Identification in production control and mobile machines

Identification systems

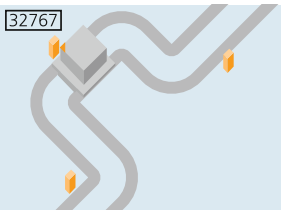
www.ifm.com/gb/identification

Identification systems from ifm: The optimum solution for every requirement

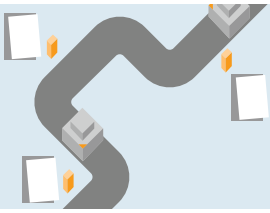
Optical code reader

Multicode reader

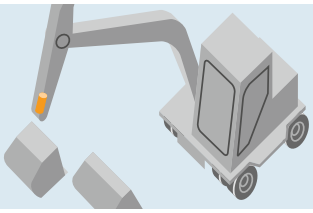
RFID Systems



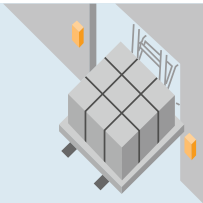
LF system 125 kHz



LF/HF system 125 kHz 13.56 Mhz



HF system 13.56 Mhz



UHF system 865 to 928 MHz

Type overview

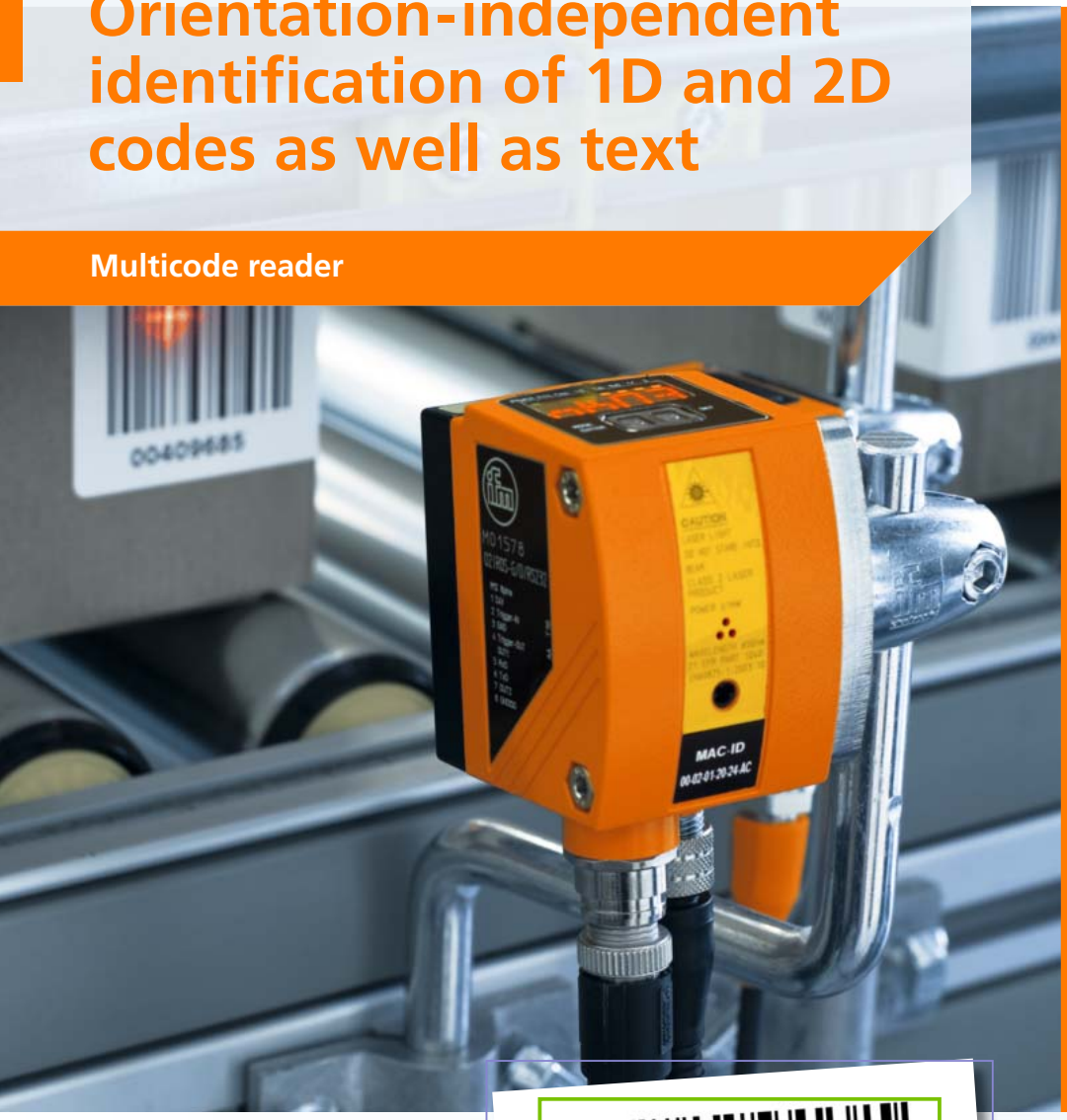
For industrial applications

Systems for mobile machines

	System type	Range	Fieldbus	Data / information	Hard tag adapted to the application condition	Smart tag, low-cost adhesive tape	
Identification of e.g. bar codes, QR or Data Matrix codes and text for the monitoring of process operations.	**O2I**	up to 2 m	RS232 Ethernet TCP/IP EtherNet/IP		–	–	*4 - 5*
Identification in routing conveyors.	**DTS125**	up to 100 mm	AS-i	16 bits 32767	✓	–	*6 - 7*
Identification in conveyors. Large data volumes, high speed.	**DTE10x ANT4xx ANT5xx ANT600**	up to 200 mm	SAP/ERP Profibus DP PROFINET EtherNet/IP TCP/IP Ethercat	8 kB 	✓	✓	*8 - 9*
Identification in mobile machines.	**DTM**	100 mm	CANopen CAN J1939	8 kB 	✓	–	*10 - 11*
Identification in production and logistics. Long ranges, many tags.	**DTE810 DTE820 DTE910**	up to 10 m	Ethernet TCP/IP EtherNet/IP	240 bit EPC 512 bit user 	✓	✓	*12 - 13*
							14 - 15

The compact all-rounder: Orientation-independent identification of 1D and 2D codes as well as text

Multicode reader



High reading reliability:
Automatic setting of the exposure time, adaptation by segmented illumination for critical surfaces.

Intelligence in the sensor:
Programmable outputs; verifier system reduces data transmission.

Flexible connection:
RS-232, Ethernet TCP/IP and EtherNet/IP interface.

Quick in the process:
Object speeds of up to 7 m/s.

Compact integration:
Illumination, optics, evaluation and interfaces in an industrially compatible housing.

Easy handling:
The system is configured and ready for use within a few minutes – with PC software or directly on the sensor.

QR code

PDF code

DMC code

Bar code

Text

710377582942

The compact unit is installed using the suitable mounting set and connected to the controller (PLC) via the process interface.
Parameter setting is done via an Ethernet cable using a common PC.

For industrial applications

Powerful identification.

Independent of orientation and number of codes the multicode reader automatically decodes 1D and 2D codes.

The new version also solves OCR tasks, e.g. for product identification by type designations or serial numbers.
All information such as expiry date or production date can now be directly "read".

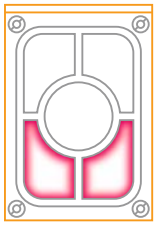
More functions include the output of the code position via the process interface, adjustable total quality parameters, individual illumination settings for each configuration in a group, integrated fault memory and access protection with password.

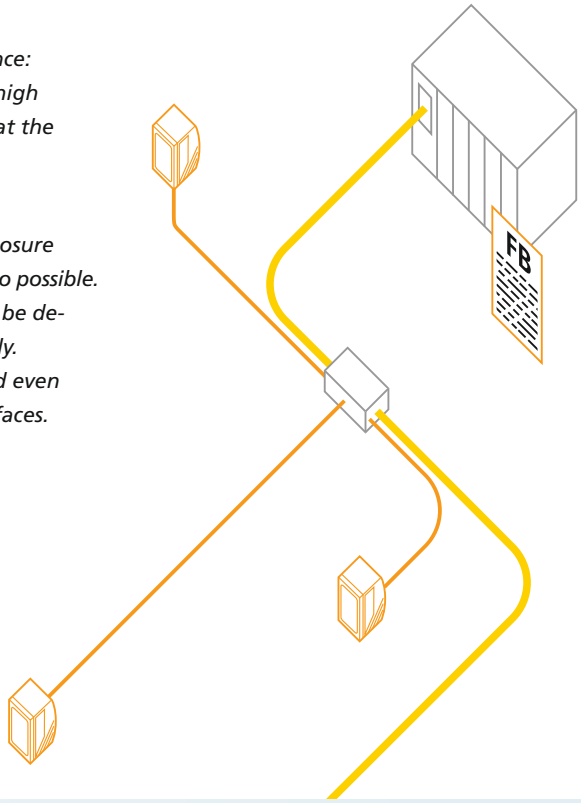
The professional software of the multicode reader takes the high reading reliability of the Data Matrix code to a new dimension.

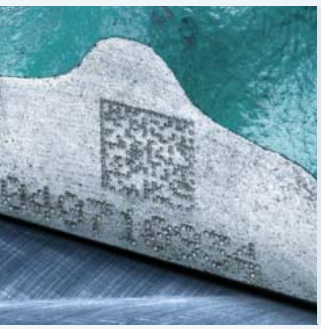
Top choice for price / performance: The multicode reader provides high functionality and performance at the price of a sensor.

Optimum illumination.

In addition to an automatic exposure setting, manual adjustment is also possible. Four illumination segments can be deactivated and activated manually. So optimum results are achieved even with highly reflective metal surfaces.







The ifm multicode reader detects numerous 2D and 1D codes.
The standardised 2D code can be applied in different ways: printed on paper, engraved by laser or dot-peened onto a metal surface.

One of many examples: Based on the Data Matrix code, the multicode reader identifies hygienically packed cotton swabs on a conveyor belt dynamically.

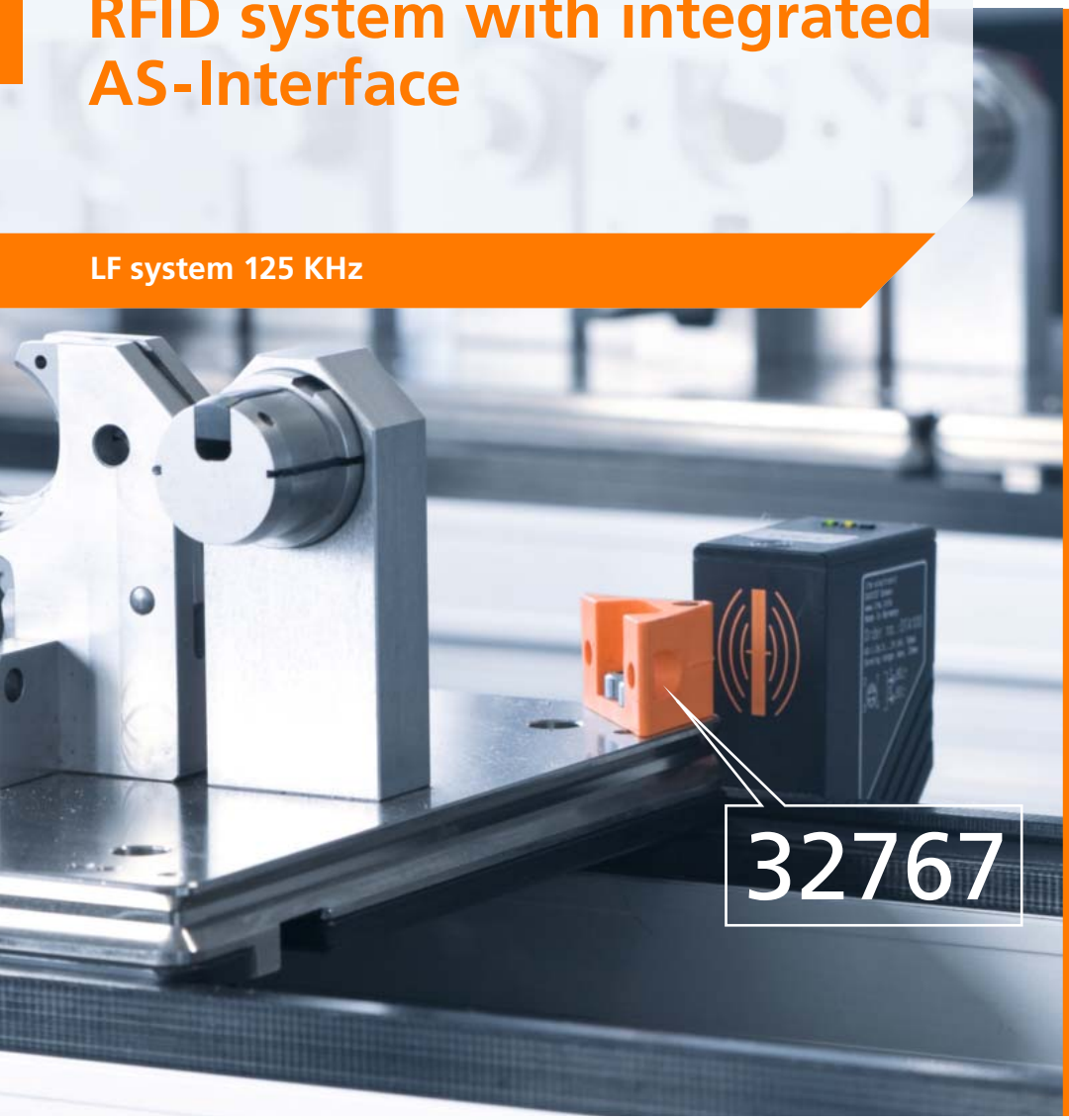
O2I in the application.

The ifm multicode reader is used in a wide range of industrial applications. It provides product tracking, production control or product identification in the most varied areas: automotive, electronic and food industries, conveyor technology or in machine tools and printing machines.
The standardised process interfaces RS-232, Ethernet TCP/IP and EtherNet/IP ensure fast and easy integration in industrial control technology.

Learn more at www.ifm.com/gb/multicodereader

Keep track of the workpiece: RFID system with integrated AS-Interface

LF system 125 KHz



Plug and play:
Cost reduction with quick and easy set-up.

Efficient:
Connection of up to 31 RFID readers to one AS-i master.

Safe:
High reading reliability and compact design.

Ready for operation at once:
No programming for read / write units with AS-Interface.
The stored value is automatically provided by the transponder when the antenna is passed.

Certified:
The AS-Interface certification guarantees interoperability in automation technology.

Plug and Play also for the hardware: Connection via M12 connector or AS-i splitter box.
The DTS125 system can be integrated into AS-i networks in no time and is ready for operation immediately. In addition to the lower cost for hardware, this also saves time during set-up.

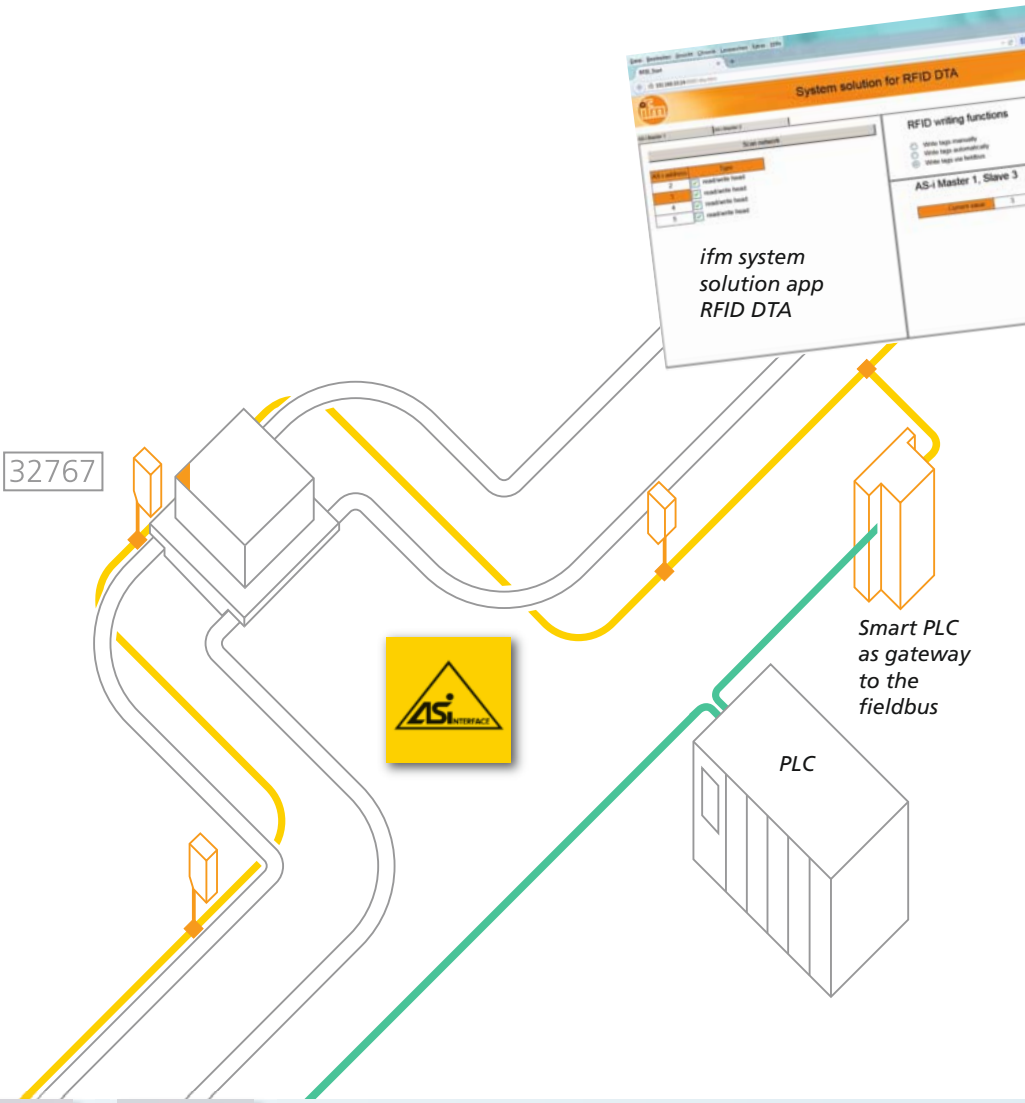
The DTS125 RFID system ensures smooth logistics flow on a production line for transmissions. All workpiece carriers can be identified by means of RFID.
Optical processes such as bar codes were eliminated due to the severe operating conditions (oils, metal swarf).

For industrial applications

The DTS125 RF identification system from ifm is an industrially compatible identification system in 125 KHz technology. It is the first RFID system for AS-Interface worldwide.

The compact read/write heads include, in addition to the antenna, the complete evaluation and the interface to AS-i. So the units can be operated directly on the AS-Interface and enable data transmission to the controller.

ifm offers the system solution app "RFID DTA" for a particular ease of handling of the RFID data and communication with higher-level networks. Download and configuration of the app is made via the integrated web interface, i.e. all required settings can be conveniently made using a device with internet browser.



ifm system solution app RFID DTA

Smart PLC as gateway to the fieldbus

ID tags for assembly and conveyor systems. The robust transponders, which do not require any batteries, are particularly suited for use in high temperature ranges.

DTS125 in the application.

The DTS125 RFID system has been designed for production control in assembly and conveying technology, handling, packaging and filling systems. The system is also the optimum choice for marking workpiece carriers.

The RFID system DTS125 – ideal for solving tasks in assembly and conveying technology as well as in handling automation. It detects objects on transport systems at a travel speed of up to 0.5 m/s.

Learn more at www.ifm.com/gb/lf

The “electronic route card”: RFID system with integrated fieldbus interface

LF/HF system 125 KHz, 13.56 MHz

Clear:
Status display via LED and integrated web server.

Flexible:
Connection of RFID antennas or digital inputs / outputs. Antenna and transponder combinations of some bits to several Kbytes.

Simple:
Connection of the antennas with unshielded standard cables of up to 20 m.

Integrable:
Function blocks enable easy integration into the higher level automation or process control.

Certified:
The fieldbus certification guarantees interoperability in automation technology.

Robust:
Protection rating IP 67 and IP 69 K for harsh industrial environments.

Scan code and watch the video on the DTE100 system!

Different interfaces.

DTE100 with Profibus DP: Evaluation unit with integrated Profibus DP interface.

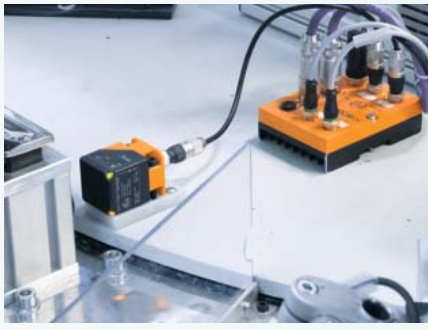
DTE101 with PROFINET: Evaluation unit with integrated PROFINET interface.

DTE102 with EtherNet/IP: Optimised for controllers from Schneider Electric or Rockwell Automation.

DTE103 with EtherCAT, the process interface for Beckhoff controllers.

DTE104 with TCP/IP and SAP/ERP connectivity: Ideal for direct connection to PCs, industrial PCs or PLCs that have no standardised fieldbus interface. Users can access all connected antennas, sensors and actuators via TCP/IP protocol.

DTC510, the compact unit with CANopen interface antenna, evaluation and CANopen interface.

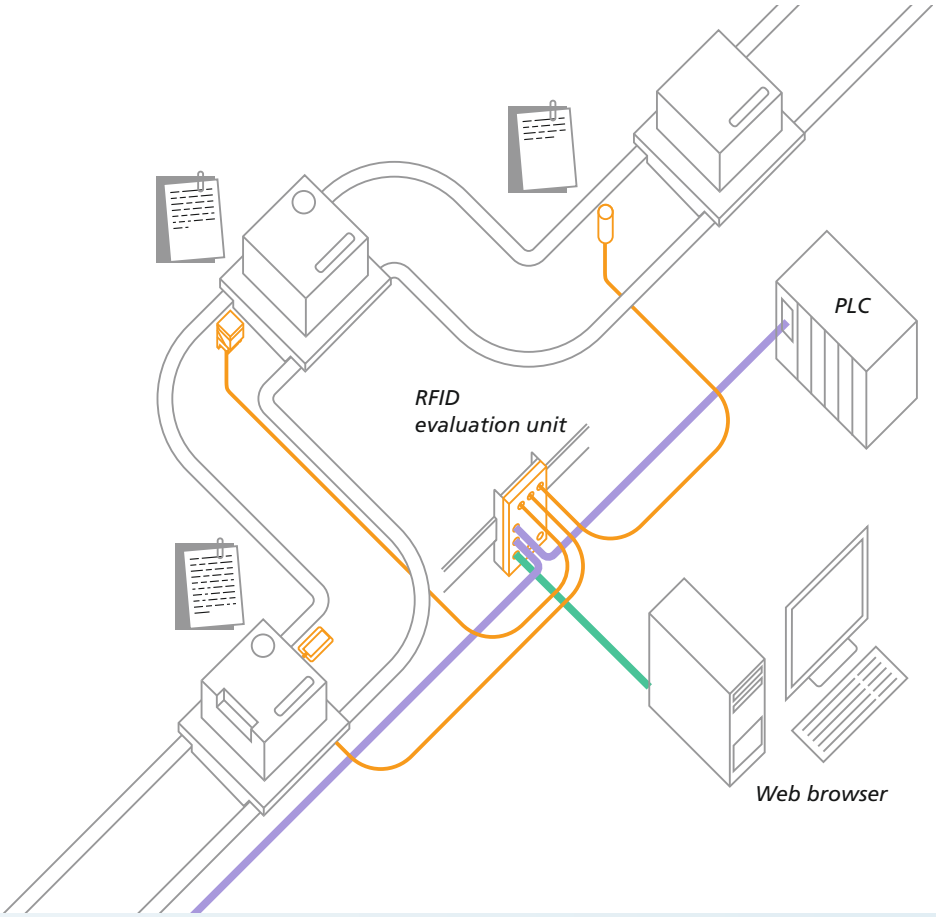


RFID system with evaluation unit, antennas and transponders.

ifm has developed a new RFID system for production and conveying in particular.

The integrated web server enables easy parameter setting via the web browser. The requirements of harsh industrial environments are met by a stable metal housing, a wide temperature range and the high protection rating IP 67.

The new RFID evaluation units DTE10x have four antenna connections, which can alternatively be used as digital I/Os. The antennas are connected via standardised M12 connectors.
The standard pin assignment of the I/O connections ensures that common sensors or actuators are directly connected and powered from the RFID evaluation unit.



The new ANT600 RFID antenna handles ranges up to 200 mm without any problems.
The device is also equipped with diagnostic and indicating LEDs to ensure easy start-up. The rotatable M12 connector allows the connection of standard cables up to 20 m.

Long ranges.

The long range means the ANT600 RFID antenna has many uses. Product tracking in the production process, production data or quality parameters can be reliably saved on the ID tags. In material logistics, the RFID system can reliably determine whether the material and quantity of material match the production order.
In plant control, product-specific machine parameters are read from the ID tag attached to the product.

All connections are for standard M12 connectors. Current is also directly supplied via an M12 connection. The wide range of accessories such as Profibus connection cables and terminating resistors facilitate the system set-up.

Learn more at www.ifm.com/gb/lf-hf

Robust and for mobile use: RFID compact unit with integrated CAN interface

HF system 13.56 MHz

Integrated:
Antenna, evaluation and CANopen / CAN J1939 interface in one compact M18 or M30 housing.

Insensitive:
Extended temperature range of -40...85 °C.

Permitted:
e1 type approval.

Robust:
Optimised for outdoor use with IP 67 and IP 69K, shock resistant to EN60068-2-27, vibration resistant to EN60068-2-64.

Compatible:
CANopen or J1939 protocol, optimised for use with ifm ecomat*mobile* controllers.

Completeness check: The presence of different tools on the corresponding fixtures is detected.

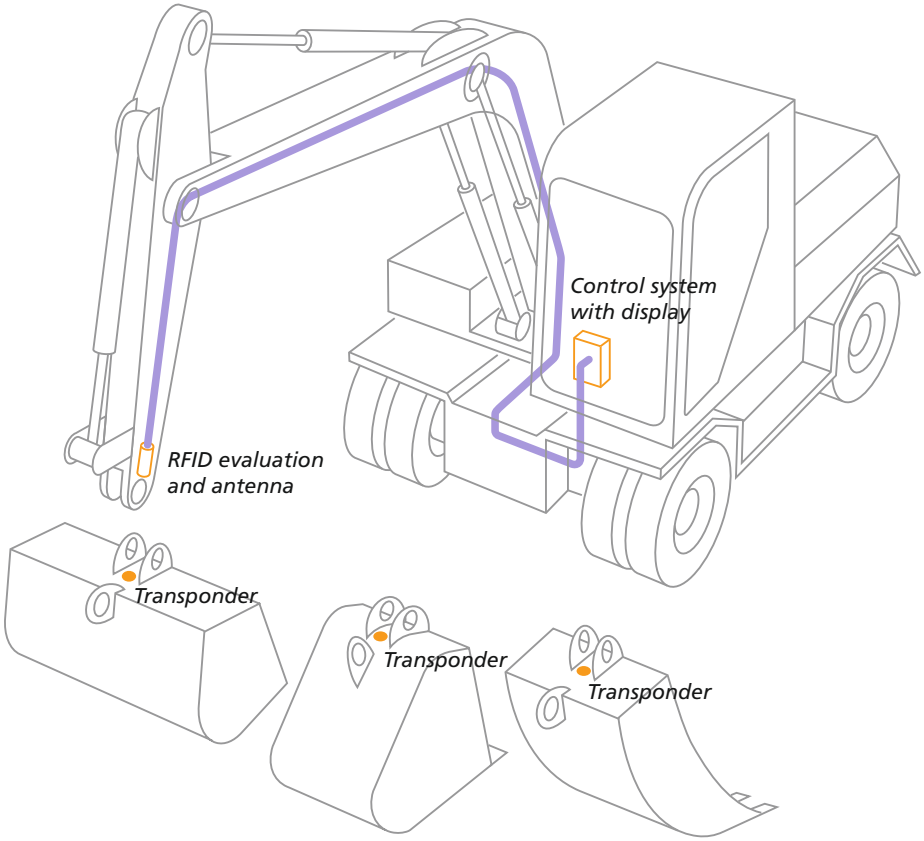
RFID compact unit suitable for mobile use.

The robust RFID compact unit with CANopen or CAN J1939 interface has been developed for identification tasks in agricultural machines, municipal vehicles and construction machines.

It automatically detects different attachments and configures the corresponding settings in the controller.

Automatic identification simplifies the creation of user-specific system set-ups.

Information on maintenance intervals and operating times can automatically be generated and stored since the controller automatically detects when and how long a specific machine set-up runs. Downtime is kept to a minimum, productivity is increased.



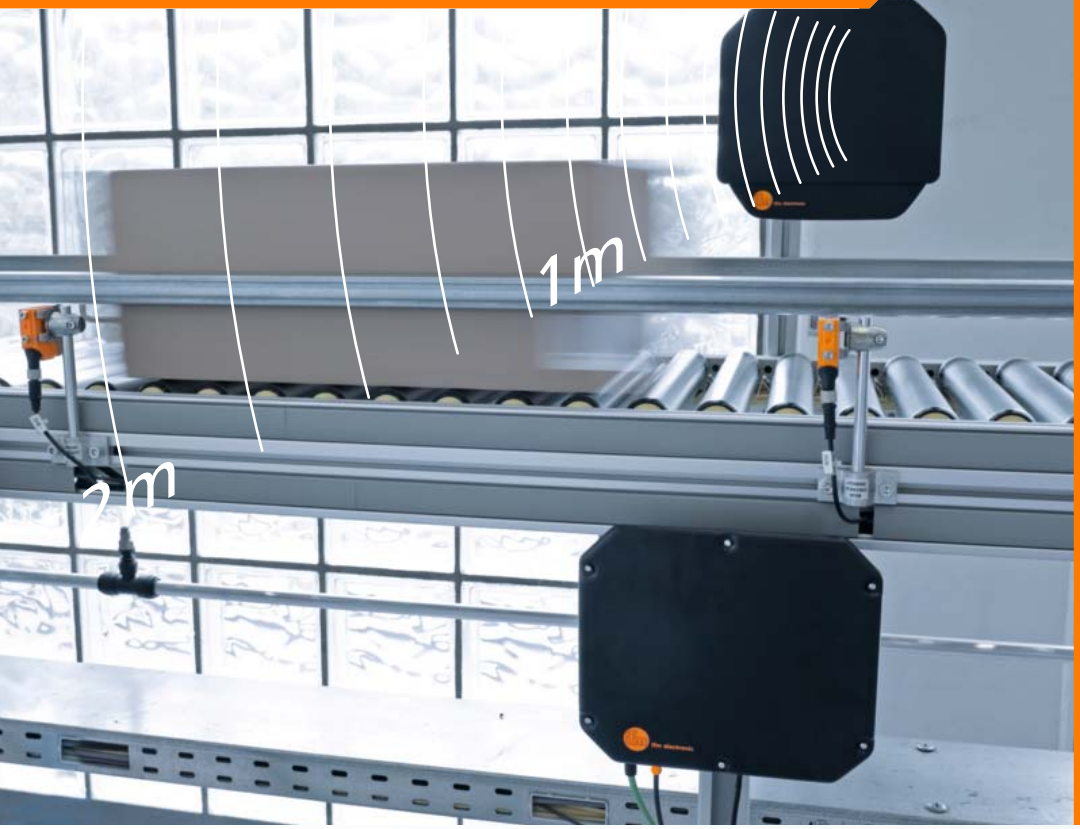
*Identification of fittings and tools.
This allows the detection and evaluation of operating times and maintenance intervals.*

Different fittings are detected. The application parameters in the controller and in the operating devices are automatically adjusted.

Learn more at www.ifm.com/gb/lf-hf

Long ranges for production and logistics: UHF RFID – systematic transparency

UHF system 865 to 928 MHz



Flexible:
Ultra low, low, mid and wide range antennas for every application.

Simple:
UHF evaluation units with four external antenna terminals.

Integrated:
Ethernet TCP/IP and Ethernet IP interface for parameter setting and data transmission.

Robust:
The protection rating IP 65 / IP 67 meets all requirements for harsh industrial environments.

Different evaluation units.

DTE810 / 910: UHF evaluation units for external antennas for short range and wide range applications. With digital inputs / outputs and Ethernet interface.

DTE820: UHF evaluation units with integrated antenna and PoE (Power over Ethernet).

Up to 10 m: ANT830.

Wide range antenna for the simultaneous detection of large quantities, e.g. boxes on pallets when gates are passed.

For industrial applications

UHF evaluation units.

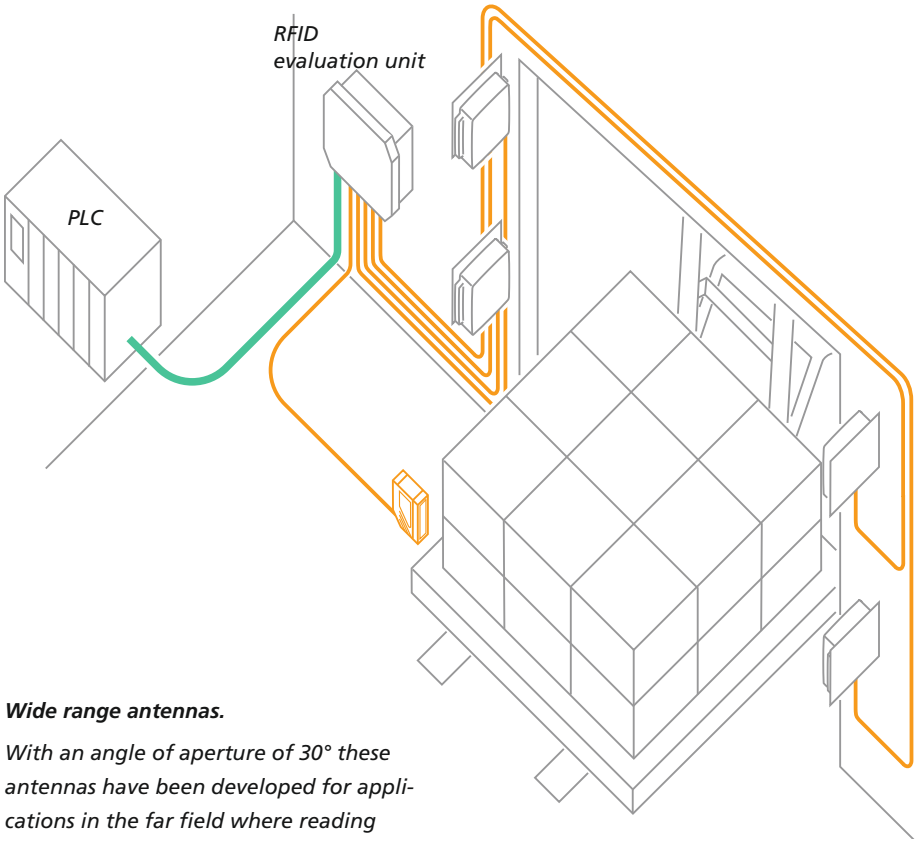
As components of the UHF system platform, the UHF evaluation units DTE810 and DTE910 are compliant with the UHF bands in Europe and the USA respectively. The setting of corresponding country profiles enables use of the units in many other countries.

Ultra low and low range antennas.

These antennas are distinguished by the near field. In order to achieve a high selectivity, the smallest possible designs are used as they manage short reading ranges.

Mid-range antennas.

Due to its smaller dimensions the mid range antenna is chosen for applications in the near / far field with reading ranges of up to 2 m.



Wide range antennas.

With an angle of aperture of 30° these antennas have been developed for applications in the far field where reading ranges of up to 10 m are required.

Up to 20 cm: ANT805 / ANT810.

(Ultra) low range antenna for the selective detection of individual products in the close range.

RFID in the application.

The UHF system platform from ifm is used in production, intralogistics and conveying due to the application-specific antennas.

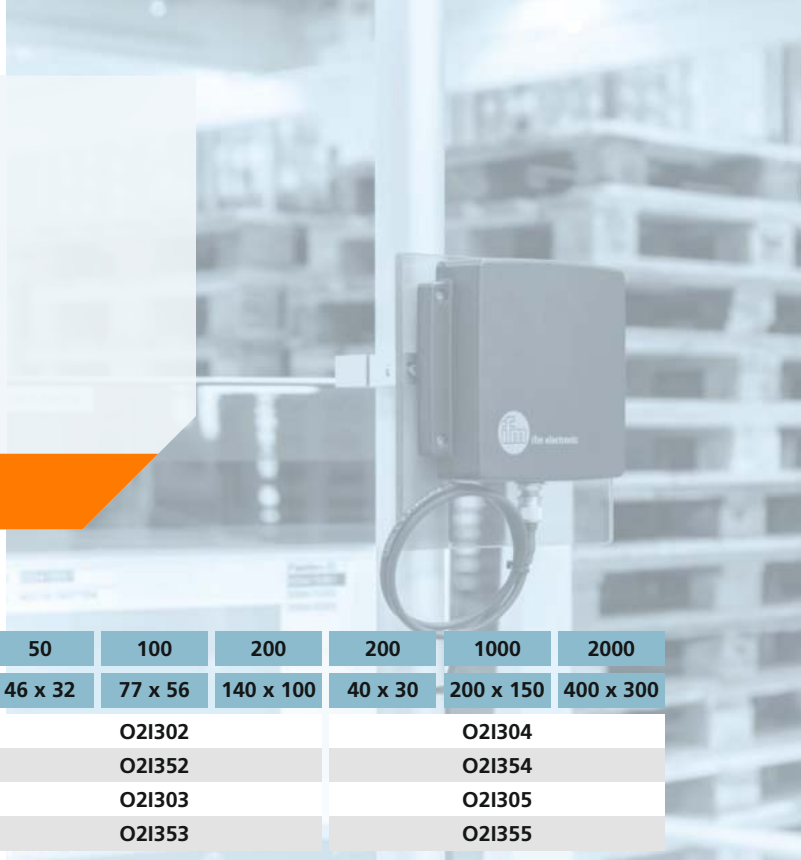
Goods such as packaging or pallets can be detected without contact. The UHF RFID system is optimised for applications in production and material flow control, the asset and supply chain management as well as track & trace.

Up to 2 m: ANT820.

Mid range antenna for the reliable identification of larger units, e.g. on a conveyor belt.

Learn more at www.ifm.com/gb/uhf

Identification systems from ifm: The choice is yours



Multicode reader type O2I

Operating distance [mm]	50	100	200	50	100	200	200	1000	2000
Field of view size [mm]	20 x 14	36 x 26	68 x 50	46 x 32	77 x 56	140 x 100	40 x 30	200 x 150	400 x 300
Order no. red light	O2I300			O2I302			O2I304		
Order no. red light	O2I350			O2I352			O2I354		
Order no. infrared	O2I301			O2I303			O2I305		
Order no. infrared	O2I351			O2I353			O2I355		

LF RFID system DTS125 · 125 KHz

Read/write systems / antennas	Order no.
RFID read/write system, AS-Interface, range max. 10 mm	DTA100
RFID read system, AS-Interface, range max. 20 mm	DTA101
RFID read/write system, AS-Interface, range max. 65 mm	DTA200
RFID read system, AS-Interface, range max. 65 mm	DTA201
RFID read/write system, AS-Interface, range max. 100 mm	DTA300
RFID read system, AS-Interface, range max. 110 mm	DTA301

Transponders	Order no.
ID tag / M18 x 1 / 01	E80311
ID tag / Ø 12 x 2 / 01	E80312
ID tag / Ø 20 x 2.15 / 01	E80317
ID tag / Ø 30 x 2.15 / 01	E80318
ID tag / Ø 50 x 2.2 / 01	E80319
ID tag / ISO CARD / 01	E80320

LF/HF RFID system DTE100 · 125 KHz · 13.56 MHz

Evaluation units / antennas	Order no.
RFID evaluation unit, Profibus DP	DTE100
RFID evaluation unit, PROFINET	DTE101
RFID evaluation unit, Ethernet/IP	DTE102
RFID evaluation unit, EtherCAT	DTE103
RFID evaluation unit, Ethernet TCP/IP	DTE104
RFID antenna 13.56 MHz, M12, flush installation	ANT410
RFID antenna 13.56 MHz, M12, non-flush installation	ANT411
RFID antenna 13.56 MHz, M18, flush installation	ANT420
RFID antenna 13.56 MHz, M18, non-flush installation	ANT421
RFID antenna 13.56 MHz, M30, flush installation	ANT430
RFID antenna 13.56 MHz, M30, non-flush installation	ANT431
RFID antenna 125 kHz, 66 x 40 x 40 mm	ANT512
RFID antenna 13.56 MHz, 66 x 40 x 40 mm	ANT513
RFID antenna 13.56 MHz, 48 x 20 x 7 mm, cable 1 m	ANT515
RFID antenna 13.56 MHz, 48 x 20 x 7 mm, cable 2 m	ANT516
RFID antenna 13.56 MHz, 113 x 113 x 50 mm	ANT600
RFID antenna 13.56 MHz, CANopen	DTC510

Transponders	Order no.
ID tag / Ø 30 x 2.5 / 05 – 125 KHz 256 bits	E80360
ID tag / Ø 30 x 2.5 / 05 – 125 KHz 2048 bits	E80361
ID tag / Ø 30 x 2.8 / 03 – 13.56 MHz, 16 Kbits – FRAM	E80370
ID tag / Ø 30 x 2.5 / 06 – 13.56 MHz, 896 bits	E80371
ID tag / Ø 20 x 2.5 / 06 – 13.56 MHz, 896 bits	E80377
ID tag / label 80 x 50 / 03 – 13.56 MHz, 896 bits	E80379
ID tag / Ø 30 x 2.8 / 03 – 13.56 MHz, 64 Kbits	E80380
ID tag / Ø 4.35 x 3.6 / 03 – 13.56 MHz, 896 bits	E80381
ID tag / label 65 x 30 / 03 – 13.56 MHz, 896 bits	E80382
ID tag / Ø 50 x 3.0 / 0 – 13.56 MHz, 16 Kbits – FRAM	E80383
ID tag / Ø 50 x 3.0 / 0 – 13.56 MHz, 896 bits	E80384

Even more choice? You can find more transponder versions at www.ifm.com

Order now?
www.ifm.com

UHF RFID system DTE · 865 to 928 MHz

Evaluation units	Order no.
RFID UHF evaluation unit, Ethernet/IP EU/ETSI	**DTE810**
RFID UHF evaluation unit, Ethernet/IP US/FCC	**DTE910**
RFID UHF evaluation unit, Ethernet TCP/IP	**DTE820**

Antennas	Order no.
RFID UHF ultra low range antenna, EU/ETSI/US/FCC	**ANT805**
RFID UHF low range antenna, EU/ETSI	**ANT810**
RFID UHF low range antenna, US/FCC	**ANT910**
RFID UHF mid range antenna, EU/ETSI/US/FCC	**ANT815**
RFID UHF mid range antenna, US/FCC	**ANT920**
RFID UHF mid range antenna, 100°/100° EU/ETSI	**ANT820**
RFID UHF wide range antenna, 70°/70° EU/ETSI	**ANT830**
RFID UHF wide range antenna, 70°/70° US/FCC	**ANT930**

Transponders	Order no.
RFID UHF ID tag / Ø 50 x 3.3 / 04	**E80350**
RFID UHF on metal ID tag / Ø 55 x 13 / 04	**E80351**
ID tag / Ø 30 x 10 / 04	**E80353**
ID tag / Ø 40 x 10 / 04	**E80354**

RFID system DTM · 13.56 MHz

Evaluation units CANopen	Order no.
RFID evaluation unit / antenna, CANopen interface, M18, flush installation	**DTM424**
RFID evaluation unit / antenna, CANopen interface, M18, non-flush installation	**DTM425**
RFID evaluation unit / antenna, CANopen interface, M30, flush installation	**DTM434**
RFID evaluation unit / antenna, CANopen interface, M30, non-flush installation	**DTM435**
RFID evaluation unit / antenna, CANopen interface, M18, cable unit with DEUTSCH connector	**DTM428**

Evaluation units CAN J1939	Order no.
RFID evaluation unit / antenna, CAN J1939 interface, M18, flush installation	**DTM426**
RFID evaluation unit / antenna, CAN J1939 interface, M18, non-flush installation	**DTM427**
RFID evaluation unit / antenna, CAN J1939 interface, M30, flush installation	**DTM436**
RFID evaluation unit / antenna, CAN J1939 interface, M30, non-flush installation	**DTM437**

Transponders	Order no.
ID tag / Ø 30 x 2.8 / 03 – 13.56 MHz, 16 Kbits – FRAM	**E80370**
ID tag / Ø 30 x 2.5 / 06 – 13.56 MHz, 896 bits	**E80371**
ID tag / Ø 20 x 2.5 / 06 – 13.56 MHz, 896 bits	**E80377**
ID tag / Ø 30 x 2.8 / 03 – 13.56 MHz, 64 Kbits	**E80380**

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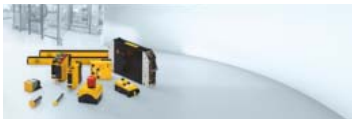

Safety technology

Process sensors

Industrial communication

IO-Link

Identification systems

Condition monitoring systems

Systems for mobile machines

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Software

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ifm electronic gmbh
Friedrichstraße 1
45128 Essen
Tel. +49 / 201 / 24 22-0
Fax +49 / 201 / 24 22-1200
E-mail info@ifm.com

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