

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



Compressed air connection required



PROFIBUS DP



AS interface

Modbus

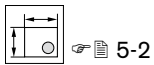
Modbus/TCP



EtherNet/IP



Profinet



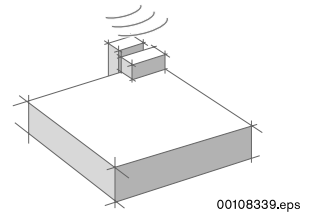
Reference to technical data/dimensions



Reference to another page

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

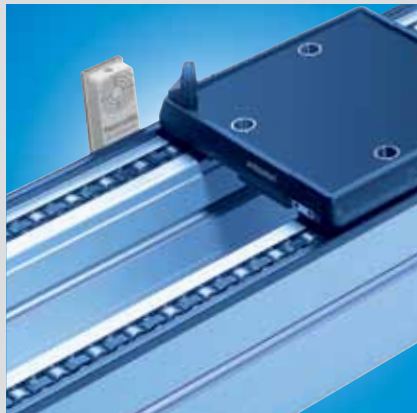
is based on mobile data tag systems, whereby the workpiece-relevant data are sent along directly with the workpiece (or on the workpiece pallet). High-performance read and write heads, which read out or modify the information, are required at the processing stations.



ID 200 - VarioFlow



ID 200 - TS 5



ID 200 - TS 2plus



ID 40 - TS 2plus



ID 15 - TS 2plus

RFID systems

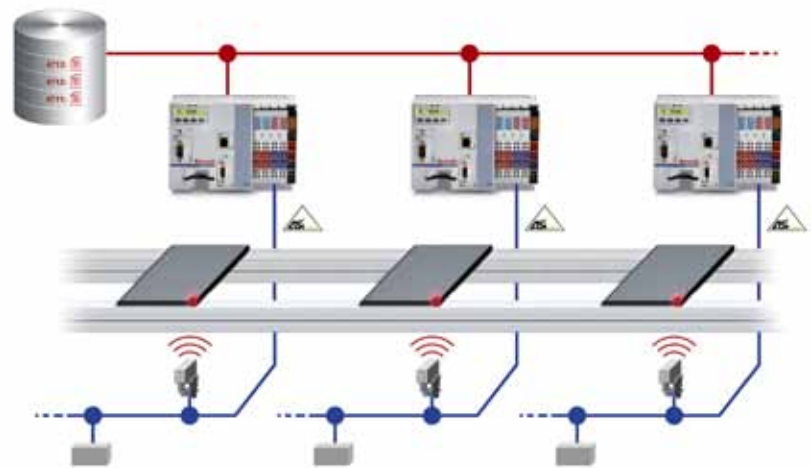
Types of data storage

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.

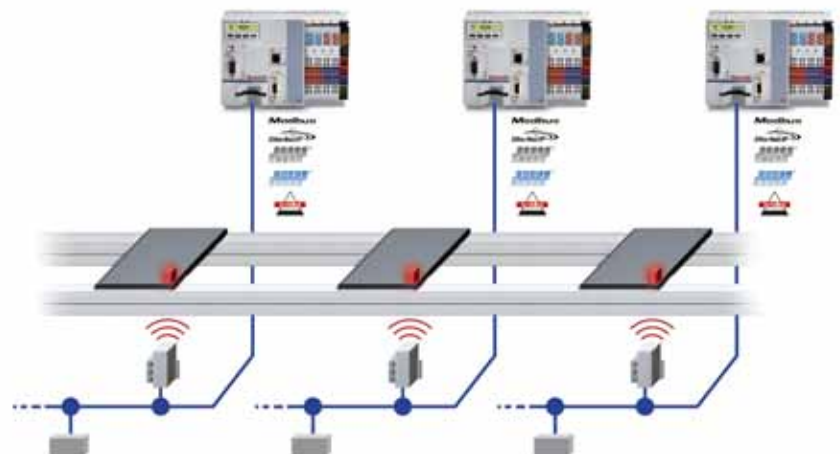


Decentralized data storage

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



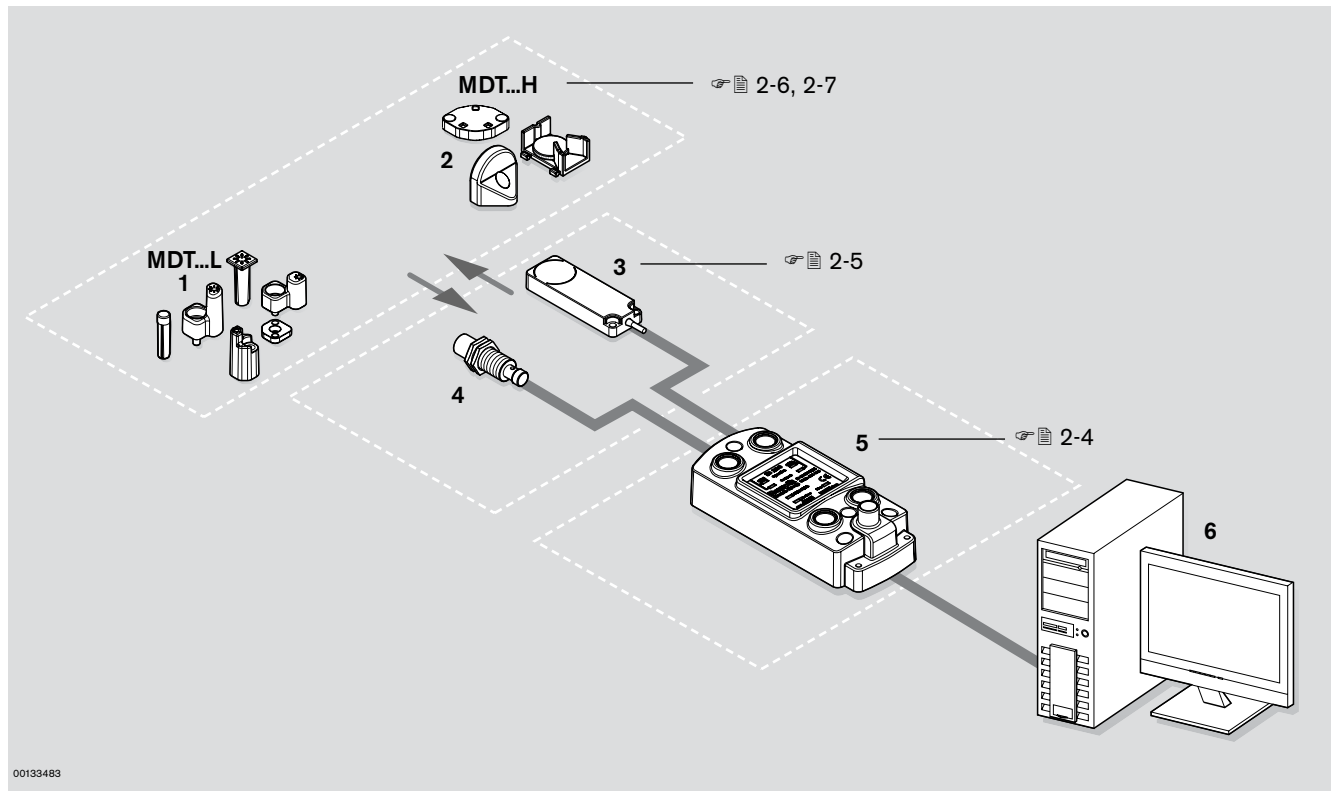
The RFID system ID 200 is a modular identification system that was developed for industrial use in production environments. The system consists of mobile data tags, antennas and communication modules. The system components have a robust and compact design and the system is particularly insensitive to 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-...



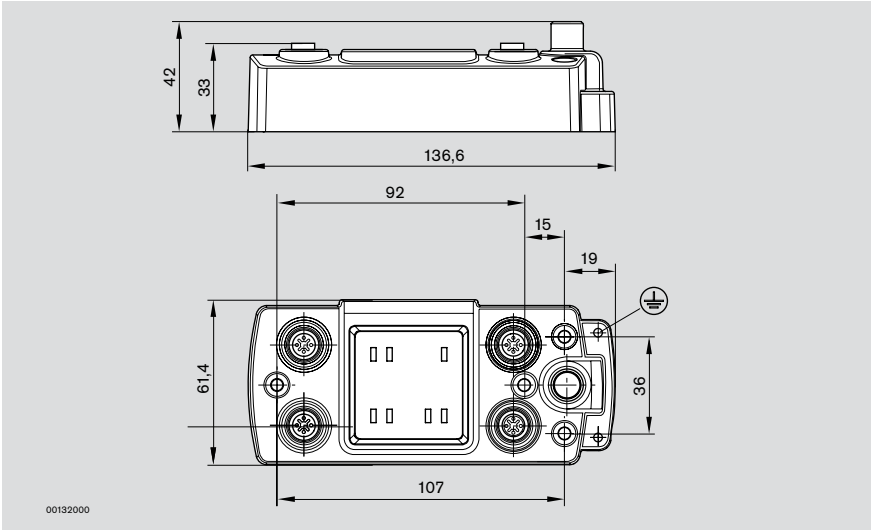
The communication module constitutes the connection between the antennas and the control system. It provides pluggable connections for up to two antennas, which can be active simultaneously and work at different frequencies. Alternatively, a digital sensor can also be connected to each antenna. Parameterization 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

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

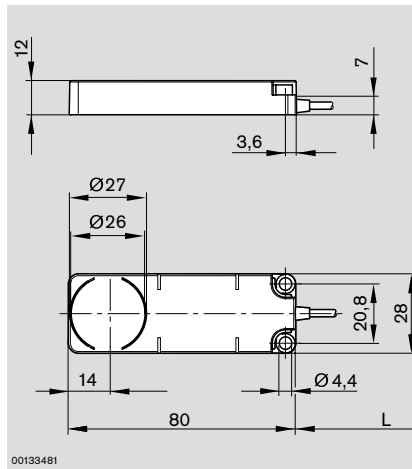
Note:

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

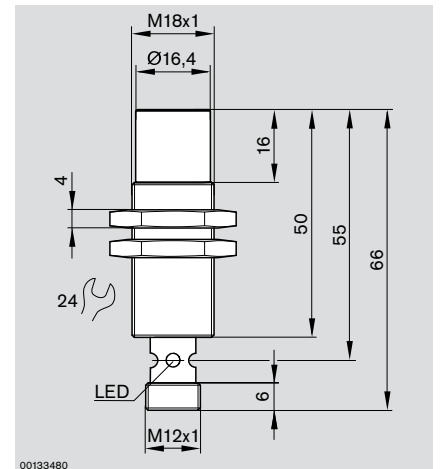
Mobile data tag MDT.../...L for 125 kHz 2-7



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Antenna ID 200/A-...F

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

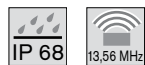
Antenna ID 200/A-...R

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

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

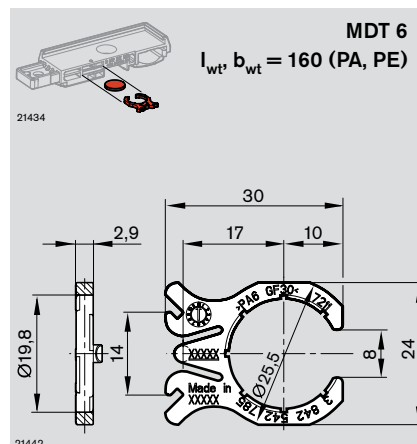
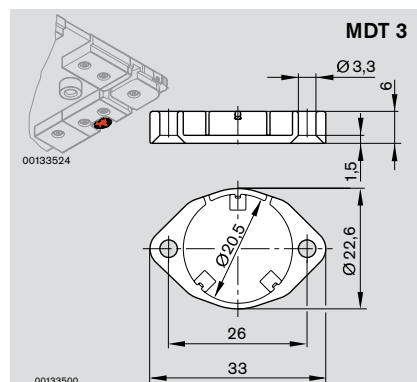
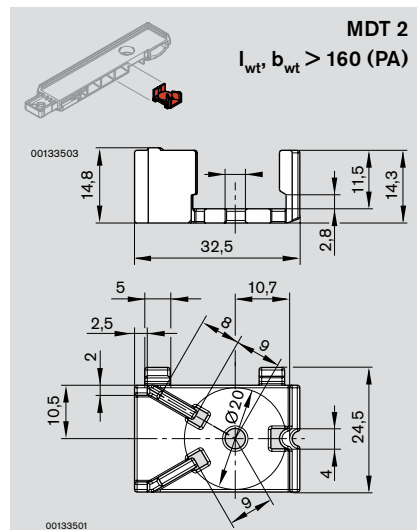
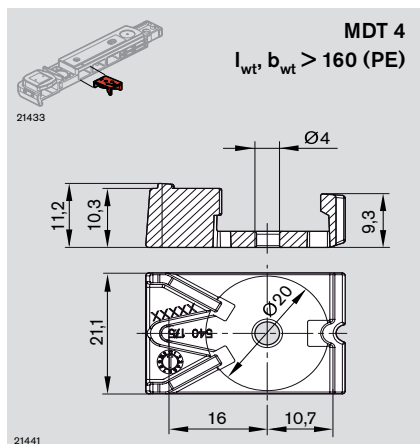
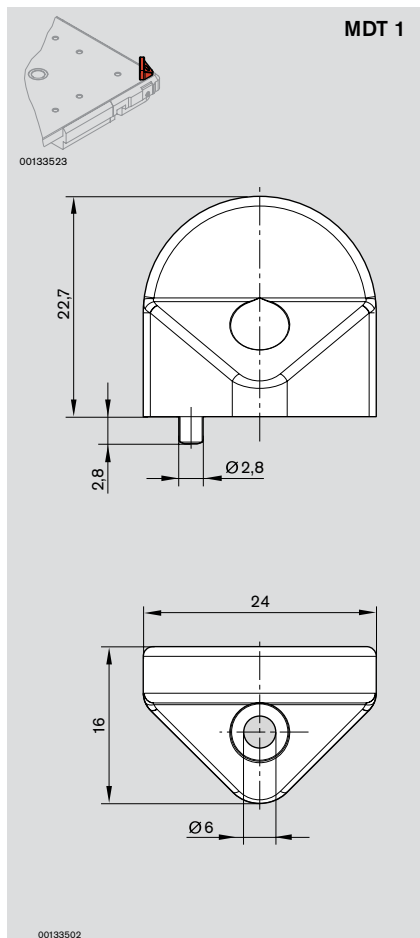
MDT with FRAM memory

		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

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

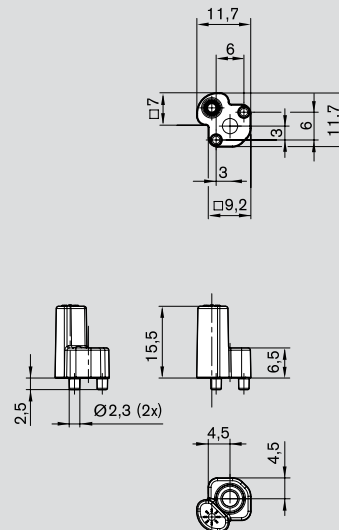
		No.
MDT 11/28-L	5	3 842 535 916
MDT 21/28-L	5	3 842 535 919
MDT 22/28-L	5	3 842 535 443
MDT 13/28-L	5	3 842 535 911
MDT 23/28-L	5	3 842 535 442

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

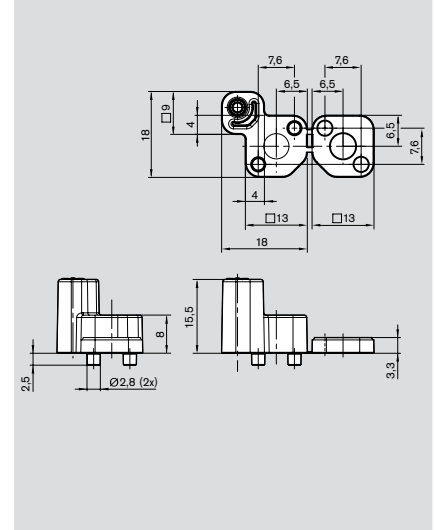


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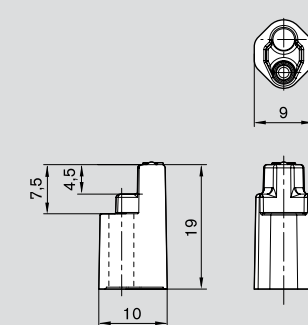
MDT 11/28-L



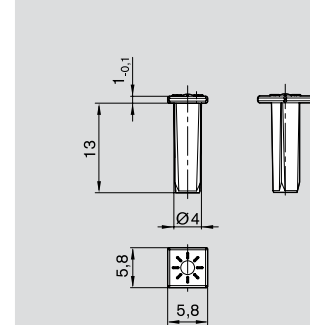
MDT 21/28-L



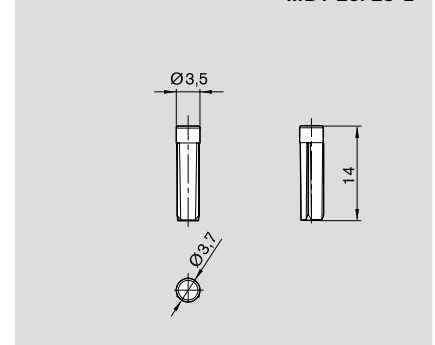
MDT 22/28-L



MDT 13/28-L



MDT 23/28-L



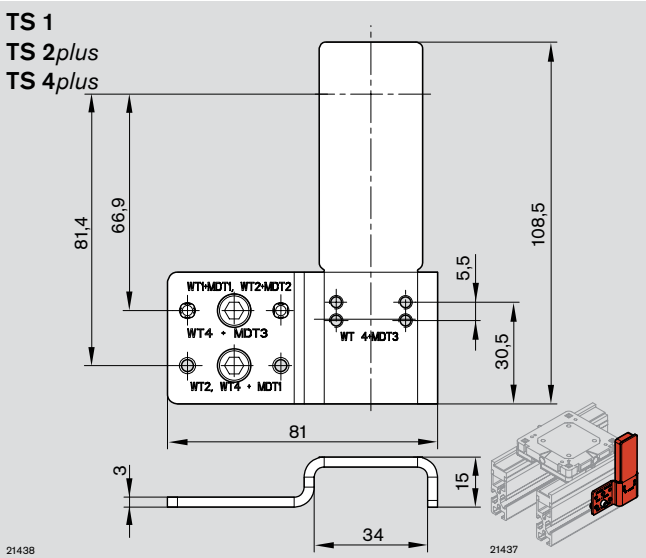
5-4

RFID system ID 200

Assembly kits ID 200

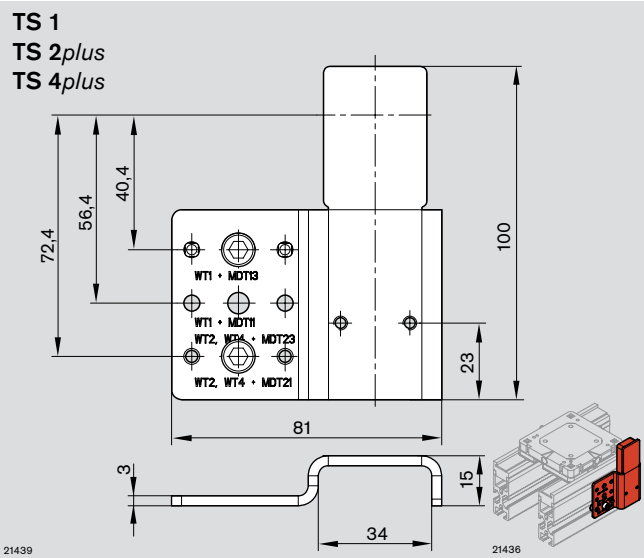


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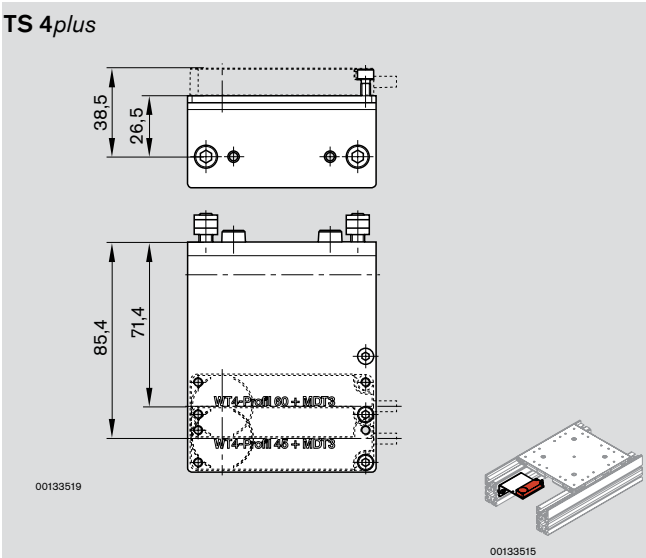
Assembly kit ID 200/MS-1

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



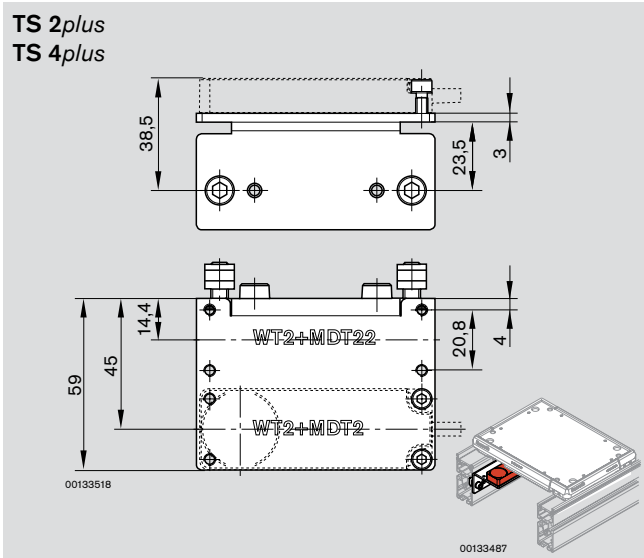
Assembly kit ID 200/MS-2

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



Assembly kit ID 200/MS-3

	No.
ID 200 /MS-3	3 842 410 101



Assembly kit ID 200/MS-4

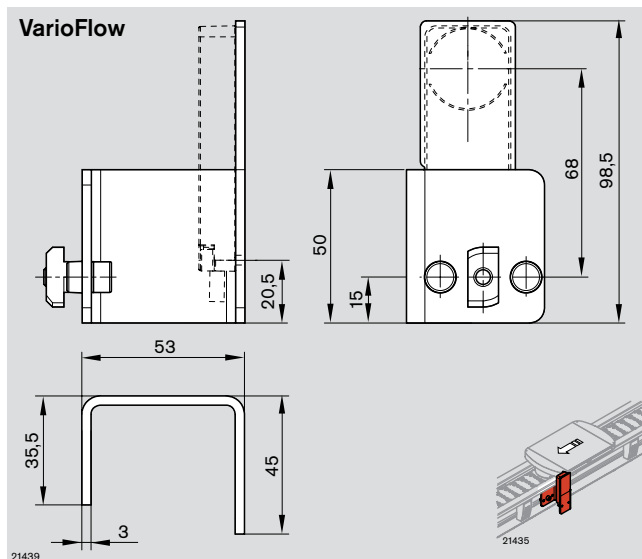
	No.
ID 200/MS-4	3 842 410 100

RFID system ID 200

Assembly kits ID 200

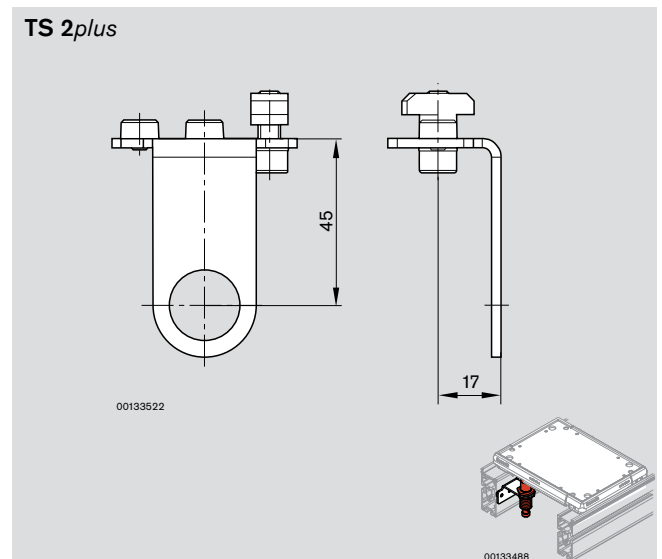


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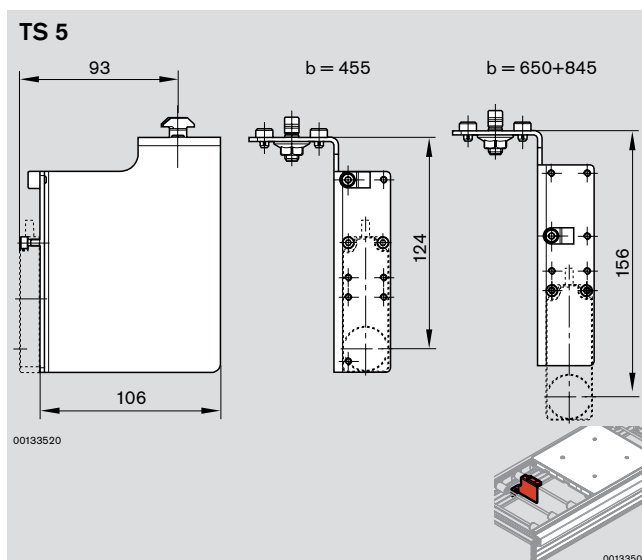
Assembly kit ID 200/MS-5

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



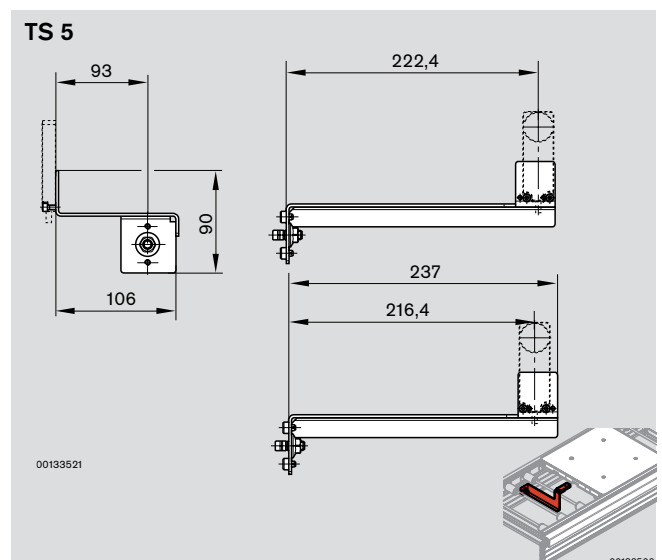
Assembly kit ID 200/MS-6

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



Assembly kit ID 200/MS-7

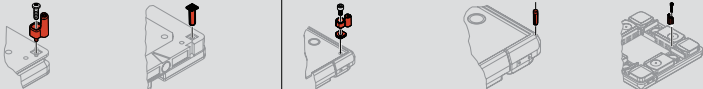
No.
ID 200/MS-7
3 842 545 144



Assembly kit ID 200/MS-8

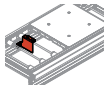
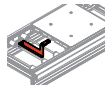
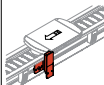
No.
ID 200/MS-8
3 842 545 148

Assembly options ID 200

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

RFID system ID 200

Assembly options ID 200

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

RFID system ID 200

Accessories - cable



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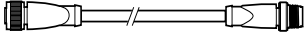
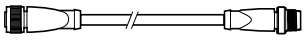
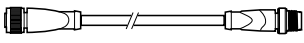
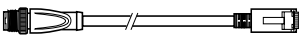
Connecting cable between antenna and communication module.

Antenna cable				
	Socket	Plug	I (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				
			I (m)	No.
ID 200/K-VCC-5M	 00193493		5	3 842 410 119

Ethernet cable for connection between communication module and control system.

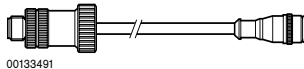
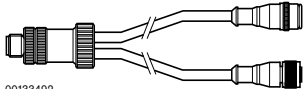
Ethernet cable				
			I (m)	No.
ID 200/K-ETH M12 - 5M	 21446		5	3 842 410 114
ID 200/K-ETH M12 - 10M	 21446		10	3 842 410 115
ID 200/K-ETH M12 - 20M	 21447		20	3 842 410 116
ID 200/K-ETH RJ - 5M			5	3 842 410 117

RFID system ID 200

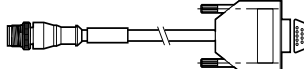


00133439

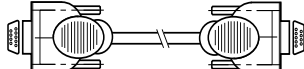
PROFIBUS cable for connection between communication module and control system.

PROFIBUS cable				
	Cable		I (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		I (m)	No.
ID 200/K-Diag		0.15	3 842 410 120
00133494			

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

Null modem cable		I (m)	No.
ID 200/K-NMK		2	3 842 410 129
00133495			

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.

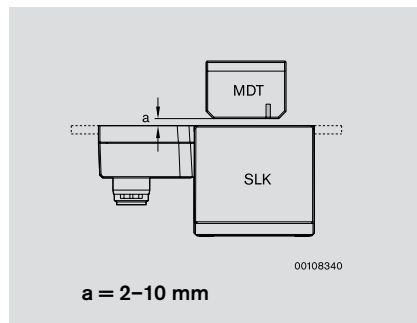
The read/write head (SLK) offers a direct fieldbus connection for the fieldbus system

- PROFIBUS DP
- via M12 plug-in connection.

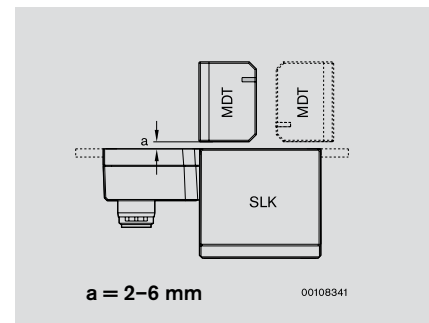
The ID 40 enables dynamic data transmission: When passing at distance “a” and at a transport speed of up to 30 m/min, the transmission capacity is 64 bytes.



00123943



Transmission range at front



Transmission range at side

The user manual, latest information and software can be downloaded under 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.

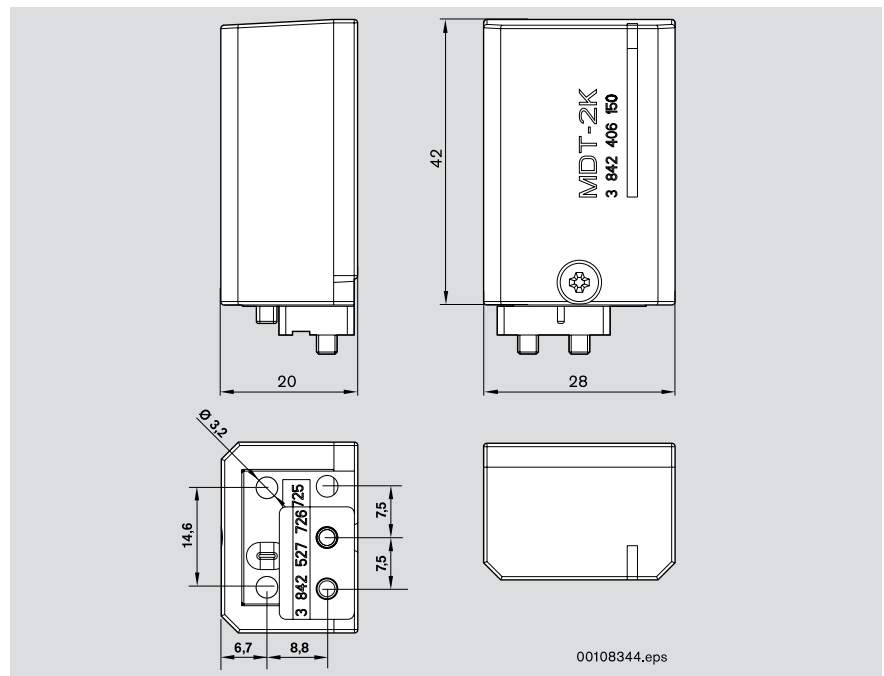
The MDT memory capacity is either approx. 2 KB, 8 KB or 32 KB. The three-color status LED on the MDT displays correct data transmission and transmission errors. The MDT complies with protection type IP68.

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

Optional accessories:
Assembly kits 3-5



00123944



3

Mobile data tag ID 40/MDT...

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

Memory capacity

- MDT2K	1904 bytes
- MDT32K	30800 bytes

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

Data access byte-wise

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.

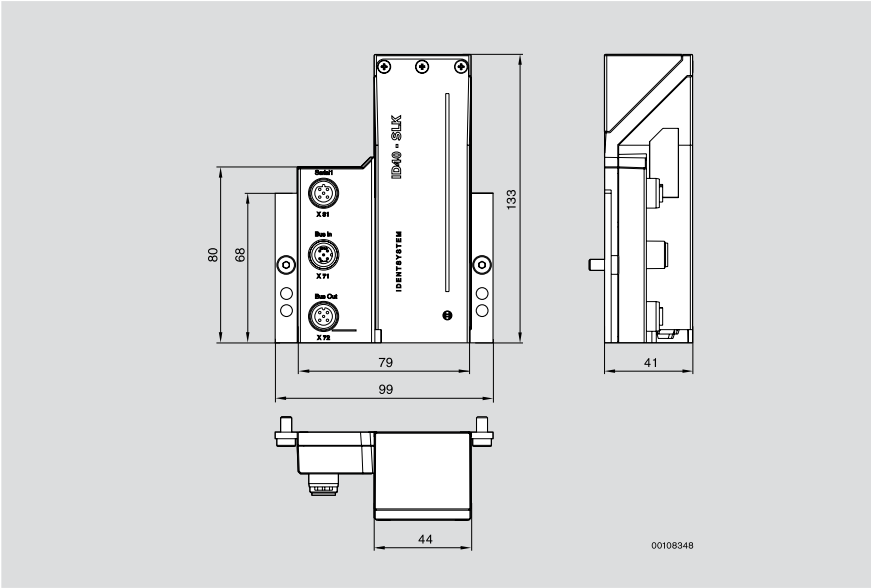
Scope of delivery: Includes assembly kit
3 842 527 634.

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

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



00123945



00108348

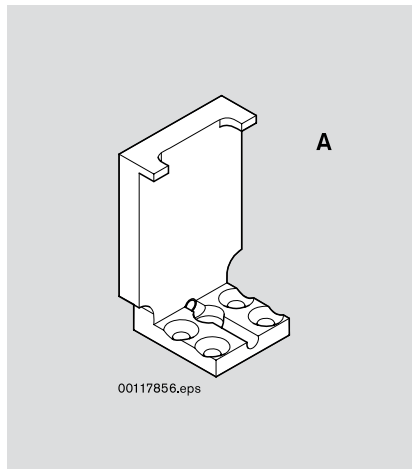
Operating voltage	24 V -15 + 20%
Waviness	< 10%
Current consumption	max. 0.35 A
Fieldbus connections	Profibus-DPV0
serial interface	RS232
Status indicators	1 LED alphanumeric display
Protection type	IP65
Ambient temperature	+5 ... +55 °C
Storage temperature	-20 ... +85 °C
Humidity	≤ 96%
Approvals	EN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

RFID system ID 40

Accessories

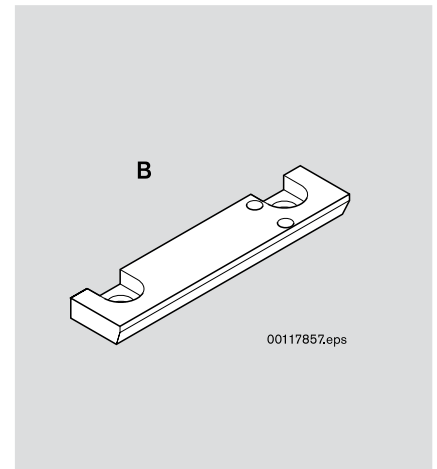
Assembly kit for ID 40/MDT...

- 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)

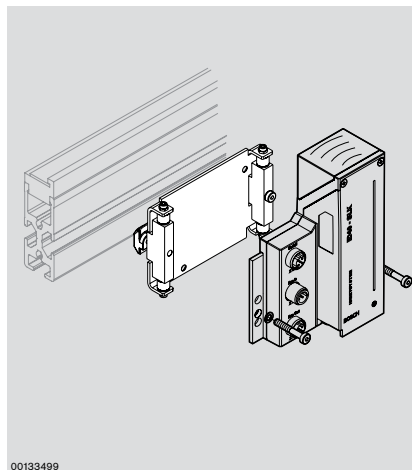
No.
3 842 535 740



Assembly kit (B)

No.
3 842 532 630

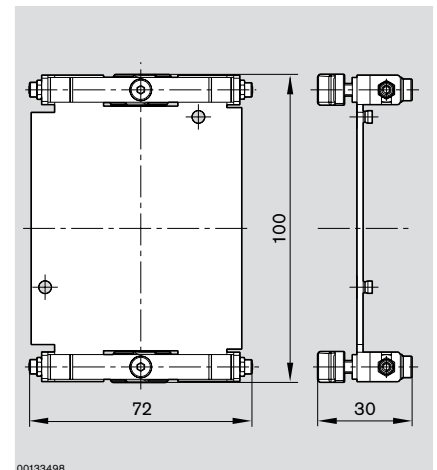
Assembly kit for ID 40/SLK for vibration-decoupled mounting.
Application in high vibration environments (on request).



Assembly kit

No.
ID 40 3 842 538 784*

* Price and availability on request.



RFID system ID 40

Accessories - software, cable

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

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

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

System requirements

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

Diagnostic cable RS232

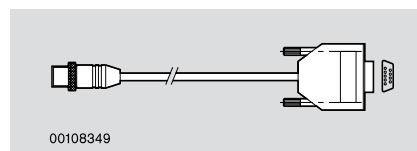
I (m)	No.
2	3 842 406 117



00123857

Configuration and diagnostic software package

No.
3 842 406 119



00108349

Function modules

No.
Siemens S7 controllers 3 842 406 190

Fieldbus connection cable

		I (m)	PROFIBUS DP ^{*)} No.
M12 plug, straight, open end		3	3 842 410 030
M12 socket, straight, open end		3	3 842 410 031
M12 plug, angled, open end		3	3 842 410 032
M12 socket, angled, open end		3	3 842 410 033
M12 plug, angled, M12 socket, angled		3	3 842 410 034
Fieldbus termination resistor		–	3 842 406 156

^{*)} 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.

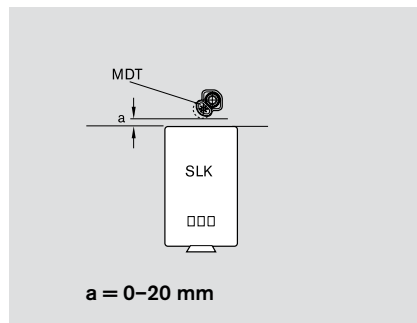
The ID 15 enables dynamic data transmission: When passing at distance "a" and a transport speed of up to 20 m/min.

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

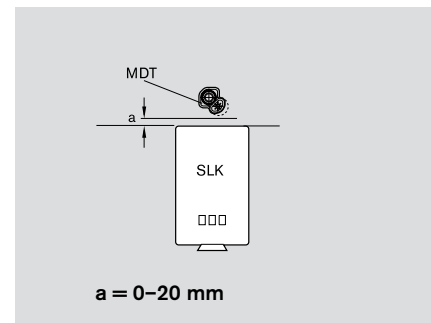
The user manual, latest information and software can be downloaded under www.boschrexroth.com/RFID



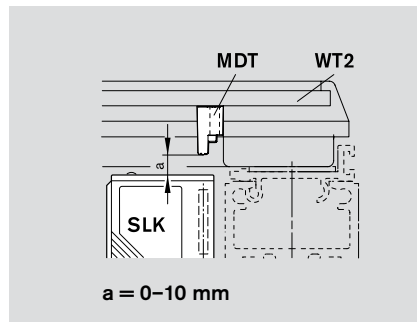
00123835



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 2*plus* and TS 4*plus* 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

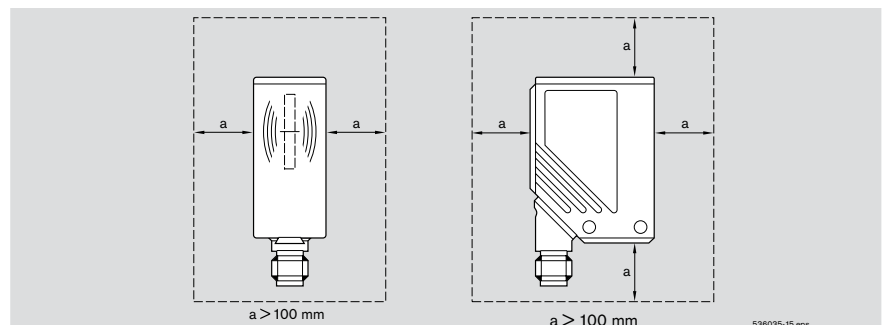
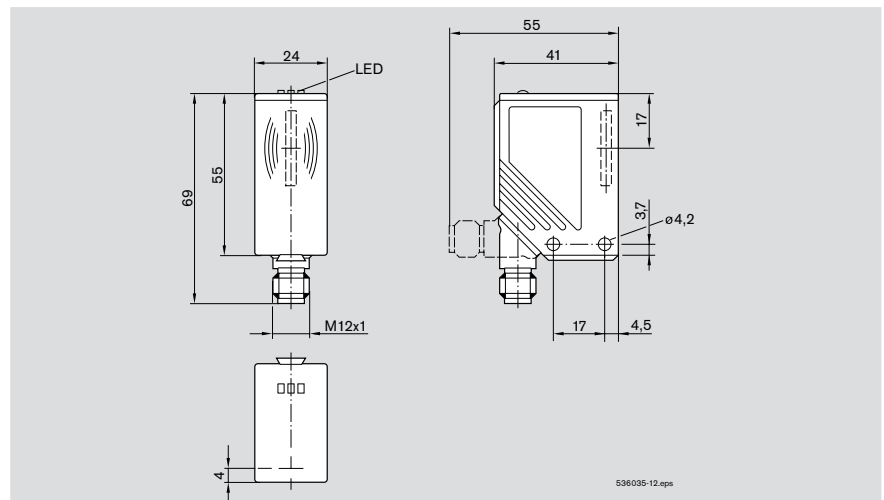
4-6

Read/write head ID 15/SLK...

	No.
ID 15/SLK	3 842 406 960



00123847



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

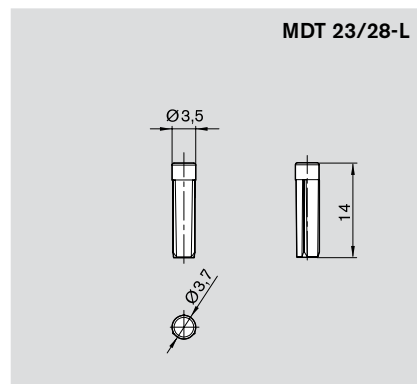
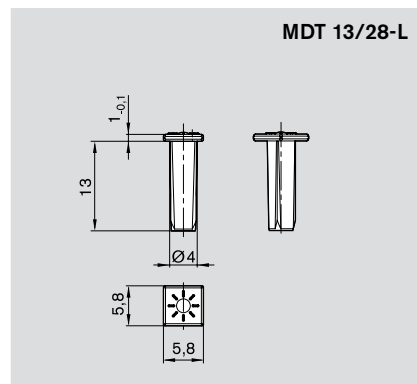
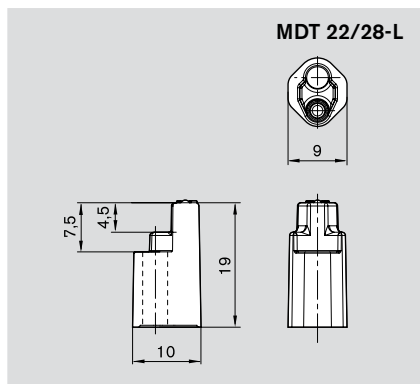
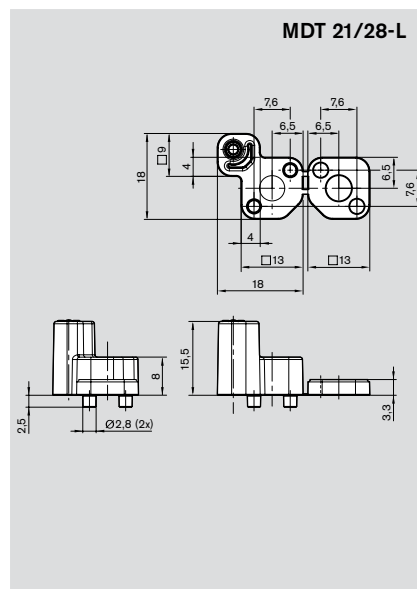
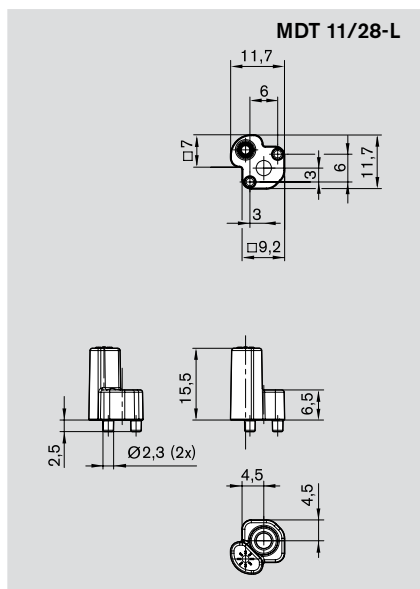
MDT...L

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

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



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



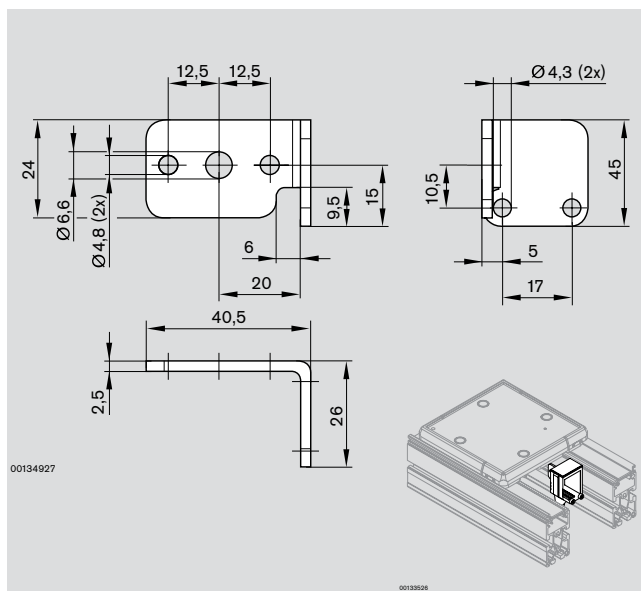
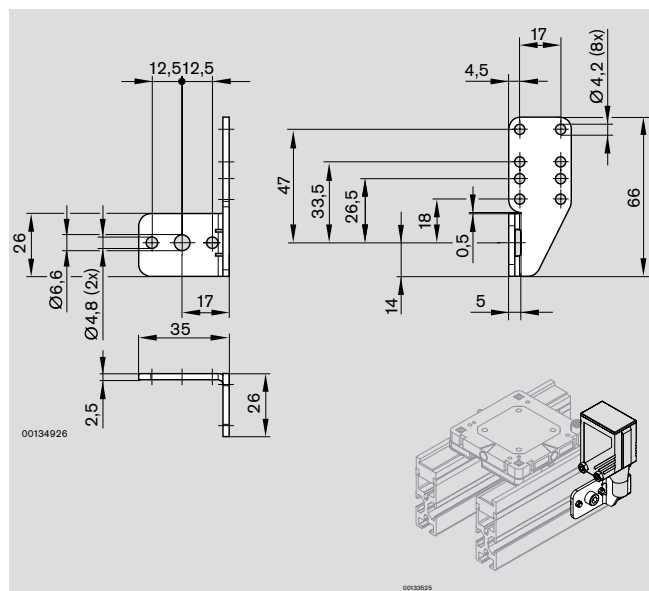
00123856

Diagnostics package DPS/L

	No.
DPS/L	3 842 406 959

RFID system ID 15

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

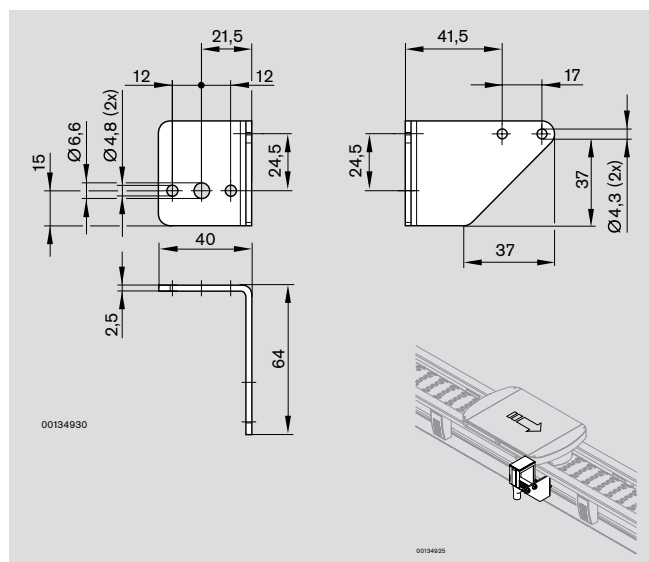


Fastening kit ID 15/MS-1

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

Fastening kit ID 15/MS-2

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



Fastening kit ID 15/MS-5

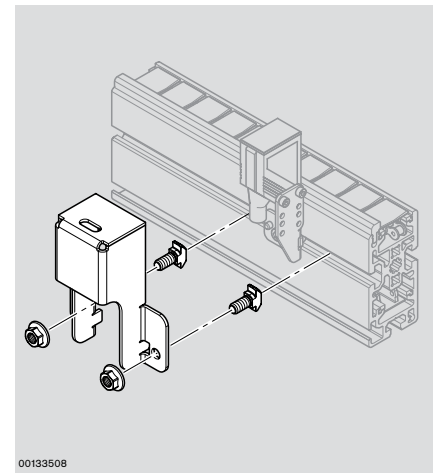
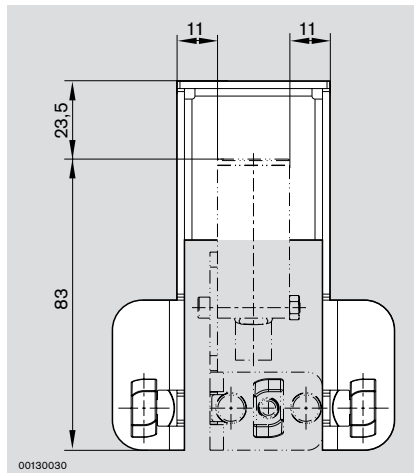
	No.
ID 15/MS-5	3 842 535 918

RFID system ID 15

Protective cover for ID 15/SLK

Protective cover ID 15/SLK

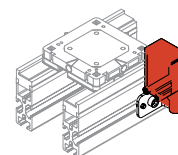
	No.
ID 15/SLK	3 842 537 885

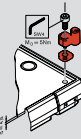
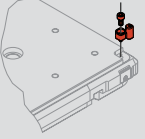


RFID system ID 15

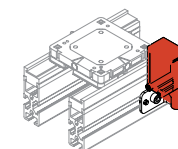
Assembly options ID 15

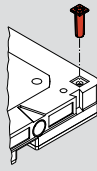
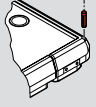
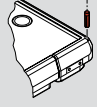
Installation on workpiece pallets TS 1, TS 2plus or TS 4plus



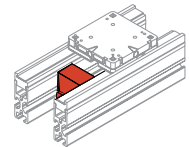
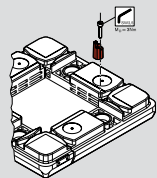
	TS 1	TS 2plus	TS 4plus
			
	No.	No.	No.
Mobile data tag			
MDT 11/28-L	3 842 535 916		
MDT 21/28-L		3 842 535 919	3 842 535 919
Fastening kit for read/write head ID 15/MS-1	3 842 535 920	3 842 535 920	3 842 535 920

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

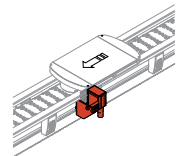
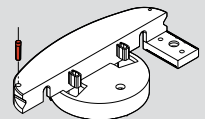


	TS1	TS 2plus	TS 4plus
			
	No.	No.	No.
Mobile data tag			
MDT 23/28-L	3 842 535 442	3 842 535 442	3 842 535 442
MDT 13/28-L	3 842 535 911		
Fastening kit for read/write head ID 15/MS-1	3 842 535 920	3 842 535 920	3 842 535 920

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

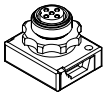
Scope of delivery: AS-i addressing and testing device DPS/AS-i with batteries (4 x 1.5 V Mignon (AA) LR6).

Addressing device DPS/AS-i	
	No.
DPS/AS-i	3 842 406 173

AS-i accessories

AS-i branch terminal
for connecting M12 plugs to an AS-i signal cable

AS-i branch terminal



No.
3 842 406 176

Connection cable

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

Technical data

Technical data

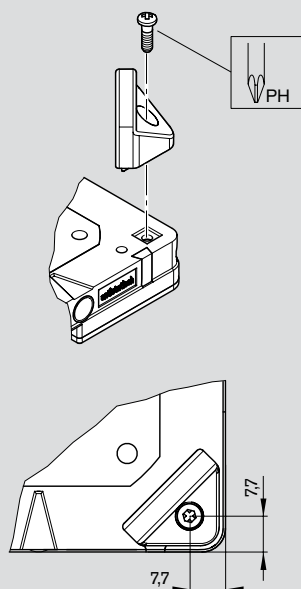
RFID system ID 200	5-2
RFID system ID 40	5-3
RFID system ID 15	5-4

Technical data

RFID system ID 200

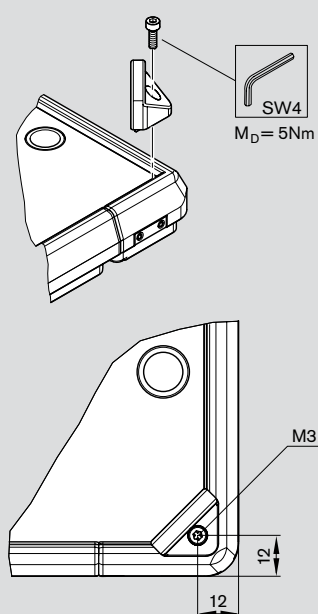
Drill patterns for workpiece pallets

TS 1
WT1



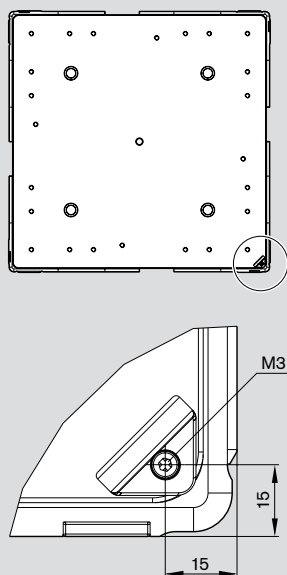
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TS 2plus
TS 4plus



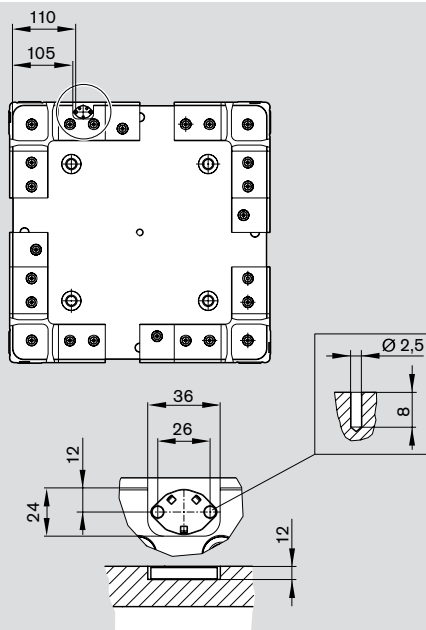
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TS 4plus



00134933

TS 4plus



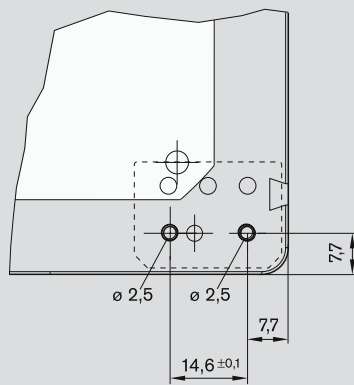
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Technical data

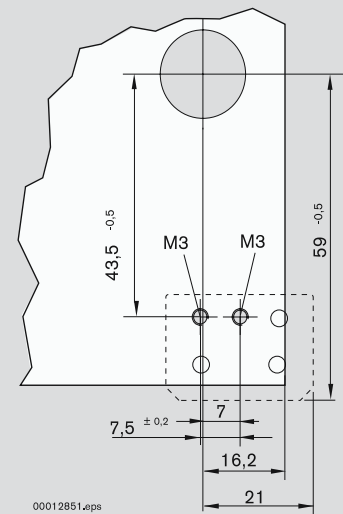
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Drill patterns for workpiece pallets

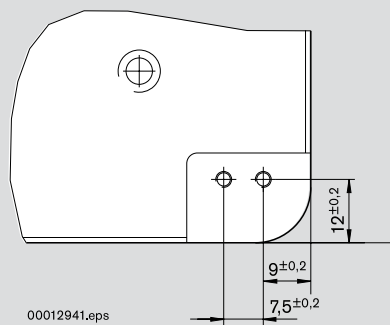
TS 1



TS 2plus



TS 4plus

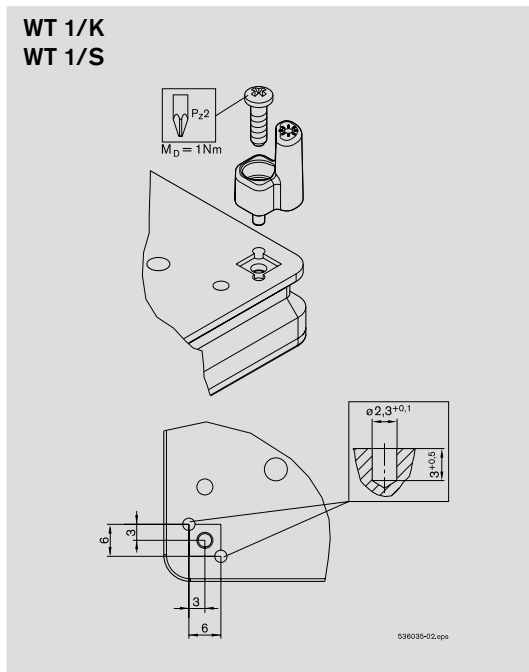


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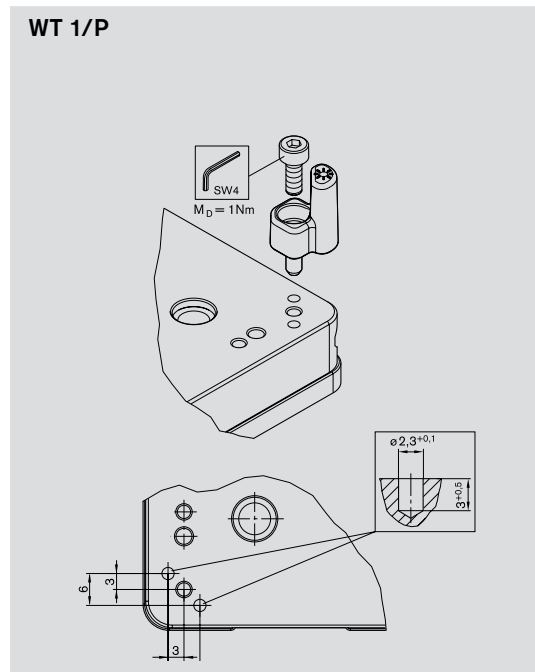
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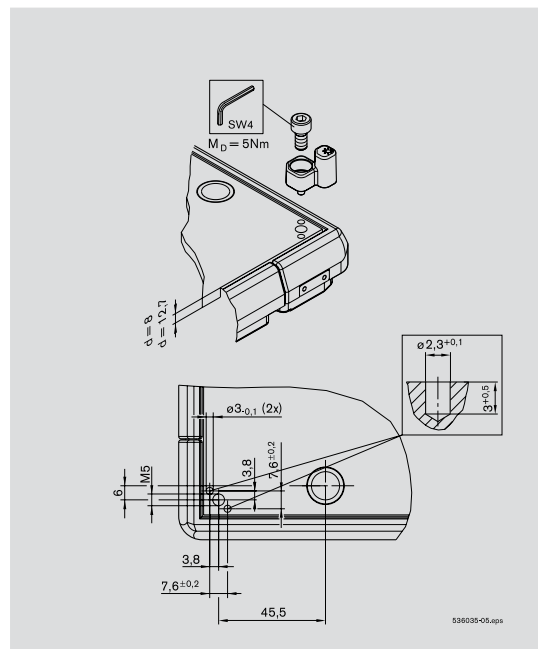
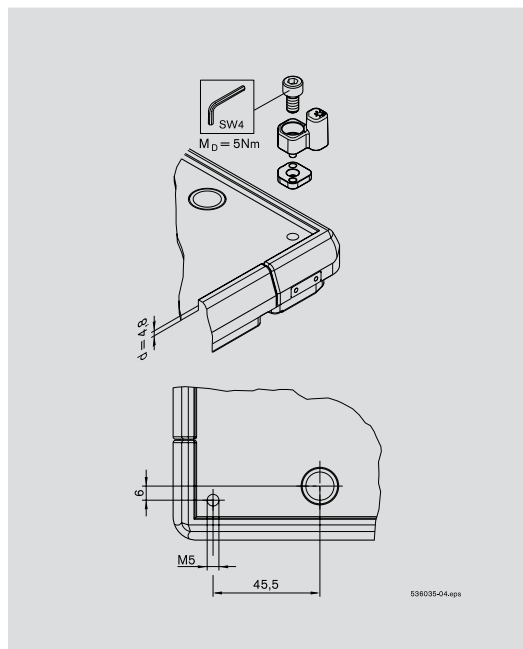
TS 1



WT 1/P

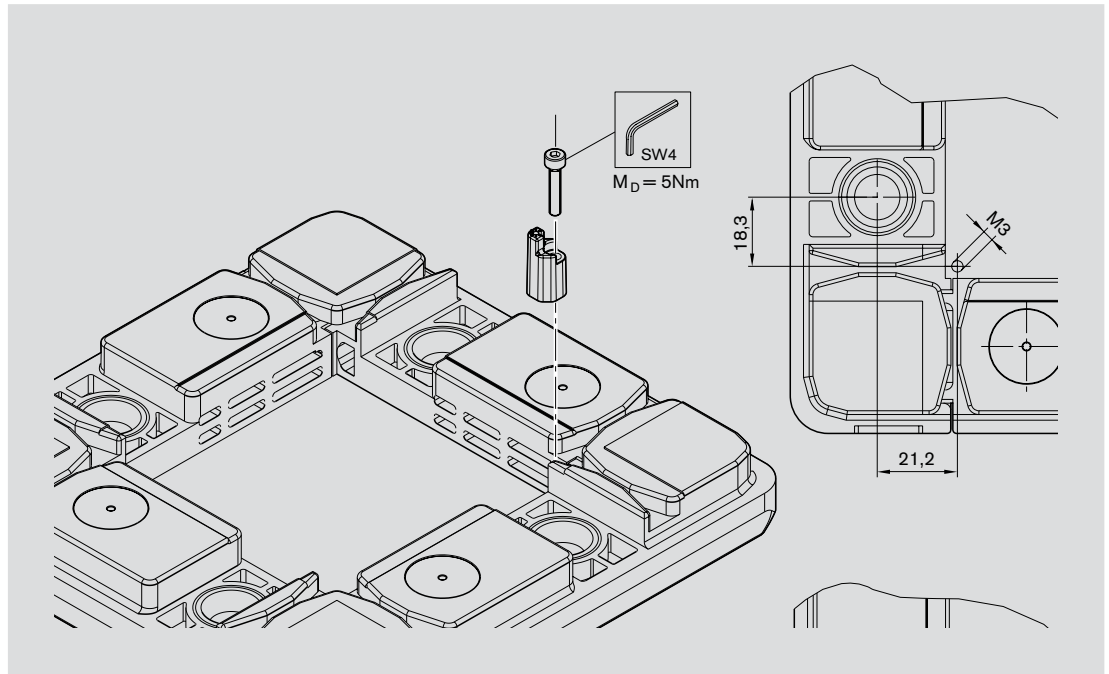


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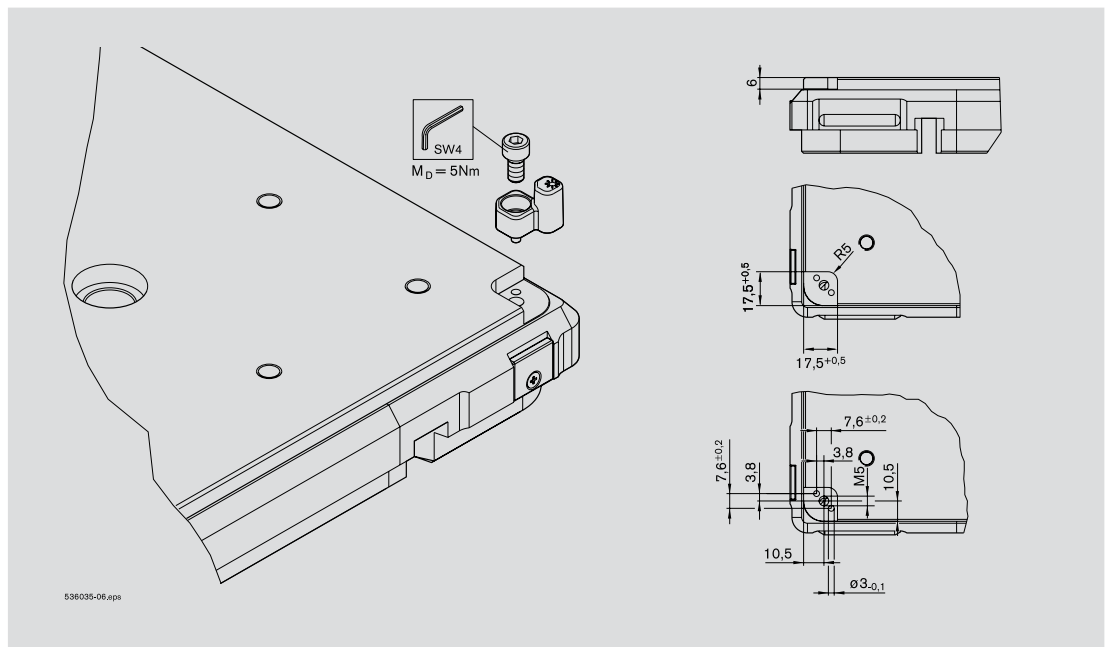


Technical data

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TS 4plus



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