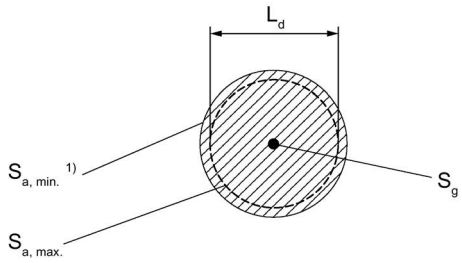
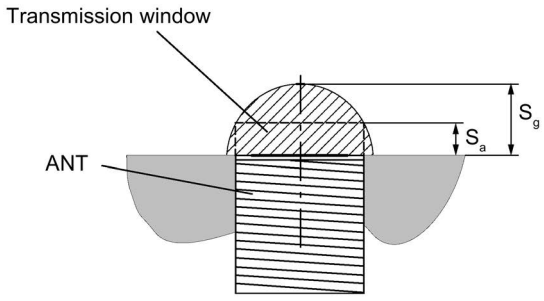
6.3.3 Transmission window

View from above



1) At $S_{a, min.}$ the transmission window is enlarged

Side view



L_d Length of the transmission window (= 3 mm)

S_a Operating distance between antenna and transponder

S_g Limit distance (maximum clear distance between upper surface of the reader and the antenna, at which the transmission can still function under normal conditions)

Figure 6-10 Transmission window ANT 8

6.3.4 Flush-mounted in metal

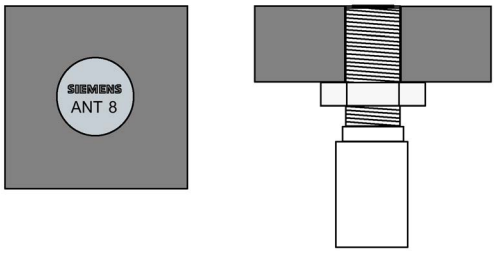


Figure 6-11 ANT 8 flush-mounted in metal

6.3.5 Minimum spacing

Note

Extension of the data transmission time if distance values are undershot

If the distance values specified in the tables are undershot, it is possible that the inductive fields will be affected. In this case, the data transmission time can increase unpredictably or a command is aborted with an error.

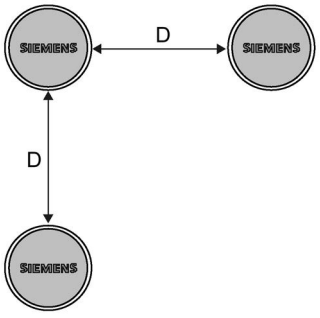
For this reason, please observe the values in the tables.

Minimum distances from transponder to transponder (without multitag mode)

Table 6- 11 Minimum distances transponder edge to transponder edge

	MDS D117 / MDS D127	MDS D421 / MDS D521
RF250R with ANT 8	≥ 20 mm	≥ 30 mm

Definition of distance D



D ≥ 50 mm

Figure 6-12 Minimum distance for ANT 8

D ≥ 50 mm

Figure 6-13 Face-to-face distance between two ANT 8s

6.3.6 Technical data

		6GT2398-1CF10 **6GT2398-1CF00**
Product type designation	ANT 8	
Electrical data		
Maximum write/read distance ANT ↔ transponder (S_g)	4 mm	
Interfaces		
Plug connection	4-pin (pin on antenna side)	
Mechanical specifications		
Housing		
• Material	• Stainless steel	
• Color	• silver	

	6GT2398-1CF10 6GT2398-1CF00
Permitted ambient conditions	
Ambient temperature	
• During operation	• -25 ℃ ... +70 ℃
• During transportation and storage	• -40 °C ... +85 °C
Degree of protection to EN 60529	IP67
Shock according to EN 60721-3-7 Class 7 M3[1)]	500 m/s²
Vibration according to EN 60721-3-7 Class 7 M3[1)]	200 m/s²
Design, dimensions and weight	
Dimensions (∅ x thread x L)	M8 x 1 x 38 mm
Weight	10 g without cable 140 g with cable
Type of mounting	2x stainless steel nuts M8 x 1
Cable length	3 m

1) Warning: The values for shock and vibration are maximum values and must not be applied continuously.

6.3.7 Dimension drawing

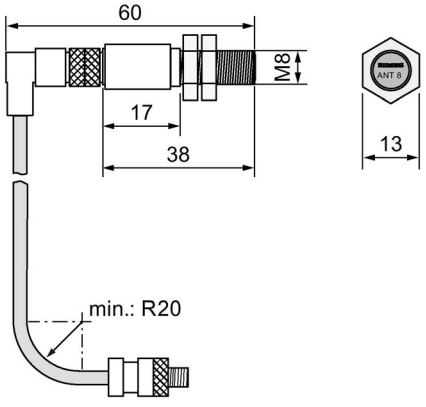


Figure 6-14 Dimension drawing ANT 8 (all values in mm)

6.4 ANT 12

6.4.1 Features

ANT 12	Characteristics	
	Area of application	Tool identification
	Writing/reading distance	up to 16 mm (depending on the transponder)
	Connecting cable	3 m or 0.6 m
	Connectable readers	RF250R
	Degree of protection	IP67 (front)

6.4.2 Ordering data

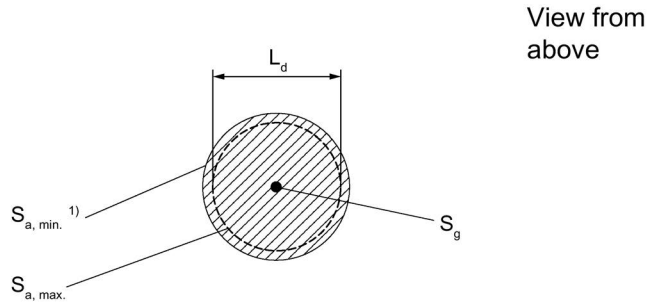
Table 6- 12 Ordering data ANT 12

Antenna	Article number
ANT 12 (including one plug-in antenna cable 3 m)	6GT2398-1CC00

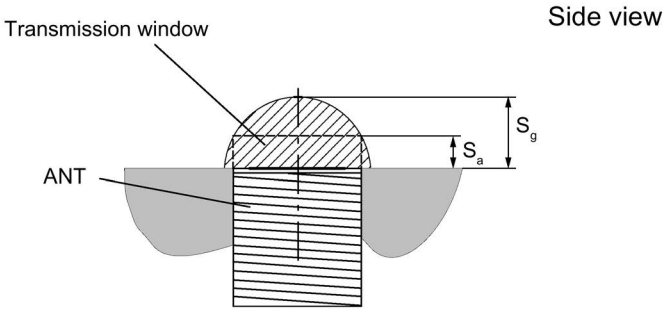
Table 6- 13 Ordering data ANT 12 accessories

Accessories	Article number
Antenna cable, 3 m	6GT2398-0AH30

6.4.3 Transmission window



1) At $S_{a, min.}$ the transmission window is enlarged



L_d Length of the transmission window (= 20 mm)

S_a Operating distance between antenna and transponder

S_g Limit distance (maximum clear distance between upper surface of the reader and the antenna, at which the transmission can still function under normal conditions)

Figure 6-15 Transmission window ANT 12

6.4.4 Flush-mounted in metal

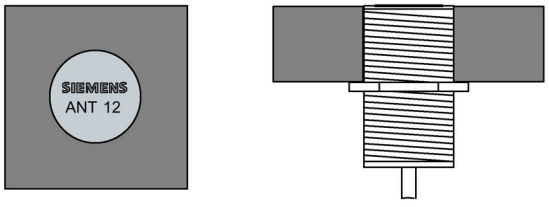


Figure 6-16 ANT 12 flush-mounted in metal

6.4.5 Minimum spacing

Note

Extension of the data transmission time if distance values are undershot

If the distance values specified in the tables are undershot, it is possible that the inductive fields will be affected. In this case, the data transmission time can increase unpredictably or a command is aborted with an error.

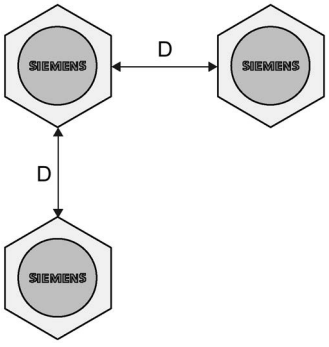
For this reason, please observe the values in the tables.

Minimum distances from transponder to transponder (without multitag mode)

Table 6- 14 Minimum distances transponder edge to transponder edge

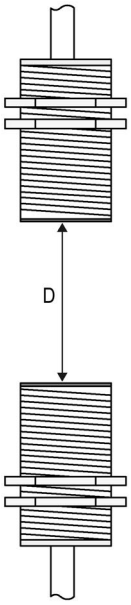
	MDS D117 / MDS D127	MDS D421 / MDS D422 / MDS D428 / MDS D460 / MDS D522 / MDS D528
RF250R with ANT 12	≥ 60 mm	≥ 80 mm

Definition of distance D



D ≥ 70 mm

Figure 6-17 Minimum distance for ANT 12



D ≥ 100 mm

Figure 6-18 Face-to-face distance between two ANT 12s

6.4.6 Technical data

		6GT2398-1CC00 6GT2398-1CC10
Product type designation	ANT 12	
Electrical data		
Maximum write/read distance ANT ↔ transponder (S_g)	16 mm	
Interfaces		
Plug connection	4-pin (pin on antenna side)	
Mechanical specifications		
Housing		
• Material	• Plastic Crastin	
• Color	• Pale turquoise	
Permitted ambient conditions		
Ambient temperature		
• During operation	• -20 °C ... +70 °C	

	6GT2398-1CC00 6GT2398-1CC10
• During transportation and storage	• -40 °C ... +85 °C
Degree of protection to EN 60529	IP67 (front)
Shock according to EN 60721-3-7 Class 7 M3[1)]	500 m/s^2
Vibration according to EN 60721-3-7 Class 7 M3[1)]	200 m/s^2

Design, dimensions and weight	
Dimensions (∅ x thread x L)	M12 x 1 x 40 mm
Weight	145 g
Type of mounting	2x plastic nuts M12 x 1
Cable length	3 m or 0.6 m

1) Warning: The values for shock and vibration are maximum values and must not be applied continuously.

6.4.7 Dimension drawing

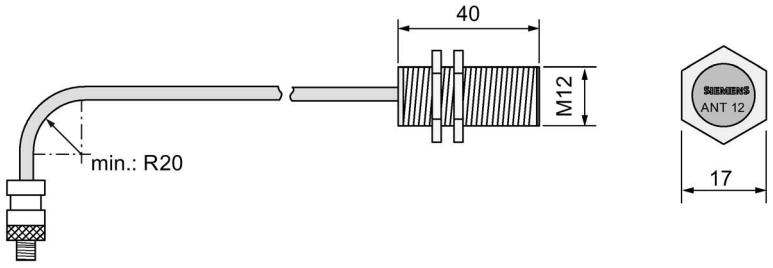


Figure 6-19 Dimension drawing ANT 12 (all values in mm)

6.5 ANT 18

6.5.1 Features

ANT 18	Characteristics	
	Area of application	Small assembly lines
	Writing/reading distance	up to 35 mm (depending on the transponder)
	Connecting cable	3 m or 0.6 m
	Connectable readers	RF250R
	Degree of protection	IP67 (front)

6.5.2 Ordering data

Table 6- 15 Ordering data ANT 18

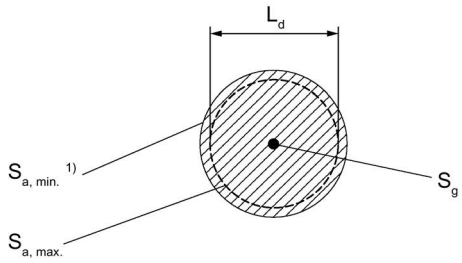
Antenna	Article number
ANT 18 (including one plug-in antenna cable 3 m)	6GT2398-1CA00

Table 6- 16 Ordering data ANT 18 accessories

Accessories	Article number
Antenna cable, 3 m	6GT2398-0AH30

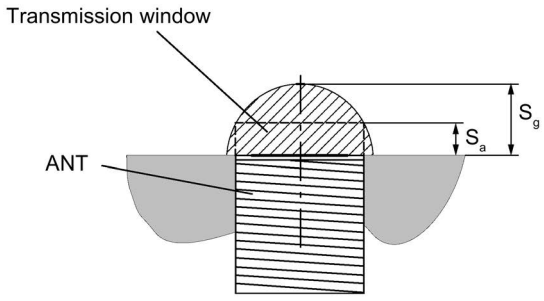
6.5.3 Transmission window

View from above



1) At $S_{a, min.}$ the transmission window is enlarged

Side view



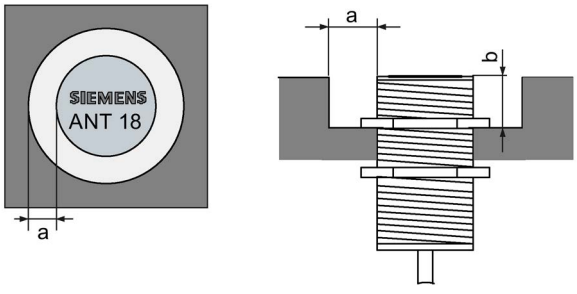
L_d Length of the transmission window (= 30 mm)

S_a Operating distance between antenna and transponder

S_g Limit distance (maximum clear distance between upper surface of the reader and the antenna, at which the transmission can still function under normal conditions)

Figure 6-20 Transmission window ANT 18

6.5.4 Flush-mounted in metal



a = 10 mm

b = 10 mm

Figure 6-21 ANT 18 flush-mounted in metal

6.5.5 Minimum spacing

Note

Extension of the data transmission time if distance values are undershot

If the distance values specified in the tables are undershot, it is possible that the inductive fields will be affected. In this case, the data transmission time can increase unpredictably or a command is aborted with an error.

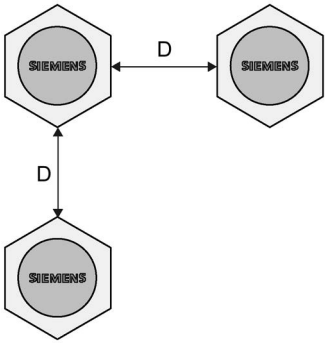
For this reason, please observe the values in the tables.

Minimum distances from transponder to transponder (without multitag mode)

Table 6- 17 Minimum distances transponder edge to transponder edge

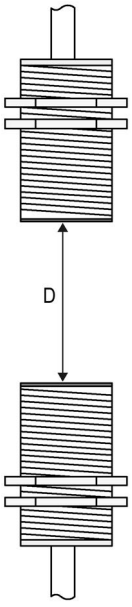
	MDS D124 / MDS D160 / MDS D324	MDS D421 / MDS D422 / MDS D423 / MDS D424 / MDS D425 / MDS D428 / MDS D460 / MDS D522 / MDS D524 / MDS D528
RF250R with ANT 18	≥ 80 mm	≥ 100 mm

Definition of distance D



D ≥ 100 mm

Figure 6-22 Minimum distance for ANT 18



D ≥ 100 mm

Figure 6-23 Face-to-face distance between two ANT 18s

6.5.6 Technical data

		6GT2398-1CA00 6GT2398-1CA10
Product type designation	ANT 18	
Electrical data		
Maximum write/read distance ANT ↔ transponder (S_g)	35 mm	
Interfaces		
Plug connection	4-pin (pin on antenna side)	
Mechanical specifications		
Housing		
• Material	• Plastic Crastin	
• Color	• Pale turquoise	
Permitted ambient conditions		
Ambient temperature		
• During operation	• -20 °C ... +70 °C	

	6GT2398-1CA00 6GT2398-1CA10
• During transportation and storage	• -40 °C ... +85 °C
Degree of protection to EN 60529	IP67 (front)
Shock according to EN 60721-3-7 Class 7 M3[1)]	500 m/s²
Vibration according to EN 60721-3-7 Class 7 M3[1)]	200 m/s²

Design, dimensions and weight	
Dimensions (∅ x thread x L)	M18 x 1 x 55 mm
Weight	130 g
Type of mounting	2x plastic nuts M18 x 1
Cable length	3 m or 0.6 m

1) Warning: The values for shock and vibration are maximum values and must not be applied continuously.

6.5.7 Dimension drawing

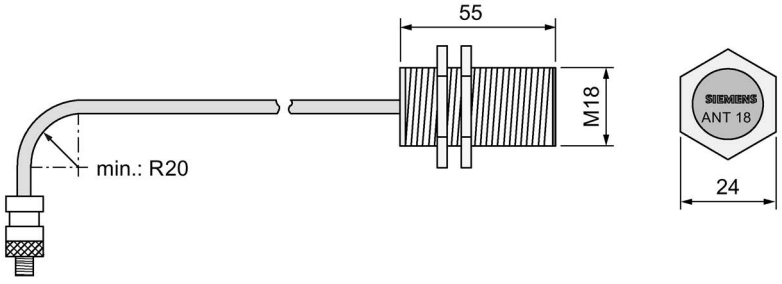


Figure 6-24 Dimension drawing ANT 18 (all values in mm)

6.6 ANT 30

6.6.1 Features

ANT 18	Characteristics	
	Area of application	Small assembly lines
	Writing/reading distance	up to 55 mm (depending on the transponder)
	Connecting cable	3 m
	Connectable readers	RF250R
	Degree of protection	IP67 (front)

6.6.2 Ordering data

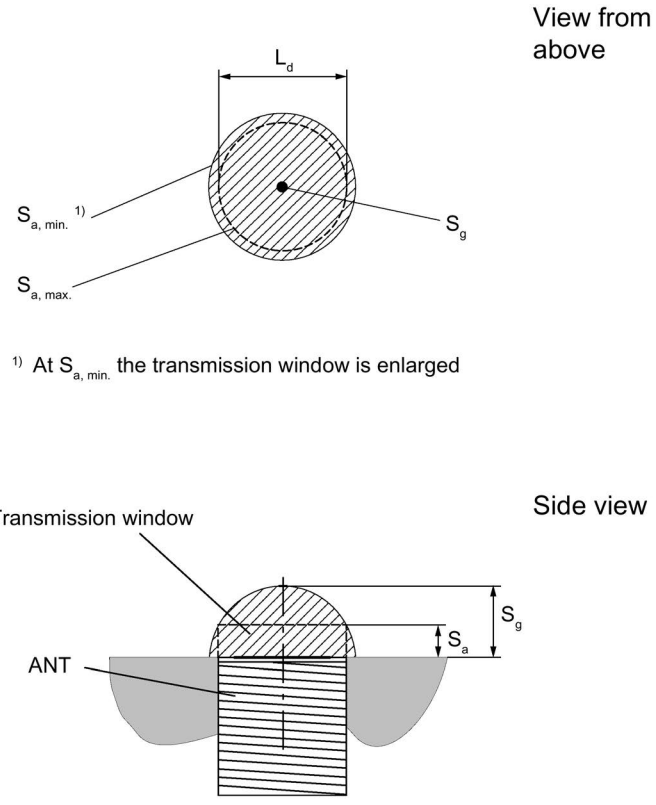
Table 6- 18 Ordering data ANT 30

Antenna	Article number
ANT 30 (including one plug-in antenna cable 3 m)	6GT2398-1CD00

Table 6- 19 Ordering data ANT 30 accessories

Accessories	Article number
Antenna cable, 3 m	6GT2398-0AH30

6.6.3 Transmission window



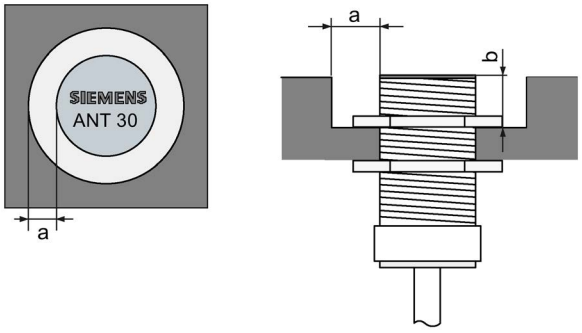
L_d Length of the transmission window (= 60 mm)

S_a Operating distance between antenna and transponder

S_g Limit distance (maximum clear distance between upper surface of the reader and the antenna, at which the transmission can still function under normal conditions)

Figure 6-25 Transmission window ANT 30

6.6.4 Flush-mounted in metal



a = 20 mm

b = 20 mm

Figure 6-26 ANT 30 flush-mounted in metal

6.6.5 Minimum spacing

Note

Extension of the data transmission time if distance values are undershot

If the distance values specified in the tables are undershot, it is possible that the inductive fields will be affected. In this case, the data transmission time can increase unpredictably or a command is aborted with an error.

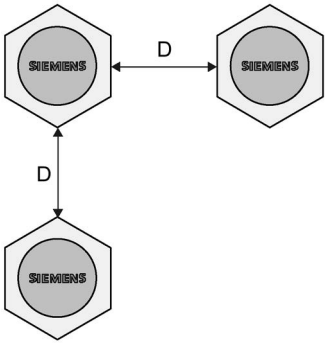
For this reason, please observe the values in the tables.

Minimum distances from transponder to transponder (without multitag mode)

Table 6- 20 Minimum distances transponder edge to transponder edge

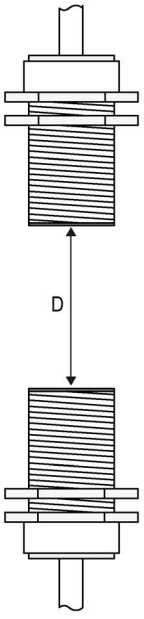
	MDS D124 / MDS D160 / MDS D324 / MDS D423 / MDS D424 / MDS D460 / MDS D524	MDS D422 / MDS D425 / MDS D428 / MDS D522 / MDS D528	MDS D126 / MDS D426 / MDS D526
RF250R with ANT 30	≥ 100 mm	≥ 80 mm	≥ 150 mm

Definition of distance D



D ≥ 100 mm

Figure 6-27 Minimum distance for ANT 30



D ≥ 200 mm

Figure 6-28 Face-to-face distance between two ANT 30s

6.6.6 Technical data

		6GT2398-1CD00
Product type designation	ANT 30	
Electrical data		
Maximum write/read distance ANT ↔ transponder (S_g)	60 mm	

	6GT2398-1CD00
Interfaces	
Plug connection	4-pin (pin on antenna side)
Mechanical specifications	
Housing	
• Material	• Plastic Crastin
• Color	• Pale turquoise
Permitted ambient conditions	
Ambient temperature	
• During operation	• -20 °C ... +70 °C
• During transportation and storage	• -40 °C ... +85 °C
Degree of protection to EN 60529	IP67 (front)
Shock according to EN 60721-3-7 Class 7 M3[1)]	500 m/s²
Vibration according to EN 60721-3-7 Class 7 M3[1)]	200 m/s²
Design, dimensions and weight	
Dimensions (∅ x thread x L)	M30 x 1.5 x 61 mm
Weight	180 g
Type of mounting	2x plastic nuts M30 x 1.5
Cable length	3 m

1) Warning: The values for shock and vibration are maximum values and must not be applied continuously.

6.6.7 Dimension drawing

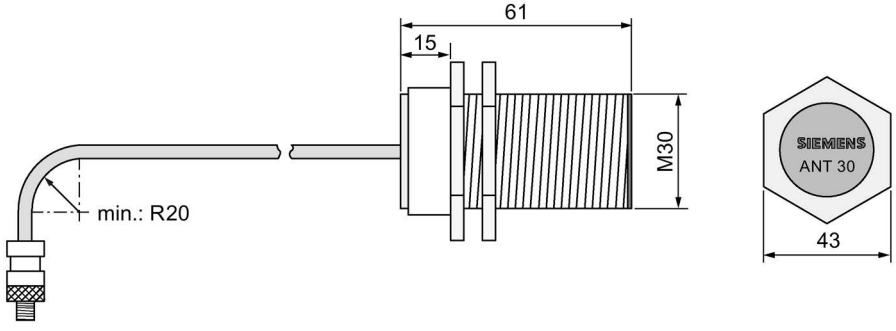


Figure 6-29 Dimension drawing ANT 30 (all values in mm)

6.7 ANT D5

6.7.1 Features

ANT D5	Characteristics	
	Area of application	Storage, logistics and distribution
	Writing/reading distance	up to 500 mm (depending on the transponder)
	Connecting cable	3.3 m
	Readers that can be connected	RF290R
	Degree of protection	IP65

6.7.2 Ordering data

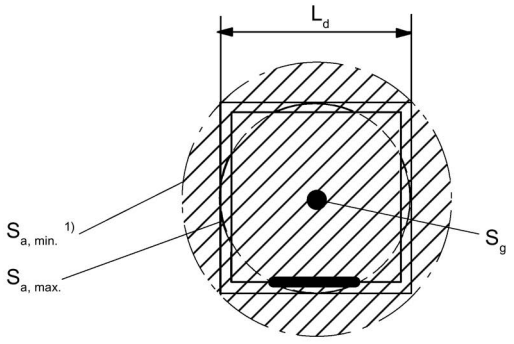
Table 6- 21 Ordering data of ANT D5

Antenna	Article number
ANT D5 (incl. one antenna connecting cable 3.3 m)	6GT2698-5AA10

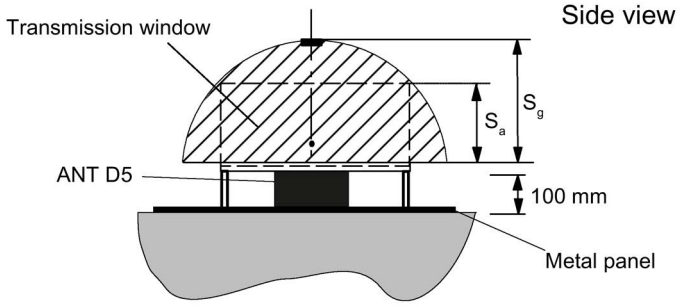
Table 6- 22 Ordering data of ANT D5 accessories

Accessories		Article number
Antenna splitter (incl. one antenna connecting cable 3.3 m)		6GT2690-0AC00
Antenna multiplexer (incl. one antenna connecting cable 0.4 m)		6GT2894-0EA00
Antenna cable	Length 3.3 m	6GT2691-0CH33
	Length 10.5 m	6GT2691-0CN10
Antenna extension cable, length 7.2 m		6GT2691-0DH72

6.7.3 Transmission window



1) At $S_{a, min.}$ the transmission window is extended



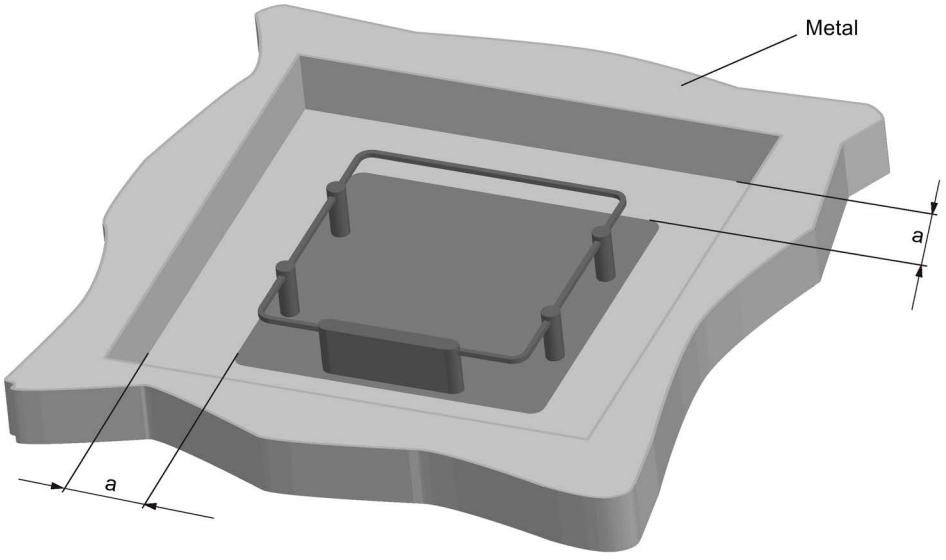
L_d Length of the transmission window (= 300 mm)

S_a Operating distance between antenna and transponder

S_g Limit distance (maximum clear distance between upper surface of the reader and the antenna, at which the transmission can still function under normal conditions)

Figure 6-30 Transmission window for ANT D5

6.7.4 Flush-mounted in metal



a = 150 mm

Figure 6-31 Metal-free area for ANT D5

6.7.5 Minimum spacing

Note

Extension of the data transmission time if distance values are undershot

If the distance values specified in the tables are undershot, it is possible that the inductive fields will be affected. In this case, the data transmission time can increase unpredictably or a command is aborted with an error.

For this reason, please observe the values in the tables.

Minimum distances from transponder to transponder (without multitag mode)

	MDS D100 / MDS D126 / MDS D139 / MDS D165 / MDS D200 / MDS D261 / MDS D339 / MDS D400 / MDS D426 / MDS D526	MDS D124 / MDS D160 / MDS D324 / MDS D424 / MDS D428 / MDS D460 / MDS D524 / MDS D528 / MDS D560
RF290R	≥ 1 m	≥ 0.8 m

Minimum distances from antenna to antenna

	RF290R with ANT D5	RF290R with ANT D6	RF290R with ANT D10
RF290R with ANT D5	≥ 2 m	≥ 2 m	≥ 2 m
RF290R with ANT D6	≥ 2 m	≥ 2 m	≥ 2 m
RF290R with ANT D10	≥ 2 m	≥ 2 m	≥ 2 m

Definition of distance D

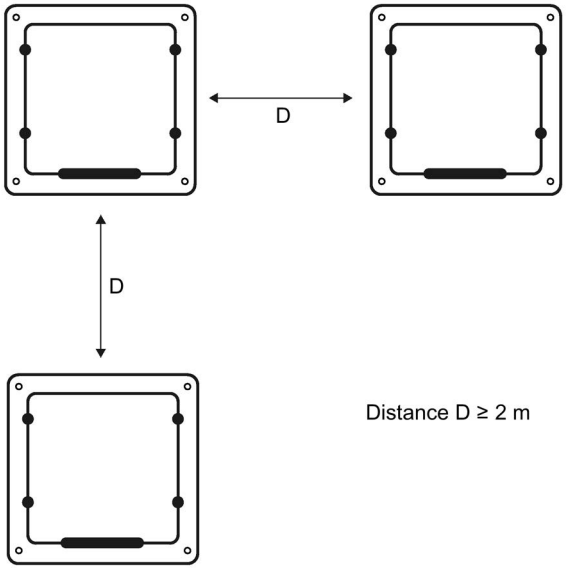


Figure 6-32 Distance D: ANT D5

6.7.6 Technical data

	6GT2698-5AA10
Product type designation	ANT D5
Electrical data	
Maximum write/read distance ANT ↔ transponder (S_g)	500 mm
Interfaces	
Plug connection	1-pin TNC plug
Mechanical specifications	
Housing	
• Material	• Aluminum/plastic

	6GT2698-5AA10
• Color	• gray/black

Permitted ambient conditions

Ambient temperature	
• During operation	• -20 °C ... +55 °C
• During transportation and storage	• -25 ℃ ... +70 ℃
Degree of protection to EN 60529	IP65 (UL: for indoor use only)
Shock according to EN 60721-3-7 Class 7 M3[1)]	300 m/s^2
Vibration according to EN 60721-3-7 Class 7 M3[1)]	• 10 m/s^2 (9 ... 200 Hz) • 15 m/s^2 (200 ... 500 Hz)

Design, dimensions and weight

Dimensions (L x W x H)	380 x 380 x 110 mm
Weight	1.2 kg
Type of mounting	4x M6 or alternatively M8 screws
Cable length	3.3 m

1) Warning: The values for shock and vibration are maximum values and must not be applied continuously.

6.7.7 Dimension drawing

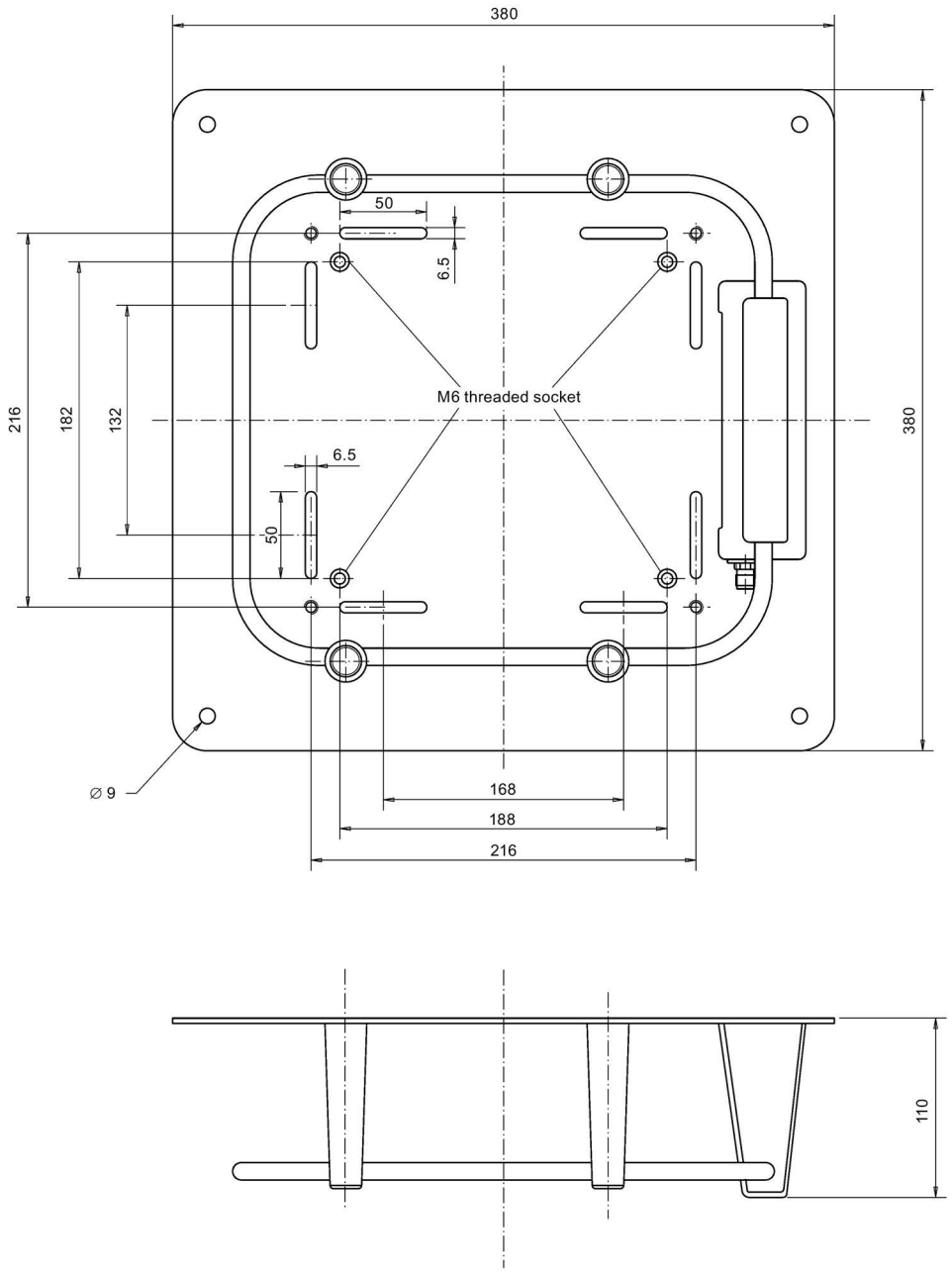


Figure 6-33 Dimension drawing for ANT D5

6.8 ANT D6

6.8.1 Features

ANT D6	Characteristics	
 ANT D6  Covering hood	Area of application	• Storage, logistics and distribution • Suitable for high-speed applications with large writing/reading distance
	Writing/reading distance	up to 650 mm (depending on the transponder)
	Connecting cable	3.3 m; included in scope of supply
	Cover	Available as accessory
	Readers that can be connected	RF290R
	Degree of protection	IP65 (also without cover)

6.8.2 Ordering data

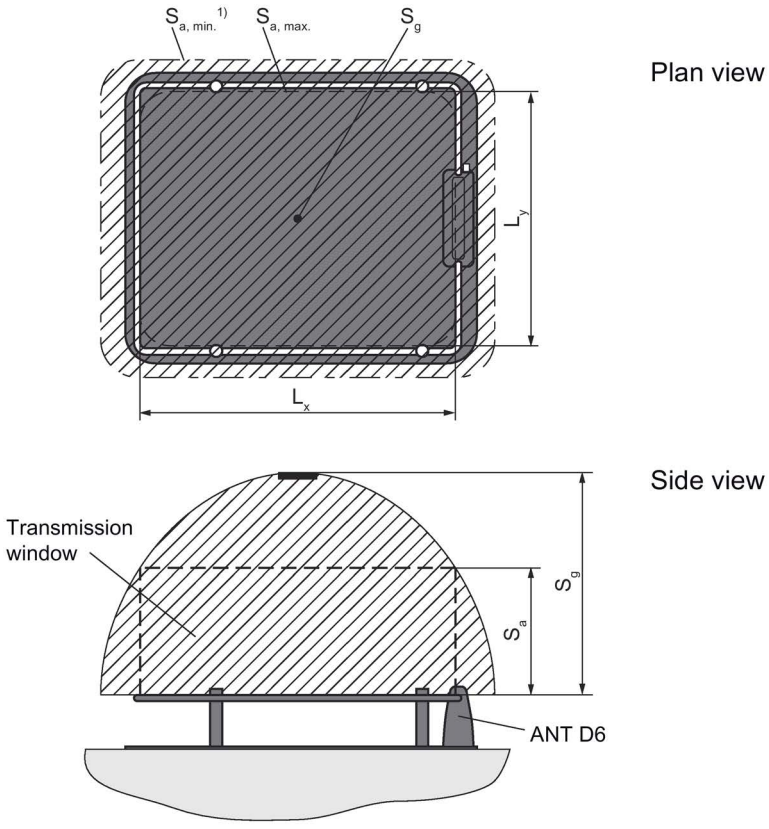
Table 6- 23 ANT D6 ordering data

Antenna	Article number
ANT D6 (without cover, incl. one antenna connecting cable 3.3 m)	6GT2698-5AB00

Table 6- 24 Ordering data for ANT D6 accessories

Accessories		Article number
Covering hood for ANT D6		6GT2690-0AD00
Antenna splitter (incl. one antenna connecting cable 3.3 m)		6GT2690-0AC00
Antenna multiplexer (incl. one antenna connecting cable 0.4 m)		6GT2894-0EA00
Antenna cable	Length 3.3 m	6GT2691-0CH33
	Length 10.5 m	6GT2691-0CN10
Antenna extension cable, length 7.2 m		6GT2691-0DH72

6.8.3 Transmission window



1) For $S_{a, min.}$, the transmission window is extended

L_x = 520 mm

L_y = 420 mm

Figure 6-34 Transmission window for ANT D6

6.8.4 Metal-free area

Flush-mounted in metal

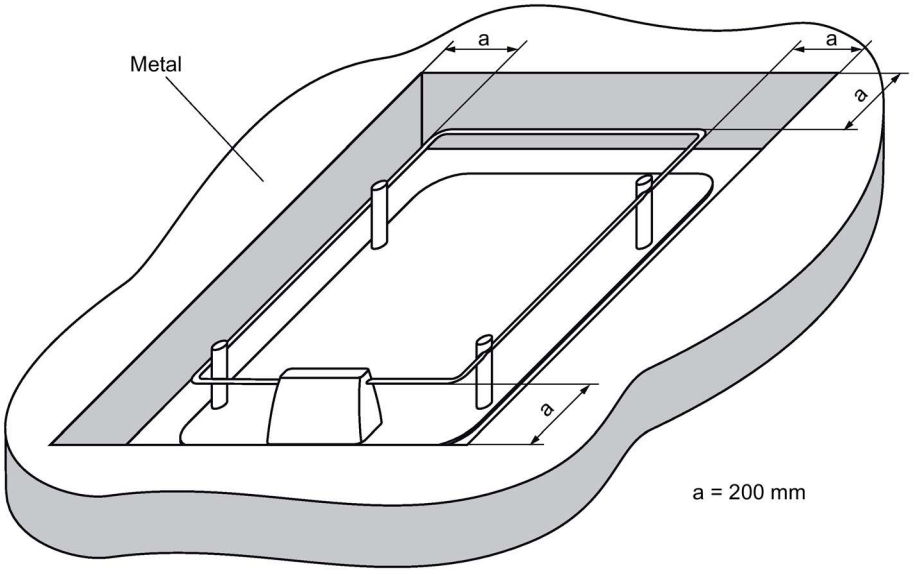


Figure 6-35 Metal-free area for ANT D6

6.8.5 Minimum spacing

Definition of distance D

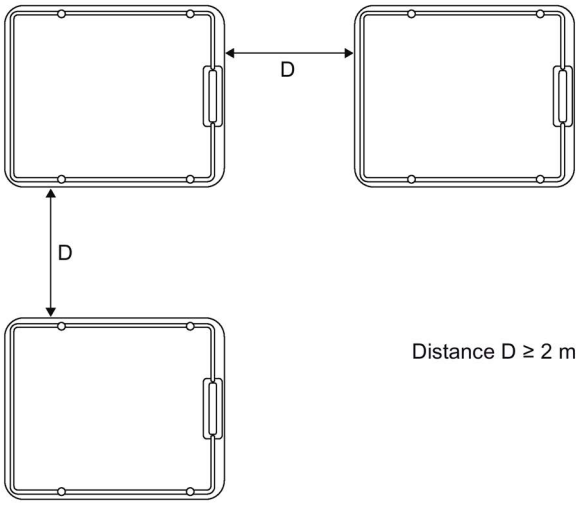


Figure 6-36 Distance D: ANT D6

6.8.6 Technical data

	6GT2698-5AB00
Product type designation	ANT D6
Electrical data	
Maximum write/read distance ANT ↔ transponder (S_g)	650 mm
Interfaces	
Plug connection	1-pin TNC plug
Mechanical specifications	
Housing	
• Material	• Aluminum/plastic
• Color	• gray/black
Permitted ambient conditions	
Ambient temperature	
• During operation	• -20 °C ... +55 °C
• During transportation and storage	• -25 °C ... +70 °C
Degree of protection to EN 60529	IP65 (UL: for indoor use only)
Shock according to EN 60721-3-7 Class 7 M3[1)]	300 m/s^2
Vibration according to EN 60721-3-7 Class 7 M3[1)]	• 10 m/s^2 (9 ... 200 Hz) • 15 m/s^2 (200 ... 500 Hz)
Design, dimensions and weight	
Dimensions (L x W x H)	580 x 480 x 110 mm
Weight	3.3 kg (without cover)

	6GT2698-5AB00
Type of mounting	4 x M6 screws
Cable length	3.3 m

[1] Warning: The values for shock and vibration are maximum values and must not be applied continuously.

6.8.7 Dimensional diagram

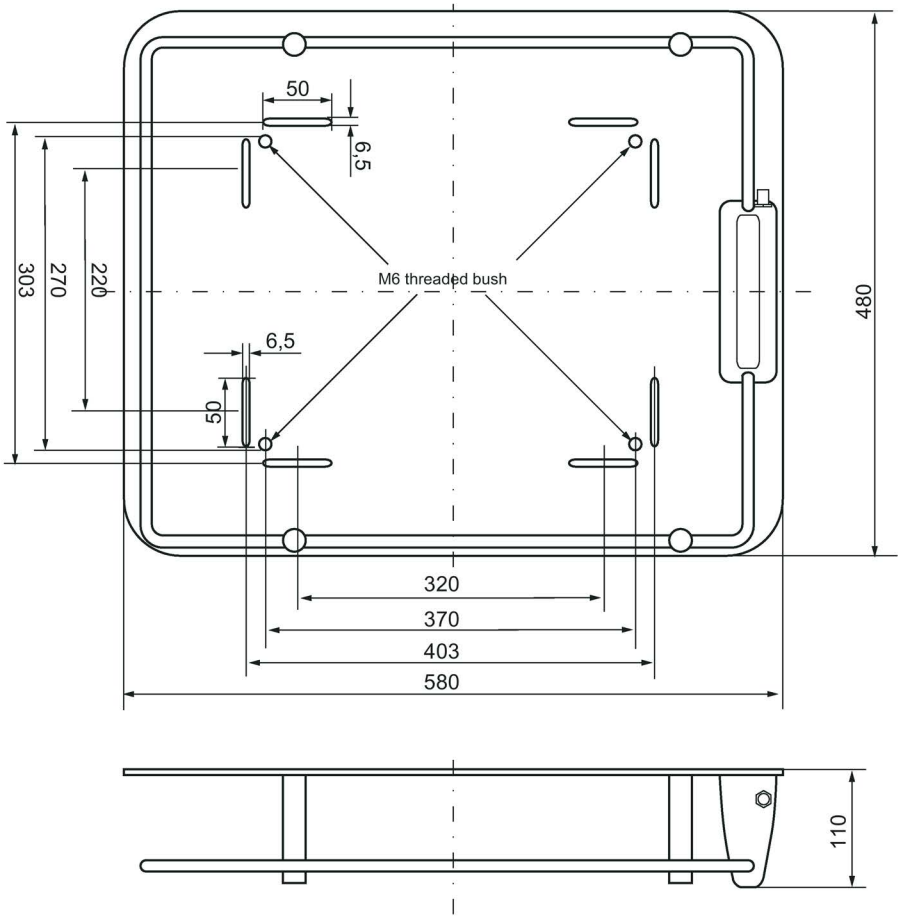


Figure 6-37 Dimension drawing for ANT D6

6.9 ANT D10

6.9.1 Features

ANT D10	Characteristics	
	Area of application	• Storage, logistics and distribution, e.g. clothing industry, laundries • Particularly when small MDS are used (e.g. MDS D124, MDS D160) and when there is a long transmission field
	Writing/reading distance	up to 480 mm (depending on the transponder)
	Connecting cable	3.3 m; included in scope of supply
	Cover	Included in scope of supply
	Readers that can be connected	RF290R

6.9.2 Ordering data

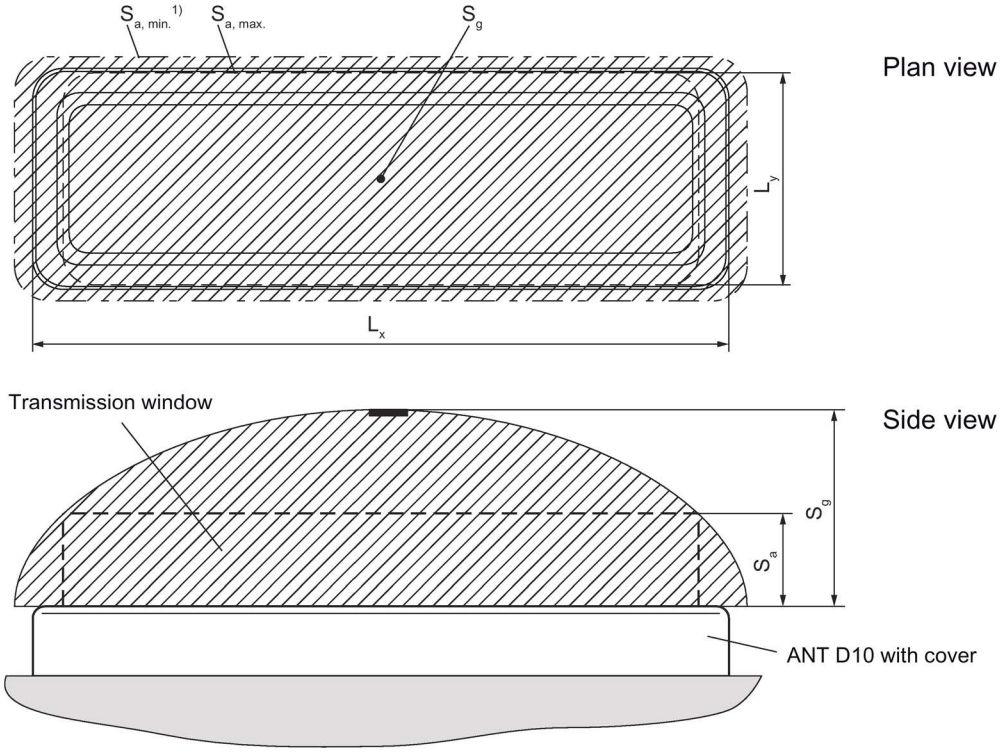
Table 6- 25 Ordering data of ANT D10

Antenna	Article number
ANT D10 (incl. cover and one antenna connecting cable 3.3 m)	6GT2698-5AF00

Table 6- 26 Ordering data of ANT D10 accessories

Accessories		Article number
Antenna splitter (incl. one antenna connecting cable 3.3 m)		6GT2690-0AC00
Antenna multiplexer (incl. one antenna connecting cable 0.4 m)		6GT2894-0EA00
Antenna cable	Length 3.3 m	6GT2691-0CH33
	Length 10.5 m	6GT2691-0CN10
Antenna extension cable, length 7.2 m		6GT2691-0DH72

6.9.3 Transmission window



1) For $S_{a, min.}$ the transmission window is extended

L_x 1050 mm

L_y 350 mm

Figure 6-38 Transmission window for ANT D10

6.9.4 Metal-free area

Flush-mounted in metal

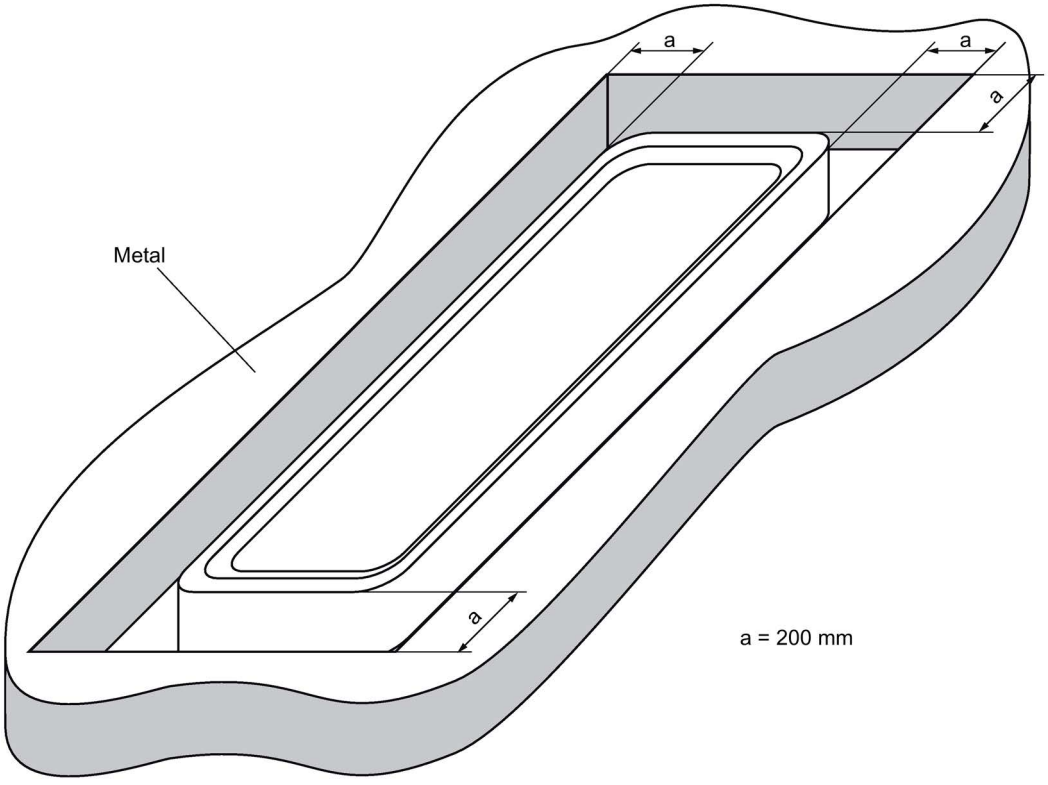


Figure 6-39 Metal-free area for ANT D10

6.9.5 Minimum spacing

Definition of distance D

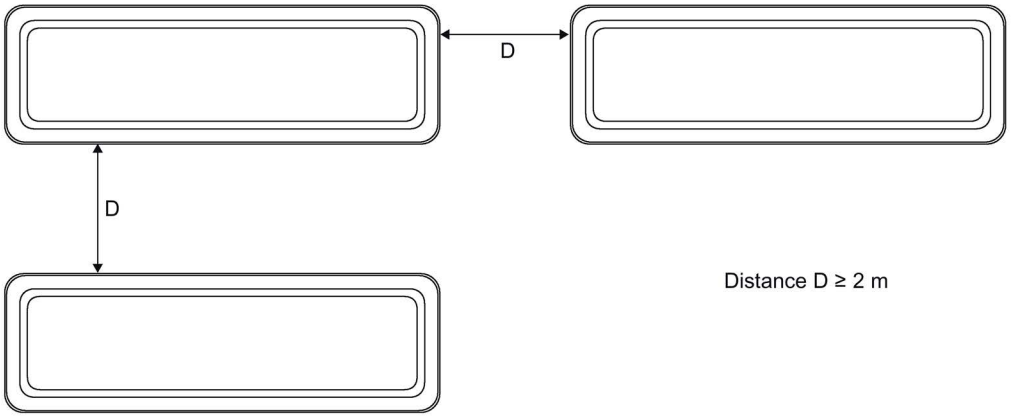


Figure 6-40 Distance D: ANT D10

6.9.6 Technical data

	6GT2698-5AF00
Product type designation	ANT D10
Electrical data	
Maximum write/read distance ANT ↔ transponder (S_g)	480 mm
Interfaces	
Plug connection	1-pin TNC plug
Mechanical specifications	
Housing	
• Material	• Aluminum/plastic
• Color	• gray/black
Permitted ambient conditions	
Ambient temperature	
• During operation	• -20 °C ... +55 °C
• During transportation and storage	• -25 °C ... +70 °C
Degree of protection to EN 60529	IP65 (UL: for indoor use only)
Shock according to EN 60721-3-7 Class 7 M3[1)]	300 m/s^2

	6GT2698-5AF00
Vibration according to EN 60721-3-7 Class 7 M3[1]	• 10 m/s² (9 ... 200 Hz) • 15 m/s² (200 ... 500 Hz)

Design, dimensions and weight

Dimensions (L x W x H)	1150 x 365 x 115 mm (with cover)
Weight	10 kg
Type of mounting	4 x M6 screws
Cable length	3.3 m

[1] Warning: The values for shock and vibration are maximum values and must not be applied continuously.

6.9.7 Dimensional diagram

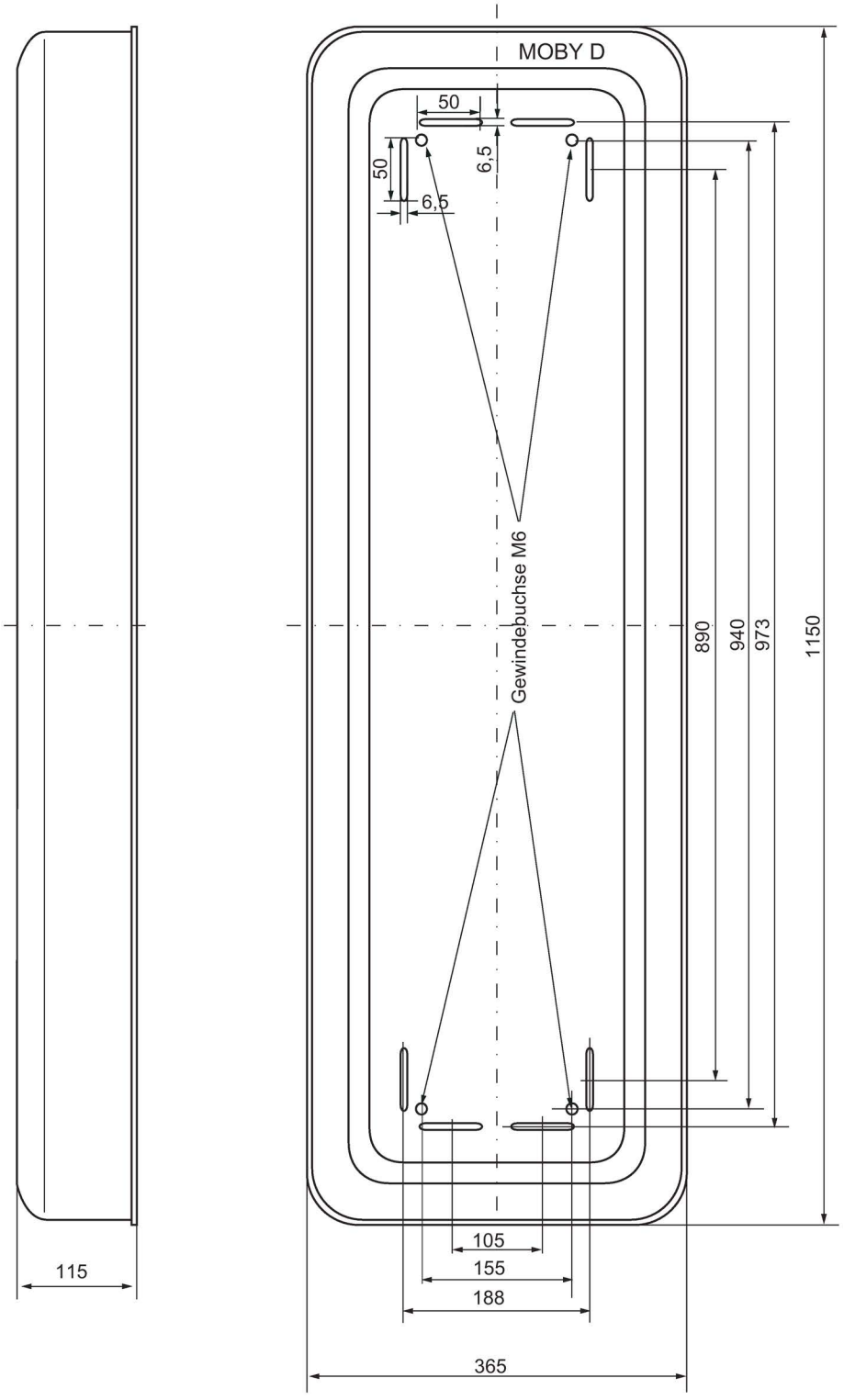


Figure 6-41 Dimension drawing for ANT D10

Transponder

7

7.1 Memory configuration of ISO the transponders

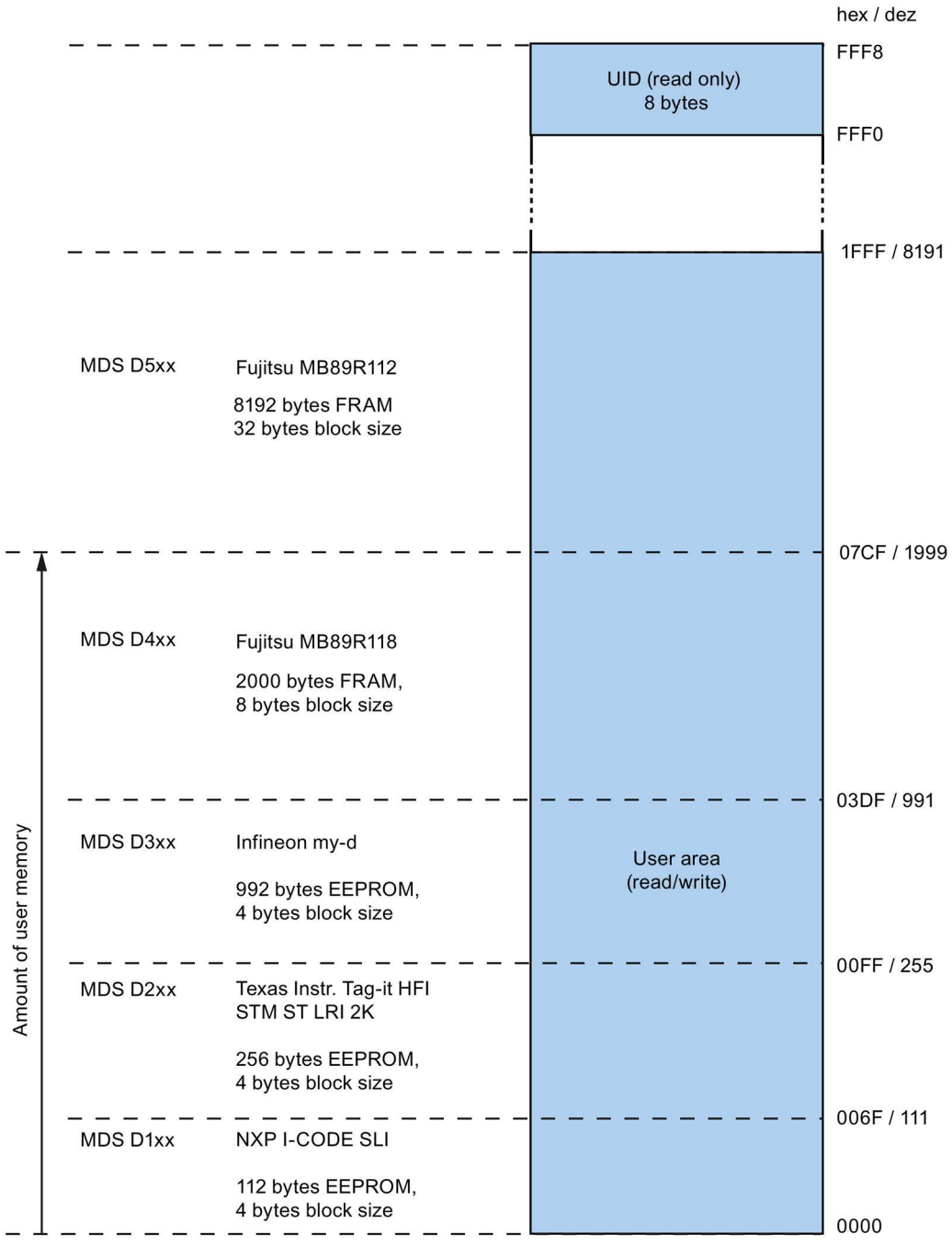


Figure 7-1 Memory configuration of ISO the transponders

Memory areas

Depending on the manufacturer of the transponder chip, the memory configuration of an ISO transponder consists of varying sizes of user memory.

The typical sizes are 112 bytes, 256 bytes, 992 bytes EEPROM or 2000 bytes, 8192 bytes FRAM. Each ISO transponder chip has an 8-byte long unique serial number (UID, read only). This UID is transferred as an 8 byte value through a read command to address FFF0 with a length of 8.

Note

OPT memory

The transponders have an OTP memory. This was previously only supported by the RF300 readers.

7.2 MDS D100

7.2.1 Characteristics

MDS D100	Characteristics	
	Area of application	From simple identification such as electronic barcode replacement/supplementation, through warehouse and distribution logistics, right up to product identification.
	Memory size	112 bytes of EEPROM user memory
	Write/read range	See section Field data (Page 39).
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP68

7.2.2 Ordering data

Table 7- 1 Ordering data for MDS D100

	Article number
MDS D100	6GT2600-0AD10

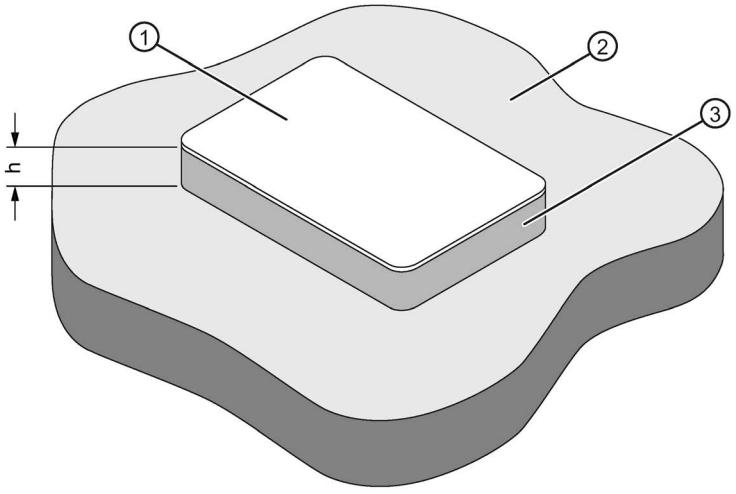
Table 7- 2 Ordering data for MDS D100 accessory

	Article number
Spacer (in conjunction with fixing pocket 6GT2190-0AB00)	6GT2190-0AA00
Fixing pocket (in conjunction with spacer 6GT2190-0AA00)	6GT2190-0AB00
Fixing pocket (not suitable for fixing directly onto metal)	6GT2390-0AA00

7.2.3 Metal-free area

Direct mounting of the MDS D100 on metal is not allowed. A distance of ≥ 20 mm is recommended. This can be achieved using the spacer 6GT2190-0AA00 in combination with the fixing pocket 6GT2190-0AB00.

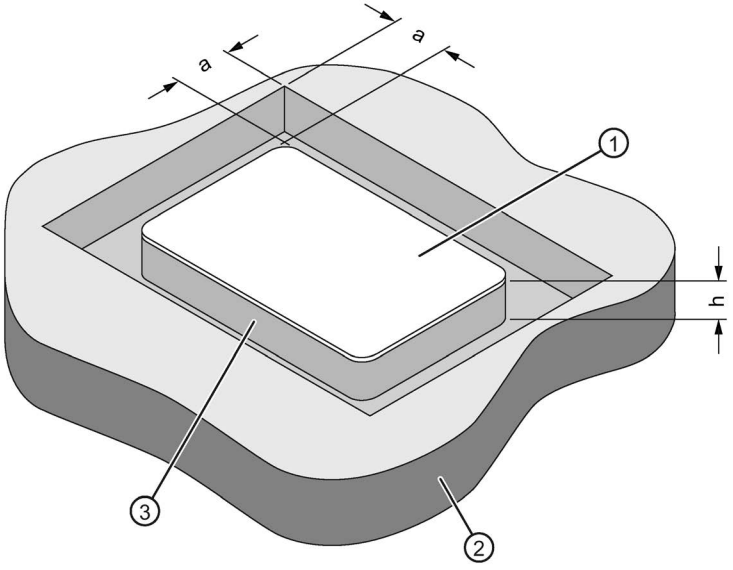
Mounting on metal



h ≥ 20 mm
① Transponder
② Metal
③ Non-metal

Figure 7-2 Mounting of the MDS D100 on metal with spacer

Flush-mounting



a ≥ 20 mm
h ≥ 20 mm
① Transponder
② Metal
③ Non-metal

Figure 7-3 Flush-mounting of MDS D100 in metal with spacer

Note

If the minimum guide values (h or a) are not observed, a reduction of the field data results.

7.2.4 Technical data

Table 7- 3 Technical specifications for MDS D100

	6GT2600-0AD10
Product type designation	SIMATIC MDS D100
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 112 bytes EEPROM
• OTP memory	• 16 bytes (EEPROM)

	6GT2600-0AD10
Read cycles (at < 40 °C)	> 10^{14}
Write cycles (at < 40 °C)	> 10^{6}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years

Mechanical specifications	
Housing	
• Material	• PET
• Color	• White/black
Recommended distance to metal	≥ 20 mm
Power supply	Inductive, without battery

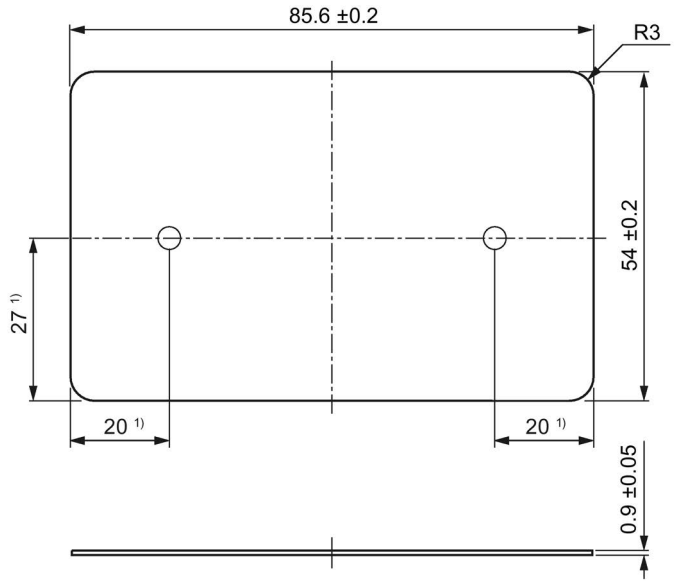
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +80 °C
• outside the read/write field	• -25 to +80 °C
• during storage	• -25 to +80 °C
Degree of protection to EN 60529	IP68
Shock-resistant to EN 60721-3-7 class 7M3	ISO 10373 / ISO 7810 [1]
Vibration-resistant to EN 60721-3-7, class 7M3	ISO 10373 / ISO 7810 [1]
Torsion and bending load	ISO 10373/ISO 7816-1

Design, dimensions and weight	
Dimensions (L x W x H)	85.6 x 54 x 0.9 mm
Weight	5 g
Type of mounting	• Fixing pocket • Glued [2]

[1] The values for shock and vibration are maximum values and must not be applied continuously.

[2] The processing instructions of the adhesive manufacturer must be observed.

7.2.5 Dimension drawing



Dimensions in mm

1) Dimensions for mounting holes

Figure 7-4 MDS D100 dimension drawing

7.3 MDS D117

7.3.1 Features

MDS D117	Characteristics	
	Area of application	Very compact data carrier that can be cemented into objects where precise positioning is necessary; e.g. tool identification, workpiece holders etc..
	Memory size	112 bytes of EEPROM user memory
	Write/read range	See section "Field data (Page 39)."
	Mounting in metal	Yes, flush-mounted in metal
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

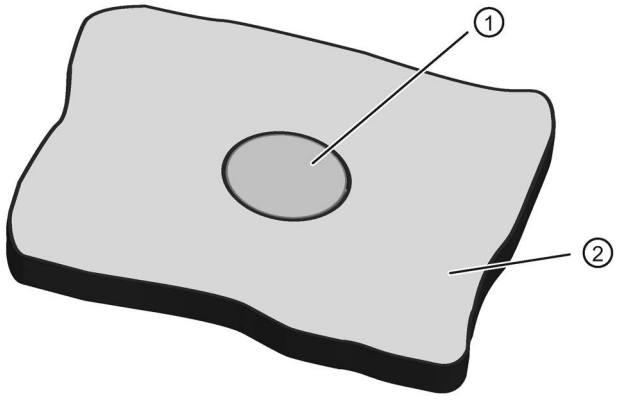
7.3.2 Ordering data

Table 7- 4 Ordering data for MDS D117

	Article number
MDS D117 Pack of 10	6GT2600-0AG00

7.3.3 Mounting in metal

Flush-mounted in metal



① Transponder
② Metal

7.3.4 Technical specifications

Table 7- 5 Technical specifications for MDS D117

	6GT2600-0AG00
Product type designation	SIMATIC MDS D117
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 112 bytes EEPROM
• OTP memory	• 16 bytes (EEPROM)
Read cycles (at < 40 °C)	> 10^{14}
Write cycles (at < 40 °C)	> 10^{6}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• PPS
• Color	• Black
Recommended distance to metal	≥ 0 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +125 °C
• during storage	• -40 to +125 °C
Degree of protection to EN 60529	IP68 2 hours, 2 bar, +20 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	1000 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	4 x 5.2 mm

	6GT2600-0AG00
Weight	1 g
Type of mounting	• Fixing pocket • Glued [2]

[1] The values for shock and vibration are maximum values and must not be applied continuously.

[2] The processing instructions of the adhesive manufacturer must be observed.

7.3.5 Dimension drawing

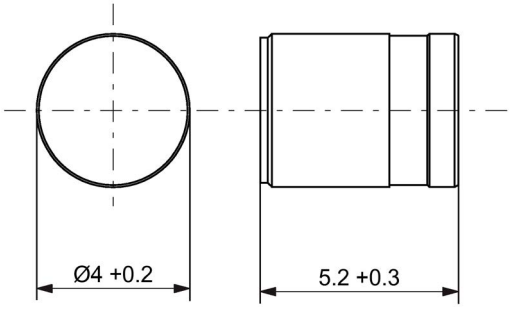


Figure 7-5 Dimensions in mm

7.4 MDS D124

7.4.1 Characteristics

MDS D124	Characteristics	
	Area of application	Application areas in production automation (e.g. small paintshops up to +180 °C)
	Memory size	112 bytes of EEPROM user memory
	Write/read range	See section "Field data (Page 39)".
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

7.4.2 Ordering data

Table 7- 6 Ordering data for MDS D124

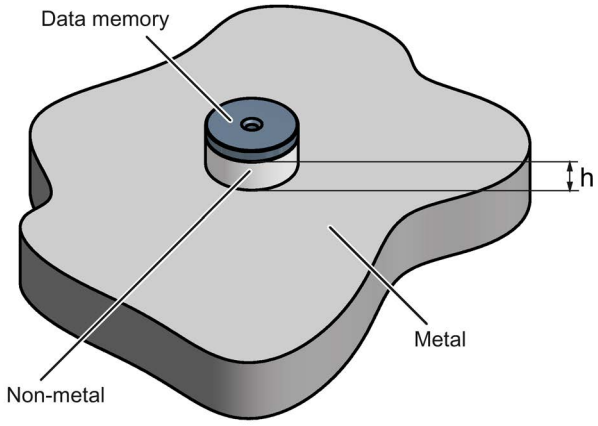
	Article number
MDS D124	6GT2600-0AC10

Table 7- 7 Ordering data for MDS D124 accessories

	Article number
Spacer	6GT2690-0AK00

7.4.3 Mounting on metal

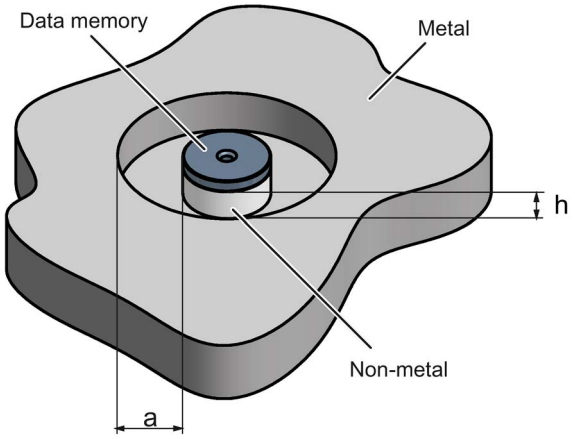
Mounting on metal



h ≥ 15 mm

Figure 7-6 Mounting the MDS D124/D324/D424/D524/E624 and RF320T on metal with spacer

Flush-mounting



h ≥ 15 mm

a ≥ 25 mm

Figure 7-7 Flush-mounting of the MDS D124/D324/D424/D524/E624 and RF320T in metal with spacer

Note

Going below the distances

If the distances (a and h) are not observed, a reduction of the field data results. It is possible to mount the MDS with metal screws (M3 countersunk head screws). This has no tangible impact on the range.

7.4.4 Technical specifications

Table 7- 8 Technical specifications for MDS D124

	6GT2600-0AC10
Product type designation	SIMATIC MDS D124
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 112 bytes EEPROM
• OTP memory	• 16 bytes (EEPROM)
Read cycles (at < 40 °C)	> 10^{14}
Write cycles (at < 40 °C)	> 10^{6}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• PPS
• Color	• Black
Recommended distance to metal	≥ 15 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 … +140 °C
	• from +125 °C: 20% reduction in the limit distance
• outside the read/write field	• -40 to +180 °C

	6GT2600-0AC10
	• at +180 °C: Tested up to 5000 hours or 3000 cycles
• during storage	• -40 to +125 °C
Degree of protection to EN 60529	• IP68 2 hours, 2 bar, +20 °C • IPx9K steam jet: 150 mm; 10 to 15 l/min; 100 bar; 75 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	1000 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	4 x 5.2 mm
Weight	5 g
Type of mounting	• 1 x M3 screw [2)] ≤ 1 Nm • Glued [3)] • With spacer

1) The values for shock and vibration are maximum values and must not be applied continuously.

2) To prevent it loosening during operation, secure the screw with screw locking varnish.

3) The processing instructions of the adhesive manufacturer must be observed.

7.4.5 Use of the MDS D124 in hazardous area

The mobile data memory MDS D124, device group II, category 1G or 1D may be installed and operated in zones 0, 1 and 2 or in the zones 20, 21 and 22.

The following requirements of the 94/9/EC directive are met:

- EN 60079-0:2009
- EN 60079-11:2007
- EN 61241-11:2006
- EN 60079-26:2007

When used in hazardous areas, the MDS D124 must not be operated with field strengths > 5 A / m to avoid impermissible heating. This is not the case with readers from the SIMATIC RF range (MOBY D, RF200 and RF300).

Identification

II 1 G Ex ia IIC T3 to T6 Ga

or

II 1 D Ex ia IIIC T80 °C to T180 °C Da

TÜV 12 ATEX 084413 X

The temperature class or the maximum surface temperature depends on the maximum ambient temperature. The relationship between temperature class (gas) or maximum surface temperature (dust) can be found in the following table.

Table 7- 9 Ambient temperature

Ambient temperature range	Temperature class	Max. surface temperature
-25 ... +150 ℃	T3	T180
-25 ... +100 ℃	T4	T130
-25 ... +65 ℃	T5	T95
-25 ... +50 ℃	T6	T80

Note

Safety markings for hazardous areas

Since there is not enough space on the MDS D124 for the safety mark, this is supplied as a label with the device.

This must be affixed immediately next to the MDS D124 so that the label clearly relates to the device.

WARNING
Gefahr durch elektrostatische Entladungen
Potential electrostatic charging hazard
Danger potentiel de charges électrostatiques

Note

Installation and operating conditions for hazardous areas:

- Use of the device in the vicinity of processes generating high charges is not allowed.
- The device must be installed so that it is mechanically protected.
- For applications requiring devices of category 1, the device must be mounted on a grounded, conductive base.
- It must only be cleaned with a damp cloth.
- The device is suitable for use in atmospheres containing dust, however not for full immersion in dust.

7.4.6 Dimension drawing

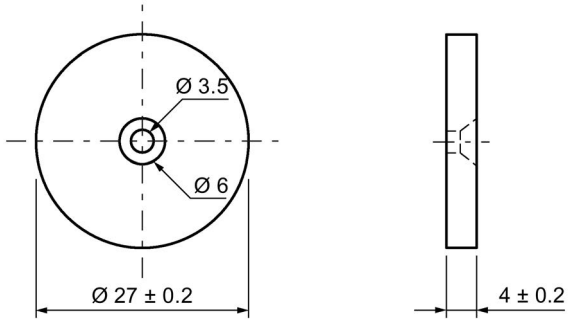


Figure 7-8 Dimension drawing of MDS D124

All dimensions in mm

7.5 MDS D126

7.5.1 Characteristics

MDS D126	Characteristics	
	Area of application	Compact and rugged ISO transponder; suitable for identification of transport units in production-related logistics; can also be deployed in harsh conditions
	Memory size	112 bytes of EEPROM user memory
	Write/read range	See section Field data (Page 39)
	Mounting on metal	Yes, with spacer
	ISO standard	ISO-15693
	Degree of protection	IP68

7.5.2 Ordering data

Table 7- 10 Ordering data for MDS D126

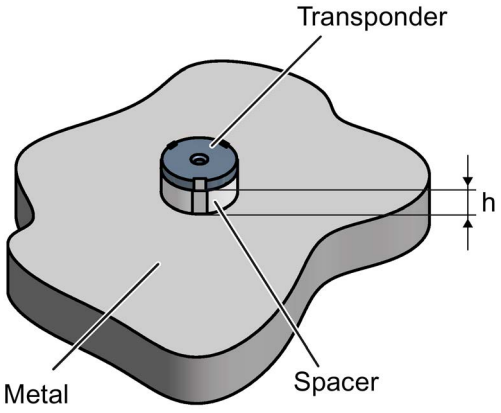
	Article number
MDS D126	6GT2600-0AE00

Table 7- 11 Ordering data for MDS D126 accessories

	Article number
Spacer	6GT2690-0AL00

7.5.3 Mounting on metal

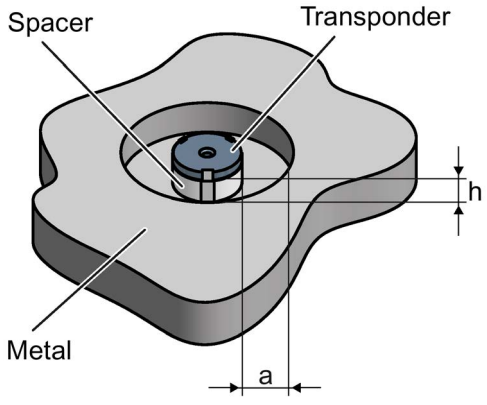
Mounting on metal



h ≥ 25 mm

Figure 7-9 Mounting the MDS D126 / D426 / D526 on metal with spacer

Flush-mounted in metal



h ≥ 25 mm

a ≥ 50 mm

Figure 7-10 Flush installation of the MDS D126 / D426 / D526 in metal with spacer

7.5.4 Technical specifications

Table 7- 12 Technical specifications for the MDS D126

	6GT2600-0AE00
Product type designation	SIMATIC MDS D126
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 112 bytes EEPROM
• OTP memory	• 16 bytes (EEPROM)
Read cycles (at < 40 °C)	> 10^{14}
Write cycles (at < 40 °C)	> 10^{6}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• PA6.6 GF
• Color	• Black
Recommended distance to metal	≥ 25 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +100 °C
• during storage	• -40 to +100 °C
Degree of protection to EN 60529	IP68 2 hours, 2 bar, +20 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	500 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	50 x 3.6 mm

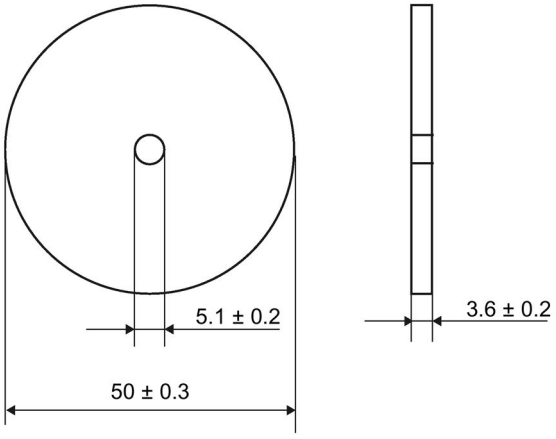
	6GT2600-0AE00
Weight	13 g
Type of mounting	• 1 x M4 screw [2)] ≤ 1 Nm • Glued [3)]

1) The values for shock and vibration are maximum values and must not be applied continuously.

2) To prevent it loosening during operation, secure the screw with screw locking varnish.

3) The processing instructions of the adhesive manufacturer must be observed.

7.5.5 Dimension drawing



Dimensions in mm

Figure 7-11 Dimension drawing of MDS D126

7.6 MDS D127

7.6.1 Features

MDS D127	Characteristics	
	Area of application	Very compact data carrier that can be screwed into areas where precise positioning is necessary; e.g. tool identification, workpiece holders etc.
	Memory size	112 bytes of EEPROM user memory
	Write/read range	See section "Field data (Page 39)"
	Mounting on metal	Yes, flush-mounted in metal
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

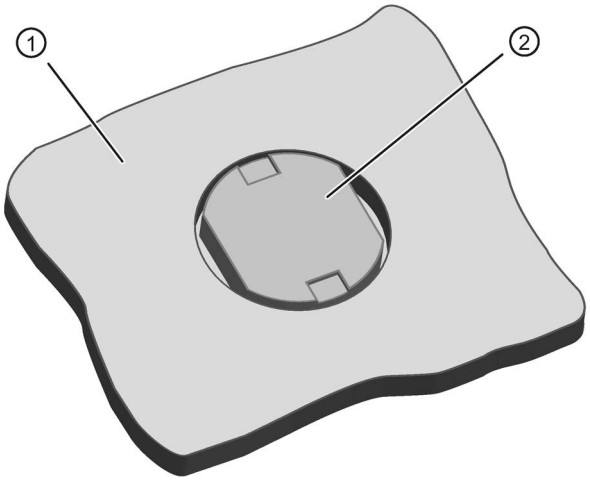
7.6.2 Ordering data

Table 7- 13 Ordering data for MDS D127

	Article number
MDS D127 Pack of 10 (A screw-in aid is supplied with each pack)	6GT2600-0AF00

7.6.3 Mounting in metal

Flush-mounted in metal



① Metal
② Transponders

Note

Damage to the transponder due to improper mounting

To screw the MDS D127 into a suitable thread, use the supplied screw-in tool. This avoids damage to the MDS D127.

Figure 7-12 Screw-in aid for mounting the MDS D127

7.6.4 Technical specifications

Table 7- 14 Technical specifications for MDS D127

	6GT2600-0AF00
Product type designation	SIMATIC MDS D127
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 112 bytes EEPROM
• OTP memory	• 16 bytes (EEPROM)
Read cycles (at < 40 °C)	> 10^{14}
Write cycles (at < 40 °C)	> 10^{6}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• PA6
• Color	• Black
Recommended distance to metal	≥ 0 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +100 °C
• outside the read/write field	• -40 to +125 °C
• during storage	• -40 to +125 °C
Degree of protection to EN 60529	• IP68 2 hours, 2 bar, +20 °C • IPx9K steam jet: 150 mm; 10 to 15 l/min; 100 bar; 75 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	1000 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Torsion and bending load	Not permitted

	6GT2600-0AF00
Design, dimensions and weight	
Dimensions (Ø x H)	M6 x 5.8 mm
Weight	1 g
Type of mounting	• Glued [2)] • 1 x M3 screw

[1)] The values for shock and vibration are maximum values and must not be applied continuously.

[2)] The processing instructions of the adhesive manufacturer must be observed.

7.6.5 Dimension drawing

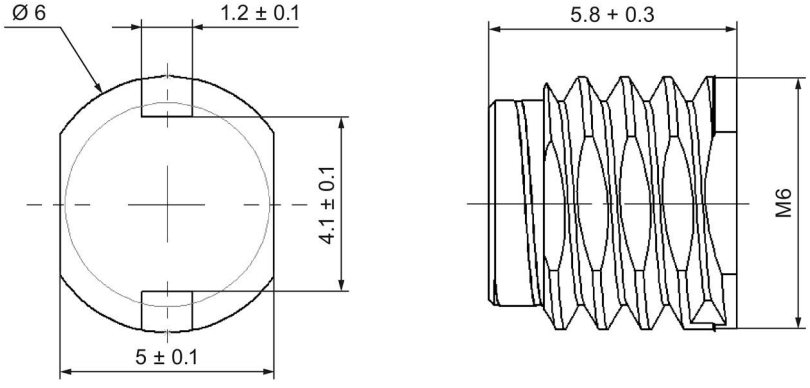


Figure 7-13 Dimensions in mm

7.7 MDS D139

7.7.1 Characteristics

MDS D139	Characteristics	
	Area of application	Applications in production logistics and in assembly lines subject to high temperatures (up to +220 °C) Typical application areas: • Paintshops and their preparatory treatments) • Primer coat, electrolytic dip area, cataphoresis with the associated drying furnaces • Top coat area with drying furnaces • Washing areas at temperatures > 85 °C • Other applications with higher temperatures
	Memory size	112 bytes of EEPROM user memory
	Write/read range	See section Field data (Page 39).
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

7.7.2 Ordering data

Table 7- 15 Ordering data for MDS D139

	Article number
MDS D139	6GT2600-0AA10

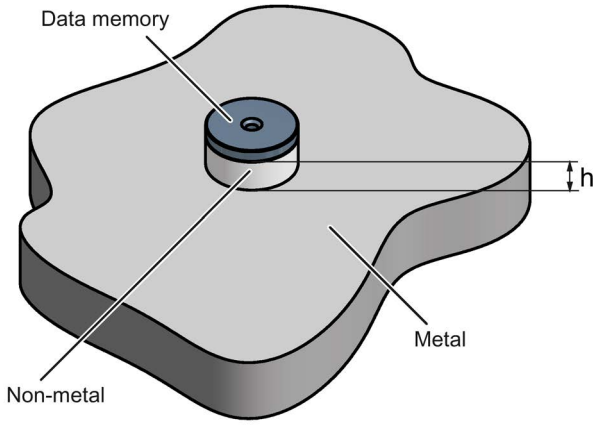
Table 7- 16 Ordering data for MDS D139 accessory

	Article number
Spacer	6GT2690-0AA00
Quick change holder (Ø x H): 22 x 60 mm	6GT2690-0AH00
Quick change holder (Ø x H): 22 x 47 mm	6GT2690-0AH10

7.7.3 Metal-free area

Direct mounting of the MDS D139 on metal is not allowed. A distance of ≥ 30 mm is recommended. This can be achieved using spacers (see "Transponder holders (Page 355)").

Mounting on metal

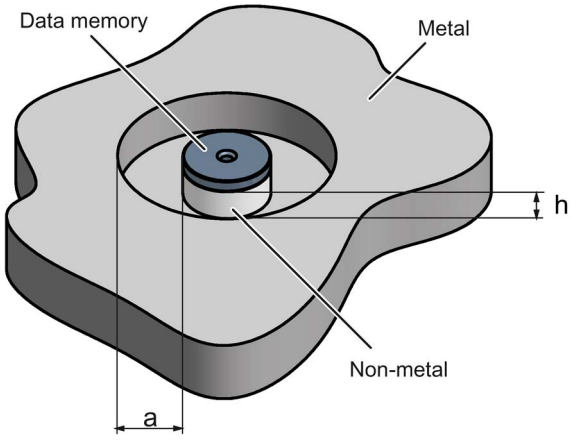


h ≥ 30 mm

Figure 7-14 Mounting the MDS D139 on metal with spacer

Flush-mounting

It is possible to mount the MDS D139 in metal. With large antennas, for example ANT D5, this leads to a reduction of ranges.



h ≥ 30 mm

a ≥ 100 mm

Figure 7-15 Flush-mounting of the MDS D139 in metal with spacer

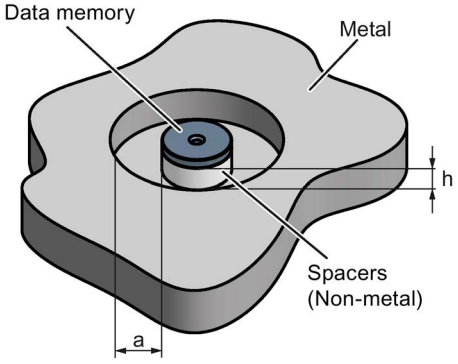
Note

Going below the distances

If the distances (a and h) are not observed, a reduction of the field data results. It is possible to mount the MDS with metal screws (M5). This has no tangible impact on the range. It is recommended that a test is performed in critical applications.

7.7.4 Mounting in metal

It is possible to mount the MDS D139 in metal. With large antennas, for example ANT D5, this leads to a reduction of ranges.



a = 100 mm

h = 30 mm

Figure 7-16 MDS D139: Mounting in metal

7.7.5 Cleaning the transponder

NOTICE

Cleaning the transponder

Do not clean the transponder with mechanical tools, sand-blasting or pressure hose. These cleaning methods result in damage to the transponder.

Clean the transponder only with the chemical cleansing agents listed in the section Chemical resistance of the reader and transponders (Page 89).

7.7.6 Technical specifications

Table 7- 17 Technical specifications for MDS D139

	6GT2600-0AA10
Product type designation	SIMATIC MDS D139
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 112 bytes EEPROM
• OTP memory	• 16 bytes (EEPROM)
Read cycles (at < 40 °C)	> 10^{14}
Write cycles (at < 40 °C)	> 10^{6}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• PPS
• Color	• Black
Recommended distance to metal	≥ 30 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 … +140 °C
	• from +125 °C: 20% reduction in the limit distance
• outside the read/write field	• -40 to +220 °C
	• at +200 °C: Tested up to 5000 hours or 6000 cycles
	• at +220 °C: Tested up to 2000 hours or 2000 cycles
• during storage	• -40 to +100 °C

	6GT2600-0AA10
Degree of protection to EN 60529	• IP68 2 hours, 2 bar, +20 °C • IPx9K steam jet: 150 mm; 10 to 15 l/min; 100 bar; 75 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	500 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Torsion and bending load	Not permitted

Design, dimensions and weight	
Dimensions (Ø x H)	85 x 15 mm
Weight	50 g
Type of mounting	1 x M5 screw [2)] 1.5 Nm

1 The values for shock and vibration are maximum values and must not be applied continuously.

2) For mounting with the spacer (6GT2690-0AA00), use a stainless steel M5 screw to avoid damaging the MDS in high temperatures (expansion coefficient).

7.7.7 Use of the MDS D139 in hazardous areas

The MDS D139 mobile data memory is classed as a piece of simple, electrical equipment and can be operated in Protection Zone 2, Device Group II, Category 3G.

The following requirements of the 94/9/EC directive are met:

- EN 60079-0:2006
- EN 60079-15:2005
- EN 61241-0:2006
- EN 61241-1:2004

Identification

II 3 G Ex nA II T2

II 3 D Ex tD A22 IP68 T 220°C

KEMA 09 ATEX 0133 X

Ta: -25 ... +220°C

WARNING
Gefahr durch elektrostatische Entladungen
Potential electrostatic charging hazard
Danger potentiel de charges électrostatiques

Note

Installations- und Betriebsbedingungen für den Ex-Schutzbereich:

a) Der Einsatz des Gerätes in der Nähe von stark ladungserzeugenden Prozessen ist untersagt.

b) Das Gerät ist mechanisch geschützt zu montieren.

c) Die Montage muss auf einem geerdeten, leitenden Untergrund erfolgen.

d) Die Reinigung darf nur mit feuchtem Tuch erfolgen.

Installation and operating conditions for hazardous areas:

a) Use of the equipment in the vicinity of processes generating high charges is not allowed.

b) The equipment must be mechanically protected when installed.

c) Installation must be performed on a grounded and conductive mounting surface.

d) Cleaning only with a wet cloth

Conditions d'installation et de mise en oeuvre pour la zone de protection Ex :

a) L'utilisation de l'appareil près de processus générant de fortes charges est interdite.

b) L'appareil doit être monté de manière à être protégé mécaniquement.

c) Le montage doit être effectué sur un socle conducteur mis à la terre.

d) Nettoyage uniquement avec un chiffon humide

7.7.8 Dimension drawings

Dimensional drawing of MDS D139

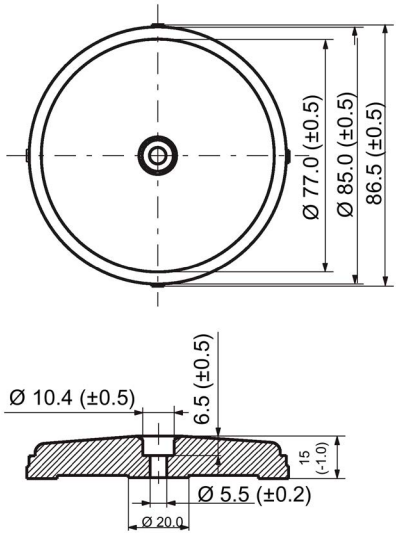


Figure 7-17 Dimensional drawing of MDS D139

Dimensions in mm

7.8 MDS D160

7.8.1 Characteristics

MDS D160	Characteristics	
	Area of application	Thanks to its rugged packaging, the MDS D160 is a transponder that can be used under extreme environmental conditions. It is washable, heat-resistant and resistant to all chemicals generally used in the laundry process. Typical applications are, for example: • Rented work clothing • Hotel laundry • Surgical textiles • Hospital clothing • Dirt collection mats • Clothing for nursing homes/hostels
	Memory size	112 bytes of EEPROM user memory
	Write/read range	See section Field data (Page 39).
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

7.8.2 Ordering data

Table 7- 18 Ordering data for MDS D160

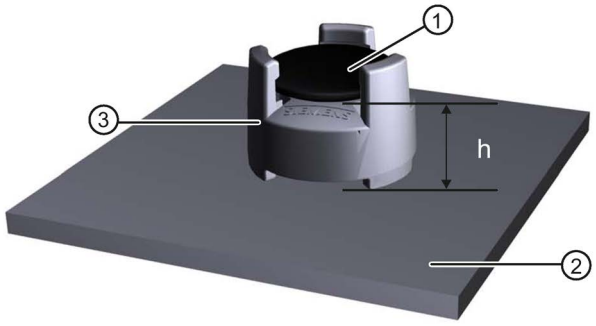
	Article number
MDS D160	6GT2600-0AB10

Table 7- 19 Ordering data for MDS D160 accessories

	Article number
Spacer	6GT2690-0AG00

7.8.3 Mounting on metal

Mounting on metal



① Transponder
② Metal carrier
③ Spacer
h ≥ 10 mm

Figure 7-18 Mounting the MDS D160 on metal with spacer

Note
Going below the minimum distance (h)

If the minimum distance (h) is not observed, a reduction of the field data results.
In critical applications, it is recommended that a test is performed.

Flush-mounting

Flush-mounting of the MDS D160 in metal is not permitted!

7.8.4 Technical specifications

Table 7- 20 Technical specifications for the MDS D160

	6GT2600-0AB10
Product type designation	SIMATIC MDS D160
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 112 bytes EEPROM

	6GT2600-0AB10
• OTP memory	• 16 bytes (EEPROM)
Read cycles (at < 40 °C)	> 10^{14}
Write cycles (at < 40 °C)	> 10^{6}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• PPS
• Color	• beige
Recommended distance to metal	≥ 10 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 … +85 °C
• outside the read/write field	• -40 … +175 °C
	• from +125 °C: for 1000 hours, 20% reduction of the limit distance
	• at +175 °C: 100 washing cycles tested
	• at +220 °C: Tested once for up to 30 seconds
• during storage	• -25 to +100 °C
Mechanical strength	
• Isostatic pressure	• 300 bar for 5 min
• Axial pressure	• 1000 N for 10 s
• Radial pressure	• 1000 N for 10 s
Resistance to chemicals	All chemicals normally used in the washing process
MDS lifespan	At least 100 wash cycles
Degree of protection	• IP68 24 hours, 2 bar, +20 °C • IPx9K
Shock according to IEC 68-2-27[1)]	400 m/s² 18 ms; 6 axes; 2000 repetitions/h
Vibration according to IEC 68-2-6[1)]	100 m/s² 10 ... 2000 Hz; 3 axes; 2.5 h

	6GT2600-0AB10
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	16 x 3 mm
Weight	1.2 g
Type of mounting	• Patched • Sewn in • Glued [2]

[1] The values for shock and vibration are maximum values and must not be applied continuously.

[2] The processing instructions of the adhesive manufacturer must be observed.

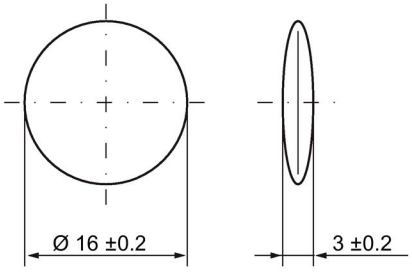
Note

Regeneration time between washing cycles

The regeneration time for the MDS D160 between washing cycles must be at least 24 hours.

7.8.5 Dimension drawings

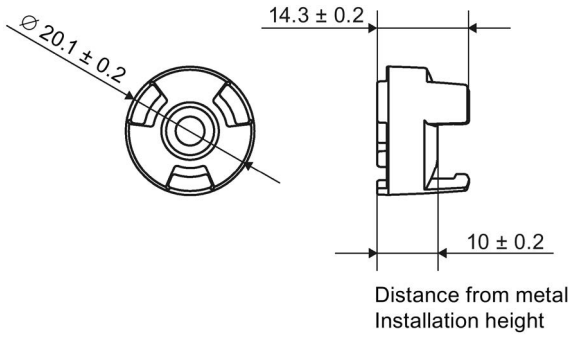
Dimensional drawing of MDS D160



Dimensions in mm

Figure 7-19 Dimensional drawing of MDS D160

Dimensional drawing of spacer



Dimensions in mm

Figure 7-20 Dimensional drawing of spacer

7.9 MDS D165

7.9.1 Features

MDS D165 (special version)	Characteristics	
	Area of application	The design of the transponder (self-adhesive label) permits a variety of designs, guaranteeing optimum dimensioning for the widest variety of applications. From simple identification such as electronic barcode replacement/supplementation, through warehouse and distribution logistics, right up to product identification.
	Memory size	112 bytes of EEPROM user memory
	Write/read range	See section Field data (Page 39).
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP65

7.9.2 Ordering data

Table 7- 21 Ordering data for MDS D165

	Article number
MDS D165 (special version ISO-CARD)	6GT2600-1AB00-0AX0

Type of delivery

Minimum order quantity: 1250 units (5 rolls with 250 units each)

7.9.3 Technical data

Table 7- 22 Technical specifications for MDS D165

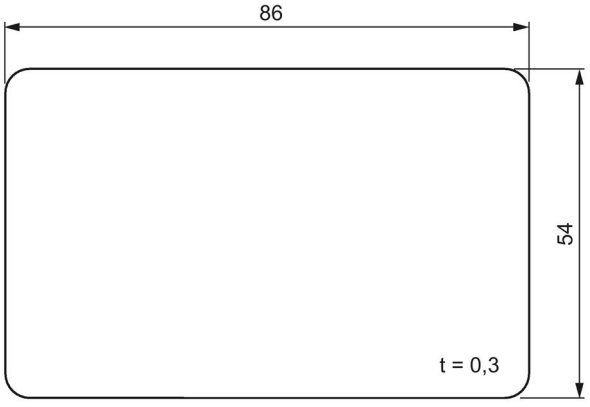
		6GT2600-1AB00-0AX0
Product type designation	SIMATIC MDS D165	
Memory		
Memory configuration		
• UID	• 8 bytes	
• User memory	• 112 bytes EEPROM	
• OTP memory	• 16 bytes (EEPROM)	
Read cycles (at < 40 °C)	> 10^{14}	
Write cycles (at < 40 °C)	> 10^{6}	
Data retention time (at < 40 °C)	> 10 years	
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"	
MTBF (Mean Time Between Failures)	228 years	
Mechanical specifications		
Housing		
• Material	• Top	• PET plastic (label material)
	• Inlay	• PET plastic (carrier material)
	• Antenna	• Aluminum
	• Bottom	• Double-sided transfer adhesive on silicon paper
• Color	• White	
Recommended distance to metal	≥ 25 mm	
Power supply	Inductive, without battery	
Permitted ambient conditions		
Ambient temperature		
• during write/read access	• -25 ... +80 °C	

	6GT2600-1AB00-0AX0
• outside the read/write field	• -25 to +80 °C
• during storage	• +20 to +30 °C Can be stored for 2 years, determined by the durability of the adhesive.
Degree of protection	IP65

Design, dimensions and weight	
Dimensions (L x W x H)	86 x 54 x 0.3 mm
Weight	1 g
Type of mounting	Glued with self-adhesive label [1]

[1] The processing instructions of the adhesive manufacturer must be observed.

7.9.4 Dimension drawing



Dimensions in mm

Figure 7-21 Dimension drawing of MDS D165

7.10 MDS D200

7.10.1 Features

MDS D200	Characteristics	
	Area of application	From simple identification such as electronic barcode replacement/supplementation, through warehouse and distribution logistics, right up to product identification.
	Memory size	256 bytes of EEPROM user memory
	Write/read range	See section Field data (Page 39).
	Mounting on metal	Yes, with spacer
	ISO standard	15693 with Tag-it HFI technology
	Degree of protection	IP67

7.10.2 Ordering data

Table 7- 23 Ordering data for MDS D200

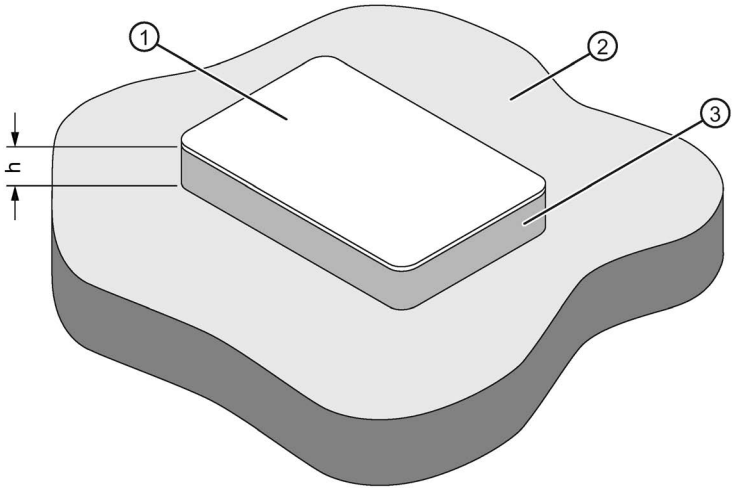
	Article number
MDS D200 (special version ISO-CARD)	6GT2600-1AD00-0AX0

Table 7- 24 Ordering data for MDS D200 accessories

	Article number
Spacer (in conjunction with fixing pocket 6GT2190-0AB00)	6GT2190-0AA00
Fixing pocket (in conjunction with spacer 6GT2190-0AA00)	6GT2190-0AB00
Fixing pocket (not suitable for fixing directly onto metal)	6GT2390-0AA00

7.10.3 Mounting on metal

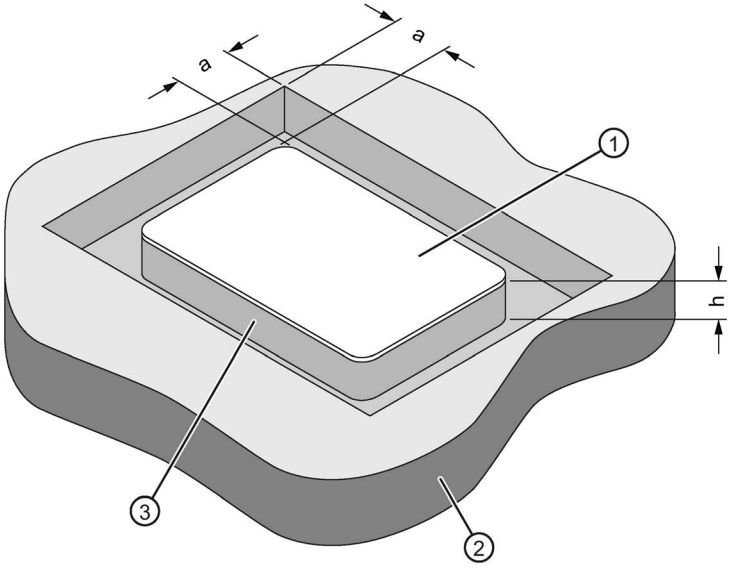
Mounting on metal



h ≥ 20 mm
① Transponder
② Metal
③ Non-metal

Figure 7-22 Mounting of the MDS D200 on metal with spacer

Flush-mounting



a ≥ 20 mm
h ≥ 20 mm
① Transponder
② Metal
③ Non-metal

Figure 7-23 Flush-mounting of MDS D200 in metal with spacer

Note

If the minimum guide values (h) are not observed, a reduction of the field data results.

7.10.4 Technical data

Table 7- 25 Technical specifications for MDS D200

	6GT2600-1AD00-0AX0
Product type designation	SIMATIC MDS D200
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 256 bytes EEPROM

	6GT2600-1AD00-0AX0
• OTP memory	• 16 bytes (EEPROM)
Read cycles (at < 25 °C)	> 10^{14}
Write cycles (at < 25 °C)	> 10^{6}
Data retention time (at < 25 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years

Mechanical specifications

Housing	
• Material	• PET
• Color	• White
Recommended distance to metal	≥ 20 mm
Power supply	Inductive, without battery

Permitted ambient conditions

Ambient temperature	
• during write/read access	• -20 to +60 °C
• outside the read/write field	• -20 to +60 °C
• during storage	• -20 to +60 °C
Degree of protection to EN 60529	IP67
Shock-resistant to EN 60721-3-7 class 7M3	ISO 10373 / ISO 7810 [1]
Vibration-resistant to EN 60721-3-7, class 7M3	ISO 10373 / ISO 7810 [1]
Torsion and bending load	ISO 10373/ISO 7816-1

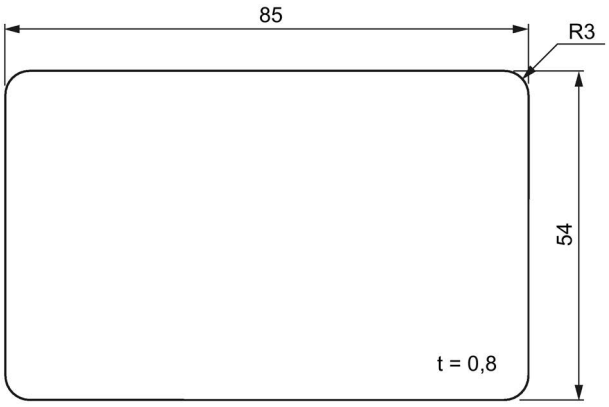
Design, dimensions and weight

Dimensions (L x W x H)	85 x 54 x 0.8 mm
Weight	5 g
Type of mounting	• Fixing pocket • Glued [2]

[1] The values for shock and vibration are maximum values and must not be applied continuously.

[2] The processing instructions of the adhesive manufacturer must be observed.

7.10.5 Dimension drawing



Dimensions in mm

Figure 7-24 Dimension drawing of MDS D200

7.11 MDS D261

7.11.1 Features

MDS D261	Characteristics	
	Area of application	The design of the transponder (self-adhesive label) permits a variety of designs, guaranteeing optimum dimensioning for the widest variety of applications. From simple identification such as electronic barcode replacement/supplementation, through warehouse and distribution logistics, right up to product identification.
	Memory size	256 bytes of EEPROM user memory
	Write/read range	See section Field data (Page 39).
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP65

7.11.2 Ordering data

Table 7- 26 Ordering data for MDS D261

	Article number
MDS D261	6GT2600-1AA00-0AX0

Type of delivery

Minimum order quantity: 1250 units (5 rolls with 250 units each)

7.11.3 Technical data

Table 7- 27 Technical specifications of MDS D261

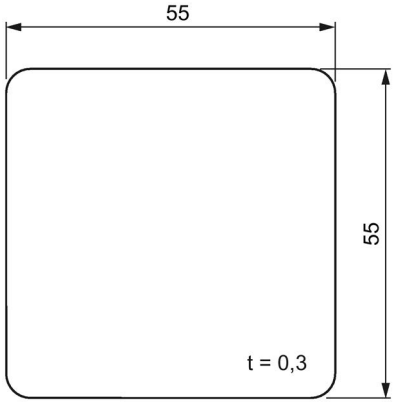
		6GT2600-1AA01-0AX0
Product type designation	SIMATIC MDS D261	
Memory		
Memory configuration		
• UID	• 8 bytes	
• User memory	• 256 bytes EEPROM	
• OTP memory	• 16 bytes (EEPROM)	
Read cycles (at < 40 °C)	> 10^{14}	
Write cycles (at < 40 °C)	> 10^{6}	
Data retention time (at < 40 °C)	> 10 years	
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"	
MTBF (Mean Time Between Failures)	228 years	
Mechanical specifications		
Housing		
• Material	• Top	• PET plastic (label material)
	• Inlay	• PET plastic (carrier material)
	• Antenna	• Aluminum
	• Bottom	• Double-sided transfer adhesive on silicon paper
• Color	• White	
Recommended distance to metal	≥ 25 mm	
Power supply	Inductive, without battery	
Permitted ambient conditions		
Ambient temperature		
• during write/read access	• -20 ... +60 °C	

	6GT2600-1AA01-0AX0
• outside the read/write field	• -20 … +85 °C
• During transportation and storage	• +20 to +30 °C Can be stored for 2 years, determined by the durability of the adhesive
Degree of protection	IP65

Design, dimensions and weight	
Dimensions (L x W x H)	55 x 55 x 0.3 mm
Weight	1 g
Type of mounting	Glued with self-adhesive label [1]

[1] The processing instructions of the adhesive manufacturer must be observed.

7.11.4 Dimension drawing



Dimensions in mm

Figure 7-25 Dimension drawing of MDS D261

7.12 MDS D324

7.12.1 Characteristics

MDS D324	Characteristics	
	Area of application	Production and distribution logistics and product identification Can also be used in harsh environments under extreme environmental conditions (e.g. with higher temperature load).
	Memory size	992 bytes of EEPROM user memory
	Write/read range	See section "Field data (Page 39)."
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP67; IPx9K

7.12.2 Ordering data

Table 7- 28 Ordering data MDS D324

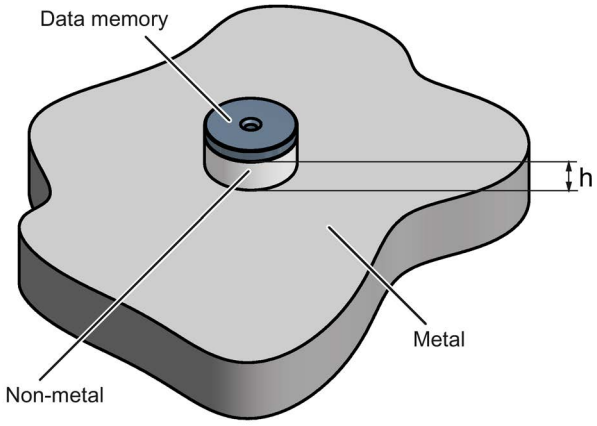
	Article number
MDS D324	6GT2600-3AC00

Table 7- 29 Ordering data MDS D324 accessories

	Article number
Spacer	6GT2690-0AK00

7.12.3 Mounting on metal

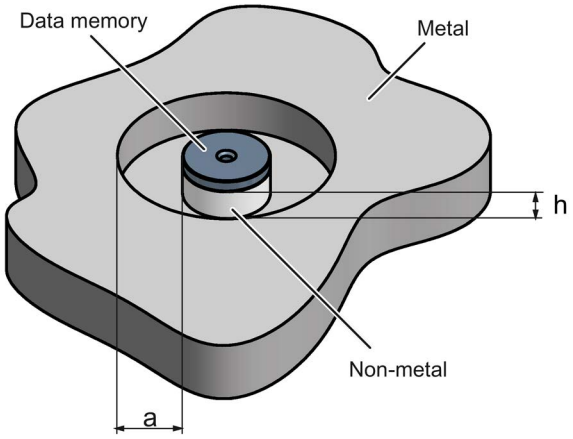
Mounting on metal



h ≥ 15 mm

Figure 7-26 Mounting the MDS D124/D324/D424/D524/E624 and RF320T on metal with spacer

Flush-mounting



h ≥ 15 mm

a ≥ 25 mm

Figure 7-27 Flush-mounting of the MDS D124/D324/D424/D524/E624 and RF320T in metal with spacer

Note

Going below the distances

If the distances (a and h) are not observed, a reduction of the field data results. It is possible to mount the MDS with metal screws (M3 countersunk head screws). This has no tangible impact on the range.

7.12.4 Technical specifications

Table 7- 30 Technical specifications of MDS D324

	6GT2600-3AC00
Product type designation	SIMATIC MDS D324
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 992 bytes EEPROM
• OTP memory	• 16 bytes (EEPROM)
Read cycles (at < 40 °C)	> 10^{14}
Write cycles (at < 40 °C)	> 10^{6}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• Epoxy resin
• Color	• Black
Recommended distance to metal	≥ 15 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +125 °C
• outside the read/write field	• -40 to +140 °C
• during storage	• -40 to +140 °C

	6GT2600-3AC00
Degree of protection to EN 60529	• IP67 • IPx9K
Shock according to EN 60721-3-7 Class 7M3[1)]	1000 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	27 x 4 mm
Weight	5 g
Type of mounting	• 1 x M3 screw [2)] ≤ 1 Nm • Glued [3)]

1) The values for shock and vibration are maximum values and must not be applied continuously.

2) To prevent it loosening during operation, secure the screw with screw locking varnish.

3) The processing instructions of the adhesive manufacturer must be observed.

7.12.5 Dimension drawing

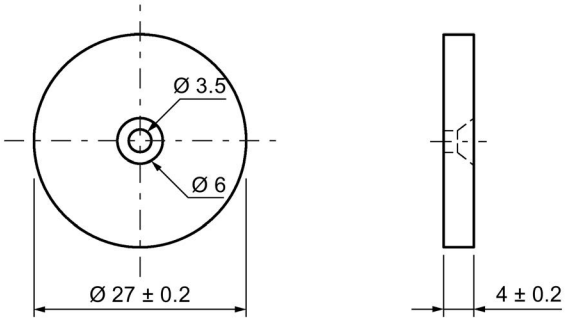


Figure 7-28 Dimension drawing of MDS D324

All dimensions in mm

7.13 MDS D339

7.13.1 Characteristics

MDS D339	Characteristics	
	Area of application	Applications in production automation with high temperature demands (up to +220 °C) Typical application areas: • Paintshops and their preparatory treatments • Primer coat, electrolytic dip area, cataphoresis with the associated drying furnaces • Top coat area with drying furnaces • Washing areas at temperatures > 85 °C • Other applications with higher temperatures
	Memory size	992 bytes of EEPROM user memory
	Write/read range	See section Field data (Page 39).
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

7.13.2 Ordering data

Table 7- 31 Ordering data for MDS D339

	Article number
MDS D339	6GT2600-3AA10

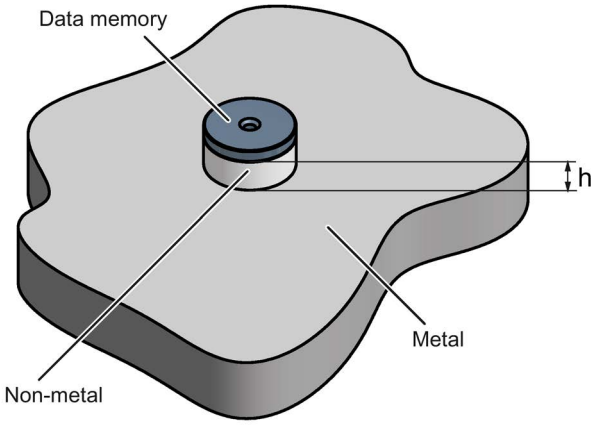
Table 7- 32 Ordering data for MDS D339 accessories

	Article number
Spacer	6GT2690-0AA00
Quick change holder (Ø x H): 22 x 60 mm	6GT2690-0AH00
Quick change holder (Ø x H): 22 x 47 mm	6GT2690-0AH10

7.13.3 Mounting on metal

Direct mounting of the MDS D139/D339 on metal is not allowed. A distance of ≥ 30 mm is recommended. This can be achieved using spacers (see "Transponder holders (Page 355)").

Mounting on metal

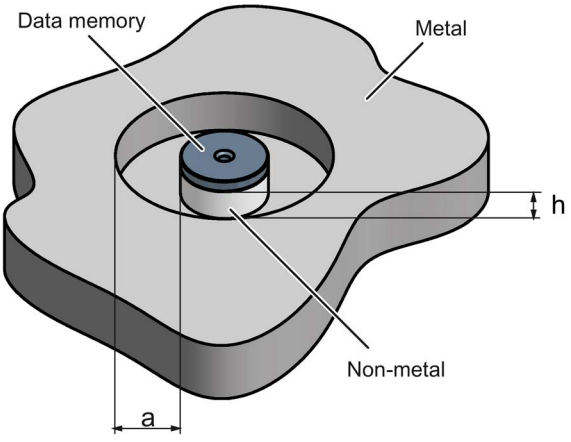


h ≥ 30 mm

Figure 7-29 Mounting the MDS D139/D339 on metal with spacer

Flush-mounting

It is possible to mount the MDS D139/D339 in metal. With large antennas, for example ANT D5, this leads to a reduction of ranges.



h ≥ 30 mm

a ≥ 100 mm

Figure 7-30 Flush-mounting of the MDS D139/D339 in metal with spacer

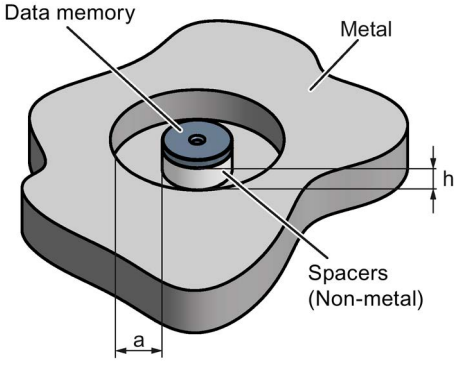
Note

Going below the distances

If the distances (a and h) are not observed, a reduction of the field data results. It is possible to mount the MDS with metal screws (M5). This has no tangible impact on the range. It is recommended that a test is performed in critical applications.

7.13.4 Mounting in metal

It is possible to mount the MDS D339 in metal. With large antennas, for example ANT D5, this leads to a reduction of ranges.



a = 100 mm

h = 30 mm

Figure 7-31 MDS D339: Mounting in metal

7.13.5 Cleaning the transponder

NOTICE
Cleaning the transponder Do not clean the transponder with mechanical tools, sand-blasting or pressure hose. These cleaning methods result in damage to the transponder. Clean the transponder only with the chemical cleansing agents listed in the section Chemical resistance of the reader and transponders (Page 89).

7.13.6 Technical specifications

Table 7- 33 Technical specifications of MDS D339

	6GT2600-3AA10
Product type designation	SIMATIC MDS D339
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 992 bytes EEPROM
• OTP memory	• 16 bytes (EEPROM)
Read cycles (at < 40 °C)	> 10^{14}
Write cycles (at < 40 °C)	> 10^{6}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• PPS
• Color	• Black
Recommended distance to metal	≥ 30 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +100 °C
• outside the read/write field	• -40 to +220 °C
	• from +125 °C: 20% reduction in the limit distance
	• at +200 °C: Tested up to 5000 hours or 6000 cycles
	• at +220 °C: Tested up to 2000 hours or 2000 cycles
• during storage	• -40 to +100 °C

	6GT2600-3AA10
Degree of protection to EN 60529	• IP68 2 hours, 2 bar, +20 °C • IPx9K steam jet: 150 mm; 10 to 15 l/min; 100 bar; 75 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	500 m/s^2
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s^2
Torsion and bending load	Not permitted

Design, dimensions and weight	
Dimensions (Ø x H)	85 x 15 mm
Weight	50 g
Type of mounting	1 x M5 screw [2)] 1.5 Nm

1 The values for shock and vibration are maximum values and must not be applied continuously.

2) For mounting with the spacer (6GT2690-0AA00), use a stainless steel M5 screw to avoid damaging the MDS in high temperatures (expansion coefficient).

7.13.7 Use of the MDS D339 in hazardous areas

The MDS D339 mobile data memory is classed as a piece of simple, electrical equipment and can be operated in Protection Zone 2, Device Group II, Category 3G.

The following requirements of the 94/9/EC directive are met:

- EN 60079-0:2006
- EN 60079-15:2005
- EN 61241-0:2006
- EN 61241-1:2004

Identification

II 3 G Ex nA II T6

Ii 3 D Ex tD A22 IP68 T 210°C

KEMA 09 ATEX 0133 X

WARNING
Gefahr durch elektrostatische Entladungen
Potential electrostatic charging hazard
Danger potentiel de charges électrostatiques

Note

Installations- und Betriebsbedingungen für den Ex-Schutzbereich:

a) Der Einsatz des Gerätes in der Nähe von stark ladungserzeugenden Prozessen ist untersagt.

b) Das Gerät ist mechanisch geschützt zu montieren.

c) Die Montage muss auf einem geerdeten, leitenden Untergrund erfolgen.

d) Die Reinigung darf nur mit feuchtem Tuch erfolgen.

Installation and operating conditions for hazardous areas:

a) Use of the equipment in the vicinity of processes generating high charges is not allowed.

b) The equipment must be mechanically protected when installed.

c) Installation must be performed on a grounded and conductive mounting surface.

d) Cleaning only with a wet cloth

Conditions d'installation et de mise en oeuvre pour la zone de protection Ex :

a) L'utilisation de l'appareil près de processus générant de fortes charges est interdite.

b) L'appareil doit être monté de manière à être protégé mécaniquement.

c) Le montage doit être effectué sur un socle conducteur mis à la terre.

d) Nettoyage uniquement avec un chiffon humide

7.13.8 Dimensional drawing

MDS D339

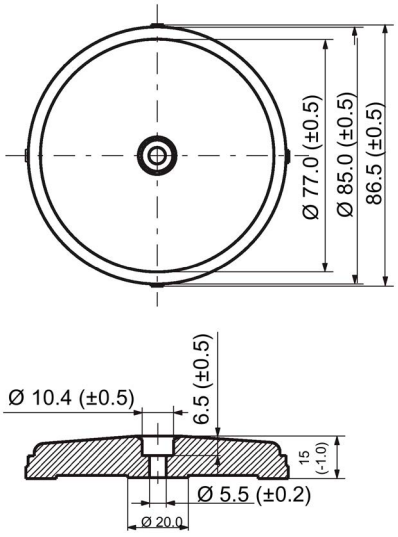


Figure 7-32 Dimension drawing of the MDS D339

Dimensions in mm

7.14 MDS D400

7.14.1 Features

MDS D400	Characteristics	
	Area of application	Simple identification such as electronic barcode replacement/supplements, from warehouse and distribution logistics right through to product identification.
	Memory size	2000 bytes of FRAM user memory
	Write/read range	See section "Field data (Page 39)"
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP67

7.14.2 Ordering data

Table 7- 34 Ordering data of MDS D400

	Article number
MDS D400	6GT2600-4AD00

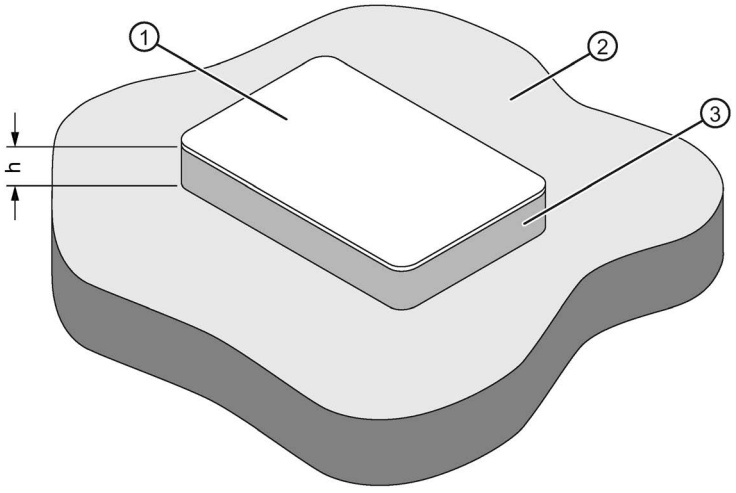
Table 7- 35 Ordering data of MDS D400 accessories

	Article number
Spacer (in conjunction with fixing pocket 6GT2190-0AB00)	6GT2190-0AA00
Fixing pocket (in conjunction with spacer 6GT2190-0AA00)	6GT2190-0AB00
Fixing pocket (not suitable for fixing directly onto metal)	6GT2390-0AA00

7.14.3 Mounting on metal

Mounting on metal

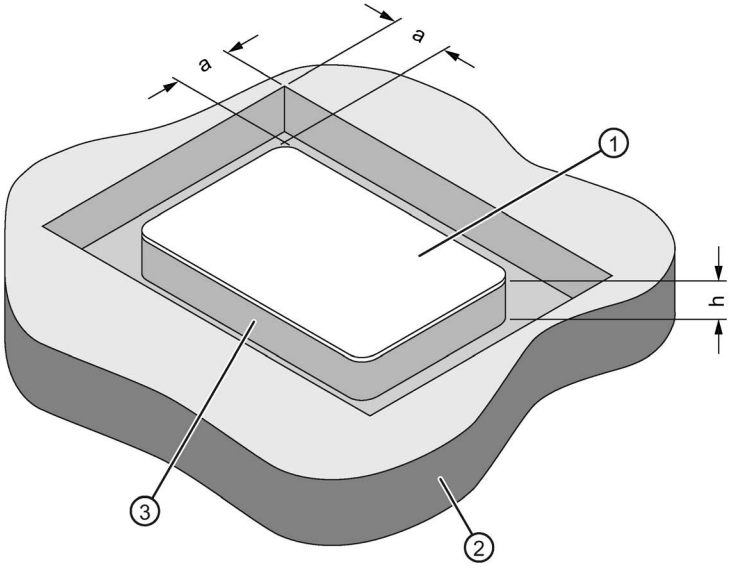
It is possible to mount the MDS D400 on metal.



h ≥ 20 mm
① Transponder
② Metal
③ Non-metal

Figure 7-33 Mounting of the MDS D400 on metal with spacer

Flush-mounted in metal



a ≥ 20 mm
h ≥ 20 mm
① Transponder
② Metal
③ Non-metal

Figure 7-34 Flush-mounting of MDS D400 in metal with spacer

Note

If the minimum guide values (h) are not observed, this will result in a reduction of the field data.

7.14.4 Technical specifications

Table 7- 36 Technical specifications for MDS D400

	6GT2600-4AD00
Product type designation	SIMATIC MDS D400
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 2000 bytes FRAM

	6GT2600-4AD00
• OTP memory	• 16 bytes FRAM
Read cycles (at < 25 °C)	> 10^{12}
Write cycles (at < 25 °C)	> 10^{12}
Data retention time (at < 25 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years

Mechanical specifications

Housing	
• Material	• PVC
• Color	• White
Recommended distance to metal	≥ 20 mm
Power supply	Inductive, without battery

Permitted ambient conditions

Ambient temperature	
• during write/read access	• -20 to +60 °C
• outside the read/write field	• -20 to +60 °C
• during storage	• -20 to +60 °C
Degree of protection to EN 60529	IP67
Vibration-resistant to EN 60721-3-7, class 7M3	ISO 10373 / ISO 7810 [1]
Torsion and bending load	ISO 10373/ISO 7816-1

Design, dimensions and weight

Dimensions (L x W x H)	85 x 54 x 0.8 mm
Weight	5 g
Type of mounting	• Fixing lug • Glued [2]

[1] The values for vibration are maximum values and must not be applied continuously.

[2] The processing instructions of the adhesive manufacturer must be observed.

7.14.5 Dimension drawing

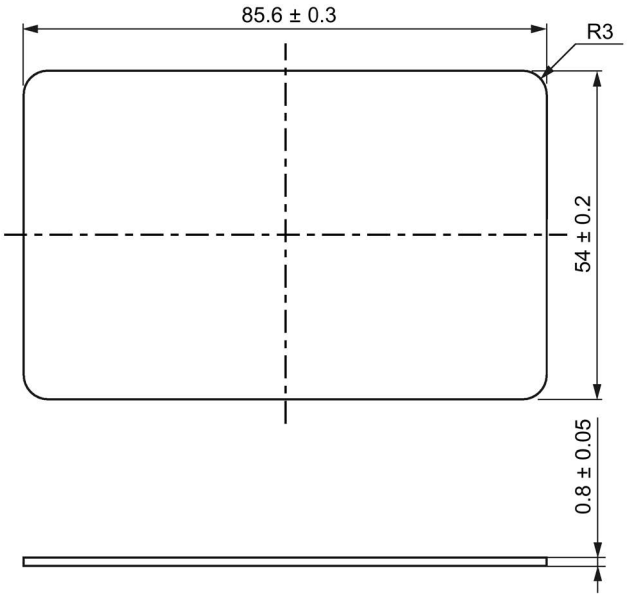


Figure 7-35 Dimensional drawing MDS D400 (dimensions in mm)

7.15 MDS D421

7.15.1 Characteristics

MDS D421	Characteristics	
	Area of application	The MDS D421 is designed for tool coding in accordance with DIN 69873. It can be used wherever small data carriers and exact positioning are required, e.g. tool identification, workpiece holders. The rugged housing of the MDS D421 means that it can also be used in a harsh industrial environment without problems.
	Memory size	2000 bytes of FRAM user memory
	Write/read range	See section "Field data (Page 39)"
	Mounting on metal	Yes, flush-mounted in metal
	ISO standard	ISO 15693
	Degree of protection	IP67/IPx9K

7.15.2 Ordering data

Table 7- 37 Ordering data of MDS D421

	Article number
MDS D421	6GT2600-4AE00

7.15.3 Mounting on metal

Mounting on metal

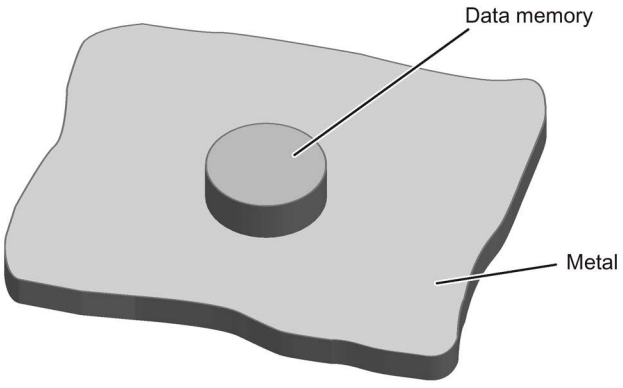


Figure 7-36 Mounting of MDS D421 on metal

Flush-mounting

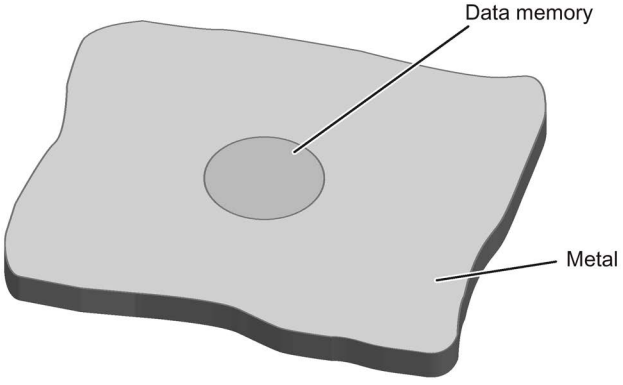


Figure 7-37 Mounting of MDS D421 in metal

Flush-mounting of MDS D421 in metal with tools

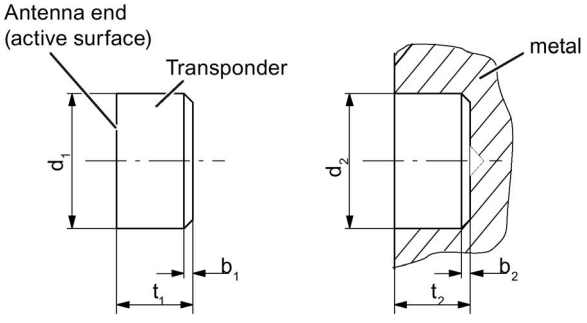


Figure 7-38 Flush-mounting of MDS D421 in metal with tools

b_1	0.5 x 45°	b_2	0.3 x 45° or R 0.3
d_1	10 (-0.04.. -0.13)	d_2	10 (+0.09... 0)
t_1	4.5 (-0... -0.1)	t_2	4.6 (+0.2... 0)

All dimensions in mm

Note

Installation instruction

The MDS should not protrude out of the locating hole; it must be flush with the outside contour.

The mounting instructions of the MDS and the conditions associated with the application (e.g. peripheral speed, temperature, and use of coolant) must be observed during the installation.

Mounting information for adhesion

- Drill installation hole
- The adhesive surfaces must be dry, free from dust, oil, stripping agents and other impurities
- Apply adhesive according to the manufacturer's processing instructions
- Press in MDS D421 using your finger; antenna side to the outside (see figure "Flush-mounting of MDS D421 in metal with tools")
- Remove residues of adhesive
- Allow to cure according to the manufacturer's instructions
- Flush-mounting of MDS D421 in metal with tools

Installation examples

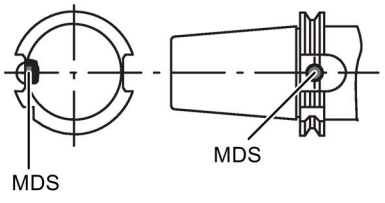


Figure 7-39 Installation example of MDS D421 in a steep cone

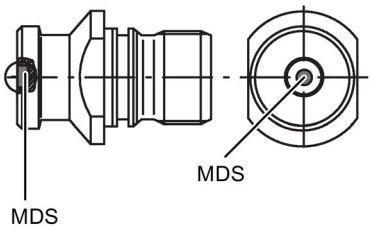


Figure 7-40 Installation example of MDS D421 in a stud bolt

7.15.4 Technical specifications

Table 7- 38 Technical specifications for the MDS D421

	6GT2600-4AE00
Product type designation	SIMATIC MDS D421
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 2000 bytes FRAM
• OTP memory	• 16 bytes FRAM
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• Epoxy resin
• Color	• Black
Recommended distance to metal	≥ 0 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +100 °C
• during storage	• -40 to +100 °C

	6GT2600-4AE00
Degree of protection to EN 60529	• IP67 • IPx9K steam jet: 150 mm; 10 to 15 l/min; 100 bar; 75 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	1000 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Torsion and bending load	Not permitted

Design, dimensions and weight	
Dimensions (Ø x H)	10 x 4.5 mm
Weight	Approx. 1 g
Type of mounting	Glued [2)]

1) The values for shock and vibration are maximum values and must not be applied continuously.

2) The processing instructions of the adhesive manufacturer must be observed.

7.15.5 Dimension drawing

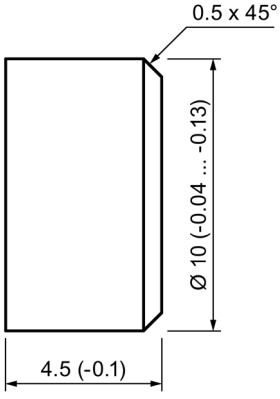


Figure 7-41 Dimension drawing of MDS D421

All dimensions in mm

7.16 MDS D422

7.16.1 Characteristics

MDS D422	Characteristics	
	Area of application	Identification of metallic workpiece holders, workpieces or containers
	Memory size	2000 bytes of FRAM user memory
	Write/read range	See section "Field data (Page 39).
	Mounting on metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68

7.16.2 Ordering data

Table 7- 39 Ordering data of MDS D422

	Article number
MDS D422 A screw-in aid is included in the scope of supply per packaging unit	6GT2600-4AF00

7.16.3 Mounting in metal

Flush-mounting

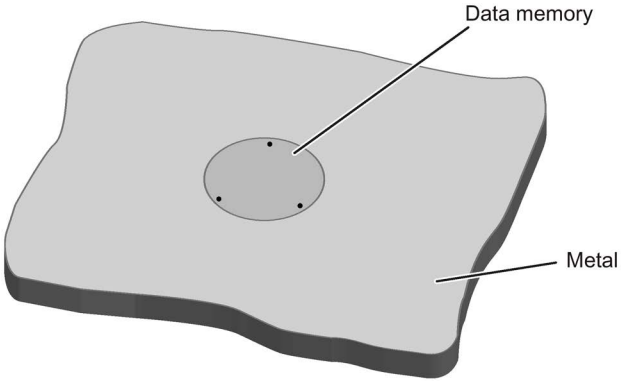


Figure 7-42 Mounting of MDS D422 in metal

Mounting information for screws

You can screw the transponder into a pre-drilled threaded hole using the screw-in aid.

Mounting information for adhesion

- Drill installation hole
- The adhesive surfaces must be dry, free from dust, oil, stripping agents and other impurities
- Apply adhesive according to the manufacturer's processing instructions
- Press in MDS D422 using your fingers; with antenna to the outside
- Remove residues of adhesive
- Allow to cure according to the manufacturer's instructions
- Flush-mounting of MDS D422 in metal with tools

7.16.4 Technical specifications

Table 7- 40 Technical specifications for the MDS D422

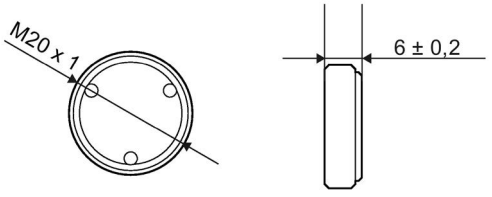
	6GT2600-4AF00
Product type designation	SIMATIC MDS D422
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 2000 bytes FRAM
• OTP memory	• 16 bytes FRAM
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	285 years
Mechanical specifications	
Housing	
• Material	• Plastic PA 6.6 GF; brass nickel plated
• Color	• Black/silver
Recommended distance to metal	≥ 0 mm
Power supply	Inductive, without battery

	6GT2600-4AF00
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +100 °C
• during storage	• -40 to +100 °C
Degree of protection to EN 60529	IP68 2 hours, 2 bar, +20 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	500 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	20 x 6 mm
Weight	13 g
Type of mounting	• Glued [2)] • 1 x transponder thread M20 ≤ 1 Nm

1) The values for shock and vibration are maximum values and must not be applied continuously.

2) The processing instructions of the adhesive manufacturer must be observed.

7.16.5 Dimension drawing



Dimensions in mm

Figure 7-43 Dimensional drawing of MDS D422

7.17 MDS D423

7.17.1 Characteristics

MDS D423	Characteristics	
	Area of application	Identification of metallic workpiece holders, workpieces or containers, production automation
	Memory size	2000 bytes of FRAM user memory
	Write/read range	See section "Field data (Page 39)"
	Mounting on metal	Yes, flush-mounted in metal
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

7.17.2 Ordering data

Table 7- 41 Ordering data of MDS D423

	Article number
MDS D423	6GT2600-4AA00

Table 7- 42 Ordering data of MDS D423 accessories

	Article number
Fixing hood RF330T / MDS D423	6GT2690-0AE00

7.17.3 Mounting on metal

Mounting on metal

Direct mounting of the MDS D423 on metal is possible.

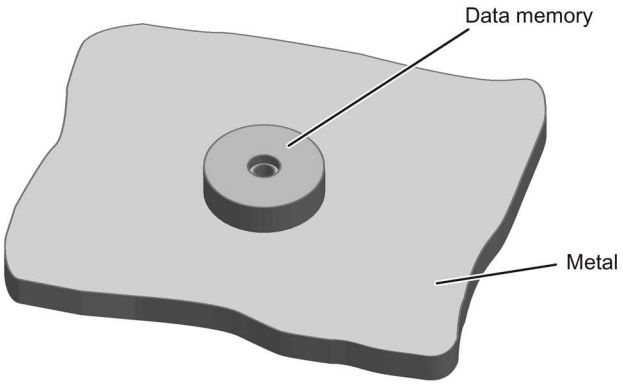
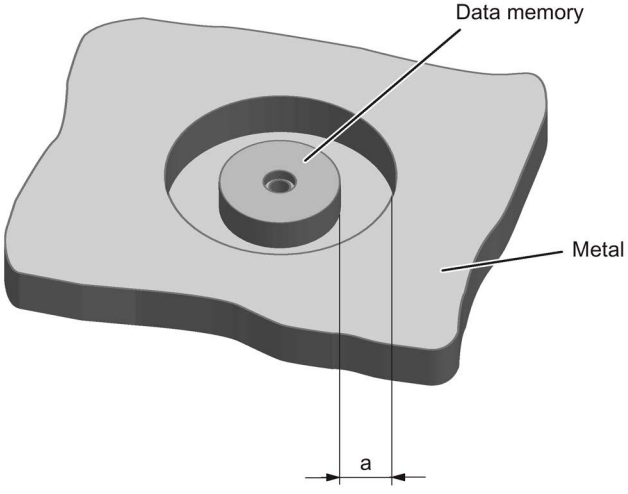


Figure 7-44 Mounting the MDS D423 on metal

Flush-mounted in metal

It is possible to mount the MDS D423 in metal.



a ≥ 10 mm

Figure 7-45 Flush-mounting of the MDS D423 in metal with 10 mm clearance

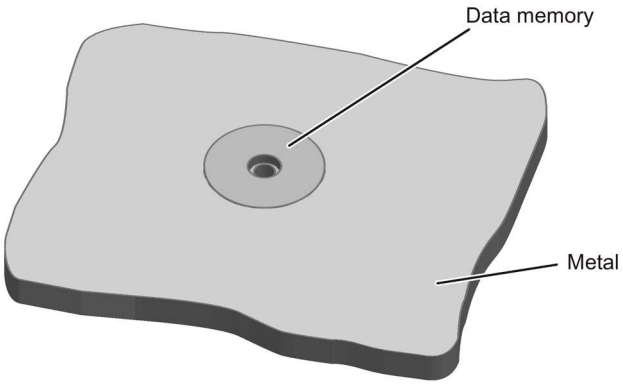


Figure 7-46 Flush-mounting of the MDS D423 in metal without clearance

Note

Reduction of the write/read range

Note that when the device is flush-mounted in metal without a surrounding clearance ≥ 10 mm, the write/read range is significantly reduced.

7.17.4 Technical specifications

Table 7- 43 Technical specifications of MDS D423

	6GT2600-4AA00
Product type designation	SIMATIC MDS D423
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 2000 bytes FRAM
• OTP memory	• 16 bytes FRAM
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• Plastic PPS

	6GT2600-4AA00
• Color	• Black
Recommended distance to metal	≥ 0 mm
Power supply	Inductive, without battery

Permitted ambient conditions

Ambient temperature	
• during write/read access	• -25 to +85 ℃
• outside the read/write field	• -40 to +100 ℃
• during storage	• -40 to +100 ℃
Degree of protection to EN 60529	• IP68 2 hours, 2 bar, +20 °C • IPx9K steam jet: 150 mm; 10 to 15 l/min; 100 bar; 75 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	500 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Pressure resistance	• Low pressure resistant vacuum dryer: up to 20 mbar • High pressure resistant (see degree of protection IPx9K)
Torsion and bending load	Not permitted

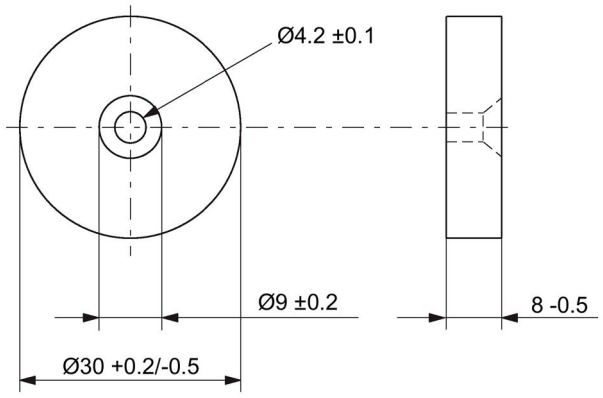
Design, dimensions and weight

Dimensions (Ø x H)	30 x 8 mm
Weight	15 g
Type of mounting	1 x M4 screw [2)] ≤ 1 Nm

[1)] The values for shock and vibration are maximum values and must not be applied continuously.

[2]) To prevent it loosening during operation, secure the screw with screw locking varnish.

7.17.5 Dimensional drawing



Dimensions in mm

Figure 7-47 Dimension drawing for MDS D423

7.18 MDS D424

7.18.1 Characteristics

MDS D424	Characteristics	
	Area of application	Production and distribution logistics as well as in assembly and production lines, can also be used in a harsh industrial environment without problem
	Memory size	2000 bytes of FRAM user memory
	Write/read range	See section "Field data (Page 39)."
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP67; IPx9K

7.18.2 Ordering data

Table 7- 44 Ordering data of MDS D424

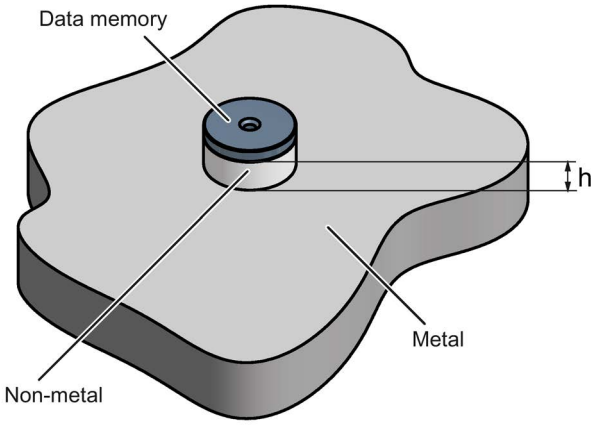
	Article number
MDS D424	6GT2600-4AC00

Table 7- 45 Ordering data of MDS D424 accessories

	Article number
Spacer	6GT2690-0AK00

7.18.3 Mounting on metal

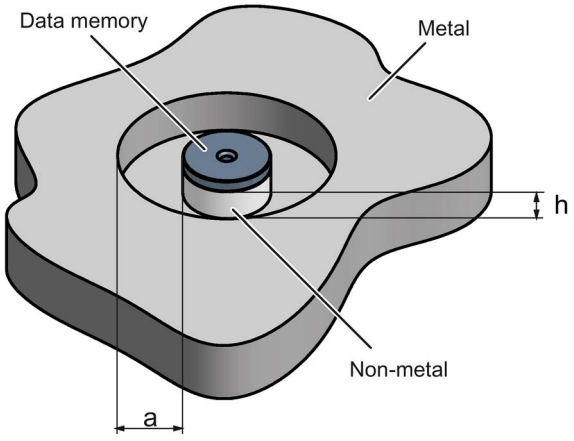
Mounting on metal



h ≥ 15 mm

Figure 7-48 Mounting the MDS D124/D324/D424/D524/E624 and RF320T on metal with spacer

Flush-mounting



h ≥ 15 mm

a ≥ 25 mm

Figure 7-49 Flush-mounting of the MDS D124/D324/D424/D524/E624 and RF320T in metal with spacer

Note

Going below the distances

If the distances (a and h) are not observed, a reduction of the field data results. It is possible to mount the MDS with metal screws (M3 countersunk head screws). This has no tangible impact on the range.

7.18.4 Technical specifications

Table 7- 46 Technical specifications for the MDS D424

	6GT2600-4AC00
Product type designation	SIMATIC MDS D424
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 2000 bytes FRAM
• OTP memory	• 16 bytes FRAM
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years

	6GT2600-4AC00
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years

Mechanical specifications

Housing	
• Material	• Epoxy resin
• Color	• Black
Recommended distance to metal	≥ 15 mm
Power supply	Inductive, without battery

Permitted ambient conditions

Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +100 °C
• during storage	• -40 to +100 °C
Degree of protection to EN 60529	• IP67 • IPx9K
Shock according to EN 60721-3-7 Class 7M3[1)]	1000 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Torsion and bending load	Not permitted

Design, dimensions and weight

Dimensions (Ø x H)	27 x 4 mm
Weight	5 g
Type of mounting	• Glued [2)] • 1x screw M3 [3)] ≤ 1 Nm

1) The values for shock and vibration are maximum values and must not be applied continuously.

2) The processing instructions of the adhesive manufacturer must be observed.

3) To prevent it loosening during operation, secure the screw with screw-locking varnish.

7.18.5 Dimension drawing

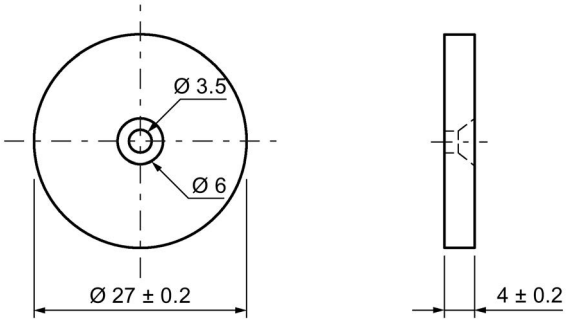


Figure 7-50 Dimension drawing of MDS D424

All dimensions in mm

7.19 MDS D425

7.19.1 Characteristics

MDS D425	Characteristics	
	Area of application	Compact and rugged ISO transponder; suitable for screw mounting Use in assembly and production lines in the powertrain sector; ideal for mounting on motors, gearboxes, and workpiece holders Rugged packaging of the MDS D425; can therefore also be used under extreme environmental conditions without problem
	Memory size	2000 bytes of FRAM user memory
	Write/read range	See section "Field data (Page 39)".
	Mounting on metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

7.19.2 Ordering data

Table 7- 47 Ordering data of MDS D425

	Article number
MDS D425	6GT2600-4AG00

7.19.3 Application example

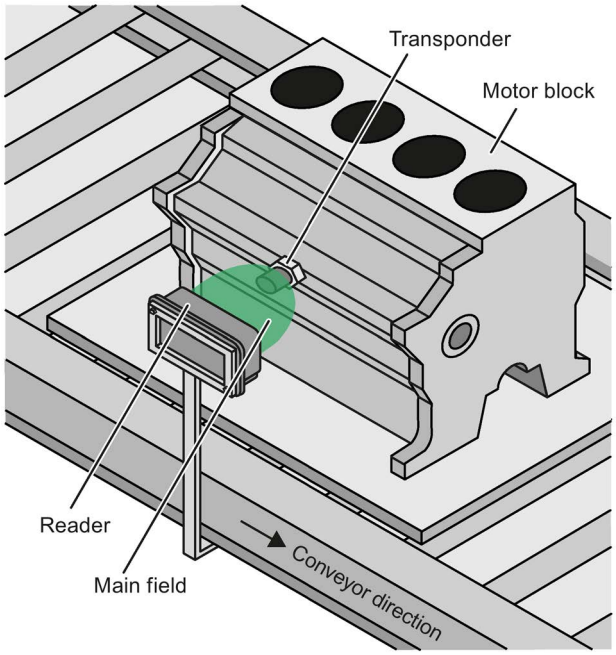


Figure 7-51 Application example

7.19.4 Technical specifications

Table 7- 48 Technical specifications for the MDS D425

	6GT2600-4AG00
Product type designation	SIMATIC MDS D425
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 2000 bytes FRAM
• OTP memory	• 16 bytes FRAM

	6GT2600-4AG00
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years

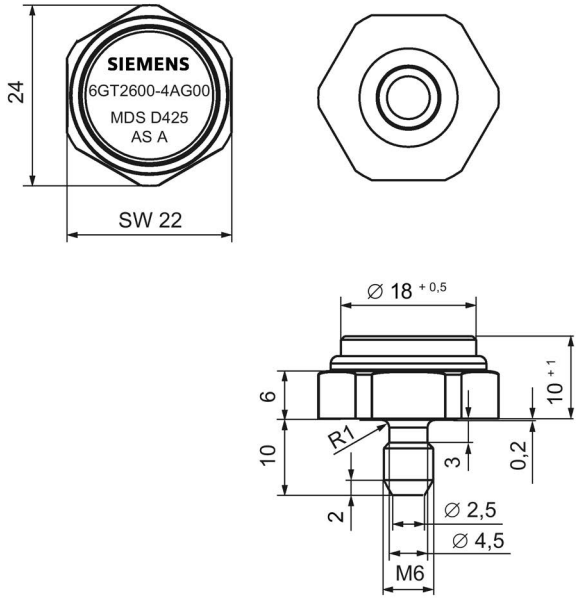
Mechanical specifications	
Housing	
• Material	• Plastic PA 6.6 GF
• Color	• Black
Recommended distance to metal	≥ 0 mm
Power supply	Inductive, without battery

Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +125 °C
• during storage	• -40 to +125 °C
Degree of protection to EN 60529	• IP68 2 hours, 2 bar, +20 °C • IPx9K steam jet: 150 mm; 10 to 15 l/min; 100 bar; 75 °C
Shock according to IEC 68-2-27[1)]	500 m/s^2
Vibration according to IEC 68-2-6[1)]	200 m/s^2
Torsion and bending load	Not permitted

Design, dimensions and weight	
Dimensions (Ø x H)	24 x 10 mm (without set screw)
Weight	35 g
Type of mounting	1x transponder set screw M6 SW 22; ≤ 6 Nm

1) The values for shock and vibration are maximum values and must not be applied continuously.

7.19.5 Dimension drawing



Dimensions in mm

Figure 7-52 Dimension drawing of MDS D425

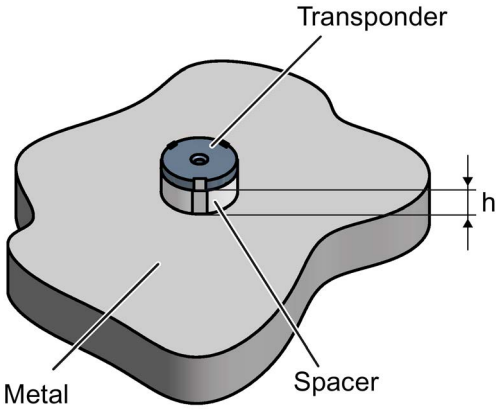
7.20 MDS D426

7.20.1 Characteristics

MDS D426	Characteristics	
	Area of application	Compact and rugged ISO transponder; suitable for identification of transport units in production-related logistics; can also be deployed in harsh conditions
	Memory size	2000 bytes of FRAM user memory
	Write/read range	See section Field data (Page 39)
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP68

7.20.2 Mounting on metal

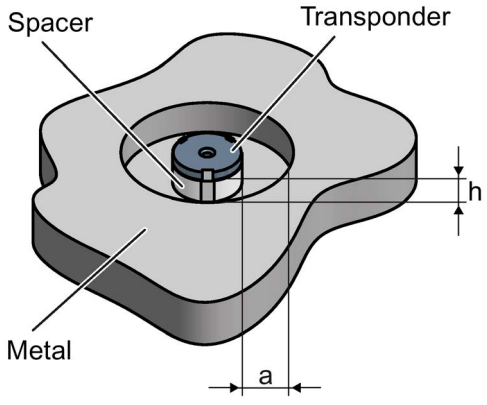
Mounting on metal



h ≥ 25 mm

Figure 7-53 Mounting the MDS D126 / D426 / D526 on metal with spacer

Flush-mounted in metal



h ≥ 25 mm

a ≥ 50 mm

Figure 7-54 Flush installation of the MDS D126 / D426 / D526 in metal with spacer

7.20.3 Ordering data

Table 7- 49 Ordering data of MDS D426

	Article number
MDS D426	6GT2600-4AH00

Table 7- 50 Ordering data of MDS D426 accessories

	Article number
Spacer	6GT2690-0AL00

7.20.4 Technical specifications

Table 7- 51 Technical specifications for the MDS D426

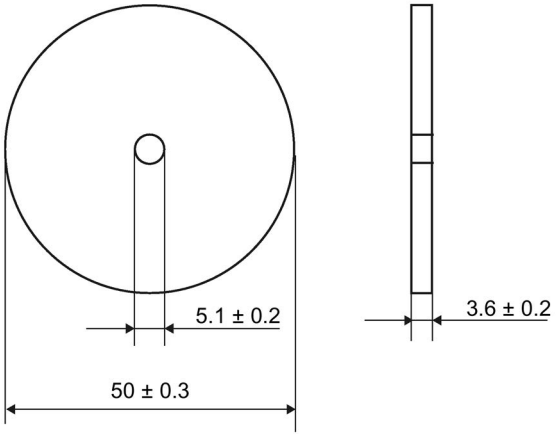
	6GT2600-4AH00
Product type designation	SIMATIC MDS D426
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 2000 bytes FRAM
• OTP memory	• 16 bytes FRAM
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• Plastic PA 6.6 GF
• Color	• Black
Recommended distance to metal	≥ 25 mm
Power supply	Inductive, without battery

	6GT2600-4AH00
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +100 °C
• during storage	• -40 to +100 °C
Degree of protection to EN 60529	IP68 2 hours, 2 bar, +20 °C
Shock according to IEC 68-2-27[1)]	50 m/s²
Vibration according to IEC 68-2-6[1)]	20 m/s²
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	50 x 3.6 mm
Weight	13 g
Type of mounting	1 x M4 screw [2)] ≤ 1 Nm

1) The values for shock and vibration are maximum values and must not be applied continuously.

2) To prevent it loosening during operation, secure the screw with screw locking varnish.

7.20.5 Dimension drawing



Dimensions in mm

Figure 7-55 Dimension drawing of MDS D426

7.21 MDS D428

7.21.1 Characteristics

MDS D428	Characteristics	
	Area of application	Compact and rugged ISO transponder; suitable for screw mounting. Use in assembly and production lines in the powertrain sector. The rugged housing of the MDS D428 means that it can also be used in extreme environmental conditions without problems.
	Memory size	2000 bytes of FRAM user memory
	Write/read range	See section "Field data (Page 39)"
	Mounting on metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

7.21.2 Ordering data

Table 7- 52 Ordering data of MDS D428

	Article number
MDS D428	6GT2600-4AK00-0AX0

7.21.3 Application example

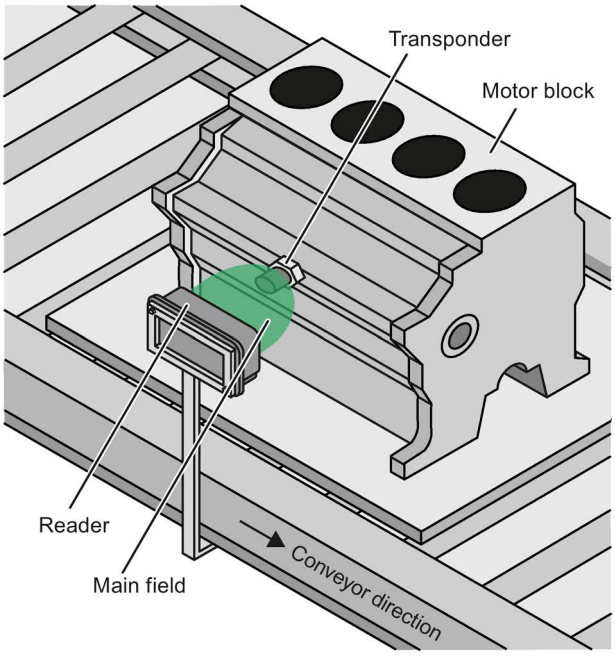


Figure 7-56 Application example

7.21.4 Technical specifications

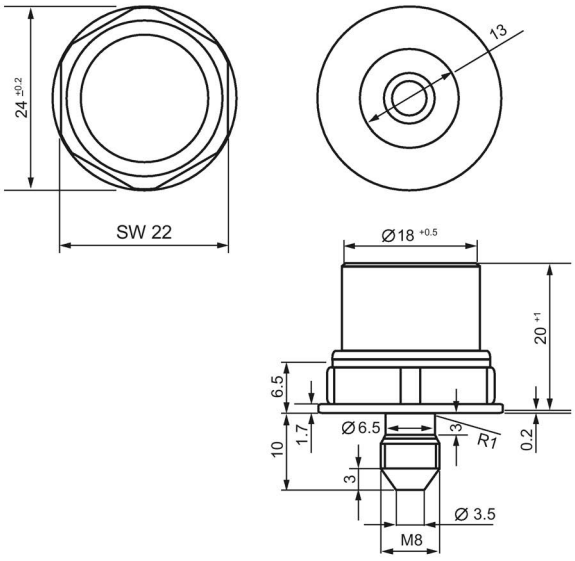
Table 7- 53 Technical specifications for the MDS D428

	6GT2600-4AK00
Product type designation	SIMATIC MDS D428
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 2000 bytes FRAM
• OTP memory	• 16 bytes FRAM
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years

	6GT2600-4AK00
Mechanical specifications	
Housing	
• Material	• Plastic PA 6.6 GF
• Color	• Black
Recommended distance to metal	≥ 0 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 ℃
• outside the read/write field	• -40 to +125 ℃
• during storage	• -40 to +125 ℃
Degree of protection to EN 60529	• IP68 2 hours, 2 bar, +20 °C • IPx9K steam jet: 150 mm; 10 to 15 l/min; 100 bar; 75 °C
Shock according to IEC 68-2-27[1)]	500 m/s²
Vibration according to IEC 68-2-6[1)]	200 m/s²
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	24 x 20 mm (without set screw)
Weight	35 g
Type of mounting	1x transponder set screw M8 SW 22; ≤ 8 Nm

[1)] The values for shock and vibration are maximum values and must not be applied continuously.

7.21.5 Dimension drawing



Dimensions in mm

Figure 7-57 Dimension drawing of MDS D428

7.22 MDS D460

7.22.1 Characteristics

MDS D460	Characteristics	
	Area of application	Identification in small assembly lines; can also be used in a harsh industrial environment
	Memory size	2000 bytes of FRAM user memory
	Write/read range	See section "Field data (Page 39).
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP67/IPx9K

7.22.2 Ordering data

Table 7- 54 Ordering data of MDS D460

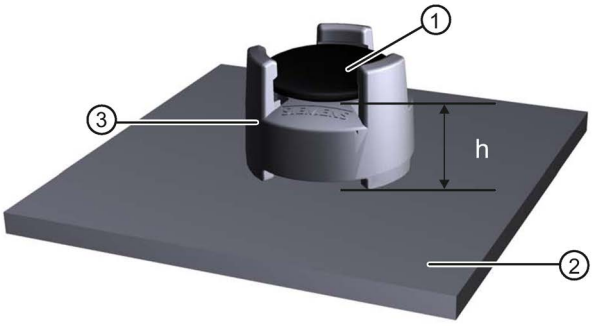
	Article number
MDS D460	6GT2600-4AB00

Table 7- 55 Ordering data of MDS D460 accessories

	Article number
Spacer	6GT2690-0AG00

7.22.3 Mounting on metal

Mounting option on metal with spacer



① Transponder
② Metal
③ Spacer
h ≥ 10 mm

Figure 7-58 Mounting the MDS D460 on metal with spacer

Note

If the minimum guide values (h) are not observed, a reduction of the field data results.
In critical applications, it is recommended that a test is performed.

Flush-mounting

Flush-mounting of the MDS D460 in metal is not permitted!

7.22.4 Technical specifications

Table 7- 56 Technical specifications for MDS D460

	6GT2600-4AB00
Product type designation	SIMATIC MDS D460
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 2000 bytes FRAM
• OTP memory	• 16 bytes FRAM
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• Epoxy resin
• Color	• Black
Recommended distance to metal	≥ 10 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +100 °C
• during storage	• -40 to +100 °C
Degree of protection to EN 60529	• IP67 • IPx9K steam jet: 150 mm; 10 to 15 l/min; 100 bar; 75 °C
Shock according to IEC 68-2-27[1)]	500 m/s^2
Vibration according to IEC 68-2-6[1)]	200 m/s^2
Torsion and bending load	Not permitted

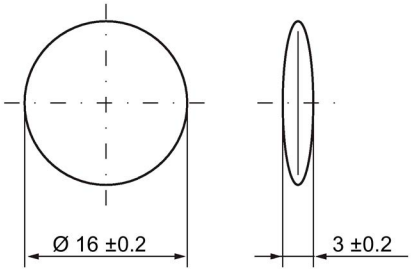
	6GT2600-4AB00
Design, dimensions and weight	
Dimensions (Ø x H)	16 x 3 mm
Weight	3 g
Type of mounting	• Glued [2] • With spacer

[1] The values for shock and vibration are maximum values and must not be applied continuously.

[2] The processing instructions of the adhesive manufacturer must be observed.

7.22.5 Dimension drawings

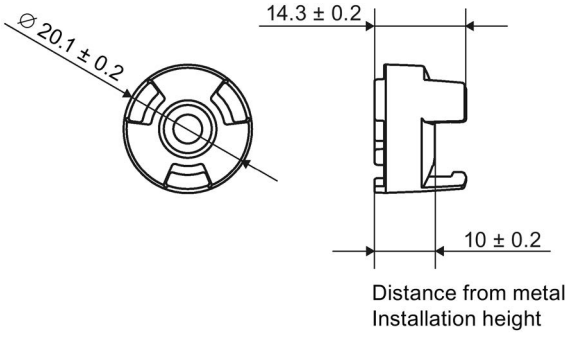
Dimensional drawing of MDS D460



Dimensions in mm

Figure 7-59 Dimensional drawing of MDS D460

Dimensional drawing of spacer



Dimensions in mm

Figure 7-60 Dimensional drawing of spacer

7.23 MDS D521

7.23.1 Characteristics

MDS D521	Characteristics	
	Area of application	The MDS D521 is designed for tool coding according to DIN 69873. It can be used wherever small data carriers and exact positioning are required, e.g. tool identification, workpiece holders. The rugged housing of the MDS D521 means that it can also be used in a harsh industrial environment without problems.
	Memory size	8192 bytes of FRAM user memory
	Write/read range	See section "Field data (Page 39)"
	Mounting on metal	Yes, flush-mounted in metal
	ISO standard	ISO 15693
	Degree of protection	IP67/IPx9K

7.23.2 Ordering data

Table 7- 57 Ordering data for MDS D521

	Article number
MDS D521	6GT2600-5AE00

7.23.3 Mounting on metal

Mounting on metal

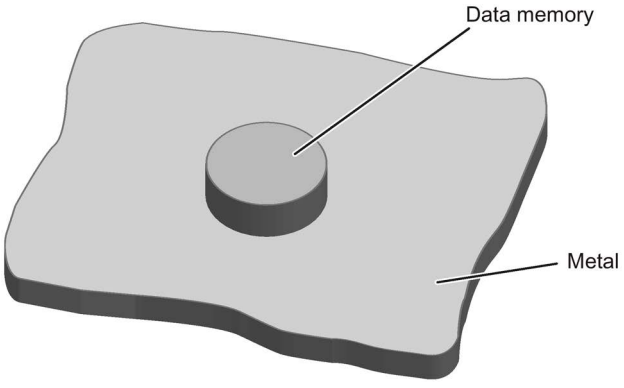


Figure 7-61 Mounting of MDS D521 on metal

Flush-mounting

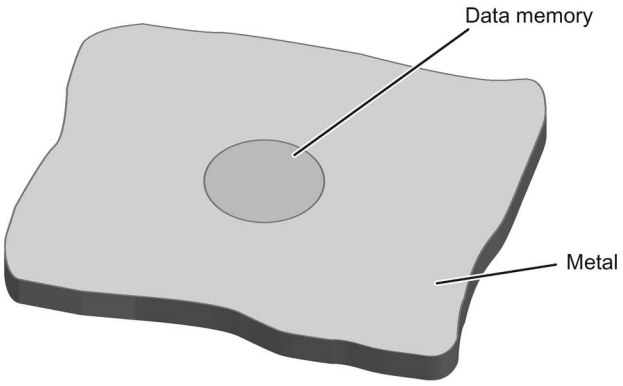


Figure 7-62 Mounting of MDS D521 in metal

Flush-mounting of MDS D521 in metal with tools

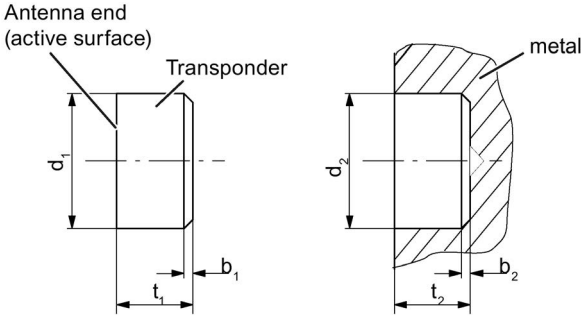


Figure 7-63 Flush-mounting of MDS D521 in metal with tools

b_1	0.5 x 45°	b_2	0.3 x 45° or R 0.3
d_1	10 (-0.04.. -0.13)	d_2	10 (+0.09... 0)
t_1	4.5 (-0... -0.1)	t_2	4.6 (+0.2... 0)

All dimensions in mm

Note

Installation instruction

The MDS should not protrude out of the locating hole; it must be flush with the outside contour.

The mounting instructions of the MDS and the conditions associated with the application (e.g. peripheral speed, temperature, and use of coolant) must be observed during the installation.

Mounting information for adhesion

- Drill installation hole
- The adhesive surfaces must be dry, free from dust, oil, stripping agents and other impurities
- Apply adhesive according to the manufacturer's processing instructions
- Press in MDS D521 using your finger; antenna side to the outside (see figure "Flush-mounting of MDS D521 in metal with tools")
- Remove residues of adhesive
- Allow to cure according to the manufacturer's instructions
- Flush-mounting of MDS D521 in metal with tools

Installation examples

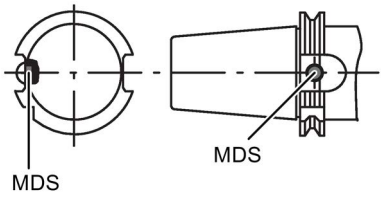


Figure 7-64 Installation example of MDS D521 in a steep cone

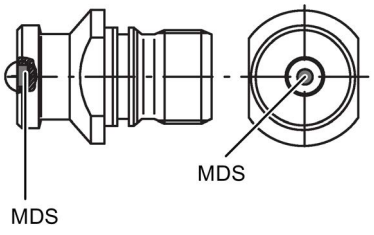


Figure 7-65 Installation example of MDS D521 in a stud bolt

7.23.4 Technical specifications

Table 7- 58 Technical specifications for MDS D521

		6GT2600-5AE00
Product type designation	SIMATIC MDS D521	
Memory		
Memory configuration		
• UID	• 8 bytes	
• User memory	• 8192 bytes FRAM	

	6GT2600-5AE00
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years

Mechanical specifications	
Housing	
• Material	• Epoxy resin
• Color	• Black
Recommended distance to metal	≥ 0 mm
Power supply	Inductive, without battery

Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +100 °C
• during storage	• -40 to +100 °C
Degree of protection to EN 60529	• IP67 • IPx9K steam jet: 150 mm; 10 to 15 l/min; 100 bar; 75 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	1000 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Torsion and bending load	Not permitted

Design, dimensions and weight	
Dimensions (Ø x H)	10 x 4.5 mm
Weight	1 g
Type of mounting	Glued [2)]

1) The values for shock and vibration are maximum values and must not be applied continuously.

2) The processing instructions of the adhesive manufacturer must be observed.

7.23.5 Dimension drawing

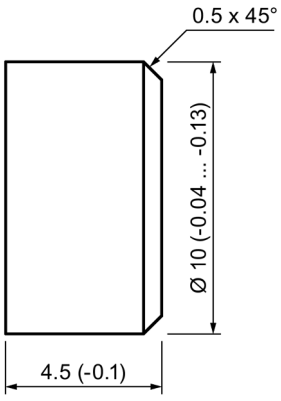


Figure 7-66 Dimension drawing of MDS D521

All dimensions in mm

7.24 MDS D522

7.24.1 Characteristics

MDS D522	Characteristics	
	Area of application	Identification of metallic workpiece holders, work-pieces or containers
	Memory size	8192 bytes of FRAM user memory
	Write/read range	See "Field data (Page 39)."
	Mounting in metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68

7.24.2 Ordering data

Table 7- 59 Ordering data for MDS D522

	Article number
MDS D522 Units in a package: 10 units A mounting aid is included in the scope of supply per packaging unit.	6GT2600-5AF00

7.24.3 Mounting in metal

Flush-mounting

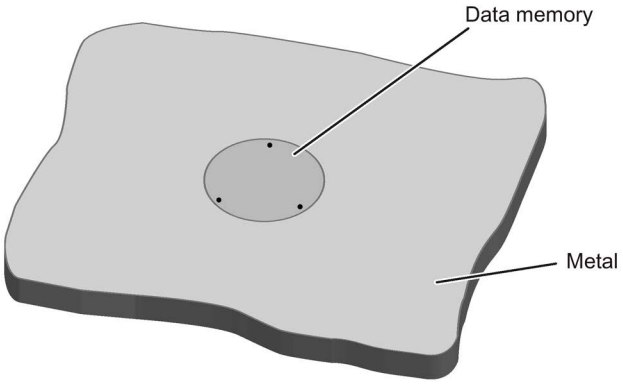


Figure 7-67 Mounting of MDS D522 in metal

Mounting information for screws

You can screw the transponder into a pre-drilled threaded hole using the screw-in aid.

Mounting information for adhesion

- Drill installation hole
- The adhesive surfaces must be dry, free from dust, oil, stripping agents and other impurities
- Apply adhesive according to the manufacturer's processing instructions
- Press in MDS D522 using your fingers; with antenna to the outside
- Remove residues of adhesive
- Allow to cure according to the manufacturer's instructions
- Flush-mounting of MDS D522 in metal with tools

7.24.4 Technical specifications

Table 7- 60 Technical specifications for MDS D522

	6GT2600-5AF00
Product type designation	SIMATIC MDS D522
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 8192 bytes FRAM
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	285 years
Mechanical specifications	
Housing	
• Material	• Plastic PA 6.6 GF; brass nickel plated
• Color	• Black/silver
Recommended distance to metal	≥ 0 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +100 °C
• during storage	• -40 to +100 °C
Degree of protection to EN 60529	IP68 2 hours, 2 bar, +20 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	500 m/s^2
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s^2
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	20 x 6 mm

	6GT2600-5AF00
Weight	13 g
Type of mounting	• Glued [2] • 1 x transponder thread M20 ≤ 1 Nm

[1] The values for shock and vibration are maximum values and must not be applied continuously.

[2] The processing instructions of the adhesive manufacturer must be observed.

7.24.5 Dimension drawing

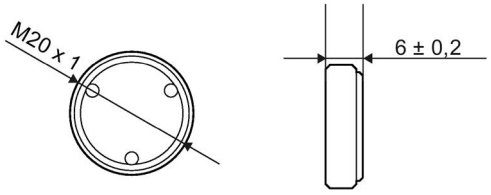


Figure 7-68 Dimensional drawing of MDS D522

All dimensions in mm

7.25 MDS D522 special variant

7.25.1 Characteristics

MDS D522 special version	Characteristics	
	Area of application	Identification of metallic workpiece holders or workpieces
	Memory size	8192 bytes of FRAM user memory
	Write/read range	See "Field data (Page 39)."
	Mounting in metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68

7.25.2 Ordering data

Table 7- 61 MDS D522 special version

	Article number
MDS D522 special version Units in a package: 10 units A mounting aid is included in the scope of supply per packaging unit.	6GT2600-5AF00-0AX0

7.25.3 Mounting in metal

Flush-mounting

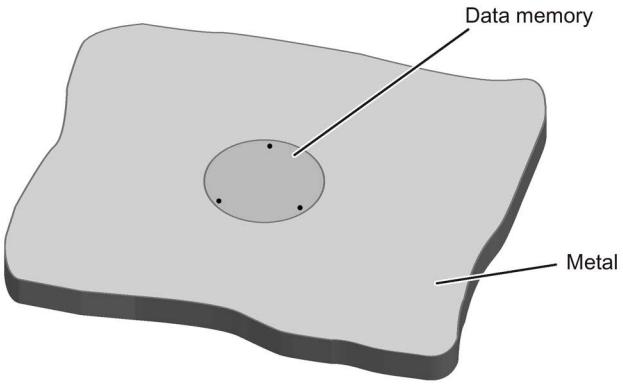


Figure 7-69 Flush installation of the MDS D522 special version in metal without clearance

7.25.4 Installation instructions

The transponder MDS D522 special version is designed to be mounted once.

Note the following instructions when mounting the MDS D522 in a workpiece to avoid damaging the transponder:

- Prepare the workpiece according to the following drawing.
- Using the accompanying mounting aid, press the transponder with uniform and evenly distributed pressure into the drilled hole until the transponder locks in place. Make sure that the transponder does not become tilted.

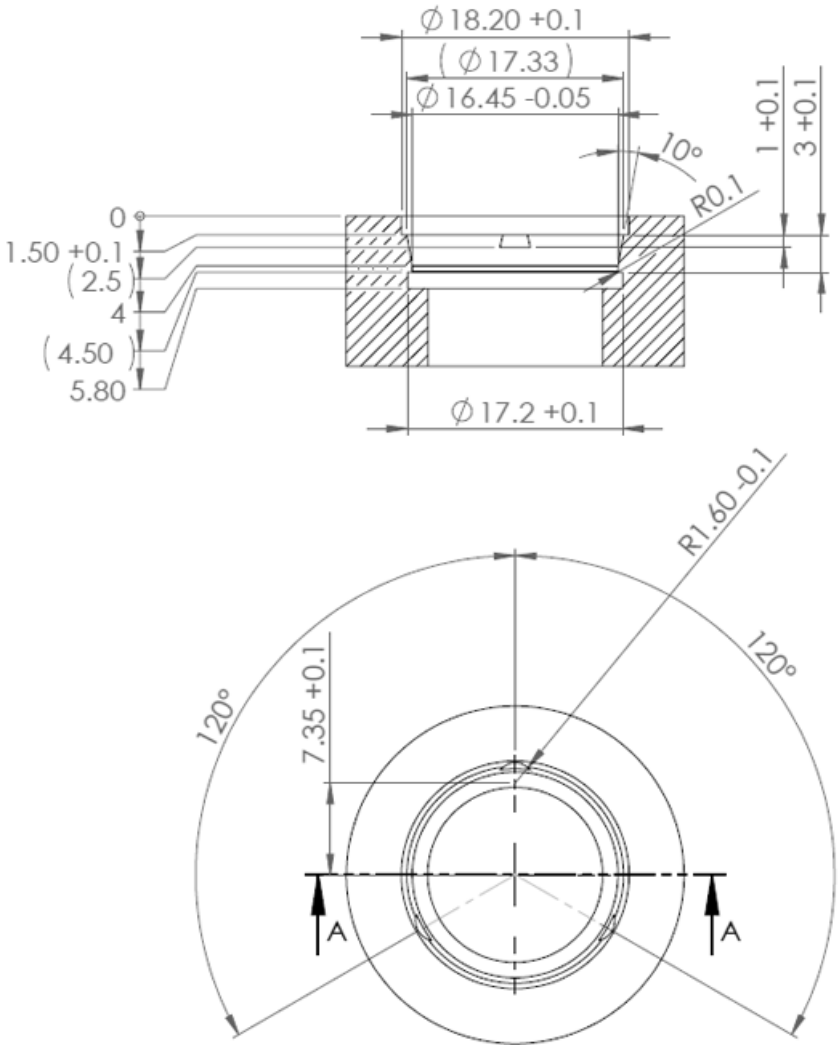


Figure 7-70 Dimension drawing: Workpiece drill hole for mounting the MDS D522 special version

7.25.5 Technical specifications

Table 7- 62 Technical data of MDS D522 special version

	6GT2600-5AF00-0AX0
Product type designation	SIMATIC MDS D522 special version
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 8192 bytes FRAM
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• Plastic PA 6.6 GF
• Color	• Black
Recommended distance to metal	≥ 0 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +100 °C
• during storage	• -40 to +100 °C
Degree of protection to EN 60529	IP68 2 hours, 2 bar, +20 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	500 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	18 (+0.1) × 5.2 mm
Weight	Approx. 1.2 g
Type of mounting	Clipping in once (with accompanying tool)

[1)] The values for shock and vibration are maximum values and must not be applied continuously.

7.25.6 Dimensional drawing

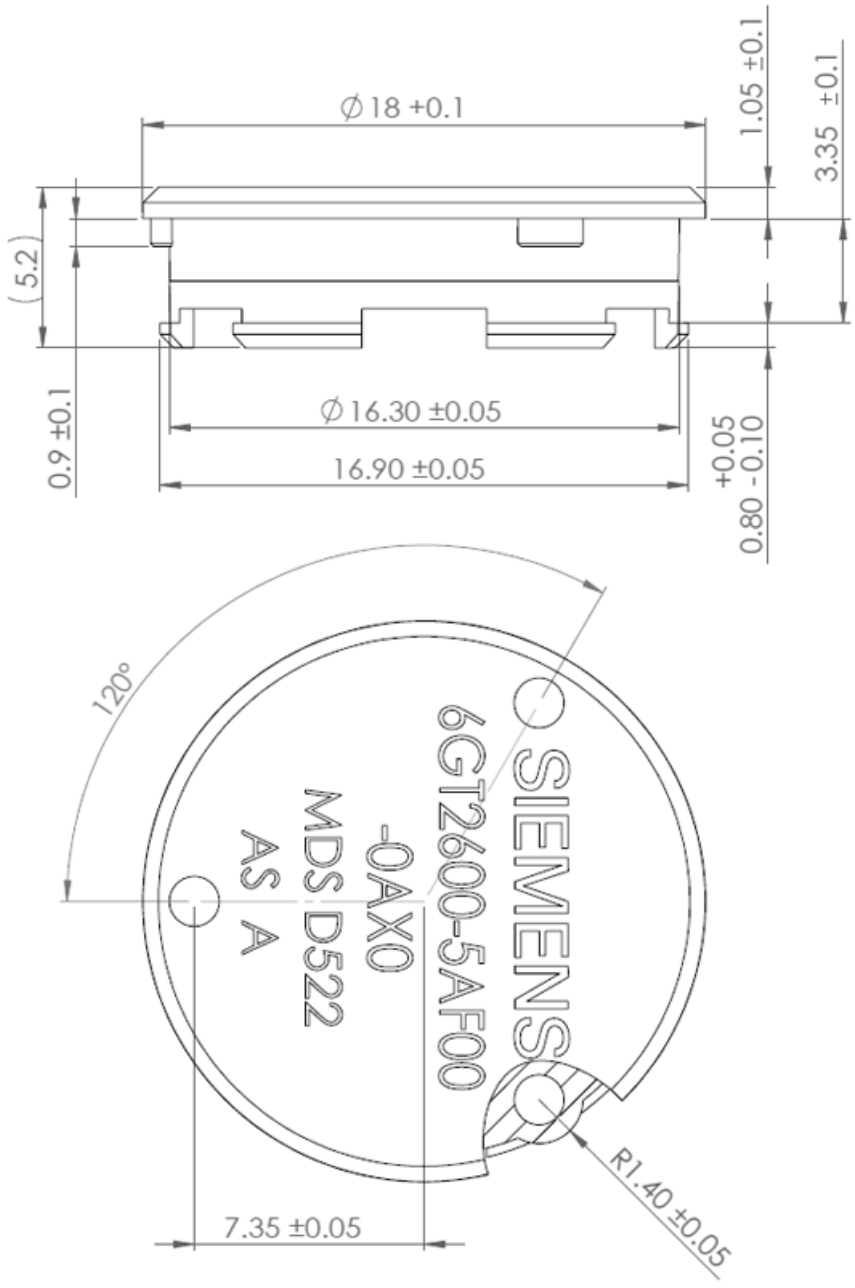


Figure 7-71 Dimension drawing MDS D522 special version

All dimensions in mm

7.26 MDS D524

7.26.1 Characteristics

MDS D524	Characteristics	
	Area of application	Production and distribution logistics as well as in assembly and production lines, can also be used in a harsh industrial environment without problem
	Memory size	8192 bytes of FRAM user memory
	Write/read range	See section "Field data (Page 39)."
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP67; IPx9K

7.26.2 Ordering data

Table 7- 63 Ordering data for MDS D524

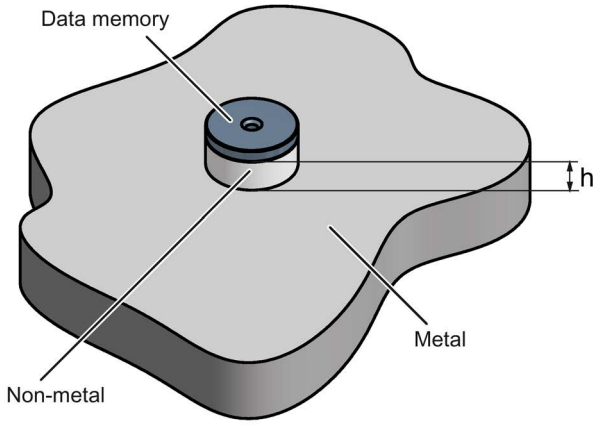
	Article number
MDS D524	6GT2600-5AC00

Table 7- 64 Ordering data of MDS D524 accessories

	Article number
Spacer	6GT2690-0AK00

7.26.3 Mounting on metal

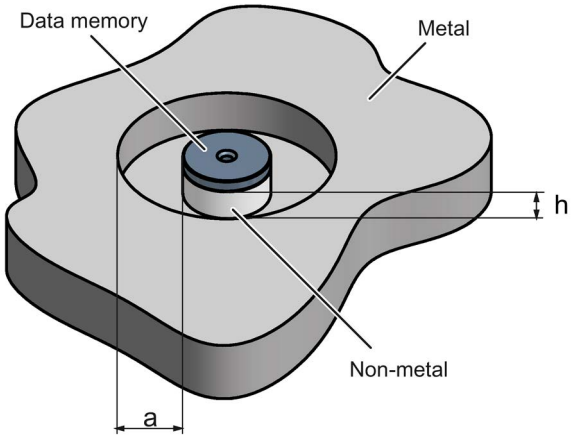
Mounting on metal



h ≥ 15 mm

Figure 7-72 Mounting the MDS D124/D324/D424/D524/E624 and RF320T on metal with spacer

Flush-mounting



h ≥ 15 mm

a ≥ 25 mm

Figure 7-73 Flush-mounting of the MDS D124/D324/D424/D524/E624 and RF320T in metal with spacer

Note

Going below the distances

If the distances (a and h) are not observed, a reduction of the field data results. It is possible to mount the MDS with metal screws (M3 countersunk head screws). This has no tangible impact on the range.

7.26.4 Technical specifications

Table 7- 65 Technical specifications for MDS D524

	6GT2600-5AC00
Product type designation	SIMATIC MDS D524
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 8192 bytes FRAM
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• Epoxy resin
• Color	• Black
Recommended distance to metal	≥ 15 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +100 °C
• during storage	• -40 to +100 °C

	6GT2600-5AC00
Degree of protection to EN 60529	• IP67 • IPx9K
Shock according to EN 60721-3-7 Class 7M3[1)]	1000 m/s²
Vibration according to EN 60721-3-7 Class 7M3[1)]	200 m/s²
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	27 x 4 mm
Weight	5 g
Type of mounting	• Glued [2)] • 1x screw M3 [3)] ≤ 1 Nm

1) The values for shock and vibration are maximum values and must not be applied continuously.

2) The processing instructions of the adhesive manufacturer must be observed.

3) To prevent it loosening during operation, secure the screw with screw-locking varnish.

7.26.5 Dimension drawing

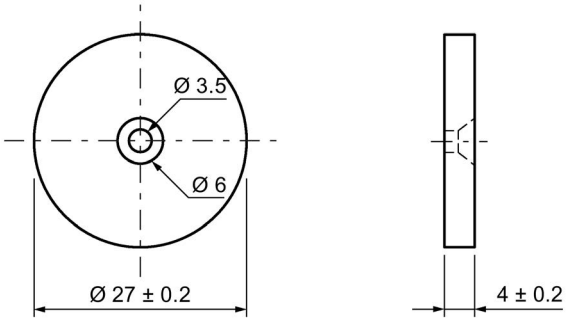


Figure 7-74 Dimensional drawing of MDS D524

All dimensions in mm

7.27 MDS D526

7.27.1 Characteristics

MDS D526	Characteristics	
	Area of application	Compact and rugged ISO transponder; suitable for identification of transport units in production-related logistics; can also be deployed in harsh conditions
	Memory size	8192 bytes of FRAM user memory
	Write/read range	See section "Field data (Page 39)."
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP68

7.27.2 Ordering data

Table 7- 66 Ordering data for MDS D526

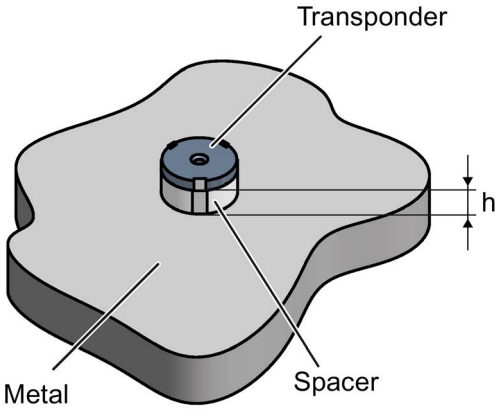
	Article number
MDS D526	6GT2600-5AH00

Table 7- 67 Ordering data for MDS D526 accessories

	Article number
Spacer	6GT2690-0AL00

7.27.3 Mounting on metal

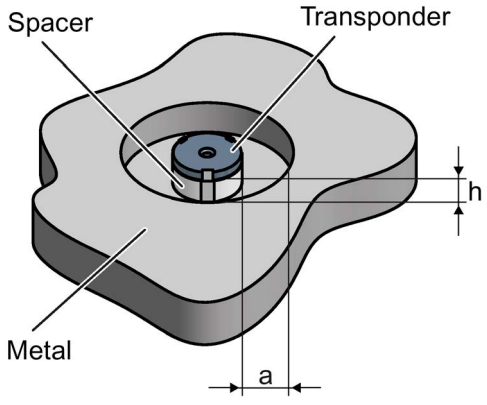
Mounting on metal



h ≥ 25 mm

Figure 7-75 Mounting the MDS D126 / D426 / D526 on metal with spacer

Flush-mounted in metal



h ≥ 25 mm

a ≥ 50 mm

Figure 7-76 Flush installation of the MDS D126 / D426 / D526 in metal with spacer

7.27.4 Technical specifications

Table 7- 68 Technical specifications for MDS D526

	6GT2600-5AH00
Product type designation	SIMATIC MDS D526
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 8192 bytes FRAM
• OTP	• 32 bytes
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• Plastic PA 6.6 GF
• Color	• Black
Recommended distance to metal	≥ 25 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +100 °C
• during storage	• -40 to +100 °C
Degree of protection to EN 60529	IP68 2 hours, 2 bar, +20 °C
Shock according to IEC 68-2-27[1)]	500 m/s²
Vibration according to IEC 68-2-6[1)]	200 m/s²
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	50 x 3.6 mm

	6GT2600-5AH00
Weight	13 g
Type of mounting	1 x M4 screw [2] ≤ 1 Nm

[1] The values for shock and vibration are maximum values and must not be applied continuously.

[2]) To prevent it loosening during operation, secure the screw with screw locking varnish.

7.27.5 Dimension drawing

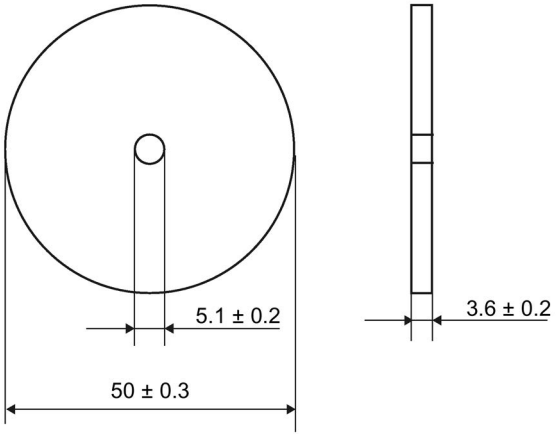


Figure 7-77 Dimensional drawing of MDS D526

All dimensions in mm

7.28 MDS D528

7.28.1 Characteristics

MDS D528	Characteristics	
	Area of application	Compact and rugged ISO transponder; suitable for screw mounting Use in assembly and production lines in the powertrain sector The rugged housing of the MDS D528 means that it can also be used in extreme environmental conditions without problems.
	Memory size	8192 bytes of FRAM user memory
	Write/read range	See section "Field data (Page 39)"
	Mounting on metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

7.28.2 Ordering data

Table 7- 69 Ordering data for MDS D528

	Article number
MDS D528	6GT2600-5AK00

7.28.3 Application example

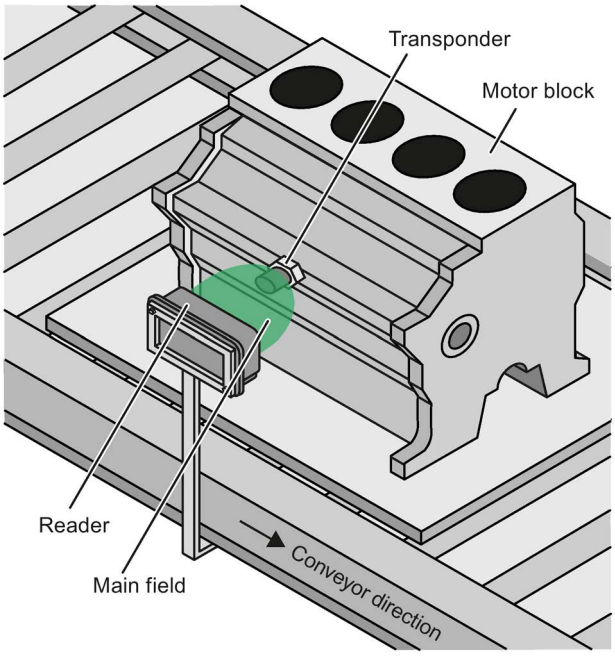


Figure 7-78 Application example

7.28.4 Technical specifications

Table 7- 70 Technical specifications for MDS D528

	6GT2600-5AK00
Product type designation	SIMATIC MDS D528
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 8192 bytes FRAM
• OTP	• 32 bytes
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data (Page 39)"
MTBF (Mean Time Between Failures)	228 years

	6GT2600-5AK00
Mechanical specifications	
Housing	
• Material	• Plastic PA 6.6 GF
• Color	• Black
Recommended distance to metal	≥ 0 mm
Power supply	Inductive, without battery
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +125 °C
• during storage	• -40 to +125 °C
Degree of protection to EN 60529	• IP68 2 hours, 2 bar, +20 °C • IPx9K steam jet: 150 mm; 10 to 15 l/min; 100 bar; 75 °C
Shock according to IEC 68-2-27[1)]	500 m/s²
Vibration according to IEC 68-2-6[1)]	200 m/s²
Torsion and bending load	Not permitted
Design, dimensions and weight	
Dimensions (Ø x H)	24 x 20 mm (without set screw)
Weight	35 g
Type of mounting	1x transponder set screw M8 SW 22; ≤ 8 Nm

[1)] The values for shock and vibration are maximum values and must not be applied continuously.

7.28.5 Dimension drawing

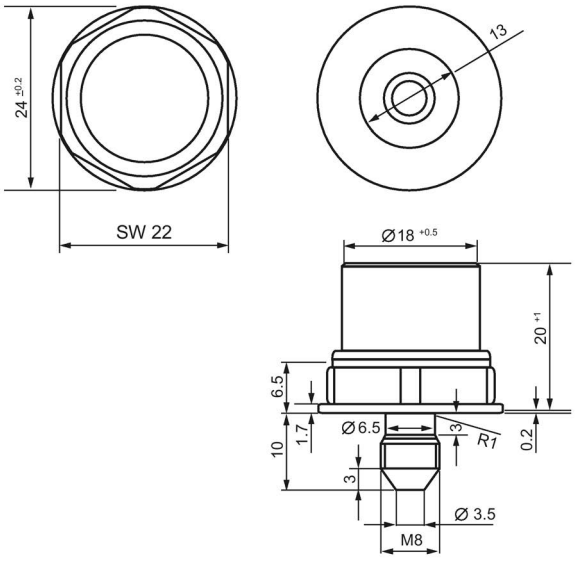


Figure 7-79 Dimensional drawing of MDS D528

All dimensions in mm