



RFMS Pro

FLEXIBLE DESIGN AND HIGH THROUGHPUT IN A SINGLE SYSTEM

Track and trace systems

SICK
Sensor Intelligence.

CONTINUOUS HIGH THROUGHPUT: WITH RFMS Pro FROM SICK

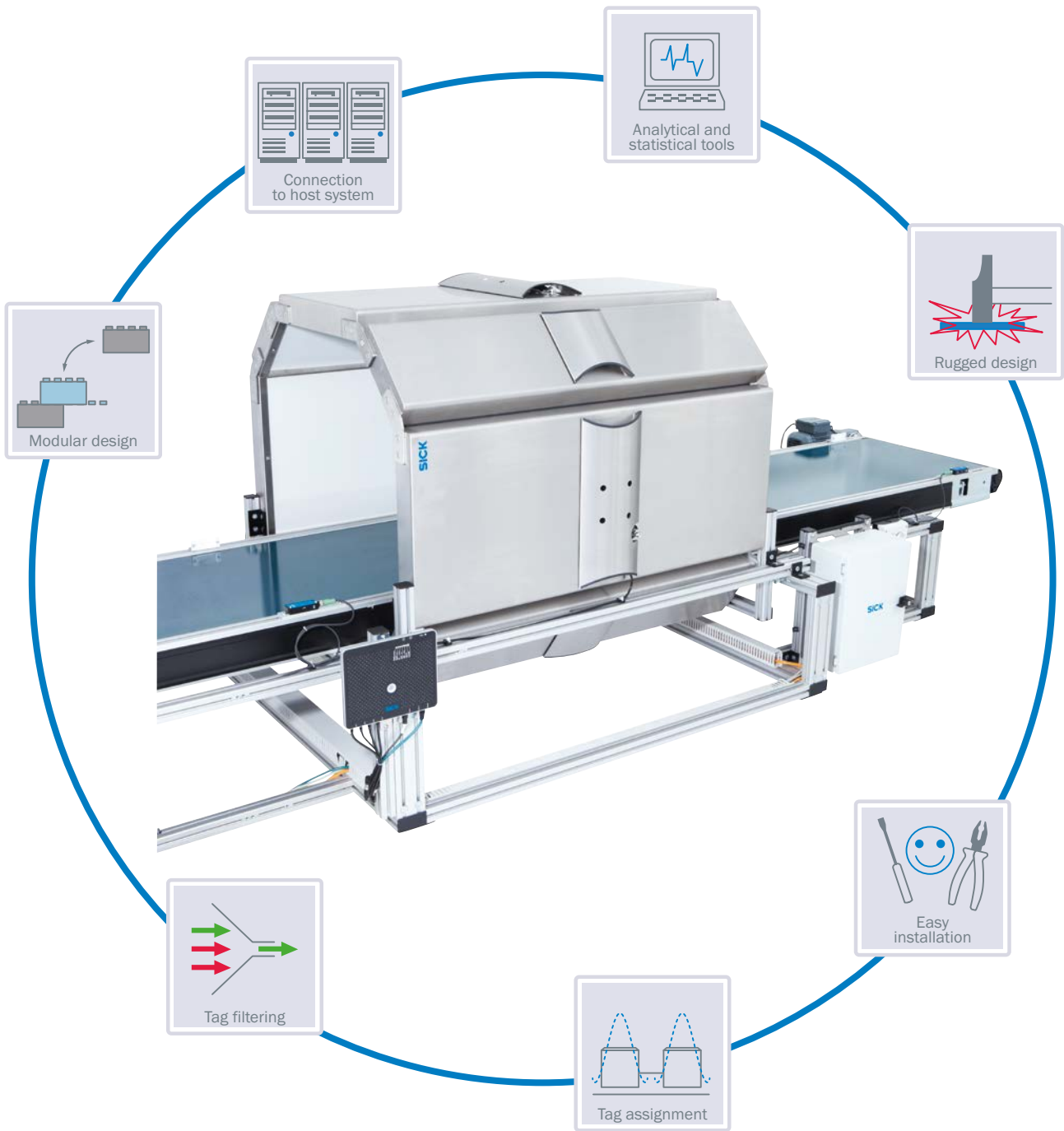
SICK's Radio Frequency Modular System (RFMS Pro) is a decisive contribution towards process optimization and transparency in the delivery chain – both today and in the future. The RFMS Pro demonstrates its strengths for goods-in and picking in conveying lines: the innovative modular concept offers top flexibility in design and commissioning. The integrated installation wizard supports simple, cost-effective on-site commissioning. The intelligent assignment algorithm allows objects to be placed closely next to other on the belts.

The IDpro from SICK integrates the RFMS Pro easily in any application – even in combination with other technologies for automatic identification (laser scanner or camera, for example). In addition, a solution to measure the volume can be integrated to output the dimension of the particular object. The advantage: all required data are output via one unit and one interface.

RFID: identification solutions without gaps

The radio-based RFID technology of the RFMS Pro brings cutting-edge benefits for fully automated monitoring and control of the material flow:

- External influences (like frost, abrasion or soiling) do not adversely affect the identification process
- Identification takes place directly without visual contact to the RFID tag
- Individual items can be identified even when in bulk, which saves time and costs.
- An intelligent assignment algorithm then assigns the tags to the corresponding object in cases where several objects are in the scanning area
- Final RFID tag assignment is completed even in start-stop operation: e.g., when the conveying line restarts after a stop
- Information can be modified decentralized on the RFID tag or overwritten – without having to integrate a central database



RFMS Pro: COMBINES PROVEN SOLUTIONS WITH INNOVATION

The track-and-trace system RFMS Pro from SICK combines proven components and sensors that are in widespread use in the industry to provide an innovative full-scale solution:

- MSC800 system controller: the hardware with integrated assignment algorithm in the controller stands for highest reliability
- RFU630 read/write device for identification with RFID
- Incremental encoder to determine the position and speed of the object, and also measure the distance between objects
- Photoelectric switch to trigger the object
- Optional: bar code scanner or image-based code reader for object identification
- Optional: VMS4xx volume measurement system for measuring the object dimension

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

VMS4xx/VMS5xx volume measurement system



ICR880/ICR890 camera system



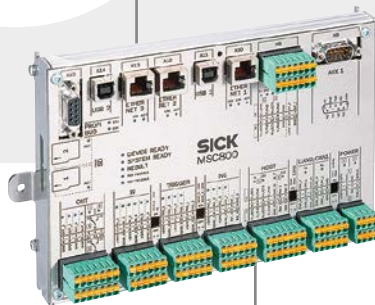
CLV650/CLV490 laser-based bar code scanner



SOPAS ET, ImageFTP, SVP analysis and statistic tools



MSC800 system controller



Weighing data

Encoder, trigger



Photoelectric switch



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



Host

Ethernet



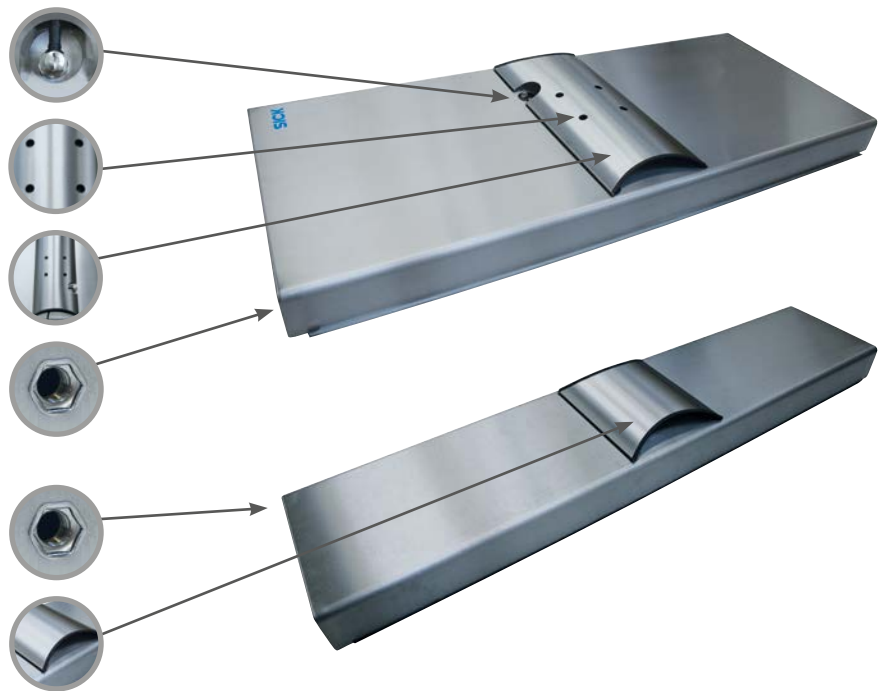
Archiving

RFMS Pro: TAILORED FOR YOUR APPLICATION

The RFMS Pro track and trace system is based on the patented, modular concept from SICK. Two modules, standard mechanics and the self-supporting design make the RFMS Pro a tailored solution in terms of cost and layout. For different dimensions and thus best-possible price strategy of your RFID project.

Module features:

- An angled plug is used to connect the antenna directly to the module
- The cable channel mounted on the module can be used to route the cables. This means that no further cable routing is necessary.
- Four mounting holes in the cable channel enable quick installation of the antenna.
- The M8 thread in the module allows simple mounting of the adapter plates
- The modules are self-supporting, an additional frame is not required



Technical data overview:

Dimensions	1,200 mm x 500 mm x 80 mm	1,200 mm x 250 mm x 80 mm
Weight	17 kg	9 kg
Integrated antenna	✓, optional	-

OPTIMIZATION AND TRANSPARENCY AT THE RIGHT POINT: RFMS Pro IN THE APPLICATION



The RFMS Pro track and trace system from SICK demonstrates its strengths precisely at those points in the supply chain where there is potential for process optimization: when comparing and monitoring incoming and outgoing goods. For picking For identification of objects positioned close to one another on conveying lines Or at article level when recording master data.

Enhanced monitoring and transparency: goods in

Always know where the goods are: RFMS Pro reads the RFID tags continuously and fully automatically – even for objects that are close together on the conveying line. RFMS Pro gives you full control and transparency for goods received – fast and reliable.

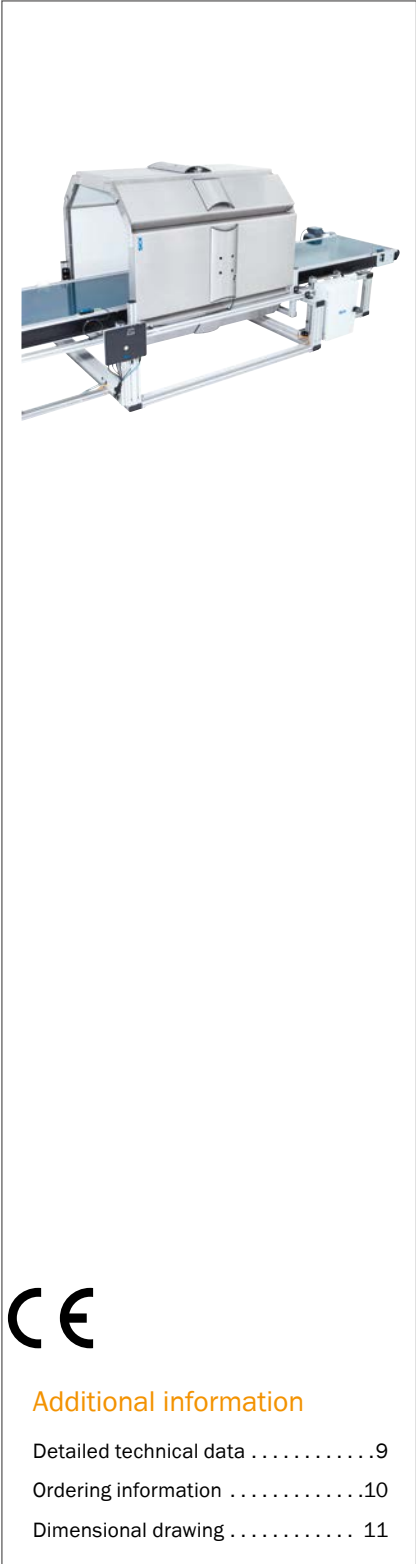


Fewer wrong deliveries: picking and goods out

Make sure that your customer receives exactly what was ordered: RFMS Pro keeps you in the picture – and minimizes costs. For picking and outgoing goods, RFMS Pro ensures that precisely those goods that were ordered are delivered. This minimizes wrong deliveries and expensive returns.



FLEXIBLE DESIGN AND HIGH THROUGHPUT IN A SINGLE SYSTEM



Product description

The RFMS Pro (Radio Frequency Modular System) track and trace system is an industrial-grade system from SICK. This system features interrogators for RFID identification, a central controller with integrated assignment algorithm and incremental encoders that determine object position on the conveyor belt. The

innovative module design makes it possible to quickly change the mechanical setup for various logistics applications. The installation wizard integrated in the configuration software from SICK makes simple, cost-effective on-site commissioning possible. The result: Complete transparency in the supply chain.

At a glance

- Standard modules with or without antenna
- Self-supporting modules
- Proven assignment algorithm for RFID tags on objects
- Static tag detection and filtering
- Integrated service, monitoring and diagnostic tools
- Object-based data output on relevant interfaces such as Ethernet, serial interface or PROFIBUS
- Parameter cloning of all components

Your benefits

- Wide range of tunnel design options with only two standard modules requires very little planning and design work
- Quick and easy commissioning of the modules reduces installation time
- Minimal space between objects ensures a high throughput
- Simple integration with SICK's 4Dpro makes it easy to add bar code scanners to an application
- Maintenance-free design saves time and money
- High-quality system components are from a single source, ensuring system reliability and easy integration
- Self-supporting modules require no additional frame, eliminating additional design and material costs



Additional information

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→ www.sick.com/RFMS_Pro

For more information, simply 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 DFV60 1 x WL18 Connection cables, brackets, number of modules, and tri-band patch antennae Depending on application
Usage	Reading and assignment of RFID tags on conveyor techniques

Features

Frequency band	865 MHz ... 868 MHz (ETSI), 902 MHz ... 928 MHz (FCC), others on request
MTBF	> 80,000 h
MTTR	< 10 min, per device
Field of application	Indoor Industrial environment

Performance

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

Interfaces

Serial	Data transmission rate	✓ (3) 300 bit/s ... 57,600 bit/s
	Electrical connection	Sub-D, 9-pin
Ethernet	Function	✓ (2) Data output, parameter set-up, analyses
	Data transmission rate	10 MBit/s / 100 MBit/s
	Protocol	FTP, TCP/IP, Server/Client
	Electrical connection	RJ45
PROFIBUS DP	Data transmission rate	✓ 12 MBaud
	Protocol	PROFIBUS DP
	Electrical connection	Sub-D, 9-pin
USB	Function	✓ Data output, parameter set-up, analyses
		✓ (13)
PNP, configurable, opto isolated, reverse polarity protected		
Digital output, PNP +24 V, 30 mA		✓ (4)
Floating output		✓ (2)
CAN bus	Data transmission rate	✓ (2) 500 kbit/s
	Protocol	SICK protocol
Reading pulse		Photoelectric sensor

Output data	XML ASCII Customer protocol
Configuration interface	Ethernet Serial SOPAS Engineering Tool

Mechanics/electronics

Dimensions, system (L x W x H)	1,200 mm x 119 mm x 500 mm (module 1) 1,200 m x 119 m x 259 m (module 2)
Enclosure rating	IP65 ¹⁾ IP54 ¹⁾
Supply voltage	100 V AC ... 264 V AC
Mains frequency	50 Hz ... 60 Hz
Power consumption	50 W, without load
Fixing	At conveyor or floor
Housing	Assembled by two different module types
Housing material	Brushed stainless steel
Total weight	17 kg, at 500 mm height, without sensors 9 kg, at 259 mm height, without sensors 19 kg, sensors
Housing color	Metallic

¹⁾ Depending on antennas.

Ambient data

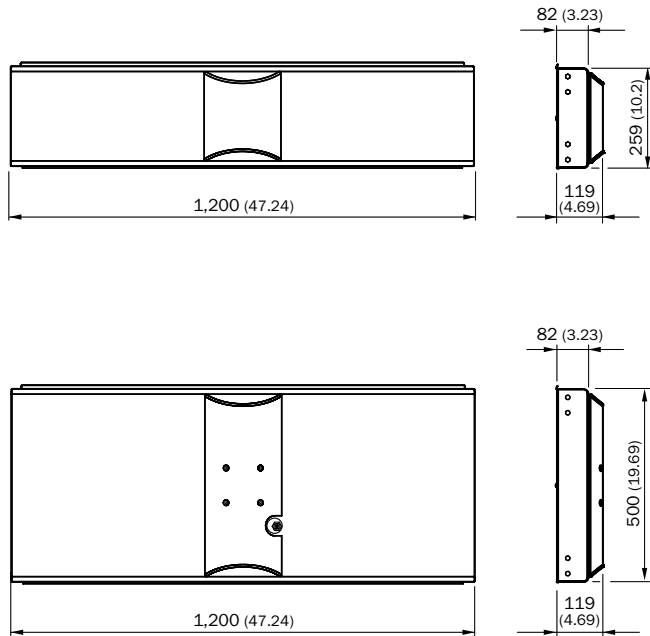
Ambient temperature operation	0 °C ... +40 °C
Ambient storage temperature	-20 °C ... +70 °C
Permissible relative humidity	90 %, Non-condensing
Radio approval	ETSI EN 302 208-2 V1.4.1, FCC Part 15.247 ¹⁾

¹⁾ Others on request.

Ordering information

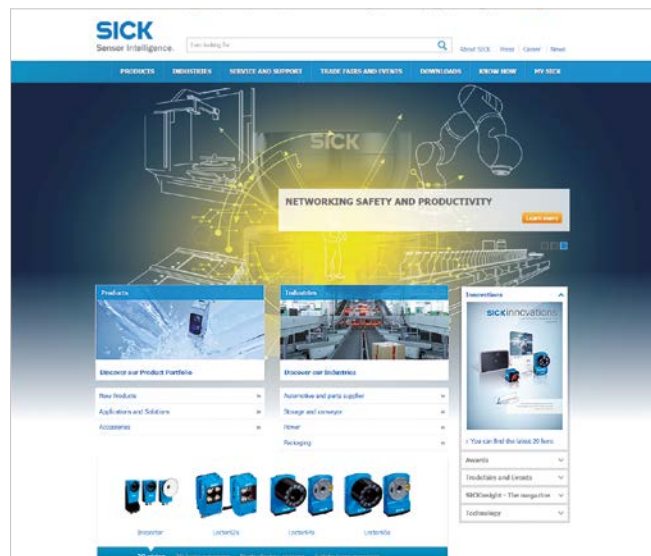
Application	Type	Part no.
Master data acquisition, Receiving area, outgoing area, conveyor	RFMS Pro	On request

Dimensional drawing (Dimensions in mm (inch))



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SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 8,000 employees and over 50 subsidiaries and equity investments as well as numerous agencies 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, Hong Kong, 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 further locations → www.sick.com