Efficient tracking of product, work in progress and control of production processes

Identification systems

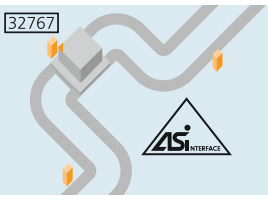
ifm.com/gb/identification

Identification systems from ifm: The optimum solution for every requirement

Optical code reader

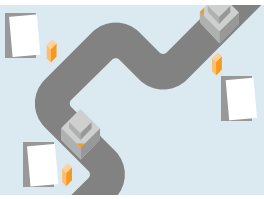
Multicode reader

RFID systems

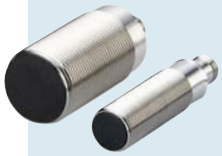


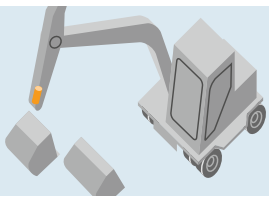
LF system
125 KHz
AS-Interface

HF system
13.56 Mhz
IO-Link

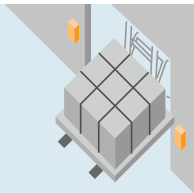


LF/HF system
125 KHz
13.56 Mhz





HF system
13.56 Mhz



UHF system
865 to 928 MHz

Type overview

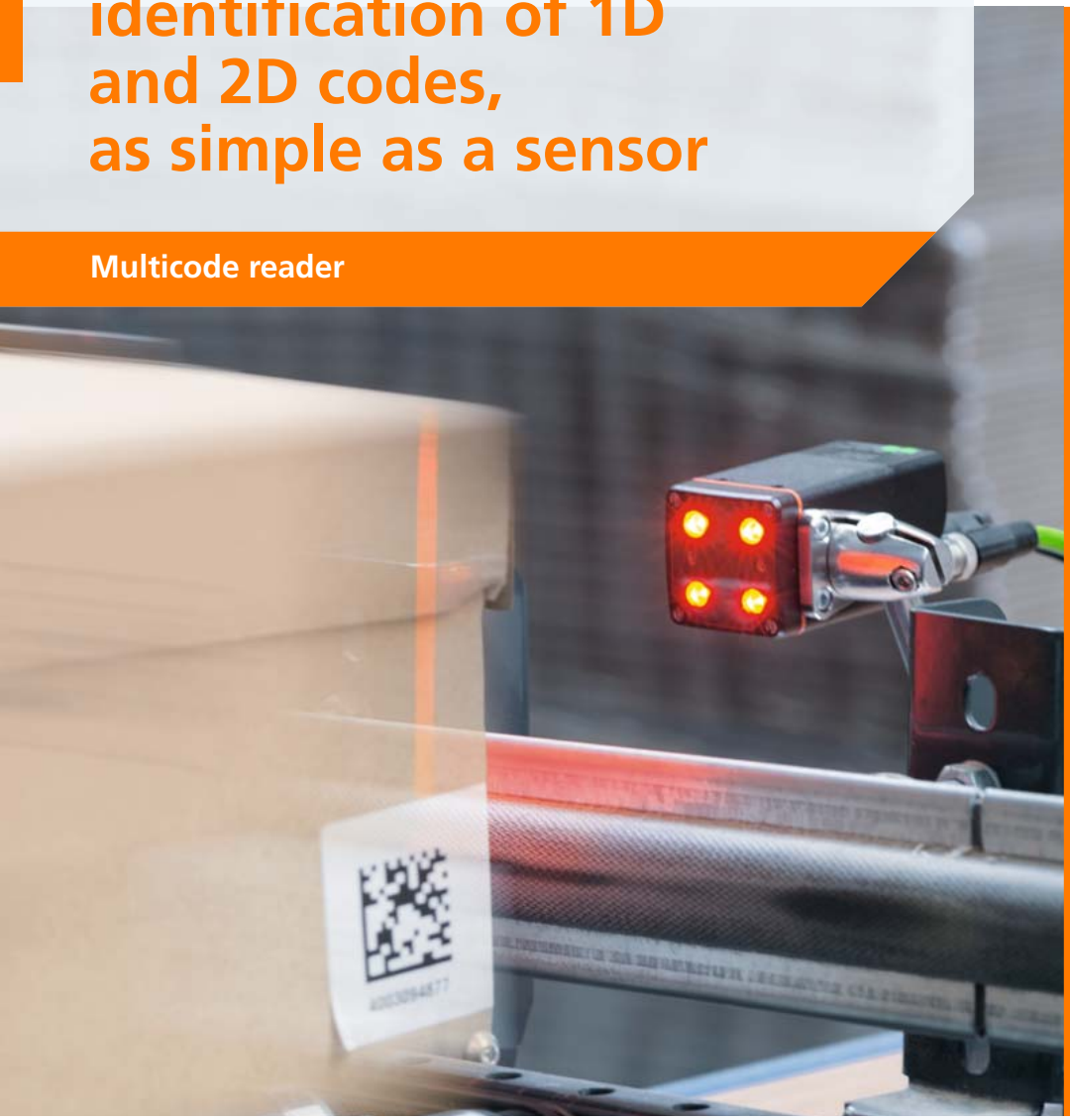
For industrial applications

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 DataMatrix codes and text for the monitoring of process operations	**O2I**	Up to 2 m	Ethernet TCP/IP EtherNet/IP Profinet		–	–	*4 - 5*
Identification in routing conveyors	**DTS125**	Up to 100 mm	AS-i	16 bits 32767	✓	–	*6 - 7*
Identification in routing conveyors	**DTI**	Up to 200 mm	IO-Link	8 kB 	✓	✓	*8 - 9*
Identification in conveyors. Large data volumes, high speed	**DTE10x ANT4xx ANT5xx ANT600**	Up to 200 mm	SAP/ERP Profibus-DP Profinet EtherNet/IP Ethernet TCP/IP Ethercat	8 kB 	✓	–	*10 - 11*
Identification in production, in mobile machines	**DTM DTC**	100 mm	CANopen CAN J1939	8 kB 	✓	✓	*12 - 13*
Identification in production and logistics. Long ranges, many tags	**DTE830 DTE930 DTE80x**	Up to 10 m	Ethernet TCP/IP EtherNet/IP Profinet	240 bit EPC 512 bit user 	✓	✓	*14 - 15*
							16 - 19

Quick and reliable identification of 1D and 2D codes, as simple as a sensor

Multicode reader



Powerful:
4 x higher resolution for reliable reading results, 10 x faster evaluation time, 10 x faster set-up.

Simple:
Teaching via one button and configuration via smartphone app.

Well equipped:
Integrated ifm memory stick, polarisation filter, automatic focussing, laser focussing aid and rotatable connector.

Communicative:
Integrated fieldbus interfaces.

Award winning:
Vision Assistant software to configure complex identification tasks.

Robust:
Industrially compatible diecast housing.

The O2I teach app is used to generate a DataMatrix code on the smartphone display.
Just hold it in the field of view of the multicode reader – and the configuration is automatically applied.
Available for iOS, Android and Windows.

Easy set-up

One-button teach

Ready for use within a few seconds

One highlight: simple teaching via one button. The sensor automatically does the focussing, exposure setting and code type recognition and is ready for use in a few seconds. The preset device configuration can be changed by means of a user-friendly smartphone app.

Standard applications – one image, one code

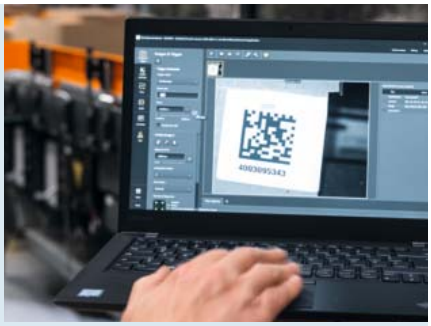
Simple applications with a bar code or 2D code per image can be set quickly via teach button. This saves time and costs.

5288935026374

For complex requirements: the ifm Vision Assistant

Clear configuration of demanding applications

For complex identification tasks, the multi-code reader can easily be configured using the award-winning Vision Assistant software. The live image and extensive visualisation of all settings provide an optimum overview.



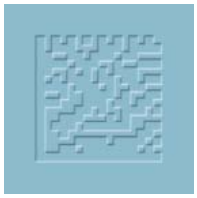
Optimum contrast by means of a polarisation filter

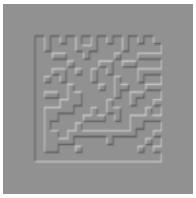
The integrated optional illumination with polarisation filter ensures sufficient contrasts to reliably read codes even in case of shiny surfaces such as metal.

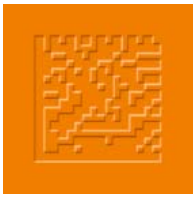
1. Without polarisation filter
2. With polarisation filter

One code, changing background

Several images can be captured very quickly with a different exposure time to recognise codes with variable surface characteristics or deviating colour or ambient light.

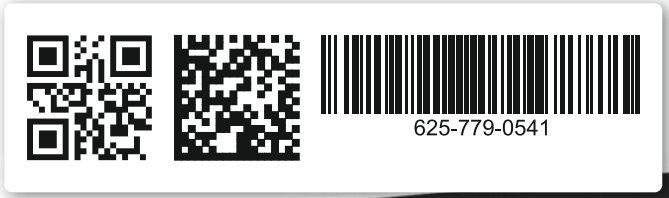






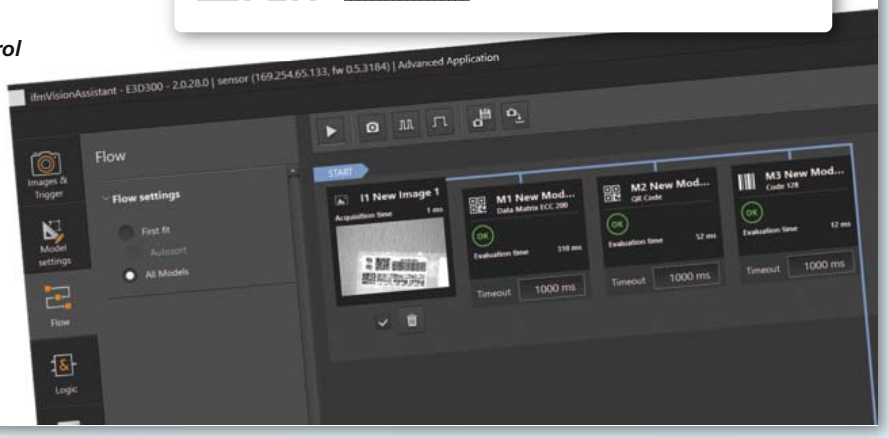
Several codes, one image

The auto-find code function automatically recognises several different codes in one image. The user can easily assign these codes in the Vision Assistant.



Unique – the sequential control

Visualises all configurations of the image and code settings. This quickly gives you a comprehensive overview of the whole application. In addition, the logic and interface function allows easy programming of the sensor output.



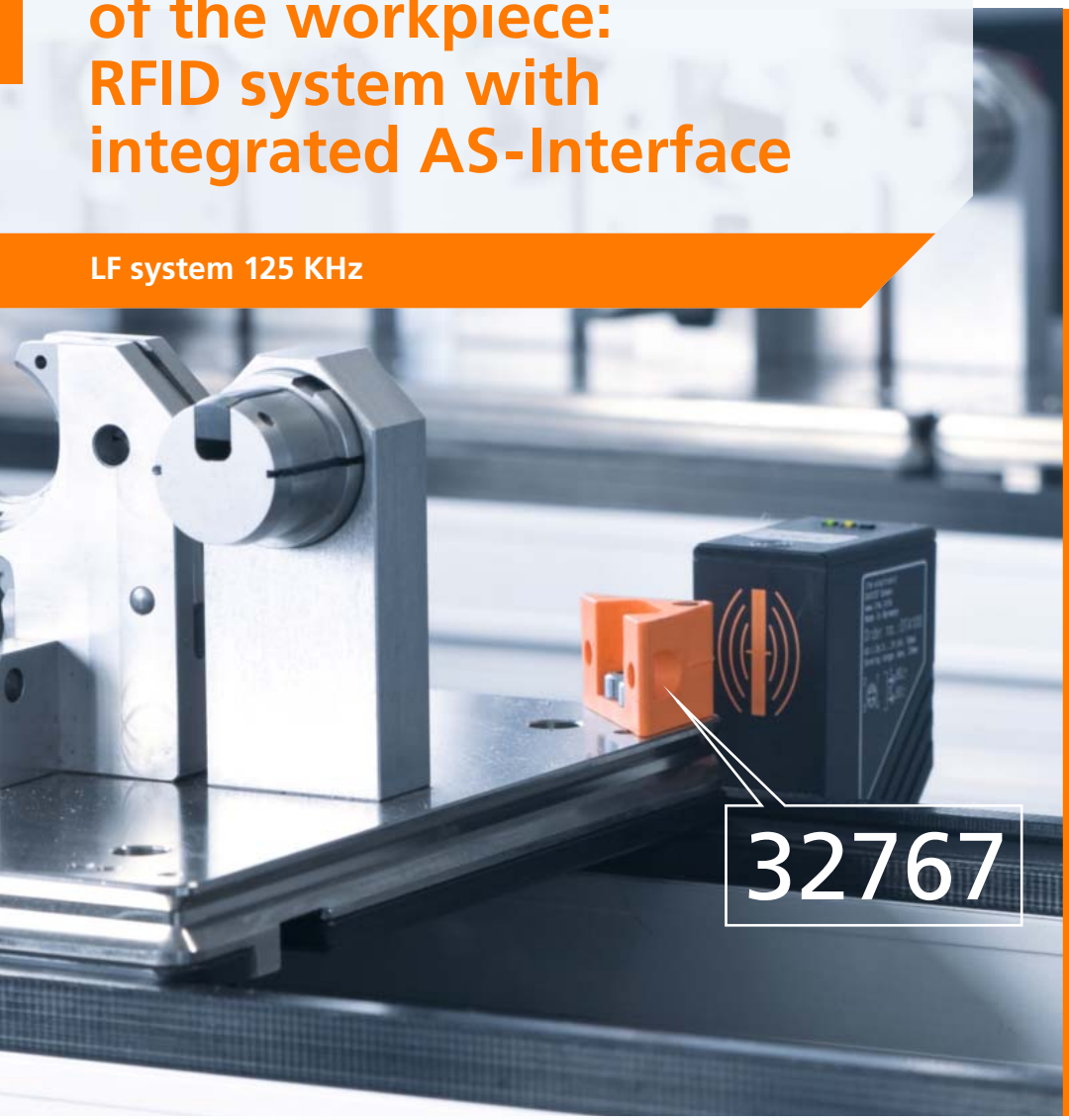
TCP/IP

EtherNet/IP

PROFINET

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.

Communicative:
Thanks to the connection to the AS-i master, communication to all PLCs, or IT systems, is possible via the fieldbus and TCP/IP interfaces that are available.

Safe:
The high reading reliability of the compact unit ensures a smooth process flow.

User-friendly:
No programming required for read/write units with AS-Interface. The stored value is automatically provided by the transponder when the antenna is passed.

Industry standard:
The certified AS-i standard guarantees interoperability with other automation components.

Simple connection

Unpack, assign an address, connect: The RFID antennas of the DTS125 system are set up in no time. Up to 31 can be connected to the network via an easy-to-use M12 connector or via an AS-i splitter box.

Ready for use in no time: RFID system DTS125 with integrated evaluation

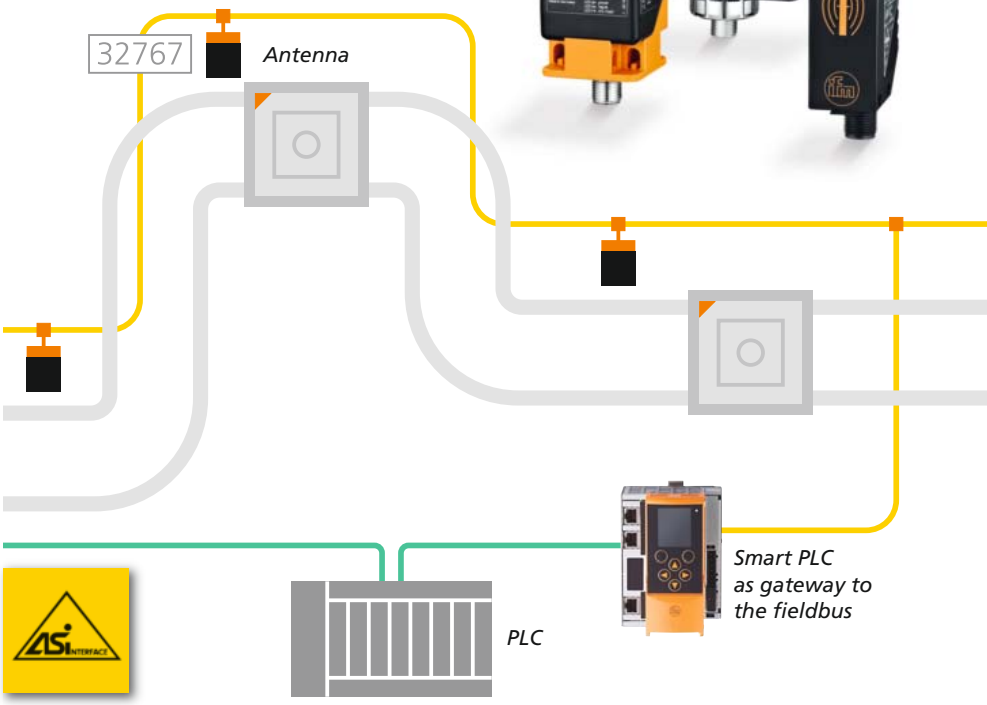
Robust and battery-free

The ID tags for assembly and conveyor systems, which do not require any batteries, are extremely robust and particularly suited for use at high ambient temperatures. They are reliably detected by the RFID system DTS125 at a travel speed of up to 0.5 m/s.

Reliable product tracking in harsh environments

The DTS125 RF identification system from ifm is based on 125 KHz technology. It has been designed for production control and is used where optical processes, such as the use of bar codes, are not suitable due to the severe operating conditions (oils, metal swarf).
The system is ideal for solving tasks in assembly and conveying applications as well as in handling automation and in packaging and filling systems.

DTS125 is the first RFID system for AS-Interface worldwide. Advantage: 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 system solution app RFID DTA

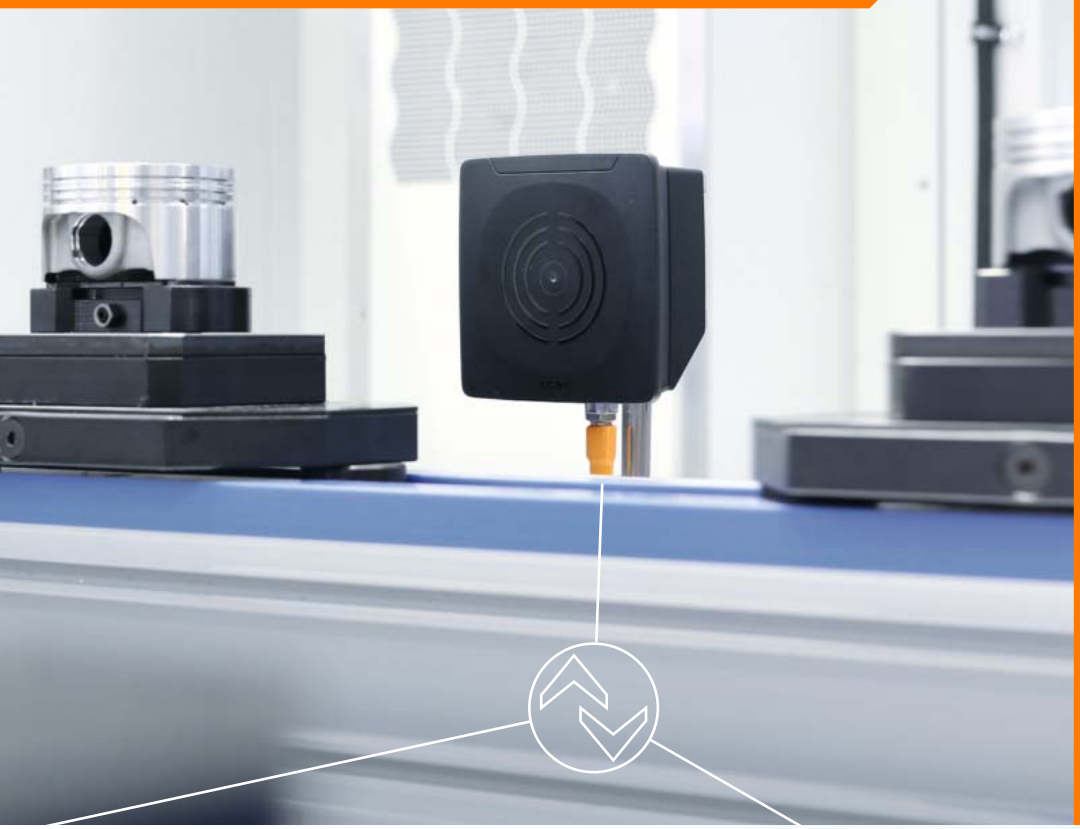
App simplifies handling

With the browser-based system solution app "RFID DTA", ifm simplifies the handling of RFID data and the communication with higher-level networks. The app can be used on all web interface enabled devices.

Learn more at ifm.com/gb/lf

Large selection of RFID antennas: RFID system with integrated IO-Link interface

HF system 13.56 MHz



Variable:
Many unit versions for different applications.

User-friendly:
Flexible parameter setting, diagnostics and data handling thanks to IO-Link.

Suitable:
Perfect for identification tasks with small data volumes.

Clear:
Easy visualisation of the antenna parameters with LR DEVICE or IO-Link master via the IODD.

More efficient automated processes

This RFID solution is especially suited for tool identification and tracking product build through multiple processes. Here, only small amounts of data are read. For example, the RFID IO-Link antennas can be used in dental milling machines to reliably determine whether the correct dental drill has been mounted.

Product tracking and assembly inspection

Thanks to the easy integration via IO-Link the new RFID antennas are suitable for a wide range of applications. RFID antennas with IO-Link are particularly suited for identification tasks with low data volumes, e.g. in product tracking or assembly inspection applications.

IO-Link master for the automation and IT world

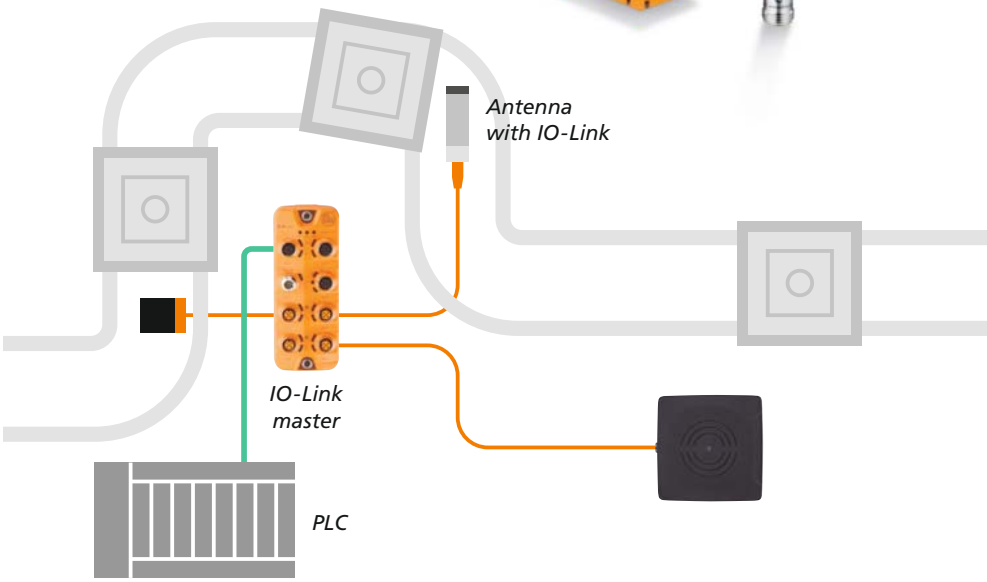
The decentralised IO-Link master modules serve as a gateway between intelligent IO-Link sensors and the field bus. Thanks to the separate IoT Ethernet socket, the sensor data can simultaneously be sent to the IT world.

TCP/IP

EtherNet/IP

Easy integration

Up to eight RFID antennas can be connected directly to the IO-Link master. This provides an easy way to establish and configure an RFID network via the existing IO-Link network. Depending on the version, the IO-Link masters have an EtherCAT, Profibus, Ethernet TCP/IP, EtherNet/IP or Profinet interface for communication to the PLC. The robust design of the antennas with protection ratings IP 67 and IP 69K permits use in harsh industrial environments. All RFID tags to HF standard ISO 15693 can be used.



Wide range of applications: DTI RFID antennas for connection to IO-Link masters

Photo: kitzmann-gruppe.de

Product quality assurance

RFID antennas can be used at hose or coupler stations, e.g. on vacuum conveyor systems, to monitor that hoses are connected correctly. This ensures that fluids are routed correctly and that the quality of the end product is in line with market requirements and no product is contaminated.

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

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

LF/HF system 125 KHz, 13.56 MHz

Clear:
Status display via LED and read out via web server.

User-friendly:
Digital inputs/outputs enable additional components to be connected.

Powerful:
Powerful – yet easy to use.

Compatible:
Certified interoperability with all common fieldbus systems.

Robust:
Protection ratings IP 67 and IP 69K for use in harsh industrial environments.

DTE evaluation units with various interfaces

Versatile and convenient evaluation unit

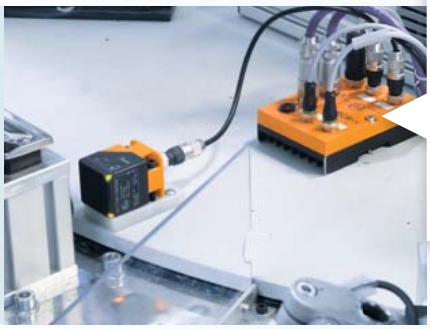
The DTE10x RFID evaluation unit controls the data exchange between the RFID antennas or the sensor/actuator level and the higher control level. The unit has four channels for the connection of field devices. Each channel can be used for connection of an RFID read / write head or as a digital input / output. The integrated web server enables easy device configuration.

TCP/IP

EtherNet/IP

Connection via M12 standard

All connections and the power supply are designed for standard M12 connectors. Antennas can be connected with connection cables of up to 20 m. The wide range of accessories such as Profibus connection cables and terminating resistors facilitate the system set-up.



For long ranges: RFID antenna ANT600

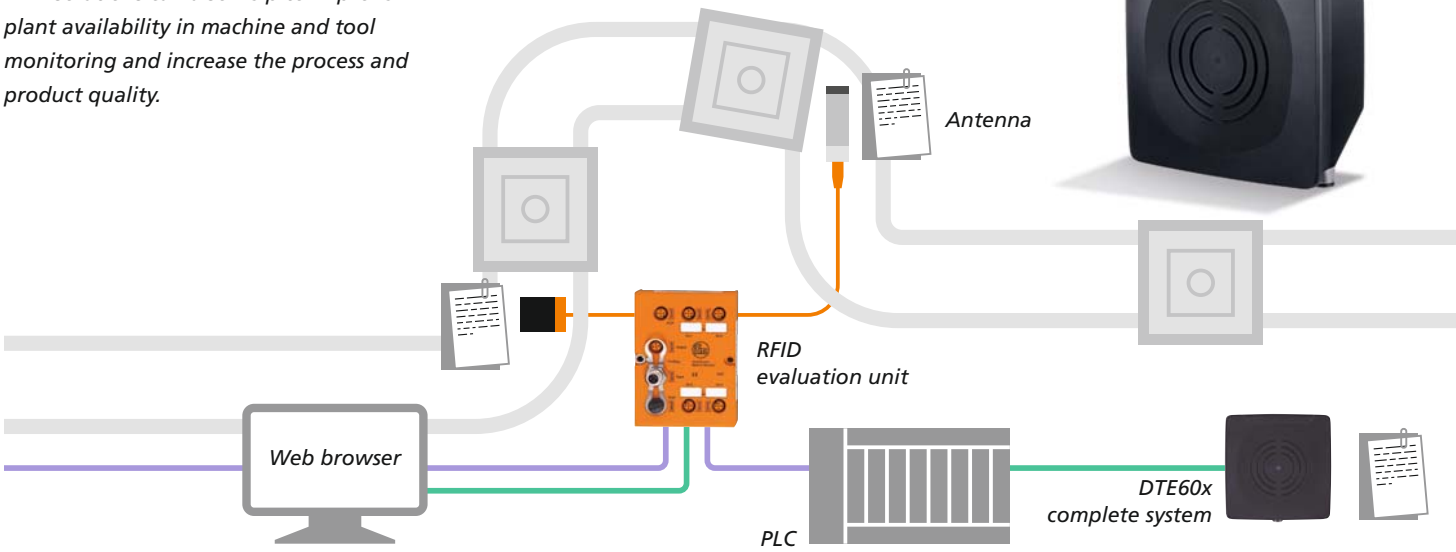
Improving OEE metrics with RFID

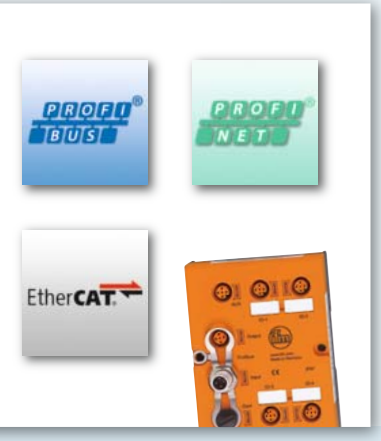
RFID systems can help to optimise the OEE metrics of availability, performance and quality of plants and processes.

Reliable product tracking enables more efficient coordination and acceleration of supply and manufacturing processes, which minimises idling and downtime – this allows you to boost both plant availability and performance.

RFID solutions can also help to improve plant availability in machine and tool monitoring and increase the process and product quality.

Relevant values such as run time, operating cycles or maximum temperature can be stored on the tags. This makes it possible to more accurately define replacement or maintenance intervals. Unplanned lengthy downtimes and wear-related reductions in production quality are prevented.





For an efficient RFID network

The RFID antenna ANT600 is used when data needs to be read or written at several positions in the process and over a distance of up to 200 mm. The DTE10x evaluation unit serves as a central link and connection to the PLC.

Ideal for RFID single-point solutions

DTE60x is the ideal choice where individual read / write points are required within a system. Thanks to the integrated evaluation unit, the compact solution can be connected directly to the PLC via the on board fieldbus interface. This makes it easy to set up a decentralised RFID network.

Directly connectable to the PLC: the RFID system DTE60x

TCP/IP EtherNet/IP PROFINET

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

Robust and convenient: RFID compact units with integrated CAN interface

HF system 13.56 MHz

User-friendly:
Antenna, evaluation and CAN-open interface in one housing simplify installation.

Compatible:
CAN protocols optimised for communication with ifm ecomat*mobile* controllers.

Convenient:
Reliable identification of fittings or workpiece carriers for efficient workflows.

Robust:
Protection ratings IP 67 and IP 69K for use in harsh industrial environments.

Suitable for mobile use: DTM RFID compact unit with integrated evaluation

Individual access authorisation

High-pressure pumps supply water with a pressure of up to 4,000 bar for cleaning and abrasive works. To ensure safe handling of the machines, the multi-level user authorisation is activated via the RFID system.

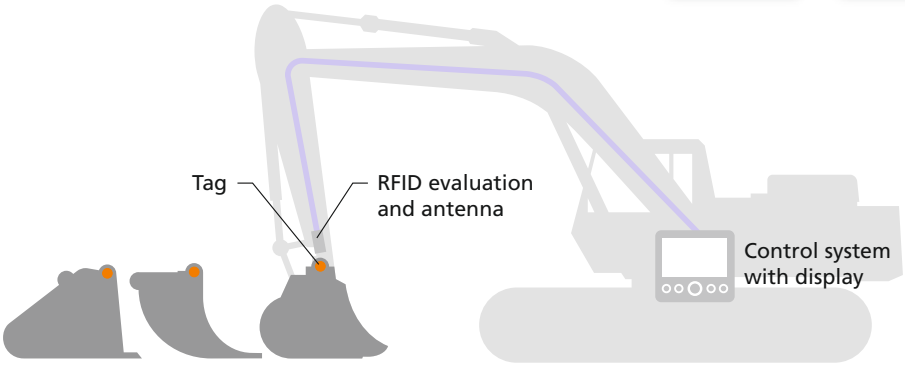
100 % security in case of emergency

The RFID evaluation system verifies that the vehicle has been loaded correctly with all the necessary tools.

A compact solution for mobile applications

The RFID system of the DTM4xx series has been designed for use in agricultural machines, municipal vehicles and construction machines. The system with E1 type approval automatically detects different attachments. This simplifies the creation of user-specific system set-ups and configurations and their definition in the controller.

The robust and compact M18 or M30 housings feature an integrated antenna, evaluation unit and interface – CANopen or CAN J1939 – which reduces the wiring complexity and space requirements.



For industrial applications

The RFID read/write systems DTC510 and DTC600 come with an integrated antenna, evaluation unit and CANopen interface. Their reduced wiring complexity and space requirements and their robust design make them the perfect choice for confined areas in industrial applications. The compact systems show their strengths particularly in intralogistics. Whether product tracking, access control or material flow control: Automated production steps can be controlled efficiently and reliably.

Little space required: DTC RFID compact unit with integrated evaluation

Higher plant productivity

The DTC600 system allows plant operators to operate the self-propelled transport systems at higher speed. This helps increase the volume of intralogistics transportation – and thus the productivity of the plant.

Large sensing field for faster AGVs

The DTC600 system offers a large sensing field for AGV navigation. The RFID tags in the floor allow positioning even at higher speeds.

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

Long ranges for production and logistics: UHF RFID

UHF system 865 to 928 MHz

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

Flexible:
Solutions for RFID networks and single-point measurements.

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

Robust:
Protection rating IP 65 / IP 67 meets all requirements for use in harsh industrial environments.

DTE830 / DTE930 evaluation unit and external antennas

Low and mid range

The (ultra) low range antennas ANT805 and ANT810 detect individual products with reading ranges of up to 20 cm. The mid range antennas ANT815, ANT820 and ANT920 identify larger units, for example on conveyor belts, at a distance of up to 2 m.

High performance, long range

The wide range antennas ANT860 and ANT960 can detect a large number of tags simultaneously over a long distance of up to 10 metres. For example, they are used for truck registration at delivery terminals or for inflow and outflow control in central warehouses.

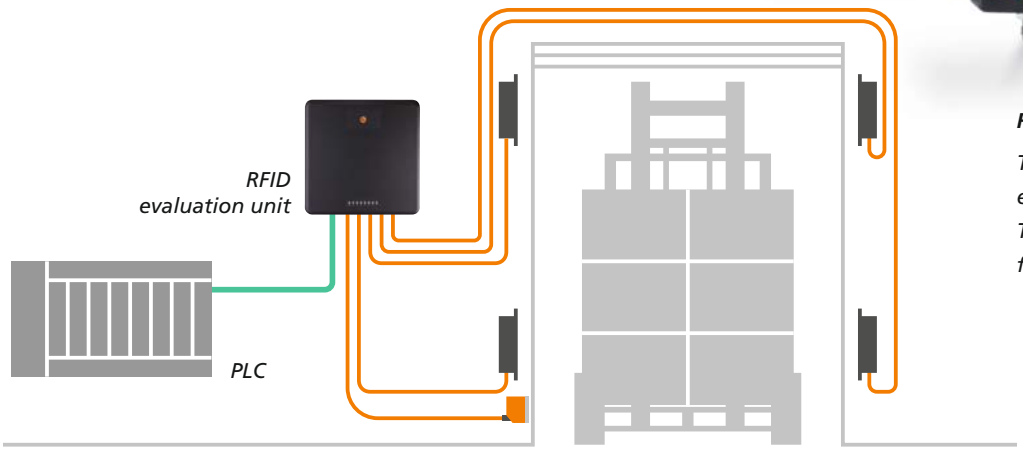
Evaluation unit for external antennas

DTE830/930: UHF evaluation units for external antennas for short range and wide range applications. With digital inputs / outputs and Ethernet interface.

EtherNet/IP

For efficient material flows

RFID UHF systems are capable of reading multiple tags over great distances. This makes them perfect for seamless tracking of products. The positions of workpieces and goods can be determined reliably and transparently, enabling the efficient control of material flows in logistics centres or along production lines, such as in the automotive industry.
This prevents an incorrect provision of products or downtime due to missing material. Plant productivity increases.



RFID UHF as a complete system

The DTE80x series features all the relevant elements of an RFID UHF system:
The antenna, evaluation unit and interface are combined in a single device.

DTE80x RFID complete system with integrated evaluation

Versatile use

Easy to use, compact and with an antenna range of up to 3 metres, the single-point solution DTE80x is ideal for applications on assembly lines, in intralogistics or in high rack storage areas as well as for access control or container management applications.

TCP/IP EtherNet/IP PROFINET

Learn more at ifm.com/gb/uhf

Identification systems from ifm: The choice is yours

Multicode reader O2I

Description	Interface	Order no.
Standard lens, red light	EtherNet/IP, Ethernet TCP/IP	**O2I500**
Standard lens, infrared	EtherNet/IP, Ethernet TCP/IP	**O2I501**
Wide-angle lens, red light	EtherNet/IP, Ethernet TCP/IP	**O2I502**
Wide-angle lens, infrared	EtherNet/IP, Ethernet TCP/IP	**O2I503**
Telephoto lens, red light	EtherNet/IP, Ethernet TCP/IP	**O2I504**
Telephoto lens, infrared	EtherNet/IP, Ethernet TCP/IP	**O2I505**

Version with Profinet interface in preparation

LF RFID system DTS125 · 125 KHz
Read / write heads with AS-Interface

Type	Description	Max. range [mm]	Order no.
55 x 24 x 41 mm	Read / write head	10	**DTA100**
	Read head	20	**DTA101**
40 x 40 x 54 mm	Read / write head	65	**DTA200**
	Read head	65	**DTA201**
92 x 80 x 40 mm	Read / write head	100	**DTA300**
	Read head	110	**DTA301**

LF RFID system DTS125 · 125 KHz
Tags

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

HF RFID system DTI 13.56 MHz
Antennas with IO-Link

Type	Order no.
M12 / L: 70 mm / f	**DTI410**
M12 / L: 70 mm / nf	**DTI411**
M18 / L: 50 mm / f	**DTI420**
M18 / L: 50 mm / nf	**DTI421**
M18 / L: 70 mm / f	**DTI424**
M18 / L: 70 mm / nf	**DTI425**
M30 / 50 mm / f	**DTI430**
M30 / 50 mm / nf	**DTI431**
M30 / L: 70 mm / f	**DTI434**
M30 / L: 70 mm / nf	**DTI435**
Rectangular 40 x 40 mm	**DTI513**
20 x 7 x 48 mm, 1 m cable, M12 connector	**DTI515**
20 x 7 x 48 mm, 2 m cable, M12 connector	**DTI516**
120 x 50 x 113 mm, M12 connector	**DTI600**

f: flush installation nf: non-flush installation

IO-Link master
DataLine

Description	Interface	Order no.
4-port	Profinet	**AL1300**
4-port	EtherNet/IP	**AL1320**
4-port	EtherCat	**AL1330**
4-port	Modbus TCP	**AL1340**
8-port	Profinet	**AL1302**
8-port	EtherNet/IP	**AL1322**
8-port	EtherCat	**AL1332**
8-port	Modbus TCP	**AL1342**

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

Type	Interface	Order no.
115 x 46.2 x 85	Profibus-DP	**DTE100**
115 x 46.2 x 85	Profinet	**DTE101**
115 x 46.2 x 85	EtherNet/IP	**DTE102**
115 x 46.2 x 85	EtherCAT	**DTE103**
115 x 46.2 x 85	Ethernet TCP/IP	**DTE104**

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

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

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

Type	Description	Order no.
M12 / L: 70 mm / f	13.56 Mhz	**ANT410**
M12 / L: 70 mm / nf	13.56 Mhz	**ANT411**
M18 / L: 50 mm / f	13.56 Mhz	**ANT420**
M18 / L: 50 mm / nf	13.56 Mhz	**ANT421**
M18 / L: 70 mm / f	13.56 Mhz	**ANT424**
M18 / L: 70 mm / nf	13.56 Mhz	**ANT425**
M30 / 50 mm / f	13.56 Mhz	**ANT430**
M30 / 50 mm / nf	13.56 Mhz	**ANT431**
M30 / L: 70 mm / f	13.56 Mhz	**ANT434**
M30 / L: 70 mm / nf	13.56 Mhz	**ANT435**
66 x 40 x 40 mm	125 KHz	**ANT512**
66 x 40 x 40 mm	13.56 Mhz	**ANT513**
48 x 20 x 7 mm, cable 1 m	13.56 Mhz	**ANT515**
48 x 20 x 7 mm, cable 2 m	13.56 Mhz	**ANT516**
113 x 113 x 50 mm	13.56 Mhz	**ANT600**

f: flush installation nf: non-flush installation

Still looking for more choice? You can find more tag versions at ifm.com

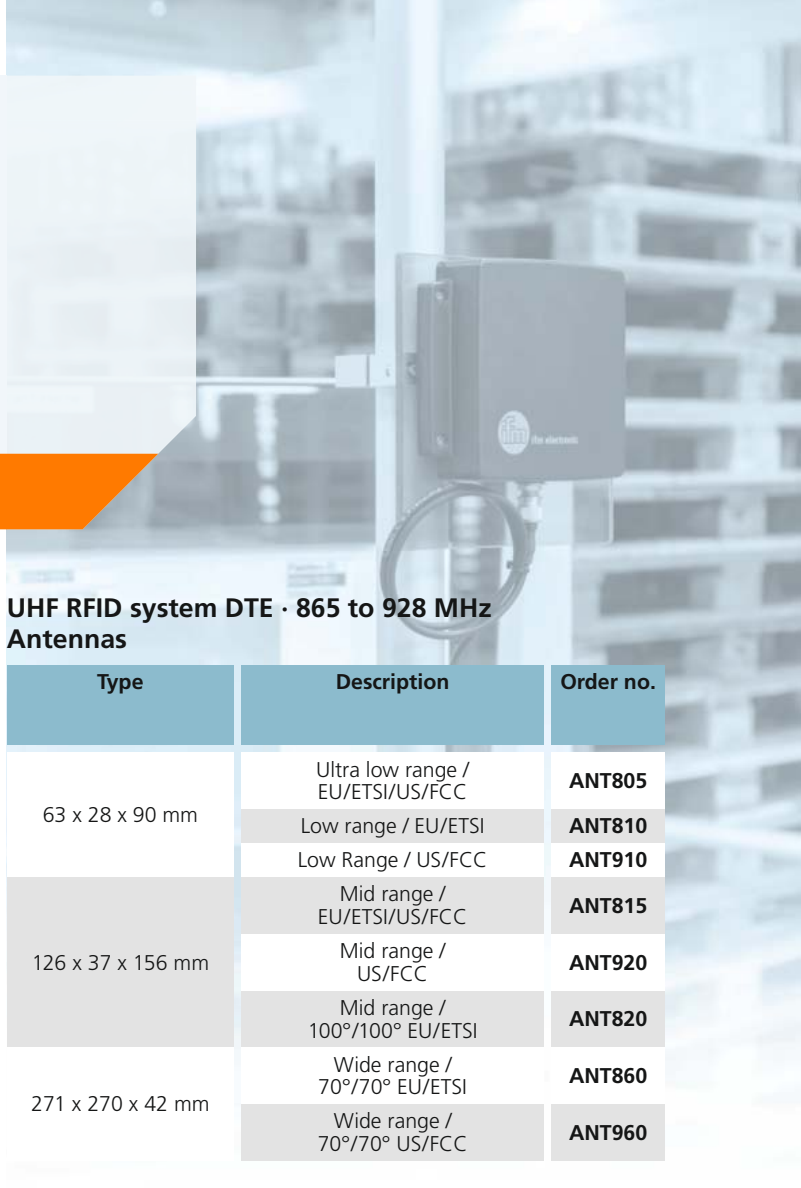
HF RFID system 13.56 MHz
Antennas with integrated evaluation

Type	Interface	Order no.
113 x 113 x 50 mm	Profinet	**DTE601**
113 x 113 x 50 mm	EtherNet/IP	**DTE602**
113 x 113 x 50 mm	TCP/IP	**DTE604**

HF RFID system 13.56 MHz
Tags

Type ID TAG	Description	Order no.
51 x 51/06	13.56 Mhz	**E80400**
Bracket for ID tag E80400		**E80401**
30 x 65/06	13.56 Mhz	**E80410**
34 x 6.0/06	13.56 MHz, 1024 bits	**E80342**
90 x 34 x 7/06	13.56 MHz 896 bits	**E80343**
16 x 3/06	13.56 MHz 896 bits	**E80344**

Identification systems from ifm: The choice is yours



UHF RFID system DTE · 865 to 868 MHz (EU/ETSI) Evaluation unit

Type	Interface	Order no.
300 x 300 x 71 mm	EtherNet/IP, Ethernet TCP/IP	**DTE830**

UHF RFID system DTE · 902 to 928 MHz (US/FCC) evaluation unit

Type	Interface	Order no.
300 x 300 x 71 mm	EtherNet/IP, Ethernet TCP/IP	**DTE930**

UHF RFID system DTE · 865 to 928 MHz Antennas

Type	Description	Order no.
63 x 28 x 90 mm	Ultra low range / EU/ETSI/US/FCC	**ANT805**
	Low range / EU/ETSI	**ANT810**
	Low Range / US/FCC	**ANT910**
126 x 37 x 156 mm	Mid range / EU/ETSI/US/FCC	**ANT815**
	Mid range / US/FCC	**ANT920**
	Mid range / 100°/100° EU/ETSI	**ANT820**
271 x 270 x 42 mm	Wide range / 70°/70° EU/ETSI	**ANT860**
	Wide range / 70°/70° US/FCC	**ANT960**

UHF RFID system DTE 865 to 928 MHz Antennas with integrated evaluation

Type	Interface	Order no.
138.1 x 63 x 156	Profinet	**DTE801**
138.1 x 63 x 156	EtherNet/IP	**DTE802**
138.1 x 63 x 156	Ethernet TCP/IP	**DTE804**

UHF RFID system DTE · 865 to 928 MHz Tags

Type ID TAG	Order no.
R30X10/04 – 865...870 MHz, 96 bits	**E80353**
73.5X21.2/04 – 1000 pcs on reel	**E80386**
139 x 53 x 15/04	**E80393**
174 x 70 x 17.6/04	**E80394**
54 x 85.6 x 0.76/04	**E80409**
110 x 25 x 12.7/04	**E80413**
51 x 48 x 12.6/04	**E80414**

HF RFID system DTM · 13.56 MHz
Antennas with integrated evaluation

Type	Interface	Connection	Order no.
M18 / L = 70 mm / f	CANopen	M12	**DTM424**
M18 / L = 70 mm / nf		M12	**DTM425**
M30 / L = 70 mm / f		M12	**DTM434**
M30 / L = 70 mm / nf		M12	**DTM435**
M18 / L = 70 mm / f	J 1939	M12	**DTM426**
M18 / L = 70 mm / nf		M12	**DTM427**
M30 / L = 70 mm / f		M12	**DTM436**
M30 / L = 70 mm / nf		M12	**DTM437**
M18 / L: 58 mm / f	CANopen	Cable 0.8 m	**DTM428**

f: flush installation nf: non-flush installation

HF RFID system DTC · 13.56 MHz
Antennas with integrated evaluation

Type	Interface	Connection	Order no.
Rectangular 40 x 40 mm	CANopen	M12	**DTC510**
138.1 x 63 x 156		M12	**DTC600**

Still looking for more choice? You can find more tag versions at ifm.com

HF RFID system DTM/DTC · 13.56 MHz
Tags

Type ID TAG	Description	Order no.
Ø 30 x 2.8 / 03	13.56 MHz, 16 kbits – FRAM	**E80370**
Ø 30 x 2.5 / 06	13.56 MHz 896 bits	**E80371**
Ø 20 x 2.5 / 06	13.56 MHz 896 bits	**E80377**
Ø 30 x 2.8 / 03	13.56 MHz, 64 kbits	**E80380**

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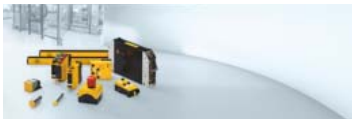

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Friedrichstraße 1
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Tel. +49 / 201 / 24 22-0
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