ASSEMBLY AND HANDLING TECHNOLOGY

di-soric

WELCOME
TO DI-SORIC

ABOUT THE INVENTOR
OF THE FORK LIGHT BARRIER:
DI-SORIC.

For over 30 years, we have been producing and selling sensors used
in industrial automation, primarily in assembly and handling technology,
the automotive, electronics and pharmaceutical industries and
packaging technology.
Other cornerstones of our product range are Machine Vision and
ID Systems, high-quality LED lighting and products for work safety.
Our subsidiary, di-soric Solutions GmbH & Co. KG, specializes in the areas
of Vision and ID. Our priorities: In addition to high-quality products, di-soric
Solutions prioritizes complete solutions, developed for you, which we call
"engineered solutions". We are involved in all phases, from consultation
and project engineering all the way to implementation.

We combine our resources to help you ensure that your production
processes are as precise, free of error and cost-effective as possible,
now and in the future.

DI-SORIC FACTS

■ **100% OWNER-MANAGED**

■ **HEADQUARTERS**
Urbach, Germany

■ **TECHNOLOGY AND PRODUCTION CENTER**
Lüdenscheid, Germany

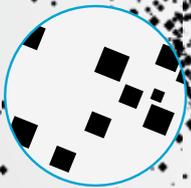■ **REPRESENTATIVES AND BRANCH OFFICES**
in more than 40 countries

■ **CERTIFICATIONS**
IQNet, DQS - ISO 9001:2008, UL, RoHS, GS1
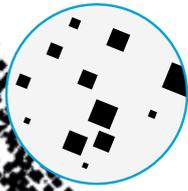
OUR PROMISE TO YOU:

SOLUTIONS.
CLEVER.
PRACTICAL.

SOLUTIONS.

**To us, finding solutions means providing you with exactly the right solution for the job.**

- Solution-oriented consultation and implementation
- Product portfolio for numerous application areas
- Engineered solutions for machine vision technology

CLEVER.

To us, being clever means
finding new, smart, unconventional and
therefore more effective solutions.

- Added value for product and application
- Efficient in function and application
- Openness and flexibility for the best solutions
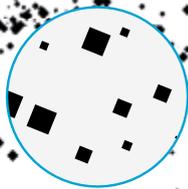
PRACTICAL.

To us, being practical means
being available, taking a straightforward approach
and communicating on the same level.

- Solution-oriented consultation and technical expertise
- Straightforward, cooperative and dynamic approach
- Address what's important, and forget about unnecessary factors.

SERVICE AREAS

DETECTION

Precision is the top priority in automated assembly and handling processes. Our sensors are ideal for checking the alignment and position of small, fast-moving parts that are difficult to detect.

In addition, assembly is fast and simple, and the sensors are easy to configure and extremely durable.

QUALITY CONTROL

The product and its components largely determine how an assembly process is conducted. Each of the various processes must be carried out precisely and reliably to ensure that the quality of the finished product complies with specifications.
When combined with Engineered Eolutions, our vision sensors and systems, color sensors and high-quality LED lights ensure maximum efficiency and quality in your processes.

IDENTIFICATION

Reliable object identification is vital to ensuring a fault-free production process.

Our mobile and permanently installed barcode and 2D code readers ensure comprehensive tracking and ensure the high quality of your products during the individual process steps.

PROTECTION

In order to protect employees, automated production systems and semi-automated assembly cells require fail-safe safety precautions.

Our space-saving solutions help you effectively prevent work accidents, optimize production and avoid time needed for repairs and downtimes.

CONTENT

FOR PRECISION AND MAXIMUM PRODUCTIVITY.

When using feed systems, precise provisioning of the parts to be assembled is a top priority.
Our devices use maximum precision and productivity in carrying out fill level monitoring, accumulation and feed control and position detection as well as in identifying and counting parts so that they can be fed precisely into the assembly process.

LEVEL CONTROL IN THE HOPPER

Ultrasonic sensor

US Q12 M 400 FP G3-T4
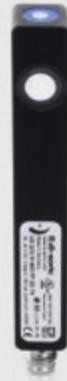
IO-Link

- Ultrasonic sensor or barrier, diffuser for level measurement, window mode – configurable via IO-Link
- Fill level monitoring of all media
- 3 different teach modes
- Operating distance from 40 to 400 mm adjustable
- Narrow detection beam / small blind zone
- Insensitive to dirt

IDENTIFYING AND COUNTING PARTS

Frame light barriers
OGWSD

DETECTING THE POSITION OF PARTS ON CONVEYOR BELTS

Vision Sensor
CS 50

Spotlight
BEK-PM12

- Durable metal housing for counting metallic and non-metallic parts
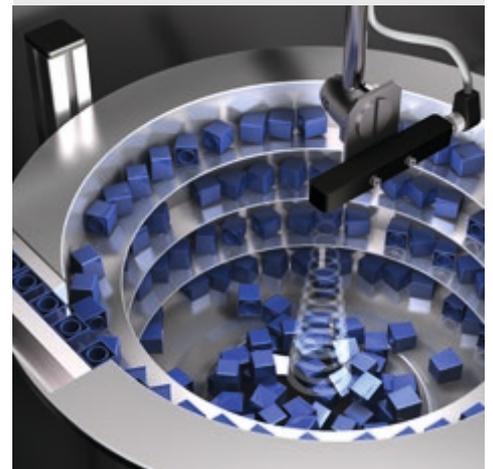- Easy configuration right on the device with potentiometer, NO/NC, pulse extension, bright LED for switching output
- Dynamic or static evaluation in one device
- Quick, precise detection of small objects that have been moved

- As intuitive and easy to use as a sensor
- The world's smallest vision sensor
- 1.4 GB of RAM for an almost unlimited number of jobs
- 5 powerful tools complete a wide variety of jobs
- All standard interfaces on board
- di-soric LINK for PLC-compliant communication

- Extremely small design in a metal housing, IP 67
- Homogeneous illumination with low heat generation
- Universal trigger input
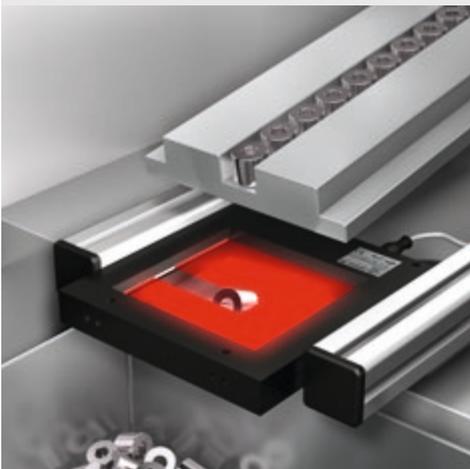
DETECTING METALLIC SURFACES

Inductive proximity switch
DCC08 M03

- Compact design for small spaces
- Long operating distance for flexible assembly
- Cap protected against lateral shearing due to flush assembly

DETECTION OF MINUTE DIFFERENCES IN COLOR

Color sensor
FSB 50

- Detection of minute differences in color even if the ambient conditions change
- Combination of different shades in one color group
- Buttons for simple operation, software for demanding applications

POSITION MONITORING PART TRANSPORT

Laser diffuse sensor with background suppression
LH 41

- Easy-to-configure operating range of 30–350 mm using a multi-turn potentiometer
- As safe as LED sensors thanks to laser class 1
- Precise and reproducible detection of slight differences in height on virtually all surfaces thanks to a small laser beam
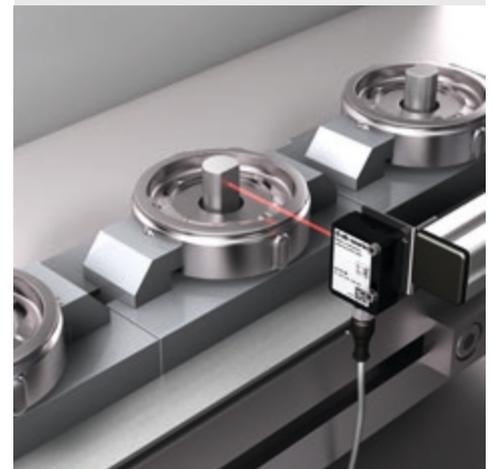
ACCUMULATION MONITORING FOR SMALL PARTS

Fork light barriers
OGU

- Durable metal housings and metal connectors, vibration-resistant
- Easy configuration right on the device with potentiometer
- Configuration and diagnostics via IO-Link including 4 selectable sensor modes
- Flexible: Fork widths drom 10 up to 250 mm

BOX HEIGHT MEASUREMENT

Ultrasonic sensors
US 12 / US 18

- Maximum teachable operating range permits long distances to the object
- Compact, short housing for small installation spaces
- Process data is output via IO-Link or analog
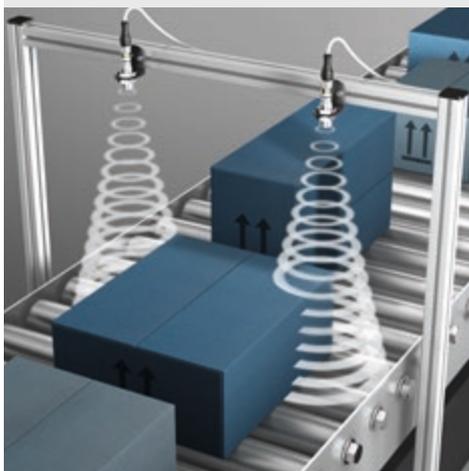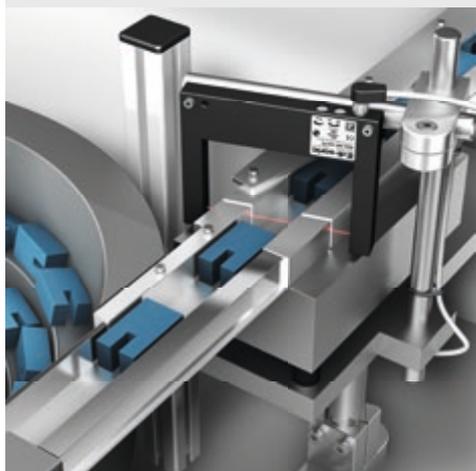- Multi I/O function

ACCUMULATION MONITORING FOR TRANSPARENT PET BOTTLES

Retroreflective sensor
OR 31K 1500

- Detection of transparent objects
- Compact design, ideal for small spaces
- Long operating range up to 1500 mm, high function reserve
- Extremely fast for dynamic applications, activation time: 0.25 ms

SAW PROFILE DETECTION

High-performance
photoelectric sensors

OxPQ 12M

PRESENCE/ASSEMBLY CHECK FOR PRODUCT CARRIERS

Capacitive proximity switch

KNS M12

Vision Sensor

CS 50

- For harsh ambient conditions, extremely resistant to dirt, maximum function reserve
- Durable metal housing and metal connector/cable, vibration-resistant
- Fast adjustment, easy integration, slim design

- Detection of all conductive materials and surfaces, not just metal
- Teachable operating range of up to 4 mm to steel

- As intuitive and easy to use as a sensor
- The world's smallest vision sensor
- 1.4 GB of RAM for an almost unlimited number of jobs
- 5 powerful tools complete a wide variety of jobs
- All standard interfaces on board
- di-soric LINK for PLC-compliant communication
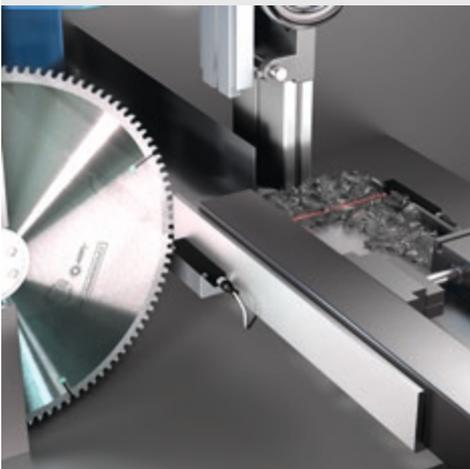
PRESENCE CHECK IN SUPPLY TUBES

Inductive ring sensor
IR 25

- Unique shielded concept used to assemble sensors extremely close to each other without any faults
- Reliable detection of metal parts as small as 0.5 mm
- Resistant to most lubricants
- Suitable for any application, flexible configuration (NO/NC, pulse extension, sensitivity)

FEED FROM ROBOTS (ROBOT GUIDANCE)

Computer-based
Vision System

Ringlight
BEK-R70

nVISION

- Coordinates transmitted to robots to ensure that products are gripped / placed in the correct position
- Simultaneous increase in productivity and decrease in waste
- Product data such as serial numbers are transmitted to the database to ensure product traceability
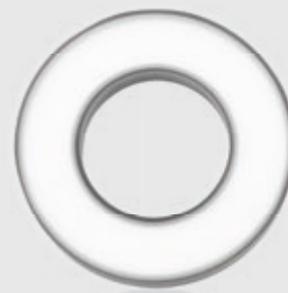
- Extremely high light intensity thanks to state-of-the-art, high-power LEDs
- Perfect view of the objects being tested through homogeneous lighting of the entire illuminated area
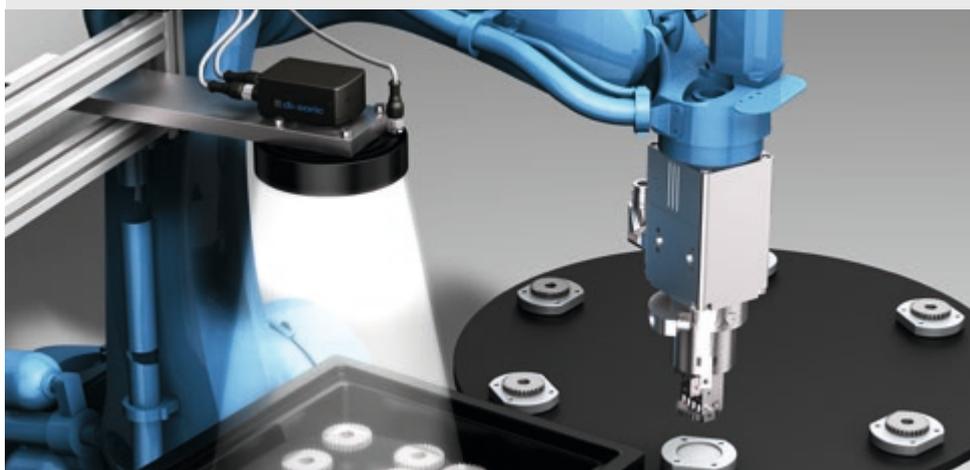
STACK HEIGHT CHECK

Angled light barrier
OGL

IO-Link

- 4 selectable sensor modes
- On-/off delay as IO-link parameter
- Diagnostics via IO-link
- Low space requirements and fast assembly thanks to the angled design
- Easy configuration of sensitivity with potentiometer or via IO-Link
- Powder-coated metal housing with full encapsulation and IP67

FEED CONTROL FOR CONTACT BELTS

Laser line diffuse sensor
LLH 51M 200

- Extended 30 mm x 1.5 mm laser line at a operating distance of 200 mm
- For detecting objects with irregular cavities, openings or holes, detecting non-guided parts
- Laser class 1
- Automatic readjustment of transmitting power for adapting to differing surfaces
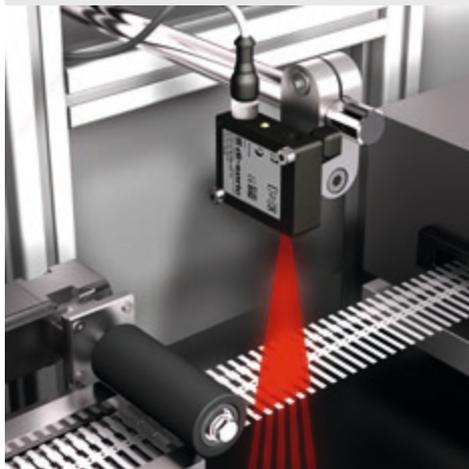
PRODUCT CHECK BEFORE ASSEMBLY

Computer-based
Vision Systems

nVISION

- Timely discharge of defective and damaged components prior to additional processing
- Manual visual inspections are no longer necessary
- High availability and short cycle times
- Flexible use thanks to freely configurable software
- Visualization of all checks on a HMI

PRESENCE CHECK

Inductive proximity switch
D7C18

- Closed, all-steel sleeve, protected from mechanical influences
- Factor 1 (same operating distance) to steel and aluminum
- Extremely high nominal switching distance (10 mm)
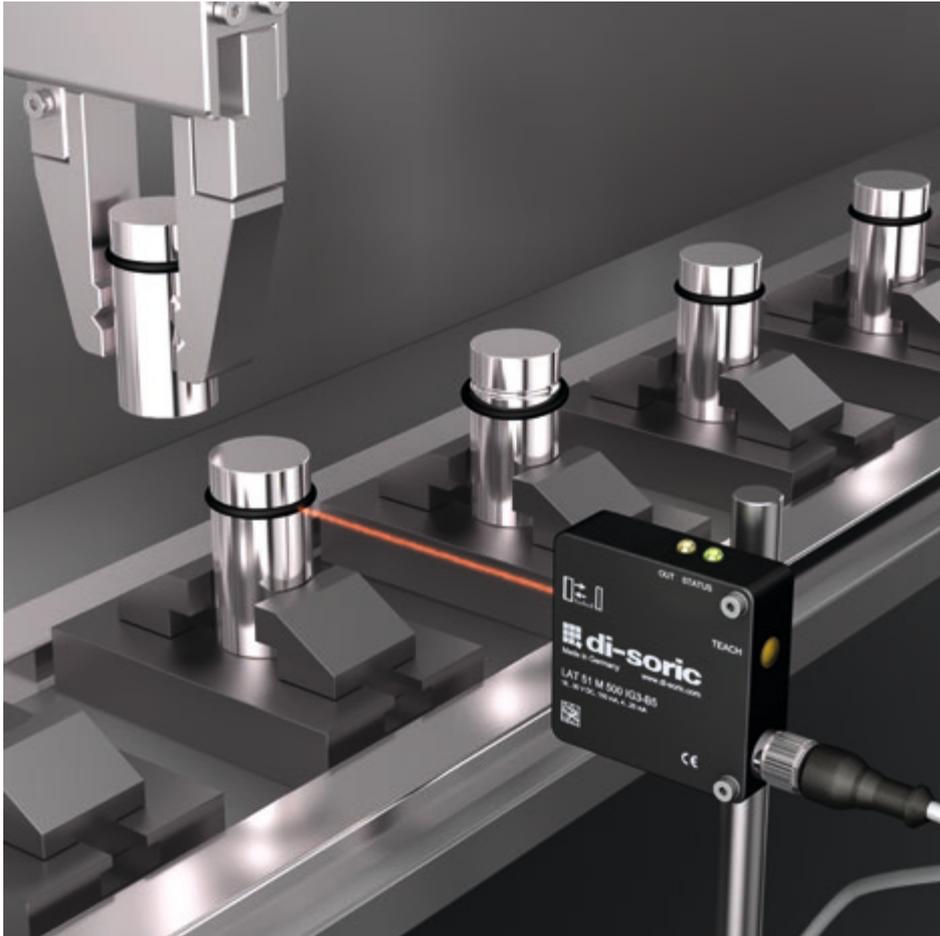
MONITOR ASSEMBLY STEPS INDIVIDUALLY.

Extremely complex assembly processes are divided into the simplest possible subsections. Preferably, transport systems or rotary indexing tables are used.

Whether they are used within or in combination with semi-automated or fully automated systems, our devices are ideal for checking the presence, completeness, position and to-scale assembly and for identifying and tracing your components. This lets you ensure that your products meet the level of quality required.

ASSEMBLY

POSITION CHECK

Laser distance sensor

LAT 51

POSITIONING PARTS

Computer-based

Vision system

Barlight

BEK-A300

nVISION

- High, universal measuring range of 50 to 500 mm with current/voltage output, switching output
- High accuracy thanks to a resolution as low as 0.05 mm
- Small laser spot for detecting small objects
- Laser class 1

- Variable operating ranges and image fields provide great flexibility
- Various interfaces implemented for connection to the control system
- Cost-effective runtime versions available

- Large operating ranges thanks to extremely high light intensity (high power LEDs)
- Homogeneous luminous field for high-contrast, evenly illuminated camera images
- Uniform light intensity thanks to integrated power output control

IDENTIFYING PARTS

Handheld reader
ID Hammer

- Lightweight aviation-grade aluminum can handle the toughest ambient conditions
- Dual zone optics for fast, reliable decoding even when operating distances fluctuate
- Able to read every kind of 1D and 2D code – needle-embossed, printed, laser-engraved
- Perfectly balanced ergonomics for fatigue-free working

CHECKING FOR FEATURES AND COMPLETENESS

Vision Sensor
CS 50

- As intuitive and easy to use as a sensor
- The world's smallest vision sensor
- 1.4 GB of RAM for an almost unlimited number of jobs
- 5 powerful tools complete a wide variety of jobs
- All standard interfaces on board
- di-soric LINK for PLC-compliant communication

PRESENCE CHECK QUERY FOR CYLINDERS

Magnetic field sensors
MZE series

- Ideal switch for each cylinder type (C-Nut = MZEC, T-Nut = MZET)
- Durable all-metal types, even for the small C-Nut with a diameter of 3.7 mm
- Resistant to ambient conditions and most lubricants thanks to full encapsulation and IP67/IP68
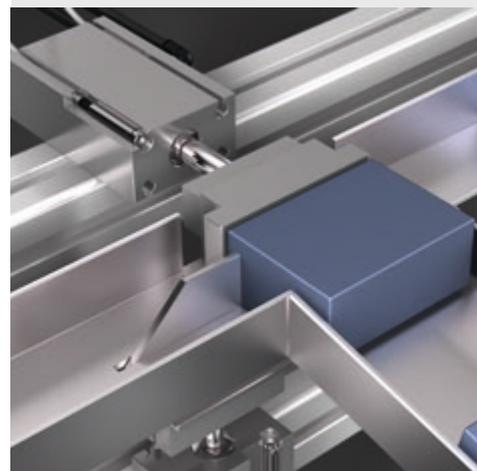
ASSEMBLY

CHECK TO ENSURE ASSEMBLY IS TO SCALE

Computer-based
Vision system

Backlight
BEK-F

nvision

- High measuring accuracy for precise inspection tasks
- Flexible system thanks to powerful software
- Various interfaces implemented for connection to the control system

- Constant level of light intensity over the entire voltage range
- Homogeneous luminous field
- High efficiency
- Light intensity can be adjusted

TRACEABILITY DURING ASSEMBLY
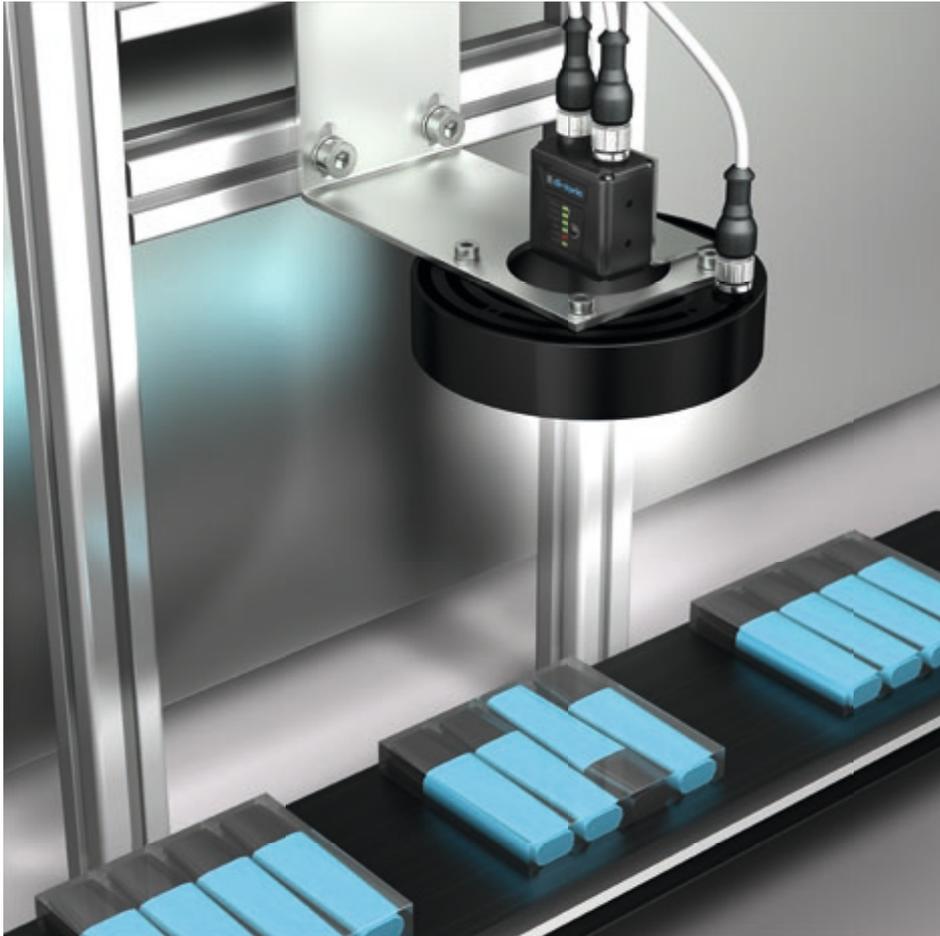
Computer-based
Vision system

nvision

- Reliable decoding of 1D and 2D codes
- Fastest reading results of up to 60 decoding processes/second
- Great flexibility thanks to available auto-focus and C-Mount-variants
- Easy start-up

DETECTING THE PRESENCE OF OBJECTS

Amplifier for
plastic fiber optics
OLK 71

- Two easy-to-read digital LED displays for the target value and actual value
- Easy adjustment of the threshold value using teach-in and +/- buttons
- Fast configuration thanks to intuitive 4-button operation
- Long ranges, short activation time

CORRECT PROVISIONING OF COMPONENTS.

We use the term "handling" to refer to correct provision of all components required in the assembly process and in each individual process step.
This begins by detecting the object presence and also includes position, alignment and size checks, as well as controlling the flow of materials using barcodes.

DETECTING THE PRESENCE OF PCBS

Ultrasonic sensor
US 08

IO-Link

- Reliably detects all objects, regard-less of color and surface type
- Teachable operating range of 20–80 mm in the most compact design
- Ideal for small assembly spaces thanks to an extremely slim detection beam
- Start-up in seconds

OBJECT POSITIONING

Laser line fork light barrier
LLGT

- For detecting/measuring edges, object sizes or slot widths
- Fast start-up thanks to an aligned system
- Universal analog output – can be combined with any control unit
- Simple application solution thanks to programmable switching outputs
- Laser class 1

DETECTING THE SIZE OF OBJECTS

Measuring light curtain
LI

- Efficient thanks to a light beam inter-space as short as 5 mm and monitoring heights of up to 3950 mm
- Easy mechanical integration thanks to a slim profile and no blind zone
- Flexible integration thanks to modular evaluation units
- Switching, analog outputs, RS232/CAN or fieldbus interfaces
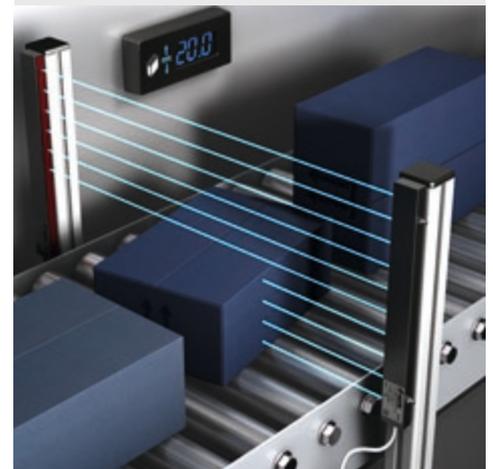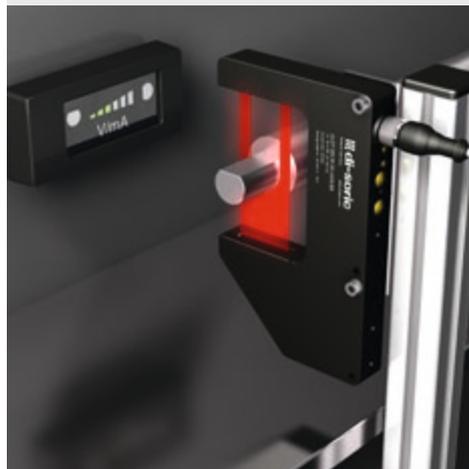
POSITION AND ALIGNMENT CHECK

Vision Sensor
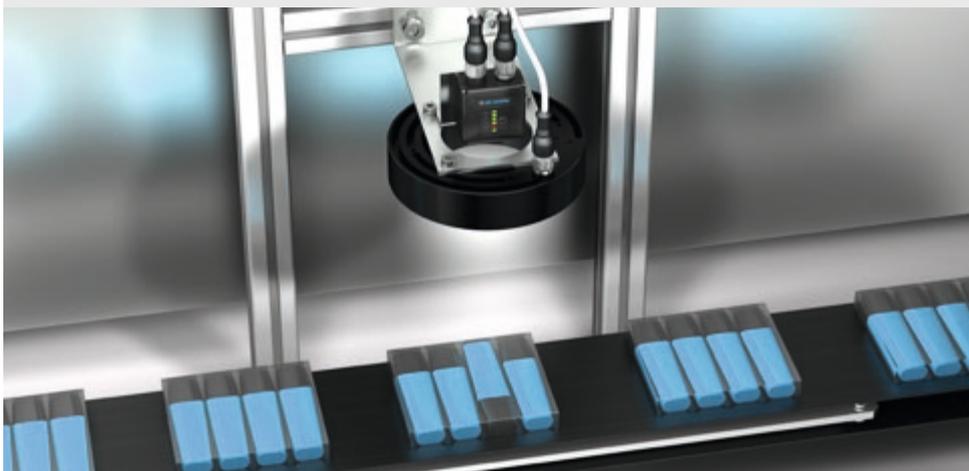### CS 50

Ringlight
BEK-R

CONTROLLING THE FLOW OF GOODS WITH BARCODES

Laser scanner
ID-02

- As intuitive and easy to use as a sensor
- The world's smallest vision sensor
- 1.4 GB of RAM for an almost unlimited number of jobs
- 5 powerful tools complete a wide variety of jobs
- All standard interfaces on board
- di-soric LINK for PLC-compliant communication

- Lighting with process stability even with unstable voltage supply
- Homogeneous illumination for perfect test results
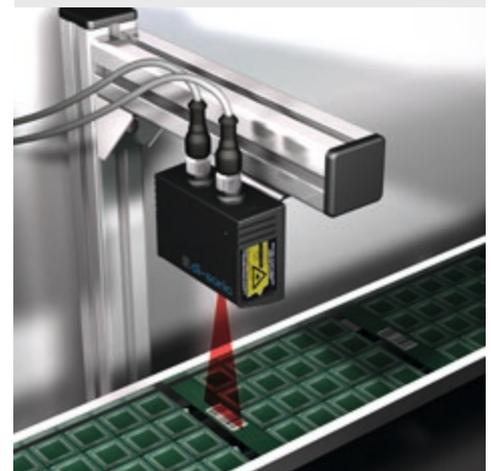- High efficiency guarantees little lost heat

- Great flexibility thanks to a reading distance of 25–940 mm
- High reading speeds of up to 1400 scans per second
- A wide variety of interfaces
- Easy start-up

OPTIMUM
REMOVAL AND TRANSPORT OF PARTS.

Pre-assembled components and products must be carefully removed, recorded and moved along for additional processing or rework. This means that they are sorted into special containers, packaged or stored.

For this purpose, we provide you with a wide variety of application solutions such as computer-based vision systems, handheld readers, smart cameras or light curtains. These solutions carry out precise and reliable presence checks, object removal and identification of your products.

1D/2D CODE READING WITH REFERENCE CODE COMPARISON

Handheld reader
ID Hammer

- Lightweight aviation-grade aluminum can handle the toughest ambient conditions
- Dual zone optics for fast, reliable decoding even when operating distances fluctuate
- Able to read every kind of 1D and 2D code – needle-embossed, printed, laser-engraved
- Perfectly balanced ergonomics for fatigue-free working

READING AND VERIFYING PLAIN TEXT

Computer-based
Vision system

nVISION

- Fastest decoding of 1D and 2D codes
- OCR / OCV
- Matching of 1D and 2D codes with plain text
- Track and trace for your plant

OBJECT REMOVAL QUERY FOR CYLINDERS

Magnetic field sensors
MZE series

- Ideal switch for each cylinder type (C-Nut = MZEC, T-Nut = MZET)
- Durable all-metal types, even for the small C-Nut with a diameter of 3.7 mm
- Resistant to ambient conditions and most lubricants thanks to full encapsulation and IP67/IP68
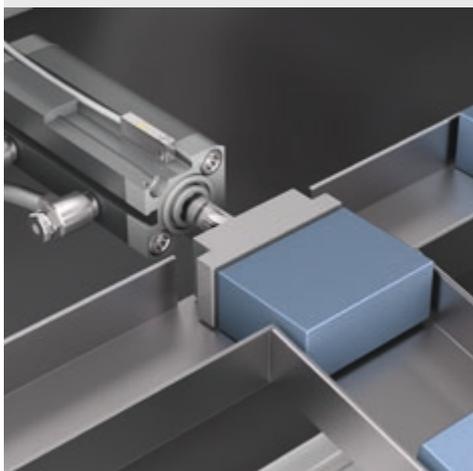

OBJECT REMOVAL USING ROBOTS

Computer-based
Vision system

nVISION

- Products are gripped and placed in the correct position
- Quality check through reviewing various work steps prior to additional processing
- Simultaneous increase in cycle speeds and decrease in waste
- Product data is transmitted to the database to ensure product traceability

DETECTING OBJECT REMOVAL

Light curtain
LA

Machine illumination
MB-N

TRACK & TRACE AT THE REMOVAL STATION

Handheld reader
ID-80

- Fast start-up thanks to integrated evaluation electronics
- Efficient thanks to a light beam interspace as short as 12.5 mm and monitoring heights of up to 2350 mm
- Compact metal housing

- High light intensity thanks to high-performance LEDs
- High color rendering guarantees safety at the workplace in accordance with DIN EN 12464-1 / EN 12464-1
- Long life thanks to intelligent thermal management, trigger input
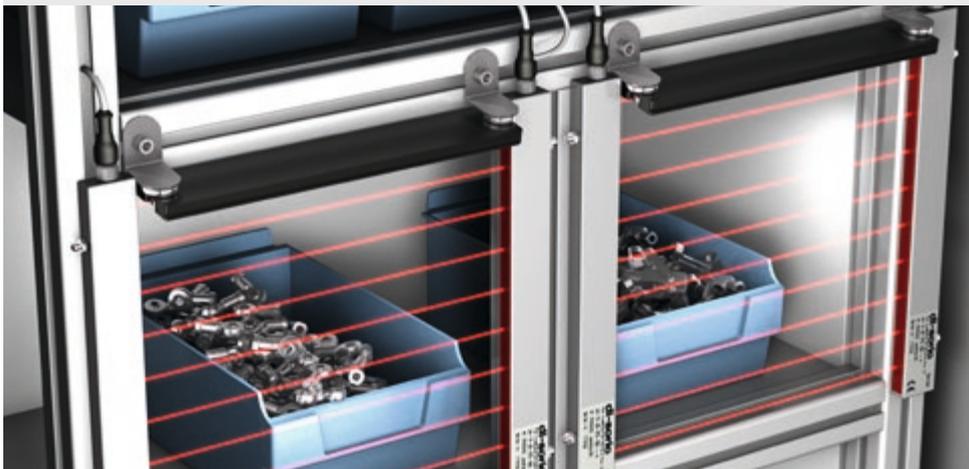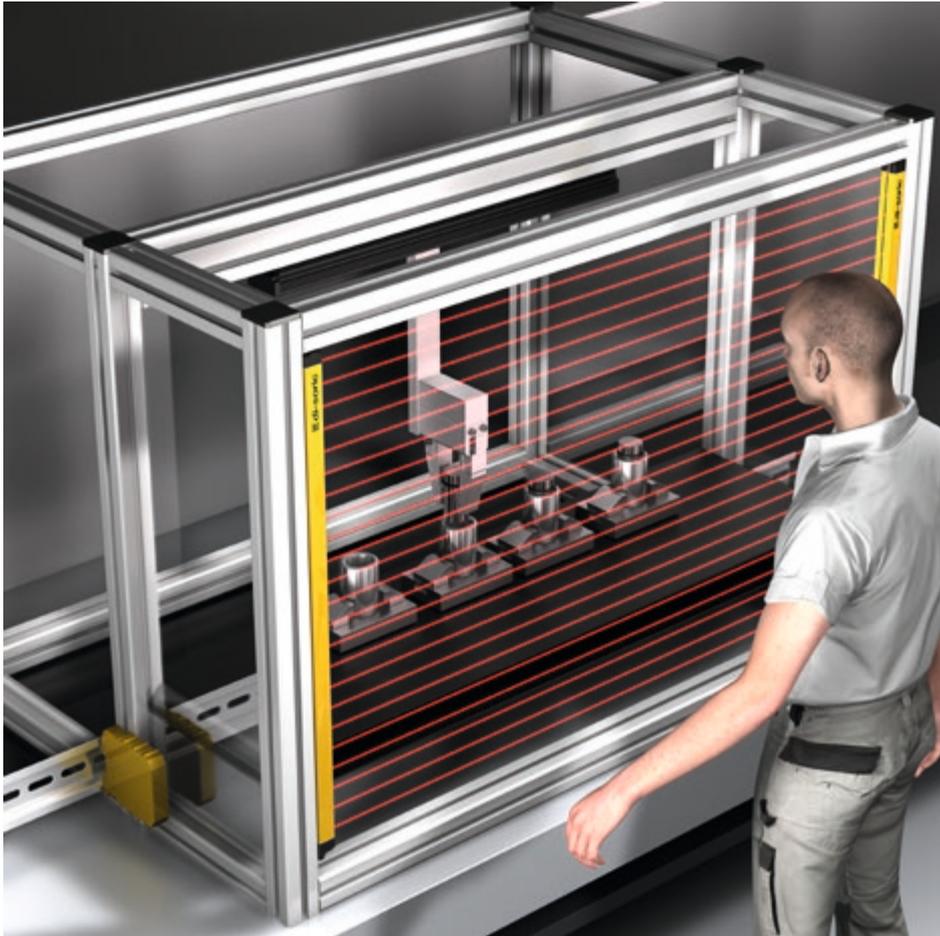- Available in four lengths

- Quickly and reliably reads 1D and 2D codes, as well as DPM codes, on labels
- Ergonomic design and low weight with protection class IP54
- Excellent price / performance ratio
- 5 years warranty

FOR MAXIMUM SAFETY.

At any given time, employees may need to make manual adjustments to assembly and handling technology. Your employees must be protected effectively with clever solutions to ensure work safety.

Our type 4 safety light curtains and light grids, safety relays and modular safety system provide you with a variety of options for securing danger zones and access points and protecting your hands and fingers.

HAND AND FINGER PROTECTION, SECURING DANGER ZONES

Safety light curtain
SLB4

- Type 4 light curtains with maximum safety level for finger or hand protection
- Universal thanks to protective field heights up to 1810 mm
- Easy integration using an M12 connection, configuration via a connecting cable, no shielded cables required
- Optional with integrated built-in control function (EDM)

MONITORING SAFETY

Safety relay
SR

Safety controller
MODSI

SECURING ACCESS POINTS

Safety light grid
SLB4

- PLe, Le performance level
- Safety relays for universal use
- Version with muting function for light curtains with EDM
- LED indicators for integration and diagnostics

- PLe performance level
- Modular, expandable and configurable control system for safety devices
- For monitoring safety light curtains, safety light barriers, emergency stop switches, etc.
- Expansion modules for fieldbus diagnostics

- Type 4 light grid with maximum safety level for access control
- Universal: up to 4 beams, protective field heights up to 1053 mm
- Easy integration and adjustment, mounting columns and deflection mirror as accessories
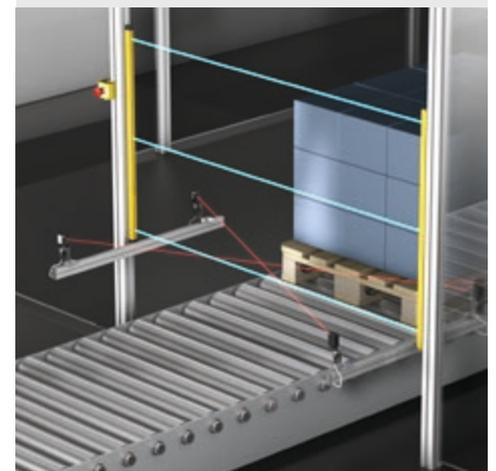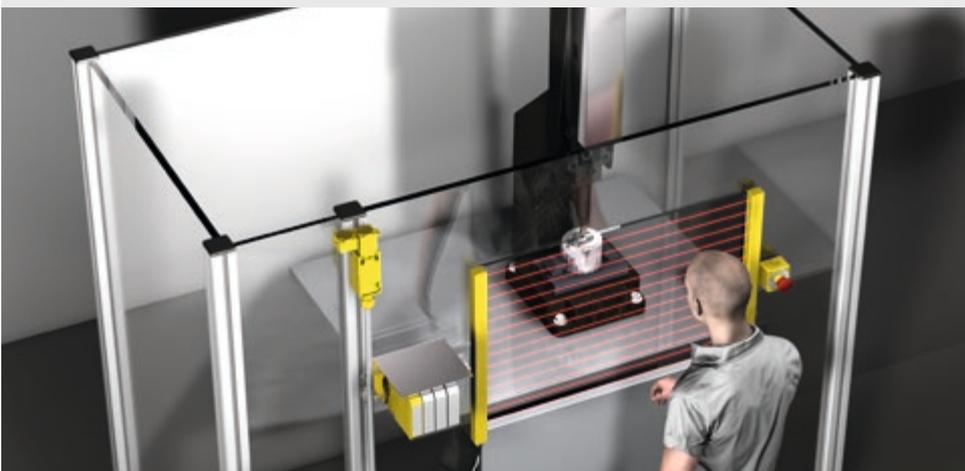
YOU'RE OUR
PARTNER.

Your success is our success. That's why we give our all to fulfill the requirements and requests of our customers. We accomplish this by providing top-quality products and clever complete solutions, as well as an array of user-oriented services.

TECHNICAL SALES
CONSULTANTS

Over 25 expert technical sales consultants are on hand to assist you in product selection and implementing our devices.

We would be glad to visit you on-site to demonstrate solutions for your applications. Just set up an appointment.

Contact our in-house staff for information on pricing and availability checks. They'll advise you personally and are happy to send you documents and templates on request.

They process your orders quickly and reliably to ensure that the orders leave our warehouse on time to arrive on your requested delivery date.

CUSTOMER
CONSULTATION
BY PHONE

TECHNICAL
SUPPORT

Do you have specific technical questions about our products?
Our employees in Technical Support offer advice on all issues related to products and applications.
We're happy to provide you with support to ensure your production process runs smoothly, in Europe or even on-site in Asia.

Order the product that meets your needs at any time, day or night!
A clear layout, intelligent search function and the product finder will help you to select the right product.

DI-SORIC
E-SHOP

SOLUTIONS. CLEVER. PRACTICAL.

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di-soric SAS | France
di-soric SNT AG | Switzerland
di-soric Pte. Ltd. | Singapore

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