RFGS Pro

THE COMPLETE RFID OBJECT IDENTIFICATION SYSTEM FOR LOGISTICS APPLICATIONS

Track and trace systems

SICK
Sensor Intelligence.

AUTOMATICALLY OPTIMIZE LOGISTICS PROCESSES: WITH THE RFGS PRO FROM SICK

SICK offers a wide range of automatic identification solutions. And now you can enjoy even more flexibility and intelligence thanks to the addition of the RFGS Pro (Radio Frequency Gate System) track and trace system with its RFID technology. The system is based on proven components and rugged standard mechan-ics and can be commissioned easily and cost-effetively. ID*pro* from SICK makes the RFGS Pro easy to integrate into any application – including in combination with other automatic identification technologies.
RFGS Pro: another step toward the automation of your logistics processes.

RFID: Seamless identification

The RFGS Pro features radio-based RFID technology, which offers major advantages when it comes to fully automated material flow monitoring and control:

- External factors such as frost, abrasion, or dirt cannot interfere with the identification process.
- The identification process can also be performed away from the conveying line without any need for visual contact with the RFID tag.

- Individual objects are detected even when they are in a pile, saving time and money
- Material flow identification does not get interrupted at gate transition points.
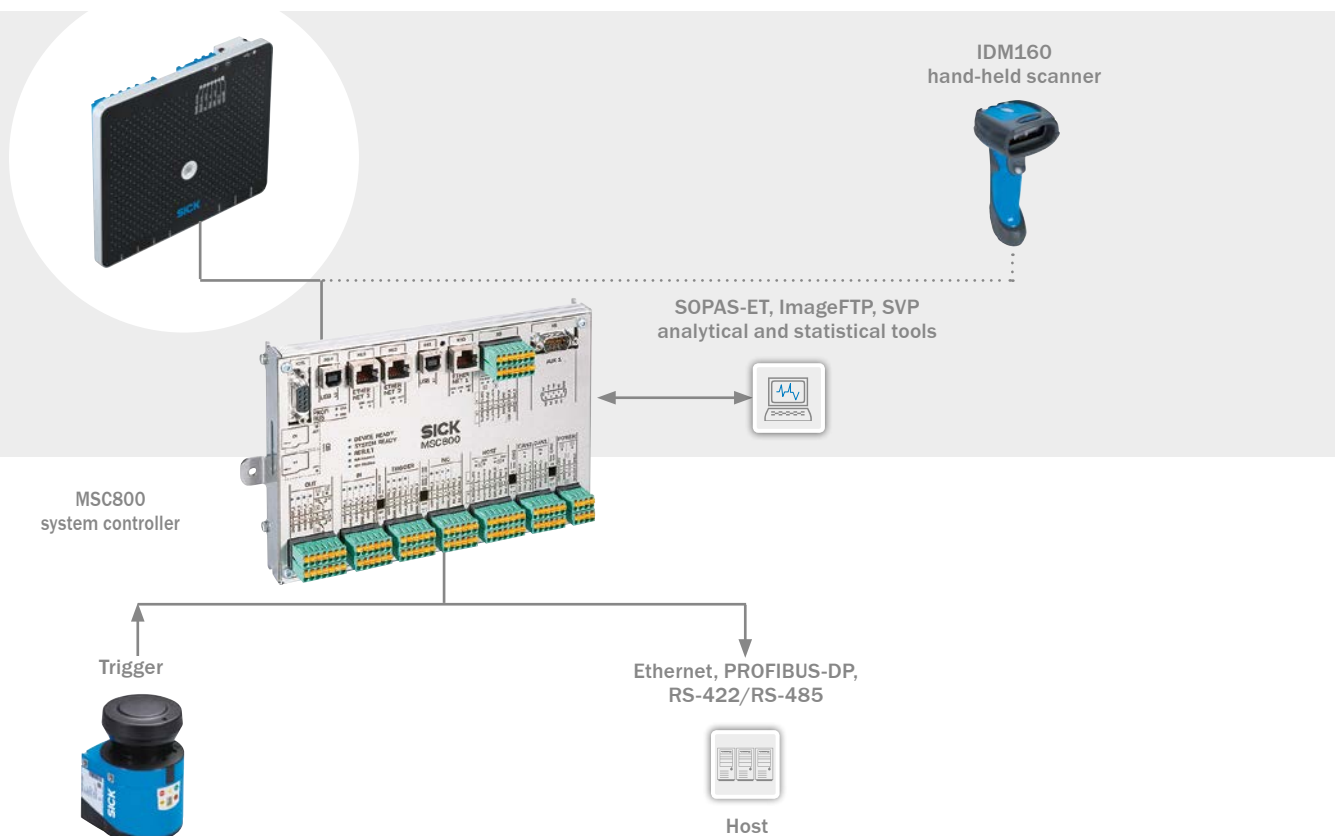- Information can be changed or overwritten on the RFID tag remotely – without a connection to a central database.

Analytical and statistical tools

Rugged design

Connection to host system

Easy installation

Direction detection

Distinguishes between pallet/person

Tag filtering

RFGS Pro:
INNOVATION BUILT ON
PROVEN COMPONENTS

To create its RFGS Pro track and trace system, SICK has combined proven components and sensors that have been used time and time again – resulting in an innovative complete solution:

- MCS800 system controller: With its integrated assignment algorithm, the controller hardware is highly reliable.
- RFU630 read/write device for RFID-based identification
- LMS1xx 2D laser scanner for detecting the object, speed, and direction. The antenna field is only activated by the triggering process if there is an object at the relevant gate.

Because of the way these components are combined, the RFID tag can be uniquely assigned at the gate – remotely and at the very point in the process where intelligent identification is required.

All customer-specific parameters are saved on an SD card in each sensor for quick and easy device replacement.

IDM160
hand-held scanner

SOPAS-ET, ImageFTP, SVP
analytical and statistical tools

MSC800
system controller

Trigger

Ethernet, PROFIBUS-DP,
RS-422/RS-485

Host

RFGS Pro:
INTEGRATED SENSOR
INTELLIGENCE

The RFGS Pro offers all the benefits you would expect from a reliable solution for identifying incoming and outgoing goods. The intelligent assignment algorithm filters the RFID tags read by the system: Goods in the vicinity of the gate that are not meant to be assigned are filtered out. This allows precise identification of the actual incoming or outgoing goods – including direction detection.

The differences at a glance

	RFID gate without sensor intelligence	RFID gate with sensor intelligence
Direction detection	-	✔
Distinguishes between static and dynamic tags	-	✔
Distinguishes between pallet and person	-	✔
Integrated service, monitoring, and diagnostic tools	-	✔
Assigns RFID tags that are of relevance to (inbound) delivery	-	✔
Reads all standard RFID tags	✔	✔
Object-based output	✔, 1 object gets read 1 x, no unnecessary multiple reading	
High reading rate	✔	✔
Installation wizard		✔, results in easy commissioning
Can be connected to an existing ERP system		Easy to connect thanks to configurable interfaces
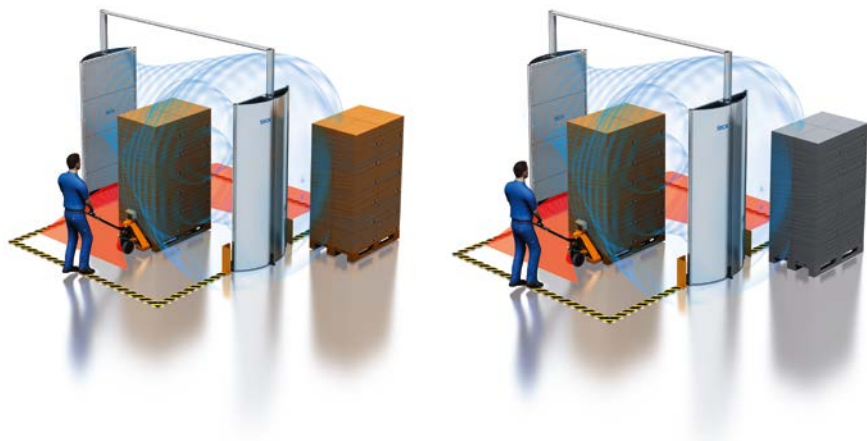
OPTIMIZATION AT EXACTLY THE RIGHT POINT: THE RFGS PRO IN ACTION

The RFGS Pro track and trace system from SICK is ideal for optimizing material flow: when monitoring incoming and outgoing goods or when detecting empty totes and load carriers.

And, in manufacturing logistics it can't be beat: during batch checking and when monitoring the material flow between warehouses and various company locations.

Fully automated monitoring within the material flow: incoming and outgoing goods

Within the context of manufacturing logistics, workers load goods onto trucks or unload them at loading bays and transfer points. With RFGS Pro, RFID tags can be read fully automatically without any interruptions – regardless of whether the goods are located inside boxes, on pallets, or inside totes.

Greater transparency and fewer losses during tote management

Whether they are used in the retail trade, for fresh produce, or in manufacturing logistics, the empty totes have to be transported back to the supplier once the goods have been removed from them. The RFGS Pro improves transparency during tote management. It enables you to set up a fully automated process that provides a precise overview of the totes that have been delivered and returned. In this way, the high costs incurred by the potential loss of these totes can be reduced.

THE COMPLETE RFID OBJECT IDENTIFICATION SYSTEM FOR LOGISTICS APPLICATIONS

Product description

The RFGS Pro (Radio Frequency Gate System) track and trace system is ideal for optimizing processes in the supply chain process. It is a flexible, intelligent solution specifically for goods receipt and goods issue in logistics. The system consists of interrogators for RFID identification, a central controller with an integrated allocation algorithm, and a 2D laser scanner for object, speed and direction detection. RFID tags can be uniquely and remotely assigned at the gate. In addition, "false-positive reads" are suppressed without the need for any expensive licensed software. The industrial, rugged standard mechanics and installation wizards integrated in SOPAS software from SICK make simple, cost-effective commissioning on site possible.

At a glance

- Remotely assigns tags to objects and detects the direction of the moving object
- Remotely distinguishes between moving and static tags and filters them for the host message
- Distinguishes between pallet and person
- Stand-alone gate with integrated controller
- Central interface for all sensors via CAN and TCP/IP network
- Integrated service, monitoring and diagnostic tools
- Parameter cloning of sensors via SD card

Your benefits

- Reliable pre-filtering of process-relevant tags reduces on-site adjustment costs
- Suppression of "false-positive reads" without using expensive licensed software saves money
- Simple ERP connectivity without any additional licensed software saves time and money
- High-quality sensors provide reliable detection capabilities
- Simple on-site commissioning via SOPAS software saves time
- Simple integration with SICK's ID*pro* makes it easy to add bar code scanners to an application
- Durable mechanical design allows flexible adjustment of antennas for easy on-site adaptation, which saves time and money

Additional information

➜ www.mysick.com/en/RFGS_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.

Detailed technical data

The exact device specifications and performance data of the product may deviate from the information provided here, and depend on the application in which the product is being used and the relevant customer specifications.

General notes

Items supplied	1 x MSC800-1100 1 x RFU630-04xx 1 x LMS100-1000 4 x triple patch antenna Brackets, conection cables, frame and shielding Depending on application
Minimum detectable object	85 mm

Features

Frequency band	865 MHz ... 868 MHz (ETSI), 902 MHz ... 928 MHz (FCC), others on request
Light source	Infrared, Laser diode
MTBF	> 80.000 h
MTTR (Mean time to repair)	< 10 min, per device
Applications	Loading gate Receiving area Outgoing area Manual loading
Field of application	Indoor

Performance

Number of codes per reading interval	Depending on application
RFID standard	EPCglobal UHF Class 1 Generation 2, ISO/IEC 18000-6 C
Number of tags per second	Max. 300 tags

Interfaces

Connection types	3 x serial 2 x Ethernet 1 x PROFIBUS DP 13 x digital input, opto isolated, reverese polarity protected 4 x digital output, PNP +24 V, 30 mA 2 x floating output
Data transmission rate	Serial: 300 bit/s ... 57,600 bit/s Ethernet: 10 MBit/s / 100 MBit/s PROFIBUS DP: 12 MBaud
Reading pulse	LMS100-1000 / TiM320-1131000
Data protocol	Ethernet: FTP, TCP/IP, Server/Client PROFIBUS DP: PROFIBUS DP
Output data	XML ASCII Customer protocol
Function	Serial: data output, parameter set-up, analyses Ethernet: data output, parameter set-up, analyses
Configuration interface	Ethernet Serial SOPAS Engineering Tool

Mechanics/electronics

|	
Dimensions system (L x W x H)	1,200 mm x 3,000 mm x 1,900 mm (width customized up to 4,500 mm possible, maximal 4,500 mm, height up to 3,000 mm possible)
Housing dimensions (W x D x H)	1,200 mm x 220 mm x 1,900 mm (height up to 2,500 mm possible)
Enclosure rating	IP 65 [1] IP 54 [1]
Electrical connection	Serial: Sub-D, 9-pin Ethernet: RJ45 PROFIBUS DP: Sub-D, 9-pin
Supply voltage	(100 V AC ... 264 V AC)
Mains frequency	50 Hz ... 60 Hz
Power consumption	50 W, without load
Housing	2 half shelf shielding with aluminium frame
Housing material	Stainless steel, Aluminum
Total weight	145 kg, at 2500 mm height 125 kg, at 1900 mm height
Weight, half-shell	75 kg, at 2500 mm height, with sensors 60 kg, at 2500 mm height, without sensors 65 kg, at 1900 mm height, with sensors 50 kg, at 1900 mm height, without sensors
Housing color	Metallic

[1] Depending on antennas.

Ambient data

Ambient temperature operation	0 °C ... +40 °C
Ambient storage temperature	−20 °C ... +70 °C
Permissible relative humidity	90 %, non-condensing
Ambient light safety	40,000 lx
Radio approval	(ETSI EN 302 208-2 V1.4.1, FCC Part 15.247) [1]

[1] Others on request.

Ordering information

Application	Model name	Part no.
Loading gate, Receiving area, outgoing area, manual loading	RFGS Pro	On request

Dimensional drawing (Dimensions in mm (inch))
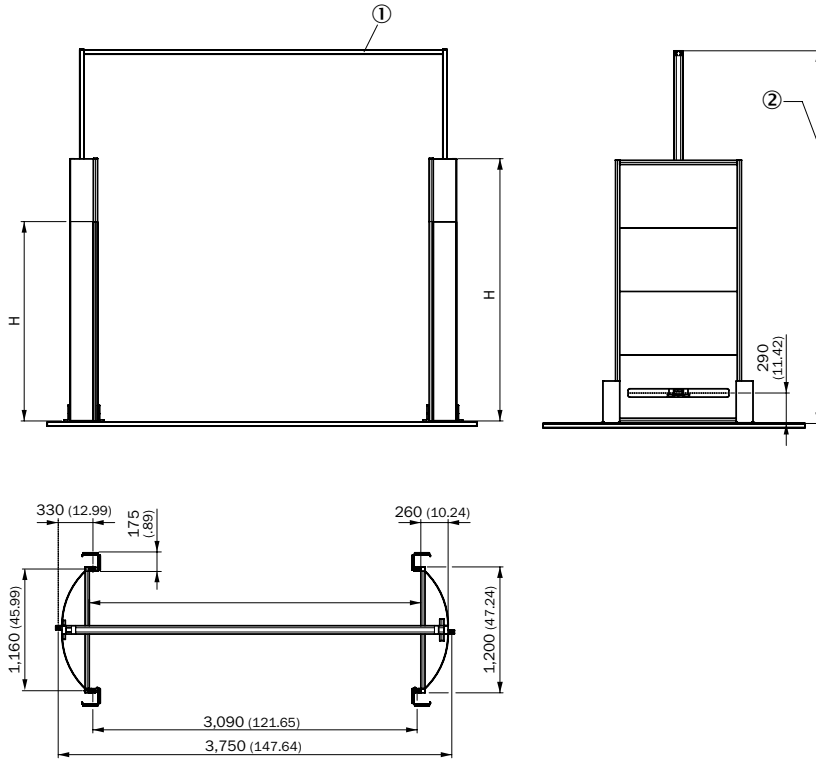
① Width customized, max. 4.0 m
② Height customized, max. 3.5 m

Accessories

Mounting systems

Device protection (mechanical)

Figure	Description	Type	Part no.
	Face plate 1.180 mm x 13 mm x 604 mm (L x W x H)	Face plate standard	4075284
	Face plate 1.180 mm x 13 mm x 604 mm (L x W x H) with cutting for 2D laser scanners	Face plate for trigger	4075285
	L-shape, steel, yellow, powder-coated, 150 mm x 150 mm x 400 mm (L x W x H)	Bumper	On request

Connection systems

Plug connectors and cables

- **Signal type/application:** Ethernet

Figure	Connection type head A	Connection type head B	Cable	Cable length	Type	Part no.
	Male connector, M12, 4-pin, straight, D-coded	Male connector, RJ45, 8-pin, straight	4-pole, AWG26	2 m	SSL-2J04-G02ME	6034414
				5 m	Connection cable (male connector-male connector)	6034415
				10 m	SSL-2J04-G10ME	6030928
			Drag chain use, AWG26	3 m	SSL-2J04-G03ME	6029630

Other accessories

Signal and display elements

Figure	Brief description	Type	Part no.
	Tower light red, yellow, green, 24 V, incl. mounting and 10 m connection cable	Tower light	2069155

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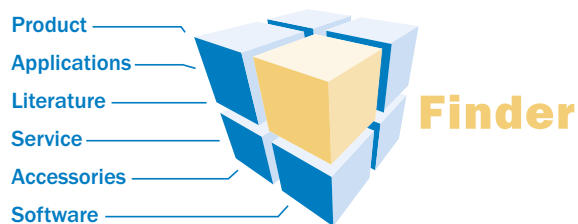
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Product Finder: We can help you to quickly target the product that best matches your application.

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SICK LifeTime Services

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RETROFIT
TRAIN
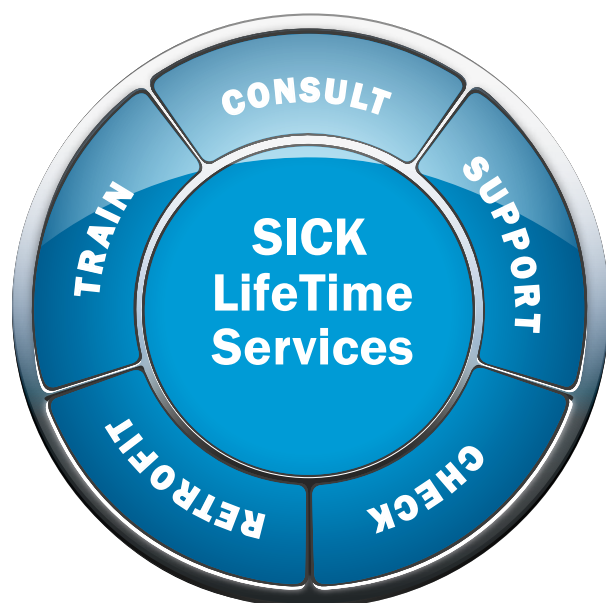
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Checks and recommendations for increased availability

Upgrade & Retrofits
Uncovers new potential for machines and systems

Training & Education
Employee qualification for increased competitiveness

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for factory, logistics, and process automation. With more than 6,000 employees and over 40 subsidiaries 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, Belgium/Luxembourg, Brasil, Česká republika, Canada, China, Danmark, Deutschland, España, France, Great Britain, India, Israel, Italia, Japan, Magyarország, México, Nederland, Norge, Österreich, Polska, România, Russia, Schweiz, Singapore, Slovenija, South Africa, South Korea, Suomi, Sverige, Taiwan, Türkiye, United Arab Emirates, USA.

Please find detailed addresses and additional representatives and agencies in all major industrial nations at: **www.sick.com**

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