



RFID

APPLICATIONS

RFID container identification

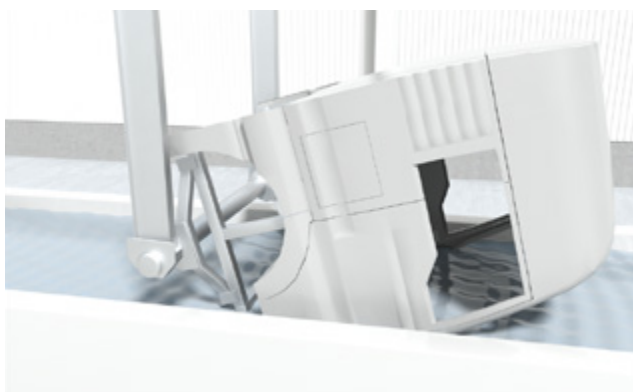
Requirement: In the food industry, the containers and, thus, the data carriers are exposed to various cleaning processes and chemicals. To be able to read and, if necessary, store product-related data at every processing point, the data carriers must be especially robust.



Solution: Thanks to their high degree of protection of up to IP68/69K, the TFM and TFI transponders are – in combination with the RFM and RFI read/write devices – very well suited for use in the food industry. On the TFM transponders, quality data and process data can be stored during the production process.

RFID skid identification

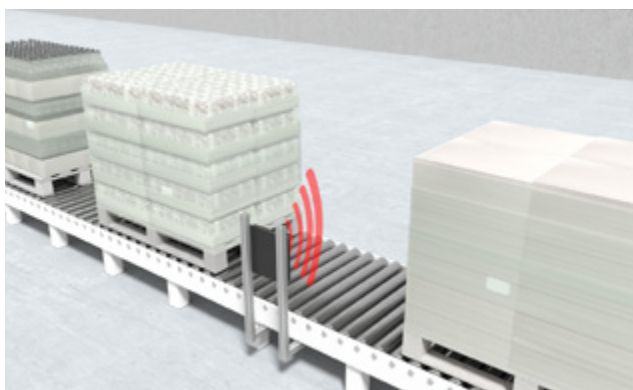
Requirement: In the automotive industry, data carriers must, to some extent, withstand high temperatures during processes for the surface treatment of body parts. Furthermore, paint particles can prevent visual contact with the data carrier.



Solution: The RFID waves of the RFM read/write devices can penetrate even layers of paint. The corresponding transponders can withstand temperatures of up to 250 °C.

RFID pallet identification

Requirement: During pallet identification, the data carriers are either on the pallet or on the material that is to be transported. Here, the pallet feet may be soiled or the data carrier may be located under the packaging film. Thus, visual contact between the identification device and data carrier is possible only to a limited extent if at all.



Solution: With the RFM read/write devices, the data carriers can be read from and written to even without visual contact. Insensitive to dirt, the transponders of the TFM series are available as hard tags or smart labels.

RFI 32

RFID readers with a frequency range of 125 kHz (LF)

Areas of application

- Part tracking in container, pallet and skid transport systems – even under harsh ambient conditions



Advantages for you



VERY ROBUST

Cast, robust housing enables use under harsh ambient conditions



FAST COMMISSIONING

Easy and fast configuration via the intuitive RF configuration tool

Features

- Evaluation unit with integrated antenna reduces installation effort and is suitable for cramped installation situations
- Reading range: 0–8 mm (depending on the used transponder)
- Reading speed: up to 0.6 m/s
- Ambient temperature (operation): –25 – 70 °C
- Interfaces: RS 232, via MA 200i also Ethernet, PROFINET, DeviceNET, Ethernet IP and EtherCAT
- Dimensions (W × H × L): 76 mm × 30 mm × 102 mm
- Degree of protection: IP 65
- Through the internal parameter memory, the parameters are retained in the device even after a power failure
- Transponders can be read to and written from in passing
- Status display directly on the device
- Insensitive to environmental materials such as water, textiles, plastic or wood

RFM 12, RFM 32, RFM 62

RFID read/write systems with a frequency range of 13.56 MHz (HF)

Areas of application

- Part tracking in container, pallet and skid transport systems – even under harsh ambient conditions
- Use in production control



Advantages for you



VERY ROBUST (Partially)
cast, robust housings
enables use under harsh
ambient conditions



FAST COMMISSIONING
Easy and fast configuration
via the intuitive RF configura-
tion tool

Features

- Evaluation unit with integrated antenna reduces installation effort and is suitable for compined installation situations
- Global use through ISO 15693 conformity
- Staggered reading ranges:
 - RFM 12: 0 – 45 mm
 - RFM 32: 0 – 110 mm
 - RFM 62: 0 – 400 mm
- High reading speed of up to 2 m/s (RFM 12) or up to 6 m/s (RFM 32, RFM 62)
- Ambient temperature (operation): –25 – 65 °C
- Interfaces: RS 232, via MA 200i also Ethernet, PROFINET, DeviceNET, Ethernet IP and EtherCAT
- Dimensions (W × H × L):
 - RFM 12: M30 × 98 mm
 - RFM 32: 76 mm × 30 mm × 102 mm
 - RFM 62: 298 mm × 34 mm × 298 mm
- Degrees of protection:
 - RFM 12, RFM 32: IP 67
 - RFM 62: IP 65
- Storage of quality and production data during the production process enables use for production control
- Through internal parameter memory, the parameters are retained in the device even after a power failure
- Transponders can be read to and written from in passing
- Status display directly on the device
- RFM 32 Ex: Model available for use in potentially explosive areas

TFI

Passive RFID fixcode transponders with a frequency range of 125 kHz (LF)

Areas of application

- Part tracking in container, pallet and skid transport systems



Advantages for you



Features

- Unchangeable 8-byte Unique ID, read-only
- Degree of protection: up to IP 67
- Ambient temperature (operation): -20 – 85 °C*
- Ambient temperature (storage): -40 – 200 °C*
- Disc transponders with diameters of 30 and 50 mm
- Insensitive to environmental materials such as water, textiles, plastic or wood

* depending on model

TFM

Passive RFID transponders with a frequency range of 13.56 MHz (HF)

Areas of application

- Part tracking in container, pallet and skid transport systems
- Applications in production control (e.g., control of assembly or painting processes)



Advantages for you



Features

- Global use through ISO 15693 conformity
- All transponders are provided with an unchangeable Unique ID
- Storage of quality and production data during the production process enables use for production control
- Degree of protection: up to IP 68/69K
- Memory size up to 1024 bytes*
- Ambient temperature (operation): -25 – 100 °C*
- Ambient temperature (storage): -40 – 250 °C*
- Various designs and sizes available for different applications: disc transponders, key fobs, self-adhesive smart labels or plug-in cards
- Model available for use in potentially explosive areas

* depending on model

TECHNICAL DATA

RFID read/write devices


RFI 32

RFM 12

**RFM 32
RFM 32 Ex**

Function	Read	Read and write	Read and write
Frequency range	125 kHz (LF)	13.56 MHz (HF)	13.56 MHz (HF)
Max. reading/writing range (depending on the transponder)	TFI 03: up to 60 mm TFI 05: up to 80 mm	TFM 02: up to 25 mm TFM 03: up to 35 mm TFM 05/08: up to 45 mm	TFM 02: up to 50 mm TFM 03/05/08: up to 110 mm
Ambient temperature (operation)	-25 – 70 °C	-25 – 65 °C	-25 – 65 °C
Interface*	RS 232	RS 232	RS 232
Connection type	1,000 mm cable with socket connectors (10+6)	1,000 mm cable with socket connectors (10+6)	1,000 mm cable with socket connectors (10+6) RFM 32 Ex: 10 m cable
Degree of protection	IP 65	IP 67	IP 67
Dimensions (W × H × L)	76 × 30 × 102 mm	M30 × 98 mm	76 × 30 × 102 mm

* via MA 200i: Ethernet, PROFINET, DeviceNET, Ethernet IP and EtherCAT

RFID transponders

	TFI 03 11 TFI 05 11	TFI 03 16 TFI 05 16	TFM 03 11 TFM 05 11 TFM 08 11	TFM 03 15 TFM 05 15	TFM 06 11
Frequency range	125 kHz (LF)	125 kHz (LF)	13.56 MHz (HF)	13.56 MHz (HF)	13.56 MHz (HF)
Design	Disc transponder	Disc transponder	Disc transponder	Disc transponder	Disc transponder
Chip type	EM4102	EM4102	I-CodeSLI	I-CodeSLI	I-CodeSLI
Memory	8-byte fixcode	8-byte fixcode	112 byte	112 byte	112 byte
Ambient temperature (operation)	-20 – 70 °C	-20 – 85 °C	-20 – 70 °C	-25 – 85 °C	-25 – 70 °C
Ambient temperature (storage)	-40 – 90 °C	-20 – 200 °C	-25 – 120 °C	-40 – 140 °C	-25 – 110 °C



RFM 62

Read and write
13.56 MHz (HF)
TFM 02: up to 130 mm TFM 03: up to 350 mm TFM 05: up to 220 mm TFM 08: up to 400 mm
−25 – 65 °C
RS 232
1,000 mm cable with socket connectors (10+6)
IP 65
298 × 34 × 298 mm

TFM 04 11	TFM 02 11	TFM 05 16	TFM 03 51	TFM 02 22 TFM 05 22	TFM 08 21
13.56 MHz (HF)	13.56 MHz (HF)	13.56 MHz (HF)	13.56 MHz (HF)	13.56 MHz (HF)	13.56 MHz (HF)
Disc transponder	Disc transponder	Disc transponder	Key fobs	Smart label Self-adhesive	Plug-in card
Infineon MyD	TagIT HFI	I-CodeSLI	TagIT HFI	I-CodeSLI	TagIT HFI
1024 byte	256 byte	112 byte	256 byte	112 byte	256 byte
−20 – 70 °C	−25 – 85 °C	−25 – 150 °C	−20 – 70 °C	−20 – 50 °C	−20 – 70 °C
−25 – 120 °C	−25 – 160 °C	−40 – 250 °C (1,000 h or 1,000 cycles)	−25 – 85 °C	−20 – 70 °C	−25 – 85 °C

SUITABLE PRODUCTS

1D-/2D-code reader



Mounting system for rod

Suitable for BCL 300i, BCL 500i, LSIS 400i



Mounting bracket

Stainless steel / galvanized
Suitable for BCL 300i, DCR 200i



Mounting system for rod

Adjustable, turnable 360°, galvanized
Suitable for DCR 200i



Connection units

Suitable for BCL 300i, BPS 300i



Cover hoods

For replacing if operating conditions change
Suitable for DCR 200i



Starter kit

Scan engine, mounted on additional circuit board with Micro-USB socket, USB cable, USB flash memory stick with drivers and documentation
Suitable for CR 50 and CR 55



Interchangeable lenses

With various focal lengths (6–75 mm)
and diaphragms (1.4–2.8)
Suitable for LSIS 4xx M49-x9



MA-CR adapter circuit board

For laboratory and test purposes
Suitable for CR 100, BCL 95,
DCR 50, DCR 55



Additional lighting

Ring light
Suitable for DCR 200i

RFID



Mounting device

Suitable for RFM 12



Mounting device

For use in painting lines
Suitable for TFM 05 16



Spacer transponders

Suitable for TFI, TFM