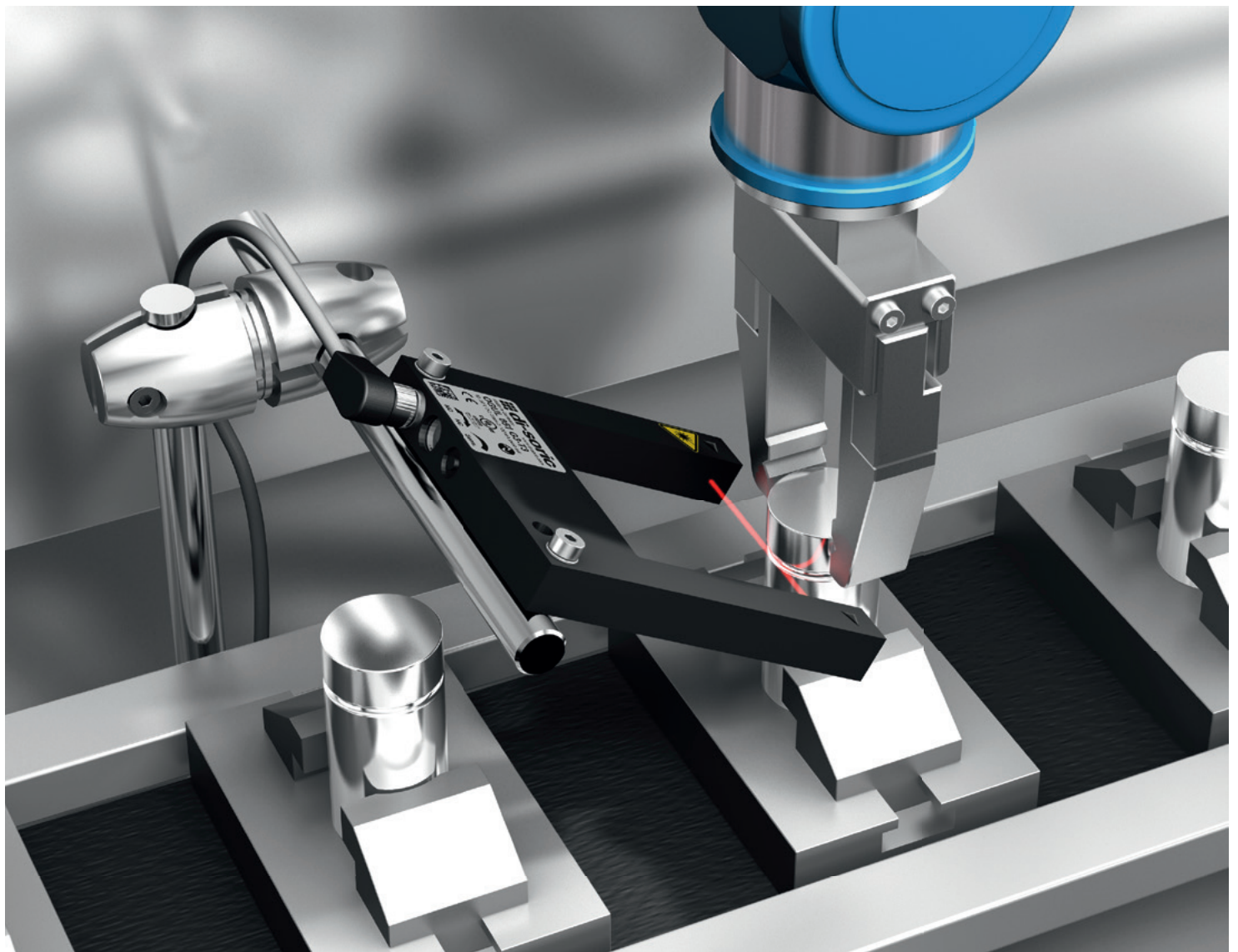




PART FEEDING

 **di-soric**

WELCOME TO DI-SORIC

More than 40 years of experience in the development and manufacture of solutions for industrial automation



- di-soric GmbH & Co. KG:
100% owner-managed
- Headquarters:
Urbach, Germany
- Technology and production center:
Lüdenscheid, Germany
- Representatives and branch offices:
in more than 40 countries
- Certifications:
IQNet, ISO 9001:2015, ISO 14001:2015

For over 40 years, the family-run company di-soric GmbH & Co. KG has been developing, manufacturing, and distributing sensors using a wide range of technologies. These sensors are primarily used in industrial automation, particularly in assembly and handling technology, the automotive, electronics, and pharmaceutical industries, and in packaging technology.

Other important cornerstones of our product range are innovative vision sensors and code readers, as well as high-quality LED lighting for machines and image processing and signal lights.



Honesty, reliability, and genuine competence in international competition

di-soric is not just any company that develops and sells sensor technology. We are committed to being a reliable and competent partner for our customers and to putting the real needs of the application before our own profits.

” **As simple as possible and
only as complex as necessary.** “

Our commitment to always seeking the best economic and ecological solution and avoiding over-engineering remains unchanged.

Our products and solutions are developed to be as simple as possible and only as complex as necessary. This not only saves money at the time of purchase, but also has a significant impact on the TCO (total cost of ownership), as you can also save costs in areas such as installation, maintenance, and cleaning.

From this perspective, we believe that we are the truly smart ones in the market because we believe in genuine expertise, a sincere focus on solutions, and thus truly sustainable customer relationships.

Solutions. Clever. Practical.

SOLUTIONS FOR RELIABLE PART FEEDING

Reliable material feeding is essential for any modern production facility.

As an upstream process for assembly, machining and packaging processes, reliable feed of parts is essential. di-soric offers various solutions for the correct storage, feed and provision of the components—each of them adequate for the individual requirement of the application.

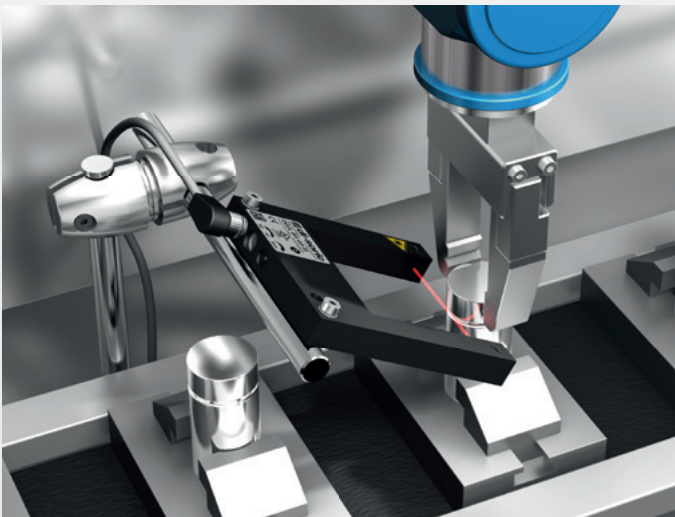
Limited installation space, diverse materials, a wide variety of sizes, high speeds, and the increasing use of robots pose particular challenges for controlling and monitoring material feed. This requires compact designs and high availability for sensors, vision sensors, and ID readers.

Easy integration

In addition to the right product solution, easy integration into the system is also important for a reliable process. Our products feature industrial interfaces such as Ethernet TCP/IP, PROFINET, and IO-Link, supporting optimized setup, maintenance, and monitoring of the entire system.

Trouble-free and safe

You too can effectively prevent machine downtime due to empty storage, material jams, and incorrect orientation of components with di-soric sensors and solutions. Whether linear material feeding, step, round, or vibratory conveyors, feeding in hoses, or manual feeding – our solutions ensure trouble-free and safe operation of your system.



Assembly and handling technology 4

- Storage of components and material 4
- Linear part feeding 6
- Position monitoring of part feeding 8
- Feeding parts in a tube 10



Packaging technology 12

- Tubular bag machine & sealing machine 12



Robotics 14

- Sensors and machine vision in robot-assisted processes 14



STORAGE OF COMPONENTS AND MATERIAL

In the segment of feeding in assembly and handling technology, components must always be available in sufficient quantity in circular or step feeders for further processing. Our optical sensors and ultrasonic sensors monitor reliably—without contact or wear.



Fill level monitoring in the step feeder

The US Q12 M 400 FP G3-T4 ultrasonic sensor detects even shiny parts such as nuts and bolts without problems. If the fill level falls below the target value, the sensor switches, and material is refilled. This target value can be set intuitively using a potentiometer. This solution is extremely reliable thanks to its narrow sound beam and the specific fill level evaluation.



Ultrasonic sensor
US Q12 M 400 FP G3-T4 



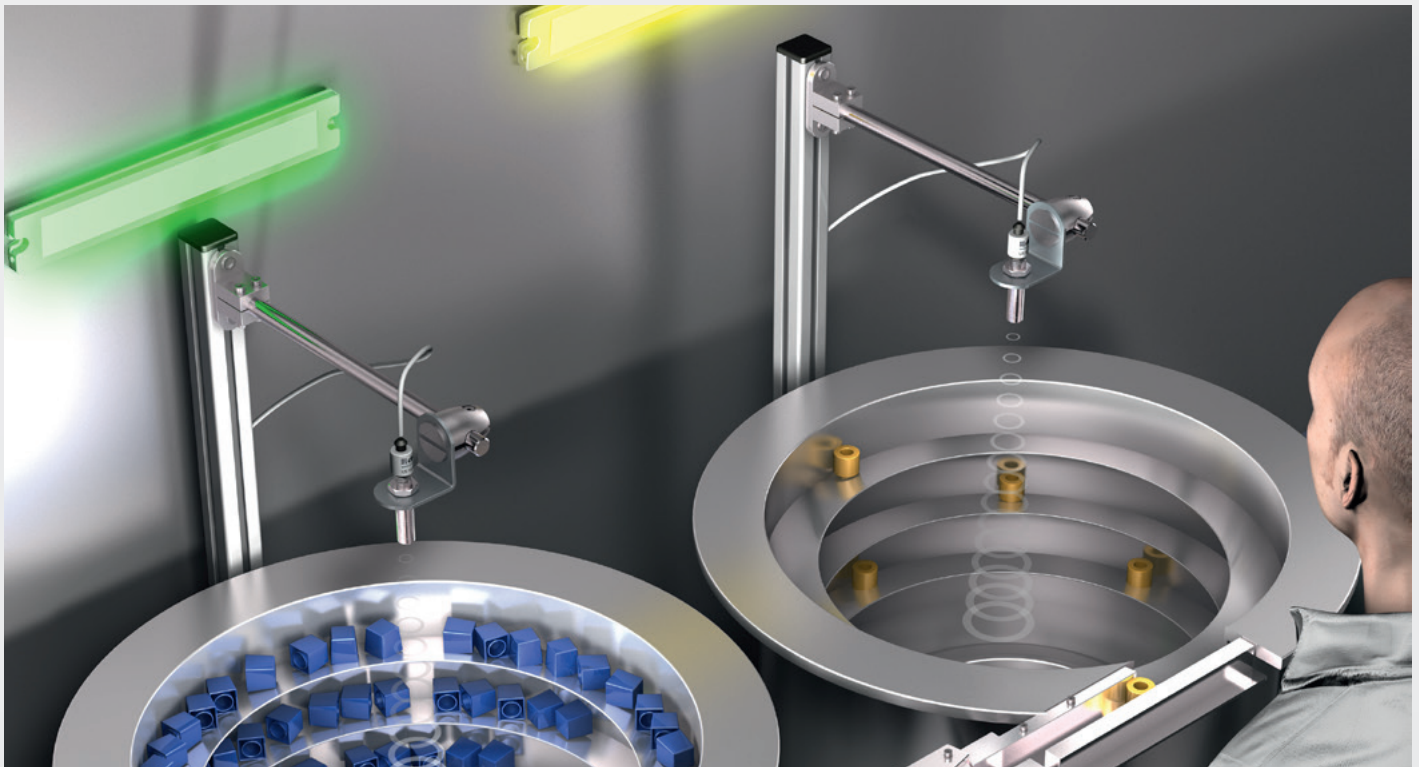
Fill level monitoring in a small circular feeder

Our diffuse sensors from the 30 series with background suppression are the economical solution for close-range fill level detection. In the OH 30 K 400 P3-T4, the target fill level is set using a potentiometer. Once the fill level falls below the target, the sensor switches and material is refilled. The maximum scan width of 400 mm enables safe detection; the small design allows for installation in constrained spaces.



Optical sensor
OH 30 K 400 P3-T4

Depending on the degree of automation, it is possible to carry out automatic or manual refilling in a timely manner—and while minimizing downtimes—when the level falls below a target value.



Fill level monitoring and signaling in larger circular feeder

Fill level monitoring in large circular feeders can be optimally implemented using a US M18 series ultrasonic sensor in combination with SB-RGB signal lighting. M18 ultrasonic sensors are suitable for larger working distances and for detecting shiny and even transparent components. Using IO-Link, the exact switch point of the sensor can be defined. This setting is tamper-proof.

If the fill level falls below the target value, the switching output of the sensor switches and the yellow light of the signal lighting indicates that material must be refilled.

Ultrasonic sensor
US 18 M 800 G3-B4 

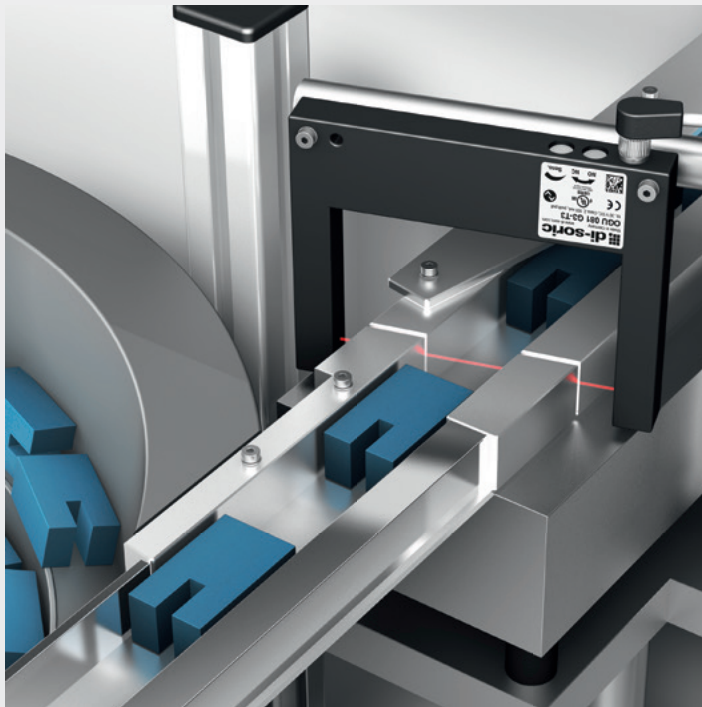


Signal lighting
SB-RGB 



LINEAR PART FEEDING

Our sensors reliably control the continuous material feed of the downstream assembly. It does not matter whether parts are being fed on rails, belts, workpiece carriers, pallet or chain feeders. Our sensors feature accumulation and feed control that ensures

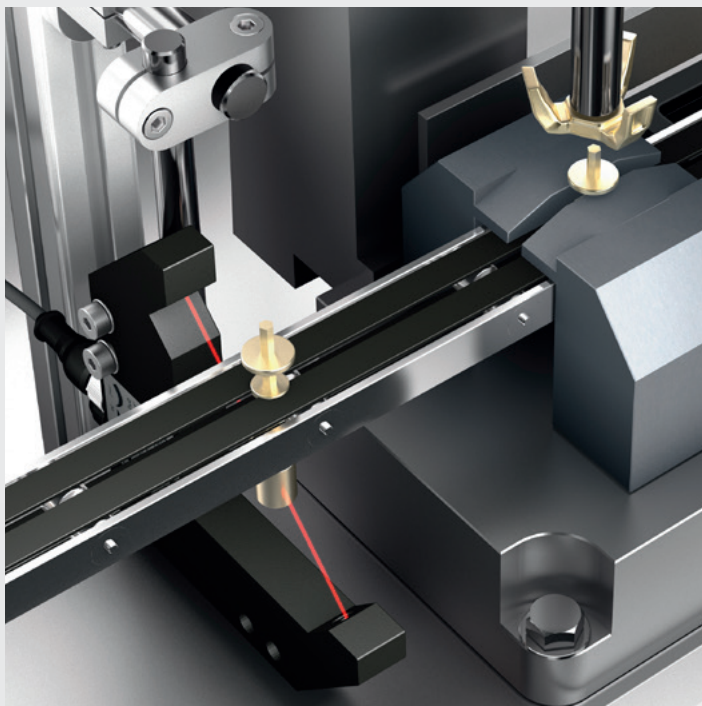


Accumulation monitoring in the feeder rail

Our fork light barriers of the OGU series provide functionally reliable accumulation monitoring with fork openings from 5 to 250 mm. This forward-thinking solution makes handling easy—in both assembly and start-up. If the products accumulate in the rail, the OGU 051 switches and the feed stops.

Integrated IO-Link allows for configurations to be stored and extensive diagnostic options and ensures high system availability.

Fork light barrier
OGU 051 G3-T3 



Feed control of small parts in constrained installation spaces

In constrained installation situations, our angled light barriers of the OGL series, which are open on two sides, control the feed of components reliably. The small, clearly visible LED light spot allows for fast, very precise adjustment and alignment. The high resolution ensures the safe detection of objects from a diameter of 0.2 mm.

Four sensor modes can be configured via IO-Link. They allow for optimization of the OGL for individualized applications.

Angled light barrier
OGL 081 G3-T3 



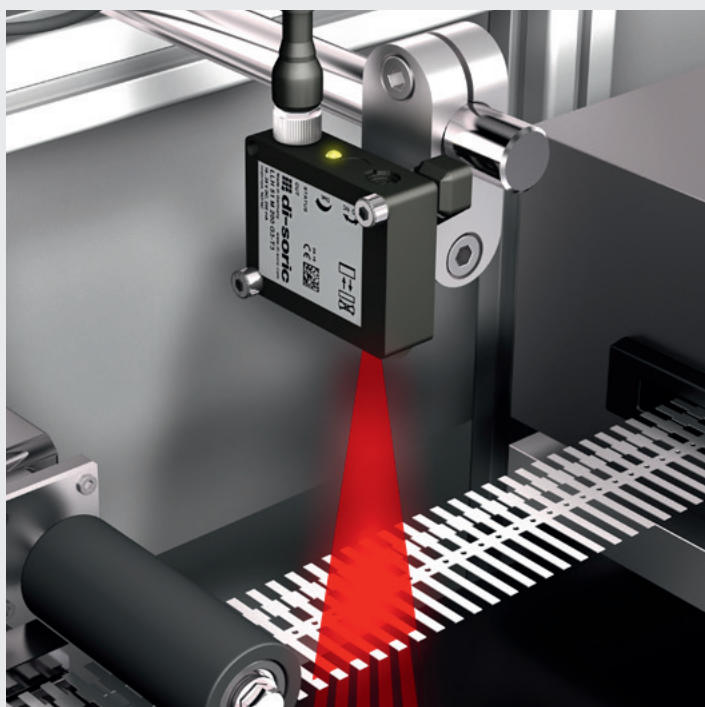
maximum availability and functional reliability in downstream processing steps such as pressing, assembling, forming or closing. The wide range of solutions from di-soric offers a suitable solution for every type of linear material feed.



Accumulation monitoring of containers guided by rail

If the structural conditions do not allow for the use of light barriers, our fiber optics, which are extremely robust and long-lasting thanks to their kink protection, are the ideal solution—for example, the KLER-M4-T. The OLK 71 amplifier is simply installed in a place where more installation space is available. The switchover value is set intuitively using +/- buttons. The switchover point and signal value are indicated by two LED displays.

Fiber-optic sensors
**OLK 71 with
KLER-M4-T2-1**



Monitoring of continuous belt feeding

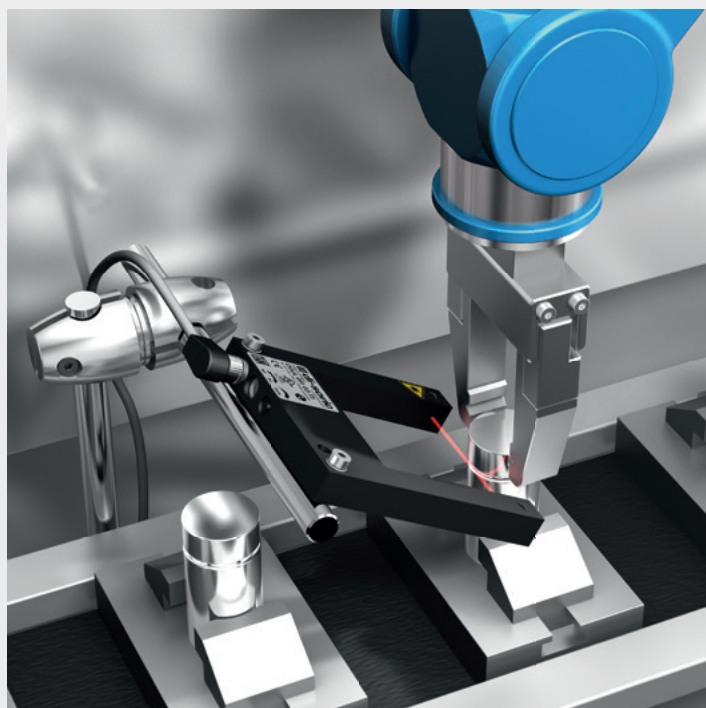
To guarantee continuous belt feeding, the presence of stamped contacts must be checked. The LLH 51 is the right solution thanks to its widened laser line with a size of 30 x 1.5 mm (at a distance of 200 mm). Thanks to the functional scanning principle with background suppression, the LLH 51 allows for monitoring moving stamped contacts while saving space.

Laser line diffuse sensor
LLH 51 M 200 G3-B4



POSITION MONITORING OF PART FEEDING

Components must be checked for their position and completeness before they are fed to assembly machines. For this purpose, di-soric has a wide selection of product solutions that increase productivity, minimize machine downtimes and even prevent machine damage.

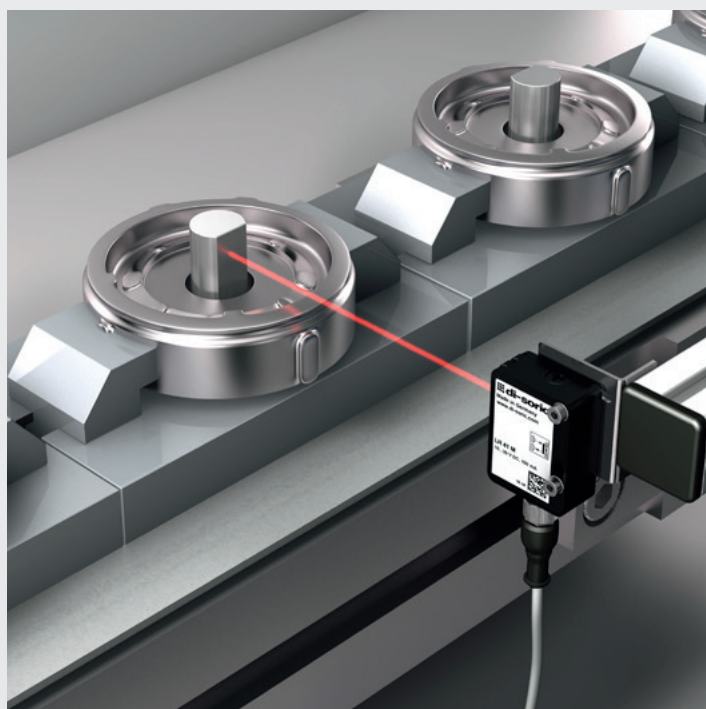


Position monitoring: groove present?

The correct position of cylindrical components is verified by checking for the presence of a small groove. Our OGUL laser fork light barrier features a clearly visible laser beam and completes this task with functional reliability. In the NC position of the potentiometer, the switching output is switched off if no groove is present and the product can be rejected.

The high-resolution OGUL detects even extremely small objects, down to a diameter of 0.05 mm.

Laser fork light barrier
OGUL 051 G3-T3



Monitoring: position of a shaft

The laser diffuse sensor with background suppression of the LH 41 series reliably detects the correct position of a shaft on a workpiece carrier system.

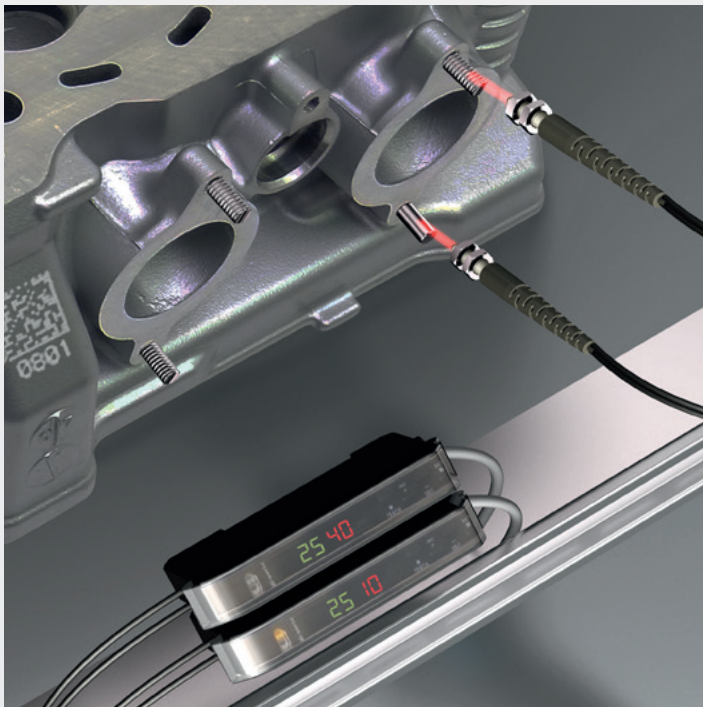
Thanks to its broad scan width range of 30 to 350 mm, it is possible to position the sensor both near the shaft and away from it.

The switch point can be adjusted easily, precisely and protected from vibrations by means of a 10-turn potentiometer.

Laser diffuse sensor
LH 41 M 350 G4L-T4



Our high-resolution laser sensors for the detection of the smallest features or fiber-optic sensors in constrained installation spaces are excellently suited to these tasks. If entire areas must be checked, our vision sensors are used.



Check: thread present?

The OLK 71 checks the presence of an outside thread on a pre-assembled bolt on a workpiece carrier. Fiber optics positioned at an angle with the VOM4 attachment optics enable the detection at a working distance of up to 8 mm. Adjustment works by simple teach-in at the fiber-optic amplifier.

Fiber-optic sensors
OLK 71 with
KLT-M4-T2-0.5K
attachment optics
VOM4



Nut position check

Our CS-60 Vision Sensor checks whether nuts are positioned correctly as they are fed through a rotary conveyor. Configuration is quick and easy using an image processing tool. Nuts that are positioned incorrectly are blown back into the container.

Vision sensor
CS-60



Components such as screws, springs, washers or welding bolts are fed to the assembly process by means of tubes. For this purpose, di-soric has a wide selection of optical ring light barriers and inductive ring and tube sensors with dynamic and static detection.



Accumulation detection of studs in a tube

The easiest solution for detecting an accumulation in a tube is our tube sensors from the IS series with static operating principle. The flat, space-saving sensor is simply attached to the feeding tube using cable ties. It reliably detects metal bolts and screws.

Inductive tube sensor
IS 70 PSK-TSSL



Detecting screws

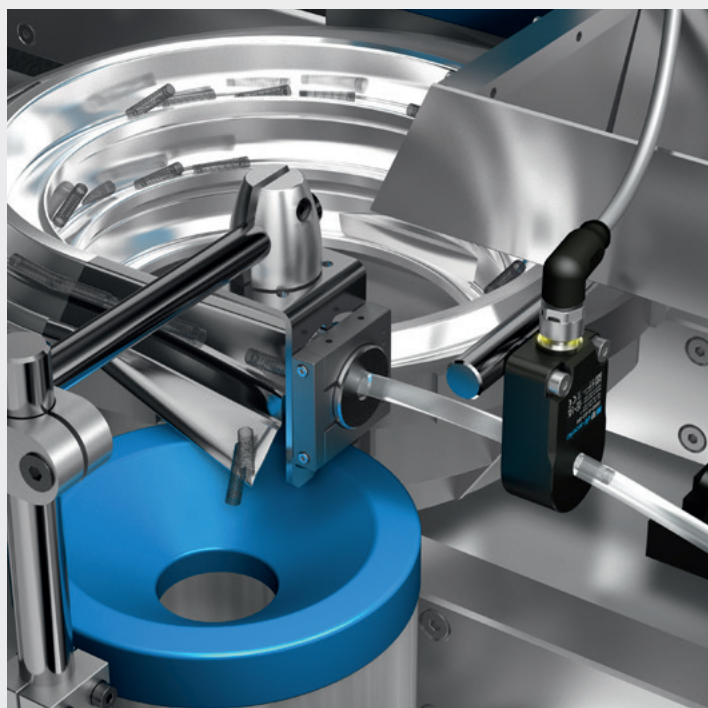
Our IRB 15 inductive ring sensor without setting elements functions according to the static operating principle. It detects metal objects in a feeding tube in a way that is reliable and tamper-proof.

The cost-effective ring sensors of the IRB series can be used for the widespread tube diameters of 10 to 27 mm.

Inductive ring sensor
IRB 15 PS-B3



For feeding both metal and plastic objects, our portfolio provides the suitable ring sensor in various sizes. Our tube sensors are suitable for flexible attachment to various tube diameters.



Detection of springs in a tube

Conventional sensors reach their limits in more demanding feeding technology applications.

Thanks to its high resolution, the IRSD reliably detects even objects with low mass. Because it is firmly attached to the tube, the objects are always detected in the correct position.

Inductive ring sensor
IRSD-6-G3-B4 



Detection of screws at small mounting distances

In automated assembly, metal components in a wide variety of formats are often screwed, riveted, or welded together. They are fed from a central storage location through tubes over long distances directly to the assembly site.

Thanks to their different operating frequencies, the sensors of the IRSD series can be installed directly next to each other without interfering with each other. They can be configured and controlled via the controller using IO-Link.

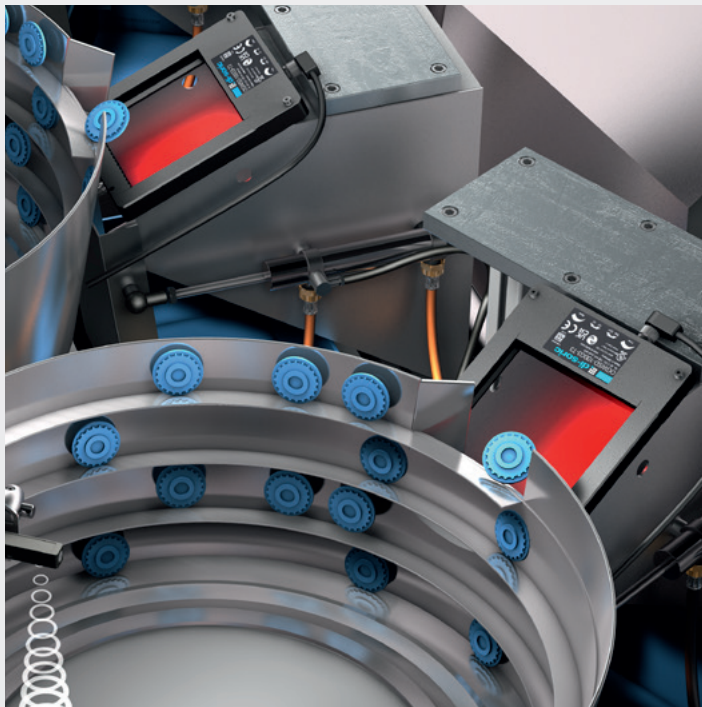
Inductive ring sensor
IRSD-25-G3-B4 



TUBULAR BAG MACHINE AND SEALING MACHINE

In packaging processes, frequent product changes, varying objects and designs call for safe object detection. In addition, large production quantities impose the highest demands on the inspection rate of the sensors in packaging technology.

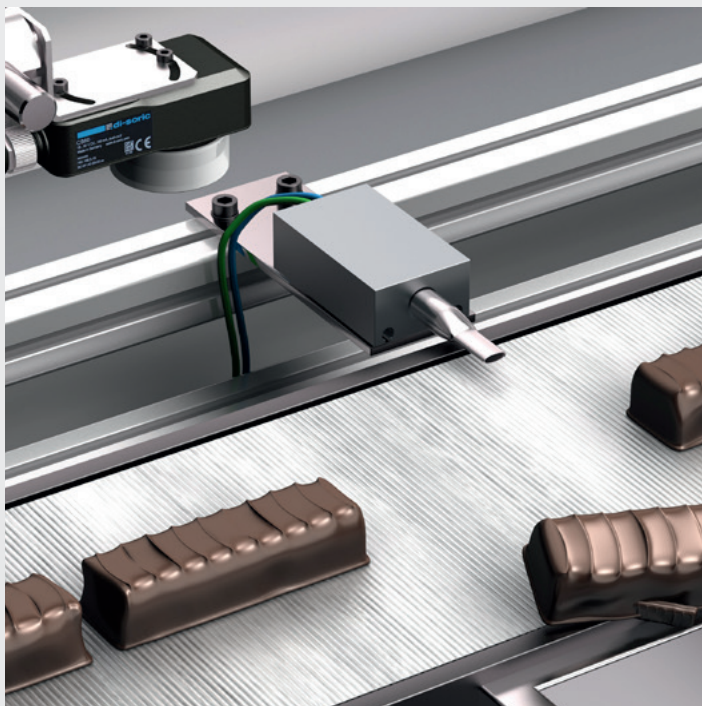
For this purpose, di-soric provides sensors that can be adjusted quickly and easily and solutions for object detection at very high speeds.



Counting objects in a tubular bag machine

Different objects are packed in a tubular bag. The frame light barriers of the OGWSD series reliably count falling parts that are reliably detected in the detection area, and an adjustable pulse extension enables error-free counting. Target specifications for the number of pieces in the bag are easy to monitor. In **peak value** sensor mode, the object type can be detected based on the maximum shadowing if required.

Frame light barrier
OGWSD-100G3-T3



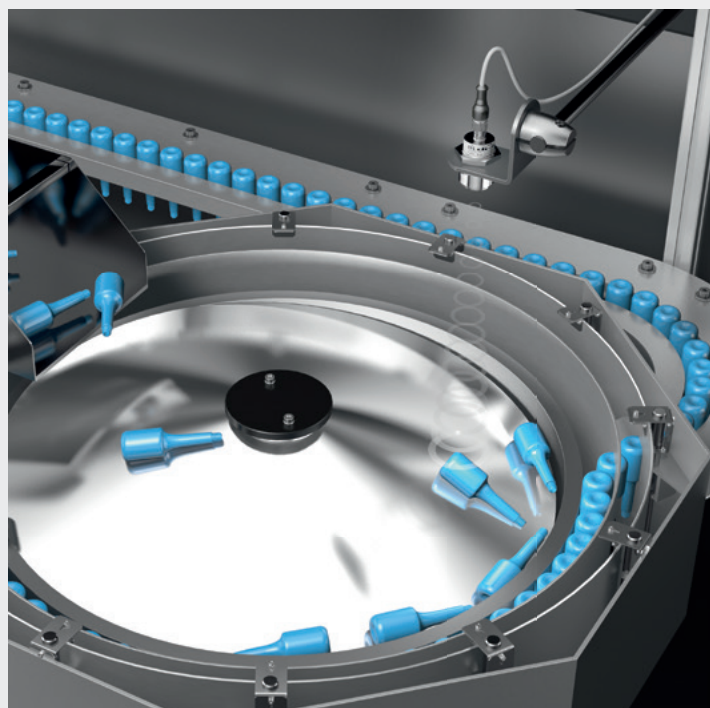
Monitoring the feed into tubular bags

Due to the narrow inlet of a tubular bag packaging machine, the correct position of chocolate bars must be monitored. The bars, which move at high speed, are monitored for rotation and dimensions using our CS-60 vision sensor to prevent rejects and machine downtime.

Vision sensor
CS-60



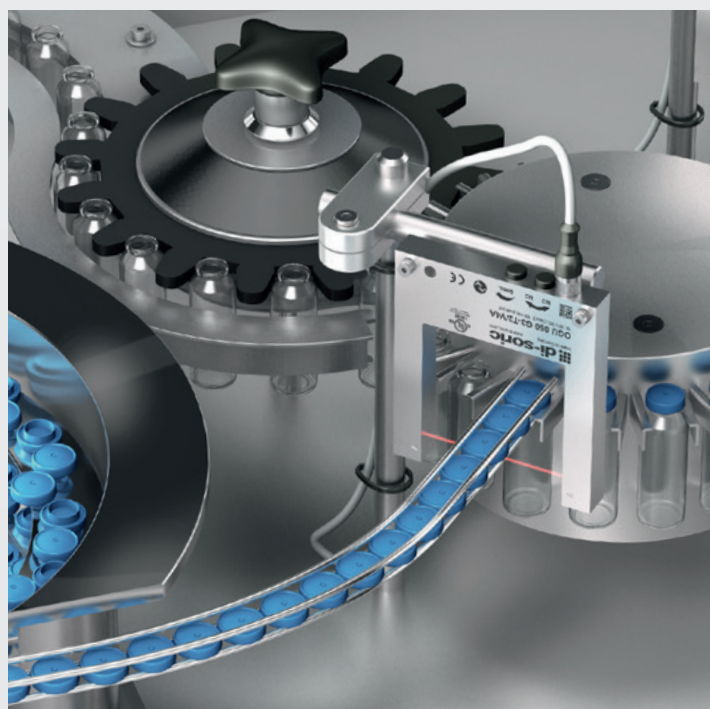
If tasks become too complex to be handled by sensor technology alone, our vision sensors with their easily configurable tools are often the suitable solution. Furthermore, our specialists for industrial image processing and identification from di-soric Solutions can handle even the most complex applications, for example in part tracking, quality checks and verification.



Fill level monitoring in the centrifugal feeder

Our M30 series ultrasonic sensors provide high functional reliability, which is required for fill level monitoring down to the millimeter in large containers. The wide sound beam means that larger objects can be detected as well. If the fill level falls below the target value, the centrifugal feeder is refilled from the hopper. As a result, parts for the sealing machine are continuously available.

Ultrasonic sensor
US 30 M 3000 G3-B4 



Accumulation monitoring in sealing machine

Where there are enhanced requirements for hygiene and resistance to cleaning agents, our OGU V4A stainless steel fork light barriers can be used.

In the event of an accumulation in the feed to the sealing machine, there is a reliable stop. Batch changes and modifications to production parameters can be implemented easily, quickly and in a reproducible manner using the IO-Link configuration.

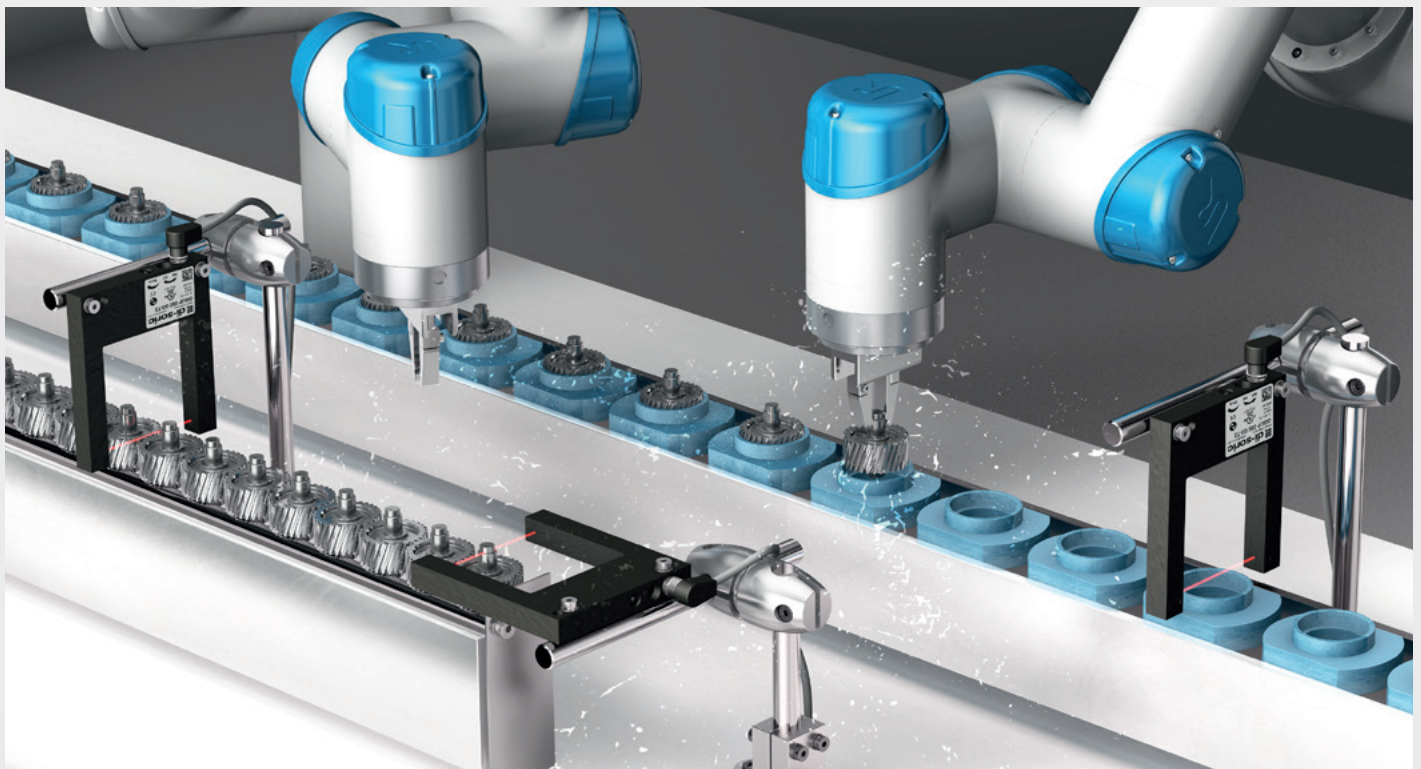
Fork light barrier
OGU 051 G3-T3/V4A 



SENSORS AND MACHINE VISION IN ROBOT-ASSISTED PROCESSES

Robotic cells present a wide variety of challenges that need to be solved.

Sensors and vision sensors are the robot's sensory organs, ensuring material recognition and reliably controlling the material flow.



Linear supply technology in the robot cell

The fork light barriers from our OGUP series are particularly well suited for use in contaminated environments, e.g. for feeding components in a robot cell, thanks to their high function reserve and high switching precision at the same time. The OGUP 050 G3-T3 is equipped with infrared high-performance LEDs, allowing cleaning cycles in contaminated environments to be minimized. Function reserve and degree of contamination of the fork light barrier can be easily monitored using IO-Link.

High-performance fork light barrier
OGUP 050 G3-T3 



Our solutions contribute significantly to productivity in all production steps: Compact designs facilitate integration, simple adjustment enables quick commissioning, and high performance ensures cost-effectiveness and process reliability from material feeding to the finished end product.

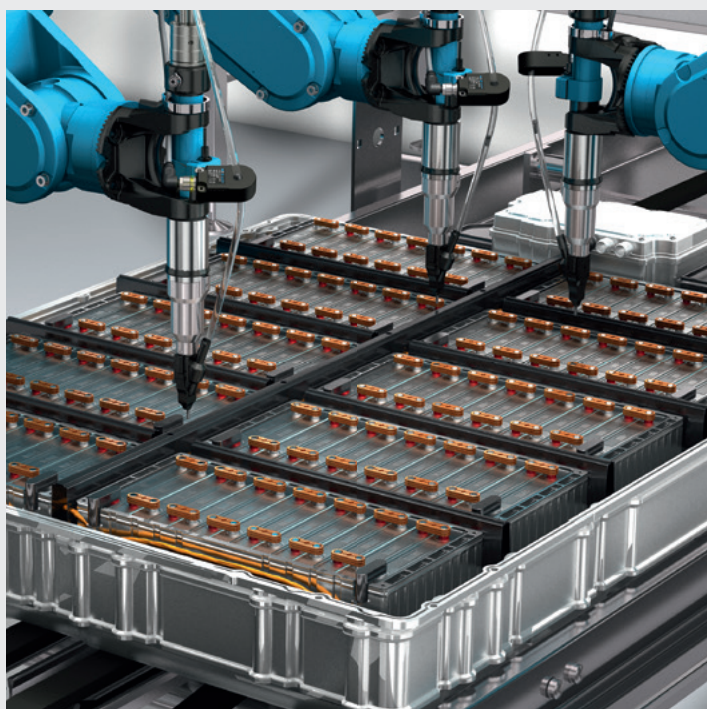


Stack monitoring in robot cell

A robot in a robot cell always picks up the top sheet from a magazine for further processing.

Thanks to the OGL angled light barrier with high switching precision and reproducibility down to 0.03 mm, the next sheet is repositioned. During this, the OGL also checks the removal of the sheet and switches off accordingly. Configuration and diagnostics are carried out via IO-Link. This means that no access to the dangerous area of the robot cell is necessary.

Angled light barrier
OGL 121 G3-T3 



Detection of screws in the feed tube

In many production processes, robots are used for screw connections in order to achieve a consistently high quality of screw fastening.

Sensors from the IRSD series reliably control screw feeding. They are robust and can be securely mounted on any robot without slipping or being affected by rapid movements.

An additional advantage is the constant monitoring or re-configuration of the sensors made possible by IO-Link.

Inductive ring sensor
IRSD-15-G3-B4 

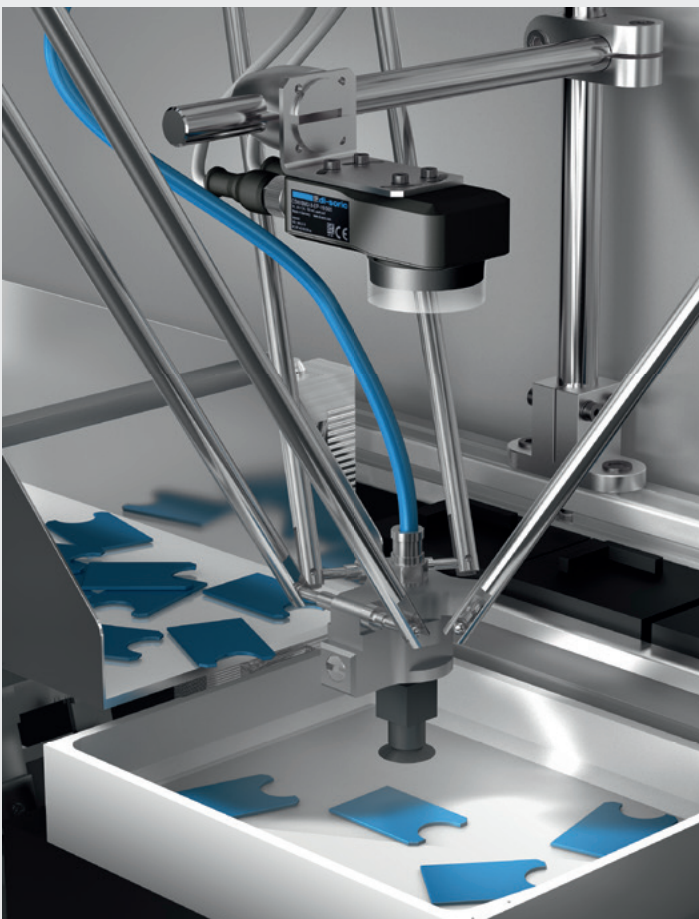




Distance regulation in the adhesion process

Robot-controlled adhesion and sealing of battery modules is extremely important. To ensure a high quality and shelf life, the distance of the glue nozzle from the object during application of the adhesive must always be optimal. Distance detection in the sub-mm range is performed with an optical distance sensor. Due to its compact design, the LAT-52 can be mounted close to the glue nozzle

Optical distance sensor
LAT52-200IU-B5 

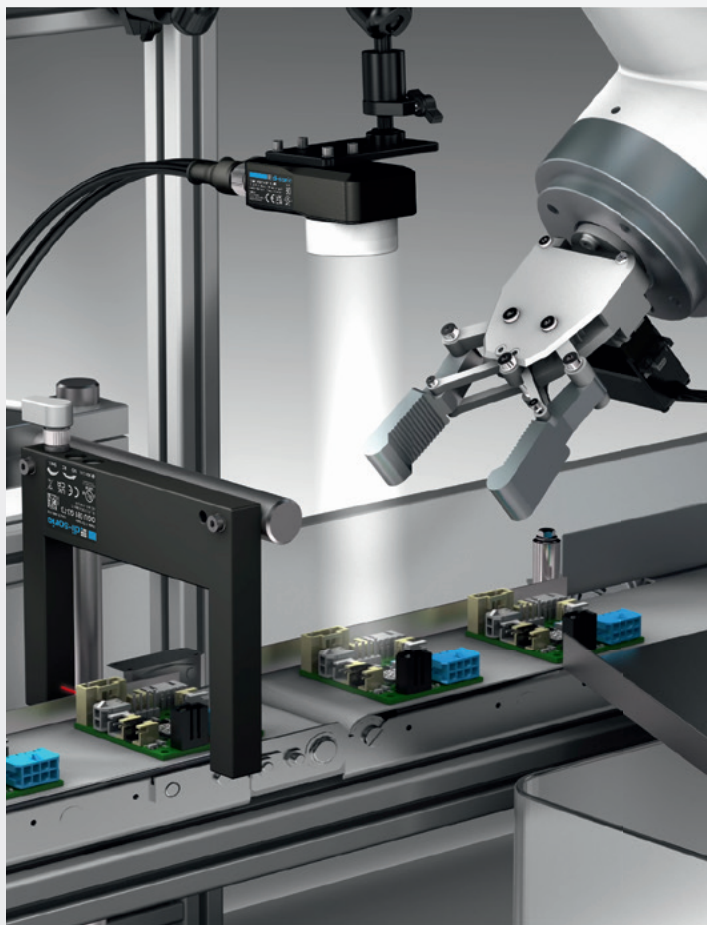


Locating and gripping

Vision sensors are suitable for determining the position of flat objects located on a backlit vibration plate. First, the CS-60 vision sensor is trained on an object. The CS-60 determines and transmits the X/Y coordinates and the rotational position of the most suitable object via PROFINET or Ethernet TCP/IP to a robot, which grips and deposits the object. If the CS-60 can no longer find any localizable parts in the working area, new objects are fed in via the conveyor system.

Vision sensor
CS-60 





Completeness check with position transfer

The CS-60 checks the product quality and position at the interface to the next process step. Thanks to its adjustment options in terms of working distance and image field (lens change) and its internal high-power lighting, the CS-60 delivers the depth of field required to display the entire product characteristics in the test image. This enables the robot to grip securely.

Vision sensor
CS-60



Dispenser on robot for painting

The spray pattern of a painting robot is monitored to ensure that no nozzles are clogged.

To do this, the shape of the paint jet is analyzed over a certain period of time and an overall result is output at the end.

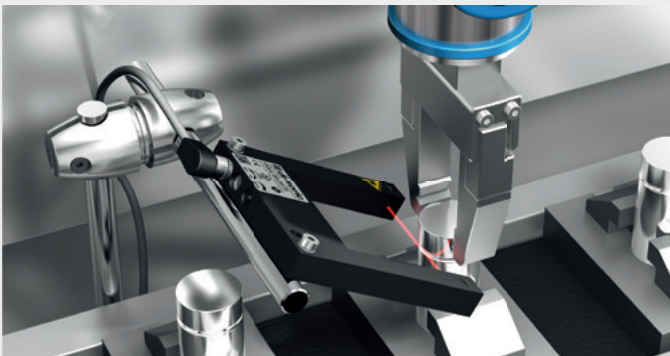
The measurement module is used to measure the paint jet. With the SMART module, the result history is processed directly in the CS-62 using several image recordings.

Vision sensor
CS-62



AREAS OF COMPETENCE

One of our best-known developments was the innovative fork light barrier over 40 years ago—to-day, we are a manufacturer of intelligent sensors based on all common operating principles, high-performance image processing components, and high-quality LED machine and signal lighting for many areas of industrial automation.



Part feeding

As an upstream process for assembly, machining and packaging processes, reliable feed of parts is essential. di-soric offers various solutions for the correct storage, feed and provision of the components—each of them adequate for the individual requirement of the application.



Distance measurement

From measurements of fill level, object positioning, to quality control – di-soric offers perfect sensors for non-contact distance measurement for these applications in automation.



Quality inspection

Automated quality inspection systems are used at various stages of production. di-soric offers solutions based on different technologies with innovative interfaces that provide added value.



ID – code-reading

The essential characteristic of new production concepts is linking the information flow with the material flow. This enables the identification of the conveyor units at any time and at any location, ensuring versatile control at each production step. Identification systems from di-soric reliably read 1D and 2D codes.

Our product solutions are based on constant development work and comprehensive application knowledge. With high efficiency, flexibility, reliability, and easy handling, our innovations enable process-reliable applications – in short:
Solutions. Clever. Practical.



Battery production

Our solutions for battery production are based on high efficiency, flexibility, reliability and easy operation. We understand the value-added processes in the industry. That's why we can help our customers operate their production plants faster, more reliably and more efficiently.



Labeling technology

If you manufacture, dispense, and check labels, we have the ideal solutions for your requirements: from trigger sensors to measuring and label sensors to machine vision.



Lighting solutions

Optimal lighting in machines and systems is an important factor in industry for high productivity, as good visibility and clear signaling can reduce downtimes in the event of a malfunction.



Individual Standards

Time and time again, we get inquiries as to whether we can modify standard products in order to resolve special tasks. In many cases, this is even possible from a technical and economical perspective and we can meet the challenges simply with an individual standard product.

SOLUTIONS. CLEVER. PRACTICAL.

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