10:00	HELSINKI	B
10:05	SINGAPORE	B
10:10	BEIJING	B
10:15	BANGKOK	
10:20	CAIRO	
10:20	TAIPEI	
10:25	HONG KONG	
10:25	PARIS	
10:30	FRANKFURT	
10:35	MOSCOW	
10:40	DUBAI	
10:45	LONDON	
10:50	NEW YORK	
11:00	MILAN	
11:05	SEOUL	
11:10	SYDNEY	

AIRPORT

WITH US, EVERYTHING LANDS WHERE IT BELONGS TO
– AIR FREIGHT, BAGGAGE, ON-BOARD CATERING AND YOURSELF

SICK
Sensor Intelligence.

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Tasks

Applications in focus

The application graphics shown are not binding, they are no substitute for the need to seek expert technical advice.

Products

General information

TASKS AT THE AIRPORT

Numerous logistics processes at the airport run smoothly thanks to sensors and sensor solutions from SICK. The airplanes stop precisely at the parking position, the air cargo container is loaded on the right cargo aircraft, and the luggage ends up in the right hands. SICK sensors control and monitor each critical movement accurately and reliably. They are used in many applications like in passenger boarding bridges, ground support vehicles, baggage handling systems and cargo facilities, access control systems, security systems for buildings and for ground surveillance and in catering facilities.

Measuring

Solutions from SICK measure distances, overhangs, profiles, volume and weights reliably, which enables optimized workflows and maximum reliability in all processes. The sensors support the docking process for the passenger boarding bridge, detect oversized baggage, determine the volume of air freight and check the contour of ULDs.

Detecting

Sensors from SICK are ideal for detecting the presence of people and objects of all types. The detection of the movement direction of passengers as well as the leading edges, levels and protrudings of baggage and air freight ensures that processes perform at the highest level. SICK offers the right solution for any task.

Identification

The basic requirement for automated sorting and storage is quick and reliable identification of codes on baggage and air freight. SICK offers scalable solutions with all identification technologies (laser, camera, RFID) for all code types; these technologies are easy to adapt to the respective application requirements.

Protection

Airports are subject to stringent security requirements. Transfers from the land side to the air side must be monitored reliably and efficient protection must be provided for the airport building. In addition, hazardous areas must be secured to ensure personal protection and the highest level of system throughput. Sensor solutions from SICK support these efforts.
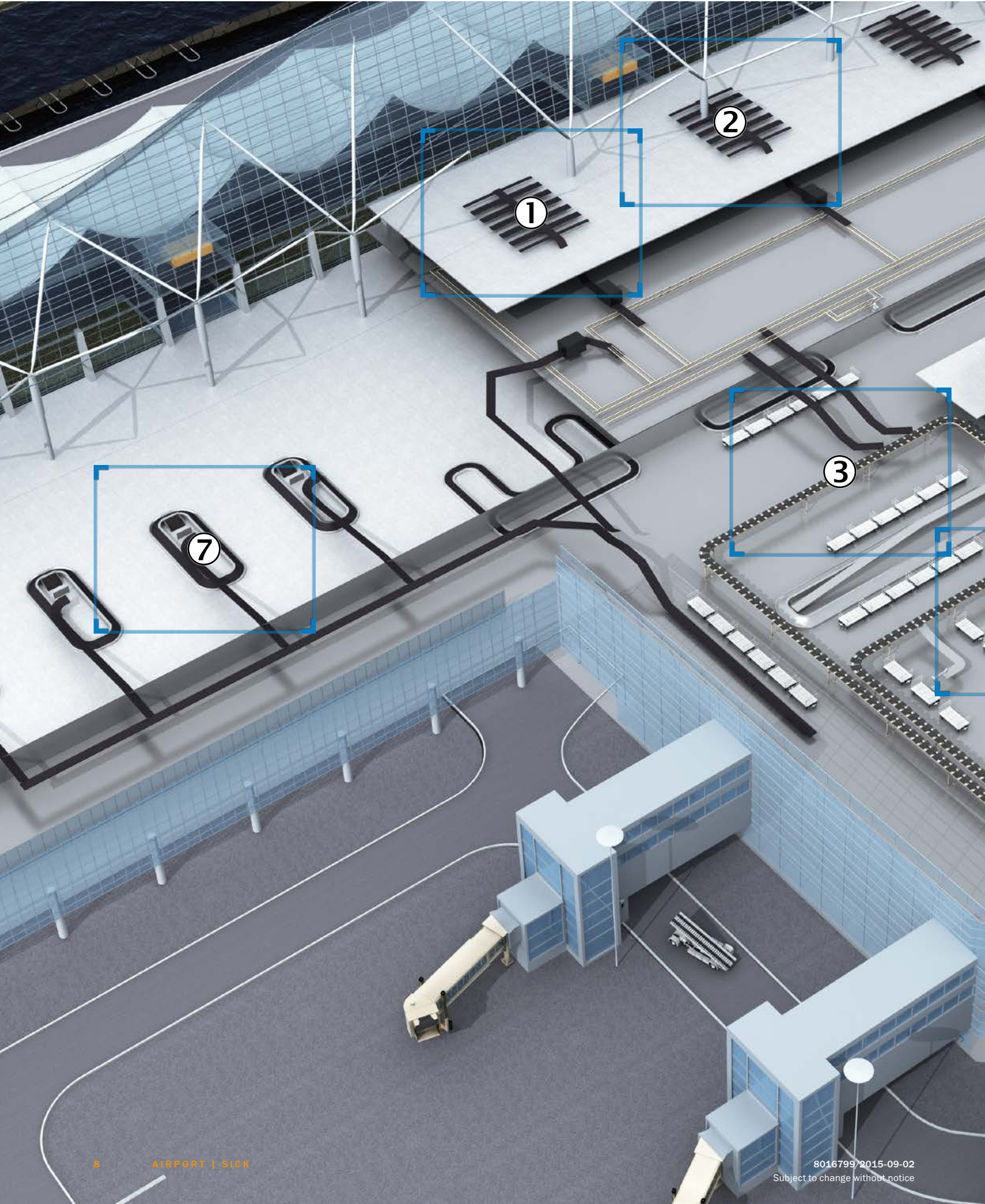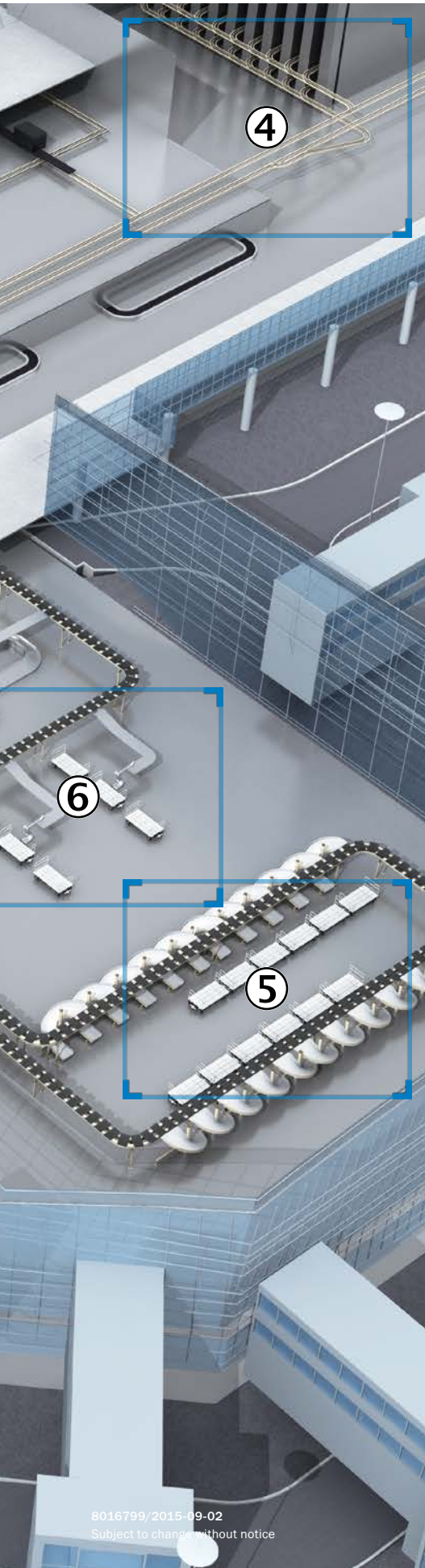
Applications in focus

Baggage transport

① Reading the boarding pass

At a self-service kiosk, the ICR80x image-based code reader reliably identifies poorly printed 2D codes on boarding passes. If the information on the boarding pass is correct, the passenger receives the baggage label. In addition to codes printed on paper, the ICR80x also reads codes on smartphones.

ICR80x ➜ p. 80

② Manually reading the baggage label

The check-in agent reads the bar code with the IDM16x or IDM26x hand-held scanner on the baggage label that the agent themselves or the passenger has attached to the luggage. The wireless variants of the hand-held scanner, such as Bluetooth or WLAN, guarantee flexibility and mobility.

③ Checking if luggage items are too long

Two G6 miniature photoelectric sensors mounted in the side guards of the baggage drop-off conveyors check whether the luggage is too long. They feature easy installation, a high level of durability, metal inserts with a female thread and a PinPoint LED with an easily visible light spot.
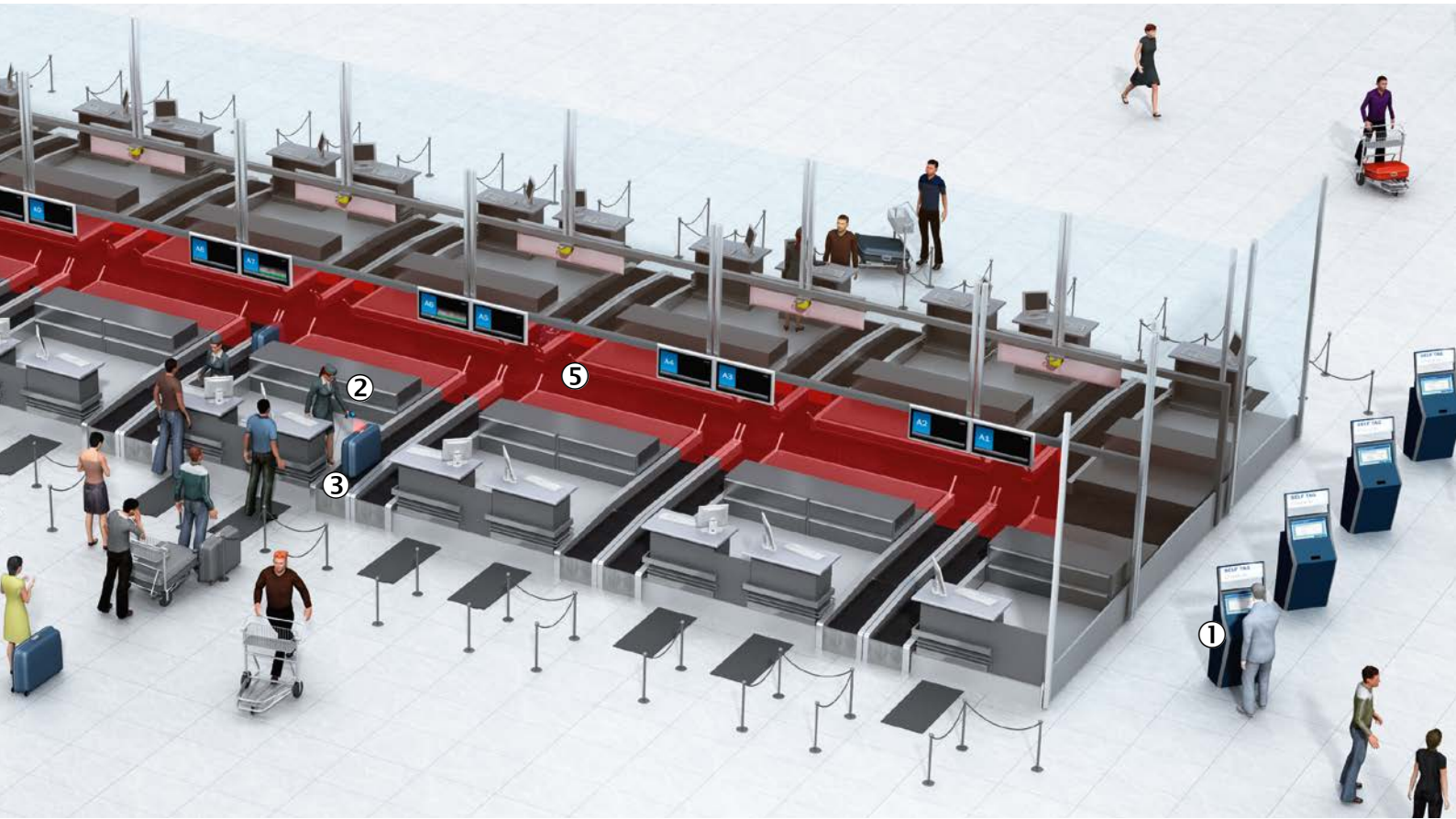
④ Monitoring the shutter door to the baggage hall

During periods when no luggage is being fed from the collecting belt to the baggage hall, a shutter door secures the baggage hall from unauthorized access. Two G6 miniature photoelectric sensors monitor the opening and closing of the shutter door.

IDM16x ➜ p. 81
IDM26x ➜ p. 81

G6 ➜ p. 64

G6 ➜ p. 64

⑤ Protecting the access to the collecting belt

In order to ensure aviation security and to protect people, especially children, from hazards in the baggage handling system, a system at the baggage drop-off counter is required to prevent unauthorized access to the baggage handling system. The S300 and S3000 safety laser scanners installed above the system belts monitor this zone.

A single S3000 monitors multiple baggage drop-off conveyors simultaneously with its extensive scan range. In addition, monitoring this area prevents the system from being blocked by oversized or bulky luggage.

① **Checking if luggage items are too long**

The MLG measuring automation light grid determines the length of the luggage at fully automated baggage drop-off stations. This ensures that pieces of luggage that are too long are not fed into the baggage handling system. Beam separations and monitoring lengths can be individually defined for the MLG.

MLG-2 Prime ➔ p. 67
MLG-2 Pro ➔ p. 67

② **Intrusion detection and height control**

TiM3xx 2D laser scanners ensure the process reliability of automated baggage drop-off. At baggage drop-off stations with very open designs, they help prevent prohibited interactions and unauthorized access. At the same time, a TiM3xx checks whether pieces of luggage are taller than the maximum permitted luggage height.

Thanks to its compact design, the TiM3xx can be optimally integrated into the housing of fully automated baggage drop-off stations. The TiM3xx is especially well-suited for use in bright terminals that are flooded with light thanks to its high level of ambient light immunity.

③ **Automatically reading the baggage label (RFID reading)**

The compact RFID RFU63x read/write device reads and writes permanent and hybrid baggage labels. The hybrid label consists of a printed bar code and a RFID tag. Up to three external antennas can be connected to the RFU63x.


TiM3xx ➔ p. 86

RFU63x ➔ p. 82

④ **Automatically reading the baggage label (reading 1D bar codes)**

CLV65x bar code scanners reliably identify the bar code on the baggage label during automated baggage drop-off, regardless of where the label is attached on the piece of luggage. The CLV65x with auto focus and high depth of field combines high levels of reading performance with a reading algorithm that can also precisely detect and decode poorly printed or partly concealed bar codes. It ensures the highest possible reading rates when integrated into an automated baggage drop-off system. The CLV65x is also available in an oscillating mirror variant.

⑤ **Safety during automated baggage drop-off**

Each baggage drop-off station is equipped with an ES21 emergency stop pushbutton to enable a manual stop of system operations in case of danger. The ES21 is optionally available as a surface-mounted version with housing or as a built-in version.
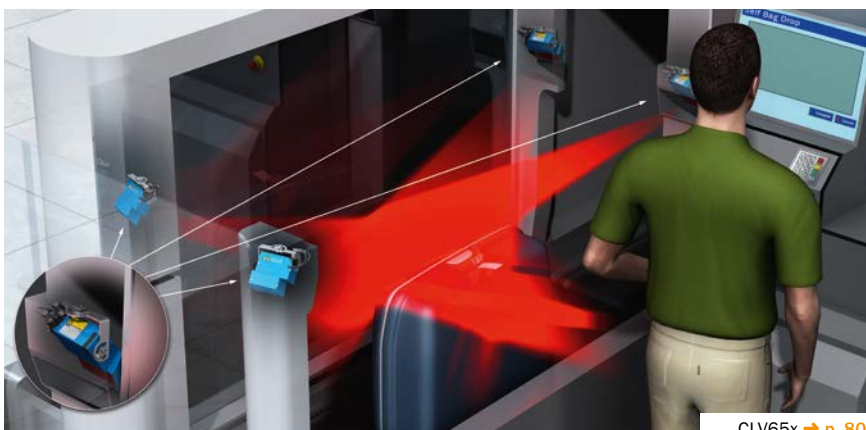

CLV65x ➜ p. 80

ES21 ➜ p. 74

① Height control on the conveyor belt

The G10 small photoelectric sensor checks if luggage on the conveyor belt is too tall. It prevents the transportation of pieces of luggage that are too tall. This ensures a smooth process flow. The G10 is easy to install and simple to align and is immune to unwanted reflections.

G6 ➜ p. 64
G10 ➜ p. 64

② Maintenance inspection on the tilt-tray sorter

In order to detect potential problems on the tilt-tray sorter before they happen, the MCL quality control system examines wear and tear parts during operation such as wheels, contact lines and mountings to ensure they are present and undamaged.


MCL ➜ p. 89
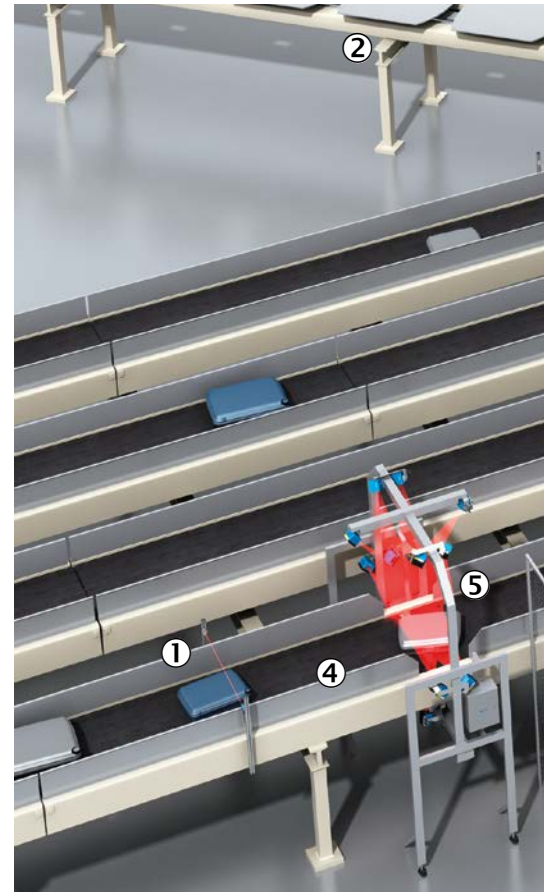
③ Leading edge detection on the conveyor belt

Conveyor belts transport luggage to the sorter. In order to ensure the pieces of luggage are positioned precisely on the sorter tray, the WLG switching automation light grid detects the various shapes of their leading edges shortly before they are transferred to the sorter.

The fast response time of the light grid also ensures precise leading edge detection even at high conveyor belt speeds. Polarizing filters suppress the unwanted effects caused by reflective surfaces.

④ Speed measurement on the conveyor belt

A DFV60 high-resolution, incremental measuring wheel-encoder installed under the conveyor belt provides information about the transport speed of a piece of luggage. The DFV60 is very rugged, allowing it to be used even in areas with high levels of vibrations.

WLG ➜ p. 68

DFV60 measuring wheel encoder ➜ p. 78
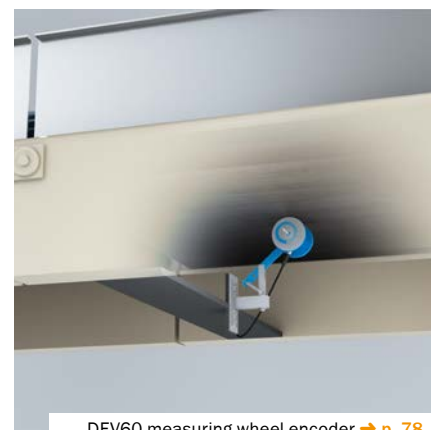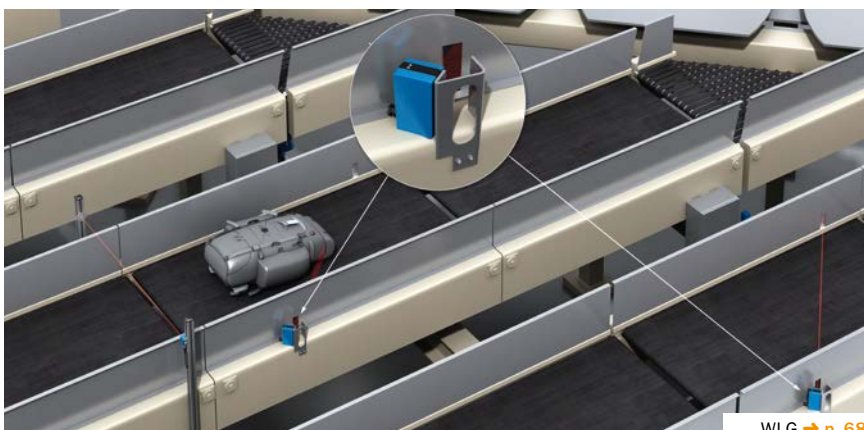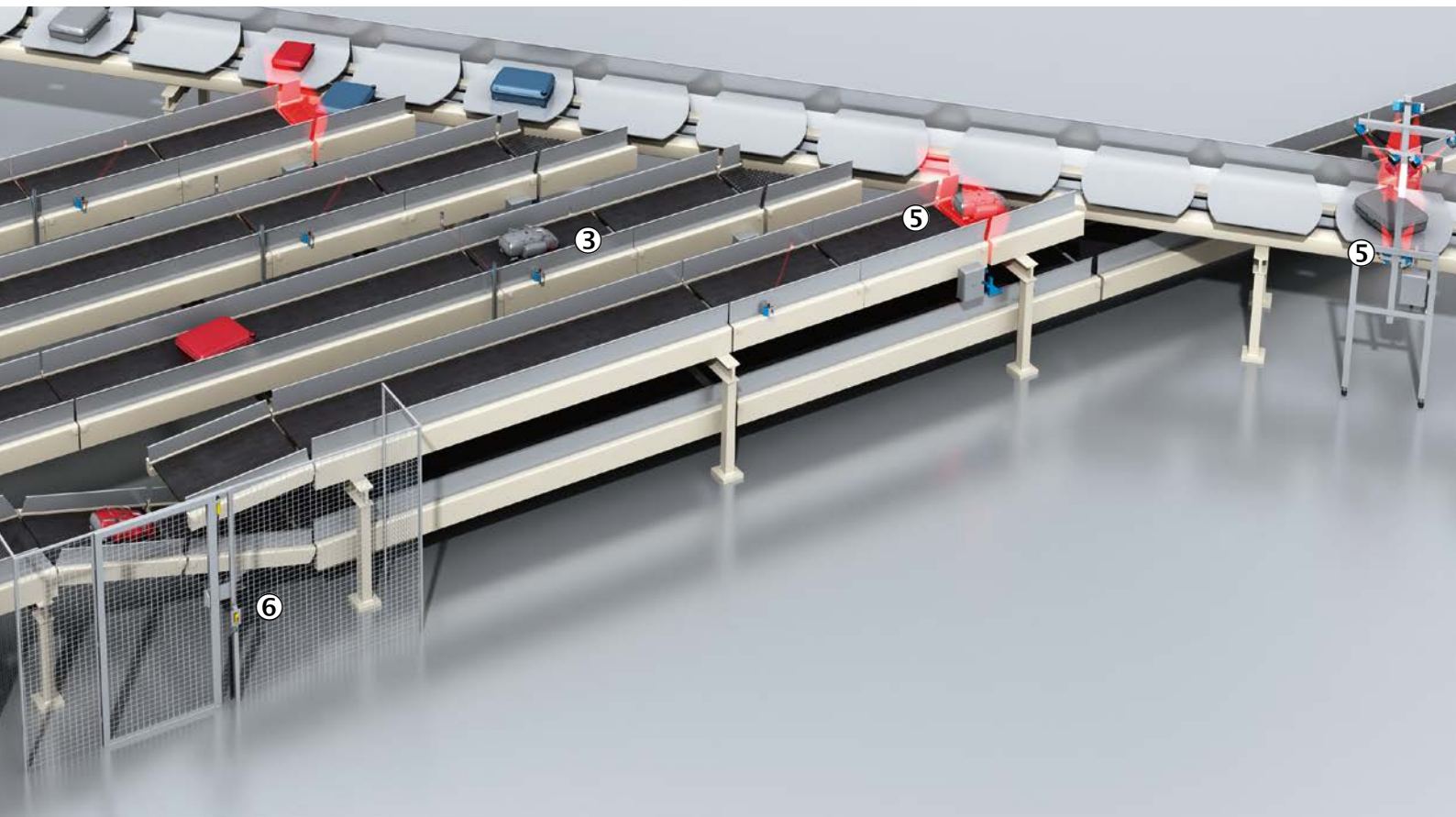
⑤ Automatically reading the baggage label

Baggage labels ensure clear identification of luggage. Important information is coded onto the labels in the form of a bar code, RFID tag or plain text. The ALIS track and trace system is a specially developed system for luggage that reliably reads the IATA-specified labels regardless of their position.

SICK offers customers a complete system with ALIS, including electronic components, encoders, photoelectric sensors and diagnostic software. SICK is also available at your side as an expert partner during installation, commissioning and maintenance.

⑥ Access protection at the vertical sorter

An ES11 emergency stop pushbutton with a reset function is attached on the vertical sorter to switch off the movement of the conveyor element in case of danger. A fence prevents unrestricted access to the vertical sorter. The i110 Lock safety locking device also monitors the access door to protect people.
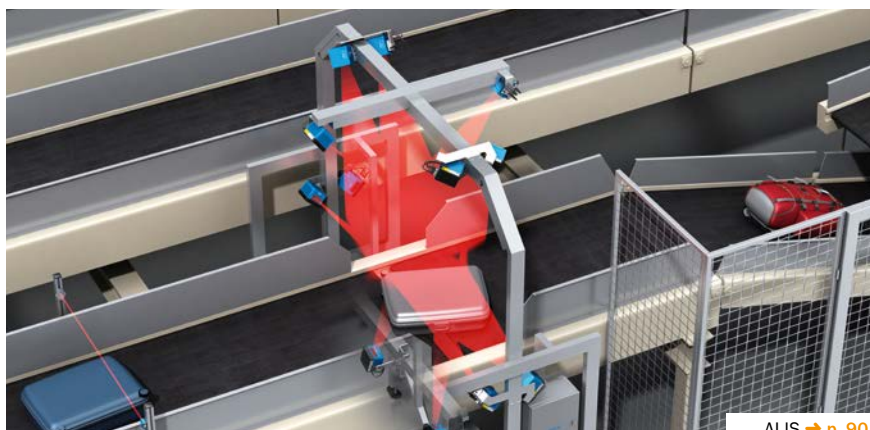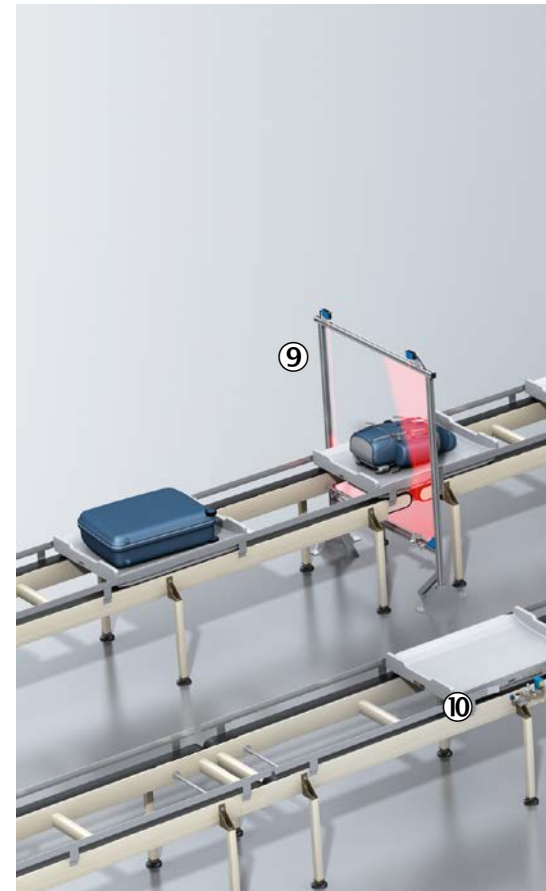
⑦ Baggage tub identification using bar code technology

Compact bar code scanners with optimized reading fields enable a smooth track and trace process when transporting luggage in baggage tubs. The bar code scanners achieve high read rates even under adverse conditions or when bar codes are partially damaged.

CLV61x ➜ p. 79
CLV62x ➜ p. 79

⑧ Baggage tub identification using RFID technology

Compact RFH6xx RFID read/write devices optimized for logistics feature an integrated antenna as well as a definable reading field. This ensures that RFID tags can be assigned correctly even when objects follow one another in quick succession. The RFID devices at 13.56 MHz are suited for scanning ranges up to 240 mm.

⑨ Protrusion monitoring at baggage tubs

The VLC100 switching automation light grid checks whether pieces of luggage or parts of them are protruding over the front and/or rear area of the baggage tubs. Two mounted W27-3 compact photoelectric sensors above the conveyor element check the sides of the baggage tub for protruding material.

⑩ Detection of baggage tubs

IQ Standard inductive proximity sensors reliably detect the baggage tubs as they pass through on the conveying line. The sensor signals are for subsequent processes such as reading the identification number of the baggage tub or needed for the switch control.

RFH6xx ➜ p. 82

VLC100 ➜ p. 69
W27-3 ➜ p. 65
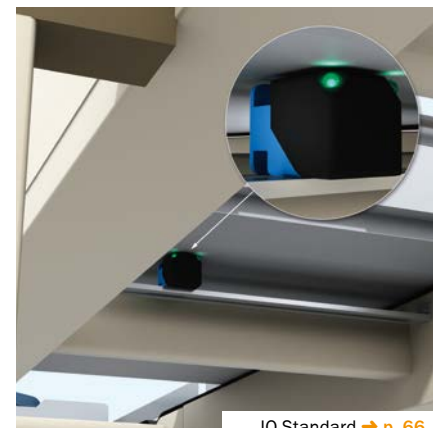
IQ Standard ➜ p. 66

⑪ Baggage tub control

Before a robot transports the baggage tubs to the inspection station, LMS4xx 2D laser scanners control the tubs. The scanners check that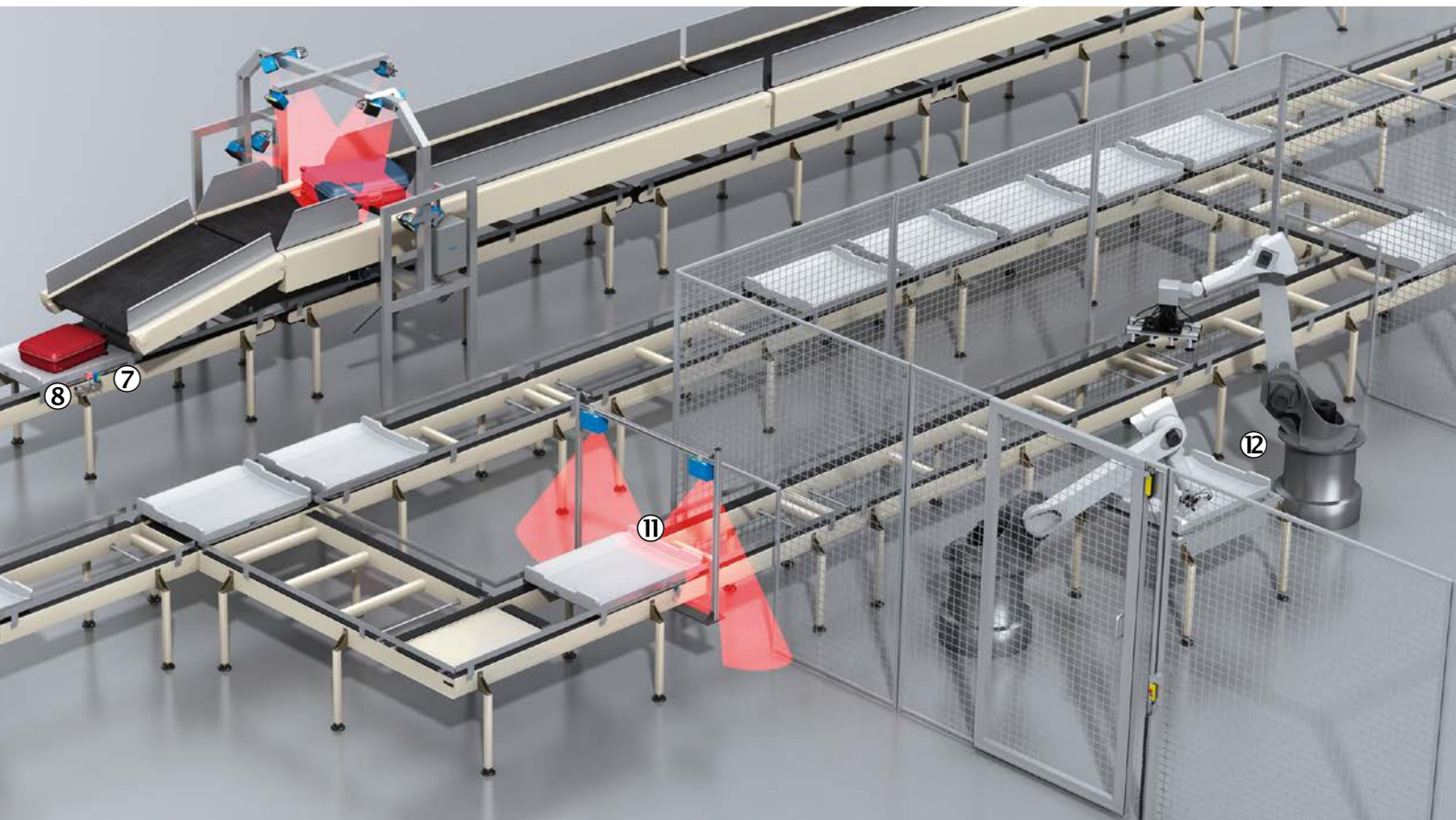 the tubs are empty and not stacked inside each other and that the tub elements required for further transport are available.

⑫ Baggage tub inspection

The Ranger 3D vision sensor checks the baggage tubs for deviations from target values. This makes it possible to detect damage to baggage tubs, such as the tiniest cracks, deformations and contour changes, and to replace defective tubs quickly.
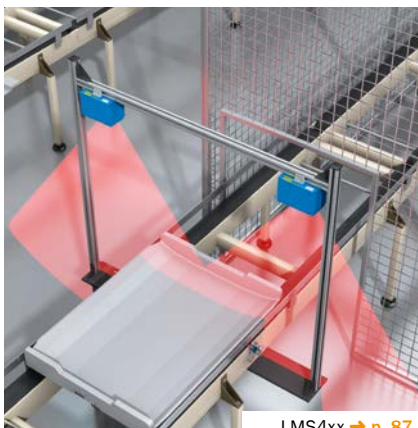
LMS4xx ➜ p. 87
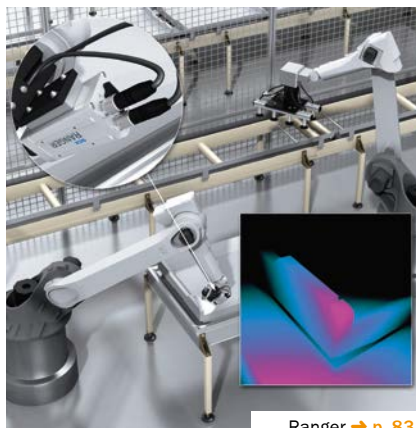
Ranger ➜ p. 83

① Positioning the lift

The A3M60 PROFIBUS absolute encoder supplies the data to position the lift with higher levels of accuracy and higher reproducibility. The availability of most common communication protocols makes integration into the control architecture a breeze. The gearless multiturn technology keeps the number of moving components on the A3M60 PROFIBUS to a minimum. This results in a long service life with low maintenance costs and consequently, optimum system availability. The highly compact technology in single and multiturn detection provides the user a space-saving and cost-efficient solution.

A3M60 PROFIBUS ➜ p. 77

② Checking for objects present in the transfer area and gap monitoring on a lift

Before the lift transports the baggage tub to the transfer area, the G6 miniature photoelectric sensor cross-checks to ensure the transfer area is clear. A W27-3 compact photoelectric sensor performs a vertical check to ensure there is enough room for the lift movement.
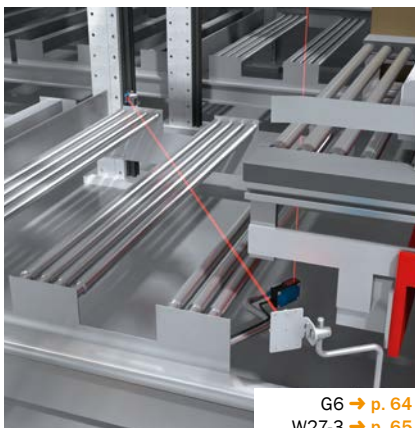
③ Gap check on the shuttle

The G6 miniature photoelectric sensors feature uniform light spot geometry. The photoelectric sensors check whether enough room is available on both sides of the shuttle. Protruding luggage or baggage tubs must not impede the shuttle's movement.

④ Empty bay detection in early baggage storage

Prior to depositing luggage in early baggage storage, the Long Range W280L-2 compact photoelectric sensor checks whether the respective bay is free. Only then can the baggage tub be temporarily stored in early baggage storage.

G6 ➜ p. 64
W27-3 ➜ p. 65

G6 ➜ p. 64
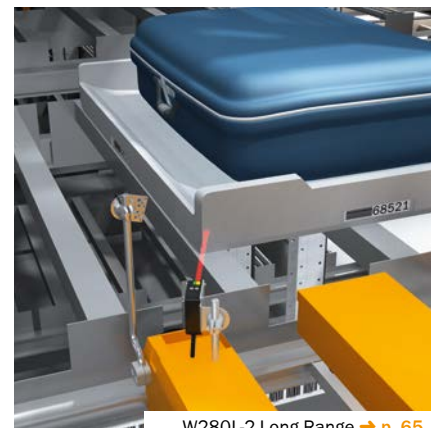
W280L-2 Long Range ➜ p. 65
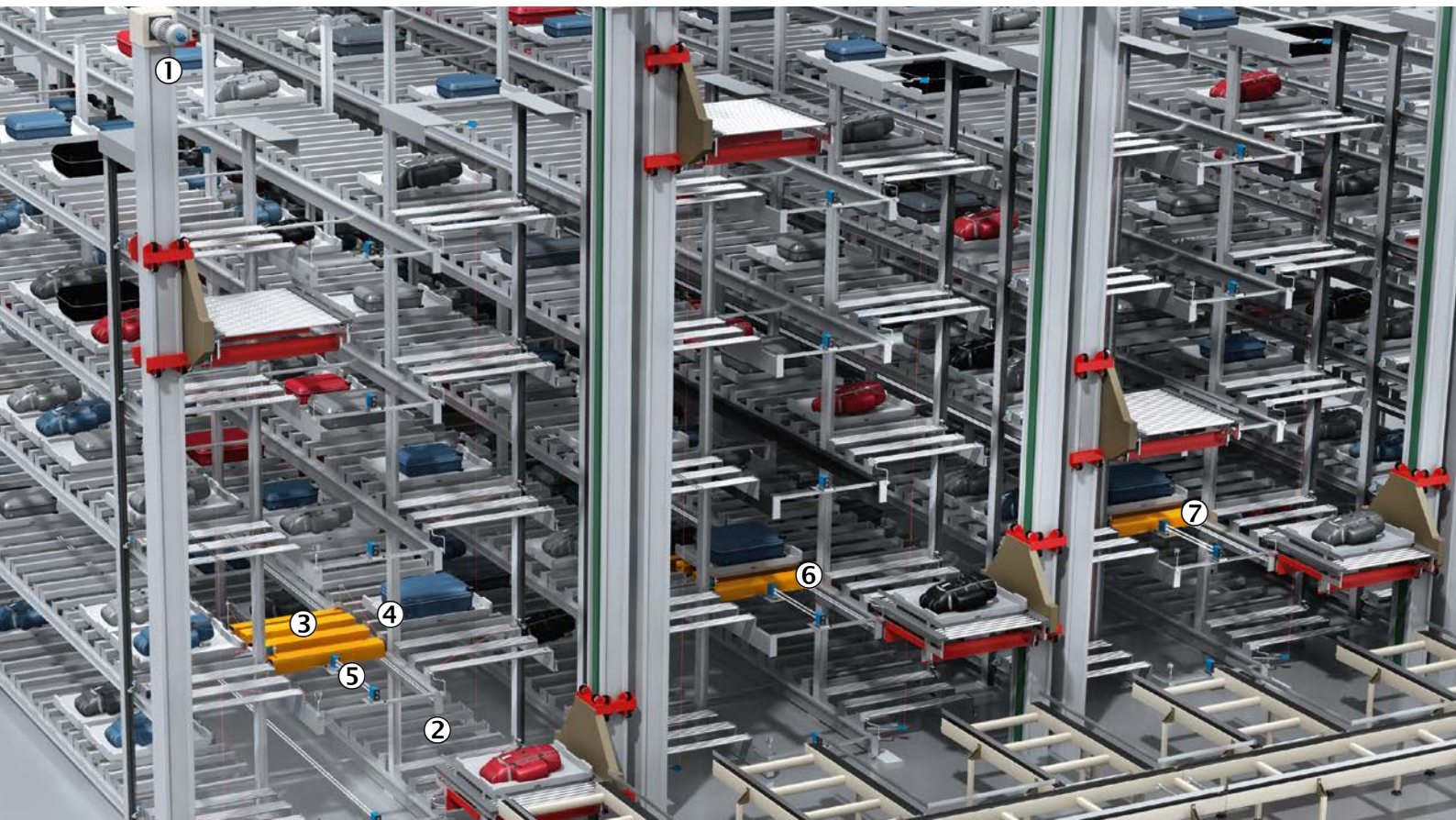
⑤ Wireless data transmission to the shuttle

The optical data transmission system ISD400 exchanges data between the shuttle and early baggage storage's management system using infrared light. This eliminates the need for field-bus cabling. High transmission rates up to 100 Mbps and long sensing ranges ensure the best performance.
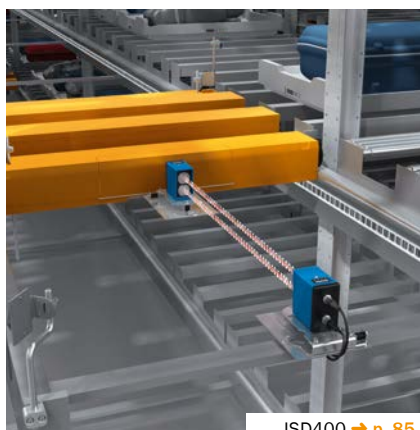
⑥ Positioning the shuttle in early baggage storage

An OLM200 linear measurement sensor determines the position of the shuttle using bar code tapes. They are affixed horizontally on one side in early baggage storage. The distance sensor features high speed, reproducibility, resolution and ambient light immunity.

⑦ Positioning the luggage shuttle's lifting forks

IM Standard inductive proximity sensors detect the end positions of the lifting forks on the load-carrying unit. This information is needed to position the luggage shuttle's lifting forks. The IM Standard features high levels of positioning accuracy, durability, resistance to shocks and vibrations and long service life.

ISD400 ➜ p. 85

OLM200 ➜ p. 84

IM Standard ➜ p. 66

① Monitoring the baggage drop

The G10 miniature photoelectric sensor, featuring a very bright and extremely precise light spot, checks if the piece of luggage was dropped from the sorter tray at the correct position. Metal inserts with female threads ensure the durability of the G10.
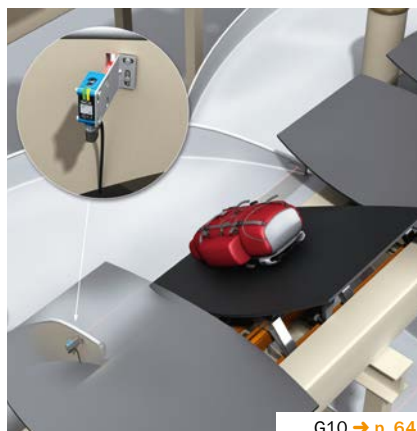
G10 ➜ p. 64

② Fill level monitoring in baggage chutes

G6 miniature photoelectric sensors are installed in the side guards of the baggage chutes and control their fill level. This information is necessary to control the loading of luggage. In addition, G6 photoelectric sensors feature an outstanding price/performance ratio.
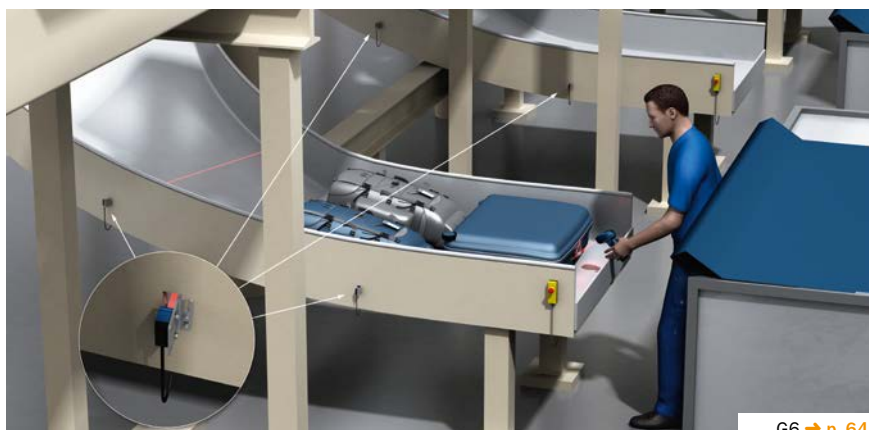
③ Reading the baggage label

When loading an ULD or the baggage cart, the IDM16x hand-held scanner reads the bar code of the baggage label. The bar code information makes it possible to match passengers and luggage (= reconciliation process). If a passenger does not appear for departure, the corresponding luggage must be removed from the aircraft.

G6 ➜ p. 64

IDM16x ➜ p. 81
IDM26x ➜ p. 81

④ **Safety during manual baggage loading**

An ES11 emergency stop pushbutton ensures that dangerous movement of the conveying system is safely stopped during manual baggage loading. The ES11 features easy installation, quick replacement and ensures minimal system downtime as a result.

ES11 ➜ p. 74

① Determining the position of the baggage cart in the robot cell

The MLG-2 measuring automation light grid supplies the position information of the baggage cart or baggage ULD to the robot cell. The light grid features individual beam adjustment, continuous threshold adaptation and ambient light immunity.

MLG-2 Prime ➜ p. 67
MLG-2 Pro ➜ p. 67
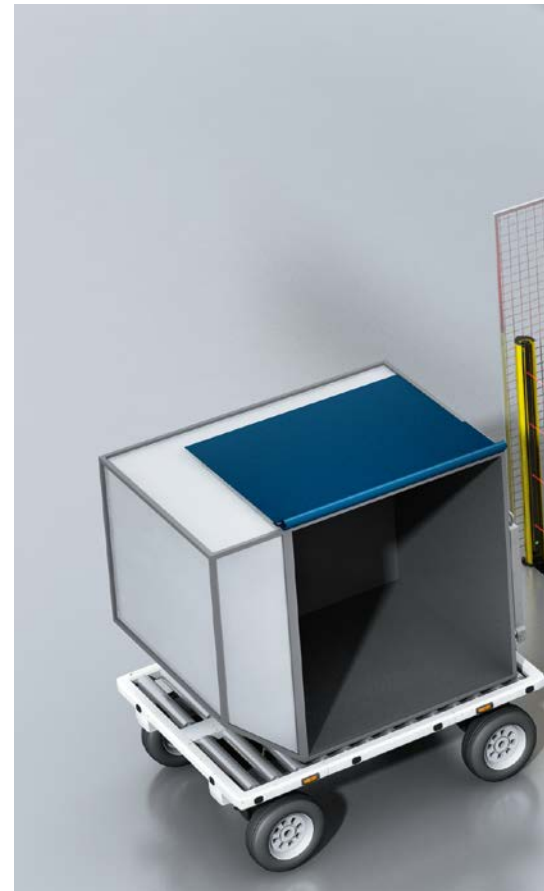
② Safeguarding the ULD access area

The M4000 Standard multiple light beam safety device safeguards access to the robot cell in the driving zone of the baggage ULD or baggage cart. If an individual attempts to enter the robot cell through this access point, the movement of the robot is stopped.

③ Safeguarding the door to the robot cell

An ES11 emergency stop pushbutton is attached to the door leading to the robot cell. In the case of danger, the pushbutton is pressed and the dangerous movement of the robot is stopped. To prevent unauthorized access to the robot cell, the i110 Lock safety locking device secures the door to the robot cell.
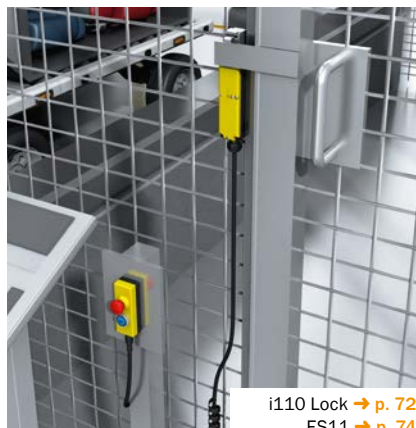
④ Monitoring the end position of the robot

The IN3000 Direct inductive safety switch detects the end position of the robot, enabling access to the robot cell. The IN3000 Direct can be connected directly to the evaluation electronics using two outputs.

M4000 Standard ➜ p. 71

i110 Lock ➜ p. 72
ES11 ➜ p. 74
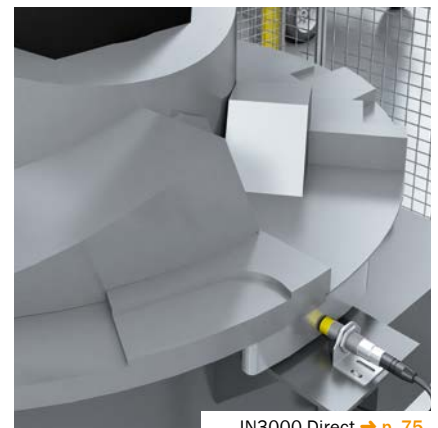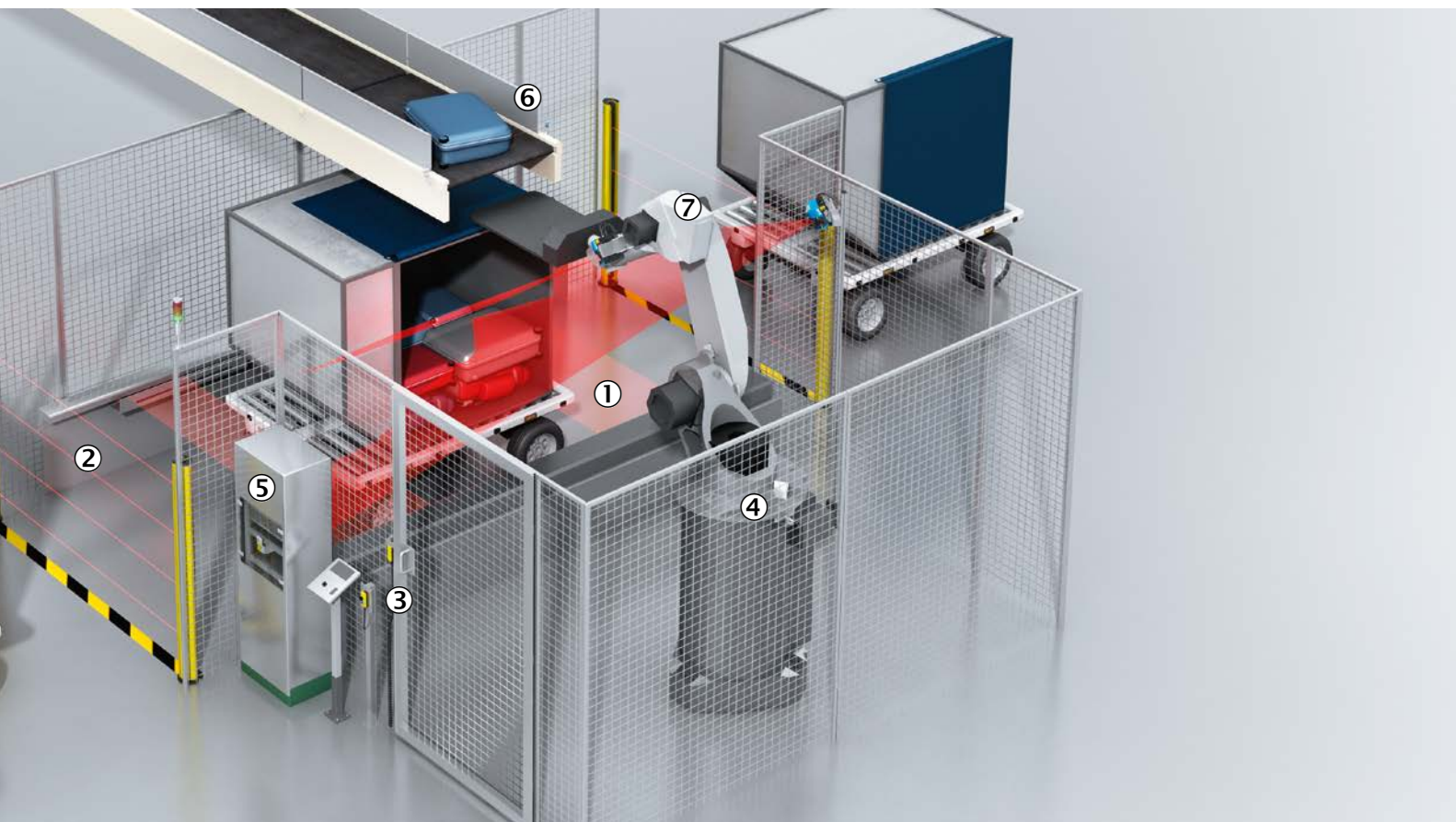
IN3000 Direct ➜ p. 75

⑤ Processing safe signals

The Flexi Soft safety controller processes signals from the M4000 Standard multiple light beam safety device, the i110 Lock safety interlock switch, the ES11 emergency stop pushbutton and the IN3000 Direct inductive safety switch. The Flexi Soft's modular structure makes it possible to meet the different requirements.

⑥ Checking for objects present in the transfer position

On the induction belt, the G6 miniature photoelectric sensor monitors the transfer position to the robot's load-carrying unit. Large, easy-to-handle adjusting screws and bright, large LED displays make the G6 easy to adjust and put into operation.

⑦ Checking the loading status of the luggage ULD

A LMS5xx 2D laser scanner installed on the robot arm determines the load profile of the luggage ULD as it swivels overhead. A second LMS5xx installed on the side of a swivel mechanism determines the load profile of the shadowed areas of the ULD.

Flexi Soft ➜ p. 75

G6 ➜ p. 64

LMS5xx ➜ p. 87

① Monitoring the induction belt

A G6 miniature photoelectric sensor monitors the induction belt to the baggage claim carousel. If the G6 detects a piece of luggage on the induction belt while another piece of luggage is occupying the infeed point of the carousel, the photoelectric sensor stops feeding the luggage to the baggage claim carousel.
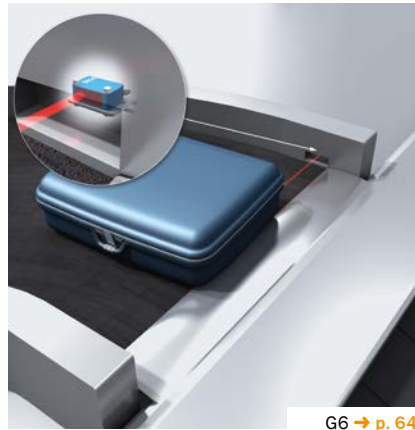
G6 ➜ p. 64

② Detecting the presence of objects on the baggage claim carousel

To avoid overloading the baggage claim carousel and damaging luggage as a result, the luggage feed process to the baggage claim carousel is monitored. A WTB27-3 photoelectric proximity sensor detects the load status of the baggage claim carousel right before the induction belt.

The luggage supply from the induction belt stops if the baggage claim carousel is occupied by luggage at that point and the G6 photoelectric sensor simultaneously detects another piece of luggage on the induction belt.
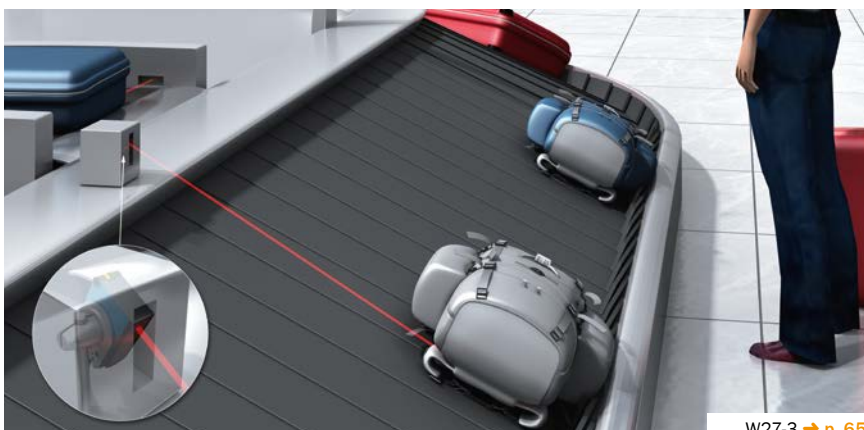
③ Monitoring the position of shutter doors

Shutter doors secure the area around the baggage claim conveyors to prevent people there from reaching the secure airside of the airport. The shutter doors are closed when the baggage claim belts are not in operation. IM18 inductive proximity sensors monitor whether the shutter doors are opened or closed.

W27-3 ➜ p. 65

IM Standard ➜ p. 66

④ Safety at the baggage claim carousel

The UE23-2MF safety relay is extremely well suited for integrating and evaluating the ES21 emergency stop pushbutton's signal. The safety relay triggers a shutdown of the baggage claim conveyor's drive unit if the emergency stop pushbutton is pressed. The integrated functions of the safety relay facilitate a manual or automatic reset and monitor the integrated contacts in addition to the actuator contacts. The ES21 emergency stop pushbutton is optionally available as a surface-mounted version with a housing or as a built-in version.

ES21 ➜ p. 74
UE23-2MF ➜ p. 76
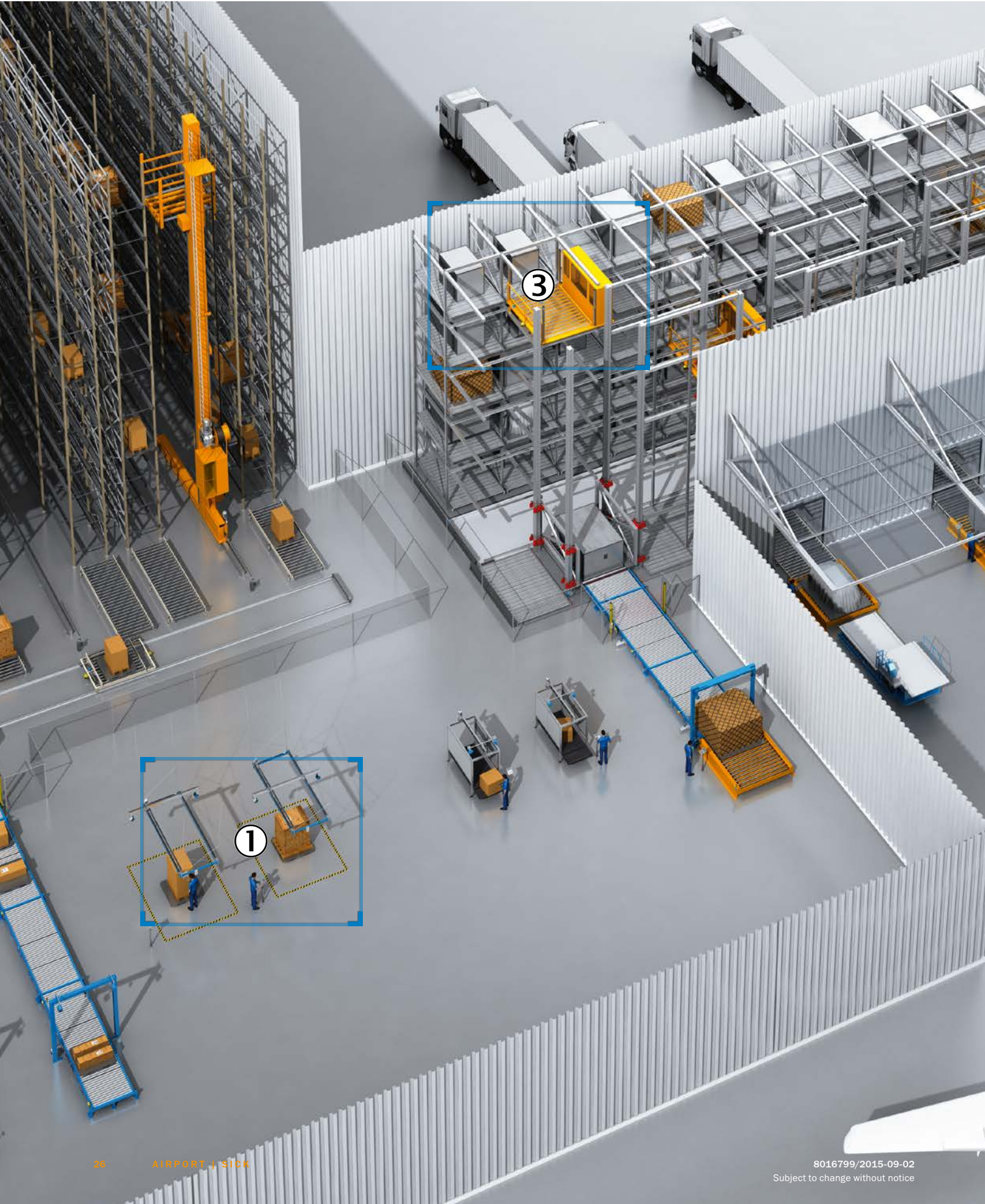
Air cargo facilities

① Dynamic freight measurement

Two LMS5xx 2D laser scanners installed above the conveyor belt scan the freight on the conveyor belt during transit through the measuring system. A three-dimensional image is produced using the two-dimensional scan data from the LMS5xx scanners and the precise speed data of the DFS60 high-resolution incremental encoder. This makes it possible to determine the dimensions and volume of the air freight. The CLV62x bar code scanner reads the air freight identification number attached to the load carrier.

DFS60 ➜ **p. 77**
CLV62x ➜ **p. 79**
LMS5xx ➜ **p. 87**
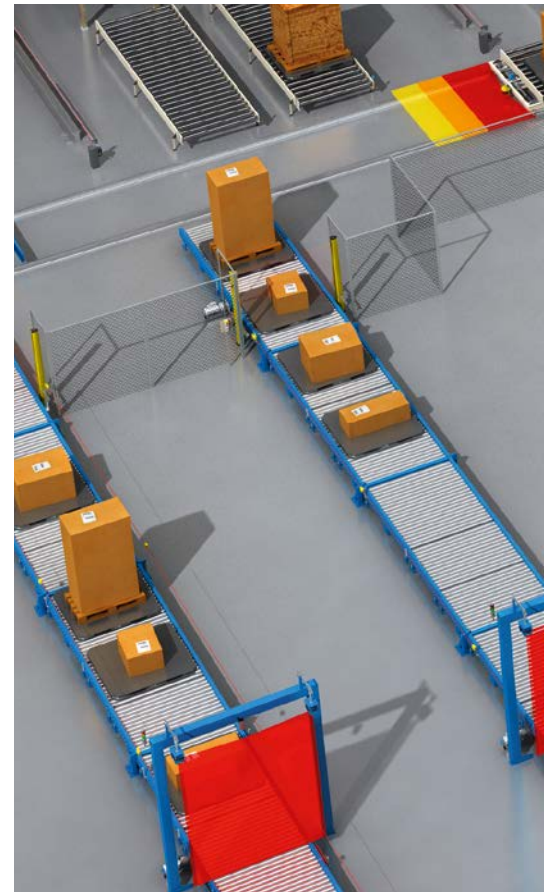
② Static freight measurement

Two LMS5xx 2D laser scanners are installed on a positioning unit above the air freight. This positioning unit is evenly maneuvered along over the freight during which two-dimensional scan data of the freight is recorded. In addition, a DFS60 incremental encoder provides precise speed information. This makes it possible to determine the dimensions and volume of the air freight. The measuring process is activated via scanning the air freight identification number. This is done using an IDM16x hand-held scanner. Inductive proximity sensors detect the end positions of the positioning unit.

IM Standard ➜ **p. 66**
DFS60 ➜ **p. 77**
IDM16x ➜ **p. 81**
LMS5xx ➜ **p. 87**
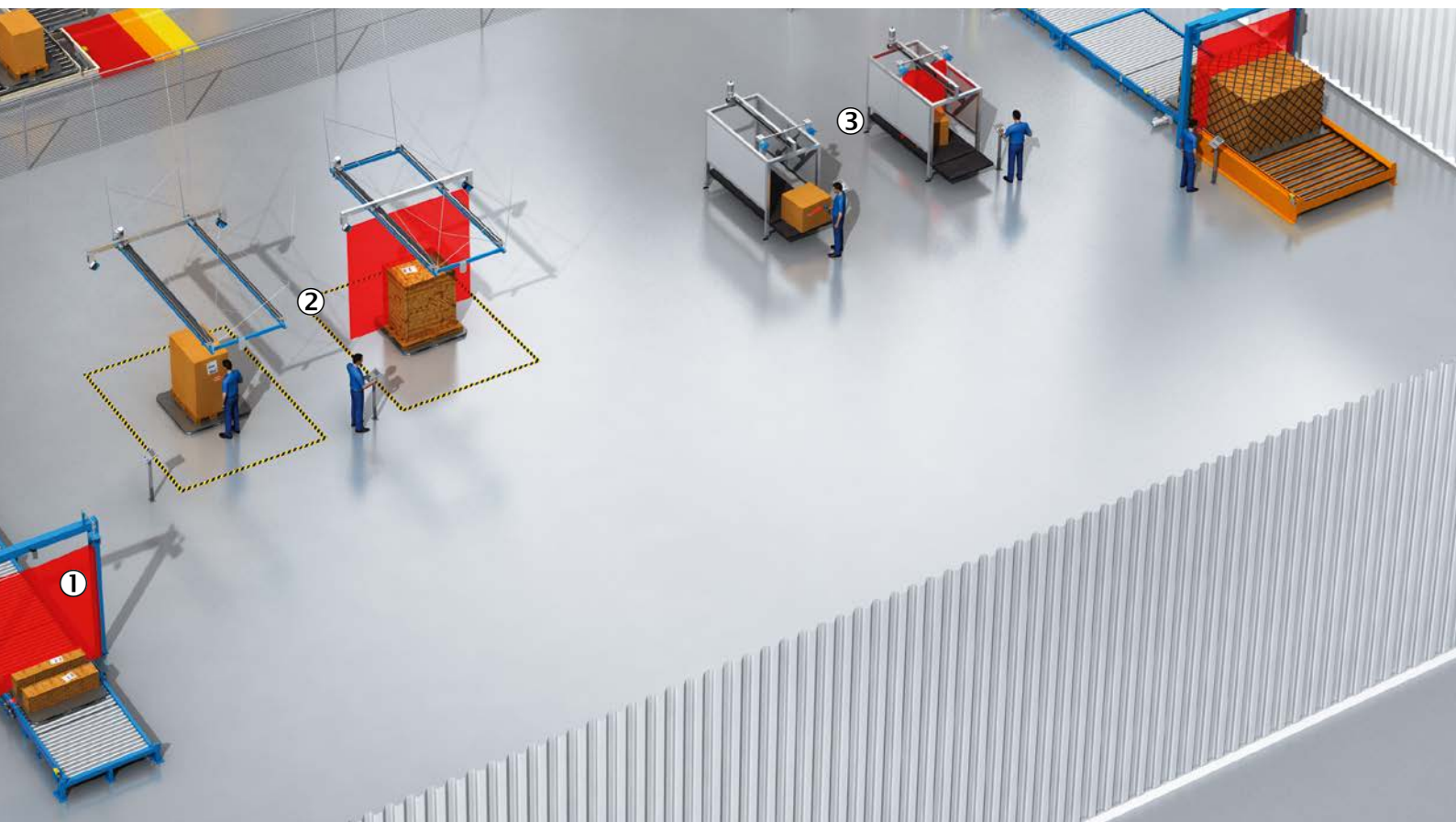
③ Measurement of freight objects

Two 2D laser scanners on a positioning unit are evenly maneuvered over the freight to provide space-saving static measurement of individual freight objects that are not positioned on a load carrier. Two LMS4xx scanners record two-dimensional scan data of the freight. The DFS60 incremental encoder provides high-precision speed information of the positioning unit. This makes it possible to calculate the dimensions and volume of the freight. IM Standard inductive proximity sensors determine the end positions. An IDM16x hand-held scanner reads the identification number of the air freight.

IM Standard	➜ p. 66
DFS60	➜ p. 77
IDM16x	➜ p. 81
LMS4xx	➜ p. 87

④ Access protection with muting

Access to hazardous areas has to be protected. The required safety functions can be implemented with the vertically installed M4000 Advanced Curtain safety light curtain in conjunction with an UE403 muting switching amplifier.

M4000 Advanced Curtain ➜ p. 71
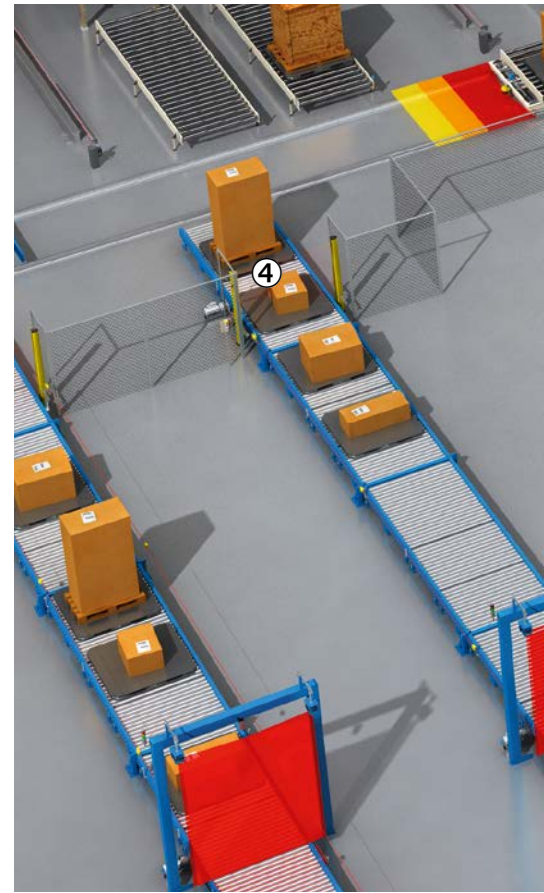
⑤ Safety along the conveyor line

If a dangerous situation arises, operating personnel can switch the conveyor line into a safe state using rope pull switches. i150RP rope pull switches are an ideal safety solution for large conveyor systems because their switching function can be activated from almost any point along the conveyor system.

⑥ Checking the ULD contour

The contour of an ULD has to precisely match the contour given by the loading position in the aircraft. Three LMS5xx 2D laser scanners record two dimensional scan data of the ULD during its transit through a contour control system. A DFS60 incremental encoder simultaneously supplies the precise speed information of the ULD movement.

The determined contour data is compared to the predefined target contour of the corresponding ULD type. This detects unacceptable protrusions and allows them to be corrected quickly, avoiding damage to the cargo hold of the aircraft.

i150RP ➜ p. 73

DFS60 ➜ p. 77
LMS5xx ➜ p. 87
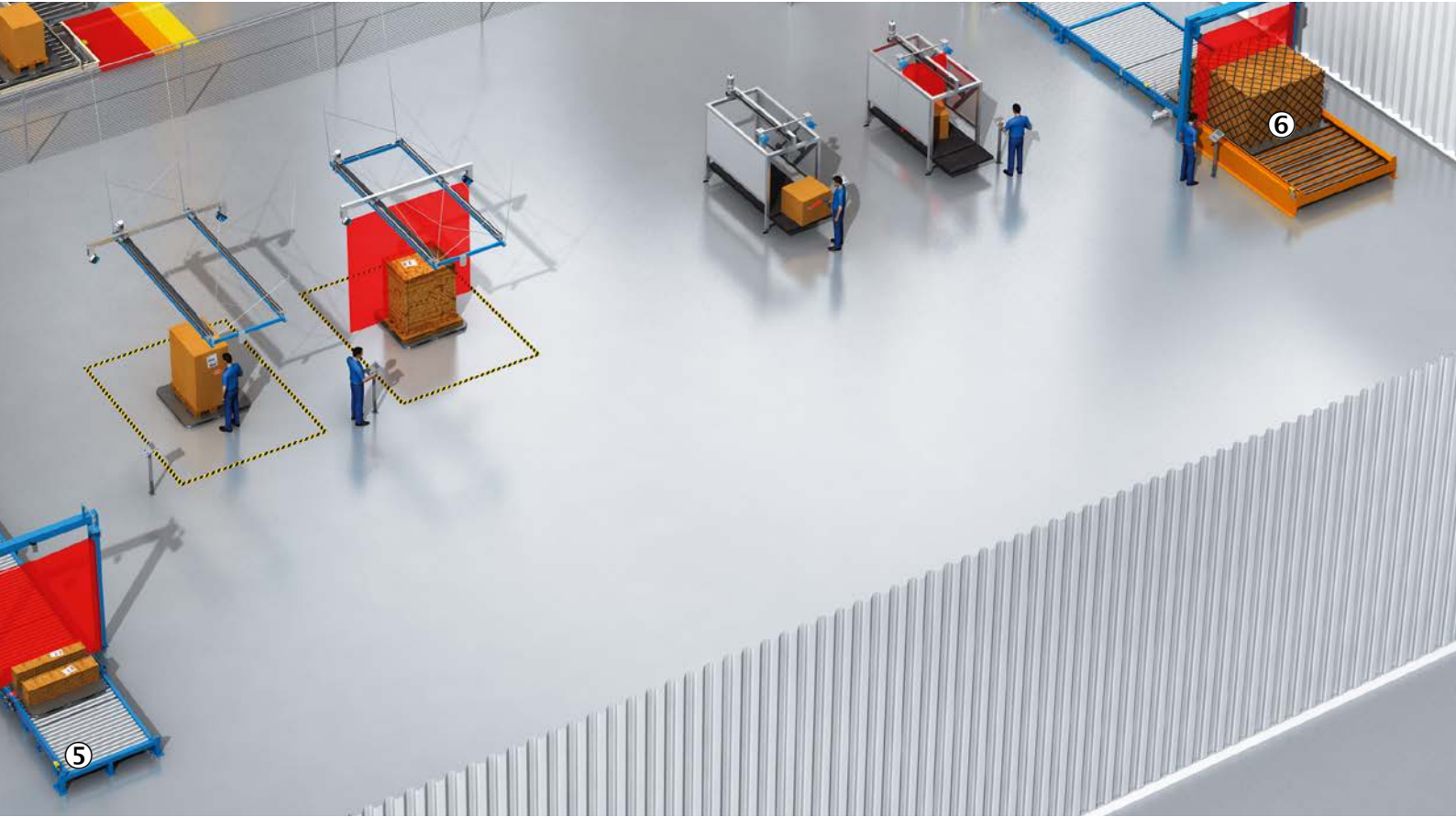
① **Monitoring the load of the ULD loading station**

The W27-3 compact photoelectric sensor checks whether the ULD loading station is free or occupied. The W27-3 can be configured quickly and easily and is also ideal for applications with strong vibrations and large temperature fluctuations.

W27-3 ➜ p. 65
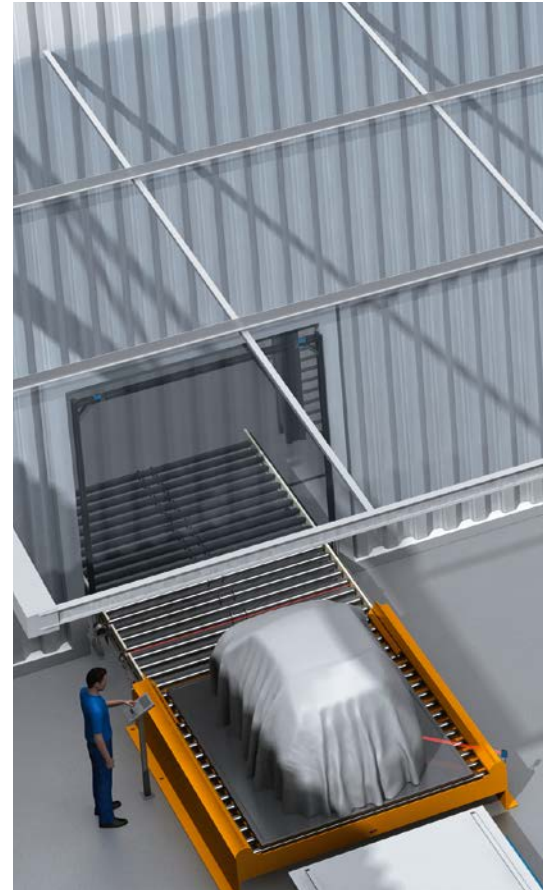
② **ULD identification with bar codes**

A cargo airline employee identifies the bar code label attached to the ULD using an IDM16x hand-held scanner. This is available in a variety of wireless and wired versions. The IDM16x is very easy and convenient to use thanks to its ergonomic housing and its low overall weight.

The IDM6x can also be used in harsh environments thanks to its rugged IP 65 housing. Its durability and reliability in harsh environments have been proven by 50 drop tests onto concrete from a height of 2 m.

③ **Protrusion monitoring before storage**

Before the ULD is stored in the ULD warehouse, it has to be checked for prohibited protruding objects. A LMS1xx 2D laser scanner in an outdoor housing checks whether any freight protrudes above the ULD from the front or back. Two W27-3 compact photoelectric sensors detect any objects protruding from the sides of the ULD.

IDM16x ➜ p. 81
IDM26x ➜ p. 81

W27-3 ➜ p. 65
LMS1xx ➜ p. 86
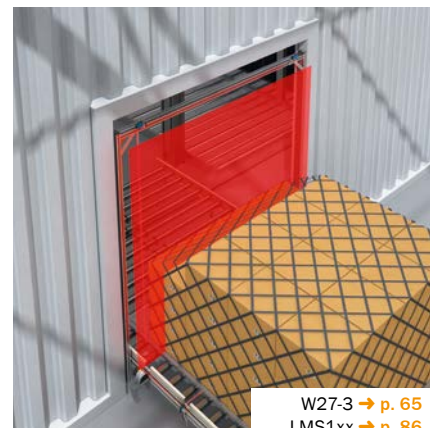
④ **Positioning of the ULD lift**

The HighLine wire draw encoder provides the information necessary to precisely position the ULD lift at the individual storage levels in the ULD warehouse. The encoder features high resistance to shocks and vibrations.
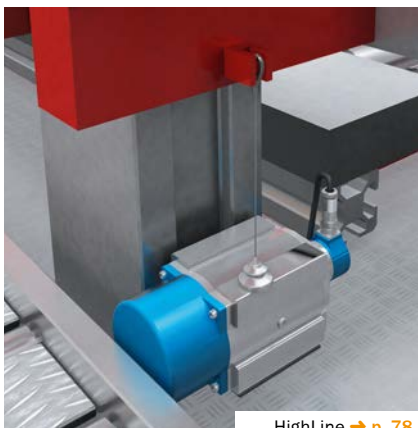
① Protrusion monitoring on the transfer vehicle

To prevent collisions, ELG switching automation light grids monitor the both sides of the transfer vehicle for protruding objects. The ELG is a very durable switching light grid that is available with a variety of different monitoring heights and beam separations.

ELG ➜ p. 68

② Positioning the transfer vehicle

An OLM200 linear measurement sensor determines the position of the transfer vehicle using the bar code tape attached on the side of the aisle along the horizontally ULD's movement. The sensor features high resolution and ambient light immunity, even at the high speeds at which the transfer vehicle can travel.
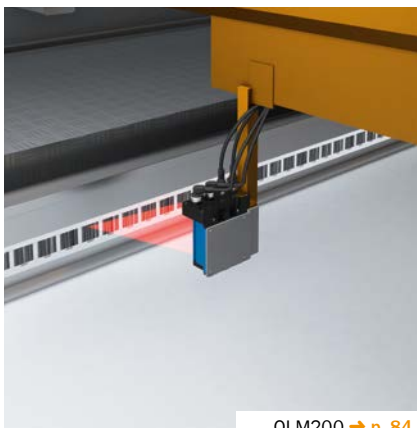
③ Wireless data transmission at the transfer vehicle

The optical data transmission system ISD400 transmits the positioning data for the transfer vehicle using infrared light. This eliminates the need for fieldbus cabling. High transmission rates up to 100 Mbps and long sensing ranges ensure the best performance.
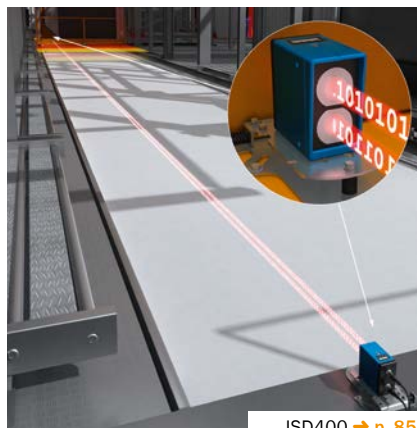
④ Speed measurement at the transport vehicle

The DFS60 incremental encoder supplies information for controlling the speed of the transfer vehicle. With its high resolution, the DFS60 encoder ensures maximum reproducibility. There are numerous encoder variants to accommodate nearly all mechanical and electrical interfaces.

OLM200 ➜ p. 84

ISD400 ➜ p. 85

DFS60 ➜ p. 77
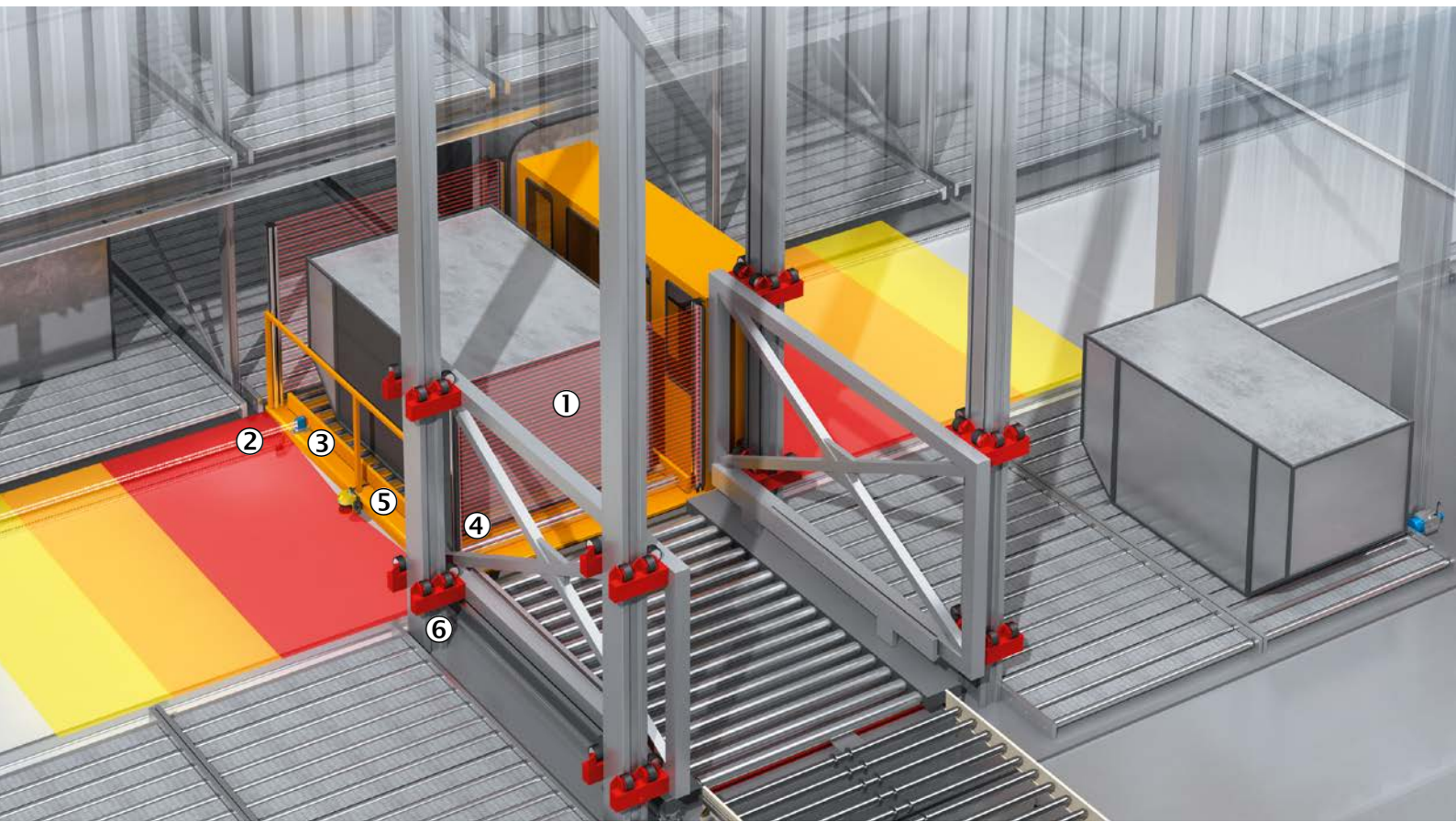
⑤ Personal protection and collision avoidance at the transport vehicle

For each direction of travel a S3000 Professional safety laser scanner is installed on the transfer vehicle. Thanks to freely configurable warning and protective fields, plus the option of static inputs or encoder inputs, fields that are dependent on positioning and speed can be implemented for specific applications.

⑥ End position monitoring at the transfer vehicle

The i110R electro-mechanical safety switch detects when an end position has been passed. If the end position is reached, the movement of the transfer vehicle is stopped. The safety position switch is very well suited for harsh environments.

S3000 Professional ➜ p. 70

i110R ➜ p. 73
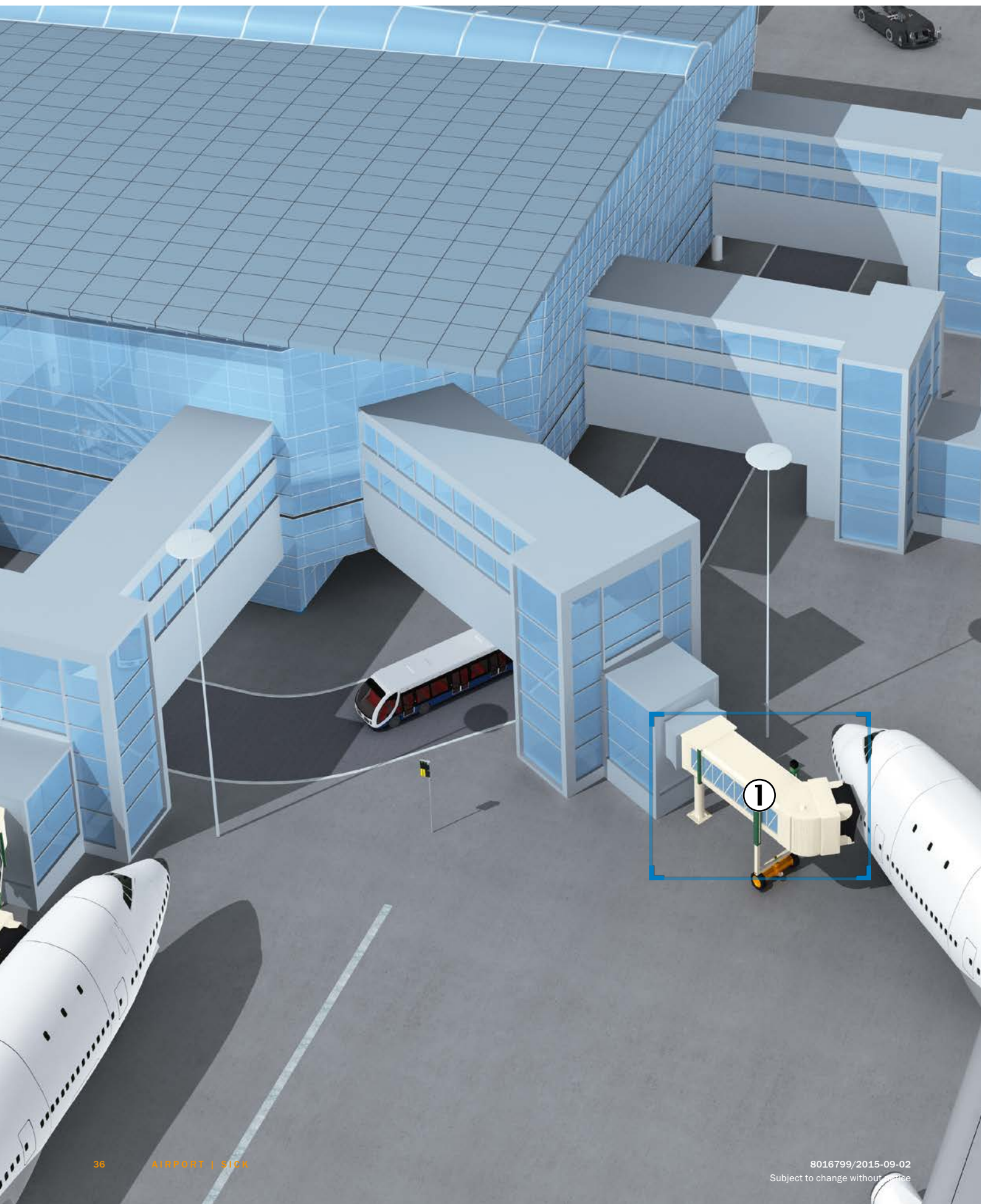
Aircraft handling at the terminal

① Monitoring the park position

If an aircraft is not docked at the gate, the passenger boarding bridge is positioned at a defined park position at the gate. An IQ80 inductive proximity sensor mounted at the bottom of the passenger boarding bridge's drive unit monitors this position. The IQ80 is ideal for use in harsh conditions.
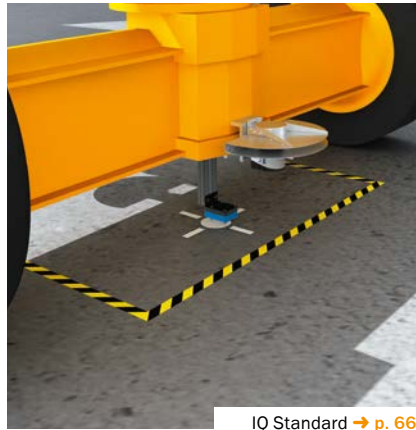
IQ Standard ➜ p. 66
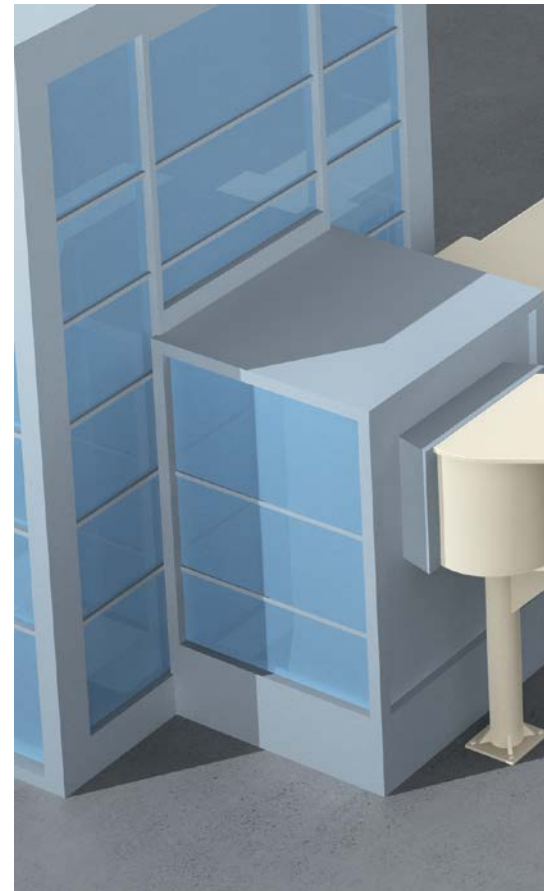
② Monitoring the position of the shutter door

To protect the interior of the passenger boarding bridge from snow and rain, a shutter door seals the passenger boarding bridge at the aircraft-side opening. An IM18 inductive proximity sensor on both the top and bottom end of the shutter door ensures contact-free position monitoring.
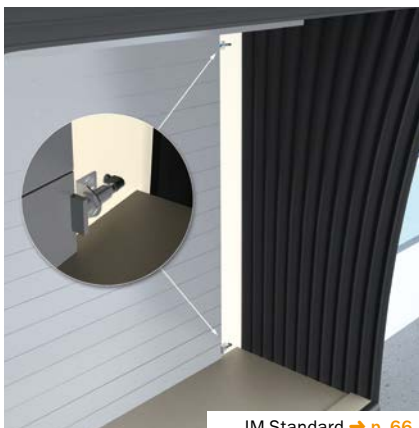
③ Determining the rotation of the drive unit

An AFS/AFM60 PROFINET absolute encoder determines the rotation of the passenger boarding bridge's drive unit. This information is essential for maneuvering the passenger boarding bridge precisely to the desired position on the airport apron. The AFS/AFM60 PROFINET is available with various interfaces.

④ Monitoring the movement of the drive unit

The AOS Prime object detection system monitors a freely definable area around the passenger boarding bridge's drive unit. AOS Prime can monitor several fields simultaneously. In the event that a warning field is violated, movement of the passenger boarding bridge is slowed or even stopped in the event a stop field is violated.

IM Standard ➜ p. 66

AFS/AFM60 PROFINET ➜ p. 76

AOS Prime ➜ p. 89

⑤ Measuring the height of the passenger boarding bridge

Docking the passenger boarding bridge to the aircraft requires that the passenger boarding bridge has a precise positioning height. A Dx50 mid range distance sensor handles this task. The Dx50 offers maximum reliability, high level of ambient light immunity and is ideal for use in harsh conditions.

⑥ Determining the rotation of the bridgehead

The AFS/AFM60 PROFINET absolute encoder determines the rotation of the passenger boarding bridge's bridgehead rotation system. The encoder's data enables the bridgehead to be maneuvered exactly parallel to the aircraft and be precisely docked.

⑦ Preventing collisions between passenger boarding bridges

On aircraft with large passenger capacities, two passenger boarding bridges are docked to the aircraft to ensure quick boarding and disembarking. LMS1xx 2D laser scanners prevent the passenger boarding bridges from colliding. Each scanner quickly and reliable detects the other passenger boarding bridge.

Dx50 ➜ p. 84

AFS/AFM60 PROFINET ➜ p. 76
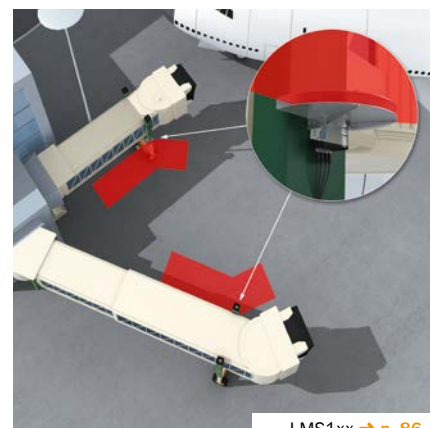
LMS1xx ➜ p. 86

⑧ Determining the distance to the aircraft

An aircraft docking system supports the docking of incoming aircrafts so that they can quickly and precisely position themselves in the parking position at the terminal. The LD-OEM 2D laser scanner uses vertical scans along the ideal center line to provide the necessary data to determine the distance to the incoming aircraft. This remaining distance is shown on a display for the pilot.

LD-OEM ➜ p. 88

⑨ Determining the extending and retracting movement of a passenger boarding bridge

In order for the passenger boarding bridge to dock with the aircraft and then move back to its parking position, it is extended or retracted lengthwise using telescoping system. To control this process, a Dx50 mid-range distance sensor provides information on the distance.
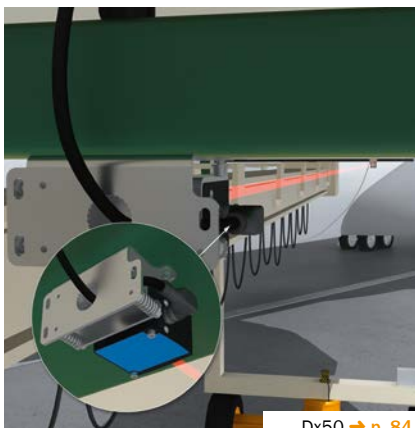
⑩ Monitoring the end positions of the telescopic system

To prevent damage to the passenger boarding bridge or the aircraft, i110R safety position switches monitor the end positions of the passenger boarding bridge's telescopic system during longitudinal movement. The safety position switch is very well suited for harsh environments.

⑪ Docking the passenger boarding bridge to the aircraft (general positioning)

An UM30 ultrasonic sensor supports general positioning when the passenger boarding bridge approaches the fuselage. The UM30 is immune to dust, dirt, and fog. Using time-of-flight measurement, it offers a higher level of measurement accuracy and detects objects regardless of their color.

Dx50 ➜ p. 84

i110R ➜ p. 73

UM30 ➜ p. 85
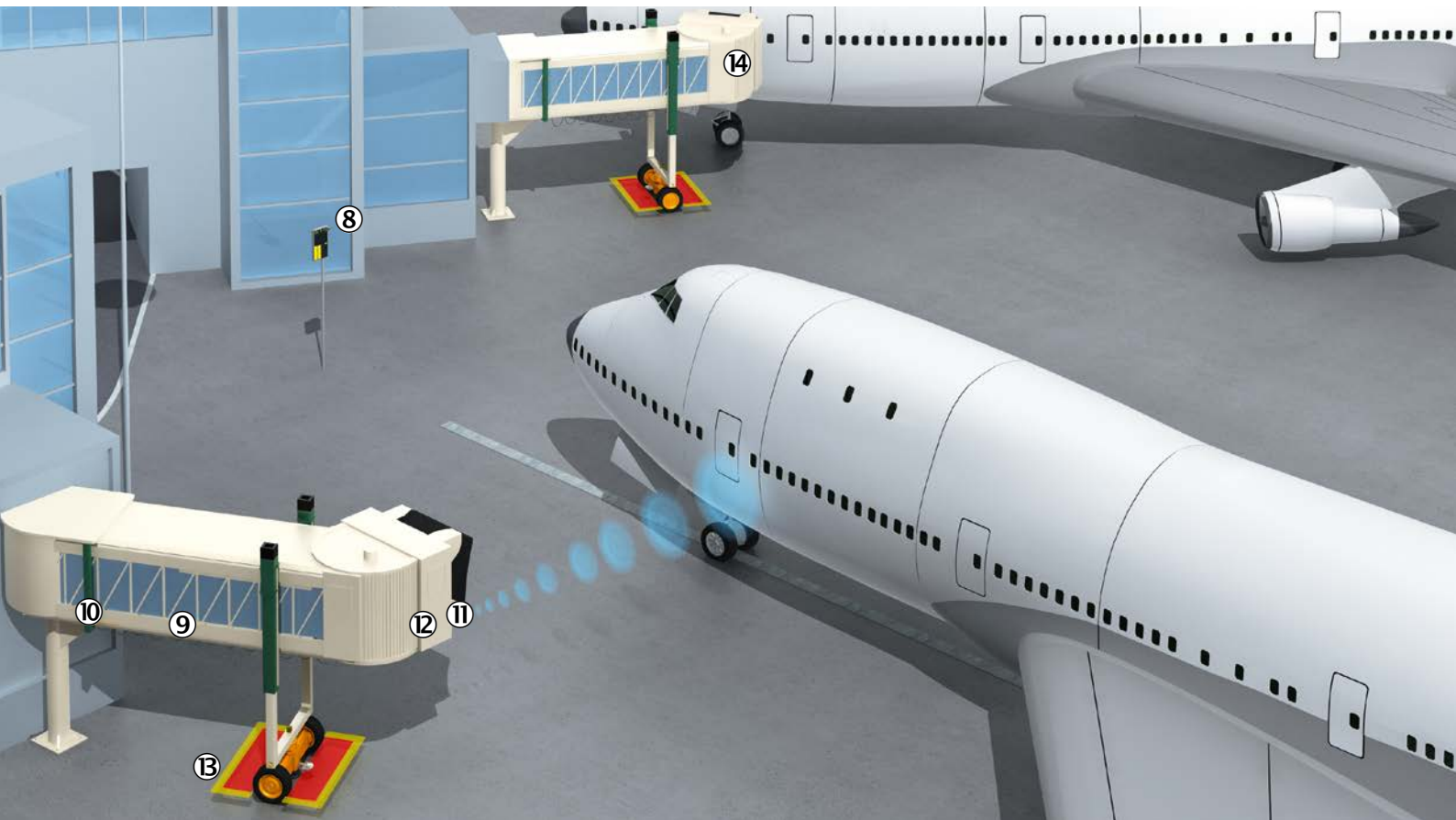
⑫ Docking the passenger boarding bridge to the aircraft (fine positioning)

A Dx35 mid-range distance sensor supports fine positioning when docking the passenger boarding bridge to the aircraft. The sensor also provides precise and reliable measurement results in situations with difficult measuring conditions on surface of the aircraft such as glossy dark colors.

⑬ Safe stopping of the passenger boarding bridge movement

To stop the movement of the passenger boarding bridge in the case of an emergency, an ES21 emergency stop pushbutton is installed at the operator panel in the bridgehead. Additional emergency stop pushbuttons are installed on both sides of the drive unit. This ensures the passenger boarding bridge movement is stopped quickly.

⑭ Automatic height readjustment of the passenger boarding bridge

The distance between the aircraft and the ground changes both when boarding and disembarking. The height of the passenger boarding bridge needs readjustment to prevent damage to the aircraft door. A DFS60 incremental encoder installed on a measuring wheel that is placed at the aircraft fuselage provides the data for this readjustment.

Dx35 ➜ p. 83

ES21 ➜ p. 74

DFS60 ➜ p. 77

③

②

Building safety and security and building management

① **Preventing collisions between airport ground vehicles and parts of the building or passenger boarding bridges**

2D laser scanners help to prevent airport ground vehicles from colliding with parts of the airport building and the passenger boarding bridges. The sensors monitor previously defined areas for objects such as oversized vehicles. Contact with the monitoring field triggers an acoustic and/or visual signal.

LMS5xx ➜ p. 87
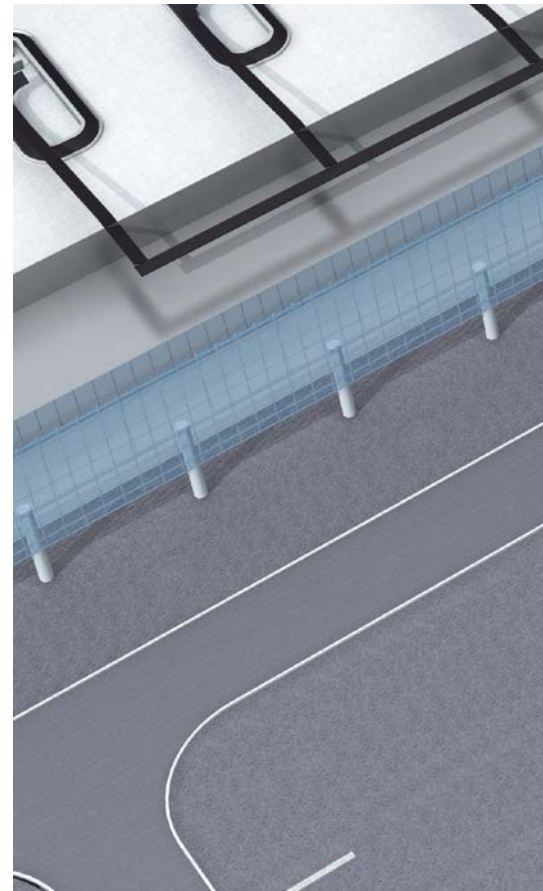
② **Monitoring doors, gates, and windows**

ELG or SLG automation light grids reliably monitor people entering through the large doors in airports, logistic centers, and other buildings. G10 photoelectric sensors are more suitable for smaller doors while LMS5xx 2D laser scanners with weatherproof housings are used for large areas.

③ **Using horizontal ceiling protection to keep aircraft secure when in the hanger**

To keep aircraft such as helicopters secure while they are in the hanger, the area above the aircraft can be protected. 2D laser scanners monitor this area using pre-defined monitoring fields. If the monitored area is breached, an acoustic or optical warning signal is activated.

⚠ This graphic is not presented in the overview.
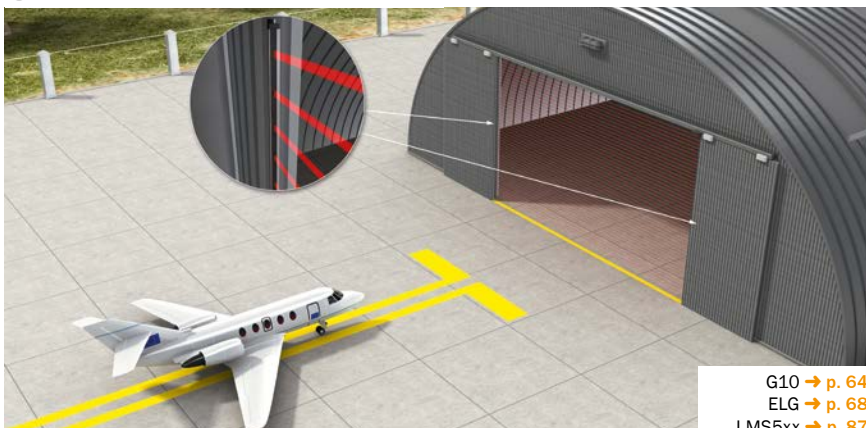
G10 ➜ p. 64
ELG ➜ p. 68
LMS5xx ➜ p. 87

⚠ This graphic is not presented in the overview.

LMS5xx ➜ p. 87
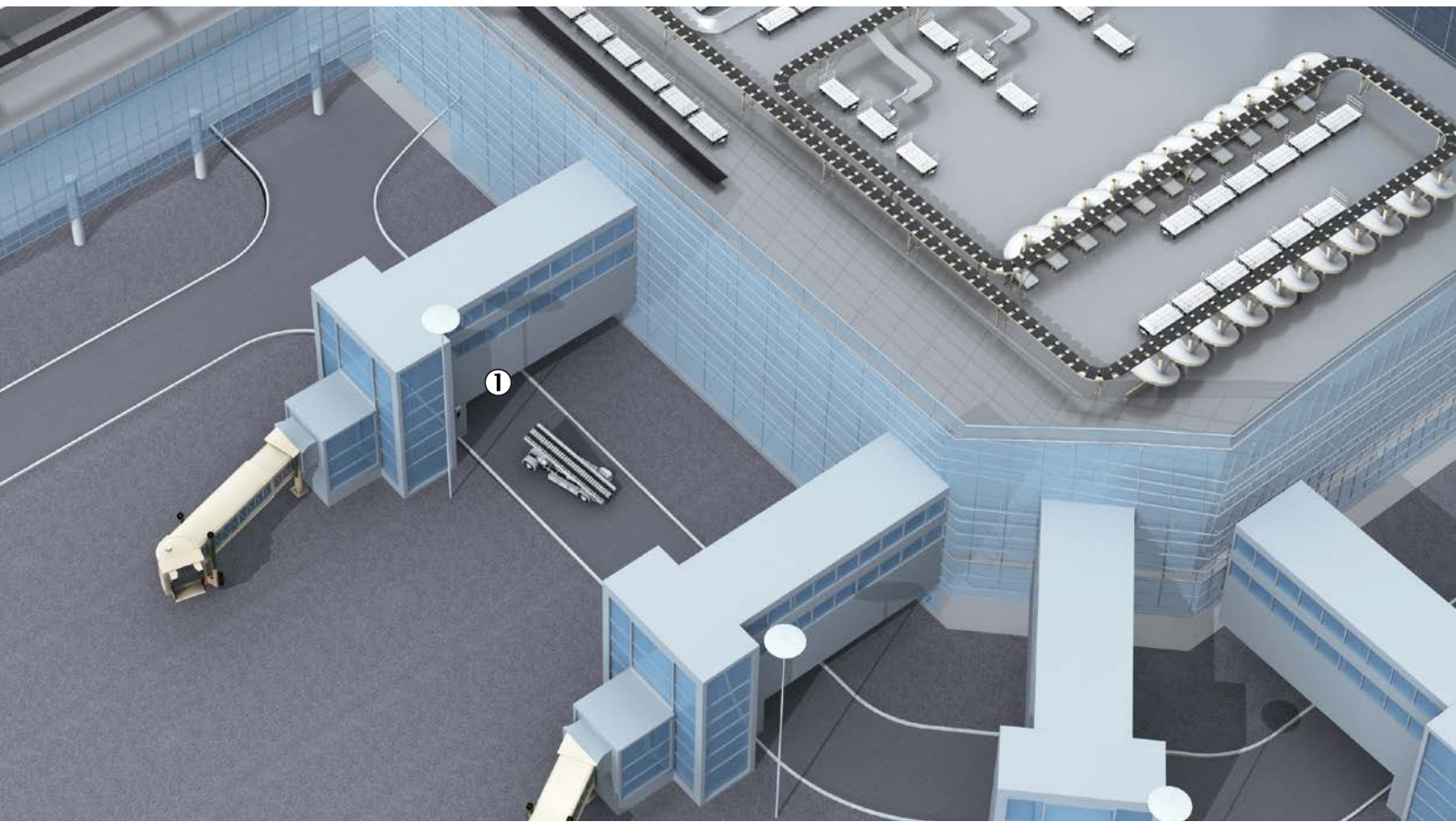
④ **Collision avoidance in hangers using vertical wall protection**

2D laser scanners help with maneuvering aircraft in the hanger. This can prevent costly collisions with docking systems, maintenance platforms, and walls. The laser scanners monitor defined monitoring fields and activate an acoustic and/or optical warning signal if the field is breached.

⚠ This graphic is not presented in the overview.

LMS1xx ➜ p. 86
LMS5xx ➜ p. 87

⑤ **Horizontal monitoring of open spaces and object tracking using cameras**

When monitoring airports and other buildings, a 2D laser scanner detects any individuals who step into the pre-defined monitored area. The position data recorded by the laser scanner is further processed by an integrated or external evaluation unit and is used to control the camera.

LMS5xx ➜ p. 87
LD-LRS ➜ p. 88
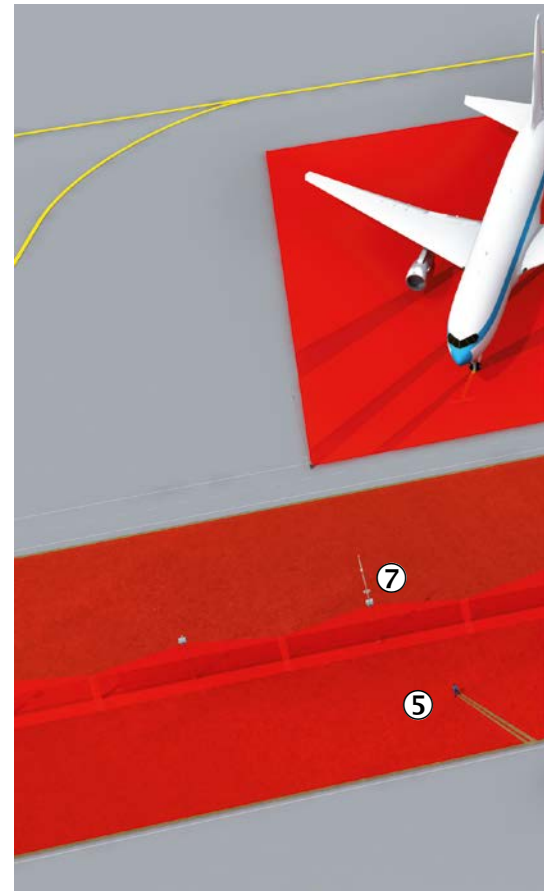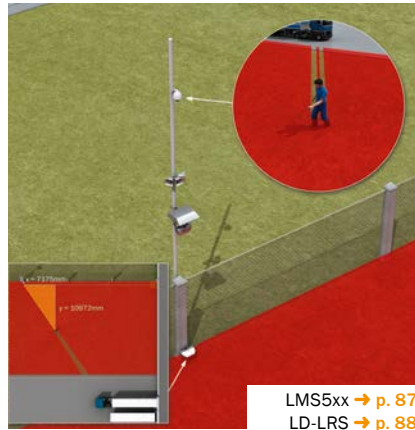
⑥ **Horizontal monitoring of open spaces in front of buildings**

2D laser scanners monitor open spaces connected to a property horizontally. Multiple monitoring fields and selective field evaluation can be freely defined. This makes it possible to block out certain access routes and paths and to monitor anyone entering.

⑦ **Vertical protection of a fence**

A 2D laser scanner detects individuals crawling beneath or otherwise cross-ing the perimeter of a fence with high detection speed and unaffected by interference from the weather. The sensor generates a vertical field. If anyone penetrates this field the security scan-ner triggers an alarm.
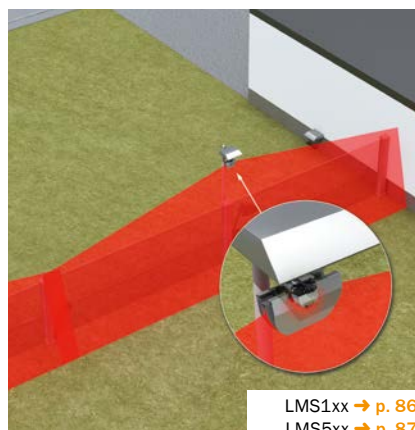
⑧ **Facade protection of distribution centers**

2D laser scanners usually monitor facades vertically. Any surrounding con-tours can act as reference points. The sensor triggers an alarm in the event of deviations from this contour or if anyone enters the protection zone. It is for the most part, not sensitive to ambient influ-ences. The false alarm rate is therefore very low.

LMS5xx ➜ p. 87
LD-LRS ➜ p. 88

LMS1xx ➜ p. 86
LMS5xx ➜ p. 87

LMS1xx ➜ p. 86
LMS5xx ➜ p. 87
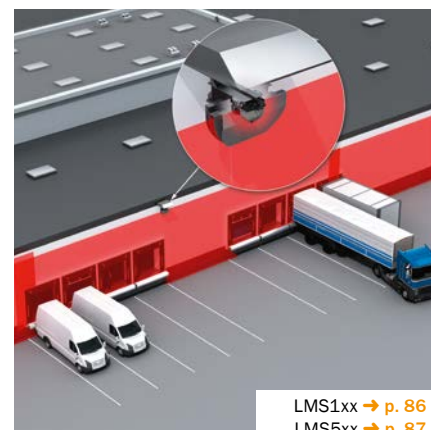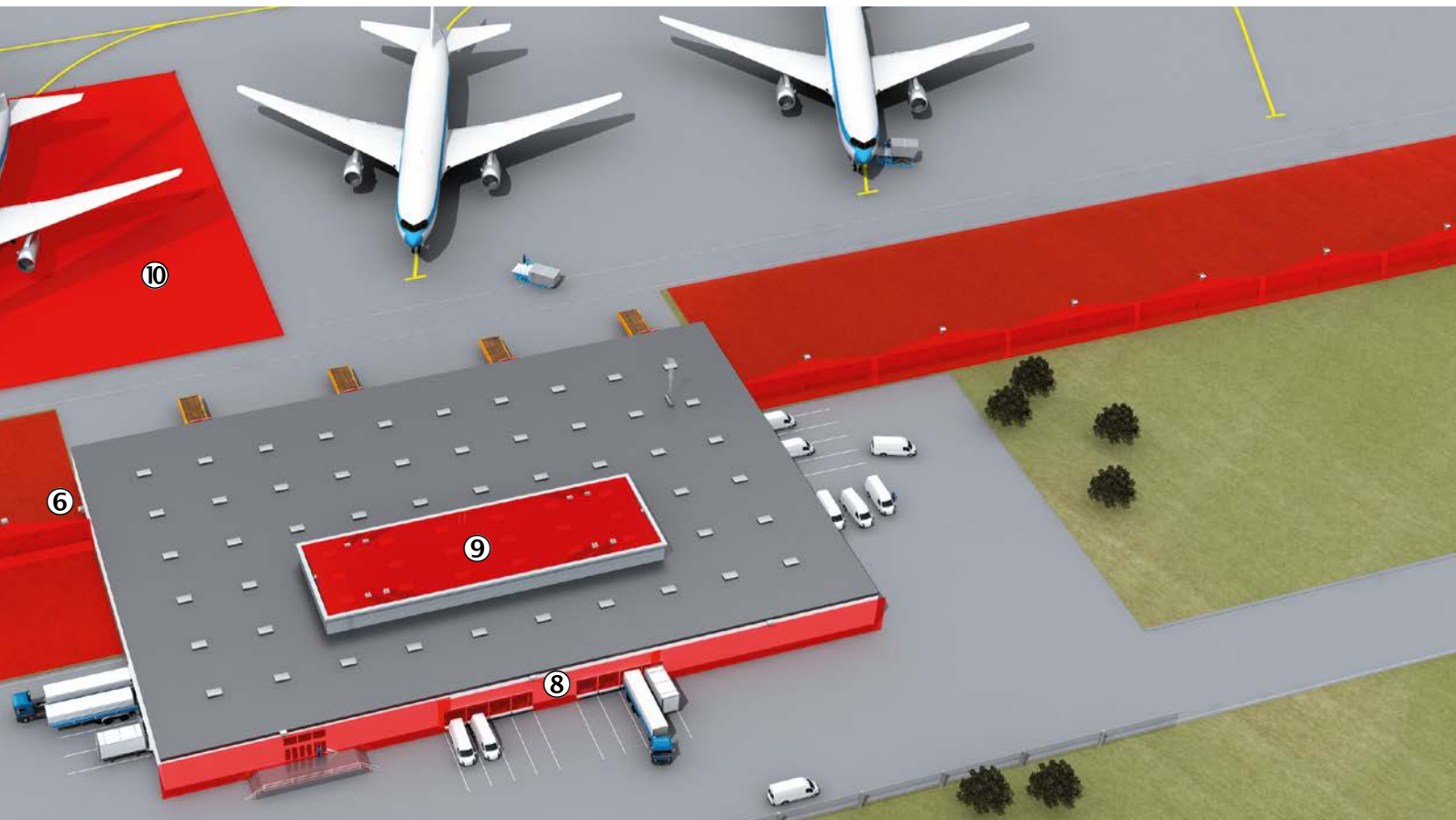
⑨ Monitoring of roofs and indoor spaces

2D laser scanners reliably monitor roofs with domes or skylights. The interior protection increases security in the supply chain as it can be used to restrict access to production.

⑩ Horizontal monitoring of open spaces for portable applications

Parked planes, vehicles, or containers can be monitored using portable detection and ranging solutions. Using intelligent field management functions, these devices constantly adapt to changing conditions as well as to the respective shape and size of the monitoring fields within this area of application.
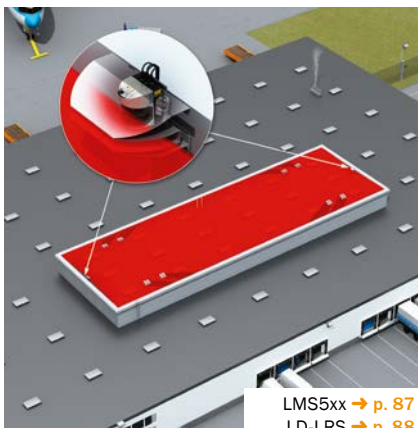
LMS5xx ➜ p. 87
LD-LRS ➜ p. 88

LMS5xx ➜ p. 87
LD-LRS ➜ p. 88

① **Non-contact access to parking garages/lots via RFID**

As a result of its large reading range, the RFID reader RFU630 enables non-contact reading of UHF transponders and manages access control for parking garages/lots. There is no longer any need to directly present or acquire a ticket at the machine. The reader device can reliably read transponders without direct contact, even at a greater distance.

RFU63x ➜ p. 82
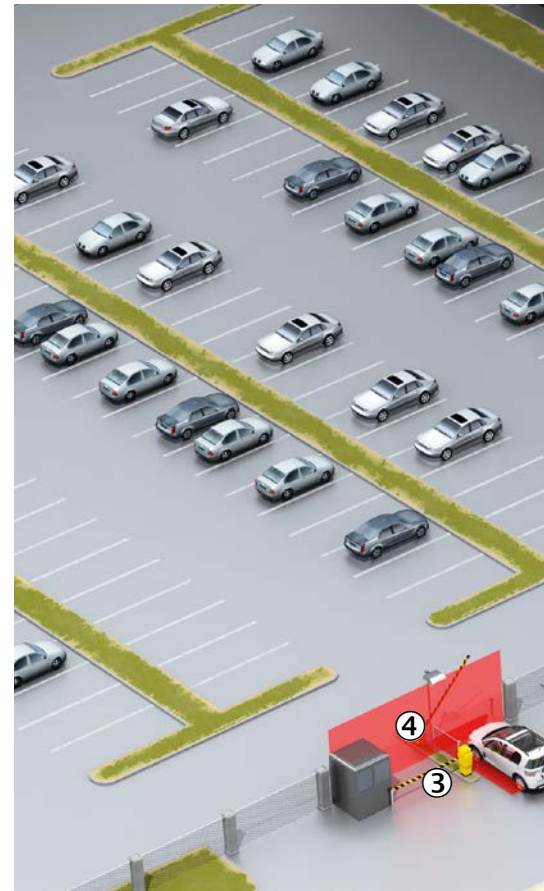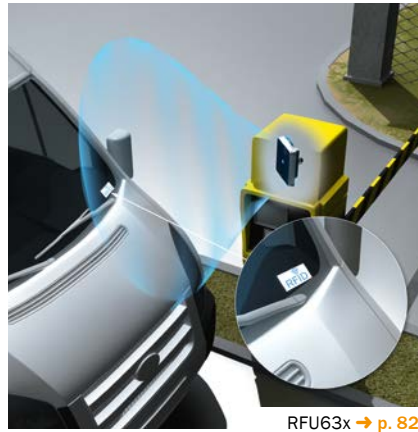
② **Collision protection at barriers**

In areas around barriers, people can be endangered by the closing barrier arm. A L27 single-beam photoelectric safety switch monitors the area under the barrier. If a person is detected, the barrier is prevented from closing.

③ **Controlling barriers with 2D laser scanners as an induction loop replacement**

Vehicles such as bicycles or motorcycles generally do not have a sufficient effect on the magnetic field of an induction loop. This is also true for SUVs due to their high ground clearance. 2D laser scanners are therefore a sensible and reliable alternative. A laser scanner monitors any vehicles traveling in and out. The entry barrier only opens, for example, when the person entering has proven their identity or has taken a parking ticket.

L27 ➜ p. 72

TiM3xx ➜ p. 86
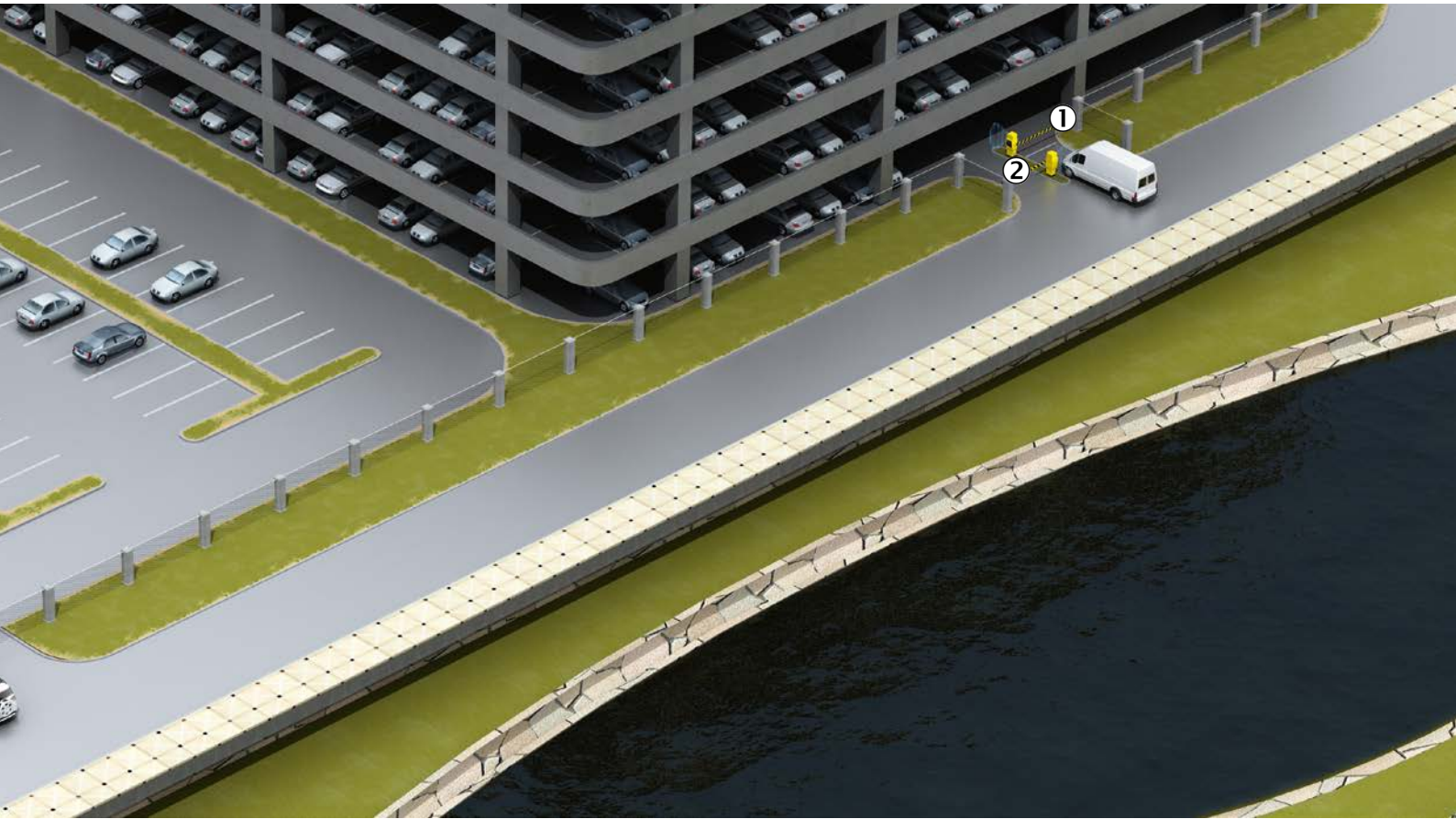
④ **Anti-climb protection for barriers**

Barriers used as a mechanical protective device are easily crossed due to their low height. This can be prevented by using a LMS1xx or TiM3xx laser scanner to monitor the barrier and detect anyone in close proximity to it.

TiM3xx ➔ **p. 86**
LMS1xx ➔ **p. 86**

① Singulation in automated border control systems

Several miniature photoelectric sensors arranged in a defined pattern ensure that there is only one person in the border control system at a time. If a second person is detected, the system controller will not unlock the exit.

G6 ➜ p. 64
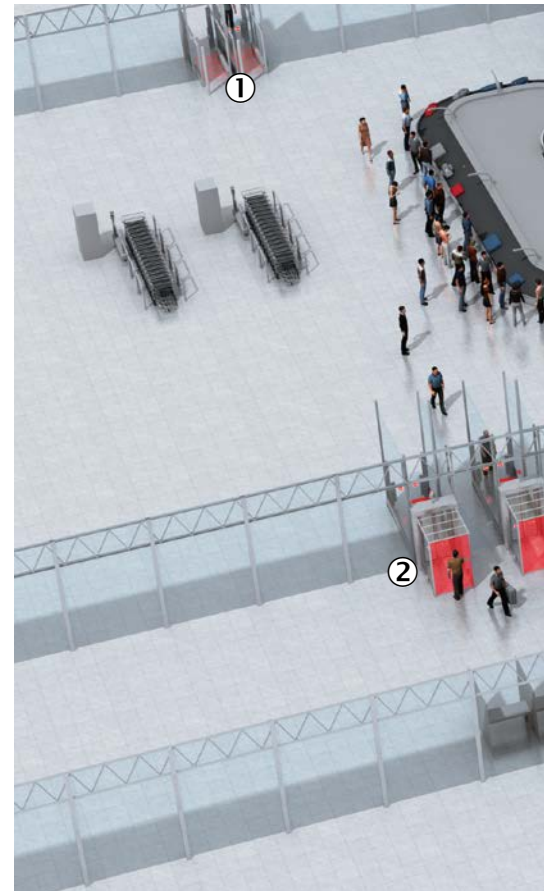
② Direction detection in entry lock systems

Entry lock systems at airports separate secure and non-secure areas. When individuals pass through the system in the designated direction, i.e., out of the security zone, this is identified as correct by two MLG automation light grids installed behind one another. If the automation light grid detects either individuals going the wrong way or objects being thrown from the landside to the airside, an alarm is triggered.

③ Detecting objects in entry lock systems

Entry lock systems act as the transition point from secure to non-secure areas of an airport. They must therefore be monitored to ensure that there are no forbidden items or objects, such as weapons. Compact 2D laser scanners reliably detect such objects.
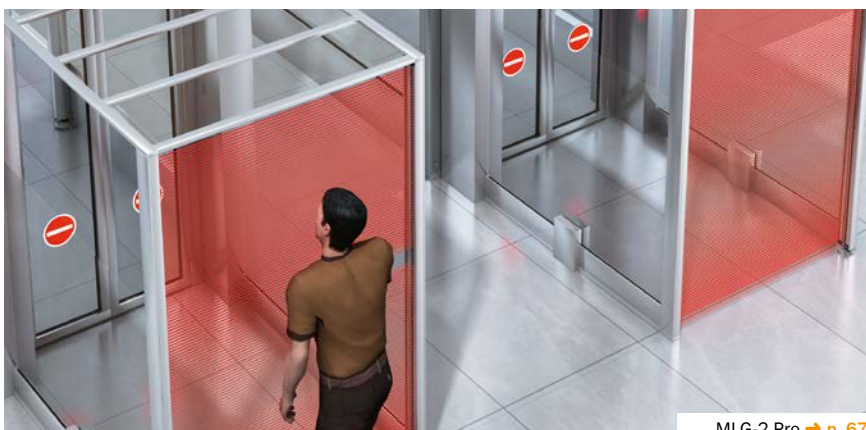
MLG-2 Pro ➜ p. 67

TiM3xx ➜ p. 86

④ **Code reading at automated pre security and boarding gates**

Passengers need to be identified at automated boarding gates by means of a printed or electronic boarding card. The information for boarding is presented as a 2D code. The image-based code reader can reliably read these codes, even if they are badly printed.

ICR80x ➜ p. 80

⑤ **Controlling the flow of people at automated pre security and boarding gates**

At automated boarding gates, it is important to ensure that several people do not go through the security door system at the same time. Only those who are authorized to access the plane are allowed to go through. This is ensured using several automation light grids arranged horizontally and vertically.

⑥ **Anti-climb monitoring at automated pre security and boarding gates**

The area above the swing doors of automated boarding gates can be monitored using 2D laser scanners. The laser scanners are activated when access is not permitted. Any attempt to climb over the doors immediately triggers an alarm signal.

MLG-2 Pro ➜ p. 67

TiM3xx ➜ p. 86
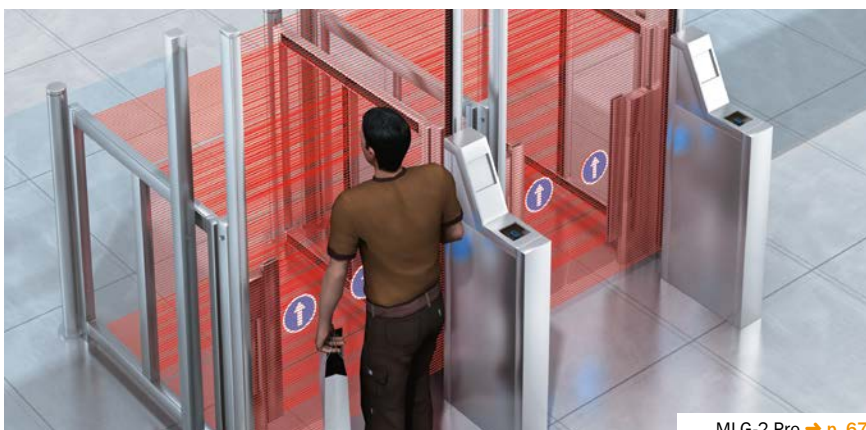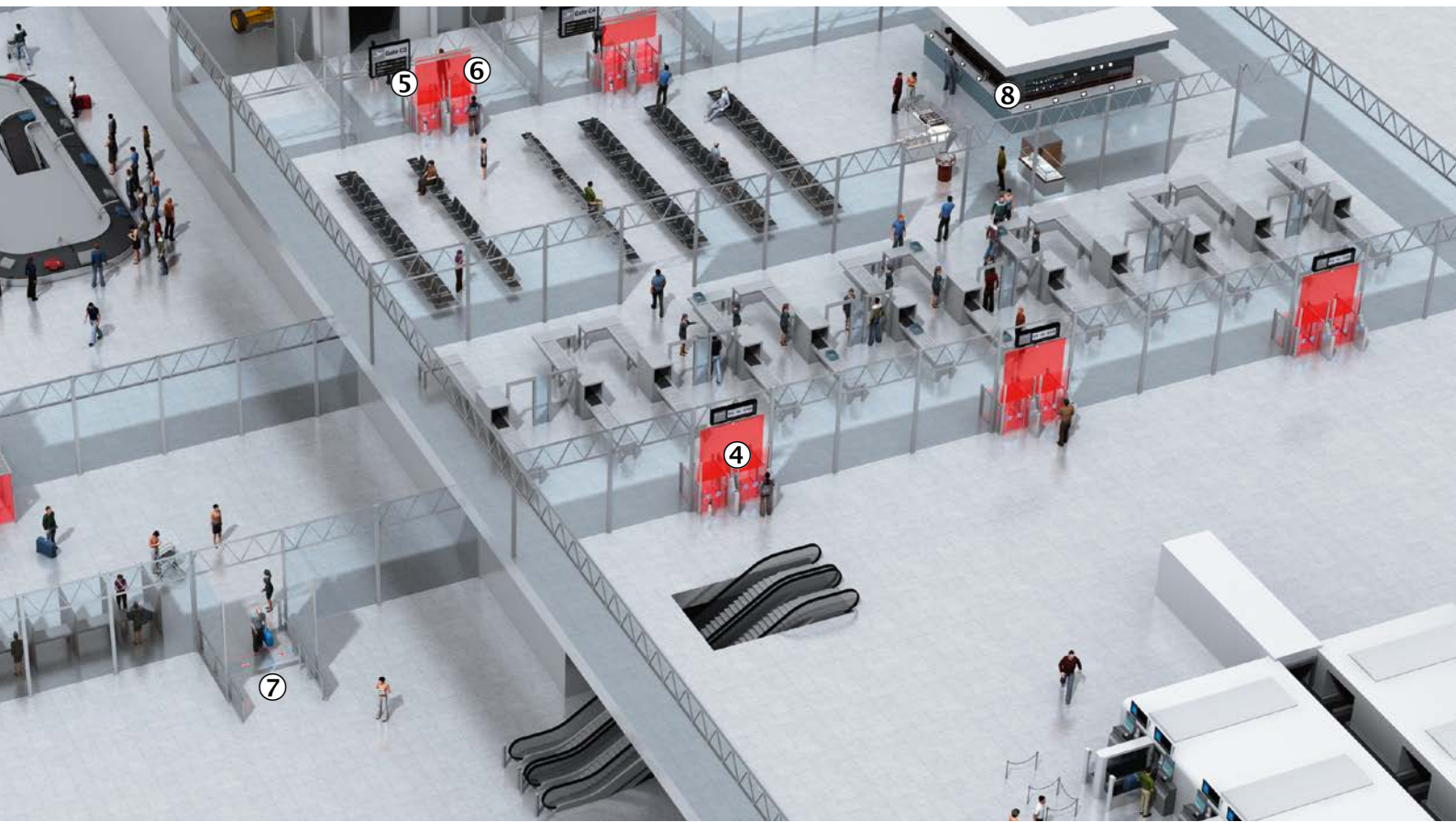
⑦ Opening swing doors at the customs exit

After baggage reclaim, arriving passengers leave the customs exit. Helped by swing doors, the stream of passengers is controlled in such a way that no-one can reach the customs area without authorization. Photoelectric sensors reliably activate the opening of the swing doors.

⑧ Monitoring sales outlets (duty free), restaurants, and bars

After business ends for the day, easily accessible sales outlets, restaurants, and bars need to be monitored. 2D laser scanners are a simple but effective opto-electronic anti-theft monitoring device. They detect anyone entering and trigger appropriate measures.

G10 ➜ p. 64

TiM3xx ➜ p. 86
LMS1xx ➜ p. 86

AIRPORT LUGGAGE IDENTIFICATION SYSTEM – ALIS

Baggage handling tasks

Sensors support the transport of baggage from the bag drop to the baggage reclaim area. Today's baggage handling systems in airports are required to manage a very large volume of luggage and shorter transfer times with as little manual labor as possible. This is where SICK steps in with everything from sensors all the way to complete sensor solutions for airport applications. SICK will work with you to create a solution for your specific task. We are your consultant for developing and delivering the sensor solutions you need for your project. SICK also supports you during the installation and commissioning stages and provides after-sales support. SICK is your competent partner during each phase of your project.
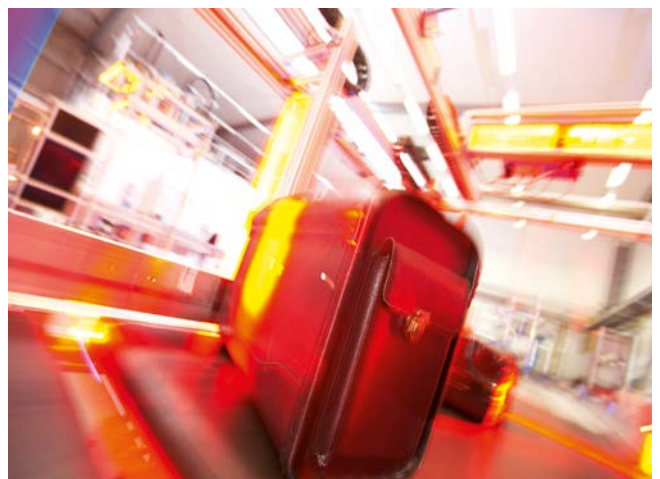
Automatic bag drop off station

SICK offers a suitable sensor solution for every task at automated bag drop-off stations. The tasks are varied: reading boarding passes, identifying baggage labels (using laser, camera or RFID technology), detecting oversized baggage and determining the volume and weight of baggage. Other tasks include taking photos of the bags and classifying them based on conveyability. Intrusion detection prevents people from tampering with bags or accessing the baggage handling system without authorization. SICK safety sensors protect passengers from dangerous machine movements. For years, sensor solutions from SICK have been successfully performing these tasks in bag drop-off stations at airports around the world.

IATA bar code reading
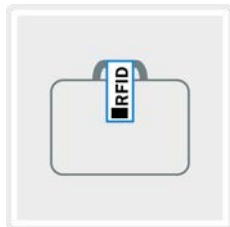
RFID tag reading and writing
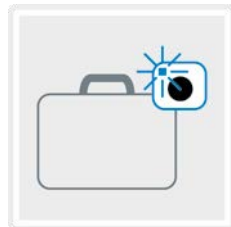
Baggage imaging

Intrusion detection

Weighing

Classification

Height control

Oversize detection

Determination of volume

Safety
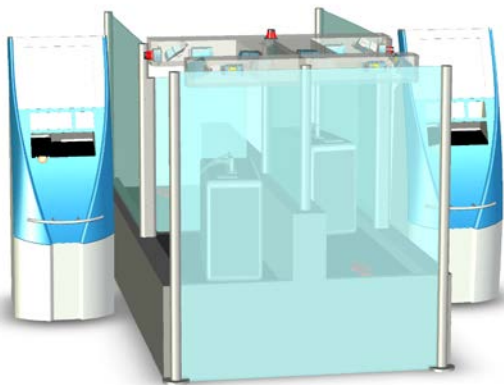
Example 1 of an automated bag drop off station

Example 2 of an automated bag drop off station

AIRPORT LUGGAGE IDENTIFICATION SYSTEM – ALIS

Identification and volume determination
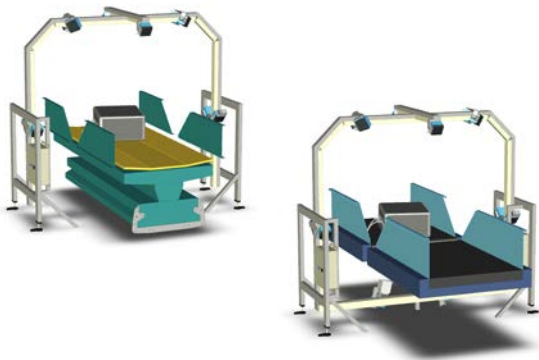
ALIS – laser scanner system

Automatic reading of baggage labels using a bar code laser scanner system for baggage handling systems and a global service network

- SMART code reconstruction
- Environmentally friendly thanks to lower energy consumption
- Easy installation
- Optional 100% redundant system design
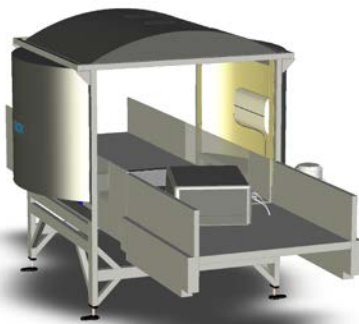
ALIS – RFID system

SICK is the innovation leader in the field of RFID in automated scanning systems for baggage handling systems

- Unambiguous assignment of the label to the bag
- Highest read rate thanks to UHF technology developed by SICK with the option of 100% redundant system design
- Use of standard components

ALIS – laser scanner/RFID system

Many years of experience in the field of bar code scanning combined with RFID technology for baggage handling techno-logy ensure maximum reliability in baggage identification

- Just a single host interface
- Both technologies developed by SICK
- 100% read rate
- Option of upgrading a bar code system with RFID

ALIS – laser scanner/camera system

Proven bar code identification using laser scanners combined with the latest camera technology enable higher read rates

- Matrix cameras with high resolution and an extensive depth of field
- Improved read results, even for damaged and dirty bar codes
- Video coding and optical character recognition possible
- Significant reduction in manual post-processing
- Option of upgrading existing bar code systems with cameras
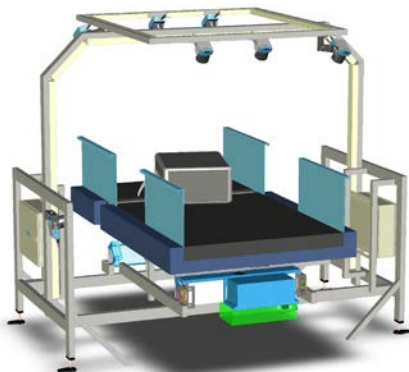
ALIS – camera system

The complete camera-based identification system for the toughest demands in video coding and optical character recognition

- Matrix and line cameras ensure the highest image quality
- Extended options for video coding and optical character recognition
- One interface for communication with the host
- Significant reduction in manual post-processing
- An increased sorting rate and optimization of transfer times
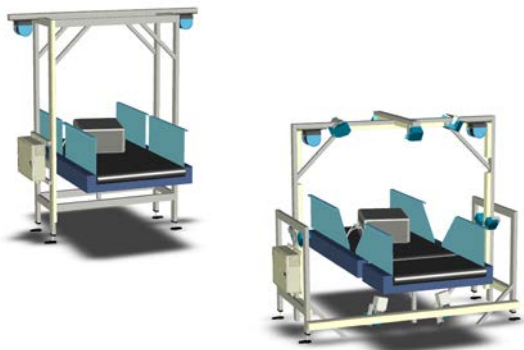
ALIS DIM

ALIS DIM protects baggage handling system components, such as x-ray devices, from oversized bags and optimizes the automated flight make-up by measuring the bag's

- Dimension
- Volume
- Position
- Orientation

Integration into other ALIS systems possible

AIRPORT LUGGAGE IDENTIFICATION SYSTEM – ALIS

Design of redundant systems

Often in airport projects, a redundant scanning system design is requested. All important system components have a duplicate in SICK scanning systems for baggage handling systems. These operating components are run in parallel. If one component fails during machine operation, the other component takes over the task.

This means:
The redundantly design of laser scanners and RFID systems from SICK prevents the failure of one system component from reducing the system's performance.

The following system components are designed with 100% redundancy: system controller, power supply, incremental encoder, trigger photoelectric sensor, CAN bus, host interface and corresponding cabling. The read devices themselves do not feature a redundant design because the entire system already has a redundant design. The failure of a bar code scanner in the system network leads to a performance loss of less than 1 percent, meaning that baggage identification systems from SICK provide the maximum level of redundancy in meeting the requirements in the airport industry.
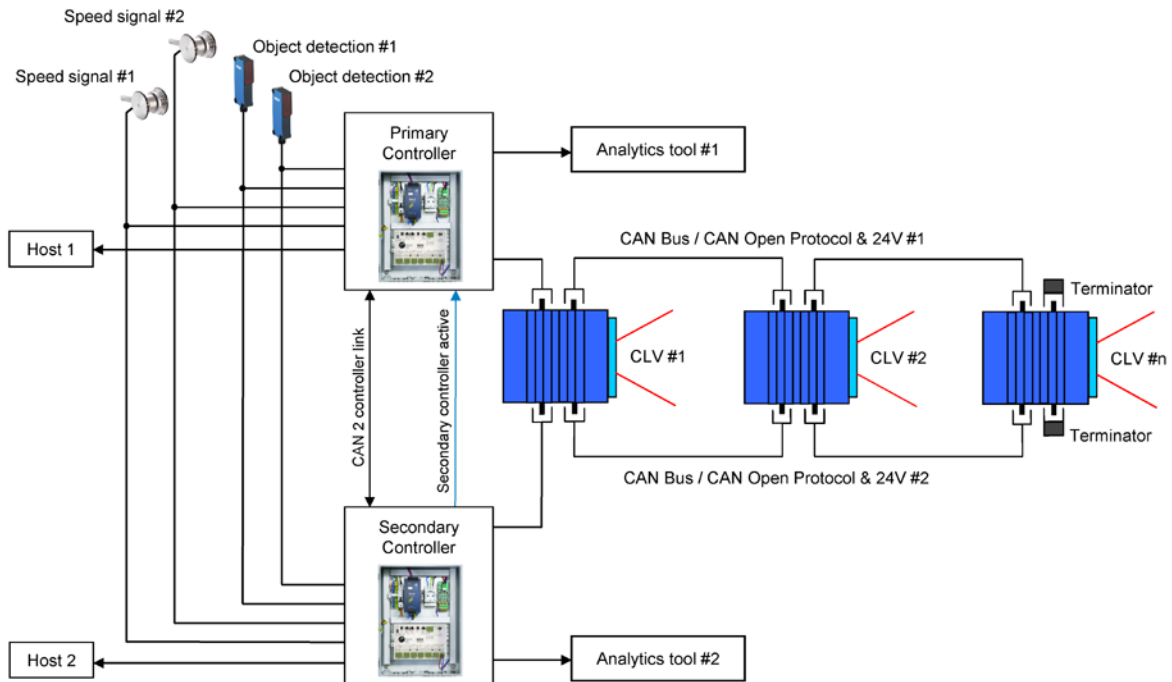
Example: redundant system design of an ALIS laser scanner system

Logic and intelligence behind every solution: MSC

Together with the sensors fitted into a frame, the modular system controller (MSC) forms a portal system for automated reading of IATA baggage labels in a conveying system.

The MSC consists of a logic unit and one or more power supplies in a control cabinet. The sensors are connected to the MSC logic unit via the CAN bus. The MSC power supply feeds supply voltage to the sensors. External sensors are required for the read cycle, for detecting the object distance and for generating an increment signal.

Data from all of the sensors in an ALIS system is compiled and evaluated in the logic unit and then made available to the higher level system. This means that just a single interface is used to communicate with the host computer, even when different technologies are being used (e.g. laser scanners and RFID in one ALIS system).

In addition, the logic unit transfers this information to the Analytics Solution software from SICK to ensure a smooth process workflow for the entire baggage handling system.

Example of a MSC (Modulare System Controller)
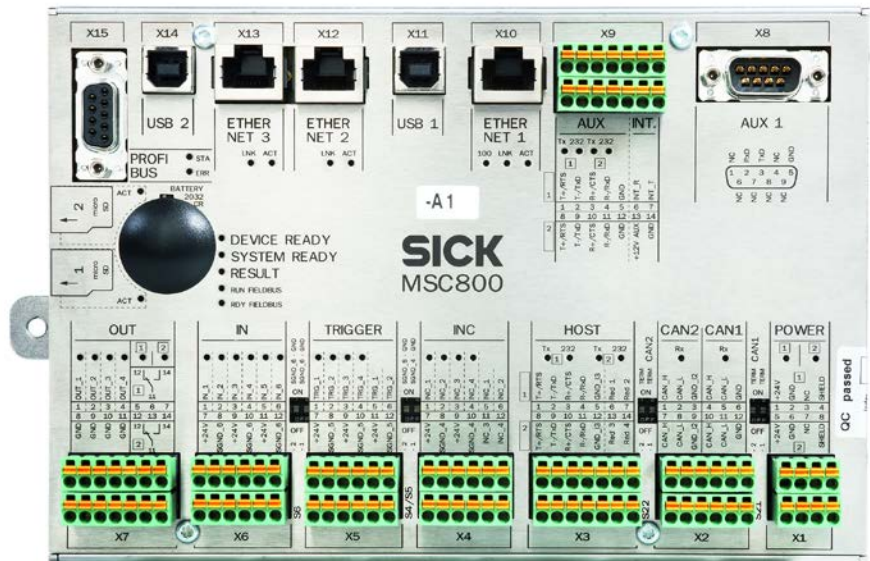
MSC logic unit

VISUALIZATION IN REAL TIME – ANALYTICS SOLUTION

There are hidden treasures buried in your data. We'll show you where.

Analytics Solution is a high-performance, web-enabled client/server system that maximizes transparency across the entire identification and sorting process. This software consolidates all of the information relating to an object—including the bar code, volume, weight, image/ video data—to streamline analysis. What's more, Analytics Solution also monitors all camera, laser scanner, and RFID systems from anywhere in the network. This makes it easy for the operator to check the performance and status, identify errors and implement countermeasures. Analytics Solution is much more advanced than a typical visualization of the process status. The wealth of acquired data stored in the database forms a solid basis for carrying out targeted analyses. By detecting repeated process patterns, anomalies and their relationships, a baggage handling system operator can continually optimize the processes. This makes it possible to create and simulate root cause analyses, trend forecasts and what-if scenarios. Analytics Solution is currently the only tool on the market that allows for these analyses regardless of the reading technology employed.

Analyze your baggage handling system on-site or remotely.
Problematic bags are highlighted.
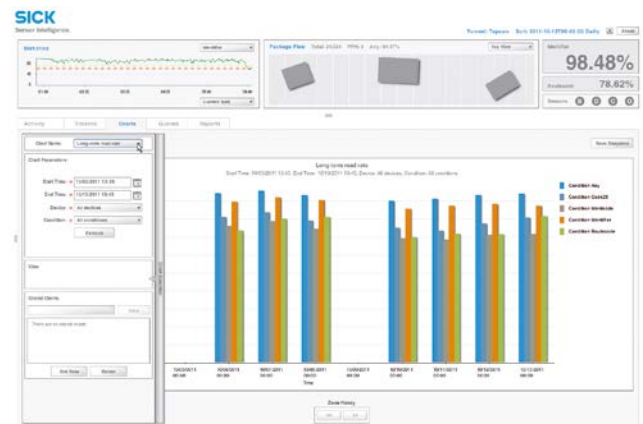
Key characteristics and advantages

- Analysis and visualization of individual systems all the way to complete baggage handling systems in real time
- Integration of all identification systems, regardless of the technology employed (camera, laser, RFID)
- Performance and status check of all systems using all key parameters, from the read rate to bar code quality
- Live view of the baggage flow with display of all data, including the bar code, dimensions, weight and image for each bag

Statistics

- Baggage tracking across all baggage handling systems in the entire network
- Scanning to determine recurring patterns, such as long-term label quality, so that recommendations for process improvements can be given to the baggage handling system operator
- Analysis of what-if scenarios to improve load distribution and utilization of capacity across different time periods and under full load conditions
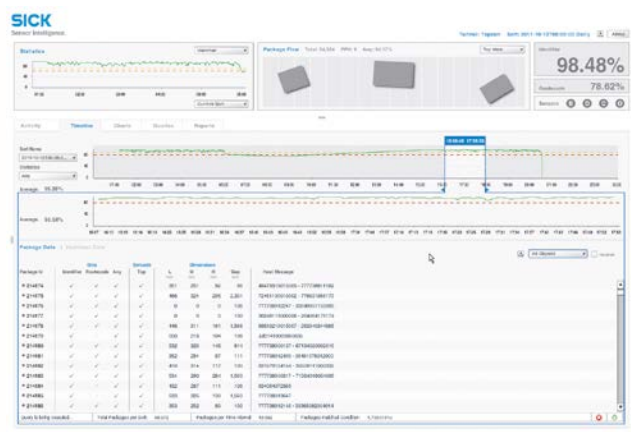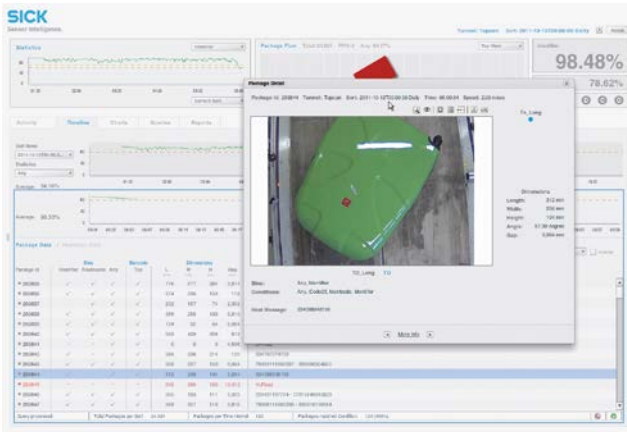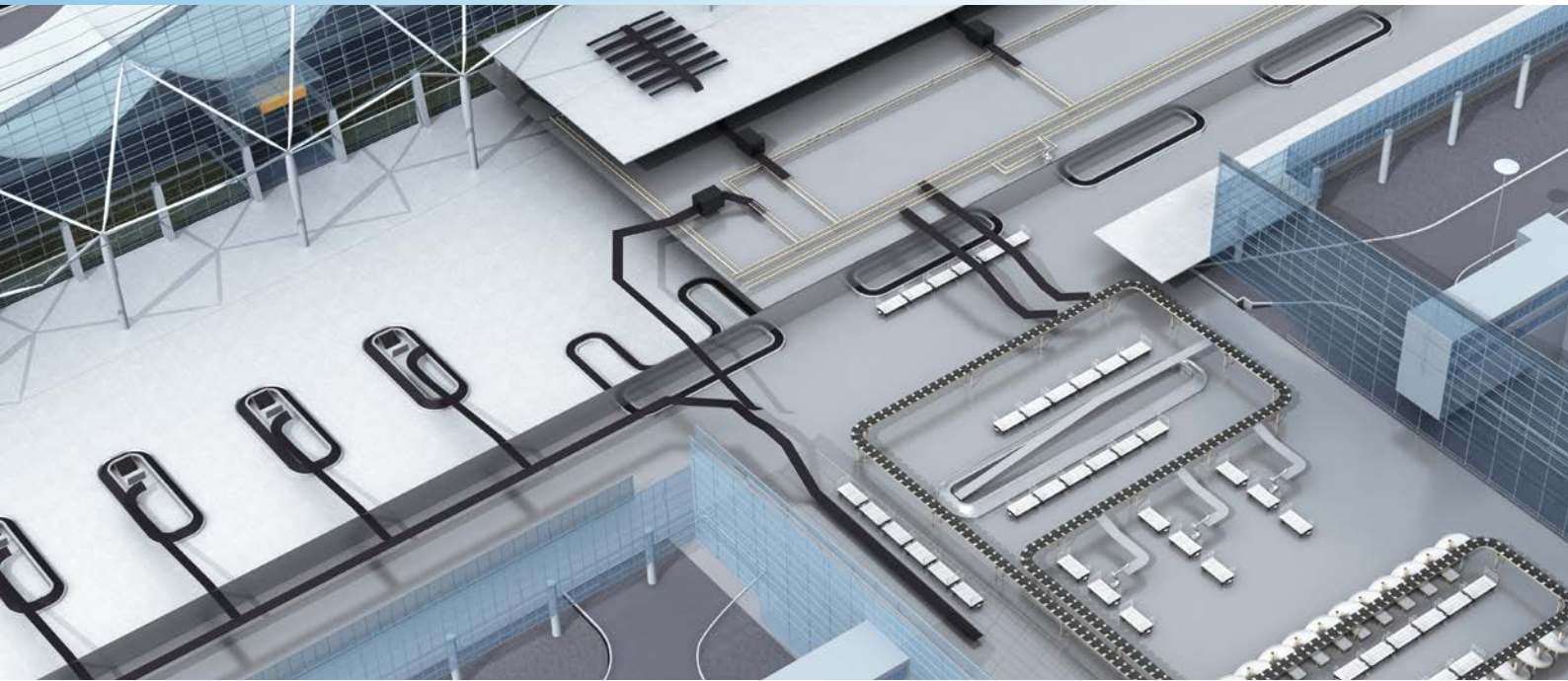
Detailed bag information

- Direct access to all baggage data, including camera image, evaluation of condition and system messages
- Root cause analysis of "no reads" based on standard code criteria and knowledge-based decoding attributes to determine the effects on internal and external factors

Data archiving

- Improved remote diagnostics and maintenance from SICK thanks to access to all relevant data
- Fully integrated archiving solution for all images and associated baggage data
- Effective database search using criteria such as ID, distance, multiple reads or oversize for trend analysis, checking the code quality, etc.

PRODUCT OVERVIEW

Product overview

G6 – At a glance

- PinPoint LED for a bright, precise light spot
- Durable metal threaded inserts
- SICK ASIC technology - the result of decades of experience in photoelectric sensors

- Large, user-friendly potentiometer
- Large, bright indicator LEDs
- IP 67 enclosure rating

Your benefits

- Easy alignment and precise object detection due to a highly visible PinPoint LED
- 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 potentiometers
- Easy to monitor due to large, bright indicator LEDs
- Easy installation with SICK accessories

→ www.mysick.com/en/G6

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

G10 – At a glance

- Maximum optical window surface combined with a small sensor housing
- Sensing range up to 1,200 mm with background suppression performance
- PinPoint LED with bright and precise light spot

- Sensor variants in all major detection principles and with DC or AC/DC power supply
- Transistor output or relay output
- Latest SICK ASIC chip technology
- Rugged sensor housing with metal sleeved mounting holes

Your benefits

- G10 focuses on the essentials the user really needs – without compromising quality, reliability or performance
- One sensor family serves all standard industrial and domestic applications
- Reliable object detection and long scanning ranges thanks to large optics and SICK ASIC technology

- Easy and fast sensor alignment due to small and highly visible PinPoint light spot
- Insensitive to dust and dirt on front lens or reflector
- Clever accessories reduce installation effort and safe time

→ www.mysick.com/en/G10

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

W280L-2 Long Range – At a glance

- WTT280L-2: sensing distance up to 4 m
- WLT280L-2: sensing distance up to 18 m
- Complete background suppression: very small black/white shift, insensitive against reflections from the background (e.g. shiny metal, window, safety vest)

- Visible red class 1 laser light
- Version 1: with 1 x switching output and light/dark switch, version 2: with 2 x switching outputs and light/dark switch
- Disable laser by wire
- Reliable detection also in very fast production processes thanks to the switching frequency of 1000 Hz

Your benefits

- Reliable target detection with difficult target colors, angles and color transitions (black/white shift)
- One sensor with two outputs and two status LEDs improves application flexibility and reduces the number of sensors needed
- Quick and easy comissioning with sensing distance adjustment potentiometers and status LED – one for each output

- Quick and easy alignment with a red class 1 laser light
- Rotatable connector and light/dark switch for mounting and installation flexibility

→ www.mysick.com/en/W280L-2_Long_Range

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

W27-3 – At a glance

- Intense visible red emitter LED with consistent light spot for PinPoint versions
- Long sensing ranges with IR LED achieve up to 2500 mm
- Precise background suppression for detection of multi-colored objects

- Universal DC or DC/AC supply voltage
- Operating temperature: –40 °C – +60 °C
- Flexible sensor settings, monitoring, advanced diagnostics, and visualization thanks to IO-Link

Your benefits

- Quick and easy commissioning due to a highly visible red PinPoint LED
- PinPoint technology can replace laser photoelectric proximity sensors in some applications. No laser safety regulations and a longer operating life due to PinPoint technology
- Resistant to ambient light, optical reflections, and crosstalk from other photoelectric devices

- Less contamination due to high operating reserves, reducing downtime
- Resistant to vibrations, reducing downtime
- Operation in harsh environments with temperatures as low as –40 °C
- IO-Link provides easy data access from the PLC
- Quick and easy configuration

→ www.mysick.com/en/W27-3

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

IM Standard – At a glance

- M8 to M30 sizes available
- Precise operating ranges due to ASIC technology
- Extra tough thanks to high fastener torque and hot melt adhesive filling
- Operating ranges from 1.5 mm to 20 mm
- IP 67 enclosure rating
- Operating temperature from –25° C to +70° C
- DC, AC and AC/DC versions available
- Customer-specific models available

Your benefits

- Reduced machine downtime
- Reduced mechanical damage
- Fewer maintenance costs due to longer service life
- High resistance to shock and vibrations

→ www.mysick.com/en/IM_Standard

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

IQ Standard – At a glance

- Long sensing range up to 60 mm
- DC, AC and AC/DC versions available
- Wide range of housing and mounting options
- Variety of connection options including terminal, cable (flying leads) and connector types
- Customer-specific models and value add options are available

Your benefits

- Increased machine throughput with less machine downtime
- Maintenance cost reduction and reduced mechanical damage due to long sensing range
- Reduced maintenance cost due to longer service life
- Time-saving quick and easy installation

→ www.mysick.com/en/IQ_Standard

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

MLG-2 Prime – At a glance

- High-resolution light grid: Available with beam separation of 5 mm, 10 mm, 25 mm, and 50 mm
- Available with three push-pull switching outputs or two analog outputs
- Display configuration with selected, pre-programmed measuring functions
- Monitoring height up to 3.2 m
- Operating range up to 8.5 m
- Optical synchronization of sender and receiver
- Cloning function via IO-Link
- Temperature range from –30 °C to +55 °C

Your benefits

- Easy concept: Time and cost savings due to simple configuration and quick commissioning
- Modular concept offers the perfect solution every time from a single source
- Two optical synchronization beams increase operational safety
- Simple maintenance without the need for specialist staff thanks to the cloning function with IO-Link
- Direct configuration on the device display for quick commissioning
- IO-Link as an interface for configuration, measured data transfer and diagnostics
- Minimal specialist knowledge required by the user thanks to the intuitive arrangement of the most essential functions
- Extremely high operational safety due to rugged aluminum housing

→ www.mysick.com/en/MLG-2_Prime

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

MLG-2 Pro – At a glance

- High-resolution light grid: Available with beam separation of 2.5 mm (coming soon), 5 mm, 10 mm, 25 mm, and 50 mm
- "High-speed scan" function with triple scanning speed
- "Transparent mode" function for detecting transparent materials
- Switchable to high-resolution evaluation
- Data compression: Run length coding
- Ethernet-based interfaces, including PROFINET, PROFIBUS, and CANopen (coming soon)
- Cloning function via IO-Link or clone plug
- SOPAS configuration software

Your benefits

- "High-speed scan" function offers short response times for safely detecting objects traveling at high speeds
- Modular concept offers the perfect solution every time from a single source
- "High measurement accuracy" function for detecting small objects reliably
- "Transparent mode" function for reliably detecting and measuring transparent objects
- Integrated bus interfaces and accompanying functional modules reduce the time and effort involved in the commissioning process
- SOPAS configuration software with menu-driven wizard saves time during the configuration process
- Simple maintenance without the need for specialist staff thanks to the cloning function with IO-Link
- High reliability due to ambient light immunity

→ www.mysick.com/en/MLG-2_Pro

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

ELG SWITCHING AUTOMATION LIGHT GRIDS
WLG SWITCHING AUTOMATION LIGHT GRIDS

ELG – At a glance

- Up to 128 beams
- Different beam resolutions 10 mm / 30 mm and 60 mm
- High functional reserve (gain) for ranges up to 12 m
- Potentiometer for sensitivity setting
- Ambient light up to 200,000 lx
- Tough, aluminum housing
- PNP/NPN, relay output and a test input
- Optical synchronization

Your benefits

- Insensitive to ambient light when exposed to direct sunlight, strobe lights, and highly reflective objects, eliminating false trips
- High functional reserve (excess gain) ensures operation even if it gets dirty, dusty, or misaligned, reducing maintenance costs
- Efficient and effective way to combine multiple sensors in one housing with one connector
- Simple commissioning thanks to a larger optical aperture angle and manual fine adjustment option
- Optical synchronization enables quick installation and cost-effective connection
- The sensitivity adjustment can be used to detect or ignore translucent materials to reduce production problems

➔ www.mysick.com/en/ELG

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

WLG – At a glance

- The direct output of individual beams for measuring and switching
- Response time 0.6 ms
- Eight visible transmission LEDs
- Eight PNP switching outputs and one alarm output
- Sensitivity can be set via a potentiometer
- Polarizing filter for reflective surfaces

Your benefits

- The WLG's fast response time keeps up with increased conveyor speeds, increasing throughput
- Detects translucent and semi-transparent objects for consistent detection of most objects
- Retro-reflective sensor saves space, installation time and cost
- Polarized retro-reflective light grids are designed to detect difficult reflective targets, such as stretch wrap and other thin films
- Visible red light reduces assembly time
- Multiple output versions indicate detection position and size of the object for closed loop process feedback and inspection

➔ www.mysick.com/en/WLG

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

VLC100 – At a glance

- Sensing range up to 2.8 m
- Resolution 6 mm up to 18 mm
- One device only: integrated sender and receiver
- Intuitive one-button operation
- Automatic alignment
- Synchronization of 2 systems
- Easy teach-in function

Your benefits

- Flexible and individual design of detection area
- Quick commissioning without additional software
- Intuitive, time-saving operation
- No variants: one device concept for all detection areas
- Reduced storage, shipping and commissioning costs
- No expert knowledge required
- High reliability and simple maintenance

➜ www.mysick.com/en/VLC100

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

S300 Mini Standard – At a glance

- Very compact design
- 1 m, 2 m or 3 m protective field range
- 270° scan angle
- 1 field set
- 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 ultracompact 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 safe operation in vertical mode

➜ www.mysick.com/en/S300_Mini_Standard

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

S3000 Standard – At a glance

- 4 m, 5.5 m or 7 m protective field range
- 1 field set
- 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 up to 4 protective fields
- Contour as reference for vertical applications
- Integrated external device monitoring (EDM)

Your benefits

- Largest protective field range in the market increases the variety of application possibilities
- Safety engineering – with no loss of productivity.
- Quick recommissioning via configuration memory
- Expandable modular system, simple cabling and additional functions such as the simultaneous monitoring of up to four protective fields using SICK safety controllers with EFI
- Easy installation, commissioning and maintenance for stationary and mobile applications
- Decades of proven safety technology guarantee maximum reliability and productivity – even under difficult conditions
- Simple alignment and safe operation in vertical mode

→ www.mysick.com/en/S3000_Standard

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

S3000 Professional – At a glance

- 4 m, 5.5 m or 7 m protective field range
- 8 switchable field sets
- Configuration memory integrated in the system plug
- EFI interface for safe SICK device communication
- Incremental encoder inputs for speed-dependent field switching
- Measured data output via RS-422
- Simultaneous monitoring of up to 4 protective fields
- Monitoring of the maximum speed of an AGV

Your benefits

- Largest protective field range in the market increases the variety of application possibilities
- Variety of field sets ensures safety and productivity when protecting vehicles or moving machine parts
- Quick recommissioning via configuration memory
- Expandable modular system, simple cabling and additional functions such as the simultaneous monitoring of up to four protective fields using SICK safety controllers with EFI
- The correct protective field at any speed avoids unnecessary stops.
- Personnel protection and navigation support in one device
- Easy installation, commissioning and maintenance for stationary and mobile applications
- Decades of proven safety technology guarantee maximum reliability and productivity – even under difficult conditions

→ www.mysick.com/en/S3000_Professional

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

M4000 Standard – At a glance

- Type 4 (IEC 61496), SIL3 (IEC 61508), PL e (EN ISO 13849)
- Robust housing with three mounting grooves
- Wide scanning range, up to 70 m
- External device monitoring (EDM), restart interlock and application diagnostic output
- Standardized M12 connectivity
- 7-segment display
- Configuration keys located directly on the device
- Optional integration features: laser alignment aid, LED or AS-i interface

Your benefits

- The wide scanning range allows the device to be customized according to the application
- Robust design with a high level of resistance to environmental changes ensures high machine availability, even under special ambient conditions
- Customized protection field adaption with deflection mirror reduces installation costs
- Customer-friendly interfaces and status display simplify commissioning and maintenance
- Mounting grooves on three housing sides ensure more flexibility during mounting and simplify machine integration
- Fast start-up times due to easy alignment, using the optional laser alignment aid and performing configuration directly on the device
- Reduced downtime through 360° visible LED and diagnostics displays

→ www.mysick.com/en/M4000_Standard

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

M4000 Advanced Curtain – At a glance

- Type 4 (IEC 61496), SIL3 (IEC 61508), PL e (EN ISO 13849)
- Rugged housing with three mounting grooves
- 7-segment display
- Resolution 14 mm or 30 mm, scanning range up to 19 m
- External device monitoring (EDM), restart interlock (RES), application
- diagnostic output (ADO), and SDL interface
- Beam coding for correct system allocation
- Muting: on-site connection and processing in combination with the UE403 muting switching amplifier
- Configuration and diagnostics via PC

Your benefits

- High resolution (14 mm/30 mm) reduces the safety distances for access protection – both with and without muting
- The robust housing and high power reserve enable reliable use, even in harsh ambient conditions
- Mounting grooves on three housing sides ensure more flexibility in the installation and simplify machine integration
- User-friendly interfaces and status indicators facilitate commissioning and maintenance
- On-site connection of the muting signals on the UE403 muting switching amplifier minimizes the time spent laying cables and facilitates commissioning procedures and maintenance
- Reduced downtimes through all-around-visible LED and diagnostics displays as well as configuration memory in the UE403 muting switching amplifier

→ www.mysick.com/en/M4000_Advanced_Curtain

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

L27 – At a glance

- Type 2 (IEC 61496), SIL1 (IEC 61508), PL c (EN ISO 13849), only in conjunction with suitable testing device, e.g., Flexi Classic or Flexi Soft
- Compact size with ranges up to 35 m
- Integrated heating
- Enclosure rating IP 67
- Temperature range from –40 °C to +60 °C

Your benefits

- Easy integration due to small, compact versions with maximum range
- Directly connect to a safety controller – reducing costs
- Flexible device integration makes it possible to set up individual protective fields
- Well suited to withstand extreme ambient conditions such as heat, cold or moisture

→ www.mysick.com/en/L27

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

i110 Lock – At a glance

- Narrow plastic housing
- Metal actuator head
- Rigid or mobile actuators
- Available with M20 X 1.5 cable entry glands or Flexi Loop-compatible M12 plug connector (depending on variant)
- Locked by spring force and magnetic force
- Lock and door monitoring

Your benefits

- Small design simplifies installation and makes it easy to mount directly on the guard door frame
- Flexible electrical connectivity due to three cable entry glands
- Improved diagnostics due to additional contacts for door monitoring
- Simple adjustment due to various actuators that are suitable for any door
- Different switching elements offer the appropriate solution for electrical installation
- Rugged metal housing provides increased machine reliability, even when the guard has a mechanical offset
- Flexi Loop now enables a safe series connection with enhanced diagnostics capabilities and minimal wiring effort.

→ www.mysick.com/en/i110_Lock

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

i110R – At a glance

- Standardized metal housing
- Metal turning lever with plastic roller
- 1 M20 x 1.5 cable entry gland
- Slow-action or snap-action switching element with up to four contacts

Your benefits

- Standard device design provides quick and easy mounting
- High availability due to rugged metal housing
- Different switching elements offer the appropriate solution for electrical installation
- Improved diagnostics due to additional signaling contacts

➜ www.mysick.com/en/i110R

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

i150RP – At a glance

- Rope lengths up to 75 m, with rope break and rope pull function
- Metal housing with integrated emergency stop push button and tension display
- Rotary unlocking lever
- Available with M20 X 1.5 cable entry gland or Flexi Loop compatible M12 plug connector (depending on variant)
- Slow-action switching elements with four contacts

Your benefits

- The emergency stop function can be triggered at any point along the rope
- The long rope length reduces the number of rope pull switches, which saves costs
- Simple adjustment of the rope tension
- Rugged metal housing offers a high level of protection for the rope pull switch
- Integrated emergency stop push-button allows users to trigger the emergency stop function at the end of the rope
- User-friendly systems available with many rope lengths
- Additional contacts provide quick and easy diagnostics
- With Flexi Loop: safe series connection including diagnostics with minimal wiring effort

➜ www.mysick.com/en/i150RP

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

ES21 – At a glance

- Either as surface-mounted version with housing or as 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 unlocking
- Variants with LED ring lighting
- Available with protective collar to prevent inadvertent actuation

Your benefits

- Increased safety due to self-monitoring contacts
- Reduction in accidental faults due to variants with a protective collar
- User-friendly status indicator identified by a colored mark or LED ring around the pushbutton simplifies diagnostics

- Successful down to the last detail: award-winning and appealing design

➜ www.mysick.com/en/ES21

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.
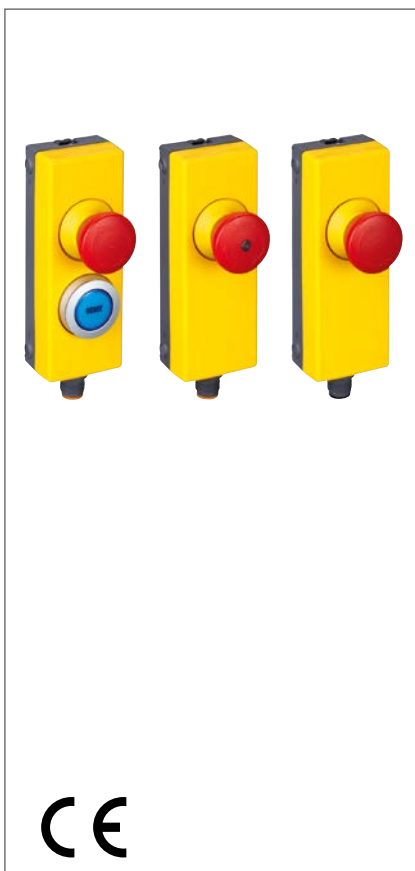
ES11 – At a glance

- Slim plastic housing with quick disconnect mounting clip
- Available as an emergency stop pushbutton or as a combined emergency stop/reset unit

- Emergency stop pushbutton with optional LED illumination
- Illuminated reset pushbutton
- Flexi Loop-compatible M12 plug connector

Your benefits

- Easy installation with quick disconnect mounting clip
- Quick commissioning and easy replacement with an M12 plug connector
- User-friendly status indication

- Flexi Loop now enables a safe series connection with enhanced diagnostics capabilities and minimal wiring effort.

➜ www.mysick.com/en/ES11

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

IN3000 Direct – At a glance

- Response range of up to 15 mm
- LED status indicator
- Up to performance level
  PL d (EN ISO 13849), SILCL2
  (EN 62061), SIL2 (IEC 61508)
- Flexi Loop-compatible M12 plug connector

Your benefits

- Cost-effective solution for applications up to PL d / SILCL2
- Space-saving mounting due to compact housing design
- Fast diagnostics via LED status indicator
- Long service life due to durable and low-maintenance design
- The devices are easy to clean, making them suitable for contaminated areas or environments with strict hygiene standards
- Flexi Loop now enables a safe series connection with enhanced diagnostics capabilities and minimal wiring effort.

➜ www.mysick.com/en/IN3000_Direct

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

Flexi Soft – At a glance

- Expansion modules, Motion Control modules, and gateways for all common fieldbuses
- Configuration data stored in the system plug
- Safe networking of up to 32 Flexi Soft stations
- Integration of sensor cascade
- Multi-language, license-free configuration software: exceptionally simple operation, plausibility check, simulation mode, wiring diagram, parts list, documentation, and data recorder

Your benefits

- Scalable for an efficient and cost-optimized safety application solution
- Cost savings: Flexi Soft offers a modular structure that is in line with your requirements, and thus offers an ideal level of granularity
- Intuitive configuration software featuring comprehensive functions enables continuous monitoring of the configuration
- Rapid verification of the safety application: The configuration software provides documentation and a wiring diagram
- Safety logic is easy to create thanks to ready-made, TÜV-certified function blocks
- The main module's diagnostics interfaces and the configuration storage facility in the system plug enable rapid commissioning, component replacement, and troubleshooting, resulting in minimum downtimes

➜ www.mysick.com/en/Flexi_Soft

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

UE23-2MF – At a glance

- Ideal for the connection of emergency stop pushbuttons and safety switches
- 2 safety outputs, 1 application diagnostic output
- Manual or automatic reset
- External device monitoring (EDM)
- Coded plugs for all slots

Your benefits

- Saves costs thanks to its application-oriented construction
- Fast diagnostics via status information reduces downtime
- Fast, tool-free exchange via coded, plug-in screw-type terminals
- Combines the advantages of classic relays and easy circuitry

→ www.mysick.com/en/UE23-2MF

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

AFS/AFM60 PROFINET – At a glance

- High-resolution 30-bit absolute encoder (18-bit singleturn and 12-bit multiturn)
- Face mount flange, servo flange and blind hollow shaft
- Connection type: 3 x M12 axial plug
- PROFINET-IO-RT interface
- Less than 5 ms data update time
- Round axis functionality
- Alarms, warnings and diagnostics functions for speed, position, temperature, operating time, etc.
- Status display via 5 LEDs

Your benefits

- Increased productivity as a result of intelligent diagnostics functions and rapid data transfer
- Increase in network reliability due to early error detection
- Simple installation with various configuration options
- Flexible, easy setup and high resolutions for various applications with binary, integer and "decimal point" values based on round axis functionality
- Maximum system availability through embedded switch technology
- Compact and cost-efficient design

→ www.mysick.com/en/AFS_AFM60_PROFINET

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

A3M60 PROFIBUS – At a glance

- Robust absolute multiturn encoder with up to 31 bits (14 bits singleturn and 17 bits multiturn)
- Face mount flange, servo flange or blind hollow shaft
- Compact design (<70 mm)
- Integrated PROFIBUS interface with DP V0, V1 and V2 functionality (dependent on type)
- Connection system: 3x M12 connectors
- Protection class up to IP67
- Operating temperature: –30 °C to +80 ▯ (dependent on type)

Your benefits

- High level of system reliability even in extreme environmental conditions
- Lower maintenance costs due to non-contact single and multiturn magnetic scanning
- Space-saving, cost-efficient design ensures easy integration into applications with limited space
- High level of productivity due to quick communication and position calculation
- Immune to contamination and condensation, making it ideal for harsh environmental conditions
- Very good price-performance ratio

→ **www.mysick.com/en/A3M60_PROFIBUS**

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

DFS60 – At a glance

- Compact installation depth
- High resolution up to 16 bits
- Optionally programmable: Output voltage, zero pulse position, zero pulse width and number of pulses
- Connection: Radial or axial cable outlet, M23 or M12 connector, axial or radial
- Electrical interfaces: 5V & 24V TTL/RS-422, 24 V HTL/push pull
- Mechanical interfaces: face mount or servo flange, blind or through hollow shaft
- Remote zero set possible

Your benefits

- Reduced storage costs and downtime due to customer-specific programming
- Variety of different mechanical and electrical interfaces enable the encoder to be optimally adjusted to fit the installation situation
- Excellent concentricity even at high speeds
- High resolution of up to 16 bits ensures precise measurements
- Permanent and safe operation due to a high enclosure rating, temperature resistance and a long bearing lifetime
- Programmability via the PGT-08 programming software and the PGT-10-S display programming tool allow the encoder to be adapted flexibly and quickly according to customer needs
- Programmable zero pulse position simplifies installation

→ **www.mysick.com/en/DFS60**

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

DFV60 measuring wheel encoder – At a glance

- Rotatable spring arm for universal use
- 300 mm wheel circumference with o-ring made from NBR70
- Mounting arm and measurement wheels made from aluminum
- Programmable output voltage, zero pulse position, zero pulse width and number of pulses

- Connection: radial M12 connector outlet or radial/axial cable outlet
- Electrical interfaces: 5V & 24V TTL/RS-422, 24 V HTL/push pull
- Remote zero setting possible

Your benefits

- Universal-use spring arm ensures fast and simple mounting
- The high level of spring tension enables use in harsh environmental conditions
- Reduced storage costs and downtime due to programmability
- Connector-in cable outlet in radial or axial direction enables customer-specific cable solutions
- Excellent concentricity even at high speeds

- Permanent and safe operation due to a high enclosure rating, temperature resistance and a long bearing lifetime
- Programmability via the PGT-08 programming software and the PGT-10-S display programming tool allow the encoder to be adapted flexibly and quickly according to customer needs
- Programmable zero pulse position simplifies installation

→ www.mysick.com/en/DFV60_measuring_wheel_encoder

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

HighLine – At a glance

- Modular measuring system with a wide selection of interfaces/measuring-ring lengths
- Measuring lengths: 2 m ... 50 m
- Very rugged system (dirt scraper, integrated brushes)
- High-quality winding mechanism and wire input

- Interfaces: - TTL/HTL - ANALOG, SSI, PROFIBUS, CANopen, DeviceNet, HIPERFACE®, EtherNET/IP, EtherCAT, PROFINET
- High enclosure rating
- Highly resistant to shock and vibrations
- High resolution possible

Your benefits

- Reliable solution in harsh environments
- Long service life due to rugged industrial housing
- Quick and easy installation without the need for precise linear guidance

- Low integration and maintenance costs
- Customization option reduces storage costs
- Teach-in function enables fast installation

→ www.mysick.com/en/HighLine

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

CLV61x – At a glance

- Optimized reading field for intralogistics applications
- Available with SICK CAN sensor network
- Configuration with SOPAS, the configuration tool for all new SICK products
- Available in different versions (CAN, Fieldbus) for use in almost any application
- Adjustable scanning frequency of up to 1000 scans/second
- Compact design

Your benefits

- A suitable scanner version for any CLV61x application
- An optimized reading field for container identification on a conveyor belt, in combination with the intuitive SOPAS user interface, enables quick and easy integration into your conveyor system
- Compact design enables installation even in applications with limited space
- Less programming time required for the control system, since data can be transmitted to the control system in the desired format
- Depending on the version, the CLV61x bar code scanner can be used as a multiplexer in any SICK CAN sensor network, so additional multiplexers are not required
- The optional configuration cloning module in combination with the quick-release mounting bracket enables very fast replacement time in the event of a fault

➔ www.mysick.com/en/CLV61x

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

CLV62x – At a glance

- CAN, Ethernet TCP/IP, PROFINET, and EtherNet/IP available on board, no additional gateway needed (depending on variant)
- SMART620 code reconstruction technology
- Flexible sorting, filtering, and logical functions
- Advanced, easy-to-use SOPAS configuration software
- High scanning frequency of up to 1,200 Hz
- Small housing
- Advanced remote diagnostics and network monitoring capabilities available over Ethernet
- IP 65 or IP 69K rated (depending on type)

Your benefits

- High read rate on damaged and obscured codes using SMART620 code recognition technology
- Increased scanner intelligence enables sophisticated configuration of logical operations, reducing the control system programming effort. Data is then delivered in the desired format
- No supplementary Ethernet gateway required with Ethernet models – lowers costs
- The CLV62x scanner can be used as a multiplexer in any CAN scanner network from SICK – no supplementary multiplexer necessary
- Real-time decoding at very high speeds
- Small size and simple setup enables fast installation, even in compact machines

➔ www.mysick.com/en/CLV62x

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

CLV65x – At a glance

- Huge depth of field due to auto focus
- Integrated pushbuttons for auto setup and reading diagnostics
- CAN, Ethernet TCP/IP, PROFINET, and EtherNet/IP available on board, no additional gateway needed (depending on variant)
- Enhanced SMART code reconstruction technology
- Flexible sorting, filtering, and logical functions
- Integrated web server provides remote diagnostics and monitoring
- Advanced, easy-to-use SOPAS configuration software
- Integrated LED bar graph

Your benefits

- Economical, as auto focus means no versions or additional light barriers are required for focus adjustment
- Intelligent auto setup and multi-function pushbuttons save time during commissioning
- Easily execute firmware updates using the microSD memory card: no need for a PC
- Enhanced SMART technology reads damaged and partially obscured codes, increasing read rates
- Increased scanner intelligence enables sophisticated configuration of logical operations, reducing the control system programming effort. Data is then delivered in the desired format
- Integrated web server provides remote diagnostics and monitoring, no additional software required

➔ www.mysick.com/en/CLV65x

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

ICR80x – At a glance

- Omni-directional code reading
- Optical alignment
- Extremely compact
- Lightweight
- USB and RS-232 versions
- RoHS and WEEE compliant
- Triggering via button, presentation mode, serial commands or hardware trigger via SICK connection technology

Your benefits

- Fast and reliable 1D and 2D code identification
- Read multiple code types with one device, accommodating future code changes
- Easy and fast installation and configuration
- No moving parts and a large reading field reduce adjustments
- Small size makes it easy to integrate in limited spaces

➔ www.mysick.com/en/ICR80x

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

IDM16x – At a glance

- Identification of all popular 1D codes, with PDF version also stacked codes
- Compact housing with up to IP 65 withstanding 50 drops from 2 m on concrete
- Good read feedback via LED, beeper and vibrator
- Supports all popular corded and cordless interfaces as well as industrial fieldbuses via SICK connectivity
- Tool-free exchange of cable and battery
- Corded and cordless versions available

Your benefits

- Increased productivity and throughput thanks to fast and reliable identification
- Reduced costs thanks to 2-in-1 scan engine: covering standard and high-density codes with a single device
- High reliability thanks to industrial grade and rugged housing
- Intuitive good read feedback for noisy industrial environment via vibration, beeper and LED
- Higher user comfort through ergonomic housing design, well balanced and light weight
- High flexibility and operator mobility with corded and cordless versions
- Quick integration in most corded and cordless PC or industrial networks

→ **www.mysick.com/en/IDM16x**

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

IDM26x – At a glance

- Identification of all current 1D, stacked, and 2D codes
- Reliable, secure, and fast code reading
- Rugged, stable housing with IP 65 enclosure rating
- Supports all common corded and cordless interfaces as well as industrial fieldbuses via SICK connectivity
- Good read feedback via LED, beeper, and vibration
- Decoding algorithms ideal for direct part marked codes (depending on type)

Your benefits

- Only one device for a wide range of different code types
- Fast and accurate identification without manual data entry
- Highly reliable thanks to industrial enclosure rating and rugged housing
- Simple and flexible integration in industrial fieldbus networks using SICK connectors
- Simple, intuitive operation thanks to multiple read confirmation
- Direct expert advice all over the world from the SICK sales and service network
- Low contrast or highly reflective DPM codes are identified reliably

→ **www.mysick.com/en/IDM26x**

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

RFH6xx – At a glance

- 13.56 MHz RFID write/read device for ranges up to 240 mm
- Transponder communication according to ISO/IEC 15693 standard
- Compact, industrial design with integrated antenna
- Embedded protocols allow interfacing with standard industrial fieldbus technologies

- Powerful micro-processor executes internally configurable logic
- Flexible trigger control
- Supports parameter cloning via microSD memory card
- Built-in diagnostics

Your benefits

- Reliable identification ensures maximum throughput
- Adapts to changing needs, ensures investment over the long term
- Simple integration saves installation time
- A wide range of functionality ensures flexible solutions

- Maintenance-free
- Uses same connectivity and configuration software as SICK's bar code scanners and image-based code readers – compatible through standardized 4Dpro platform

→ www.mysick.com/en/RFH6xx

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

RFU63x – At a glance

- UHF RFID read/write unit for industrial applications
- With or without integrated antenna, depending on the type (up to four external antennas can be connected)
- Standard-compliant transponder interface (ISO/IEC 18000-6C/EPC G2C1)

- Supports common industrial data interfaces and fieldbuses
- MicroSD memory card for device parameter cloning
- Several diagnostic and service options available

Your benefits

- Intelligent technology allows stand-alone usage
- Highest reading/writing performance
- Flexible integration in common industrial fieldbuses via 4Dpro compatibility
- Less maintenance time due to an integrated cloning back-up system using microSD memory card

- Easily adapts to application requirements via SOPAS parameter setting tool
- Free usable feedback LED quickly provides read results and diagnostic information directly to the user

→ www.mysick.com/en/RFU63x

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.
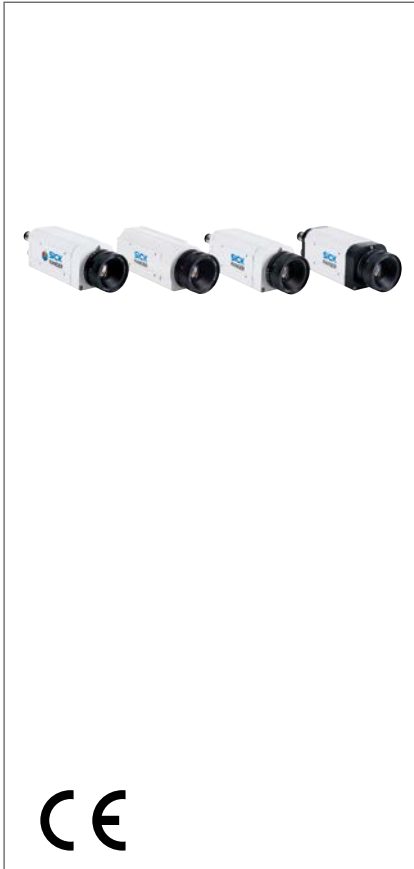
Ranger – At a glance

- High speed 3D at unmatched speed and quality
- MultiScan technology to measure 3D, contrast, color and scatter at the same time
- Sensor resolutions of up to 1,536 pixels in 3D and 3,072 pixels in grayscale and color

- Full flexibility in configuration, working distance, and field of view
- In-machine 3D calibration tool
- Gigabit Ethernet and CameraLink interfaces

Your benefits

- High-speed and high-resolution measurement allow you to increase production throughput and still ensure product quality
- Get accurate size and position measurements in 3D regardless of an object's height or color, ensuring reliable solutions
- Fully flexible field of view in combination with in-machine 3D calibration, provides dimensions in millimeters

- Unique MultiScan technology lets one camera do the job of many, reducing costs for integration, maintenance, and accessories, creating cost-efficient solutions
- The high level of flexibility and versatility of Ranger makes it an ideal choice for the most challenging tasks

➔ www.mysick.com/en/Ranger

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

Dx35 – At a glance

- Maximum reliability, immunity to ambient light, and best price/performance ratio thanks to HDDM™ technology
- Measuring range of 0.05 m to 12 m for natural objects or 0.2 m to 35 m on reflective tape

- Devices with analog and switching output, or just switching
- Infrared or red laser in class 1 or class 2
- Repeatability: 0.5 mm to 5 mm
- Small housing size
- IO-Link

Your benefits

- Precise and reliable measurement regardless of object color extends run time and process quality
- A small size and blind zone make flexible mounting possible when space is limited
- Optimum solution thanks to flexible settings for speed, range and repeatability
- Flexible interface use: 4 mA to 20 mA, 0 V to 10 V, PNP output, NPN output, or IO-Link – making machine integration simple

- Offering easy alignment, optimal performance or inconspicuous measurement, versatile light senders make it an ideal solution for all scenarios
- Low investment costs and high performance levels guarantee a quick return on investment
- IO-Link offers full process control, from commissioning to service
- A wide variety of control options ensures rapid commissioning and fast batch changes

➔ www.mysick.com/en/Dx35

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

Dx50 MID RANGE DISTANCE SENSORS
# OLM200 LINEAR MEASUREMENT SENSORS

Dx50 – At a glance

- HDDM™ technology offers best reliability, immunity to ambient light and price/performance ratio
- Measurement ranges of 10 or 20 m directly onto the object or even 50 m on reflector
- Different performance levels depending on product and laser class chosen

- Different interfaces: switching, analog or serial interface
- Display with intuitive and consistent operating concept
- Robust die-cast zinc metal housing
- Operating temperature from –30 °C to +65 °C

Your benefits

- Wide measurement ranges up to 10, 20 or 50 m in combination with different interfaces allow an easy and fast integration in any production environment
- Highly reliable and precise measurement helps to increase process quality and stability
- High measurement or switching frequencies enable a fast material flow
- Dx50 product family is based on a common platform, offering multiple performance levels, making it easy to accommodate future changes

- Intuitive setup via display or remote teach reduces installation time and costs
- Temperature range from –30 °C to +65 °C allows for outdoor use without additional cooling or heating
- Up to 40 klx ambient light immunity – allows for use in optically challenging environments

➔ www.mysick.com/en/Dx50

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.
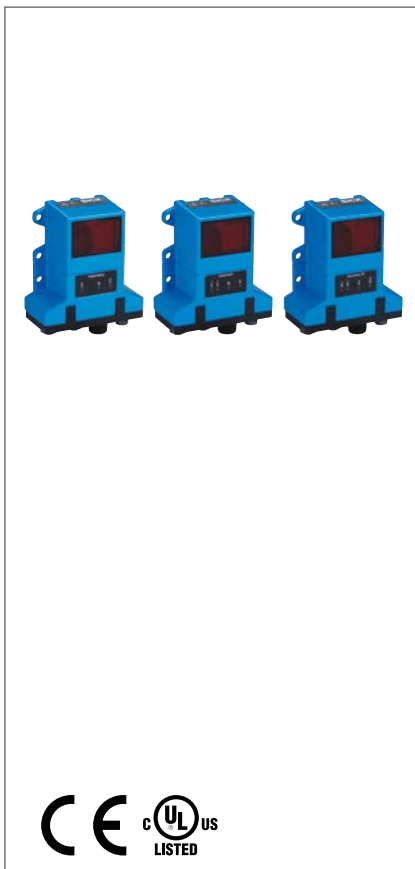
OLM200 – At a glance

- Highly accurate non-contact bar code positioning system
- Travel speed of up to 10 m/s can be achieved
- Wear and maintenance-free thanks to camera technology
- Adjustable resolution as low as 0.1 mm

- Compatible with standard and SPEEDCON™ M12 plug connectors
- Output of position and speed data, as well as pre-failure notifications via fieldbus interfaces
- Large temperature range from –30°C to +60°C

Your benefits

- High travel speed linked to precise positioning increases system efficiency and improves throughput
- Camera-based system with no moving parts increases the sensor's service life, thus reducing lifecycle costs considerably
- Fieldbus interfaces (PROFIBUS, PROFINET, and EtherNet/IP) offer highest flexibility and easiest system integration, hence saving costs for interface converters and protocol adaption

- Status bit for pre-failure notification and preventive maintenance eliminates unpredicted machine downtimes
- The large temperature range from –30°C to +60°C offers reliable use in many applications

➔ www.mysick.com/en/OLM200

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.
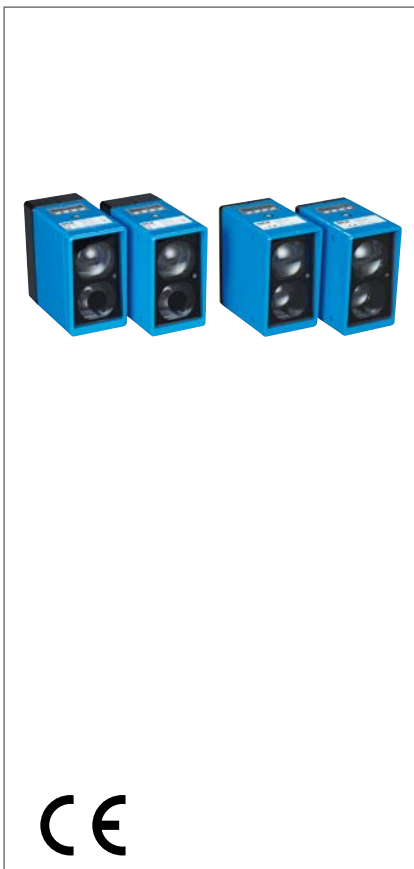
UM30 – At a glance

- Integrated time-of-flight technology detects objects such as glass, liquids and transparent foils, independent of color
- Range up to 8,000 mm
- Display enables fast and flexible sensor adjustment
- Immune to dust, dirt and fog
- Available with combined analog and digital outputs
- Synchronization and multiplexing
- Adjustable sensitivity
- Three operation modes: Distance to Object (DtO), Window (Wnd) or Object between sensor and background (ObSB)

Your benefits

- Easy machine integration due to compact size
- Various setup options ensure flexible adaptation to applications
- Multiplex mode eliminates crosstalk interference for consistent and reliable detection and high measurement reliability
- Synchronization mode allows multiple sensors to work as one large sensor, providing a low-cost solution for area detection
- Display enables setup prior to installation, reducing on-site installation time
- Integrated temperature compensation and time-of-flight technology ensure high measurement accuracy
- ObSB-mode enables detection of any object between the sensor and a taught background

→ www.mysick.com/en/UM30

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

ISD400 – At a glance

- PROFIBUS DP interface for the ISD400 Core
- Protocol-free Fast Ethernet interface for the ISD400 Pro
- Fast Ethernet with a transmission rate of 100 Mbps for the ISD400 Pro
- Connection and operation without opening the device
- Version with heating for use in temperatures as low as –40 °C

Your benefits

- An integrated optical and electronic alignment aid supports fast and cost-effective commissioning
- Wide operating temperature range guarantees high system throughput, even in cold stores
- Integrated PROFIBUS DP repeater for the ISD400 Core for cost-effective and straightforward multi-master configuration
- Output of operating parameters and status information via display and switching output in the ISD400 Pro to prevent unexpected failures

→ www.mysick.com/en/ISD400

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

TiM3xx 2D LASER SCANNERS
LMS1xx 2D LASER SCANNERS

TiM3xx – At a glance

- Configure without a PC using "touch and teach"
- Small, lightweight and economical measurement sensor
- Field evaluation using intelligent algorithms

Your benefits

- Low cost of ownership
- Easily hidden from view due to small dimensions
- Low installation costs and exchange time due to M12 x 12 or D-Sub connector
- Long operation for battery-driven vehicles

- Set parameter interface is accessible while device is mounted
- One of the smallest laser scanners on the market
- Proven industrial design
- Low power consumption (typ. 3 W)

- Preconfigured fields ensure short installation time
- Reduced hardware costs since only one sensor can be used for large anti-collision fields (up to 235 qm)
- No wiring necessary between sender and receiver

➔ www.mysick.com/en/TiM3xx

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

LMS1xx – At a glance

- Efficient and cost-effective 2D laser scanner for measuring ranges of up to 50 m
- Outstanding performance whatever the weather, thanks to multi-echo technology and intelligent algorithms
- Rugged, compact housing with enclosure rating up to IP 67, integrated heating and a temperature range from –40°C and +60°C

- Variants for security applications with relay outputs and VdS certification available
- Measurement data output via Ethernet interface in real time
- Number of switching outputs can be expanded via external CAN modules

Your benefits

- Straightforward integration and mounting due to compact design
- Low purchase and operating costs: One device can monitor areas of over 5,500 m² in size
- Product family with many variants, which also provide solutions for demanding and specialized applications
- Extended filter options significantly reduce measurement errors caused by conditions such as fog, rain or snow

- Optional CAN I/O module increases number of switching outputs for greater application flexibility
- Ethernet interface enables straightforward implementation and remote maintenance

➔ www.mysick.com/en/LMS1xx

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

LMS4xx – At a glance

- The Level Control feature, which is integrated into the sensor, features a gap-free scanning surface that can detect objects in containers, without any impairment from a shadow. Smaller objects, regardless of color, are detected at any place in the container.

- Large dynamic measurement range of 0.7 m to 3 m
- High ambient light immunity
- Rugged design
- High angular resolution
- Ideal for vision applications on pallets

Your benefits

- The integrated Level Control feature replaces a number of sensors and drastically reduces the effort required for wiring and programming
- Reliable detection at high conveyor speeds
- Neither shading nor artificial lighting is necessary

- Simple, flexible installation at positions beyond the robot collision area
- High accuracy detection and positioning measurements in real-time provide rapid data capture

➜ www.mysick.com/en/LMS4xx

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

LMS5xx – At a glance

- Powerful and efficient laser measurement sensor for ranges of up to 80 m
- Outstanding performance in adverse environmental conditions due to multi-echo technology
- Up to IP 67 enclosure rating, built-in heater for outdoor versions, highly compact design

- Low power consumption
- Fast signal processing
- Multiple I/Os
- Synchronization of multiple sensors possible

Your benefits

- Superior performance in a vast range of applications
- Smallest sensor with highest accuracy in its class
- Comprehensive range of lines and models to suit all performance and price requirements
- Fast, reliable object detection in nearly any weather conditions

- Low power consumption reduces total cost of ownership
- Best price/performance ratio in this sensor class on the market
- Fast, easy commissioning due to SOPAS software
- Self-monitoring functions increase system availability

➜ www.mysick.com/en/LMS5xx

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

LD-OEM 2D LASER SCANNERS
LD-LRS 2D LASER SCANNERS

LD-OEM – At a glance

- Long scanning range even when detecting dark surfaces
- Eye-safe, class 1 laser technology
- High angular resolution of up to 0.125 degrees
- High level of immunity to solar radiation and other infrared light sources
- Synchronous monitoring of up to four freely definable fields
- Real-time output of measurement data via Ethernet interface
- Gap-free scanning with uniform laser spot over the full 360-degree angle

Your benefits

- Reliable operation even in harsh ambient conditions
- Reduce ownership costs by using one device type for several different applications
- Reliable detection of small objects at long distances
- Easy adaptation to existing customer-specific systems

➜ www.mysick.com/en/LD-OEM

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

LD-LRS – At a glance

- Long scanning range, even when detecting dark surfaces
- High angular resolution of up to 0.0625 degrees
- High immunity to solar radiation
- Synchronous monitoring of up to four different fields
- Small laser spot diameter even at long distances

Your benefits

- Reliable operation even in harsh ambient conditions
- Low installation costs due to large monitoring areas
- Reliable detection of small objects at long distances
- Easy installation options for excavators and crane systems

➜ www.mysick.com/en/LD-LRS

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

AOS Prime – At a glance

- Enhanced system diagnostics
- Automatic self-test cycles for the entire system
- Safe monitoring of the correct switching behavior and connection cable of the laser scanner
- Easy implementation of additional logic functions
- Easily expandable due to modular concept

Your benefits

- The independent self-testing system ensures secure operation due to excellent diagnostic capabilities
- Reliable, industry-proven laser scanner with enhanced diagnostics for outdoor applications
- Variable monitoring fields make the AOS ideal for a wide range of applications
- Modular concept makes expanding the system simple
- Optional gateways ensure connection to bus systems or remote diagnostics
- Built-in control functions for peripheral devices, even for safety-related signals like emergency stop
- Supports and simplifies individual operating licenses for machinery

➜ www.mysick.com/en/AOS_Prime

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.
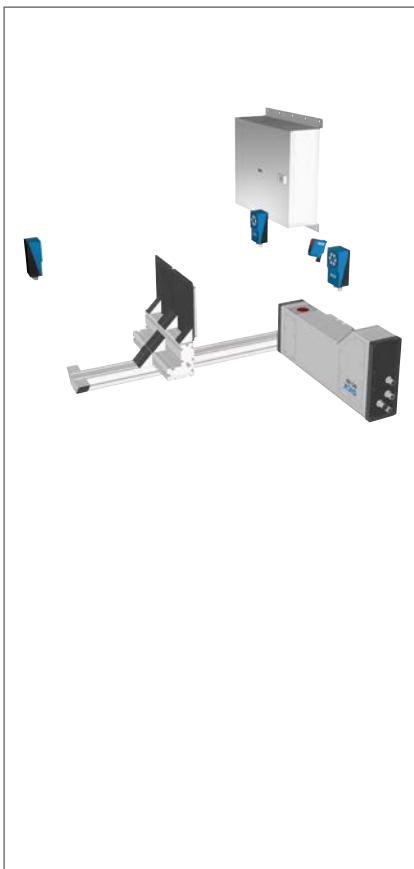
MCL – At a glance

- Vision-based system for sorter inspections
- On-demand inspection of sorter cart components
- Non-intrusive: Inspections take place during sorting activity
- Inspects at full sorter speed
- Resolution of sorter cart height position < 0.1 mm
- Pre-configured software for the inspections
- Maintenance report format: CSV and Excel

Your benefits

- Increase sorter availability: Automated maintenance inspections performed during normal sorting activity, no need to stop sorter for an inspection
- Decrease costly emergency stops: Easy detection of sorter cart problems, Preventive maintenance can take place before major problems occur, Minimize number of uncontrolled production stops
- Decrease missorts: Correct shape of tilt wheels prevent risk of missort due to incorrect off-loading
- Minimize fire hazards in a greasy environment: Correct sorter cart height ensures no sparks are generated due to contact between sorter cart and linear motors, Correct wheel shapes minimize risk of overheated wheels
- Minimize power consumption of sorter: Correct height position of sorter carts ensures minimum power consumption of sorter line
- Easy to generate, on-demand maintenance report

➜ www.mysick.com/en/MCL

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

ALIS – At a glance

- Optional 100 % redundant design
- Suitable for belt conveyors and container-type sorters
- Extremely high read rates
- For T-codes, linear codes and IATA RFID-tags
- Real-time auto focus function
- Uses tried-and-tested high-performance scanners

Your benefits

- Reads labels that are dirty or partially concealed, reducing manual processing
- Cloning modules store the configuration parameters for each scanner and quick release brackets precisely maintain scanner alignment
- High level of operational reliability
- Service-friendly and economical

➔ www.mysick.com/en/ALIS

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

Lector®65x System – At a glance

- Dynamic focus adjustment
- Tracking function with MSC800
- Integration into the network concept of the MSC800
- JPEG image output in real time
- 2 or 4 megapixel resolution along with a high image capture rate of up to 40 Hz
- Highly versatile customer interfaces and protocols

Your benefits

- Dynamic focus and dynamic brightness adjustment provide sharp, uniform images for different object heights, code positioning and transport speeds
- Minimum object gaps and high package throughput in the sorting process via an integrated tracking function
- Modular system design: from low-cost to high performance
- Intelligent decoding algorithms and a high image recording frequency provide excellent read rates, even with
- codes that are difficult to read
- Ability to combine multiple products to create a tailored hybrid solution
- Read adjacent objects with "side-by-side" focusing, which increases the throughput
- Easy installation due to the slim, sophisticated design and partial pre-assembly

➔ www.mysick.com/en/Lector65x_System

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

CE

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

Almost 7,000 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. The people work with pleasure at SICK.

This is demonstrated by the accolades that the company is regularly awarded in the "Great Place to Work" competition. This lively corporate culture holds strong appeal for qualified and skilled persons. In SICK, they are part of a company that ensures an excellent balance between career progression and quality of life.

Innovation for the leading edge

SICK sensor systems simplify and optimize processes and allow for sustainable production. SICK operates at many 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 leaders – 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.

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 innovations to solve these tasks.

➜ **www.sick.com/industries**

SERVICES FOR MACHINES AND SYSTEMS:
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 plant walk-through 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. LifeTime Services range from product-independent consulting to traditional product services and are characterized by extensive industry expertise and more than 60 years of experience.

➔ www.sick.com/service

Consulting and design

- Plant walk-through
- Risk assessment
- Safety concept
- Safety software and hardware design
- Validation of functional safety
- CE-conformance check

Product and system support

- Installation
- Commissioning
- Start-up support
- Calibrations
- Telephone support
- 24-hour helpline
- SICK Remote Service
- Troubleshooting on site
- Repairs
- Exchange units
- Extended warranty

Verification and optimization

- Inspection
- Stop time measurement
- Machine safety inspection
- Electrical equipment check
- Accident investigation
- Initial verification
- Performance check
- Maintenance

Upgrade and retrofits

- Upgrade services

Training and education

- Training
- Seminars
- Web training

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
- Cylindrical photoelectric sensors
- Fiber-optic sensors and fibers
- MultiTask photoelectric sensors

Proximity sensors

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

Magnetic cylinder sensors

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

Registration sensors

- Contrast sensors
- Markless sensors
- Color sensors
- Luminescence sensors
- Fork sensors
- Array sensors
- Register sensors
- Glare sensors

Automation light grids

- Measuring automation light grids
- Switching automation light grids

Opto-electronic protective devices

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

Safety switches

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

sens:Control – safe control solutions

- Safe sensor cascade
- Safety controllers
- Safety relays

Gas analyzers

- Gas transmitters
- In-situ gas analyzers
- Extractive gas analyzers

Dust measuring devices

- Scattered light dust measuring devices
- Transmittance dust measuring devices
- Gravimetric dust measuring devices

Analyzer solutions

- CEMS solutions
- Process solutions

Traffic sensors

- Tunnel sensors
- Overheight detectors
- Visual range measuring devices

Ultrasonic gas flow measuring devices

- Volume flow measuring devices
- Mass flow measuring devices
- Flow velocity measuring devices
- Gas flow meters

Identification solutions

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

Vision

- 2D vision
- 3D vision

Distance sensors

- Short range distance sensors (Displacement)
- Mid range distance sensors
- Long range distance sensors
- Linear measurement sensors
- Ultrasonic sensors
- Optical data transmission
- Position finders

Detection and ranging solutions

- 2D laser scanners
- 3D laser scanners

- Radar sensors

Motor feedback systems

- Motor feedback system rotary HIPERFACE®
- Motor feedback system rotary HIPERFACE DSL®
- Motor feedback system rotary incremental

- Motor feedback system rotativ incremental with commutation
- Motor feedback system linear HIPERFACE®

Encoders

- Absolute encoders
- Incremental encoders
- Linear encoders

- Wire draw encoders
- Safety encoders

Fluid sensors

- Level sensors
- Pressure sensors

- Flow sensors
- Temperature sensors

System solutions

- Customized analyzer systems
- Collision awareness systems
- Robot guidance systems
- Object detection systems
- Profiling systems

- Quality control systems
- Security systems
- Track and trace systems
- Functional safety systems

EASY INTEGRATION INTO YOUR AUTOMATION WORLD

Sensor integration with SICK is easy and fast for you: Our intelligent sensor solutions and safety controllers provide different integration technologies which 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 reliability with a continuous diagnostic concept.

PLC and engineering tool integration

Function Blocks	
IO-Link devices Level sensors Pressure sensors Presence detection sensors Distance sensors	**Bar code scanners, Image-based code readers** 1D und 2D
Vision sensors Inspector	**RFID** RFH6xx RFU62x, RFU63x
Absolute encoders AFS60/AFM60	**Laser volume flowmeter** Bulkscan® LMS511

Function blocks

The SICK function blocks quickly allow you to establish acyclic communication to our sensors within your PLC program. Additionally, complex and variable process data can be parsed into their individual information contents without programmer effort.

DTM (Device Type Manager)

FDT/DTM is a cross-manufacturer concept, with which configuration and diagnosis of devices from different manufacturers can be done with just one engineering tool.

TCI (Tool Calling Interface)

The Tool Calling Interface (TCI) makes it possible to call up a tool used to carry out parameterization and diagnosis of a field device via the existing communication infrastructure.

HMI integration

OPC server

OPC technology is used to exchange data between field devices and Windows-based applications. The SOPAS OPC server from SICK follows the OPC DA specification and thus can be used on Windows operating systems.

Web server

The SOPAS web server from SICK can be used everywhere, where a web browser is available. The web server is distinguished by its ability to both carry out pure data exchange and also to provide visualizations for the devices, which is a big advantage, particularly for vision sensors.

Fieldbus Communication Interface

ETHERNET POWERLINK · HIPERFACE® by SICK · HIPERFACE DSL · SSI · PROFIBUS · PROFINET · DeviceNet · EtherNet/IP · CANopen® · IO-Link · EtherCAT® · PROFIsafe

Modbus®TCP

Our fieldbus and network solutions allow SICK sensors and safety controllers to be connected to all conventional automation systems. This guarantees an easy and fast access to the available data.

➜ www.sick.com/industrial-communication

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☑ Easily repeat previous orders.

☑ Conveniently export quotations and orders to work with your systems.

SERVICES FOR MACHINES AND SYSTEMS: SICK LifeTime Services

Our comprehensive and versatile LifeTime Services are the perfect addition to the comprehensive range of products from SICK. The services range from product-independent consulting to traditional product services.
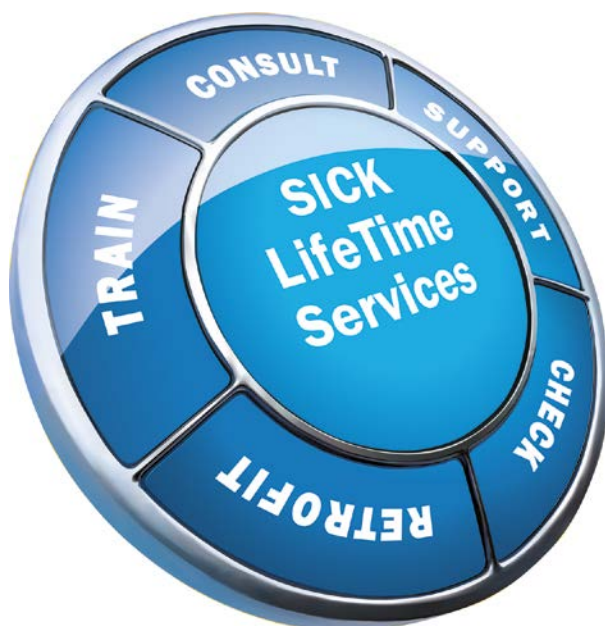
Consulting and design
Safe and professional

Product and system support
Reliable, fast and on-site

Verification and optimization
Safe and regularly inspected

Upgrade and retrofits
Easy, safe and economical

Training and education
Practical, focused and professional

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With almost 7,000 employees and over 50 subsidiaries and equity investments as well as numerous representative offices worldwide, we are always close to our customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in various industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

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

For us, that is "Sensor Intelligence."

Worldwide presence:

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and additional representatives ➜ **www.sick.com**

SICK
Sensor Intelligence.

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