












# RFID systems

Issue **4.1**

ID 200 / ID 40 / ID 15

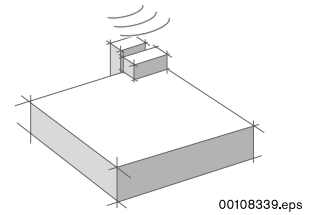


# Symbols

	Suitable for use in ESD Protected Areas. Contact with your Rexroth representative is recommended.
	Protection type [IP]
	Dynamic data transfer
	Operating frequency 125 kHz
	Compressed air connection required 4...6 bar
	PROFIBUS DP
	AS interface
<b>Modbus</b>	Modbus/TCP
	EtherNet/IP
	Profinet
	Reference to technical data/dimensions 5-2
	Reference to another page 3-3

RFID systems

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RFID systems

## RFID in assembly technology

Identification and data tag systems are used to control numerous production and transport systems in assembly technology applications. Object-related data not only form the basis for the targeted control of process and processing steps, but also for the type- or variant-dependent infeeding and outfeeding of workpiece pallets during the production of product variants on branched, flexible assembly systems.

Two basic principles characterize the handling of workpiece-related data:

### Central data storage

is based on the centralized storage of all workpiece-relevant data. This requires reliable workpiece identification at the processing station, whereby the associated data are retrieved from the central data storage.

### Decentralized data storage

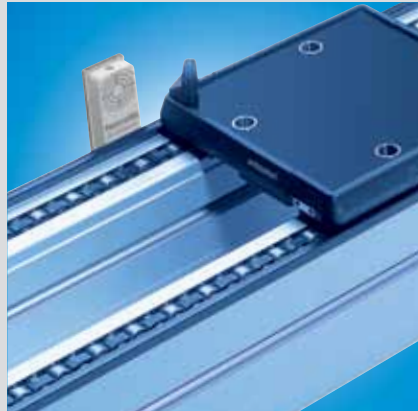
is based on mobile data tag systems, whereby the workpiece-relevant data are sent along directly with the workpiece (or on the workpiece pallet). High-performance read and write heads, which read out or modify the information, are required at the processing stations.



ID 200 - VarioFlow



ID 200 - TS 5



ID 200 - TS 2plus



ID 40 - TS 2plus



ID 15 - TS 2plus

RFID systems

## Types of data storage

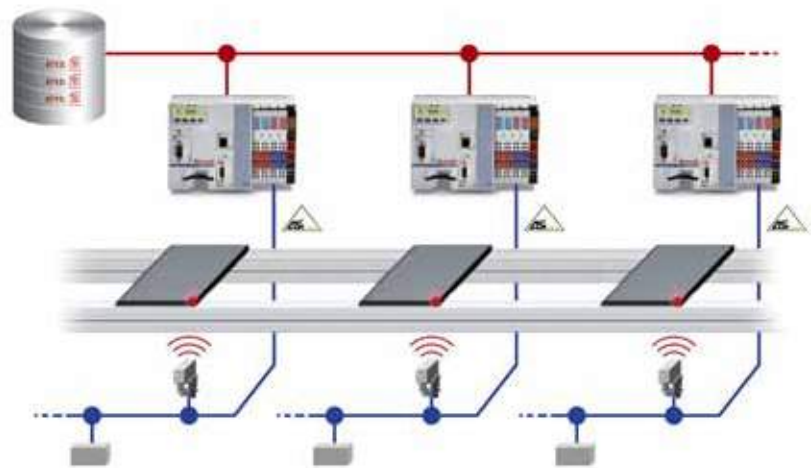
### Central data storage

With central data storage, the data related to the process and product are stored centrally.

Mobile data tags on the workpiece pallet as well as the corresponding readers ensure reliable workpiece identification at the production stations. On the basis of the workpiece identity, the associated data set is indexed in order to load the data into the PLC or cell controller.

The cell controller reads out the product type (variant, order or production batch) and the respective production status. This information is used to determine whether and which process steps are required.

After passing through the production station, the information in the data set is supplemented. The data flow between the processing station and the central computer with the data storage requires a network.

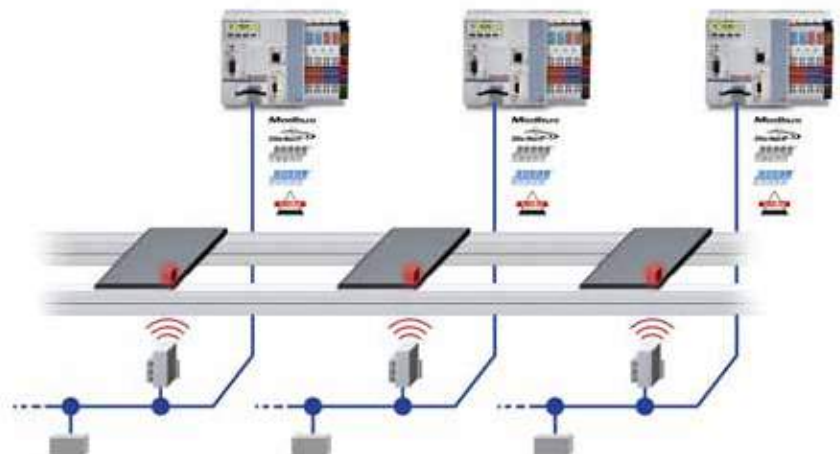


### Decentralized data storage

With decentralized data storage, the data related to the process and product accompany the workpiece.

The workpiece pallets are equipped with a mobile data tag that has a high storage capacity and offers the possibility to read and write data.

The data with the mobile data tag, which can be read or edited at any time via the corresponding read / write heads, are currently available at each processing station. The individual stations can thus independently handle the respective production processes; a network is not required for the workpiece data.



RFID systems

## Main features

System		ID 200	ID 40	ID 15
Central data storage		++	0	++
Decentralized data storage		++	++	-
PLC connection via	AS-i	-	-	+
	PROFIBUS DP	+	+	-
	Modbus	+	-	-
	EtherNet/IP	+	-	-
	Profinet	+	-	-
	TCP/IP	+	-	-
	Parallel	-	-	-
Data	Write	+	+	0
	Read	+	+	+
Attachment to workpiece pallet	Extension module	+	+	+
	Integration	+	-	+
Maximum speed for dynamic reading	(m/min)	30	30	20
Frequencies		125 kHz	1.28 MHz	125 kHz
		13.56 MHz		
Max. read distance, static	(mm)	35	12	20
Operating temperature of data tag	(°C)	-25...+85	0...+70	-40...+85
Min. number of write cycles		10 billion	10 billion	100000
Max. memory size		2 KB	32 KB	15 bit

RFID system ID 200

# RFID system ID 200

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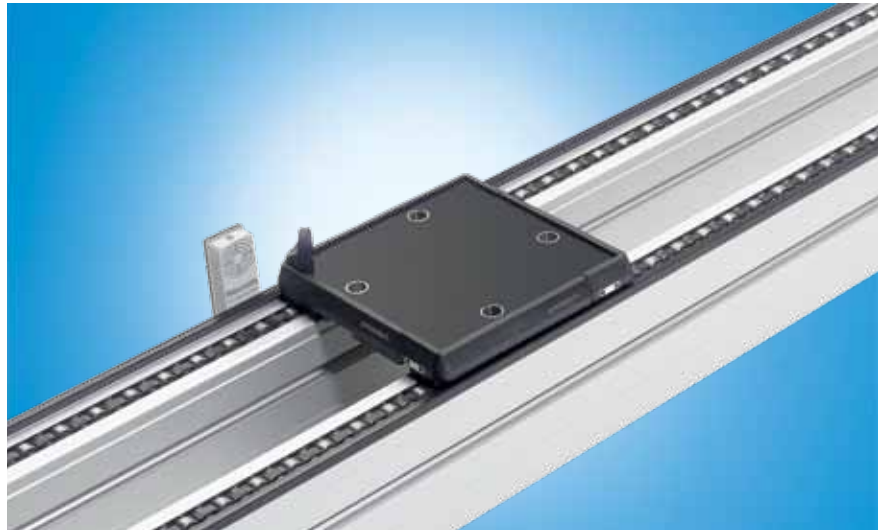
RFID system ID 200

# RFID system ID 200



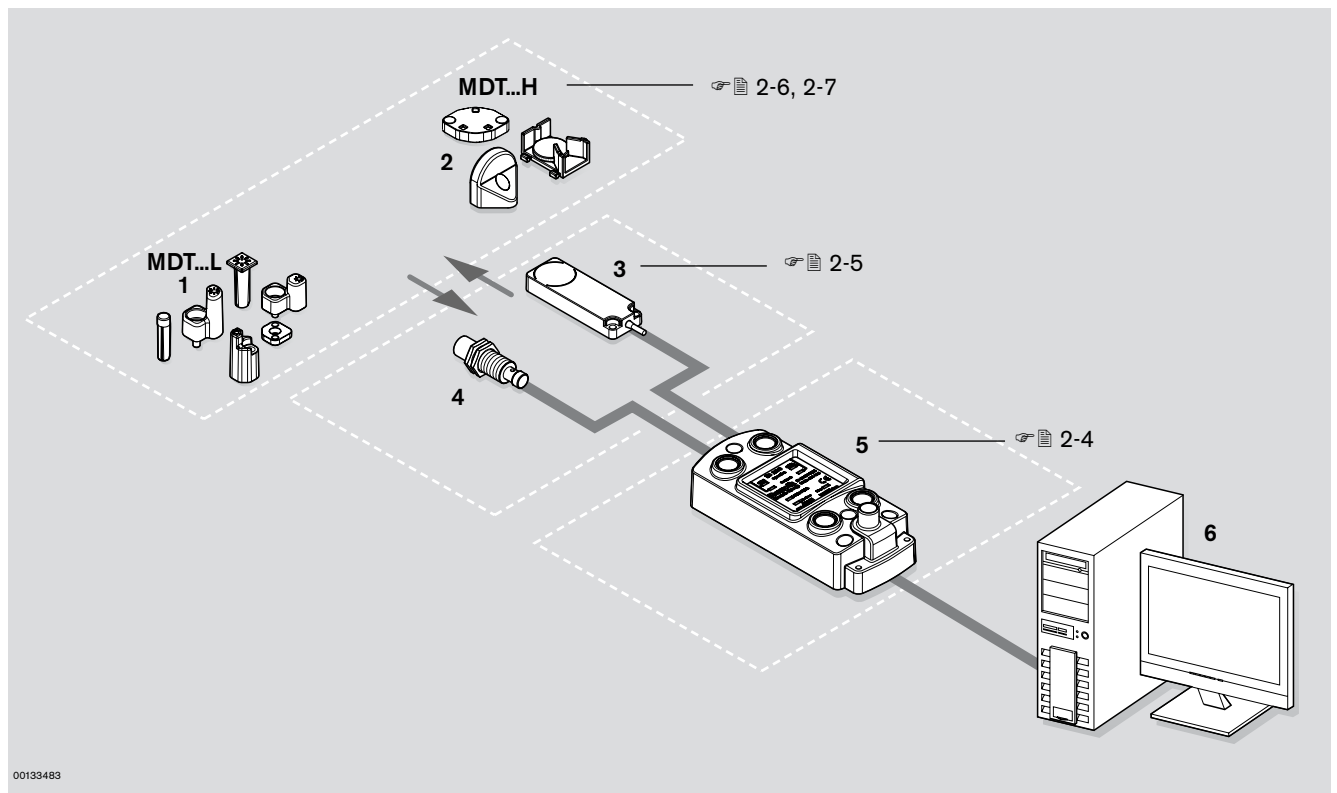
The RFID system ID 200 is a modular identification system that was developed for industrial use in production environments. The system consists of mobile data tags, antennas and communication modules. The system components have a robust and compact design and the system is particularly insensitive to faults and ensures secure data transmission. ID 200 is suitable for applications with both centralized and decentralized data storage.

The mobile data tags with inexpensive EEPROM memory are particularly small and are suitable for applications with low data volumes. The versions with FRAM memory can also store larger data quantities locally and are readable and rewritable almost as often as you like. They are the preferred choice for applications with short transmission times. Antennas are available in different designs and transmission frequencies. The appropriate version can therefore be selected for any application and installation location. The communication modules constitute the connection between the antennas and the higher-level control system. You can simultaneously control up to two antennas, including ones at different frequencies. PROFIBUS DP or Ethernet are available as control system interface options.



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## RFID system ID 200



**1** Mobile data tags MDT...L for 125 kHz.

**2** Mobile data tags MDT...H for 13.56 MHz

**3** Flat antennas A...F for 125 kHz or 13.56 MHz.

**4** Round antennas A...R for 125 kHz or 13.56 MHz

**5** Communication modules C... for PROFIBUS or Ethernet.

**6** Control system

RFID system ID 200

## Communication module ID 200/C-...



Modbus EtherNet/IP



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The communication module constitutes the connection between the antennas and the control system.

It provides pluggable connections for up to two antennas, which can be active simultaneously and work at different frequencies. Alternatively, a digital sensor can also be connected to each antenna. Parameterization and diagnosis are done via the integrated web server.

### ID 200/C-PDP

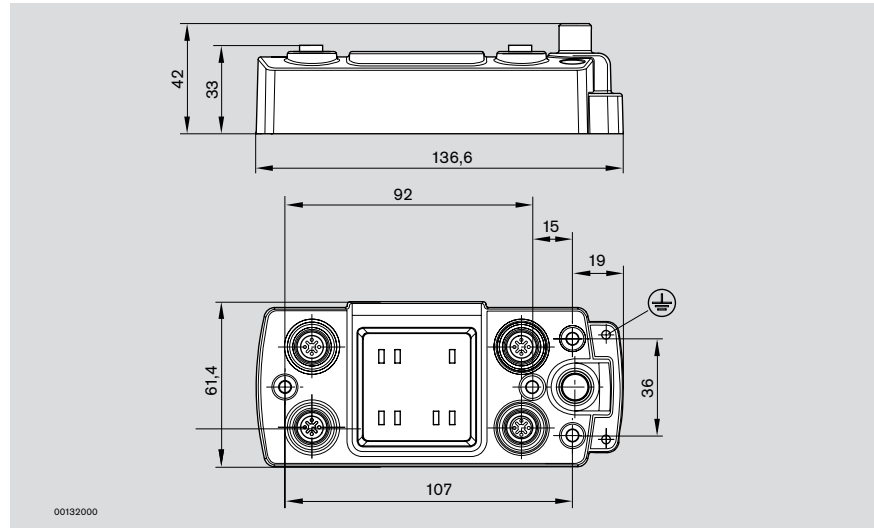
The connection to the control system is established via PROFIBUS-DPV0. The integrated web server is reached via a separate RS-232 interface.

### ID 200/C-ETH

The connection to the control system is established via Ethernet. In addition to TCP/IP, the Profinet/IO, Modbus/TCP and EtherNet/IP Ethernet protocols are also available. An integrated switch enables line structure cabling in addition to the conventional Ethernet star shape cabling.

Communication module ID 200/C-...

	No.
ID 200/C-PDP	3 842 410 061
ID 200/C-ETH	3 842 410 060



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<b>Operating voltage</b>	20...30 VDC, PELV
<b>Waviness</b>	≤ 10%
<b>Current consumption</b>	Max. 0.5 A (including 2 antennas)
<b>Status indicators</b>	7 LEDs
<b>Connections:</b>	RS232 ID 200/C-PDP PROFIBUS-DPV0 Profinet ID 200/C-ETH Ethernet/IP Modbus/TCP TCP/IP
<b>Protection type</b>	IP65
<b>Housing material</b>	Aluminum; powder-coated, RAL 7035
<b>Ambient temperature</b>	-25...+70 °C
<b>Storage temperature</b>	-30...+80 °C
<b>Humidity</b>	Max. 96%
<b>Vibration resistance</b>	3.5 mm (10...55 Hz); 20 g (55...2000 Hz)
<b>Shock and impact resistance</b>	70 g/6 ms 18 cycles
<b>Approvals</b>	EN 300330, ETS 300683, CE, FCC
<b>Mass</b>	0.5 kg

RFID system ID 200

# Antenna ID 200/A-...



The antennas are used to read and write mobile data tag MDT...L (125 kHz, low frequency) or MDT...H (13.56 MHz, high frequency). The antennas are designed for operation on a communication module and are also powered from this module.

## Antenna ID 200/A-...F (flat antenna)

The flat design of the antenna is optimized for side mounting on transfer systems. Other installation situations are possible with corresponding assembly kits.

## Antenna ID 200/A-...R (round antenna)

The round design of the antenna is particularly suitable for reading data tags that are mounted on the underside of the workpiece pallet. Other installation situations are possible with corresponding assembly kits.

Accessories: Assembly kits 2-8

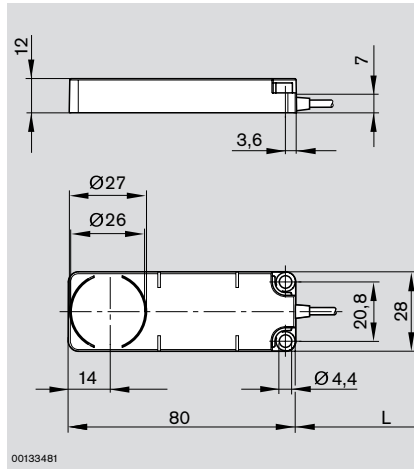
### Note:

Mobile data tag MDT.../...H for 13.56 MHz 2-6

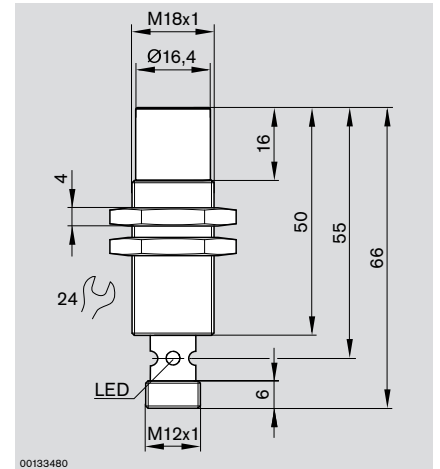
Mobile data tag MDT.../...L for 125 kHz 2-7



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Antenna ID 200/A-...F

	No.
ID 200/A-HF (13.56 MHz)	<b>3 842 410 065</b>
ID 200/A-LF (125 kHz)	<b>3 842 410 176</b>

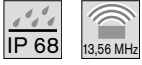
Antenna ID 200/A-...R

	No.
ID 200/A-HR (13.56 MHz)	<b>3 842 410 063</b>
ID 200/A-LR (125 kHz)	<b>3 842 410 177</b>

Type	ID 200/A-LR	ID 200/A-LF	ID 200/A-HR	ID 200/A-HF
<b>Operating voltage (from communication module)</b>	24 V	24 V	24 V	24 V
<b>Status indicator</b>	LED orange/green	LED orange/green	LED orange/green	LED orange/green
<b>Protection type</b>	IP67	IP67	IP67	IP67
<b>Housing material</b>	PBT/ stainless steel	PBT/ ABS plastic	PBT/ stainless steel	PBT/ ABS plastic
<b>Ambient temperature</b>	-25...+70 °C	-25...+70 °C	-25...+70 °C	-25...+70 °C
<b>Storage temperature</b>	-40...+85 °C	-40...+85 °C	-40...+85 °C	-40...+85 °C
<b>Humidity</b>	max 96%	max 96%	max 96%	max 96%
<b>Vibration resistance</b>	1 mm (10...55 Hz); 5 g (10...2000 Hz)			
<b>Shock and impact resistance</b>	30 g/11 ms 18 cycles			
<b>Mass</b>	0.1 kg	0.1 kg	0.1 kg	0.1 kg
<b>Transmission frequency</b>	125 kHz	125 kHz	13.56 MHz	13.56 MHz
<b>Read/write distance</b>				
- static	15 mm	15 mm	35 mm	35 mm
- dynamic (v = 20 m/min)	12 mm	12 mm	30 mm	30 mm
<b>min. distance between two antennas</b>				
- multiplex operation	30 mm	50 mm	30 mm	100 mm
- simultaneous operation	180 mm	290 mm	80 mm	150 mm

RFID system ID 200

# Mobile data tag MDT...H (13.56 MHz)



The mobile data tags are compatible with international standard ISO 15693 (13.56 MHz) and work without batteries and with FRAM memory. Several housing variants offer a wide range of installation positions on the workpiece pallet or directly on the products to be identified. The data tags can be read from several sides, including dynamically while passing.

MDTs with FRAM memory

- Memory capacity: 2000 byte user memory
- Additional 64 bit: unique serial number
- Read/write cycles:  $10^{10}$

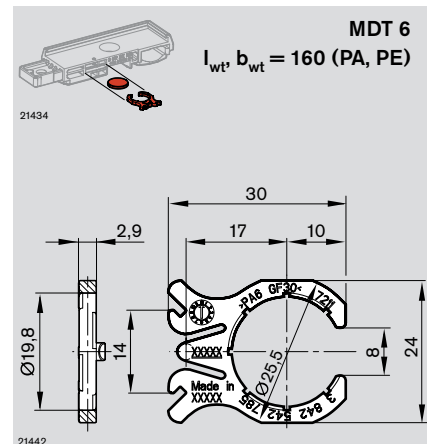
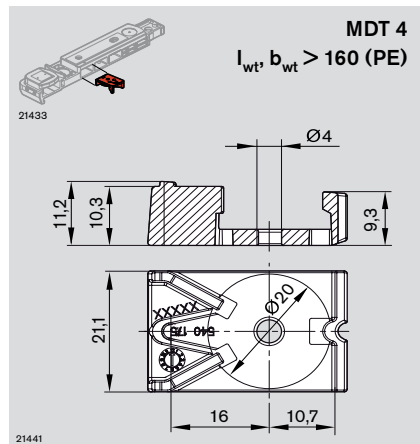
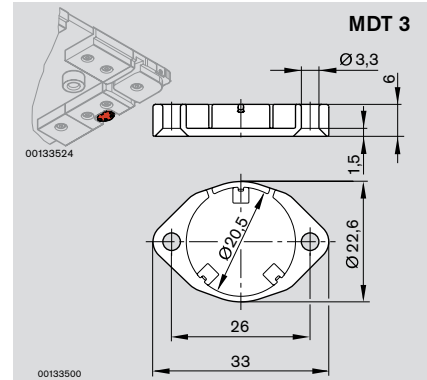
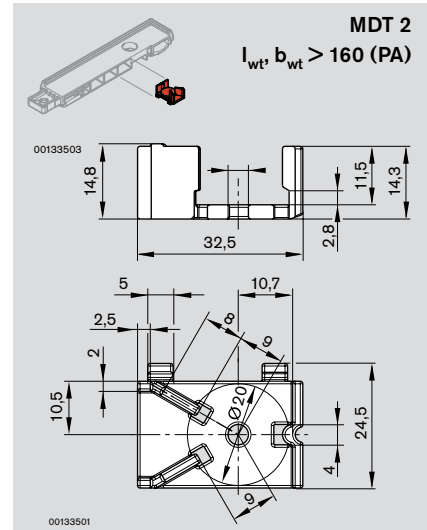
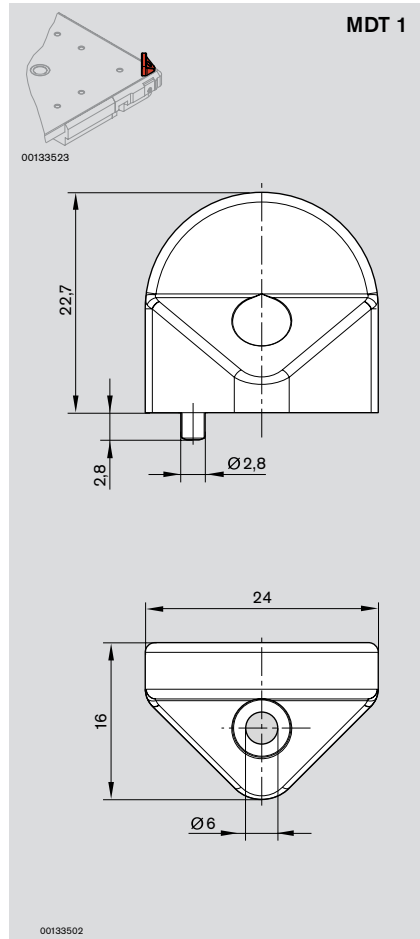
MDT with FRAM memory

		No.
MDT 1/2K-H	5	3 842 410 104
MDT 2/2K-H	5	3 842 410 103
MDT 3/2K-H	5	3 842 410 102
MDT 4/2K-H	5	3 842 410 124
MDT 6/2K-H	5	3 842 410 184

<b>Type</b>	MDT.../2K-H
<b>Frequency</b>	13.56 MHz
<b>Conformity with standards</b>	ISO 15693
<b>Memory capacity</b>	2000 bytes
<b>Data access</b>	8 byte block
<b>Memory type</b>	FRAM
<b>Number of write cycles</b>	$\geq 10$ billion
<b>Number of read cycles</b>	unlimited
<b>Transmission distance</b>	
- static	35 mm
- dynamic	30 mm
<b>Ambient temperature during operation</b>	-25...+85 °C
<b>Housing material</b>	PA66



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RFID system ID 200

## Mobile data tag MDT...L (125 kHz)



The mobile data tag MDT.../28-L is located directly on the workpiece pallet and stores the identification allocated by the user during initialization. The compact MDT has a non-volatile EEPROM (battery back-up not required) with a memory capacity of 5 bytes (payload data).

MDT.../28-L can be read from all sides (front, lift/right side, top and bottom) an unlimited number of times.

In addition to various installation positions on the workpiece pallet, seamless integration into the workpiece pallet is also possible 4-8, 4-9.

ID 15 data tags from manufacturing date FD986 can be initialized using the diagnostic package DPS/L for use with ID 200. The simultaneous operation of ID 15 and ID 200 is not possible.

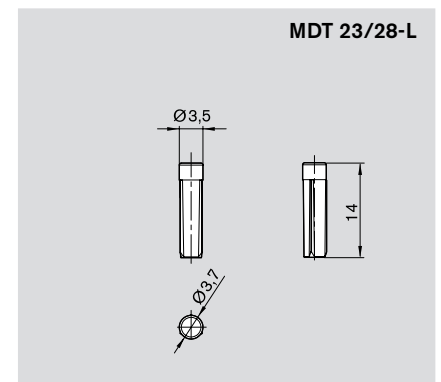
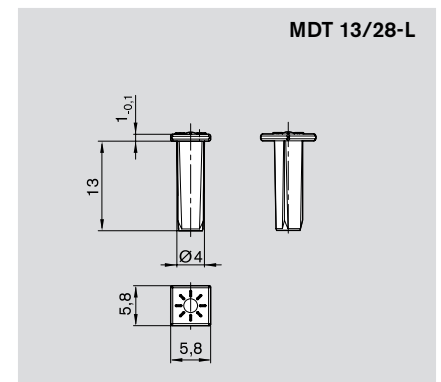
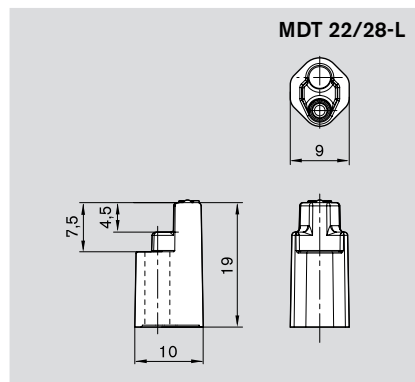
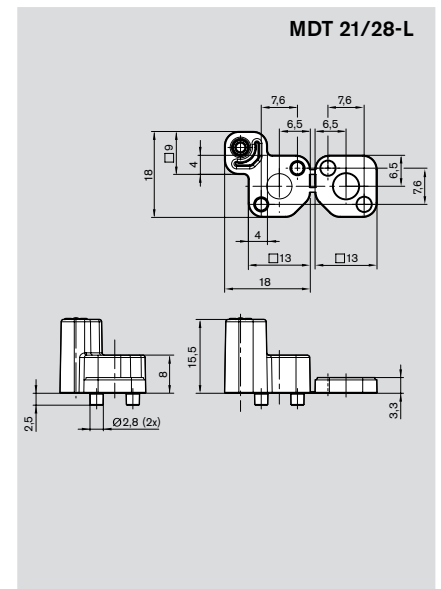
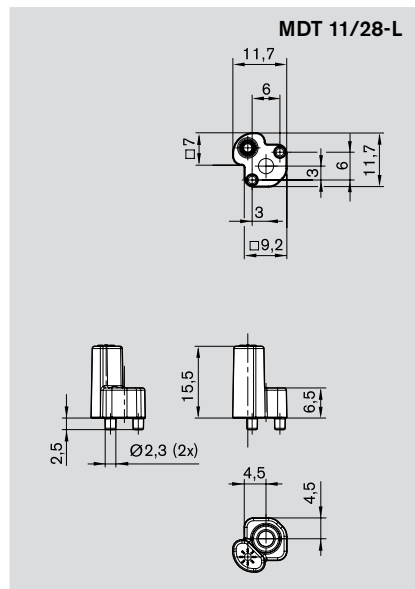
MDT...L

		No.
MDT 11/28-L	5	<b>3 842 535 916</b>
MDT 21/28-L	5	<b>3 842 535 919</b>
MDT 22/28-L	5	<b>3 842 535 443</b>
MDT 13/28-L	5	<b>3 842 535 911</b>
MDT 23/28-L	5	<b>3 842 535 442</b>

Type	MDT.../28-L
Frequency	125 kHz
Conformity with standards	–
Memory capacity	5 bytes
Memory type	EEPROM
Number of write cycles	≥ 100,000
Number of read cycles	unlimited
Transmission distance	
– static	15 mm
– dynamic	12 mm
Ambient temperature during operation	-40...+85 °C
Housing material	PA66



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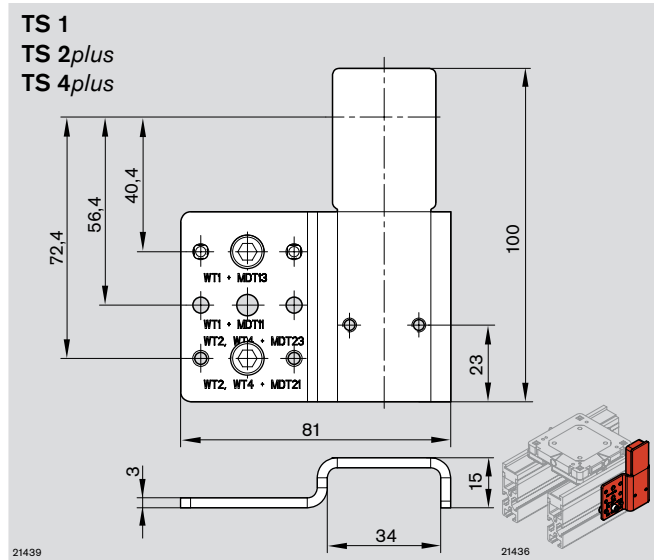
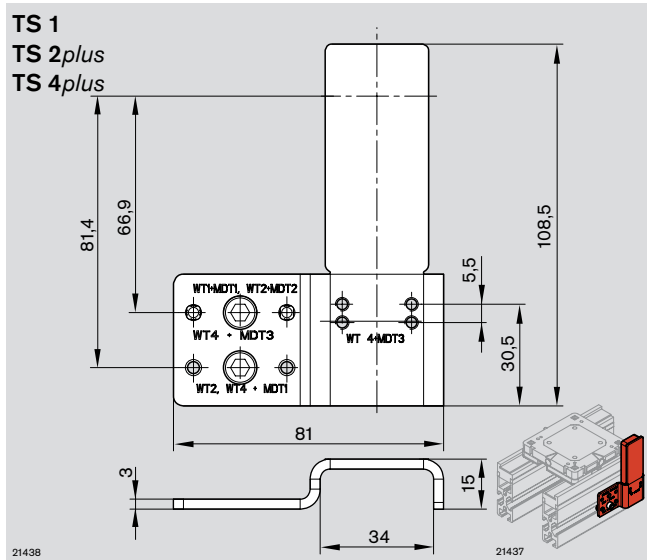
5-4

RFID system ID 200

# Assembly kits ID 200



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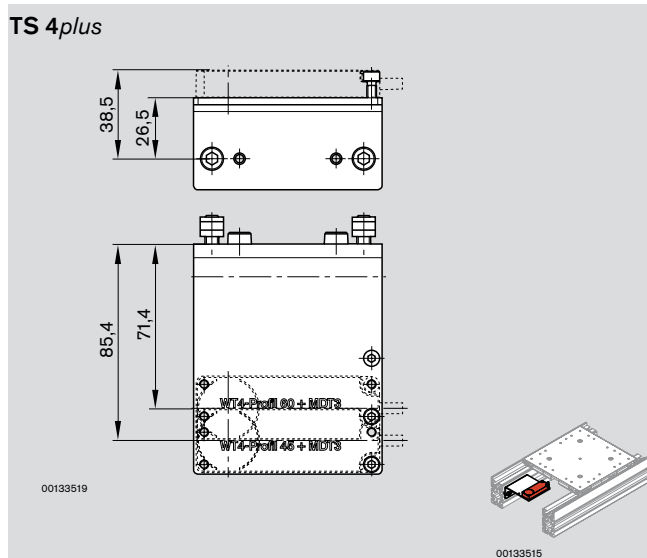


Assembly kit ID 200/MS-1

	No.
ID 200/MS-1	<b>3 842 410 098</b>

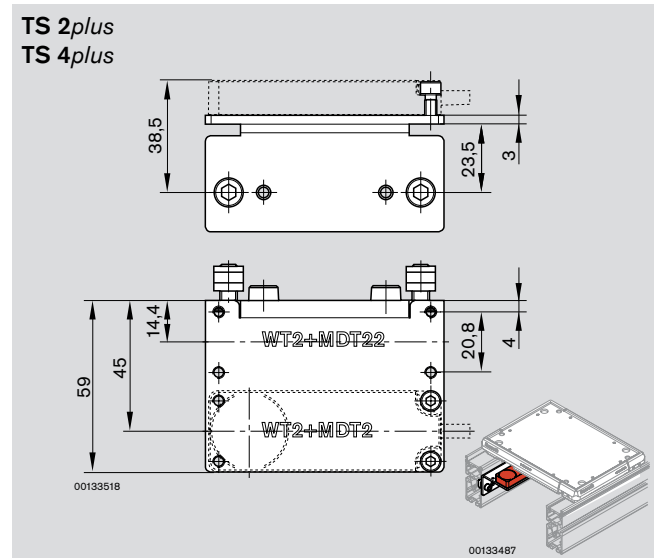
Assembly kit ID 200/MS-2

	No.
ID 200/MS-2	<b>3 842 410 095</b>



Assembly kit ID 200/MS-3

	No.
ID 200 /MS-3	<b>3 842 410 101</b>



Assembly kit ID 200/MS-4

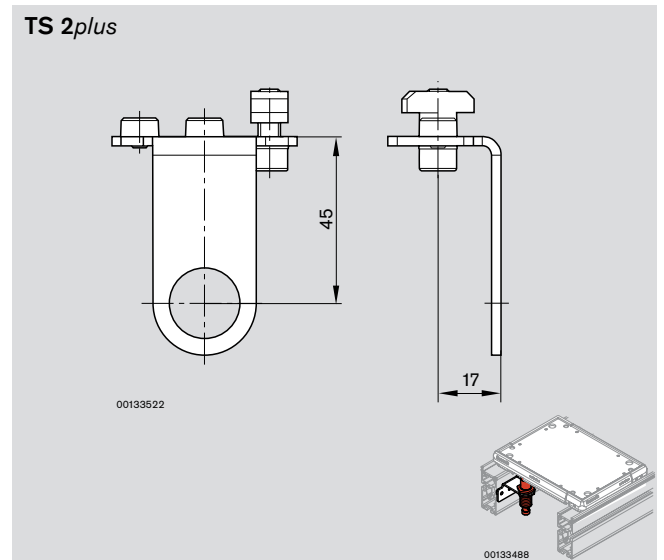
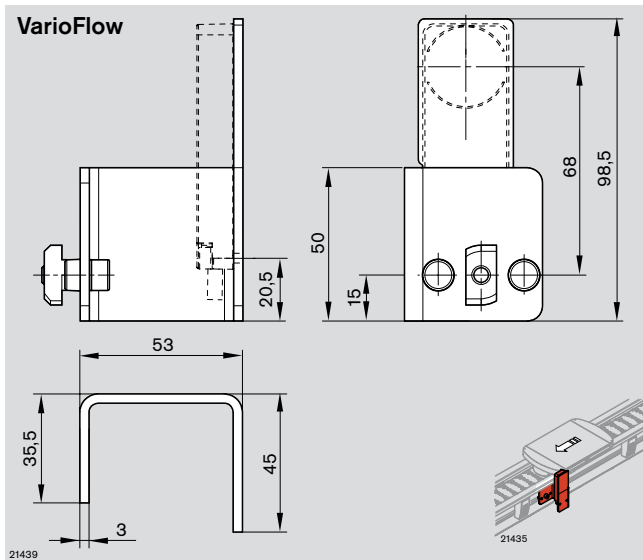
	No.
ID 200/MS-4	<b>3 842 410 100</b>

RFID system ID 200

# Assembly kits ID 200



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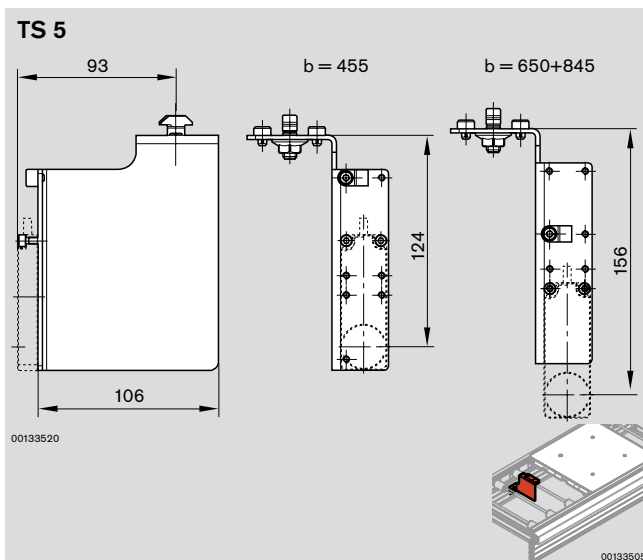
2

Assembly kit ID 200/MS-5

	No.
ID 200/MS-5	<b>3 842 410 096</b>

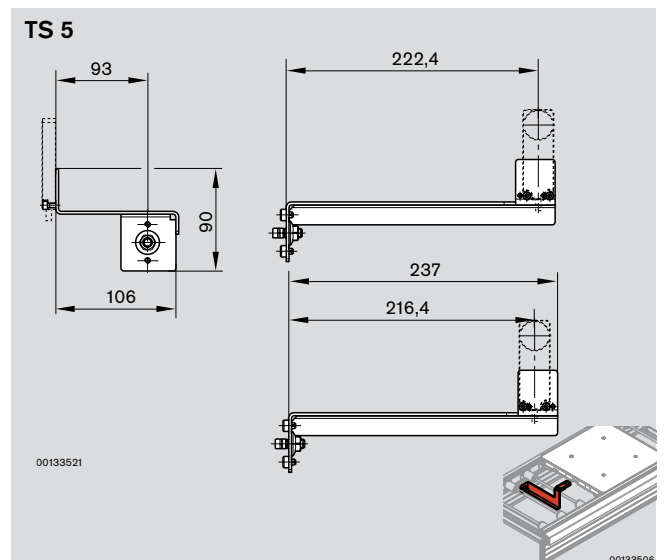
Assembly kit ID 200/MS-6

	No.
ID 200/MS-6	<b>3 842 410 097</b>



Assembly kit ID 200/MS-7

	No.
ID 200/MS-7	<b>3 842 545 144</b>


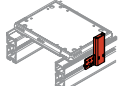
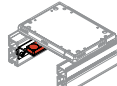
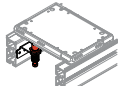












Assembly kit ID 200/MS-8

	No.
ID 200/MS-8	<b>3 842 545 148</b>


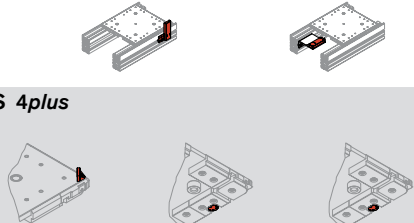
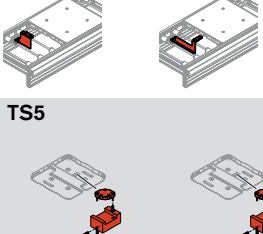
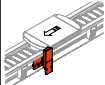

RFID system ID 200

# Assembly options ID 200

	 <b>TS 1</b>	 <b>TS 2plus</b>	 <b>TS 2plus</b> $I_{wt}, b_{wt} > 160$ (PA)		 <b>TS 2plus</b> $I_{wt}, b_{wt} > 160$ (PE)
					
Mobile data tag					
MDT 1/2K-H	<b>3 842 410 104</b>	<b>3 842 410 104</b>			
MDT 2/2K-H			<b>3 842 410 103</b>		
MDT 3/2K-H					
MDT 4/2K-H					<b>3 842 410 124</b>
MDT 6/2K-H					
Kit for WT 5					
Assembly kit flat antenna					
ID 200/MS-1	<b>3 842 410 098</b>	<b>3 842 410 098</b>			
ID 200/MS-3					
ID 200/MS-4			<b>3 842 410 100</b>	<b>3 842 410 100</b>	
ID 200/MS-7 (longitudinal conveyor)					
ID 200/MS-8 (transverse conveyor)					
Flat antenna					
ID 200/A-HF	<b>3 842 410 065</b>	<b>3 842 410 065</b>	<b>3 842 410 065</b>	<b>3 842 410 065</b>	
Assembly kit round antenna					
ID 200/MS-6			<b>3 842 410 097</b>	<b>3 842 410 097</b>	
Round antenna					
ID 200/A-HR			<b>3 842 410 063</b>	<b>3 842 410 063</b>	
					
Mobile data tag					
MDT 11/28-L	<b>3 842 535 916</b>				
MDT 13/28-L	<b>3 842 535 911</b>				
MDT 21/28-L		<b>3 842 535 919</b>			
MDT 22/28-L				<b>3 842 535 443</b>	
MDT 23/28-L	<b>3 842 535 442</b>		<b>3 842 535 442</b>		
Kit for WT 5					
Assembly kit flat antenna					
ID 200/MS-2	<b>3 842 410 095</b>	<b>3 842 410 095</b>	<b>3 842 410 095</b>	<b>3 842 410 095</b>	
ID 200/MS-3					
ID 200/MS-4				<b>3 842 410 100</b>	
ID 200/MS-5					
ID 200/MS-7 (longitudinal conveyor)					
ID 200/MS-8 (transverse conveyor)					
Flat antenna					
ID 200/A-LF	<b>3 842 410 176</b>	<b>3 842 410 176</b>	<b>3 842 410 176</b>	<b>3 842 410 176</b>	<b>3 842 410 176</b>

RFID system ID 200

# Assembly options ID 200

 <p><b>TS 2plus</b> <math>I_{wt}, b_{wt} = 160</math> (PA, PE)</p>	 <p><b>TS 4plus</b></p>	 <p><b>TS5</b></p>	 <p><b>VarioFlow</b></p>
	<b>3 842 410 104</b>		
		<b>3 842 410 102 3 842 410 102</b>	<b>3 842 410 102 3 842 410 102</b>
<b>3 842 410 184</b>			
		<b>3 842 545 450 3 842 545 450</b>	
	<b>3 842 410 098 3 842 410 098</b>		
		<b>3 842 410 101</b>	
<b>3 842 410 100</b>			
		<b>3 842 545 144</b>	
			<b>3 842 545 148</b>
<b>3 842 410 065</b>	<b>3 842 410 065 3 842 410 065 3 842 410 065</b>	<b>3 842 410 065 3 842 410 065</b>	
<b>3 842 410 097</b>			
<b>3 842 410 063</b>			
	<b>3 842 535 919</b>		
		<b>3 842 535 443</b>	
	<b>3 842 535 442</b>	<b>3 842 535 442 3 842 535 442</b>	<b>3 842 535 442</b>
		<b>3 842 545 450 3 842 545 450</b>	
	<b>3 842 410 095 3 842 410 095</b>		
		<b>3 842 410 101</b>	
		<b>3 842 410 100</b>	
			<b>3 842 410 096</b>
		<b>3 842 545 144</b>	
			<b>3 842 545 148</b>
	<b>3 842 410 176 3 842 410 176 3 842 410 176</b>	<b>3 842 410 176 3 842 410 176</b>	<b>3 842 410 176</b>

RFID system ID 200









# Accessories - cable



00193440

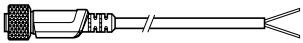
Connecting cable between antenna and communication module.

### Antenna cable

	Socket	Plug	l (m)	No.
ID 200/K-ANT2-2M	 00193489 straight	 angled	2	3 842 410 108
ID 200/K-ANT2-5M	 00193489 straight	 angled	5	3 842 410 109
ID 200/K-ANT3-2M	 00193490 angled	 angled	2	3 842 410 110
ID 200/K-ANT3-5M	 00193490 angled	 angled	5	3 842 410 111

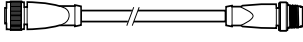
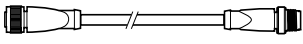
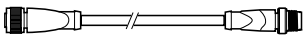
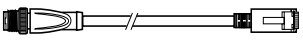
Power supply for communication module.

### Power supply cable

		l (m)	No.
ID 200/K-VCC-5M	 00193493	5	3 842 410 119

Ethernet cable for connection between communication module and control system.

### Ethernet cable

		l (m)	No.
ID 200/K-ETH M12 - 5M	 21446	5	3 842 410 114
ID 200/K-ETH M12 - 10M	 21446	10	3 842 410 115
ID 200/K-ETH M12 - 20M	 21447	20	3 842 410 116
ID 200/K-ETH RJ - 5M		5	3 842 410 117

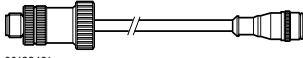
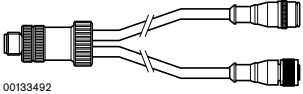
RFID system ID 200



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PROFIBUS cable for connection between communication module and control system.

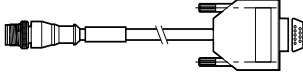
PROFIBUS cable

	Cable	l (m)	No.
ID 200/K-PDP R	 00133491 PROFIBUS cable with termination resistor	0.2	3 842 410 112
ID 200/K-PDP Y	 00133492 PROFIBUS Y cable	0.2	3 842 410 113

Diagnostic cable for PROFIBUS variant. For connection between communication module and PC.

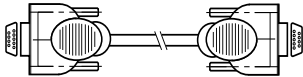
Required accessories: Null modem cable

Diagnostic cable

		l (m)	No.
ID 200/K-Diag	 00133494	0.15	3 842 410 120

Null modem cable to connect the diagnostic cable to a PC for PROFIBUS variant.

Null modem cable

		l (m)	No.
ID 200/K-NMK	 00133495	2	3 842 410 129

RFID system ID 200

## Diagnostics package DPS/L

**Use:**

Test and initial description of the mobile data tag MDT.../28-L (125 kHz) via a PC external to the plant.

**Software functions:**

- Reading the MDT.../28-L
- Writing the MDT.../28-L
- Importing prepared lists (csv format)
- Writing the MDT.../28-L as per list

**Scope of delivery:**

- Manual antenna with data cable for connecting to a USB port
- Software on CD-ROM



00123856

Diagnostics package DPS/L

	No.
DPS/L	3 842 406 959

RFID system ID 40

## RFID system ID 40

Operating principle	3-2
Mobile data tag	3-3
Read/write head	3-4
Accessories	3-5

RFID system ID 40



## Identification and data memory system ID 40



The identification system ID 40 provides a reliable and fast supply of workpiece data on the workpiece pallet. Relevant information must be available at every processing station for each arriving part, such as

- Workpiece type
- Production status
- Next processing step
- Setting parameters

These are particularly important where products are being manufactured on the same plant in several variants.

All data is stored by a stationary read/write head (SLK)  3-4 on a mobile data tag (MDT)  3-3, which is located directly on the workpiece pallet (WT) and goes through the entire installation process with it. Decentralized data storage guarantees short access times and high system availability.

An integrated delete function, which must be triggered on the SLK only, enables the data memory to be cleared so it no longer remains in the SLK.

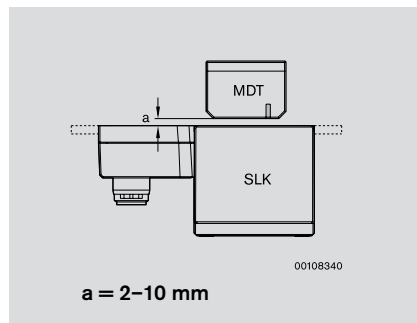
The read/write head (SLK) offers a direct fieldbus connection for the fieldbus system

- PROFIBUS DP
- via M12 plug-in connection.

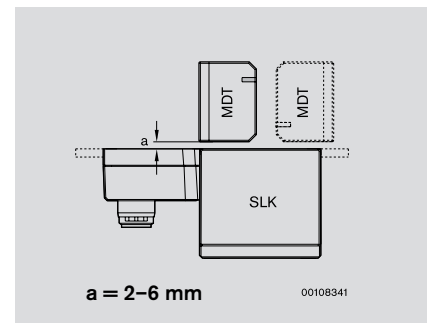
The ID 40 enables dynamic data transmission: When passing at distance “a” and at a transport speed of up to 30 m/min, the transmission capacity is 64 bytes.



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Transmission range at front

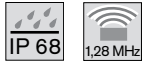


Transmission range at side

The user manual, latest information and software can be downloaded under [www.boschrexroth.com/RFID](http://www.boschrexroth.com/RFID)

RFID system ID 40

## Mobile data tag ID 40/MDT...



The mobile data tag (MDT) for the ID 40 is located directly on the workpiece pallet and stores the workpiece data. The compact MDT has a non-volatile RAM (battery back-up not required). It can be read and written from three sides (front, left/right side) up to 10 billion times and enables diverse installation positions on the workpiece pallet.

The MDT memory capacity is either approx. 2 KB, 8 KB or 32 KB. The three-color status LED on the MDT displays correct data transmission and transmission errors. The MDT complies with protection type IP68.

Scope of delivery: Includes assembly kit  
**3 842 529 237**.

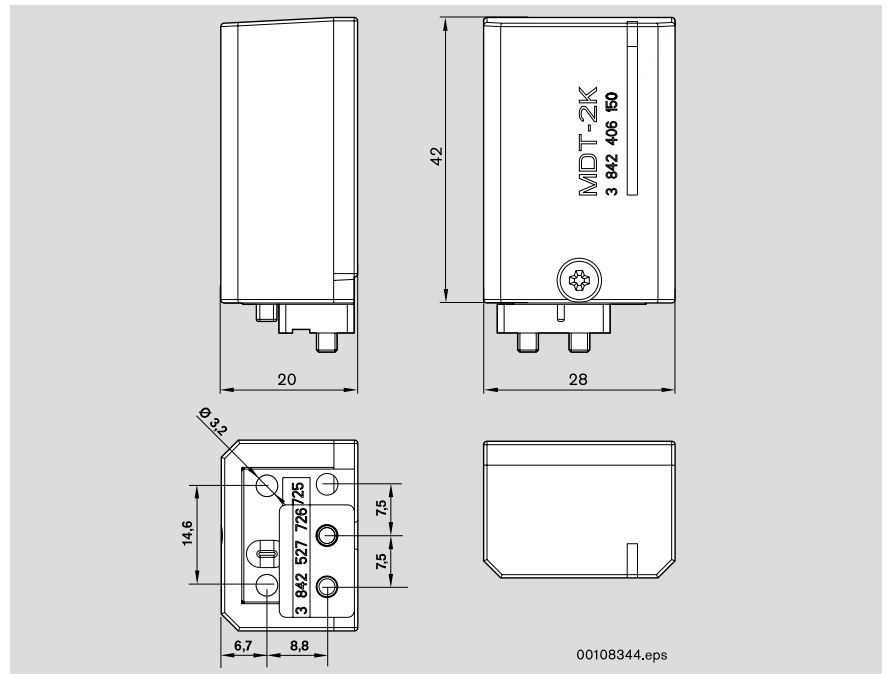
Optional accessories:  
Assembly kits 3-5

Mobile data tag ID 40/MDT...

	No.
ID 40/MDT2K	<b>3 842 406 150</b>
ID 40/MDT32K	<b>3 842 406 170</b>



00123944



3

### Memory capacity

- MDT2K	1904 bytes
- MDT32K	30800 bytes

Data retention time > 10 years (20 ... 40 °C)

Data access bytewise

Ambient temperature during operation -25 ... +70 °C

Storage temperature -25 ... +85 °C

Humidity +5 ... 95%

Protection type IP68

Housing material Polyamide PA6

Media resistance Water, mineral oil, other on request

Mass 0.06 kg

Transmission direction frontal or on the right/left side

Read/write distance

- frontal 4 ... 12 mm/4 ... 10 mm static/dynamic

- at side 1 ... 7 mm/1 ... 6 mm static/dynamic

Permissible height offset between SLK and MDT +/- 5 mm

Status indicators LED, 3-color

Installation in metal 10 mm clearance on all sides required



5-3

RFID system ID 40

## Read/write head ID 40/SLK-...



The read/write head (ID 40/SLK-...) is used to transfer workpiece data between MDT and a bus master to control workpiece pallets in the Rexroth transfer systems.

The SLK can be easily installed in the Rexroth transfer systems TS 1, TS 2*plus* and TS 4*plus* using a standard assembly kit.

Direct connection to the fieldbus system – PROFIBUS DP (ID 40/SLK-PDP) via M12 plug-in connection.

The antenna of the SLK can be swiveled through 90° and rotated through 180°, providing a variety of installation possibilities. The semi-transparent cover of the antenna lights up during data transmission with the MDT.

The 4-digit alphanumeric display provides information about the current status of the fieldbus connection and the communication with the MDT. The built-in RS232 serial interface enables parameterization and diagnosis, e.g. with a web browser and a notebook. User-friendly power supply via a standard AS-i profile cable (black). The SLK complies with protection type IP65.

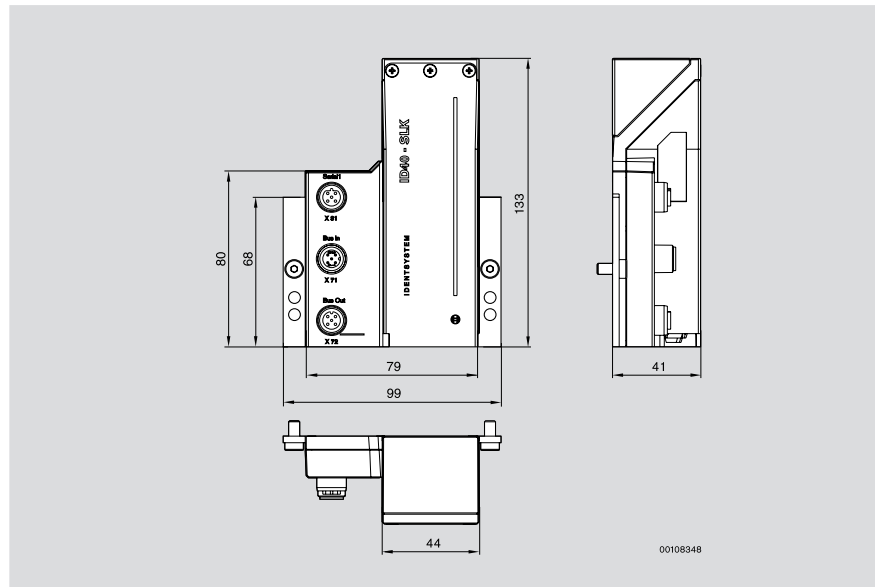
Scope of delivery: Includes assembly kit  
**3 842 527 634.**

Read/write head ID 40/SLK-...

	No.
ID 40/SLK-PDP	<b>3 842 406 130</b>



00123945



00108348

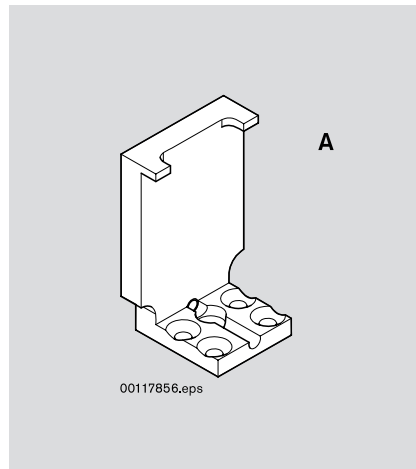
<b>Operating voltage</b>	24 V -15 + 20%
<b>Waviness</b>	< 10%
<b>Current consumption</b>	max. 0.35 A
<b>Fieldbus connections</b>	Profibus-DPV0
<b>serial interface</b>	RS232
<b>Status indicators</b>	1 LED alphanumeric display
<b>Protection type</b>	IP65
<b>Ambient temperature</b>	+5 ... +55 °C
<b>Storage temperature</b>	-20 ... +85 °C
<b>Humidity</b>	≤ 96%
<b>Approvals</b>	EN 300330, ETS 300683, CE
<b>Weight (including mounting plate)</b>	0.4 kg
<b>max. read/write distance</b>	
– static	12 mm
– dynamic (v = 20 m/min)	10 mm
<b>min. distance between two read/write heads</b>	100
<b>Installation in metal</b>	10 mm clearance required

RFID system ID 40

## Accessories

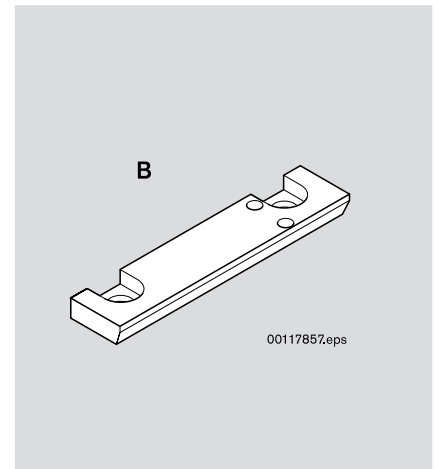
### Assembly kit for ID 40/MDT...

- Assembly kit (A) in a reinforced version for applications with high mechanical load of the data tag.
- Assembly kit (B) for using the ID 40/MDT as a replacement for ID 80/E on workpiece pallets WT2 with ID 80 drill pattern.



Assembly kit (A)

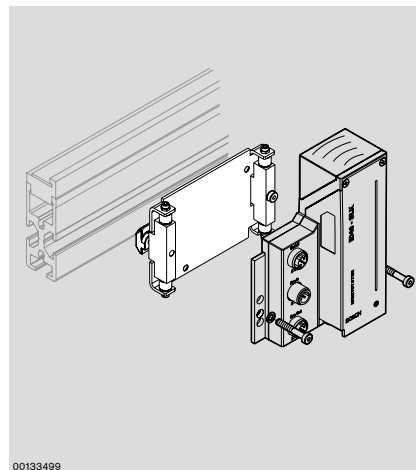
No.
<b>3 842 535 740</b>



Assembly kit (B)

No.
<b>3 842 532 630</b>

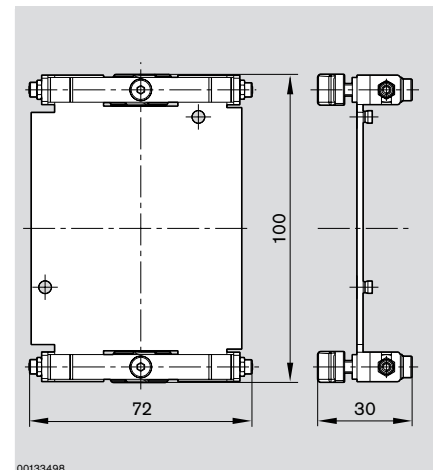
**Assembly kit for ID 40/SLK for vibration-decoupled mounting.**  
Application in high vibration environments (on request).



Assembly kit

No.
<b>3 842 538 784*</b>

\* Price and availability on request.



RFID system ID 40

# Accessories - software, cable



00123857

**Configuration and diagnostic software package** for setting equipment parameters (such as the fieldbus node number) and reading out system diagnostics data.

**System requirements**  
Win NT 4.0/Win 2000/Win XP  
diagnostic cable RS232  
(M12 plug on 9-pin Sub-D)

Configuration and diagnostic software package

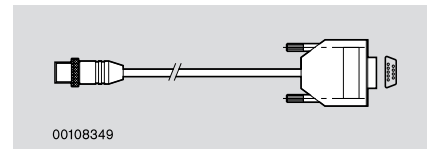
No.
<b>3 842 406 119</b>

## Diagnostic cable RS232

The diagnostic cable is used:  
– to efficiently exchange data via web browsing functionality for the direct serial connection to workstations  
– to set the ID 40/SLK bus address to read out the internal diagnostic memory

Diagnostic cable RS232

l (m)	No.
2	<b>3 842 406 117</b>



00108349

## Function modules

Contain all the basic functions for reading and writing data blocks on the MDT, parameterizable.  
– For Siemens S7 controllers from CPU 315 onwards  
– For Rexroth IndraLogic on request

Function modules

No.
<b>3 842 406 190</b>

## Fieldbus connection cable

		l (m)	PROFIBUS DP <sup>*)</sup> No.
M12 plug, straight, open end		3	<b>3 842 410 030</b>
M12 socket, straight, open end		3	<b>3 842 410 031</b>
M12 plug, angled, open end		3	<b>3 842 410 032</b>
M12 socket, angled, open end		3	<b>3 842 410 033</b>
M12 plug, angled, M12 socket, angled		3	<b>3 842 410 034</b>
Fieldbus termination resistor		–	<b>3 842 406 156</b>

<sup>\*)</sup> No GND on pin 5, shield on the housing

RFID system ID 15

# RFID system ID 15

Operating principle	4-2
Read/write head	4-3
Mobile data tag	4-4
Diagnostics package	4-5
Fastening kits	4-6
Protective cover	4-7
Assembly options	4-8
Addressing device and AS-i accessories	4-10

RFID system ID 15

# Identification system ID 15



The identification system ID 15 enables the reliable and quick identification of workpieces. The data tag can be mounted on or below the workpiece pallet and can also be fully integrated into the Rexroth workpiece pallet. Short access times with high interference resistance and high availability are the main features of the system.

The read/write head (SLK) offers a direct connection to the actuator sensor level via AS-i via an M12 plug-in connection.

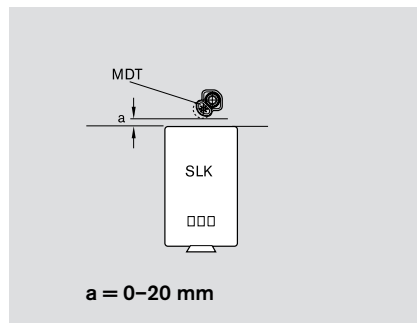
The ID 15 enables dynamic data transmission: When passing at distance "a" and a transport speed of up to 20 m/min.

A separate antenna with USB connection used in conjunction with the ID 15 diagnostic software enables quick and easy initialization of the data tag.

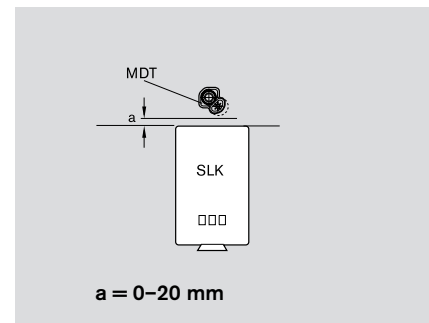
The user manual, latest information and software can be downloaded under [www.boschrexroth.com/RFID](http://www.boschrexroth.com/RFID)



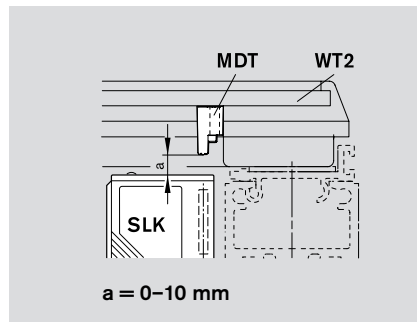
00123835



Transmission range at front



Transmission range at side



Transmission range at top

RFID system ID 15

# Read/write head ID 15/SLK



The read/write head (ID 15/SLK) is used to transfer workpiece data between MDT.../28-L and an AS-i bus master to control workpiece pallets in the Rexroth transfer systems.

With the ID 15/SLK, a maximum of 15 bits of user data can be written or read on an MDT.../28-L.

The SLK can be easily installed in the Rexroth transfer systems TS 1, TS *2plus* and TS *4plus* and VarioFlow chain conveyor system using standard fastening kits. Direct connection to AS-i via M12 plug-in connection, can be swiveled through 270°.

Three light-emitting diodes show

- Operational readiness (green)
- Presence of a data tag in the field (yellow)
- Fault (red)

Scope of delivery: Read/write head

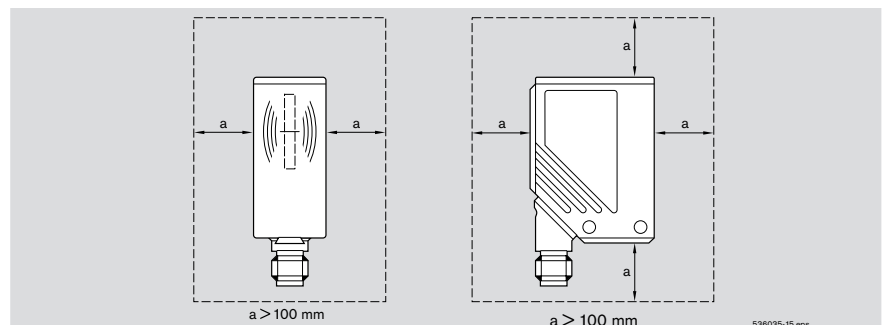
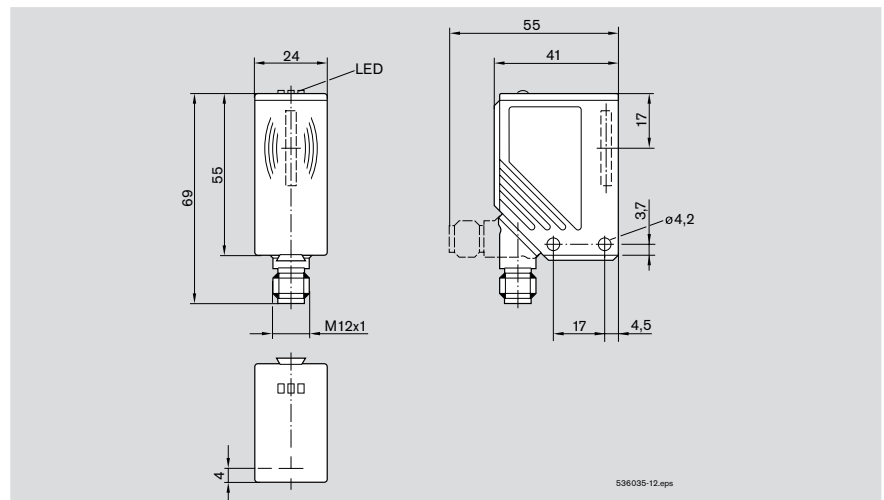
Required accessories:  
Fastening kit according to the application  
☞ 4-6

Read/write head ID 15/SLK-...

	No.
ID 15/SLK	3 842 406 960



00123847



<b>Operating voltage (via AS-i power pack)</b>	26.5...31.6 V
<b>Current consumption</b>	max. 0.1 A
<b>Fieldbus connections</b>	AS-i, profile 7.4
<b>Status indicators</b>	3 LEDs
<b>Protection type</b>	IP67
<b>Housing material</b>	PA
<b>Ambient temperature</b>	-20 ... +60 °C
<b>Storage temperature</b>	-25 ... +80 °C
<b>Humidity</b>	95%
<b>Vibration resistance DIN EN 60068-2-6</b>	20 g (10...2000 Hz)
<b>Shock and impact resistance EN 60068-2-29</b>	40 g/6 ms
<b>Shock and impact resistance EN 60068-2-27</b>	50 g/11 ms
<b>Approvals</b>	EN 300330, EN 61326, CE, FCC
<b>Mass</b>	0.1 kg
<b>max. read/write distance</b>	
– static	20 mm
– dynamic (v = 20 m/min)	15 mm
<b>min. distance between two read/write heads</b>	
	400 mm (reading and writing)
	200 mm (only reading)

RFID system ID 15

# Mobile data tag MDT...L (125 kHz)



The mobile data tag MDT.../28-L is located directly on the workpiece pallet and stores the identification allocated by the user during initialization. The compact MDT has a non-volatile EEPROM (battery back-up not required) with a memory capacity of 5 bytes (payload data). MDT.../28-L can be read from all sides (front, left/right side, top and bottom) an unlimited number of times. In addition to various installation positions on the workpiece pallet, seamless integration into the workpiece pallet is also possible 4-8, 4-9.

ID 15 data tags from manufacturing date FD986 can be initialized using the diagnostic package DPS/L for use with ID 200. The simultaneous operation of ID 15 and ID 200 is not possible.

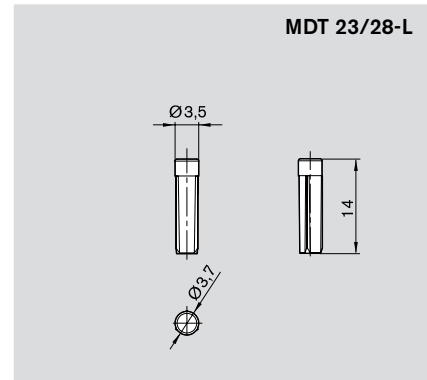
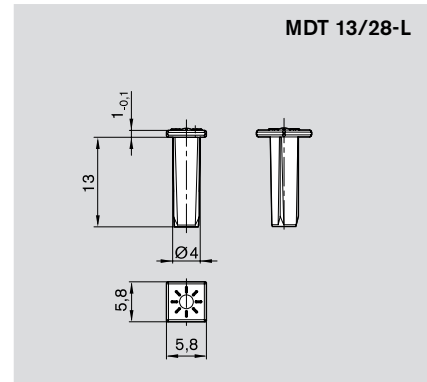
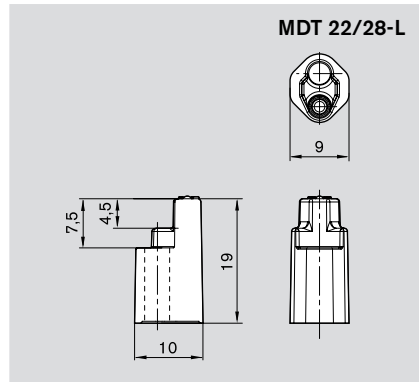
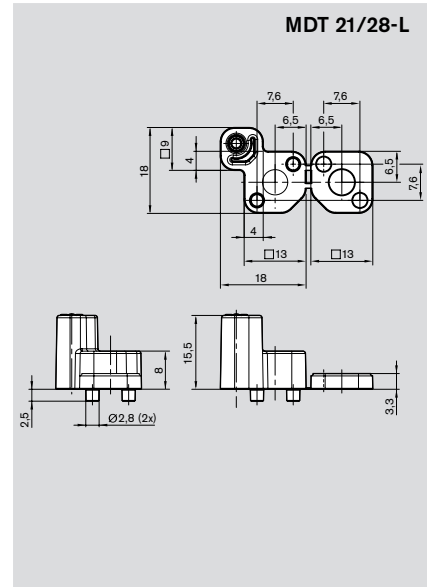
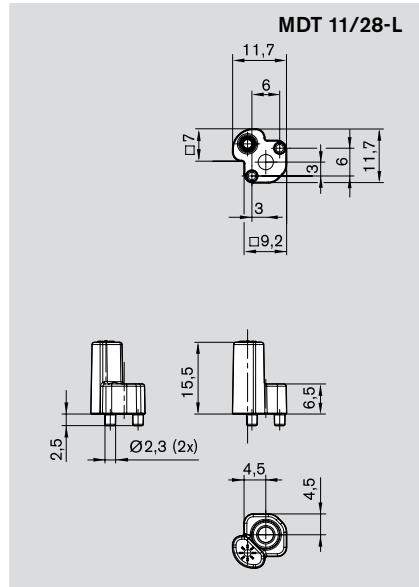
MDT...L

		No.
MDT 11/28-L	5	<b>3 842 535 916</b>
MDT 21/28-L	5	<b>3 842 535 919</b>
MDT 22/28-L	5	<b>3 842 535 443</b>
MDT 13/28-L	5	<b>3 842 535 911</b>
MDT 23/28-L	5	<b>3 842 535 442</b>

<b>Type</b>	<b>MDT.../28-L</b>
<b>Frequency</b>	125 kHz
<b>Conformity with standards</b>	-
<b>Memory capacity</b>	5 bytes
<b>Memory type</b>	EEPROM
<b>Number of write cycles</b>	≥ 100,000
<b>Number of read cycles</b>	unlimited
<b>Transmission distance</b>	
- static	15 mm
- dynamic	12 mm
<b>Ambient temperature during operation</b>	-40...+85 °C
<b>Housing material</b>	PA66



00123839



RFID system ID 15

## Diagnostics package DPS/L

**Use:**

Test and initial description of the mobile data tag MDT.../28-L (125 kHz) via a PC external to the plant.

**Software functions:**

- Reading the MDT.../28-L
- Writing the MDT.../28-L
- Importing prepared lists (csv format)
- Writing the MDT.../28-L as per list

**Scope of delivery:**

- Manual antenna with data cable for connecting to a USB port
- Software on CD-ROM



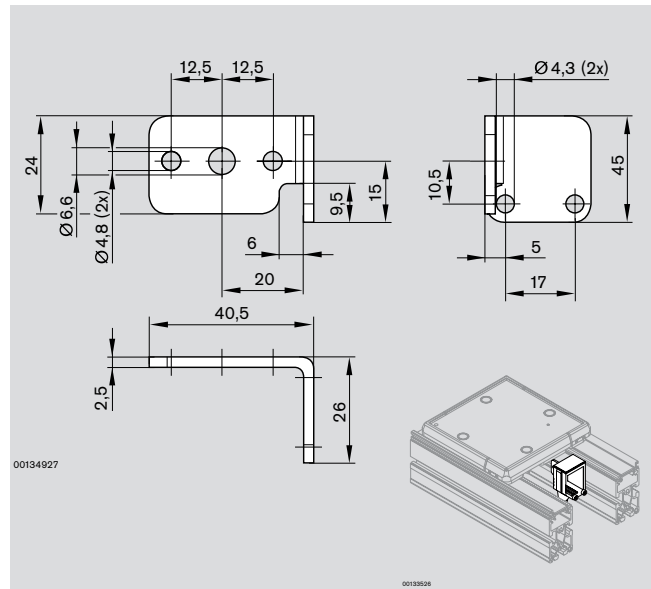
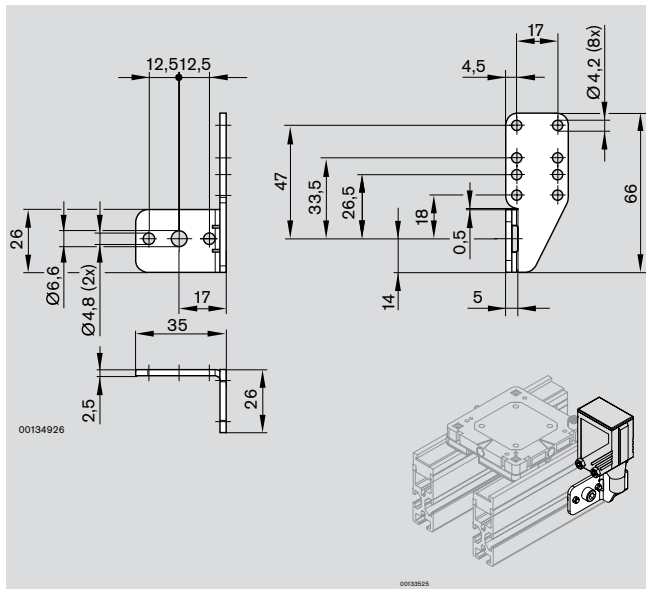
00123856

Diagnostics package DPS/L

	No.
DPS/L	3 842 406 959

RFID system ID 15

# Fastening kits for read/write head, ID 15/SLK

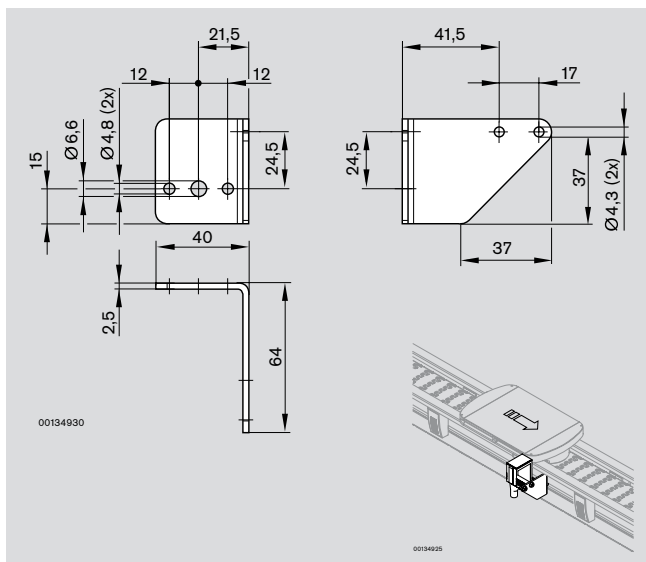


Fastening kit ID 15/MS-1

	No.
ID 15/MS-1	<b>3 842 535 920</b>

Fastening kit ID 15/MS-2

	No.
ID 15/MS-2	<b>3 842 535 917</b>



Fastening kit ID 15/MS-5

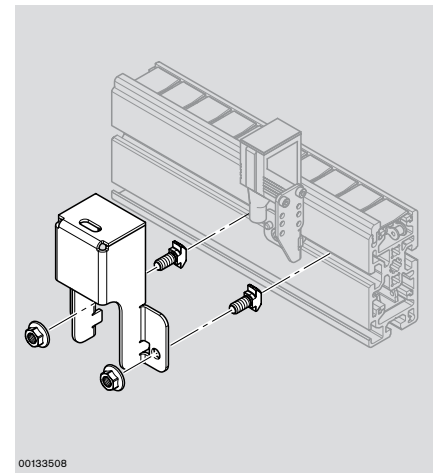
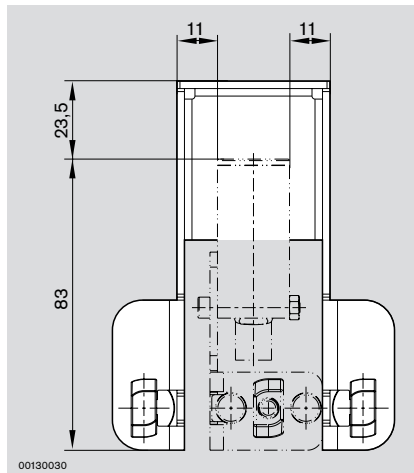
	No.
ID 15/MS-5	<b>3 842 535 918</b>

RFID system ID 15

# Protective cover for ID 15/SLK

Protective cover ID 15/SLK

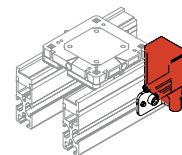
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RFID system ID 15

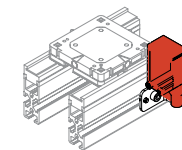
# Assembly options ID 15

## Installation on workpiece pallets TS 1, TS 2plus or TS 4plus



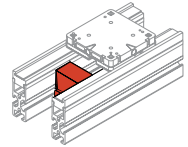
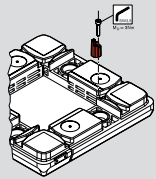
	TS 1	TS 2plus	TS 4plus
	No.	No.	No.
Mobile data tag			
MDT 11/28-L	<b>3 842 535 916</b>		
MDT 21/28-L		<b>3 842 535 919</b>	<b>3 842 535 919</b>
Fastening kit for read/write head ID 15/MS-1	<b>3 842 535 920</b>	<b>3 842 535 920</b>	<b>3 842 535 920</b>

## Integration in frame modules of workpiece pallets TS 1, TS 2plus or TS 4plus

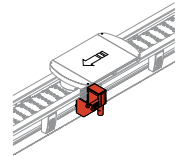
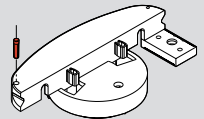


	TS1	TS 2plus	TS 4plus
	No.	No.	No.
Mobile data tag			
MDT 23/28-L	<b>3 842 535 442</b>	<b>3 842 535 442</b>	<b>3 842 535 442</b>
MDT 13/28-L	<b>3 842 535 911</b>		
Fastening kit for read/write head ID 15/MS-1	<b>3 842 535 920</b>	<b>3 842 535 920</b>	<b>3 842 535 920</b>

RFID system ID 15

**Attachment under workpiece pallet TS 2plus****TS 2plus****No.**Mobile data tag  
MDT 22/28-L**3 842 535 443**

Fastening kit for read/write head ID 15/MS-2

**3 842 535 917****Integration in VarioFlow workpiece pallet****VarioFlow****No.**Mobile data tag  
MDT 23/28-L**3 842 535 442**

Fastening kit for read/write head ID 15/ MS-5

**3 842 535 918**

RFID system ID 15

# Addressing device DPS/AS-i and AS-i accessories



## AS-i addressing device

**Use:**

The handy, robust addressing and diagnostics tool for commissioning, maintenance and servicing AS-i systems offers the following

**functions:**

- Readout of slave addresses 0.. 31, A, B without scrolling with clear full LCD display
- Readout of slave IO and ID codes (including extended ID code 1 and ID code 2)

- Standard addressing mode and extended addressing mode as per AS-i version 2.1.
- Programming of ID code 1
- Functional test of slaves including analog slaves with profile 7.1 to 7.4
- Detection of complete system assemblies
- Memory, diagnostic and PC gateway function
- Data transmission, management and documentation of system parameters using optional software
- Connection via plug M12 (A coded)
- Infrared interface



00123942

Scope of delivery: AS-i addressing and testing device DPS/AS-i with batteries (4 x 1.5 V Mignon (AA) LR6).

Addressing device DPS/AS-i

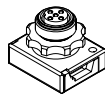
	No.
DPS/AS-i	<b>3 842 406 173</b>

## AS-i accessories

### AS-i branch terminal

for connecting M12 plugs to an AS-i signal cable

AS-i branch terminal



	No.
	<b>3 842 406 176</b>

### Connection cable

		I (m)	No.
M12 plug, straight, M12 socket, straight		0.5	<b>3 842 406 193</b>
		1.0	<b>3 842 406 194</b>
M12 plug, straight, M12 socket, angled		0.5	<b>3 842 406 166</b>
		1.0	<b>3 842 406 171</b>

Technical data

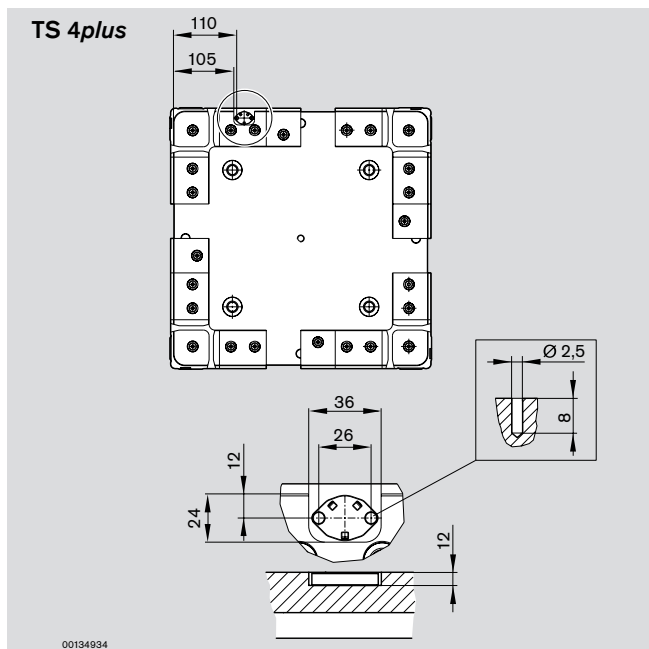
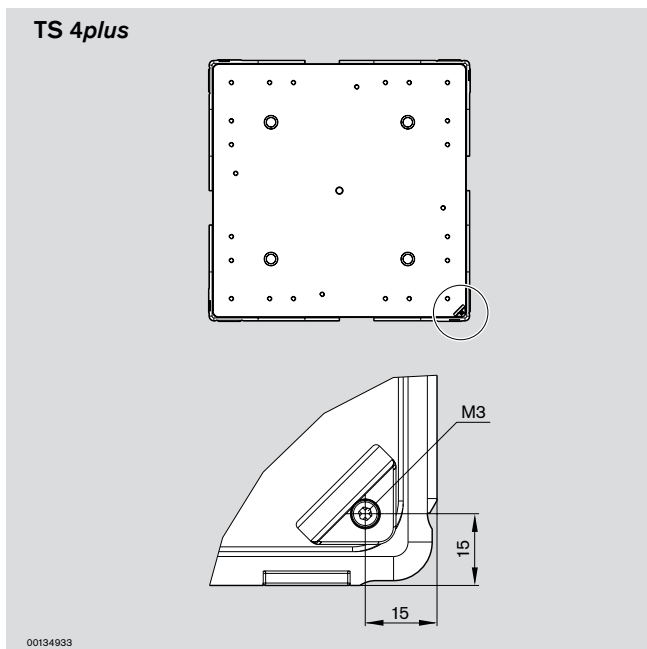
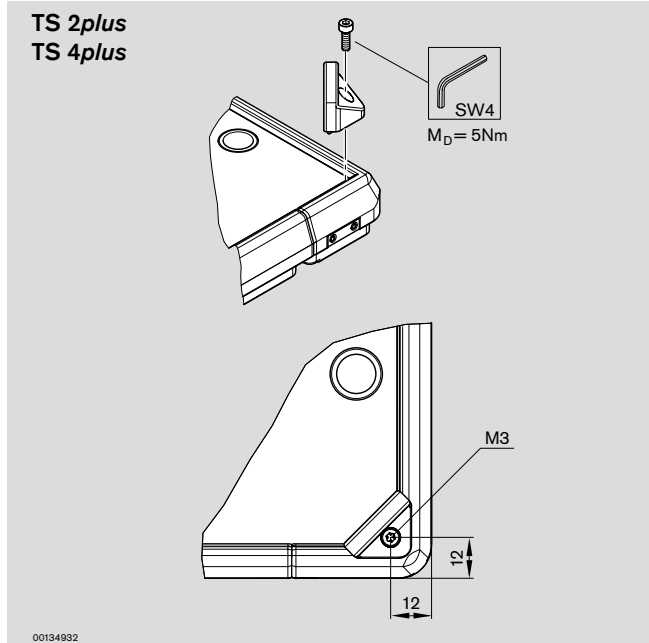
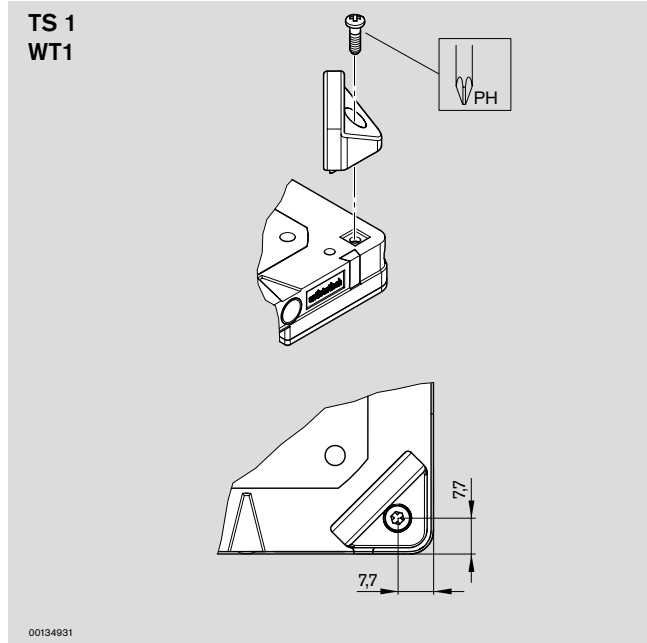
## Technical data

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Technical data

# RFID system ID 200

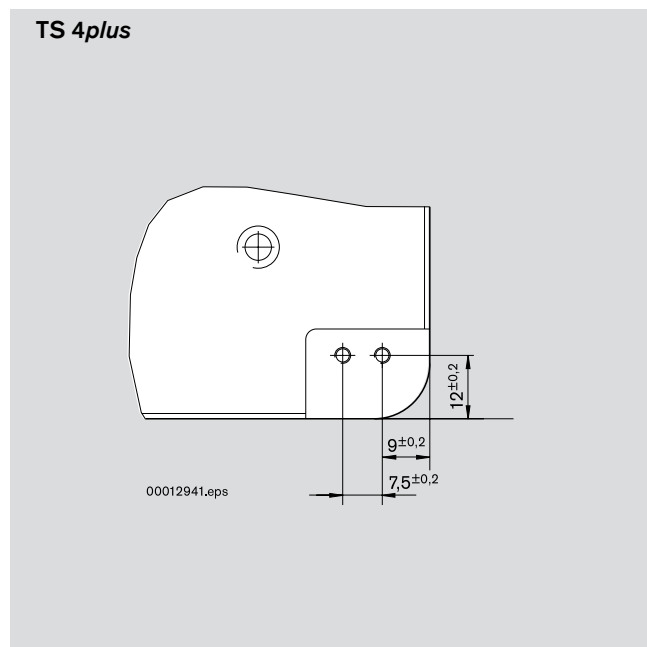
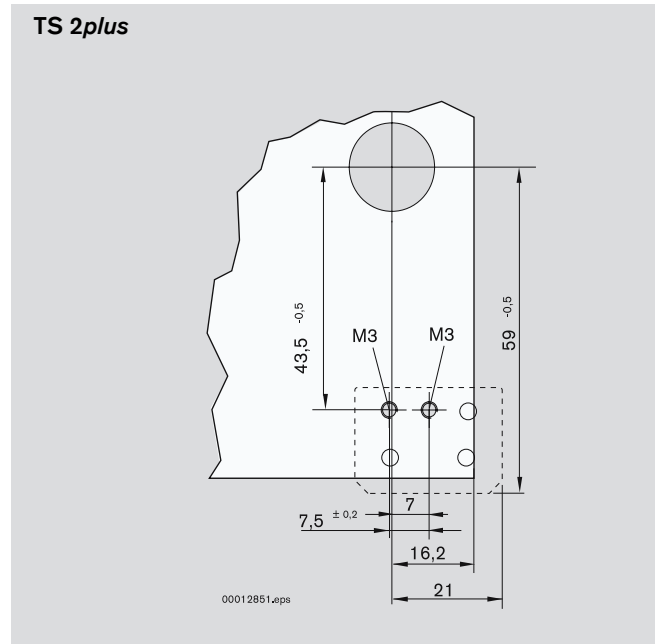
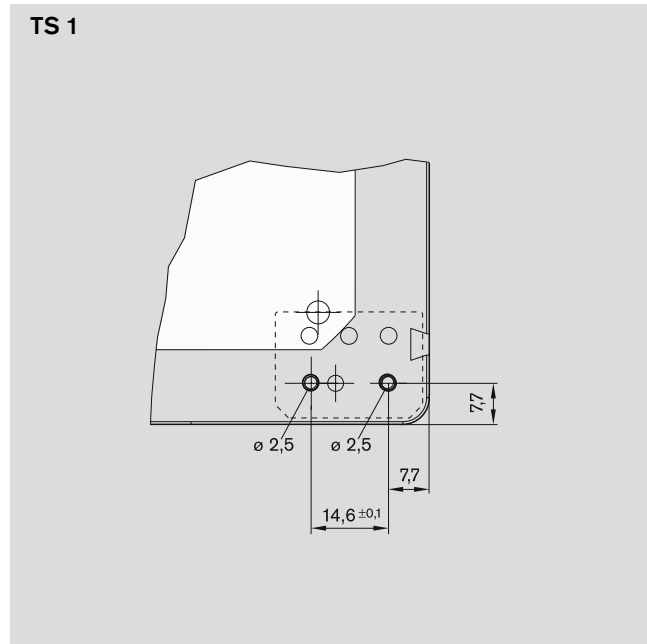
## Drill patterns for workpiece pallets



Technical data

# RFID system ID 40

## Drill patterns for workpiece pallets

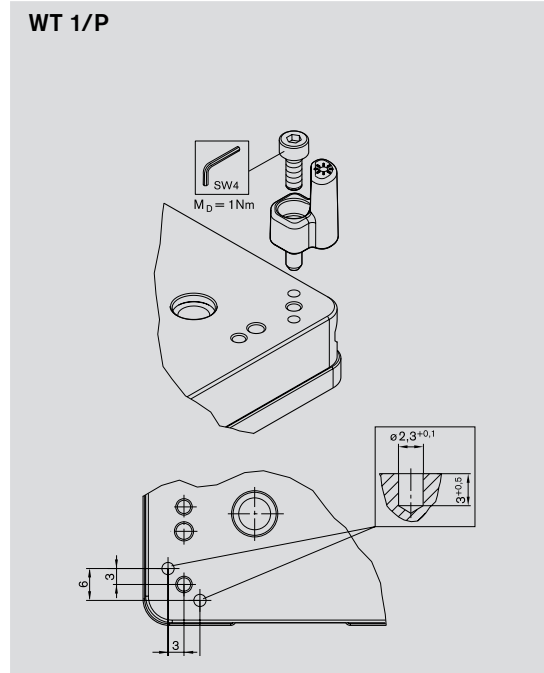
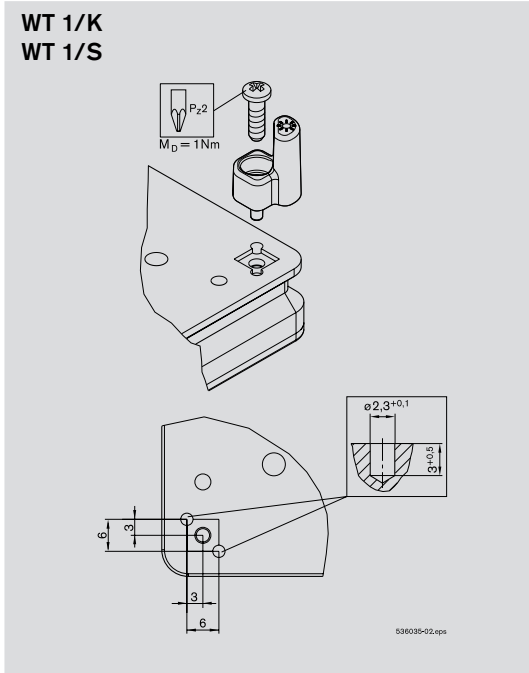


Technical data

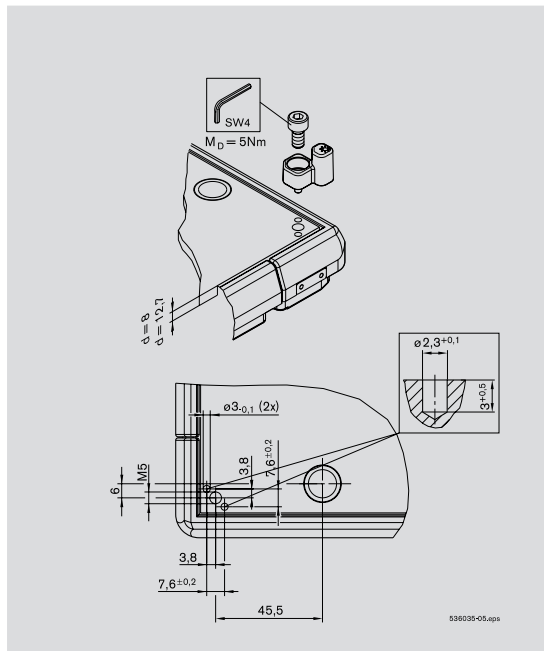
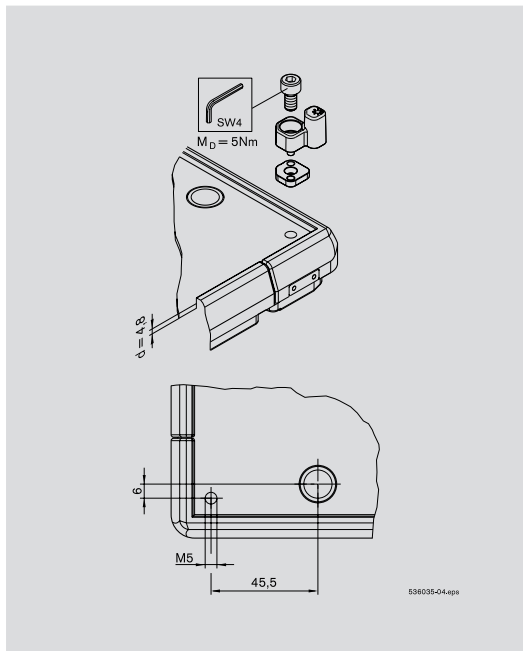
# RFID system ID 15

## Drill patterns for workpiece pallets

TS 1

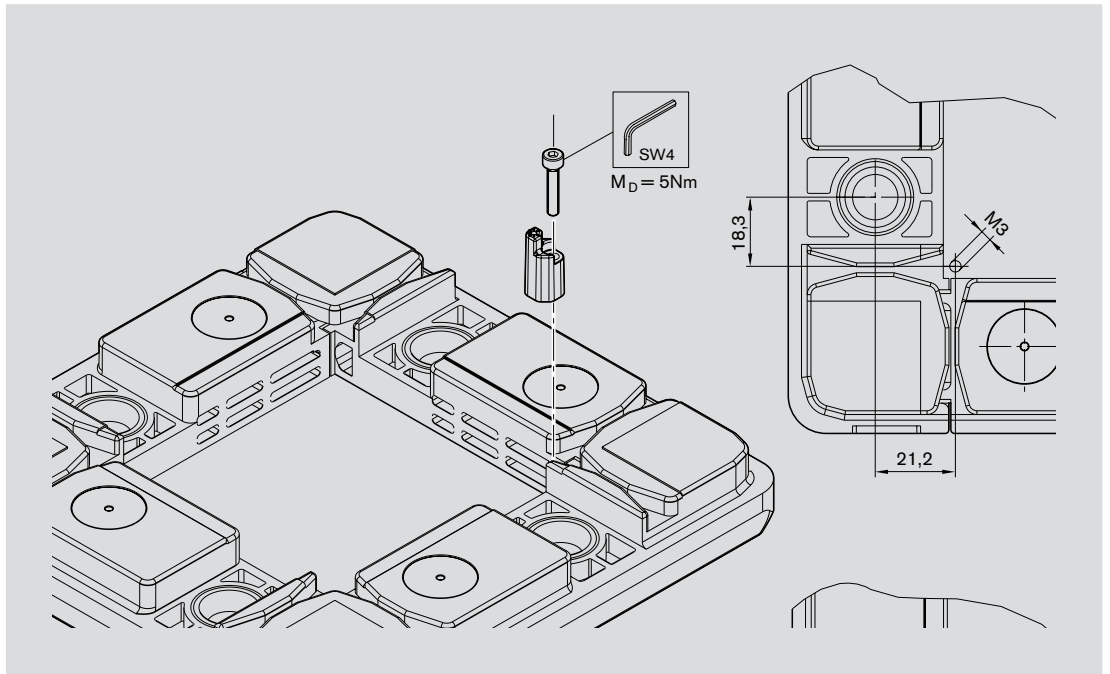


TS 2plus

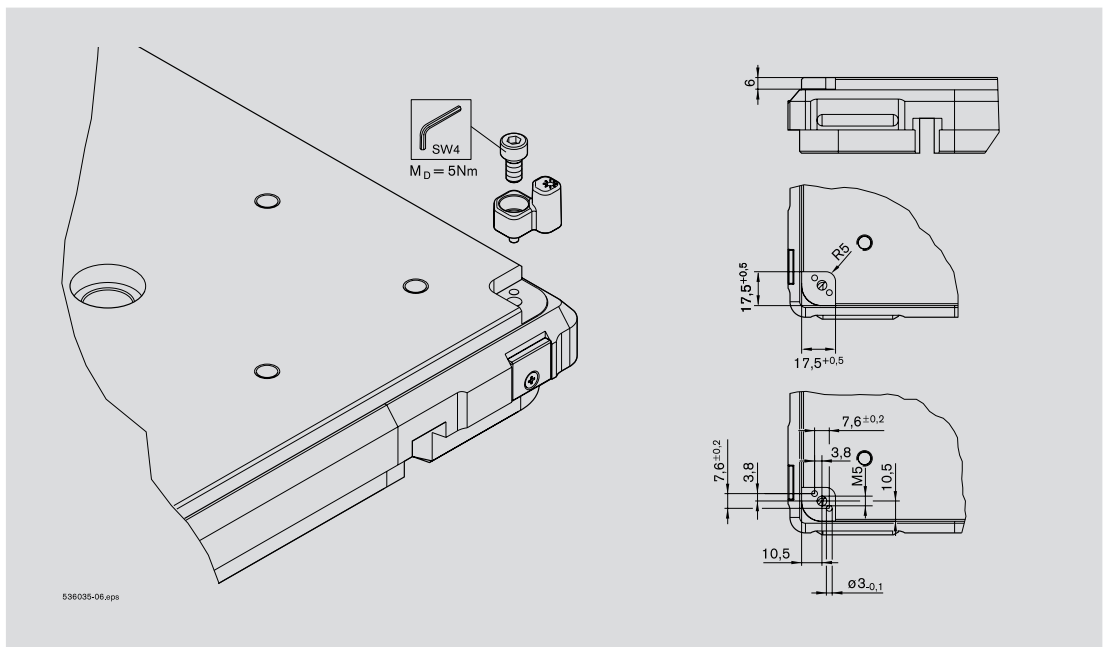


Technical data

TS 2plus



TS 4plus



538035-06.pps

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