading window	Model name	Part no.
On the front	CLV620-0120	1041547
Lateral (105°)	CLV620-2120	1041551

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Mounting bracket, U-shaped	Mounting bracket	2042800
Modules	Small connection module for one sensor, four PG connectors, basic unit for CMC600	CDB620-001	1042256
	CDF600 fieldbus proxy for connecting CLV6xx, RFH6xx, LECTOR®62x, and cabled IDM1xx hand-held scanners to PROFIBUS networks	CDF600-0100	1041251
	Modular connection module for one sensor	CDM420-0001	1025362
Storage media	Micro-SD flash card, storage medium with 512 MB	Micro-SD memory card	4051366
Plug connectors and cables	Ethernet cable, 4-wire, screened, M12 plug, 4-pin (D-coded)/RJ-45 plug, 8-pin, 2 m	SSL-2J04-G02ME	6034414
	M12 12-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-Sub, 2 m (socket/plug)	Connection cable (plug-socket)	2041834



At a glance

- Huge depth of field thanks to real-time auto-focus function
- Integrated function buttons, e.g., for starting auto-setup or reading quality evaluation
- CAN, Ethernet TCP/IP, PROFINET, and EtherNet/IP on board. No additional Ethernet gateway required (for "Ethernet" connection type)
- Enhanced SMART code reconstruction
- Highly flexible sorting and filter functions
- Integrated web server for diagnostic data and network monitoring
- Configuration with SOPAS, the configuration tool for all new SICK products
- Integrated LED bar graph

Your benefits

- Cost-effective, as auto-focus means no variants or additional light barriers are required for focus adjustment
- Intelligent auto-setup and function buttons save time during commissioning
- Teach-in of match codes enabled by integrated function buttons directly on the device
- Simple firmware updates using the Micro-SD flash card: no PC required
- No additional Ethernet gateway required with Ethernet variants, thus lowering costs
- Further increased reading rate of damaged, dirty, and partially covered bar codes using enhanced SMART algorithm

→ **www.mysick.com/en/CLV65x**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/CLV65x

- **Focus:** Auto-focus
- **Version:** CLV650 Standard Density
- **Connection type:** Ethernet
- **Scanner design:** Line scanner
- **Heating:** Optional

Reading window	Model name	Part no.
On the front	CLV650-0120	1042121
Oscillating mirror	CLV650-6120	1042125

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Mounting bracket, U-shaped	Mounting bracket	2042800
Modules	Small connection module for one sensor, four PG connectors, basic unit for CMC600	CDB620-001	1042256
	CDF600 fieldbus proxy for connecting CLV6xx, RFH6xx, LECTOR®62x, and cabled IDM1xx hand-held scanners to PROFIBUS networks	CDF600-0100	1041251
	Modular connection module for one sensor	CDM420-0001	1025362
Storage media	Micro-SD flash card, storage medium with 512 MB	Micro-SD memory card	4051366
Plug connectors and cables	Ethernet cable, 4-wire, screened, M12 plug, 4-pin (D-coded)/RJ-45 plug, 8-pin, 2 m	SSL-2J04-G02ME	6034414
	M12 12-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-Sub, 2 m (socket/plug)	Connection cable (plug-socket)	2041834

At a glance

- Advanced SMART code reconstruction technology
- Innovative connectivity with integrated parameter storage
- CAN, Ethernet, and D-Sub on board (depending on the clone plug used)
- Maximum depth of field thanks to real-time auto-focus function
- Consistent, user-friendly GUI – SOPAS ET
- Integrated tracking of up to seven devices without system controller
- Flexible sorting and filter function
- Integrated LED bar graph with control panel

Your benefits

- Increased reading rate of damaged, dirty, and partially covered bar codes using enhanced SMART algorithm
- Maximum accuracy, even in complex applications, thanks to high computing power
- No additional Ethernet gateway required when using the Ethernet clone plug - cost-effective
- Time saved during commissioning thanks to the integrated function buttons and LED bar graph
- The scanner's unique intelligence allows a flexible output format and saves additional controller programming
- It is cost-effective since standard applications can be implemented without an additional system controller thanks to integrated tracking

→ **www.mysick.com/en/CLV69x**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/CLV69x

- **Focus:** Auto-focus
- **Connection type:** Depends on the clone plug used
- **Scanner design:** Line scanner

Version	Reading window	Model name	Part no.
CLV690-0/1 Standard Density	On the front	CLV690-0000	1056600
	Oscillating mirror	CLV690-1000	1056601
CLV692-0/1 High Density	On the front	CLV692-0000	1056608
	Oscillating mirror	CLV692-1000	1056609

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Angled bracket, single, self-locking	Mounting bracket	2013824
Modules	Modular connection module for one sensor, 2 A fuse	CDM420-0006	1058634
Plug connectors and cables	D-Sub plug cover with 15-pin D-Sub HD device plug and 15-pin D-Sub HD device socket	Clone plug	2062450
	I/O plug cover, Ethernet, with three M12 cylindrical connections (17-pin plug, 4-pin Ethernet socket, 5-pin CAN plug)	Clone plug	2062452

At a glance

- Decoding of all common code types: 1D, 2D, direct marking
- Easy integration into industrial networks: serial, USB, diverse bus technologies
- Quick commissioning without a PC using function buttons, aiming laser, focus adjustment, auto-setup, and green feedback LED
- Industrially robust, compact design
- Analysis tools include live image capturing, code verification and reading rates

Your benefits

- Intelligent decoding algorithms provide reliable reading performance for improved reading rates and throughput
- ID*pro* facilitates quick and easy integration into numerous industrial networks
- Intuitive setup with function buttons, auto-setup, aiming laser, focus adjustment, and green feedback LED reduces training and installation time and costs
- Compact design and flexible interface connections make mounting easy, even in confined spaces
- Quick and efficient analysis of reading performance and code quality
- Cloning systems which create back-up copies of parameters ensure short machine downtimes in the event of malfunctions
- SICK LifeTime Services give you peace of mind

→ **www.mysick.com/en/LECTOR®62x**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

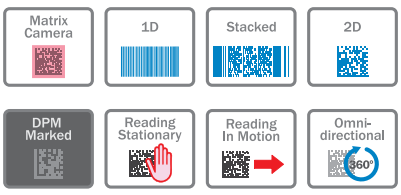
Additional device versions at www.mysick.com/en/LECTOR®62x

- **Version:** LECTOR®620
- **Reading window:** Lateral

Variant	Model name	Part no.
ECO	ICR620E-H12013 ECO	1054507
Professional	ICR620S-T11503 Professional	1050589
High Speed	ICR620H-T11503 High Speed	1055890
DPM Plus	ICR620D-T11503 DPM Plus	1055891

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Mounting bracket (simple bracket), self-locking	Mounting bracket	2020410
Modules	CDF600 fieldbus proxy for connecting CLV6xx, RFH6xx, LECTOR®62x, and cabled IDM1xx hand-held scanners to PROFIBUS networks	CDF600-0100	1041251
	Modular connection module for one sensor	CDM420-0001	1025362
Lenses and accessories	Dome accessories for curved and reflective surfaces including brackets and mounting hardware	Dome accessories	2063093
Storage media	Micro-SD flash card, storage medium with 512 MB	Micro-SD memory card	4051366
Plug connectors and cables	Ethernet cable, 4-wire, screened, M12 plug, 4-pin (D-coded)/RJ-45 plug, 8-pin, 2 m	SSL-2J04-G02ME	6034414
	USB cable, 2 m	USB cable	6036106
	M12 17-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-Sub, 2 m (socket/plug)	Connection cable (plug-socket)	2055419



At a glance

- Configuration with live image and auto-setup
- Fast, omni-directional reading of printed and direct marked 1D and 2D codes
- Rapid image and data transfer via Ethernet interface
- Adjustable reading distance with the use of c-mount lenses and lighting
- Industrial IP 65 housing (with optional hood and protective cap) for harsh ambient conditions

Your benefits

- Fast, cost-effective commissioning via intuitive user interface with live image and auto-setup configuration
- Omni-directional reading of 1D and 2D codes makes it possible to identify components that are not aligned
- Fast, reliable decoding of low contrast and direct marked codes guarantees reliable identification and flexible use
- Different camera resolutions, c-mount lenses, lighting types and colors offer a wide range of solutions
- Dynamic parameter switching makes the identification of a wide range of codes possible with just one setting

→ **www.mysick.com/en/ICR84x-2_FlexLens**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

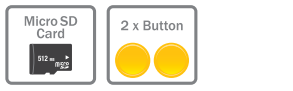
Ordering information

Additional device versions at www.mysick.com/en/ICR84x-2_FlexLens

Version	Reading window	Model name	Part no.
ICR845-2L FlexLens FlexLens	On the front	ICR845-2L0020 FlexLens	1046574
		ICR845-2L0020S01 FlexLens (for infrared lighting)	1047956
ICR847-2L FlexLens FlexLens		ICR847-2L0030 FlexLens	1051095
ICR849-2L FlexLens FlexLens	Lateral	ICR849-2L1030 FlexLens	1051931

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Mounting bracket, adjustable skew angle	Mounting bracket	2039465
Modules	Small connection module for one sensor, four PG connectors, basic unit for CMC600	CDB620-001	1042256
	Modular connection module for one sensor	CDM420-0001	1025362
Storage media	Micro-SD flash card, storage medium with 512 MB	Micro-SD memory card	4051366
Lighting	Matching lighting can be found at www.mysick.com/en/ICR84x-2_FlexLens		
Lenses	Matching lenses can be found at www.mysick.com/en/ICR84x-2_FlexLens		
Plug connectors and cables	Matching plug connectors and cables can be found at www.mysick.com/en/ICR84x-2_FlexLens		



At a glance

- 13.56 MHz RFID writing/reading unit for scanning ranges of up to 150 mm
- Transponder communication complies with the ISO 15693 standard
- Compact, industrial design with integrated antenna
- Integrated protocols provide access to standard fieldbus technology
- A powerful processor performs control tasks independently
- Flexible trigger control
- Parameter cloning is supported with the Micro-SD card
- Integrated diagnostic function

Your benefits

- Reliable identification guarantees maximum throughput
- Adapts to changing needs, providing long-term investment security
- Simple integration saves installation time
- A wide range of functions for flexible solutions
- Maintenance-free
- The same connectivity and user interface as the bar code scanners and image-based code readers from SICK - compatible thanks to the uniform ID*pro* platform

→ **www.mysick.com/en/RFH62x**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/RFH62x

Frequency band	Version	Connection type	Radio equipment type approval	Model name	Part no.
HF (13.56 MHz)	Short Range	Ethernet	Europe, North America	RFH620-1001201	1044839

Accessories

Accessory category	Brief description	Model name	Part no.
Modules	Small connection module for one sensor, four PG connectors, basic unit for CMC600	CDB620-001	1042256
	CDF600 fieldbus proxy for connecting CLV6xx, RFH6xx, LECTOR®62x, and cabled IDM1xx hand-held scanners to PROFIBUS networks	CDF600-0100	1041251
	Modular connection module for one sensor	CDM420-0001	1025362
Storage media	Micro-SD flash card, storage medium with 512 MB	Micro-SD memory card	4051366
Plug connectors and cables	Ethernet cable, 4-wire, screened, M12 plug, 4-pin (D-coded)/RJ-45 plug, 8-pin, 2 m	SSL-2J04-G02ME	6034414
	M12 12-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-Sub, 2 m (socket/plug)	Connection cable (plug-socket)	2041834

At a glance

- 13.56 MHz RFID writing/reading unit for scanning ranges of up to 240 mm
- Transponder communication complies with the ISO 15693 standard
- Compact, industrial design with integrated antenna
- Integrated protocols provide access to standard fieldbus technology
- A powerful processor performs control tasks independently
- Flexible trigger control
- Parameter cloning is supported with the Micro-SD card
- Integrated diagnostic function

Your benefits

- Reliable identification guarantees maximum throughput
- Adapts to changing needs, providing long-term investment security
- Simple integration saves installation time
- A wide range of functions for flexible solutions
- Maintenance-free
- The same connectivity and user interface as the bar code scanners and image-based code readers from SICK - compatible thanks to the uniform ID*pro* platform

→ **www.mysick.com/en/RFH63x**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/RFH63x

Frequency band	Version	Connection type	Radio equipment type approval	Model name	Part no.
HF (13.56 MHz)	Mid Range	Ethernet	Europe, North America	RFH630-1102101	1054746

Accessories

Accessory category	Brief description	Model name	Part no.
Modules	Small connection module for one sensor, four PG connectors, basic unit for CMC600	CDB620-001	1042256
	CDF600 fieldbus proxy for connecting CLV6xx, RFH6xx, LECTOR®62x, and cabled IDM1xx hand-held scanners to PROFIBUS networks	CDF600-0100	1041251
	Modular connection module for one sensor	CDM420-0001	1025362
Storage media	Micro-SD flash card, storage medium with 512 MB	Micro-SD memory card	4051366
Plug connectors and cables	Ethernet cable, 4-wire, screened, M12 plug, 4-pin (D-coded)/RJ-45 plug, 8-pin, 2 m	SSL-2J04-G02ME	6034414
	M12 12-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-Sub, 2 m (socket/plug)	Connection cable (plug-socket)	2041834

At a glance

- Industry-standard UHF RFID writing/ reading unit
- Compact device with integrated antenna (additional external antennas can be used)
- Standard-compatible transponder interface (ISO/IEC 18000-6C/ EPC G2C1)
- Supports industry-standard data interfaces and fieldbuses
- MicroSD memory card can be used for parameter cloning
- Extensive diagnostic and service functions

Your benefits

- Can also be used as a stand-alone system thanks to intelligent process logic
- Optimum and stable reading performance
- Can be easily integrated into industrial networks thanks to ID*pro* compatibility
- Easy to replace thanks to the cloning back-up system on the MicroSD card
- Easy to configure for application-specific requirements using the SOPAS interface
- Simplified diagnostics thanks to the LED signal on the device which can be freely assigned

→ **www.mysick.com/en/RFU63x**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/RFU63x

- **Version:** Long Range

Frequency band	Radio equipment type approval	Model name	Part no.
UHF (860 ... 960 MHz)	Europe (CE)	RFU630-13100	1054396
	North America (FCC)	RFU630-13101	1054397
UHF (920 ... 925 MHz)	China	RFU630-13105	1057943

Accessories

Accessory category	Brief description	Model name	Part no.
Modules	Small connection module for one sensor, four PG connectors, basic unit for CMC600, 1.2 A fuse	CDB620-001S02	1056432
	CDF600 fieldbus proxy for connecting RFU63x to PROFIBUS networks	CDF600-0120	1056443
Storage media	Micro-SD flash card, storage medium with 512 MB	Micro-SD memory card	4051366
Plug connectors and cables	Ethernet cable, 4-wire, screened, M12 plug, 4-pin (D-coded)/RJ-45 plug, 8-pin, 2 m	SSL-2J04-G02ME	6034414
	M12 17-pin, to CDB620/CDM420/CDM425/CDF600 15-pin D-Sub, 2 m (socket/plug)	Connection cable (plug-socket)	2055419

At a glance

- Reading distance up to 320 mm
- Identification of all common linear bar codes
- Scanning speeds of up to 500 scans/second
- Withstands 25 drops from 1.6 m
- Clearly visible scan line
- IP 41 enclosure rating

Your benefits

- Increased productivity thanks to high reading speed
- Reliable reading, even of poorly printed bar codes - no need to enter data manually
- Maximum user comfort due to ergonomic housing design and weight
- Highly reliable thanks to the robust housing design and non-moving parts
- Easy targeting thanks to the clearly visible scan line

→ **www.mysick.com/en/IDM140**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/IDM140

- **Version:** Mid Range

Variant	Application	Items supplied		Model name	Part no.
IDM140 Standard	General purpose	Single scanner	Hand-held scanner, quick start guide	IDM140-201D	6040985
				IDM140-2PDF01D	6040989
		Kit	Hand-held scanner, communication cable, power supply, and quick start guide	IDM140 RS-232 Kit	6041017
			Hand-held scanner, communication cable, and quick start guide	IDM140 USB Kit	6040983
			Hand-held scanner, communication cable, power supply, and quick start guide	IDM140PDF RS-232 Kit	6041018
			Hand-held scanner, communication cable, and quick start guide	IDM140PDF USB Kit	6040987
IDM140 Bluetooth	General purpose, cordless	Kit	Cordless scanner, battery, charging station, and power supply unit	IDM140BT Charging Kit	6040993
			Cordless scanner, battery, base station, communication cable, power supply unit, and quick start guide	IDM140BT RS-232 Kit	6040992
				IDM140BT USB Kit	6040991
			Cordless scanner, battery, charging station, and power supply unit	IDM140PDF BT Charging Kit	6040997
			Cordless scanner, battery, base station, communication cable, power supply unit, and quick start guide	IDM140PDF BT RS-232 Kit	6040996
				IDM140PDF BT USB Kit	6040995
IDM140 WLAN	General purpose, cordless	Kit	Cordless scanner, battery, charging station, USB cable, power supply unit, and quick start guide	IDM140 WLAN Kit	6043431
				IDM140PDF WLAN Kit	6043432

Accessories

Accessory category	Brief description	Model name	Part no.
Other mounting accessories	Stand mount	Stand mount	6036724
	Table mount	Table mount	6036723
Plug connectors and cables	Smooth USB keyboard wedge cable, 1.8 m	Connection cable (plug-plug)	6036728

At a glance

- Decoding of all common 1D codes, plus stacked codes with PDF version
- Reading distances of up to 800 mm (for 0.5 mm code)
- Reading of standard and high-density codes with a resolution from 0.076 mm
- Fast detection with up to 500 scans/second
- Compact housing with up to IP 65 withstands 50 drops from 2 m on concrete
- Good read feedback via LED, beeper, and vibrator
- Supports all common corded and cordless interfaces as well as industrial fieldbuses via SICK connectivity
- Tool-free exchange of cable and battery
- Corded and cordless variants available

Your benefits

- Increased productivity thanks to fast and reliable identification
- Reduced costs thanks to integrated 2-in-1 scan engine: reading standard and high-density codes with a single device
- Highly reliable thanks to industrial enclosure rating and robust housing
- Easy to use due to long reading range and immediate reading
- Intuitive good read feedback for noisy industrial environments via vibrator, beeper, and LED
- Maximum user comfort thanks to ergonomic and well-balanced housing, plus low overall weight

→ **www.mysick.com/en/IDM160**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/IDM160

- **Version:** Long Range

Variant	Application	Items supplied		Model name	Part no.
IDM160 Standard	Industrial	Single scanner	Hand-held scanner, quick start guide	IDM160-01E	6045078
				IDM160-PDF01E	6045081
		Kit	Hand-held scanner, communication cable, power supply, and quick start guide	IDM160 RS-232 Power Supply Kit	1056245
				IDM160 USB Kit	6045058
				IDM160PDF RS-232 Power Supply Kit	1056246
			Hand-held scanner, communication cable, and quick start guide	IDM160PDF USB Kit	6045059
		Set	Hand-held scanner, communication cable, CDF600, and voltage converter cable	IDM160 CDF600 PROFIBUS Set	1056248
IDM160 Bluetooth	Cordless, industrial	Kit	Cordless scanner, battery, base station, communication cable, power supply unit, and quick start guide	IDM160BT RS-232 Kit	6045083
				IDM160BT USB Kit	6045060
				IDM160PDF BT RS-232 Kit	6045087
				IDM160PDF BT USB Kit	6045061
IDM160 WLAN	Cordless, industrial	Kit	Cordless scanner, battery, end cap, charging station, power supply, USB cable, and quick start guide	IDM160 WLAN Kit	6045062
				IDM160PDF WLAN Kit	6045063

Accessories

Accessory category	Brief description	Model name	Part no.
Other mounting accessories	Stand mount	Stand mount	6045193
	Table mount	Table mount	6045192
Plug connectors and cables	Smooth USB keyboard wedge cable, 1.8 m	Connection cable (plug-plug)	6045195

At a glance

- "Touch and Teach" configuration without PC
- Small, light, and economical sensor
- Field evaluation using intelligent software algorithms
- Configuration interface accessible from the side when the device is mounted
- One of the most compact laser scanners on the market
- Industrial design
- Low power consumption (typically 3 W)

Your benefits

- Low operational costs
- Flexible installation thanks to compact dimensions
- Low implementation and replacement costs thanks to D-Sub plug
- Long battery service life when used in battery-operated vehicles
- Easy installation thanks to intuitive operating concept and pre-configured field sets
- Low costs as a result of monitoring large fields with one scanner
- No cabling required between the sender and receiver

→ **www.mysick.com/en/TiM3xx**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/TiM3xx

Sub-product family	Version	Application	Model name	Part no.
TiM31x	Short Range	Indoor	TIM310-1030000	1052627

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Mounting kit 2, impact protection, and alignment aid	Mounting kit 2	2061776
Modules	Small connection module for one sensor, four PG connectors	CDB730-001	1055981
Plug connectors and cables	USB cable, 2 m	USB cable	6036106

At a glance

- The "Level Control" application integrated in the sensor is, with its gapless scanning surface, able to perform "shadowless" detection of objects in containers. Even small objects, regardless of color, are detected anywhere in the container
- Large dynamic measurement range of 0.7 m to 3 m
- High immunity to ambient light
- Robust design
- High angular resolution
- Ideal for vision applications on pallets

Your benefits

- The integrated "Level Control" application replaces numerous sensors and drastically reduces the effort required for wiring and programming.
- Reliable evaluation at high conveyor speeds
- Neither shading nor artificial lighting is necessary
- Mounting is possible in positions beyond the robot collision area
- Fast data acquisition thanks to highly precise detection and positioning measurements in real-time

→ **www.mysick.com/en/LMS4xx**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/LMS4xx

- **Sub-product family:** LMS400
- **Version:** Short Range
- **Application:** Indoor
- **Reading window:** On the front
- **Switching outputs:** 5 (4 x PNP/analog 1 x 4 ... 20 mA)
- **Housing color:** Light blue (RAL 5012)

Object remission	Model name	Part no.
6.5% ... 200%	LMS400-1000	1027897
4.5% ... 100%	LMS400-2000	1041725

Accessories

Accessory category	Brief description	Model name	Part no.
Terminal and alignment brackets	Brackets for item profile	Alignment bracket	2030421
Modules	Modular connection module for one sensor	CDM490-0001	1025363
Plug connectors and cables	Plug cover, with connecting cable, 15-pin, D-Sub, 3 m	Plug cover	2030535

At a glance

- Compact housing
- Single-sided, omni-directional reading
- Real-time auto-focus function
- Reliable code detection thanks to SMART code reconstruction
- Integrated tracking for the shortest object distances

Your benefits

- No additional components required for detecting the object distance, thus reducing costs
- The ability to read dirty and partially covered labels reduces the amount of manual processing required
- High level of operational safety
- Service-friendly and economical

→ **www.mysick.com/en/OPS400**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/OPS400

Design	Version	Model name	Part no.
X scanner	Standard Density	OPS400-00	1019691
	High Density	OPS400-20	1019692
	Low Density	OPS400-60	1019693

At a glance

- Flow sensor for conductive and non-conductive liquids
- Compact design with no moving parts
- Process temperature up to 80 °C, process pressure up to 10 bar
- High chemical resistance due to seal-free sensor design
- Large display with membrane keyboard
- Integrated teaching tube detection

Your benefits

- Maintenance-free flow sensor; saves maintenance costs
- Adjustable measuring ranges, reduced number of variants
- Can be used for conductive and non-conductive liquids – fewer variants and lower storage costs
- Straight measuring tube reduces pressure loss, thus reducing energy costs
- Sensor without seals increases process reliability and availability
- Flexible measurement system for all industries

→ **www.mysick.com/en/FFU**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/FFU

Process pressure	Process connection	Measuring tube nominal width	Maximum flow	Model name	Part no.
Max. 10 bar	G 1/2	DN 10	0 l/min ... 21 l/min	FFUS10-1G1I0	6041737
	G 3/4	DN 15	0 l/min ... 36 l/min	FFUS15-1G1I0	6041249
Max. 6 bar	G 1	DN 20	0 l/min ... 60 l/min	FFUS20-1G1I0	6041738
	G 1 1/4	DN 25	0 l/min ... 240 l/min	FFUS25-1G1I0	6041739

At a glance

- Measuring ranges of 0 bar ... 1 bar to 0 bar ... 600 bar
- Gauge, absolute, and ± measuring ranges
- No mechanical moving parts. No wear, fatigue-proof, maintenance-free
- Stainless steel membrane
- Various programmable switching functions
- Digital outputs PNP or NPN, analog output signal 4 mA ... 20 mA or 0 V ... 10 V
- Min/max memory
- Password protection
- Switch-over of the pressure unit for the display
- IO-Link optional

Your benefits

- Low space requirements due to compact dimensions
- Dual rotatable housing enables flexible installation
- Quick and easy setup and operation via three large pushbuttons and clearly legible display
- Wide application range
- Resistant to corrosive media due to stainless steel membrane welded and hermetically sealed all the way round
- No compromises: individual solutions thanks to versatile configuration options
- Considerable cost savings possible due to IO-Link

→ **www.mysick.com/en/PBS**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/PBS

- **Accuracy of the measuring element:** ≤ ± 1% of the span including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement as per IEC 61298-2)
- **Process temperature:** –20 °C ... +85 °C

Process connection	Electrical connection	Output signal	Seal	Measuring range	Pressure type	Model name	Part no.
G 1/4 A in accordance with DIN 3852-E	M12 x 1 plug, 4-pin, IP 67	2 x PNP	NBR	0 bar ... 10 bar	Gauge pressure	PBS-RB010SG1SSNAMA0Z	6038862
				0 bar ... 100 bar	Gauge pressure	PBS-RB100SG1SSNAMA0Z	6038865
				0 bar ... 250 bar	Gauge pressure	PBS-RB250SG1SSNAMA0Z	6038866
		1x PNP + 4 ... 20 mA	NBR	0 bar ... 10 bar	Gauge pressure	PBS-RB010SG1SSNBMA0Z	6038888
				0 bar ... 100 bar	Gauge pressure	PBS-RB100SG1SSNBMA0Z	6038891
				0 bar ... 250 bar	Gauge pressure	PBS-RB250SG1SSNBMA0Z	6038892
G 1/4 inside	M12 x 1 plug, 4-pin, IP 67	2 x PNP	Without seal	0 bar ... 10 bar	Gauge pressure	PBS-RB010SG2SS0AMA0Z	6039110
				0 bar ... 100 bar	Gauge pressure	PBS-RB100SG2SS0AMA0Z	6039614
				0 bar ... 250 bar	Gauge pressure	PBS-RB250SG2SS0AMA0Z	6039615
		1x PNP + 4 ... 20 mA		0 bar ... 10 bar	Gauge pressure	PBS-RB010SG2SS0BMA0Z	6039121
				0 bar ... 100 bar	Gauge pressure	PBS-RB100SG2SS0BMA0Z	6041615
G 1/4 A in accordance with DIN 3852-E	M12 x 1 plug, 5-pin, IP 67	2x PNP + 4 ... 20 mA	NBR	0 bar ... 10 bar	Gauge pressure	PBS-RB010SG1SSND5A0Z	6038678
G 1/4 inside	M12 x 1 plug, 5-pin, IP 67	2x PNP + 4 ... 20 mA	Without seal	0 bar ... 10 bar	Gauge pressure	PBS-RB010SG2SS0D5A0Z	6039123
				0 bar ... 100 bar	Gauge pressure	PBS-RB100SG2SS0D5A0Z	6042526
				0 bar ... 250 bar	Gauge pressure	PBS-RB250SG2SS0D5A0Z	6041527
G 1/4 A in accordance with DIN 3852-E	M12 x 1 plug, 4-pin, IP 67	2 x PNP	NBR	-1 bar ... 9 bar	Vacuum and ± measuring ranges	PBS-CB010SG1SSNAMA0Z	6038870
		1x PNP + 4 ... 20 mA	NBR	-1 bar ... 9 bar	Vacuum and ± measuring ranges	PBS-CB010SG1SSNBMA0Z	6038896

At a glance

- Large display
- Individually programmable transistor outputs PNP or NPN, optional analog output 4 mA ... 20 mA or 0 V ... 10 V
- M12 round connector x 1
- Measuring ranges from –20 °C ... +80 °C
- Pt1000 element, accuracy class A (IEC 60751)
- Various installation lengths and connection threads
- Wetted parts made from corrosion-resistant stainless steel 1.4571
- Enclosure rating IP 65 and IP 67

Your benefits

- Quick and reliable set-up with superior ease-of-use
- Compact dimensions and rotatable housing make integration easy
- Highly reliable: splash-proof housing, high-grade materials, robust design, and tried-and-tested technology
- Very good long-term stability, accuracy, and linearity
- Short response time
- Optimum solutions for individual requirements thanks to versatile configurability

→ **www.mysick.com/en/TBS**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/TBS

- **Seal:** NBR

Electrical connection	Output signal	Process connection	Installation length/diameter of probe	Model name	Part no.
M12 round connector x 1, 4-pin	2 x PNP	G 1/4 A thread in accordance with DIN 3852-E	50 mm/6 mm	TBS-1ASG10506NM	6048661
			100 mm/6 mm	TBS-1ASG11006NM	6048662
			150 mm/6 mm	TBS-1ASG11506NM	6048663
		G 1/2 A thread in accordance with DIN 3852-E	50 mm/6 mm	TBS-1ASGT0506NM	6048665
			100 mm/6 mm	TBS-1ASGT1006NM	6048666
			150 mm/6 mm	TBS-1ASGT1506NM	6048667
	1 x PNP 1 x 4 mA ... 20 mA	G 1/4 A thread in accordance with DIN 3852-E	50 mm/6 mm	TBS-1BSG10506NM	6048669
			100 mm/6 mm	TBS-1BSG11006NM	6048670
			150 mm/6 mm	TBS-1BSG11506NM	6048671
		G 1/2 A thread in accordance with DIN 3852-E	50 mm/6 mm	TBS-1BSGT0506NM	6048673
			100 mm/6 mm	TBS-1BSGT1006NM	6048674
			150 mm/6 mm	TBS-1BSGT1506NM	6048675
M12 round connector x 1, 5-pin	2 x PNP 1 x 4 mA ... 20 mA	G 1/4 A thread in accordance with DIN 3852-E	50 mm/6 mm	TBS-1DSG10506NE	6048677
			100 mm/6 mm	TBS-1DSG11006NE	6048678
			150 mm/6 mm	TBS-1DSG11506NE	6048679
		G 1/2 A thread in accordance with DIN 3852-E	50 mm/6 mm	TBS-1DSGT0506NE	6048681
			100 mm/6 mm	TBS-1DSGT1006NE	6048682
			150 mm/6 mm	TBS-1DSGT1506NE	6048683

At a glance

- No mechanical moving parts
- Exchangeable and cutable monoprobe from 200 mm to 2,000 mm
- Immune to deposit formation
- Process temperature up to 100 °C, process pressure up to 10 bar
- Small inactive areas, ideal for small containers
- Accurate measurement, even when liquid type changes
- 3-in-1: combined display, analog output (according to NAMUR NE 43), and binary output
- High enclosure rating of IP 67, rotatable housing

Your benefits

- High flexibility due to cutable and exchangeable monoprobe
- Cost savings due to multiple output signals: one system for both level and continuous level monitoring
- Time and cost savings due to low maintenance and quick commissioning
- No medium calibration or subsequent recalibration required for commissioning, thus saving time and costs
- Compact and rotatable housing enables flexible installation
- High availability, even when several sensors are installed in parallel, since there is no mutual device interference
- Time and cost savings due to universal technology, which enables the calibration-free measurement of oil- and water-based liquids

→ **www.mysick.com/en/LFP_Cubic**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/LFP_Cubic

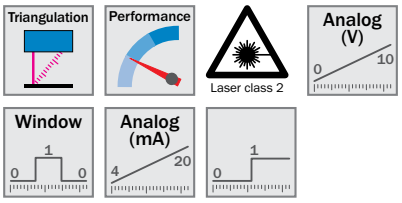
- **Output signal:** 1x PNP + 1x PNP/NPN + 4 ... 20 mA/0 ... 10 V
- **Process temperature:** –20 °C ... +100 °C
- **Process pressure:** –1 bar ... 10 bar
- **Housing material:** Plastic PBT
- **Electrical connection:** M12x1, 5-pin
- **Enclosure rating:** IP 67: EN 60529

Process connection	Probe length	Model name	Part no.
G 3/4 A	500 mm	LFP0500-A4NMB	1057076
	600 mm	LFP0600-A4NMB	1057077
	800 mm	LFP0800-A4NMB	1057079
	1,000 mm	LFP1000-A4NMB	1057081
	1,200 mm	LFP1200-A4NMB	1057083
	1,400 mm	LFP1400-A4NMB	1057085
	1,600 mm	LFP1600-A4NMB	1057087
	1,800 mm	LFP1800-A4NMB	1057089
	2,000 mm	LFP2000-A4NMB	1057091

Process connection	Probe length	Model name	Part no.
3/4" NPT	500 mm	LFP0500-B4NMB	1057095
	600 mm	LFP0600-B4NMB	1057096
	800 mm	LFP0800-B4NMB	1057098
	1,000 mm	LFP1000-B4NMB	1057100
	1,200 mm	LFP1200-B4NMB	1057102
	1,400 mm	LFP1400-B4NMB	1057104
	1,600 mm	LFP1600-B4NMB	1057106
	1,800 mm	LFP1800-B4NMB	1057108
	2,000 mm	LFP2000-B4NMB	1057110

Accessories

Accessory category	Brief description	Model name	Part no.
Terminal and alignment brackets	Spacer for bypass and immersion tube mounting with a diameter of 40 mm ... 100 mm	BEF-FL-BYRD40-LFP1	2059612
Nuts and screws	Counter nut, process connection G 3/4 A	BEF-MU-0PAG34-LFT1	5321681
	Counter nut, process connection 3/4" NPT	BEF-MU-0PAN34-LFT1	5321680
Plug connectors and cables	Cable socket, M12 plug, 5-pin, straight, 2 m, PVC	DOL-1205-G02M	6008899
	Cable socket, M12, 5-pin, straight, 5 m, PVC	DOL-1205-G05M	6009868
	Power supply cable, M12, 5-pin, straight socket/open end, 2 m	DOL-1205-G02MC	6025906
	Power supply cable, M12, 5-pin, straight socket/open end, 5 m	DOL-1205-G05MC	6025907



CE III CDRH
RS-422

At a glance

- Several measuring ranges from 26 mm ... 34 mm to 100 mm ... 400 mm
- Very accurate, surface-independent measurement using CMOS receiver element
- Simple, LED-based operating and teach-in concept
- Wide range of products with a variety of standard interfaces
- Laser technology for precise measurement of very small objects
- Compact stand-alone device
- Excellent price/performance ratio

Your benefits

- Reliable measurement independent of surface, minimizes machine downtime
- Extremely simple sensor teach-in makes commissioning faster and more cost-effective
- Minimal space requirements and cabling work due to the compact stand-alone design
- Numerous measuring ranges and interfaces make the unit ideal for cost-effective integration into any production environment
- Low investment costs enable consistent, regular quality assurance
- Non-contact measuring technology from a safe distance allows the inspection to be carried out directly during the production process
- Wear and damage-free inspection due to non-contact measurement

➜ **www.mysick.com/en/OD_Value**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/OD_Value

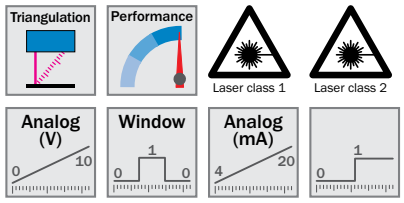
- **Data interface:** 4 mA ... 20 mA (≤ 300 Ω) (analog output resolution 16 bit.)
- **Connection type:** M12 plug, 8-pin

Measuring range [1]	Resolution [2]	Reproducibility [1] [2] [3] [4]	Linearity [2] [5] [4] [6]	Typical light spot size (distance)	Measuring frequency	Response time [7]	Switching output [8]	Model name	Part no.
26 mm ... 34 mm	2 µm	6 µm	± 8 µm	0.1 mm x 0.1 mm (30 mm)	2 kHz	1 ms/ 10 ms/ 35 ms	2 x PNP (100 mA)	OD2-P30W04I0	6036580
							2 x NPN (100 mA)	OD2-N30W04I0	6036572
40 mm ... 60 mm	5 µm	15 µm	± 20 µm	0.5 mm x 1 mm (50 mm)	2 kHz		2 x PNP (100 mA)	OD2-P50W10I0	6036597
							2 x NPN (100 mA)	OD2-N50W10I0	6036588
65 mm ... 105 mm	10 µm	30 µm	± 40 µm	0.8 mm x 1.3 mm (85 mm)	2 kHz		2 x PNP (100 mA)	OD2-P85W20I0	6036613
							2 x NPN (100 mA)	OD2-N85W20I0	6036605
60 mm ... 180 mm	30 µm	90 µm	± 120 µm	1 mm x 1.5 m (120 mm)	2 kHz		2 x PNP (100 mA)	OD2-P120W60I0	6036629
							2 x NPN (100 mA)	OD2-N120W60I0	6036621
100 mm ... 400 mm	75 µm	225 µm	± 750 µm	1.8 mm x 3.5 mm (250 mm)	1.3 kHz	2 ms/ 15 ms/ 50 ms	2 x PNP (100 mA)	OD2-P250W150I0	6036645
							2 x NPN (100 mA)	OD2-N250W150I0	6036637

[1] 6% ... 90% remission. [2] At set averaging medium. [3] Constant application parameters. [4] For optimum performance observe max. warm-up time of 5 min.
[5] Measurement at 90% remission (ceramic, white). [6] With regular calibration in the application.
[7] Automatic sensitivity adjustment ≤ 4 ms, 6 ms for models with a measuring range of 100 mm ... 400 mm.
[8] PNP: HIGH = V_S - (< 2 V) / LOW = < 2 V; NPN: HIGH = < 2 V / LOW = V_S.

Accessories

Accessory category	Brief description	Model name	Part no.
Plug connectors and cables	Cable socket, M12, 8-pin, straight, 2 m, PVC, screened, special color code	DOL-1208-G02MF	6020663
	Cable socket, M12, 8-pin, straight, 5 m, PVC, screened, special color code	DOL-1208-G05MF	6020664



RS-232 RS-422

At a glance

- Numerous measuring ranges from 24 mm ... 26 mm to 300 mm ... 700 mm
- CMOS receiving element for measurement independent of surface
- Maximum measuring accuracy and frequency
- Glass thickness measurement with just one sensor head
- Various light spot sizes
- Integrated calculations for up to three sensors
- Stand-alone use via RS-422

Your benefits

- Non-contact, highly accurate measuring technology ensures 100% end product quality directly in the production process
- Surface-independent measurement algorithms ensure minimum machine downtimes
- Reduced processing times as a result of the high measuring frequency of up to 10 kHz
- Simple, cost-effective solution for challenging measuring tasks thanks to the calculations for a variety of sensor heads
- Optional stand-alone operation means the OD Precision offers maximum performance at lower investment costs
- Clear LCD display enables simple, cost-effective commissioning
- Numerous interfaces for simple integration into existing production environments

→ **www.mysick.com/en/OD_Precision**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/OD_Precision

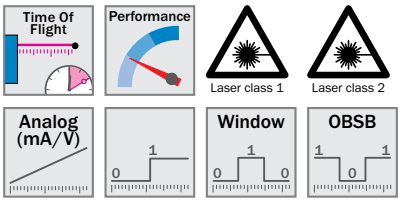
- **Note:** OD Precision sensor head can be used in combination with AOD5-P/N1 or stand-alone via RS-422

Measuring range [1]	Resolution [2]	Reproducibility [3]	Measuring frequency	Response time [4]	Linearity [5]	Typical light spot size (distance)	Model name	Part no.
25 mm ... 35 mm	0.2 µm	0.6 µm	10 kHz	0.1 ms	± 10 µm	30 µm x 100 µm (30 mm)	OD5-30T05	6035977
					± 8 µm	260 µm x 1,000 µm (30 mm)	OD5-30W05	6035978
65 mm ... 105 mm	1 µm	3 µm	10 kHz	0.1 ms	± 20 µm	70 µm x 290 µm (85 mm)	OD5-85T20	6035979
						260 µm x 1,200 µm (85 mm)	OD5-85W20	6035980
250 mm ... 450 mm	5 µm	15 µm	1.25 kHz	0.8 ms	± 160 µm	700 µm x 2,400 µm (350 mm)	OD5-350W100	6035981
300 mm ... 700 mm	10 µm	30 µm	1.25 kHz	0.8 ms	± 400 µm	1,000 µm x 3,700 µm (500 mm)	OD5-500W200	6035982
–	–	–	10 kHz, 1.25 kHz	–	–	–	AOD5-N1	6035984
							AOD5-P1	6035985

[1] 6% ... 90% remission.
[2] Measurement at 90% remission (ceramic, white), or mirror for OD5-25x; averaging set to 4096.
[3] Measurement at 90% remission (ceramic, white), or mirror for OD5-25x; averaging set to 4096; constant application parameters.
[4] Automatic sensitivity adjustment ≤ 2 ms/≤ 16 ms (OD5-350x and OD5-500x).
[5] Measurement at 90% remission (ceramic, white) or mirror for OD5-25x.

Accessories

Accessory category	Brief description	Model name	Part no.
Adapters/distributors	Terminal strip for AOD5-P1/AOD5-N1 (OD Precision)	TERM.-AOD5	6035989
Plug connectors and cables	Cable socket, M12, 12-pin, straight, 5 m, PVC, screened, for stand-alone operation	DOL-1212-G05M	6035988
	Connection cable, M12, 12-pin, straight plug/straight socket, 2 m	DSL-1212-G02M	6035986



CDRH

IO-Link

At a glance

- Maximum reliability, immunity to ambient light, and best price/performance ratio thanks to HDDM™ technology
- Measuring range: up to 50 mm ... 12,000 mm depending on the individually adjustable response time
- Response time: 2.5 ms ... 192 ms
- Accuracy: ± 10 mm
- Reproducibility: 0.5 mm ... 5 mm
- Compact size
- Laser classes 1 and 2 available
- IO-Link as well as analog and switching output

Your benefits

- Smallest blind zone and reduced housing size for use under restricted application conditions
- Consistent, reliable, and precise measurement, even when measuring extremely shiny or dark objects
- The ideal solution for any application requirements thanks to the individual selection between a fast response time or wide measuring range
- Three switching modes for a simple solution to challenging applications using a switching output
- No mutual interference – this allows several sensors to be used simultaneously in a restricted space
- Quick and easy teach-in of settings reduces commissioning costs
- IO-Link enables fast batch changes and simple maintenance and diagnostics
- Moderate acquisition costs and high performance levels guarantee a short return on investment

→ **www.mysick.com/en/Dx35**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/Dx35

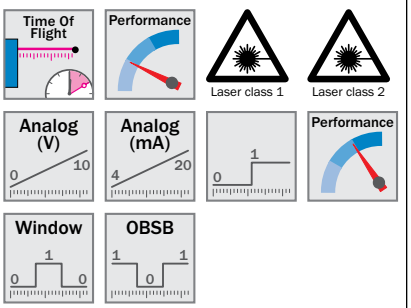
- **Switching output (max. output current):** 1 x / 1 x / 2 x push-pull: PNP/NPN (100 mA), IO-Link (output Q_2 adaptable: 4 mA ... 20 mA, 0 V ... 10 V or switching output)
- **Multi-functional input:** 1 x (response time ≤ 60 ms.)
- **Analog output:** 1 x 4 mA ... 20 mA (≤ 450 Ω) / 1x 0 V ... 10 V (≥ 50 kΩ) / - (output Q_2 adaptable: 4 mA ... 20 mA, 0 V ... 10 V or switching output)

Measuring range [1) 2)]	Laser protection class	Output rate [5) 6)]	Response time [5) 7)]	Switching frequency [5) 7)]	Model name	Part no.
50 mm ... 12,000 mm/ 50 mm ... 5,300 mm/ 50 mm ... 3,100 mm	1 (EN 60825-1) [4)]	2 ms ... 64 ms	4.5 ms ... 192 ms	167 Hz ... 3 Hz	DT35-P15551	1057651
	2 (EN 60825-1) [3)]	1 ms ... 32 ms	2.5 ms ... 96 ms	333 Hz ... 6 Hz	DT35-P15251	1057652

1) 90%/18%/6% remission.
2) With the Super Slow speed setting.
3) Wavelength 658 mm; max. output: 250 mW; pulse duration: 4 ns; pulse rate: 1/250.
4) Wavelength 658 mm; max. output: 250 mW; pulse duration: 4 ns; pulse rate: 1/500.
5) Depending on the set speed: Super Fast ... Super Slow.
6) Continuous change to the distance from the object in the measuring range.
7) Lateral entry of the object into the measuring range.

Accessories

Accessory category	Brief description	Model name	Part no.
Plug connectors and cables	Cable socket, M12, 5-pin, straight, 2 m, PVC	DOL-1205-G02M	6008899
	Cable socket, M12, 5-pin, straight, 5 m, PVC	DOL-1205-G05M	6009868



At a glance

- HDDM technology offers maximum reliability, immunity to ambient light, and price/performance ratio
- Measuring ranges of 10 or 20 m directly onto the object or 50 m on the reflector
- Various performance levels depending on product and laser class
- Various interfaces: switching, analog or serial
- Display with intuitive and consistent operating concept
- Robust die-cast zinc housing
- Wide operating temperature range from –30 °C to +65 °C

Your benefits

- Measuring ranges of up to 10, 20 or 50 m in combination with various interfaces enable quick and easy integration into any production environment
- Highly reliable and precise measurement helps to increase process quality and stability
- High measuring or switching frequencies enable a fast material flow
- Minimal commissioning costs due to quick and easy operation via the display
- The temperature range of –30 °C to +65 °C enables easy usage in outdoor or low-temperature areas
- Increased machine availability thanks to immunity to ambient light up to 40 klx
- Moderate investment costs and high to very high performance levels ensure a short return on investment

→ **www.mysick.com/en/Dx50**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/Dx50

Measuring range	Laser protection class	Switching output (max. output current) [4] [5]	Multi-functional input	Analog output	Model name	Part no.
200 mm ... 10,000 mm [1] 200 mm ... 5,000 mm [2] 200 mm ... 2,500 mm [3]	1 (EN 60825-1)	1 x PNP (100 mA)	1 x PNP [6] [7]	1 x 4 mA ... 20 mA (≤ 300 Ω)	DT50-P1123	1047118
200 mm ... 13,000 mm [1] 200 mm ... 5,800 mm [2] 200 mm ... 3,400 mm [3]					DT50-P2123	1047399
200 mm ... 10,000 mm [1] 200 mm ... 6,500 mm [2] 200 mm ... 4,000 mm [3]	2 (EN 60825-1)				DT50-P1113	1044369
200 mm ... 20,000 mm [1] 200 mm ... 8,500 mm [2] 200 mm ... 5,000 mm [3]					DT50-P2113	1047314
200 mm ... 10,000 mm [1] 200 mm ... 6,000 mm [2] 200 mm ... 4,000 mm [3]	1 (EN 60825-1)	2 x PNP (100 mA)	1 x PNP [8] [7]	–	DS50-P1112	1047402
				–	DS50-P1122	1047405

[1] 90% remission. [2] 18% remission. [3] 6% remission. [4] Output Q short-circuit protected. [5] PNP: HIGH = V_S - (< 2.5 V) / LOW = 0 V.
[6] Response time ≤ 15 ms. [7] PNP: HIGH = V_S / LOW = ≤ 2.5 V. [8] Response time ≤ 60 ms.

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Mounting bracket, steel, zinc-coated, incl. mounting hardware, for Dx50	BEF-WN-DX50	2048370
Terminal and alignment brackets	Dx50 alignment bracket, steel, zinc-coated	BEF-AH-DX50	2048397
Plug connectors and cables	Cable socket, M12, 5-pin, straight, 2 m, PVC	DOL-1205-G02M	6008899
	Cable socket, M12, 5-pin, straight, 5 m, PVC	DOL-1205-G05M	6009868

At a glance

- 3D alignment bracket with quick lock system
- SpeedCon™ and standard M12-compatible connections
- Small, robust metal housing
- Display with intuitive menu structure and clearly visible status LEDs
- Pre-failure and diagnostic data available
- Numerous fieldbus and Ethernet interfaces
- Oblong holes for zero point adjustment during device replacement
- Versatile accessories available

Your benefits

- 3D alignment bracket with quick lock system ensures fast alignment and easy device replacement, thus reducing maintenance and mounting costs
- Phase-shift measuring method with optimum control circuit behavior offers increased performance levels and maximum system productivity
- Fast parameter adjustment with an intuitive and easy-to-use display guarantees the perfect sensor settings
- Contamination control and diagnostic data enable a quick device analysis and preventive maintenance measures for maximum system availability
- Numerous fieldbus- and Ethernet-based interfaces offer a high degree of flexibility and fast communication for maximum productivity
- Small, robust metal housing compatible with SpeedCon™ connectors ensures smooth handling – even in confined spaces
- Numerous accessories allow flexible use and guarantee high operation functionality

→ **www.mysick.com/en/Dx100**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

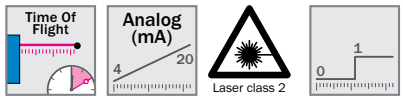
Additional device versions at www.mysick.com/en/Dx100

Ambient temperature	Measuring range [1]	Accuracy	Reproducibility [2]	Interface	Model name	Part no.
Operation –20 °C ... +55 °C Storage –40 °C ... +75 °C	0.15 m ... 100 m	± 2 mm	0.5 mm	SSI	DL100-21AA2101	1052684
				PROFIBUS	DL100-21AA2102	1052686
				PROFINET	DL100-21AA2112	1058164
	0.15 m ... 200 m	± 2.5 mm	1 mm	SSI	DL100-22AA2101	1052690
				PROFIBUS	DL100-22AA2102	1052692
				PROFINET	DL100-22AA2112	1058166
	0.15 m ... 300 m	± 3 mm	2 mm	SSI	DL100-23AA2101	1052696
				PROFIBUS	DL100-23AA2102	1052698
				PROFINET	DL100-23AA2112	1058168

[1] On "Diamond Grade" reflective tape. [2] Statistical error 1 σ, constant ambient conditions, min. power-up delay 10 min.

Accessories

Accessory category	Brief description	Model name	Part no.
Terminal and alignment brackets	Alignment unit for Dx100, steel, zinc-coated, incl. mounting hardware	BEF-AH-DX100	2058653
Reflectors	Reflector plate, DG tape, 665 mm x 665 mm, material: base plate aluminum, screw connection	PL560DG	1016806
Plug connectors and cables	Cable socket, M12, 5-pin, straight, 5 m, PROFIBUS, screened	DOL-1205-G05MQ	6026006
	Cable socket, M12, 8-pin, straight, 2 m, PUR halogen-free, screened	DOL-1208-G02MAH1	6032448
	Connection cable, Ethernet patch cable, 2 m, straight, M12 plug, 4-pin to RJ-45 plug	SSL-2J04-G02ME	6034414
	Cable socket, M12, 4-pin, straight, 2 m, PVC	DOL-1204-G02M	6009382
	Cable plug, M12, 5-pin, straight, 5 m, PROFIBUS, screened	STL-1205-G05MQ	6026005
	Cable plug, M12, 4-pin, straight, 2 m, D-coded, PROFINET, to RJ-45 plug	SSL-2J04-G02MZ60	6048244



At a glance

- Scanning range of up to 30 m on black, 70 m on white
- Very high measuring accuracy and reproducibility
- Red laser, laser class 2
- Heated variants for use in cold store applications
- Robust metal housing
- Serial interfaces as well as analog and switching outputs
- Display for easy commissioning

Your benefits

- High measuring accuracy ensures optimum process reliability, particularly in demanding applications
- Red laser and alignment brackets (optional accessory) enable fast and cost-effective installation
- Robust metal housing and heated device variants ensure a high level of functional safety in harsh ambient conditions
- Integrated display with user-friendly menu navigation guarantees fast and cost-effective commissioning
- Serial interfaces, analog and digital outputs, and optional accessories, such as a weather protection housing and lens hoods, ensure flexible application integration

→ **www.mysick.com/en/Dx500**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/Dx500

- **Connection type:** M12 plug, 5-pin
- **CAN address:**
- **Data rate:**
- **Ambient temperature:** Operation –10 °C ... +50 °C, storage –25 °C ... +75 °C

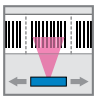
Resolution	Interface	Measuring range [1) 2)]	Output rate	Power consumption	Model name	Part no.
12 bit	Q_A	0.2 m ... 30 m [1)] 0.2 m ... 18 m [2)]	250 ms	Typical 3 W	DT500-A111	1026515
–	–	0.2 m ... 30 m [1)] 0.2 m ... 18 m [2)]	–	Typical 3 W	DS500-P111	1026519

[1)] 90% remission.

[2)] 6% remission.

Accessories

Accessory category	Brief description	Model name	Part no.
Terminal and alignment brackets	Alignment unit for DS/DT500, stainless steel (1.4301), incl. mounting hardware	BEF-DSDT	2031377
Plug connectors and cables	Cable socket, M12, 5-pin, straight, 2 m, PVC	DOL-1205-G02M	6008899
	Cable socket, M12, 8-pin, straight, 2 m, PUR halogen-free, screened	DOL-1208-G02MAH1	6032448



RS-485
RS-422
CANopen®

At a glance

- Response to control marks for special functions and sensor configuration
- Clear measuring range up to 10 km
- High reproducibility of 1 mm
- Adjustable resolution as low as 0.1 mm
- Multiple interfaces: SSI, RS-422, RS-485, and CANopen
- Self-adjusting quadruple red LED lighting
- Inclination and rotation integrated in the sensor, which means that alignment is only required in one axis
- Wide temperature range from –30 °C to +60 °C

Your benefits

- Precise positioning at speeds of up to 4 m/s increases productivity
- Camera-based system with no moving parts in a robust metal housing ensures an increased lifetime, thus reducing replacement costs
- High immunity to ambient light thanks to self-adjusting LED lighting, which ensures reliable operation and increases system availability
- Wide operating temperature range from –30 °C to +60 °C offers maximum flexibility and reliability in numerous applications
- Various serial interfaces (RS-422, RS-485, SSI, and CANopen) offer maximum flexibility and easy machine integration without additional costs for interface adapters and protocol adaption

→ **www.mysick.com/en/OLM100**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/OLM100

- **Operating distance:** 100 mm ± 20 mm (from bar code strip, 30 mm bar code width)
- **Bar code width:** 30 mm (the bar code strip available from SICK always has a bar code width of 30 mm. The bar code strip is available in 2 heights: 30 mm and 40 mm.)
- **Resolution:** 0.1 mm, 1 mm

Output rate	Data interface	Model name	Part no.
1 ms	SSI	OLM100-1001	1047411
5 ms	RS-422	OLM100-1003	1047412
	RS-485	OLM100-1005	1046580
	CANopen	OLM100-1006	1047413

Accessories

Accessory category	Brief description	Model name	Part no.
Other mounting accessories	Sliding nut set, M5, 4 pieces	Sliding nuts	2017550
Plug connectors and cables	Cable socket, M12, 5-pin, straight, 5 m, PUR halogen-free, screened	DOL-1205-G05MAC	6036384
	Cable socket, M12, 8-pin, straight, 2 m, PUR halogen-free, screened	DOL-1208-G02MAH1	6032448
	Cable socket, M12, 8-pin, straight, 5 m, PUR halogen-free, screened, twisted pair wires for SSI and DME-HIPERFACE interface	DOL-1208-G05MAH1	6032449
	Connection cable, Ethernet patch cable, 2 m, straight, M12 plug, 4-pin to RJ-45 plug	SSL-2J04-G02ME	6034414
Codes	Scanning range of 0 m ... 20 m	Bar code strip	5324069

At a glance

- Response to control marks for special functions and sensor configuration
- Clear measuring range up to 10 km
- Adjustable resolution as low as 0.1 mm
- Travel speed up to 10 m/s
- Output of position and speed plus contamination control via PROFIBUS
- Compatible with SPEEDCON™ quick connectors and standard M12 plugs
- Wide temperature range from –30 °C to +60 °C

Your benefits

- Precise positioning with speeds of up to 10 m/s increase productivity
- Camera-based system with no moving parts in a robust metal housing increases both the availability and lifetime of the sensor
- High immunity to ambient light thanks to self-adjusting LED lighting, which ensures reliable operation and increases system availability
- Wide operating temperature range from –30 °C to +60 °C offers maximum flexibility and reliability in numerous applications
- Status bit for contamination control enables preventive device maintenance and prevents unexpected machine failures
- Alignment in just one axis, red LED lighting and compatibility with SPEEDCON™ plugs ensure quick and easy mounting with reduced installation costs

→ **www.mysick.com/en/OLM200**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

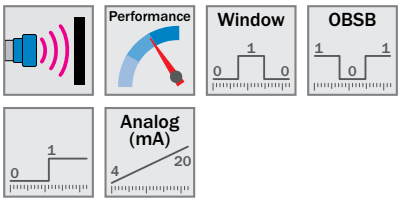
Additional device versions at www.mysick.com/en/OLM200

Operating distance	Bar code width	Output rate	Resolution	Data interface	Model name	Part no.
100 mm ± 20 mm (from bar code strip, 30 mm bar code width)	30 mm [1]	2.5 ms	0.1 mm, 1 mm, 10 mm, 100 mm	PROFIBUS DP-V0	OLM200-1002	1051658

[1] The bar code strip available from SICK always has a bar code width of 30 mm. The bar code strip is available in 2 heights: 30 mm and 40 mm.

Accessories

Accessory category	Brief description	Model name	Part no.
Other mounting accessories	Sliding nut set, M5, 4 pieces	Sliding nuts	2017550
Plug connectors and cables	Cable socket, M12, 4-pin, straight, 5 m, PUR halogen-free, screened	DOL-1204-G05MAC	6038621
	Cable socket, M12, 5-pin, straight, 5 m, PROFIBUS, screened	DOL-1205-G05MQ	6026006
	Connection cable, Ethernet patch cable, 2 m, straight, M12 plug, 4-pin to RJ-45 plug	SSL-2J04-G02ME	6034414
	Cable plug, M12, 5-pin, straight, 5 m, PROFIBUS, screened	STL-1205-G05MQ	6026005
Codes	Scanning range of 0 m ... 20 m	Bar code strip	5324069



IO-Link

At a glance

- Reliable measurement independent of material color, transparency, gloss, and ambient light
- Four scanning ranges up to 1,300 mm
- Short M18 metal housing with a length of 41 mm
- Straight or angled variants
- Analog current or voltage output plus push-pull switching output (PNP/NPN in one) with IO-Link available
- Configuration via IO-Link and/or teach-in via cable
- Immune to dirt, dust, humidity, and fog

Your benefits

- Scanning ranges up to 1,300 mm open up a range of options for flexible use
- Easy integration due to a short M18 housing, available in straight or angled designs
- Intelligent measured value filters guarantee reliable measurement results for maximum process stability
- Integrated temperature compensation ensures high measuring accuracy at all times for optimum process quality
- Robust, one-piece metal housing ensures maximum system availability
- Synchronization or multiplexing allow simultaneous operation of up to 10 sensors, which improves flexibility and process reliability
- Teach-in via cable prevents unintentional sensor adjustment
- Devices with switching output and IO-Link provide maximum machine flexibility with easy system operation

→ **www.mysick.com/en/UM18**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

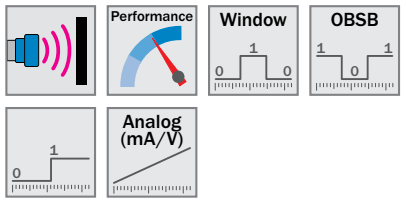
Additional device versions at www.mysick.com/en/UM18

Operating range, limiting range	Output rate	Response time	Switching frequency	Hysteresis	Switching output/ analog output	Model name	Part no.
30 mm ... 250 mm, 350 mm	8 ms	40 ms	25 Hz	≥ 3 mm	1 x push-pull: PNP/NPN (100 mA); IO-Link [1) 2)]	UM18-21112A211	6048390
			–	–	1 x 4 mA ... 20 mA (≤ 500 Ω) [3) 4)]	UM18-211126111	6048392
65 mm ... 350 mm, 600 mm	16 ms	80 ms	12 Hz	≥ 5 mm	1 x push-pull: PNP/NPN (100 mA); IO-Link [1) 2)]	UM18-21212A211	6048396
			–	–	1 x 4 mA ... 20 mA (≤ 500 Ω) [3) 4)]	UM18-212126111	6048398
120 mm ... 1,000 mm, 1,300 mm	20 ms	100 ms	10 Hz	≥ 20 mm	1 x push-pull: PNP/NPN (100 mA); IO-Link [1) 2)]	UM18-21812A211	6048402
			–	–	1 x 4 mA ... 20 mA (≤ 500 Ω) [3) 4)]	UM18-218126111	6048404

[1)] Output Q short-circuit protected. [2)] Push-pull: PNP/NPN HIGH = V_S - (< 4 V) / LOW < 2 V.
[3)] At V_S ≤ 20 V max. load ≤ 100 Ω.[4)] The subsequent smoothing of the analog signal can increase the response time by up to 200% depending on the application.

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Mounting plate for M18 sensors, steel, zinc-coated, without mounting hardware	BEF-WG-M18	5321870
	Mounting bracket, M18 thread, steel, zinc-coated, without mounting hardware	BEF-WN-M18	5308446
Terminal and alignment brackets	Plate H for universal clamp, steel, zinc-coated, incl. universal clamp and mounting hardware	BEF-KHS-H01	2022465
Plug connectors and cables	Cable socket, M12, 5-pin, straight, 2 m, PVC	DOL-1205-G02M	6008899



At a glance

- High measuring accuracy due to time-of-flight measurement, detects objects regardless of their color (even glass, liquids, and foils)
- Scanning range up to 8,000 mm
- Display enables fast and flexible sensor adjustment
- Immune to dust, dirt, and fog
- Also available with combined analog and digital outputs
- Synchronization and multiplex operation
- Adjustable sensitivity
- Three operation modes: Distance to Object (DtO), Window (Wnd) or Object between sensor and background (OBSB)

Your benefits

- Easy system integration due to compact size
- Various configuration options enable flexible adaptation to application requirements
- Reliable measurement results due to the elimination of mutual interference by means of synchronization and multiplex modes
- Cost-effective area monitoring possible due to sensor synchronization
- Offline sensor configuration via the display enables pre-configuration and thus saves times when commissioning the system
- Integrated temperature compensation ensures a high measuring accuracy for optimum results
- OBSB mode enables detection of any object between the sensor and a taught-in background

→ **www.mysick.com/en/UM30**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/UM30

- **Sending axis:** Straight
- **Switching output:** 1 x PNP (200 mA) (output Q short-circuit protected.) (PNP: HIGH = V_S - (< 2 V) / LOW = 0 V.)
- **Analog output:** 1 x 0 V ... 10 V (≥ 100 kΩ) / 1 x 4 mA ... 20 mA (≤ 500 Ω) (automatic switching between current and voltage output depending on the load.)
- **Analog output resolution:** 12 bit

Operating range, limiting range	Output rate	Ultrasonic frequency (typical)	Weight	Response time	Switching frequency	Hysteresis	Model name	Part no.
65 mm ... 350 mm, 600 mm	16 ms	400 kHz	150 g	70 ms	8 Hz	≥ 5 mm	UM30-212118	6036922
200 mm ... 1,300 mm, 2,000 mm	23 ms	200 kHz	150 g	110 ms	6 Hz	≥ 20 mm	UM30-213118	6036923
350 mm ... 3,400 mm, 5,000 mm	43 ms	120 kHz	210 g	180 ms	3 Hz	≥ 50 mm	UM30-214118	6036924
600 mm ... 6,000 mm, 8,000 mm	60 ms	80 kHz	270 g	240 ms	2 Hz	≥ 100 mm	UM30-215118	6036925

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Mounting plate for M30 sensors, steel, zinc-coated, without mounting hardware	BEF-WG-M30	5321871
	Mounting bracket, M30 thread, steel, zinc-coated, without mounting hardware	BEF-WN-M30	5308445
Terminal and alignment brackets	Mounting bracket, can be rotated axially, with M6 threaded mounting hole, without mounting hardware	BEF-HA-M30A	5311527
Plug connectors and cables	Cable socket, M12, 5-pin, straight, 2 m, PVC	DOL-1205-G02M	6008899

At a glance

- Up to 3 Mbit/s optical transfer rate
- The level of the opposite device can be read out at the push of a button, making one-man mounting easy
- PROFIBUS/Ethernet interface
- Adjustable carrier frequency F1/F2
- Integrated repeater
- 10/100 Mbit Ethernet
- Connection and operation without opening the device

Your benefits

- An integrated optical and electronic alignment aid supports fast and cost-effective commissioning
- The electronically adjustable carrier frequency allows the ISD400 to be used as either the sender or receiver, thus reducing storage costs
- Wide operating temperature range guarantees high system availability – even in cold stores
- Flexible and cost-effective use due to a variety of fieldbus interfaces
- High data transmission rates ensure optimum system performance

→ **www.mysick.com/en/ISD400**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/ISD400

- **Transmission range:** 0.2 m ... 180 m
- **Ambient temperature during operation:** –25 °C ... +55 °C
- **Power consumption:** ≤ 0.4 A

Data interface	Model name	Part no.
PROFIBUS DP	ISD400-1111	1042286
Ethernet [1]	ISD400-6111	1046119

[1] Internal buffer 8 kB.

Accessories

Accessory category	Brief description	Model name	Part no.
Terminal and alignment brackets	Alignment unit for DME4000/ISD400, aluminum, anodized	BEF-DME/ISD	2046052
Plug connectors and cables	Cable socket, M12, 4-pin, straight, 2 m, PVC	DOL-1204-G02M	6009382
	Cable socket, M12, 5-pin, straight, 12 m, PROFIBUS, screened	DOL-1205-G12MQ	6032636
	Connection cable, Ethernet patch cable, 2 m, straight, M12 plug, 4-pin to RJ-45 plug	SSL-2J04-G02ME	6034414

At a glance

- High-speed positioning and testing
- Advanced "object locator" to locate objects regardless of position, rotation, and size
- Unique interchangeable housing supports a diffuser and diverse optical accessories
- User-friendly step-by-step configuration via PC
- User-friendly user interface
- Flexible interfaces for machine integration and HMI design

Your benefits

- Powerful yet simple tools ensure flexibility in positioning and testing applications
- The advanced "object locator" guarantees high-quality results even under the harshest production conditions
- Unique interchangeable housing for straightforward optimization of the image quality
- The simple configuration under SOPAS, including the emulator for the offline configuration and test, reduces production downtimes to a minimum
- User-friendly user interfaces are perfectly tailored to users' monitoring requirements, making their work as efficient as possible
- Ethernet communication and web API provide excellent connectivity and scope for customer-specific HMI development

→ **www.mysick.com/en/Inspector**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/Inspector

Product name	Image field of internal lighting	Light sender	Task	Lenses	Model name	Part no.
Inspector I10 Standard	20 mm x 20 mm ... 72 mm x 72 mm	White ring light	Detecting	Fixed	VSPI-1R111	1042779
Inspector I40	22 mm x 15 mm ... 79 mm x 58 mm	White ring light	Detecting	Interchangeable	VSPI-4F2111	1047913
Inspector P30	20 mm x 20 mm ... 72 mm x 72 mm	White ring light	Positioning	Interchangeable	VSPP-3F1122	1051982
Inspector PI50	22 mm x 15 mm ... 79 mm x 58 mm	White ring light	Detecting, positioning	Interchangeable	VSPP-5F2113	1056082
Inspector PI50-IR	22 mm x 15 mm ... 79 mm x 58 mm	IR LED ring light, 850 nm	Detecting, positioning	Interchangeable	VSPP-5F2413	1057303
Inspector I40-LUT	22 mm x 15 mm ... 79 mm x 58 mm	UV ring light	Detecting	Interchangeable	VSPI-4F2311	1050694
Inspector I40-IR	22 mm x 15 mm ... 79 mm x 58 mm	IR LED ring light, 850 nm	Detecting	Interchangeable	VSPI-4F2411	1054705
Inspector Viewer	–	LCD, back light MTBF 30,000 h	Monitoring & controlling	–	VSPV-22222	2057556

Accessories

Accessory category	Brief description	Model name	Part no.
Mounting brackets/plates	Inspector mounting bracket	BEF-WK-EPA	2045167
Lenses and accessories	Replaces the front screen and creates even and homogeneous illumination. For reflective surfaces. Including adapter ring and O-ring	Inspector Flex Dome	2050678
Plug connectors and cables	M12 plug, 12-pin, straight, 2 m	DOL-1212-G02MAS01	6036555
	Ethernet cable, 4-wire, screened, M12 plug, 4-pin (D-coded)/ RJ-45 plug, 8-pin, 2 m	SSL-2J04-G02ME	6034414

At a glance

- Suitable for demanding testing and measuring tasks
- Flexible operating distance and field of view
- Stand-alone operation, no PC needed
- IP 65 enclosure rating
- Easy-to-use user interface with more than 110 tools
- Simple connection to a PLC, robots, and other control systems, e.g., via EtherNet/IP or OPC
- Available in three resolutions, from fast VGA (0.3 megapixel) to high-resolution UXGA (1.9 megapixel)

Your benefits

- The IVC-2D's flexibility ensures optimum adaptation to individual applications
- The 1.9 megapixel resolution ensures detailed precision and a high reproducibility
- IP 65 enclosure rating makes the system suitable for industrial environments
- Easy operation ensures fast application development, saving time and reducing costs
- The camera's OPC server and EtherNet/IP interface enable easy integration into PLCs, robots, and control systems
- Stand-alone operation reduces installation complexity compared to PC-based vision systems
- The wide selection of camera-controlled lighting options makes it easy to develop complete solutions

➜ **www.mysick.com/en/IVC-2D**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/IVC-2D

Product name	Resolution	Image sensor	Maximum performance	Model name	Part no.
IVC-2D Standard	640 px x 480 px	1/3" CCD, electronic shutter	30 Hz	IVC-2DM1111	1027190
IVC-2D HighRes	1,024 px x 768 px		24 Hz	IVC-2DM1121	1028407
IVC-2D Reader	640 px x 480 px		30 Hz	IVC-2DM1112	1029135
IVC-2D HighRes Reader	1,024 px x 768 px		24 Hz	IVC-2DM1122	1029136
IVC-2D UXGA	1,600 px x 1,200 px	1/1.8" CCD, electronic shutter	10 Hz	IVC-2DM1131	1054511
IVC-2D UXGA Reader			10 Hz	IVC-2DM1132	1054512

Accessories

Accessory category	Brief description	Model name	Part no.
Lighting	Lighting with low angle, red light source, 660 nm, exterior diameter 208 mm	VLR-66RA2011	6037798
Terminal and alignment brackets	Articulated bracket, can be rotated along 2 axes	BEF-GH-IVC2D	2032753
Lenses and accessories	C-mount lens, 1:1.4	OBJ-C01214A	5314042
Plug connectors and cables	M12 plug, 8-pin, straight, 2 m	DOL-1208-G02MA	6020633
	Ethernet cable, 4-wire, screened, suitable for drag chains, M12 plug, 4-pin (D-coded)/RJ-45 plug, 8-pin, 3 m	SSL-2J04-G03ME	6029630

At a glance

- Advanced 3D image processing made easy
- Independent of object contrast and color
- Factory calibrated – providing metric measurement results in real-time
- Easy-to-use graphical user interface for fast application development
- Stand-alone operation, no PC required after configuration
- Simple connection of PLCs, robots, and other control systems, e.g., via Ethernet/IP or OPC
- Scans up to 5,000 profiles per second
- Industrial, robust metal housing

Your benefits

- The IVC-3D makes advanced 3D shape inspections easy and cost-effective
- Contrast-independent measurement makes your application stable, even with varying object colors and when there is minimal contrast
- Factory calibrated – providing metric measurement results in real-time
- Stand-alone operation – all of the software required for lighting and analysis is included. This saves space as well as wiring effort.
- The common graphical user interface for the IVC-2D and IVC-3D enables fast application development. This reduces both training costs and integration time.
- The IVC has an OPC server and supports Ethernet/IP, which enables simple connection to PLCs, robots, and other control systems

➜ **www.mysick.com/en/IVC-3D**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/IVC-3D

Product name	Example field of view (H x W)	Nominal sensing range [1]	Height resolution	3D profile resolution	Model name	Part no.
IVC-3D 30	30 mm x 50 mm	207 mm ... 238 mm	0.015 mm	2,048 points	IVC-3D31111	1041205
IVC-3D 50	50 mm x 150 mm	190 mm ... 274 mm	0.04 mm	2,048 points	IVC-3D21111	1027538
IVC-3D 100	100 mm x 200 mm	260 mm ... 400 mm	0.05 mm	2,048 points	IVC-3D51111	1043579
IVC-3D 200	200 mm x 600 mm	300 mm ... 675 mm	0.2 mm	2,048 points	IVC-3D11111	1027539
IVC-3D 300	300 mm x 1,000 mm	280 mm ... 1,200 mm	1.2 mm	1,400 points	IVC-3D41111	1041204

[1] +/- 5% of max. height range

Accessories

Accessory category	Brief description	Model name	Part no.
Plug connectors and cables	Cable socket, M12, 8-pin, straight, 5 m, PVC, screened	DOL-1208-G05MA	6020993
	Cable socket, M12, 5-pin, straight, 5 m, PVC	DOL-1205-G05M	6009868
	Connecting cable	SSL-2J04-G05ME	6035389

At a glance

- Ultra-compact design
- 2 m or 3 m protective field range
- 270° scan angle
- 1 field set (1 protective field, 2 warning fields)
- Selectable resolution for hand, leg or body detection
- Contour as reference for vertical applications
- Integrated external device monitoring (EDM)
- Easy-to-configure fields and functions

Your benefits

- Simple integration due to ultra-compact design
- Easy installation, commissioning, and maintenance for stationary and mobile applications
- Unbeatable cost-effectiveness – 270° scan angle allows complete application protection with only two scanners
- Safety engineering - with no loss of productivity
- Decades of proven safety technology guarantee maximum reliability and availability – even under difficult conditions
- Easy to manage, reducing costs and work time
- Reduction of downtime and brake wear thanks to triple field function
- Simple alignment and reliable operation in vertical mode

→ **www.mysick.com/en/S300_Mini_Standard**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

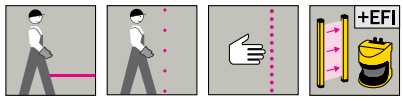
Ordering information

Additional device versions at www.mysick.com/en/S300_Mini_Standard

Designation	System part	Protective field range	Model name	Part no.
S300 Mini Standard	Laser scanner	2 m	S32B-2011BA	1050932
		3 m	S32B-3011BA	1056430

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Mounting brackets/ plates	Mounting bracket for rear mounting on the wall or the machine	–	Mounting kit 1a	2034324
	Mounting bracket, cross-wise adjustment possible, only in connection with mounting kit 1a (2034324) or 1b (2034325)	–	Mounting kit 2	2039302
	Holding plate, longitudinal adjustment possible, only in connection with mounting kit 2 (2039302)	–	Mounting kit 3	2039303
Connecting cables	Cable socket, M12 x 7 + FE, straight, screened	5 m	DOL-127SG05ME25KM0	6020354
Configuration connection cable	For connecting the configuration connection to the USB interface of the PC, M8 x 4, USB-A	2 m	DSL-8U04G02M025KM1	6034574
		10 m	DSL-8U04G10M025KM1	6034575



At a glance

- Compact design
- 2 m or 3 m protective field range
- 270° scan angle
- 1 field set (1 protective field, 2 warning fields)
- Configuration memory integrated in the system plug
- EFI interface for safe SICK device communication
- Selectable resolution for hand, leg or body detection
- Contour as reference for vertical applications

Your benefits

- Simple integration due to compact design
- Easy installation, commissioning, and maintenance for stationary and mobile applications
- Unbeatable cost-effectiveness – 270° scan angle allows complete application protection with only two scanners
- Safety engineering - with no loss of productivity
- Quick recommissioning via configuration memory
- Easy modular expansions, simple cabling, and additional functions using SICK safety controllers via EFI
- Decades of proven safety technology guarantee maximum reliability and availability – even under difficult conditions
- Simple alignment and reliable operation in vertical mode

→ **www.mysick.com/en/S300_Standard**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

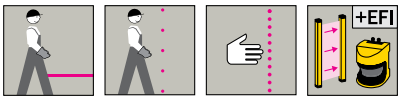
Ordering information

Additional device versions at www.mysick.com/en/S300_Standard

Designation	System part	Protective field range	Model name	Part no.
S300 Standard	Laser scanner	2 m	S30B-2011BA	1026820
		3 m	S30B-3011BA	1056427

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Mounting brackets/ plates	Mounting bracket for rear mounting on the wall or the machine	–	Mounting kit 1a	2034324
	Mounting bracket, cross-wise adjustment possible, only in connection with mounting kit 1a (2034324) or 1b (2034325)	–	Mounting kit 2	2039302
	Holding plate, longitudinal adjustment possible, only in connection with mounting kit 2 (2039302)	–	Mounting kit 3	2039303
System plug	Without cable	–	SX0B-A0000G	2032807
	Pre-assembled	5 m	SX0B-B1105G	2032859
Configuration connection cable	For connecting the configuration connection to the USB interface of the PC, M8 x 4, USB-A	2 m	DSL-8U04G02M025KM1	6034574
		10 m	DSL-8U04G10M025KM1	6034575



At a glance

- Compact design
- 2 m or 3 m protective field range
- 270° scan angle
- 4 switchable field sets (4 protective fields, 8 warning fields)
- Configuration memory integrated in the system plug
- EFI interface for safe SICK device communication
- Selectable resolution for hand, leg or body detection
- Contour as reference for vertical applications

Your benefits

- Simple integration due to compact design
- Easy installation, commissioning, and maintenance for stationary and mobile applications
- Unbeatable cost-effectiveness – 270° scan angle allows complete application protection with only two scanners
- Safety engineering - with no loss of productivity
- Quick recommissioning via configuration memory
- Easy modular expansions, simple cabling, and additional functions using SICK safety controllers via EFI
- Decades of proven safety technology guarantee maximum reliability and availability – even under difficult conditions
- Simple alignment and reliable operation in vertical mode

→ **www.mysick.com/en/S300_Advanced**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

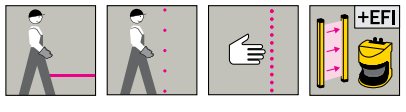
Ordering information

Additional device versions at www.mysick.com/en/S300_Advanced

Designation	System part	Protective field range	Model name	Part no.
S300 Advanced	Laser scanner	2 m	S30B-2011CA	1026821
		3 m	S30B-3011CA	1056428

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Mounting brackets/ plates	Mounting bracket for rear mounting on the wall or the machine	–	Mounting kit 1a	2034324
	Mounting bracket, cross-wise adjustment possible, only in connection with mounting kit 1a (2034324) or 1b (2034325)	–	Mounting kit 2	2039302
	Holding plate, longitudinal adjustment possible, only in connection with mounting kit 2 (2039302)	–	Mounting kit 3	2039303
System plug	Without cable	–	SX0B-A0000G	2032807
	Pre-assembled	5 m	SX0B-B1505G	2034264
Configuration connection cable	For connecting the configuration connection to the USB interface of the PC, M8 x 4, USB-A	2 m	DSL-8U04G02M025KM1	6034574
		10 m	DSL-8U04G10M025KM1	6034575



At a glance

- 4 m, 5.5 m or 7 m protective field range
- 1 field set (1 protective field, 2 warning fields)
- EFI interface for safe SICK device communication
- Configuration memory integrated in the system plug
- Selectable resolution for hand, leg or body detection
- Simultaneous monitoring of two protective fields
- Contour as reference for vertical applications
- Integrated external device monitoring (EDM)

Your benefits

- Largest protective field range available on the market increases the variety of application possibilities
- Safety engineering - with no loss of productivity
- Quick recommissioning via configuration memory
- Easy modular expansions, simple cabling, and additional functions using SICK safety controllers via EFI
- Easy installation, commissioning, and maintenance for stationary and mobile applications
- Decades of proven safety technology guarantee maximum reliability and availability – even under difficult conditions
- Simple alignment and reliable operation in vertical mode

→ **www.mysick.com/en/S3000_Standard**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

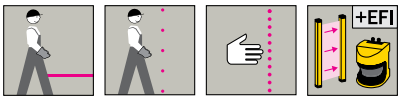
Additional device versions at www.mysick.com/en/S3000_Standard

- **System part:** Sensor head with I/O module

Protective field range	Model name	Part no.
4 m	S30A-4011BA	1028934
5.5 m	S30A-6011BA	1023546
7 m	S30A-7011BA	1023890

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Mounting brackets/ plates	Mounting bracket for direct rear mounting on the wall or the machine, no adjustment possible	–	Mounting kit 1	2015623
	Mounting bracket for rear mounting on the wall or the machine, longitudinal and cross-wise adjustment possible, only in connection with mounting kit 1 (2015623)	–	Mounting kit 2	2015624
	Mounting bracket for rear or base mounting on the wall or the machine, longitudinal and cross-wise adjustment possible, only in connection with mounting kit 1 (2015623) and 2 (2015624)	–	Mounting kit 3	2015625
	Mounting bracket, heavy version, with protective hood, for floor mounting, height adjustment possible	–	Mounting support	7087514
System plug	Without cable, cable outlet facing upwards	–	SX0A-A0000B	2023797
	Pre-assembled, cable outlet facing upwards	5 m	SX0A-B0905B	2027170
		10 m	SX0A-B0910B	2027171
Configuration connection cable	For connecting the configuration connection to the USB interface of the PC, M8 x 4, USB-A	2 m	DSL-8U04G02M025KM1	6034574
		10 m	DSL-8U04G10M025KM1	6034575



At a glance

- 4 m, 5.5 m or 7 m protective field range
- 4 switchable field sets (4 protective fields, 8 warning fields)
- Configuration memory integrated in the system plug
- EFI interface for safe SICK device communication
- Selectable resolution for hand, leg or body detection
- Simultaneous monitoring of two protective fields
- Contour as reference for vertical applications
- Integrated external device monitoring (EDM)

Your benefits

- Largest protective field range available on the market increases the variety of application possibilities
- Safety engineering - with no loss of productivity
- Quick recommissioning via configuration memory
- Easy modular expansions, simple cabling, and additional functions using SICK safety controllers via EFI
- Easy installation, commissioning, and maintenance for stationary and mobile applications
- Decades of proven safety technology guarantee maximum reliability and availability – even under difficult conditions
- Simple alignment and reliable operation in vertical mode

→ **www.mysick.com/en/S3000_Advanced**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/S3000_Advanced

- **System part:** Sensor head with I/O module

Protective field range	Model name	Part no.
4 m	S30A-4011CA	1028935
5.5 m	S30A-6011CA	1023547
7 m	S30A-7011CA	1023891

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Mounting brackets/ plates	Mounting bracket for direct rear mounting on the wall or the machine, no adjustment possible	–	Mounting kit 1	2015623
	Mounting bracket for rear mounting on the wall or the machine, longitudinal and cross-wise adjustment possible, only in connection with mounting kit 1 (2015623)	–	Mounting kit 2	2015624
	Mounting bracket for rear or base mounting on the wall or the machine, longitudinal and cross-wise adjustment possible, only in connection with mounting kit 1 (2015623) and 2 (2015624)	–	Mounting kit 3	2015625
	Mounting bracket, heavy version, with protective hood, for floor mounting, height adjustment possible	–	Mounting support	7087514
System plug	Without cable, cable outlet facing upwards	–	SX0A-A0000B	2023797
	Pre-assembled, cable outlet facing upwards	5 m	SX0A-B1305B	2027172
		10 m	SX0A-B1310B	2027173
Configuration connection cable	For connecting the configuration connection to the USB interface of the PC, M8 x 4, USB-A	2 m	DSL-8U04G02M025KM1	6034574
		10 m	DSL-8U04G10M025KM1	6034575

At a glance

- Direct integration into PROFINET IO secure bus system
- 4 m, 5.5 m or 7 m protective field range
- 4 switchable field sets (4 protective fields, 4 warning fields)
- Managed 2-port switch for copper or fiber-optic plug connector
- Configuration memory integrated in the system plug
- Configurable system plug in I/O module
- Remote diagnostics and configuration via safety controller
- Simultaneous monitoring of two protective fields

Your benefits

- Reliable, fault-tolerant communication with PLC controller using state-of-the-art fiber-optic technology
- Efficient, cost-effective protection - networked through direct integration in PROFINET IO networks
- Rapid diagnostics using remote access prevents downtimes
- Standardized integration into the PLC controller via GSDML generic station description
- Largest protective field range available on the market increases the variety of application possibilities
- Quick recommissioning via configuration memory
- Easy installation, commissioning, and maintenance for stationary and mobile applications
- Decades of proven safety technology guarantee maximum reliability and availability – even under difficult conditions

→ **www.mysick.com/en/S3000_PROFINET_IO_Advanced**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

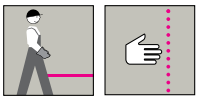
Additional device versions at www.mysick.com/en/S3000_PROFINET_IO_Advanced

- **System part:** Sensor head with I/O module

Connection type	Protective field range	Model name	Part no.
Copper cable (2 sockets for RJ-45 push-pull plug)	4 m	S30A-4111CP	1045650
Fiber-optic cable (2 sockets for SCRJ push-pull plug)		S30A-4111CL	1052591
Copper cable (2 sockets for RJ-45 push-pull plug)	5.5 m	S30A-6111CP	1045652
Fiber-optic cable (2 sockets for SCRJ push-pull plug)		S30A-6111CL	1052593
Copper cable (2 sockets for RJ-45 push-pull plug)	7 m	S30A-7111CP	1045654
Fiber-optic cable (2 sockets for SCRJ push-pull plug)		S30A-7111CL	1052595

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Mounting brackets/ plates	Mounting bracket for direct rear mounting on the wall or the machine, no adjustment possible	–	Mounting kit 1	2015623
	Mounting bracket for rear mounting on the wall or the machine, longitudinal and cross-wise adjustment possible, only in connection with mounting kit 1 (2015623)	–	Mounting kit 2	2015624
	Mounting bracket for rear or base mounting on the wall or the machine, longitudinal and cross-wise adjustment possible, only in connection with mounting kit 1 (2015623) and 2 (2015624)	–	Mounting kit 3	2015625
	Mounting bracket, heavy version, with protective hood, for floor mounting, height adjustment possible	–	Mounting support	7087514
Power supply plug	Without cable	–	SX1A-A0000L	2047286
Configuration connection cable	For connecting the configuration connection to the USB interface of the PC, M8 x 4, USB-A	2 m	DSL-8U04G02M025KM1	6034574
		10 m	DSL-8U04G10M025KM1	6034575



At a glance

- Protective field size from 0.4 m x 0.4 m to 1.5 m x 1.5 m
- Resolution of 20 mm, 24 mm, and 30 mm
- One device only: integrated sender and receiver
- Intuitive one-button operation
- Automatic alignment
- Synchronization of 2 systems
- Restart/reset, EDM integrated
- SIL2 (IEC 61508, EN 62061) and PL d (EN ISO 13849)

Your benefits

- Flexible and individual design of protective fields
- Quick and easy commissioning without additional software
- Intuitive, time-saving operation
- No variants: single device concept for all opening angles
- Universal and variable: more flexibility in the machine design
- Reduced storage, logistics, and commissioning costs
- No expert knowledge required for commissioning
- High machine availability due to quick and easy maintenance

→ **www.mysick.com/en/V300_Work_Station_Extended**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

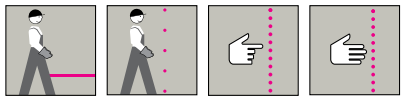
Ordering information

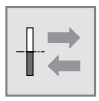
Additional device versions at www.mysick.com/en/V300_Work_Station_Extended

System part	Model name	Part no.
Camera system	V30W-0101000	1041542

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Resolution sets	2 x 1.0 m reflective tape, test rod, 20 mm diameter	–	Resolution set 20 mm	2051336
	2 x 1.2 m reflective tape, test rod, 24 mm diameter	–	Resolution set 24 mm	2051338
	2 x 1.5 m reflective tape, test rod, 30 mm diameter	–	Resolution set 30 mm	2051339
Terminal bracket	Mounting kit for mounting the sensor on the profile frame	–	Mounting kit	2045375
Connecting cables	Cable socket, M12 x 7 + FE, straight, screened	2.5 m	DOL-127SG2M5E25KM0	6020537
		5 m	DOL-127SG05ME25KM0	6020354
		7.5 m	DOL-127SG7M5E25KM0	6020353





At a glance

- Type 2 (IEC 61496), PL d (EN ISO 13849)
- Blind-zone-free device concept with compact cross section (15 x 32 mm)
- Twin stick: sender and receiver in a single housing – cascadable
- Tailored protective field heights in 60 mm increments: from 120 to 1,200 mm
- Typical scanning ranges of 0 ... 8 m
- Intelligent, software-free configuration of external device monitoring and reset function
- M12 device connection, 5-pin

Your benefits

- Cost-effective machine integration: the miniature design, cascading, and fine stepping of the protective field lengths enable flexible adaptation to the machine design
- Standardization saves time and resources by making logistics, order processing, and service more straightforward
- Exemplary handling: software-fee, almost fully automatic commissioning and intuitive operation with sustainable optics
- LED-guided start-up together with colored LEDs for quick alignment and unequivocal protective field visualization ensure rapid diagnostics
- A continuous protective field for cascade applications eliminates blind zones, reduces the safety distance, and thereby increases productivity
- Application-specific brackets increase mounting flexibility, while reducing mounting time

→ **www.mysick.com/en/miniTwin2**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

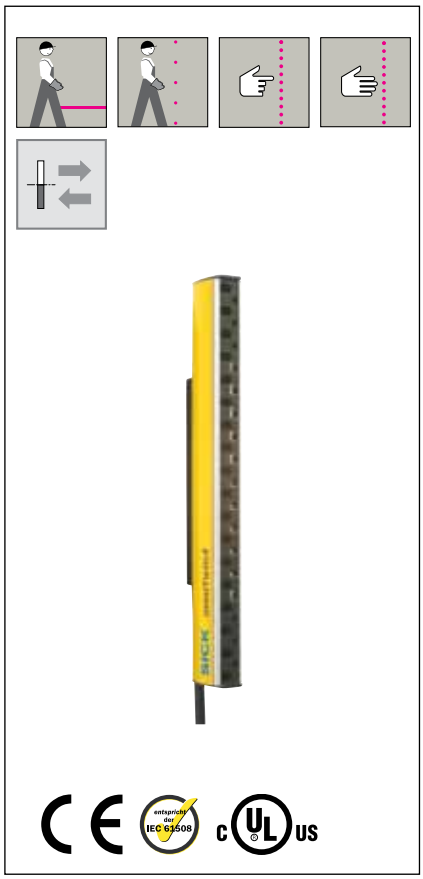
Ordering information

Additional device versions at www.mysick.com/en/miniTwin2

Resolution	Protective field height	Length of cable	Model name	Part no.
14 mm	120 mm	160 mm	C2MT-01214BBC03BB0	1207923
	180 mm	160 mm	C2MT-01814BBC03BB0	1207924
	240 mm	350 mm	C2MT-02414BBC03DB0	1207925
	300 mm	350 mm	C2MT-03014BBC03DB0	1207926
	360 mm	350 mm	C2MT-03614BBC03DB0	1207927
	480 mm	350 mm	C2MT-04814BBC03DB0	1207929
	600 mm	700 mm	C2MT-06014BBC03FB0	1207931
34 mm	300 mm	350 mm	C2MT-03034BBC03DB0	1207964
	420 mm	350 mm	C2MT-04234BBC03DB0	1207966
	600 mm	700 mm	C2MT-06034BBC03FB0	1207969
	900 mm	700 mm	C2MT-09034BBC03FB0	1207974
	1,200 mm	700 mm	C2MT-12034BBC03FB0	1207979

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Connecting cables	Cable socket, M12 x 5, straight, unshielded	5 m	DOL-1205-G05M	6009868
		10 m	DOL-1205-G02M	6010544



At a glance

- Type 4 (IEC 61496), PL e (EN ISO 13849)
- Blind-zone-free device concept with compact cross section (15 x 32 mm)
- Twin stick: sender and receiver in a single housing – cascadable
- Tailored protective field heights in 60 mm increments: from 120 to 1,200 mm
- Typical scanning ranges of 0 ... 5 m
- Intelligent, software-free configuration of external device monitoring and reset function
- M12 device connection, 5-pin

Your benefits

- Cost-effective machine integration: the miniature design, cascading, and fine stepping of the protective field lengths enable flexible adaptation to the machine design
- Standardization saves time and resources by making logistics, order processing, and service more straightforward
- Exemplary handling: software-fee, almost fully automatic commissioning and intuitive operation with sustainable optics
- LED-guided start-up together with colored LEDs for quick alignment and unequivocal protective field visualization ensure rapid diagnostics
- A continuous protective field for cascade applications eliminates blind zones, reduces the safety distance, and thereby increases productivity
- Application-specific brackets increase mounting flexibility, while reducing mounting time

→ **www.mysick.com/en/miniTwin4**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

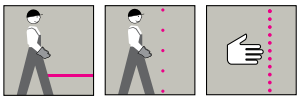
Ordering information

Additional device versions at www.mysick.com/en/miniTwin4

Resolution	Protective field height	Length of cable	Model name	Part no.
14 mm	120 mm	160 mm	C4MT-01214ABB03BB0	1206951
	180 mm	160 mm	C4MT-01814ABB03BB0	1206945
	240 mm	350 mm	C4MT-02414ABB03DB0	1206954
	300 mm	350 mm	C4MT-03014ABB03DB0	1206953
	360 mm	350 mm	C4MT-03614ABB03DB0	1206955
	480 mm	350 mm	C4MT-04814ABB03DB0	1206957
	600 mm	700 mm	C4MT-06014ABB03FB0	1206959
34 mm	300 mm	350 mm	C4MT-03034ABB03DB0	1207337
	420 mm	350 mm	C4MT-04234ABB03DB0	1207339
	600 mm	700 mm	C4MT-06034ABB03FB0	1207342
	900 mm	700 mm	C4MT-09034ABB03FB0	1207347
	1,200 mm	700 mm	C4MT-12034ABB03FB0	1207169

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Connecting cables	Cable socket, M12 x 5, straight, unshielded	5 m	DOL-1205-G05M	6009868
		10 m	DOL-1205-G02M	6010544



At a glance

- Type 2 (IEC 61496), PL d (EN ISO 13849)
- Robust housing with an industrial design
- 7-segment display
- Impact- and scratch-resistant front screen
- External device monitoring (EDM)
- Beam coding for precise system allocation
- Standardized and comprehensive connection and mounting systems
- Internal self-testing function, configurable without PC

Your benefits

- User-friendly interfaces and status indicators simplify commissioning and maintenance
- High-quality industrial design for reliable and durable continuous operation
- Time-saving alignment and diagnostics by means of 7-segment display
- Resistance and a robust design for high system availability, even under special ambient conditions
- A multitude of intelligent mounting adapters enable flexible mounting
- Integrated additional functions: reset and EDM for short cable paths and connection to cost-optimized, positively guided relays
- Special variants for the most stringent requirements in terms of hygiene and resistance to cleaning

→ **www.mysick.com/en/C2000_Standard**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

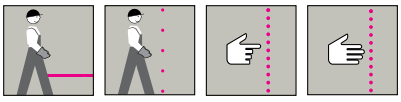
Ordering information

Additional device versions at www.mysick.com/en/C2000_Standard

Resolution	Scanning range	Protective field height	Sender		Receiver	
			Model name	Part no.	Model name	Part no.
30 mm	0 m ... 6 m	300 mm	C20S-030103A11	1016568	C20E-030303A11	1016569
		450 mm	C20S-045103A11	1016454	C20E-045303A11	1016455
		600 mm	C20S-060103A11	1016477	C20E-060303A11	1016478
		750 mm	C20S-075103A11	1016479	C20E-075303A11	1016480
		900 mm	C20S-090103A11	1016481	C20E-090303A11	1016482

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Mounting brackets/plates	Mounting kit 1, rotatable, swivel mount	–	BEF-2SMKEAKU4	2019649
Connecting cables	Cable socket, M12 x 7 + FE, straight, screened	5 m	DOL-127SG05ME25KM0	6020354
		10 m	DOL-127SG10ME25KM0	6020352



At a glance

- Type 4 (IEC 61496), PL e (EN ISO 13849)
- 7-segment display
- Impact- and scratch-resistant front screen
- Maximum EMC immunity
- Standardized M12 connectivity
- Extensive range of accessories for mounting

Your benefits

- Time-saving alignment and diagnostics by means of 7-segment display
- Economical: pre-assembled M12 x 5 cables
- Optimized cabling due to smart accessories, e.g., T-distributor with just one cable to the control cabinet
- Maximum availability thanks to the interference-free and robust light curtain - even under harsh industrial conditions
- A multitude of intelligent mounting adapters enable flexible mounting

→ **www.mysick.com/en/C4000_Eco**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

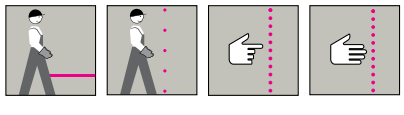
Ordering information

Additional device versions at www.mysick.com/en/C4000_Eco

Resolution	Scanning range	Protective field height	Sender		Receiver	
			Model name	Part no.	Model name	Part no.
14 mm	1 m ... 5 m	300 mm	C40S-0301AA310	1027440	C40E-0301BN310	1027486
		600 mm	C40S-0601AA310	1027444	C40E-0601BN310	1027488
		900 mm	C40S-0901AA310	1027448	C40E-0901BN310	1027490
		1,200 mm	C40S-1201AA310	1027452	C40E-1201BN310	1027492
30 mm	0 m ... 6 m	300 mm	C40S-0303AA310	1027464	C40E-0303AN310	1027465
		600 mm	C40S-0603AA310	1027468	C40E-0603AN310	1027469
		900 mm	C40S-0903AA310	1027472	C40E-0903AN310	1027473
		1,200 mm	C40S-1203AA310	1027476	C40E-1203AN310	1027477
		1,500 mm	C40S-1503AA310	1027480	C40E-1503AN310	1027481

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Mounting brackets/plates	Mounting kit 1, mounting bracket, rigid, L-shaped, including fixing screws and washers	–	BEF-3WNGBAST4	7021352
Connecting cables	Cable socket, M12 x 5, straight, unshielded	5 m	DOL-1205-G05M	6009868



At a glance

- Type 4 (IEC 61496), PL e (EN ISO 13849)
- 7-segment display
- PSDI mode with the UE402 evaluation unit
- External device monitoring (EDM) and restart interlock (RES)
- Configuration and diagnostics via PC
- Cascadable, up to three systems
- ADO application diagnostic output for contamination indication
- Clone plug accessories - for saving the configuration

Your benefits

- Time-saving alignment and diagnostics by means of 7-segment display
- Beam coding protects the systems against mutual interference and thus offers a high level of availability
- Increased flexibility and reduced wiring complexity via cascading of up to a maximum of three systems
- Quick and easy commissioning by means of pre-configuration of the systems or clone plug
- Convenient configuration and diagnostics ensure increased availability

→ **www.mysick.com/en/C4000_Standard**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

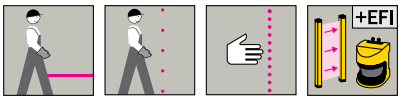
Ordering information

Additional device versions at www.mysick.com/en/C4000_Standard

Resolution	Scanning range	Protective field height	Sender		Receiver	
			Model name	Part no.	Model name	Part no.
14 mm	0 m ... 8 m	600 mm	C40S-0601CA010	1018593	C40E-0601CA010	1018594
		900 mm	C40S-0901CA010	1018597	C40E-0901CA010	1018598
		1,200 mm	C40S-1201CA010	1018601	C40E-1201CA010	1018602
30 mm	0 m ... 19 m	600 mm	C40S-0603CA010	1018639	C40E-0603CA010	1018640
		900 mm	C40S-0903CA010	1018643	C40E-0903CA010	1018644
		1,200 mm	C40S-1203CA010	1018647	C40E-1203CA010	1018648
		1,500 mm	C40S-1503CA010	1018651	C40E-1503CA010	1018652

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Mounting brackets/plates	Mounting kit 2, rotatable, swivel mount	–	BEF-2SMMEAKU4	2019659
Connecting cables	Hirschmann cable socket M26 x 11 + FE, straight	5 m	DOL-0612G05M075KM0	2022545
		10 m	DOL-0612G10M075KM0	2022547
Configuration connection cable	For connecting the configuration connection to the USB interface of the PC, M8 x 4, USB-A	2 m	DSL-8U04G02M025KM1	6034574
		10 m	DSL-8U04G10M025KM1	6034575



At a glance

- Reliable operation: immune to dirt
- Simplified logistics: just one sensor pair for mounting and service
- Reduced costs: no muting sensors, no hinged doors
- Convenient: man/material differentiation with various skids
- Standardized: one device for hand and access protection
- Quick installation: integrated laser

Your benefits

- Increased system productivity, since the safety light curtain is not shut down as a result of falling chips.
- Dependable: skids are detected, interference objects such as cables are blanked
- Cost-effective due to the savings made on additional muting sensors or other protective measures
- Maximum safety for access protection with automated material transport – the system reliably differentiates between man and material
- Easy integration and quick commissioning save time and costs since secondary sensors are not required
- Safe: also offers protection in areas where there is no object, in contrast to conventional muting solutions
- The integrated laser alignment aid enables time-saving alignment of the sender and receiver

→ **www.mysick.com/en/C4000_Fusion**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

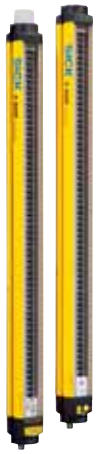
Ordering information

Additional device versions at www.mysick.com/en/C4000_Fusion

Resolution	Scanning range	Protective field height	Sender		Receiver	
			Model name	Part no.	Model name	Part no.
20 mm	1.5 m ... 19 m	900 mm	C40S-0902FY010	1043185	C40E-0902FY010	1043186
		1,200 mm	C40S-1202FY010	1043190	C40E-1202FY010	1043191

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Mounting brackets/plates	Mounting kit 2, rotatable, swivel mount	–	BEF-2SMMEAKU4	2019659
Connecting cables	Hirschmann cable socket M26 x 11 + FE, straight	5 m	DOL-0612G05M075KM0	2022545
		10 m	DOL-0612G10M075KM0	2022547
Configuration connection cable	For connecting the configuration connection to the USB interface of the PC, M8 x 4, USB-A	2 m	DSL-8U04G02M025KM1	6034574
		10 m	DSL-8U04G10M025KM1	6034575



Only available in North America!

At a glance

- Type 4 (IEC 61496), PL e (EN ISO 13849)
- Configuration via DIP switch, without PC
- Wide scanning range of up to 19 m
- Integrated laser alignment aid and alignment display
- Robust housing with 3 mounting grooves for maximum mounting flexibility
- Single-beam/double-beam blanking
- Diagnostics via 7-segment display – error codes directly on the device
- Beam coding for precise system allocation
- Cascadable, up to three systems or with one safety laser scanner

Your benefits

- The blanking functions for reliable and safe object detection increase productivity
- Beam coding protects the systems against mutual interference and thus offers a high level of availability
- The clone plug allows quick and easy duplication of configurations, thus saving time and costs
- Increased flexibility and reduced wiring complexity through the cascading of up to a maximum of three systems or one system together with a safety laser scanner
- Precise and convenient configuration and diagnostics possible via DIP switch
- The integrated laser alignment aid in combination with the alignment display enables time-saving alignment of the sender and receiver

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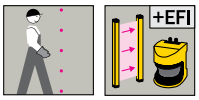
Ordering information

Additional device versions at www.mysick.com

Resolution	Scanning range	Protective field height	Model name	Part no.
30 mm	0 m ... 19 m	600 mm	XC40P-0603A0A0CBA0	1043130
		900 mm	XC40P-0903A0A0CBA0	1043131
		1,200 mm	XC40P-1203A0A0CBA0	1043132
		1,500 mm	XC40P-1503A0A0CBA0	1043133
		600 mm	XC40P-0603A0A0CBC0	1043136
		900 mm	XC40P-0903A0A0CBC0	1043137
		1,200 mm	XC40P-1203A0A0CBC0	1043138
		1,500 mm	XC40P-1503A0A0CBC0	1043139

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Mounting brackets/ plates	Mounting kit 12, rotatable, swivel mount	–	BEF-2SMGEAKU4	2030510
Connecting cables	Cable socket, M12 x 5, straight, unshielded	5 m	DOL-1205-G05M	6009868



At a glance

- Type 4 (IEC 61496), PL e (EN ISO 13849)
- Robust housing with 3 mounting grooves
- 7-segment display
- Wide scanning range of up to 70 m
- External device monitoring (EDM), restart interlock (RES), application diagnostic output (ADO), SDL interface
- Muting in connection with switching amplifier UE403
- Optional integration: laser alignment aid, LED
- Configuration and diagnostics via PC

Your benefits

- The broad scanning range spectrum allows a device to be standardized for the relevant application
- Resistance and a robust design for high system availability, even under special ambient conditions
- Mounting grooves on three housing sides ensure more flexibility during mounting and simplify machine integration
- User-friendly interfaces and status indicators simplify commissioning and maintenance
- For 2-sensor and 4-sensor muting, the on-site connection of the muting signals minimizes the wiring effort considerably and simplifies commissioning and maintenance
- Reduced downtimes due to all-around-visible LED and diagnostics displays as well as the configuration memory in the UE403 switching amplifier

→ **www.mysick.com/en/M4000_Advanced**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/M4000_Advanced

M4000 Advanced

Number of beams	Beam separation	Scanning range	Sender		Receiver	
			Model name	Part no.	Model name	Part no.
2	500 mm	≤ 70 m	M40S-025003AA0	1200060	M40E-025003RB0	1200065
3	400 mm		M40S-034003AA0	1200061	M40E-034003RB0	1200064
4	300 mm		M40S-043003AA0	1200073	M40E-043003RB0	1200100

M4000 Advanced, with end cap with integrated LED

Number of beams	Beam separation	Scanning range	Sender		Receiver	
			Model name	Part no.	Model name	Part no.
2	500 mm	≤ 70 m	M40S-025003AA0	1200060	M40E-025023RB0	1200062
3	400 mm		M40S-034003AA0	1200061	M40E-034023RB0	1200067
4	300 mm		M40S-043003AA0	1200073	M40E-043023RB0	1200109

M4000 Advanced, with integrated alignment aid and end cap with integrated LED

Number of beams	Beam separation	Scanning range	Sender		Receiver	
			Model name	Part no.	Model name	Part no.
2	500 mm	≤ 70 m	M40S-025013AA0	1200057	M40E-025033RB0	1200110
3	400 mm		M40S-034013AA0	1200069	M40E-034033RB0	1200068
4	300 mm		M40S-043013AA0	1200080	M40E-043033RB0	1200113

Safety switching amplifier UE403

Description	Model name	Part no.
Switching amplifier	UE403-A0930	1026287

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Connecting cables	Hirschmann cable socket M26 x 11 + FE	5 m	DOL-0612G05M075KM0	2022545
		10 m	DOL-0612G10M075KM0	2022547
		2.5 m	DOL-0612G2M5075KM0	2022544
Extension connection cable	For connecting the M4000 Advanced to the M12 plug, 5-pin, of the UE 403, M12 x 5 plug, straight, M12 x 5 socket, straight	0.6 m	DSL-1205-G0M6C	6025930
		2 m	DSL-1205-G02MC	6025931
Configuration connection cable	For connecting the configuration connection to the USB interface of the PC, M8 x 4, USB-A	2 m	DSL-8U04G02M025KM1	6034574
		10 m	DSL-8U04G10M025KM1	6034575

At a glance

- Type 4 (IEC 61496), PL e (EN ISO 13849), only in connection with UE401
- Small M18 sensors with scanning ranges of up to 10 m
- Compact M30 sensors with scanning ranges of up to 60 m
- IP 67 enclosure rating
- Temperature range from -20 °C ... +55 °C
- Slender evaluation device (22.5 mm) with external device monitoring and restart interlock (EDM/RES)
- Fast response time of max. 30 ms
- Up to 8 sensors can be cascaded

Your benefits

- Simple integration due to small, compact designs with maximum scanning range
- Flexible device integration makes it possible to set up individual protective fields
- Fast response times reduce the safety distances and save production space
- Well-suited to extreme ambient conditions such as heat, cold or moisture
- Simple configuration without additional tools, only with the help of jumpers

→ **www.mysick.com/en/L4000_Systeme**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

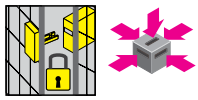
Additional device versions at www.mysick.com/en/L4000_Systeme

- **Scanning range:** 0 m ... 60 m
- **Optical axis:** Axial
- **Housing material:** Metal
- **Supply voltage:** 24 V DC

Connection type	Enclosure rating	Size	Type of output	System part	Model name	Part no.
M12 x 4 plug, angled	IP 67	M30, 100 mm	–	Sender	L40S-33MA2A	6027335
			PNP, Q	Receiver	L40E-33MA2A	6027336
–	–	–	–	Evaluation unit	UE401-A0010	6027343

Accessories

Accessory category	Brief description	Model name	Part no.
Safety relays	UE10-3OS contact expansion module	UE10-3OS3D0	6024918
Safety controllers	Flexi Classic main module	UE410-MU3T5	6026136



At a glance

- Narrow plastic housing
- Either rigid or mobile actuators
- 3 M20 x 1.5 cable entries or M12 plug connector
- Spring- and solenoid-locked
- Locking and door monitoring

Your benefits

- Simple mounting without additional mounting plate – directly on the aluminum profile of the guard door frame
- High flexibility of the electrical connection due to three cable entries
- Improved diagnostics due to additional signaling contacts
- Practical adjustment: large selection of actuators to match any door
- Different switching elements guarantee the right solution for the electrical installation
- Fast device replacement thanks to variants with M12 plug connector

→ **www.mysick.com/en/i10_Lock**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

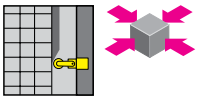
Ordering information

Additional device versions at www.mysick.com/en/i10_Lock

Locking type	Number of positive opening normally closed lock monitoring contacts	Number of N/O lock monitoring contacts	Number of N/O door monitoring contacts	Number of N/C door monitoring contacts	Connection type	Model name	Part no.
Electrical	2	1	0	1	Cable entry	i10-E0233 Lock	6022585
Mechanical						i10-M0233 Lock	6022580

Accessories

Accessory category	Brief description	Model name	Part no.
Actuator	Straight design, rigid actuation option	iE10-S1	5306527
	Radial design, semi-flexible actuation option, actuator door hinged on left/right	iE10-R2	5306529



At a glance

- Standardized metal housing (EN 50041)
- Roller plunger with stainless steel roller
- 1 M20 x 1.5 cable entry
- Slow action or snap-action switching element with two or four contacts

Your benefits

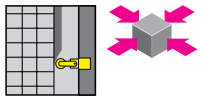
- Quick mounting due to standardized design
- High availability due to robust metal housing
- Different switching elements guarantee the right solution for the electrical installation
- Improved diagnostics due to two additional signaling contacts

→ **www.mysick.com/en/i110P**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/i110P

Design	Number of positive opening normally closed contacts	Number of N/O contacts	Enclosure rating	Connection type	Switching principle	Model name	Part no.
According to EN 50041	2	2	IP 66	Cable entry	Slow action switching element	i110-PA223	6025105



At a glance

- Standardized metal housing (EN 50041)
- Turning lever with plastic roller
- 1 M20 x 1.5 cable entry
- Slow action or snap-action switching element with two or four contacts

Your benefits

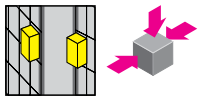
- Quick mounting due to standardized design
- High availability due to robust metal housing
- Different switching elements guarantee the right solution for the electrical installation
- Improved diagnostics due to two additional signaling contacts

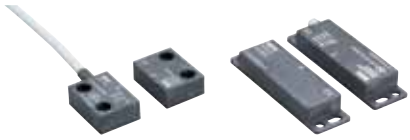
→ **www.mysick.com/en/i110R**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/i110R

Design	Number of positive opening normally closed contacts	Number of N/O contacts	Enclosure rating	Connection type	Switching principle	Model name	Part no.
According to EN 50041	2	2	IP 66	Cable entry	Slow action switching element	i110-RA223	6025108





At a glance

- Cuboid plastic housing
- Response range up to 7 mm for small design, up to 9 mm for standard design
- 2 N/O contacts
- Performance level PL e (EN ISO 13849) in connection with a suitable safety module
- Direct connection to control system possible
- M8 plug connector or connected cable
- Actuator with code

Your benefits

- Low-wear and low-maintenance for a long product service life
- Space-saving mounting due to small, compact design
- High level of machine availability due to large door offset tolerances
- Simple installation due to variety of plug connectors
- The devices are easy to clean, making them suitable for use in very dirty or hygienic areas
- Sensor and actuator up to enclosure rating IP 67

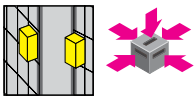
→ **www.mysick.com/en/RE13_RE23**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/RE13_RE23

- **System part:** Sensor & actuator
- **Design:** Cuboid

Connection type	Length of cable	Safe switch-on distance S_{ao}	Model name	Part no.
M8 plug connector, 4-pin	–	7 mm	RE13-DAC	6036769
Cable	3 m	7 mm	RE13-DA03	6034333
M8 plug connector, 4-pin	–	9 mm	RE23-DAC	6036927



At a glance

- Multicoded and unique coded sensors
- Response range of up to 19 mm
- Series connection of up to 20 sensors possible
- Two safety outputs for direct connection to a safety controller
- LED status indicator
- Up to performance level PL e (EN ISO 13849)
- Various actuators
- M12 plug connection

Your benefits

- High protection against manipulation
- High level of machine availability due to large door offset tolerances
- Resistant to shock and vibrations
- Plug connectors and integrated evaluation unit in the sensor enable direct connection to the control system
- Economical solution due to series connection of sensors
- Performance level PL e: with just one safety switch in connection with safety switching device/safety controller
- Non-contact safety switches are low-wear and low-maintenance, ensuring a long product service life

→ **www.mysick.com/en/T4000_Direct**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

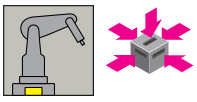
Ordering information

Additional device versions at www.mysick.com/en/T4000_Direct

System part	Design	Connection type	Code	Model name	Part no.
Evaluation unit & sensor	Cuboid	Plug connection	Multicoded	T40-E0101K	6035041
			Unique coded	T40-E0121K	6035042

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Actuator	Cuboid design	–	T4000-1KBA	5306531
	Square design	–	T4000-1KBQ	5311153
Plug connectors and cables	Cable socket, M12, 8-pin, straight	5 m	DOL-1208-G05MA	6020993



At a glance

- Two safety outputs for direct connection of sensors to a safety controller
- Cuboid plastic/metal housing
- Response range of up to 15 mm
- Sensor with LED status indicator
- Up to performance level PL e (EN ISO 13849)
- M12 plug connector
- Without actuator

Your benefits

- Simple connection to the safe control solution
- Fast diagnosis via LED status indicator
- No additional wiring - direct connection to the control system
- Long service life, resistant to shocks and vibrations
- Performance level PL e: with just one safety switch in connection with a suitable safety module
- The devices are easy to clean, making them suitable for use in very dirty or hygienic areas

→ **www.mysick.com/en/IN4000_Direct**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

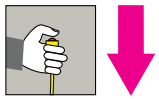
Ordering information

Additional device versions at www.mysick.com/en/IN4000_Direct

System part	Design	Installation type	Connection type	Model name	Part no.
Evaluation unit & sensor	Cuboid	Non-flush	Plug connection	IN40-E0101K	6027388

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Plug connectors and cables	Cable socket, M12, 4-pin, straight	5 m	DOL-1204-G05M	6009866



At a glance

- Plastic housing with connected cable
- 3-stage functional structure (off-on-off)
- Slow action switching elements with four contacts
- Variant with additional plus/minus pushbuttons

Your benefits

- A high standard of personal protection by means of optimum safety in setup mode when protective devices are deactivated
- Safety and motion control: dual function in one device for variants with plus/minus pushbuttons
- Customers' requirements are met with different lengths of cable

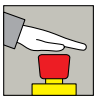
→ **www.mysick.com/en/E100**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/E100

- **Number of positive opening normally closed contacts:** 2
- **Number of N/O contacts:** 2
- **Type of connection cable:** Straight
- **Length of cable:** 10 m

Plus/minus pushbuttons	Model name	Part no.
–	E100-A2A22S10A	6021916
I	E100-B2A22S10A	6022880



At a glance

- Available either as a surface-mounted version with housing or as a built-in version (Ø 22 mm)
- Built-in version for machine control panels with self-monitoring contacts between the pushbutton and switching element
- Surface-mounted version for direct mounting on different machines and systems
- Rotational or key release
- Variants with LED ring lighting
- Optionally available with protective collar to prevent inadvertent actuation
- Screw connection in all variants

Your benefits

- Greater safety in built-in devices due to self-monitoring contacts
- Greater availability due to variants with a protective collar
- User-friendly status display by means of colored mark or LED ring lighting around the sensor
- Success down to the smallest detail: award-winning and appealing design

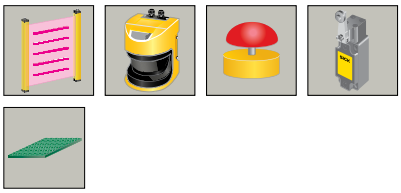
→ **www.mysick.com/en/ES21**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/ES21

- **System part:** Complete devices
- **Number of positive opening normally closed contacts:** 2
- **Number of N/O contacts:** 1
- **Jamming protection:** I
- **Release type:** Rotational release

Mounting version	Model name	Part no.
Surface-mounted version	ES21-SA10F1	6036148
Built-in version	ES21-SB10G1	6036492



At a glance

- Ideal for the evaluation of emergency stop pushbuttons, safety switches, safety light curtains, safety laser scanners, and pressure sensitive safety mats
- Cross-circuit detection and sequence monitoring for dual-channel actuation
- 2 safety outputs, 1 application diagnostic output
- Manual or automatic reset
- Coded version for all slots

Your benefits

- One module for all common applications simplifies machine integration
- Complete monitoring and evaluation of sensors
- The sequence monitoring function takes over the evaluation of non-contact safety switches
- Fast diagnostics via the status information reduces downtimes
- Fast, tool-free replacement via interchangeable, coded removable terminals
- Combines the advantages of classic relays and simple circuitry

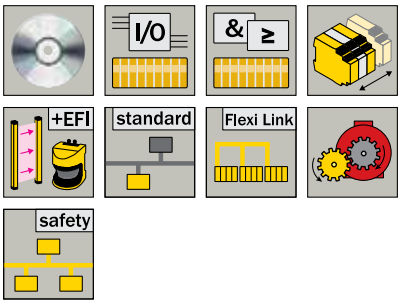
→ **www.mysick.com/en/UE48-20S**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/UE48-20S

- **Supply voltage:** 24 V AC, 24 V DC

Connectivity	Model name	Part no.
Plug-in screw type terminals	UE48-20S2D2	6024915
Plug-in spring terminals	UE48-20S3D2	6024916



At a glance

- Modular expansion options (12 ... 144 inputs/outputs)
- Intuitive configuration software: easy operation, simulation mode, wiring diagrams, downloadable free of charge
- Configuration memory in the system plug
- Safely link up to four Flexi Soft safety controllers via EFI
- Integration into all common fieldbus systems
- Enhanced sensor functionalities via EFI interface
- 38 TÜV-certified function blocks

Your benefits

- Prevention of redundant inputs and outputs saves money
- Fast commissioning via a system plug which saves the configuration
- Minimized downtimes through the use of gateways, e.g., PROFInet I/O, PROFIBUS-DP, EtherCAT, CANopen, Modbus TCP, Ethernet (TCP/IP)
- Standard RS-232 diagnosis via the main module enables real-time diagnostics for quick commissioning, faster fault rectification, and reduced downtimes
- Fast electronic installation by means of complete wiring diagram
- Simulation mode allows users to verify the safety functions before installation
- Fast hardware selection from a list of clear element icons using drag & drop

→ **www.mysick.com/en/Flexi_Soft**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/Flexi_Soft

Number of EFI interfaces	Number of inputs	Connectivity	Fieldbus	Model name	Part no.
–	–	–	–	FX3-CPU000000 [1]	1043783
2	–	–	–	FX3-CPU130002 [1]	1043784
–	8 single-channel	Plug-in spring terminals	–	FX3-XTIO84002	1044125
				FX3-XTDI80002	1044124
	–	–	EtherCAT	FX0-GETC00000	1051432
		Plug-in spring terminals	PROFIBUS-DP	FX0-GPRO00000	1044075
			CANopen	FX0-GCAN00000	1044076
		–	Modbus TCP	FX0-GMOD00000	1044073
			EtherNet/IP	FX0-GENT00000	1044072
			PROFINET IO	FX0-GPNT00000	1044074

[1] The system plug has to be ordered separately.

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
System plug	With integrated configuration memory	–	FX3-MPL000001	1043700
Configuration connection cable	For connecting the configuration connection to the USB interface of the PC, M8 x 4, USB-A	2 m	DSL-8U04G02M025KM1	6034574

Speed Monitor MOC3SA

At a glance

- Standstill and speed monitoring
- 4 safe semiconductor outputs
- PL e (EN ISO 13849), SIL3 (IEC 61508), SILCL3 (EN 62061)
- Maximum input frequency of 2 kHz
- Adjustable speed limit/monitoring frequency of 0.1 to 9.9 Hz or 0.5 to 99 Hz, depending on the variant
- 2 application diagnostic outputs for error and status display
- Diagnostic LEDs

Your benefits

- Easy commissioning using only a screwdriver – reduces installation time
- Tool backup using the Flexi Soft Designer and the Flexi Classic Configurator
- Additional HTL encoder evaluation
- Cascading of multiple axes possible

→ **www.mysick.com/en/Speed_Monitor_MOC3SA**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/Speed_Monitor_MOC3SA

- **Connectivity:** Plug-in spring terminals

Adjustable speed limit	Model name	Part no.
0.1 Hz ... 9.9 Hz	MOC3SA-AAB44D31	6034246
0.5 Hz ... 99 Hz	MOC3SA-BAB44D31	6034248

At a glance

- Standstill monitoring by means of residual voltage measurement
- 3 normally open and 1 normally closed positively guided safety contacts
- 2 application diagnostic outputs (semiconductor)
- 1 application diagnostic output (N/O)
- PL e (EN ISO 13849), SIL3 (IEC 61508), SILCL 3 (EN 62061)
- Maximum motor supply voltage 690 V
- Adjustable voltage threshold and standstill period

Your benefits

- Quick mounting and installation since no additional wiring is required
- Simple commissioning with a screwdriver
- Easy to retrofit as the subsequent mounting of sensors is not necessary

→ **www.mysick.com/en/Standstill_Monitor_MOC3ZA**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/Standstill_Monitor_MOC3ZA

- **Connectivity:** Plug-in spring terminals

Supply voltage V_s	Model name	Part no.
400 V AC	MOC3ZA-KAZ34A6	6047864
230 V AC	MOC3ZA-KAZ34A3	6047865
24 V DC	MOC3ZA-KAZ34D3	6047866

At a glance

- Robust absolute multiturn encoder with up to 31 bits (14-bit singleturn and 17-bit multiturn)
- Face mount flange, servo flange or blind hollow shaft
- Compact design (<70 mm)
- Integrated PROFIBUS interface with DP V0, V1, and V2 functionality (depending on type)
- Connectivity: 3 x M12 plug
- Protection class up to IP67
- Operating temperature: –30 to +80 °C (depending on type)

Your benefits

- Maximum system availability, even under extreme ambient conditions
- Reduced maintenance costs due to wear-free magnetic singleturn and multiturn scanning
- Space-saving and cost-efficient design - the best solution, particularly when installation space is limited
- High productivity thanks to fast communication and position calculation
- Immune to contamination and condensation - ideal for tough ambient conditions
- Very good price/performance ratio

→ **www.mysick.com/en/A3M60_PROFIBUS**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/A3M60_PROFIBUS

- **Electrical interface:** PROFIBUS
- **Connection type:** Axial plug
- **Range of number of steps per revolution:** 5,001 ... 8,192
- **Total resolution (multiturn encoders only):** 13 bit x 13 bit
- **Encoder type:** Absolute multiturn
- **Programmable/configurable:** I

Mechanical interface	Shaft diameter	Model name	Part no.
Solid shaft, face mount flange	10 mm	A3M60B-S4PB013X13	1038826
Solid shaft, servo flange	6 mm	A3M60B-S1PB013X13	1051018
Blind hollow shaft	8 mm	A3M60B-BBPB013X13	1051016
	10 mm	A3M60B-BDPB013X13	1038824
	12 mm	A3M60B-BEPB013X13	1038825
	15 mm	A3M60B-BHPB013X13	1051017

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Plug connectors and cables	Supply voltage	5 m	DOL-1202-W05MC	6042067
	PROFIBUS IN	5 m	DOL-1205-W05MQ	6041423
	PROFIBUS OUT	5 m	STL-1205-W05MQ	6041426

At a glance

- High-resolution absolute encoder with up to 30 bits (AFM60), or up to 18 bits (AFS60)
- Face mount flange, servo flange, blind hollow shaft or through hollow shaft
- SSI, SSI + incremental or SSI + sin/cos interface
- Resolution, offset, etc. can be programmed (depending on the type)
- Connectivity: M12 plug, M23 or cable outlet
- Enclosure rating: IP67 (housing), IP65 (shaft)
- Operating temperature: –30 °C to +100 °C (depending on the type)

Your benefits

- The programmability of the encoder results in reduced storage, high machine availability, and easy installation
- Precise positioning thanks to high resolutions
- Large selection of mechanical interfaces and electrical contacting options: suitable for all applications
- Suitable for applications with limited space (extremely short installation depth of 30 mm)
- Very good concentricity properties due to long bearing distance
- One programming tool and software with automatic detection of the encoder for AFS60/AFM60/DFS60

→ **www.mysick.com/en/AFS_AFM60_SSI**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/AFS_AFM60_SSI

- **Electrical interface:** SSI/Gray, programmable
- **Connection type:** Plug, M12, 8-pin, radial
- **Type B: Singleturn (AFS) from 2 to 32,768, multiturn (AFM) from 4 to 32,768, binary**
- **Programmable/configurable:** I

Mechanical interface	Shaft diameter	Total resolution (multiturn encoders only)	Encoder type	Model name	Part no.
Solid shaft, servo flange	6 mm	15 bit x 12 bit	Absolute multiturn	AFM60B-S1PC032768	1037514
Solid shaft, face mount flange	10 mm		Absolute multiturn	AFM60B-S4PC032768	1037504
Blind hollow shaft	10 mm		Absolute multiturn	AFM60B-BDPC032768	1051111
	12 mm		Absolute multiturn	AFM60B-BEPC032768	1051112
	15 mm		Absolute multiturn	AFM60B-BHPC032768	1053813
Through hollow shaft	10 mm		Absolute multiturn	AFM60B-TDPC032768	1051096
	12 mm		Absolute multiturn	AFM60B-TEPC032768	1038903
	15 mm		Absolute multiturn	AFM60B-THPC032768	1053067
Solid shaft, servo flange	6 mm	–	Absolute singleturn	AFS60B-S1PC032768	1037494
Solid shaft, face mount flange	10 mm		Absolute singleturn	AFS60B-S4PC032768	1037484
Blind hollow shaft	10 mm		Absolute singleturn	AFS60B-BDPC032768	1051052
	12 mm		Absolute singleturn	AFS60B-BEPC032768	1037927
	15 mm		Absolute singleturn	AFS60B-BHPC032768	1039024
Through hollow shaft	10 mm		Absolute singleturn	AFS60B-TDPC032768	1051069
	12 mm		Absolute singleturn	AFS60B-TEPC032768	1037941
	15 mm		Absolute singleturn	AFS60B-THPC032768	1051522

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Programming/ diagnostic tools	Programming tool, USB	–	PGT-08-S	1036616
Plug connectors and cables	M12 plug, 8-pin, cable socket, IP 67, straight, PUR	2 m	DOL-1208-G02MAC1	6032866
		5 m	DOL-1208-G05MAC1	6032867
	Absolute SSI adapter cable – PGT-08-S with SUB-D cable plug, 9-pin and M12 cable socket, 8-pin, pre-wired with 8-wire cable, 4 x 2 x 0.08 mm^2, screened, length of cable 0.5 m	0.5 m	DSL-2D08-G0M5AC2	2048439
Shaft adaptation	Bellows coupling, shaft diameter 6 mm/10 mm	–	KUP-0610-B	5312982

At a glance

- Short installation depth
- High resolution of up to 16 bits
- Optional programming: output voltage, zero pulse position, zero impulse width and pulse count
- Connection: radial or axial cable outlet, M23 or M12 plug, axial or radial
- Electrical interfaces: 5 V & 24 V TTL/RS-422, 24 V HTL/push pull
- Mechanical interfaces: face mount flange or servo flange, blind hollow shaft or through hollow shaft
- Remote zero set possible

Your benefits

- Reduced storage costs and downtimes due to programmability by the customer
- The wide range of different mechanical and electrical interfaces enables the optimum adaptation of the encoder to the application-specific installation situation
- Excellent concentricity, even at high speeds
- Long-term and reliable operation thanks to a high enclosure rating, temperature resistance and bearing lifetime
- The ability to program using the PGT-08-S programming software and the PGT-10-S display programming device enables fast and flexible adaptation of the encoder to customer requirements
- Programmable zero pulse position simplifies installation

→ **www.mysick.com/en/DFS60**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/DFS60

- **Electrical interface:** TTL/HTL, programmable
- **Connection type:** M12 plug, 8-pin, radial
- **Range of pulses per revolution:** 1 ... 10,000
- **Programmable/configurable:** I

Mechanical interface	Shaft diameter	Model name	Part no.
Blind hollow shaft	10 mm	DFS60B-BDPC10000	1036775
	12 mm	DFS60B-BEPC10000	1036776
	15 mm	DFS60B-BHPC10000	1036779
Solid shaft, servo flange	6 mm	DFS60B-S1PC10000	1036756
Solid shaft, face mount flange	10 mm	DFS60B-S4PC10000	1036721
Through hollow shaft	10 mm	DFS60B-TDPC10000	1036915
	12 mm	DFS60B-TEPC10000	1036916
	15 mm	DFS60B-THPC10000	1036919

Accessories

Accessory category	Brief description	Length of cable	Model name	Part no.
Programming/diagnostic tools	Programming tool, USB	–	PGT-08-S	1036616
Plug connectors and cables	Cable socket, 8-pin, straight, pre-wired, shielded, suitable for towing	2 m	DOL-1208-G02MAC1	6032866
		5 m	DOL-1208-G05MAC1	6032867
	Adapter cable for PGT-08-S. Incremental with SUB-D cable plug, 9-pin and M12 cable socket, 8-pin, pre-wired with 8-wire cable, screened	0.5 m	DSL-2D08-G0M5AC3	2046579
Shaft adaptation	Bellows coupling, shaft diameter 6 mm/10 mm	–	KUP-0610-B	5312982

At a glance

- Measuring lengths of 1.25 m, 3 m, 5 m up to 10 m
- Various interfaces thanks to modular concept - all servo flange encoders can be connected
- Analog interface with teach-in function available
- Very small housing (55 ... 190 mm)
- Slim housing with spring integrated in the measurement drum
- Light yet shock-proof and temperature-resistant plastic housing (Noryl)

Your benefits

- Space- and cost-saving design thanks to slimline mechanics
- Cost-effective interface card can be used thanks to analog interface
- Teach-in function enables fast commissioning
- Selection options for interface/ encoder type and measuring length
- Advanced programming options lead to a reduction in the amount of variants, save costs, and reduce storage

→ **www.mysick.com/en/EcoLine**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/EcoLine

Measuring range	Electrical interface	Connection type	Model name	Part no.
0 m ... 1.25 m	0 ... 20 mA, analog	1.5 m cable	BCG05-K1KM01PP	6039745
	0 ... 10 V, analog		BCG05-L1KM01PP	6039746
0 m ... 3 m	0 ... 20 mA, analog	1.5 m cable	BCG08-K1KM03PP	6039747
	0 ... 10 V, analog		BCG08-L1KM03PP	6039748
	4.5 ... 32 V SSI/Gray	M12 plug, 8-pin, radial outlet	BCG08-A1CM0336	1054131
	Profibus DP	3 x M12 plug, 5-pin, axial outlet	BCG08-P1BM0336	1052618
0 m ... 5 m	0 ... 20 mA, analog	1.5 m cable	BCG13-K1KM05PP	6039749
	0 ... 10 V, analog		BCG13-L1KM05PP	6039750
	Profibus DP		BCG13-P1BM0521	1052619
0 m ... 10 m	0 ... 20 mA, analog	M23 plug, 12-pin, radial outlet	BCG19-K1EM10PP	6048294
	0 ... 10 V, analog	Plug	BCG19-L1EM10PP	6048295
	4.5 ... 32 V SSI/Gray	M23 plug, 12-pin, radial outlet	BCG19-A1AM1007	1056983

At a glance

- Compact housing (90 x 90 x 90 mm)
- Incremental and absolute versions
- Integrated measuring systems
- Measuring lengths from 2 m ... 5 m
- High resolution

Your benefits

- Industrial design: the encoder is integrated in the aluminum housing, making it less susceptible to external damage and thus reducing maintenance time and costs
- Extremely precise measurements by eliminating the coupling between the encoder and the mechanism
- Space-saving installation, since the encoder is directly integrated in the wire draw mechanics
- Very precise measurements thanks to the high resolution

→ **www.mysick.com/en/Compact**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

Additional device versions at www.mysick.com/en/Compact

- **Connection type:** M23 plug, 12-pin, radial

Measuring range	Electrical interface	Model name	Part no.
0 m ... 2 m	12 V ... 30 V SSI	BKS09-ATBM0220	1035240
0 m ... 5 m	12 V ... 30 V SSI	BKS09-ATBM0520	1035241
0 m ... 2 m	4.5 V ... 5.5 V TTL/RS422	PKS09-ATBM0220	1035242
0 m ... 5 m	4.5 V ... 5.5 V TTL/RS422	PKS09-ATBM0520	1035243

At a glance

- Modular measuring system with a wide selection of interfaces/ measuring lengths
- Measuring lengths: 2 m ... 50 m
- Very robust system (dirt scraper, integrated brushes)
- High-quality winding mechanism and wire input
- Interfaces: - TTL/HTL - ANALOG, SSI, PROFIBUS, CANopen, DeviceNet, HIPERFACE®
- High enclosure rating
- High resistance to shocks and vibrations
- High resolution possible

Your benefits

- Reliable solution for use in harsh ambient conditions
- Long service life due to robust industrial housing
- Quick and easy installation without the need for precise linear guidance
- Low integration and maintenance costs
- Customization option reduces storage costs

→ **www.mysick.com/en/HighLine**
For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Ordering information

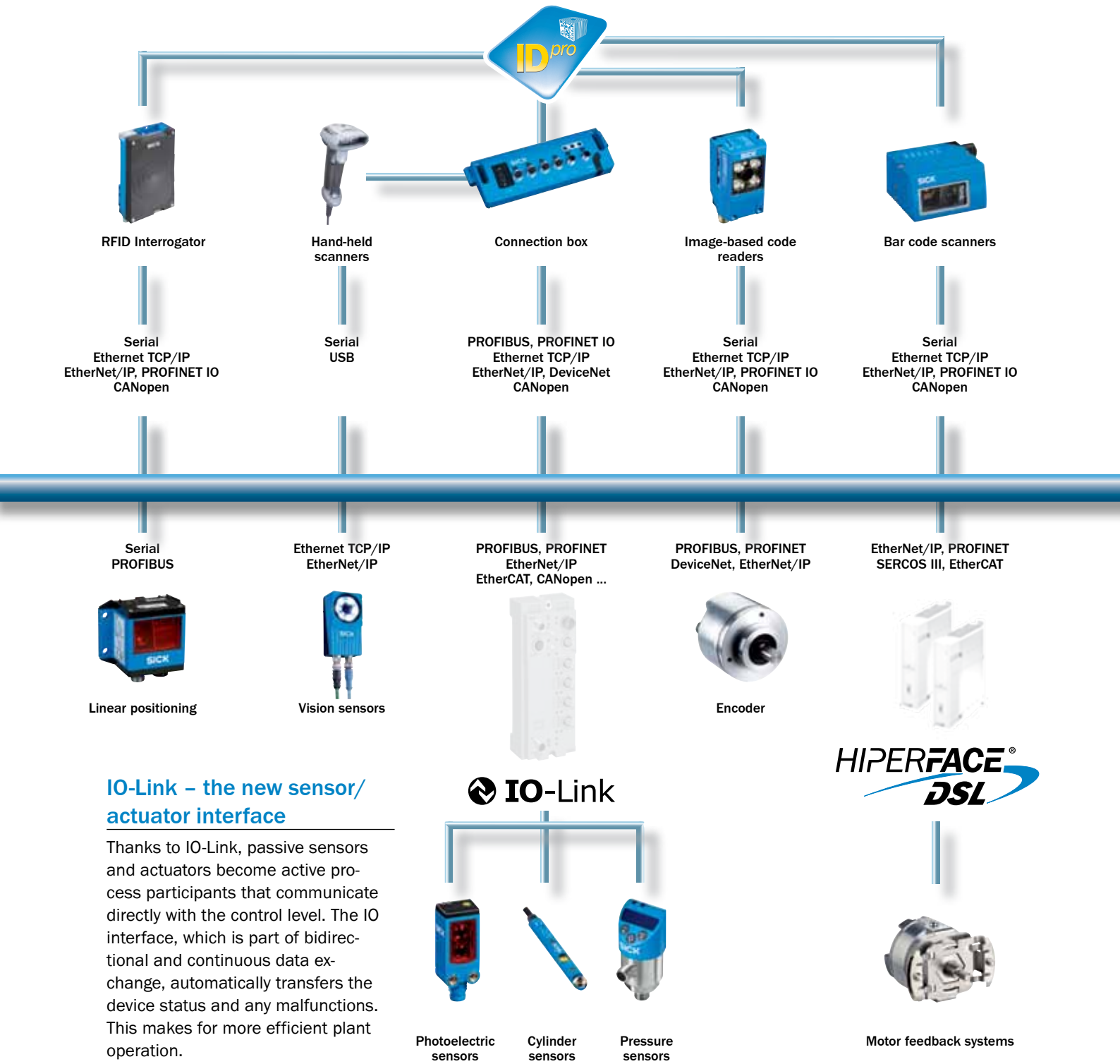
Additional device versions at www.mysick.com/en/HighLine

Measuring range	Electrical interface	Connection type	Model name	Part no.
0 m ... 5 m	10 V ... 32 V SSI	M23 plug, 12-pin, radial	BTF13-A1AM0520	1034300
	10 V ... 32 V CANopen [1]	Connection adapter	BTF13-C1HM0525	1034318
	10 V ... 32 V PROFIBUS [1]	Connection adapter	BTF13-P1HM0525	1034306
0 m ... 10 m	10 V ... 32 V SSI	M23 plug, 12-pin, radial	BTF13-A1AM1020	1034301
	10 V ... 32 V CANopen [1]	Connection adapter	BTF13-C1HM1025	1034319
	10 V ... 32 V PROFIBUS [1]	Connection adapter	BTF13-P1HM1025	1034307
0 m ... 20 m	10 V ... 32 V SSI	M23 plug, 12-pin, radial	BTF13-A1AM2020	1034302
	10 V ... 32 V CANopen [1]	Connection adapter	BTF13-C1HM2025	1034320
	10 V ... 32 V PROFIBUS [1]	Connection adapter	BTF13-P1HM2025	1034308

[1] **Warning:** The connection adapter for fieldbus encoders has to be ordered separately.

Accessories

Accessory category	Brief description	Model name	Part no.
Adapters/distributors	BTF PROFIBUS connection adapter KA3, 3 x PG	AD-ATM60-KA3PR	2029225
	BTF CANopen connection adapter KR1, 1 x PG	AD-ATM60-KR1CO	2029230
	BTF CANopen connection adapter KR2, 2 x PG	AD-ATM60-KR2CO	2029231
	BTF CANopen connection adapter KR3, 3 x PG	AD-ATM60-KR3CO	2029232



IO-Link – the new sensor/ actuator interface

Thanks to IO-Link, passive sensors and actuators become active process participants that communicate directly with the control level. The IO interface, which is part of bidirectional and continuous data exchange, automatically transfers the device status and any malfunctions. This makes for more efficient plant operation.

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DeviceNet Safety

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Our intelligent sensor solutions and safety controllers make available different integration technologies that allow easy access – from HMI, PLC, and Engineering Tools – to data from our sensors. In this way, we support you towards solving your application rapidly and easily and increase machine availability with a continuous diagnostic concept.

Industrial communication

SICK's fieldbus and network solutions allow sensors and safety controllers from SICK to be connected to all common automation systems. This guarantees simple and fast access to all available data and information.

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Whether the issue is generic integration using device description files, standardized interfaces (e. g. TCI, FDT/DTM) for diagnosis or integration into the PLC program via function blocks – the user-friendly tools from SICK support you in implementation.

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Our software tools support you in establishing connections, parameterizing and diagnosing sensors and safety controllers from SICK. The intuitive user interface permits simple and fast designing and realization of the application required.

www.sick.com/industrial-communication

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Notes

Notes

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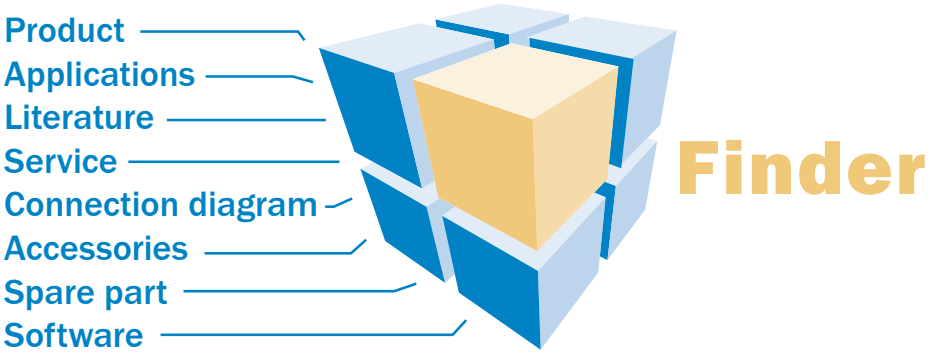

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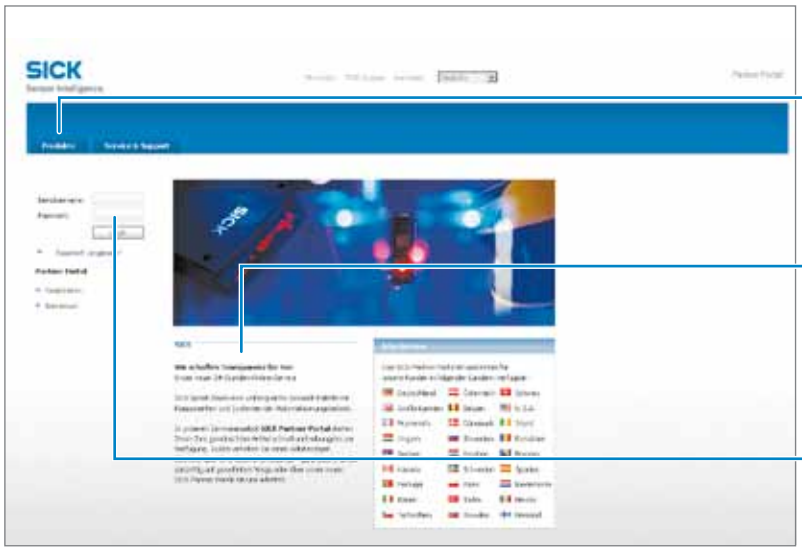

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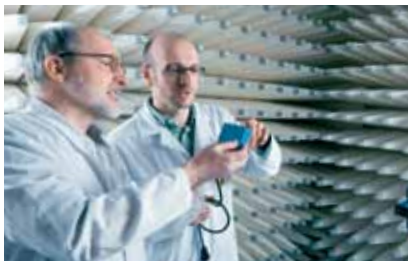
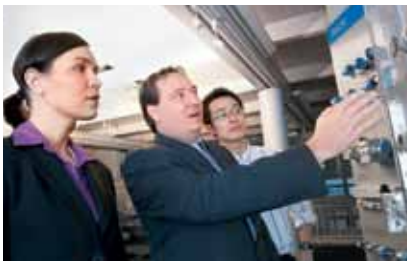
SICK at a glance



Leading technologies

With a staff of more than 5,000 and over 50 subsidiaries and representations worldwide, SICK is one of the leading and most successful manufacturers of sensor technology. The power of innovation and solution competency have made SICK the global market leader. No matter what the project and industry may be, talking with an expert from SICK will provide you with an ideal basis for your plans – there is no need to settle for anything less than the best.



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- Automatic identification with bar code and RFID readers
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