8.8 MDS D160

8.8.1 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 of ISO transponders (MDS D) (Page 56).
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

8.8.2 Information for RF300 compatibility

Note

Compatibility with SIMATIC RF300 depending on MLFB number

Only the MDS D160 with MLFB 6GT2600-0AB10 is compatible with SIMATIC RF300.

8.8.3 Ordering data

Table 8- 18 Ordering data for MDS D160

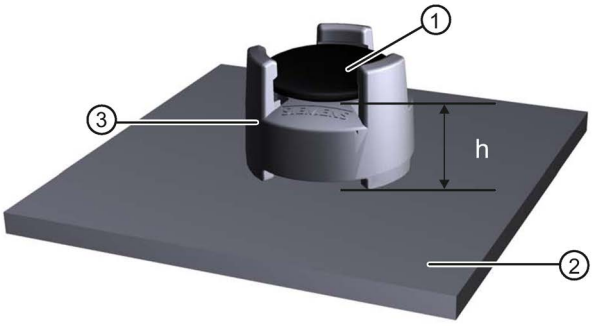
	Article number
MDS D160	6GT2600-0AB10

Table 8- 19 Ordering data for MDS D160 accessories

	Article number
Spacer	6GT2690-0AG00

8.8.4 Mounting on metal

Mounting on metal



① Transponder
② Metal carrier
③ Spacer
h ≥ 10 mm

Figure 8-17 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!

8.8.5 Technical specifications

Table 8- 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
• 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 of ISO transponders (MDS D) (Page 56)"
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

	6GT2600-0AB10
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
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.

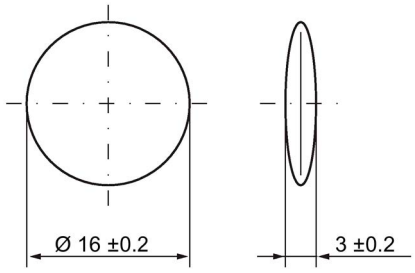
Note

Regeneration time between washing cycles

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

8.8.6 Dimension drawings

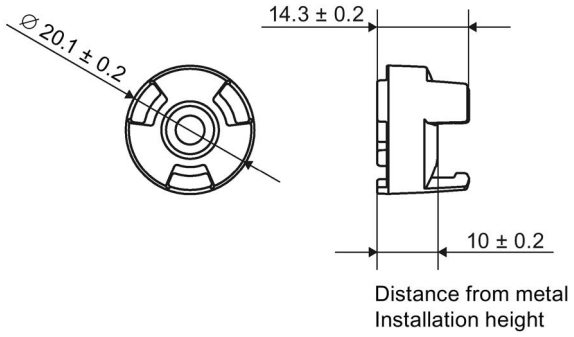
Dimensional drawing of MDS D160



Dimensions in mm

Figure 8-18 Dimensional drawing of MDS D160

Dimensional drawing of spacer



Dimensions in mm

Figure 8-19 Dimensional drawing of spacer

8.9 MDS D165

8.9.1 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 of ISO transponders (MDS D) (Page 56).
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP65

8.9.2 Ordering data

Table 8- 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)

8.9.3 Technical data

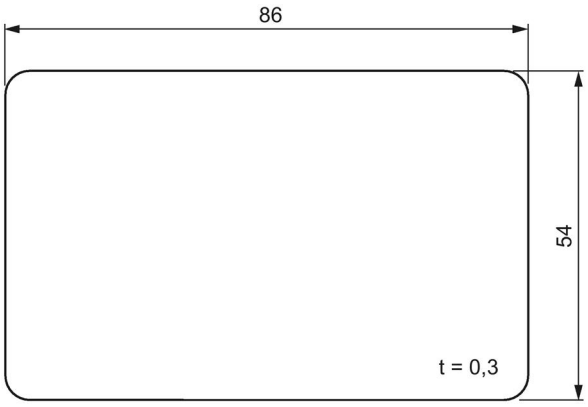
Table 8- 22 Technical specifications for MDS D165

	6GT2600-1AB00-0AX0
Product type designation	SIMATIC MDS D165
Memory	
Memory configuration	
• UID	• 8 bytes

			6GT2600-1AB00-0AX0
• 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 of ISO transponders (MDS D) (Page 56)"		
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		
• 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.

8.9.4 Dimension drawing



Dimensions in mm

Figure 8-20 Dimension drawing of MDS D165

8.10 MDS D200

8.10.1 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 of ISO transponders (MDS D) (Page 56).
	Mounting on metal	Yes, with spacer
	ISO standard	15693 with Tag-it HFI technology
	Degree of protection	IP67

8.10.2 Ordering data

Table 8- 23 Ordering data for MDS D200

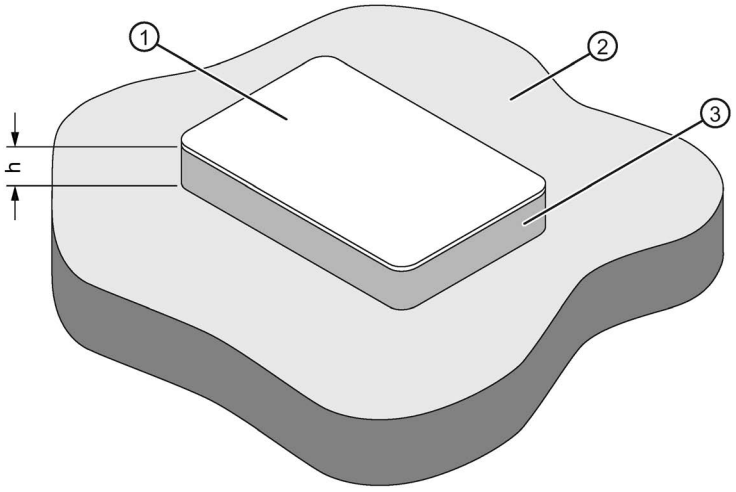
	Article number
MDS D200 (special version ISO-CARD)	6GT2600-1AD00-0AX0

Table 8- 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

8.10.3 Mounting on metal

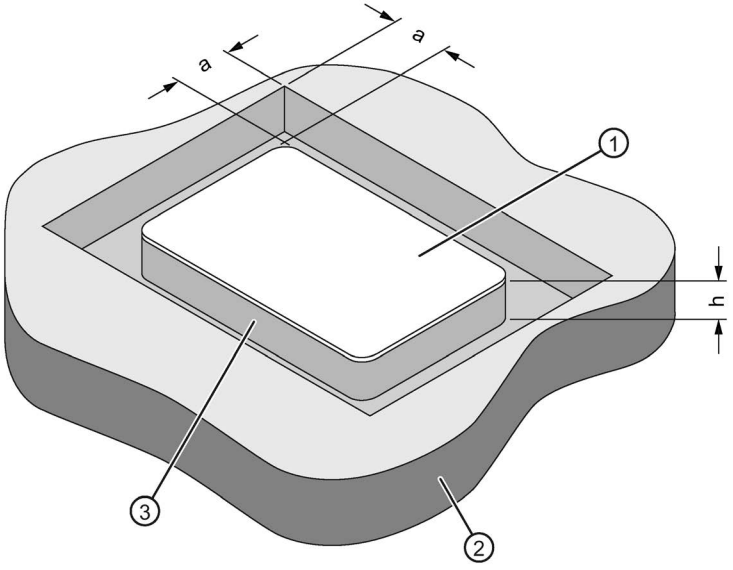
Mounting on metal



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

Figure 8-21 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 8-22 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.

8.10.4 Technical data

Table 8- 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 of ISO transponders (MDS D) (Page 56)"
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

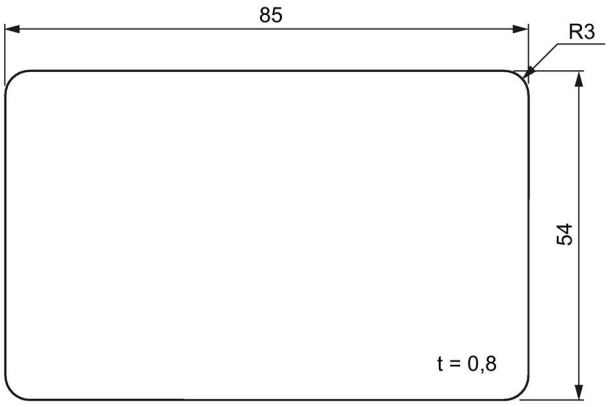
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -20 to +60 °C
• outside the read/write field	• -20 to +60 °C
• during storage	• -20 to +60 °C
Degree of protection to EN 60529	IP67
Shock-resistant to EN 60721-3-7 class 7M3	ISO 10373 / ISO 7810 [1]
Vibration-resistant to 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.

8.10.5 Dimension drawing



Dimensions in mm

Figure 8-23 Dimension drawing of MDS D200

8.11 MDS D261

8.11.1 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 of ISO transponders (MDS D) (Page 56).
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP65

8.11.2 Ordering data

Table 8- 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)

8.11.3 Technical data

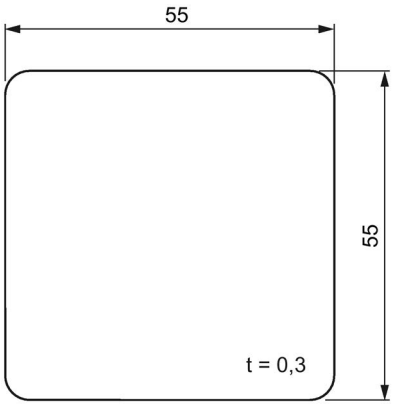
Table 8- 27 Technical specifications of MDS D261

	6GT2600-1AA01-0AX0
Product type designation	SIMATIC MDS D261
Memory	
Memory configuration	
• UID	• 8 bytes

		6GT2600-1AA01-0AX0
• 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 of ISO transponders (MDS D) (Page 56)"	
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	
• 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.

8.11.4 Dimension drawing



Dimensions in mm

Figure 8-24 Dimension drawing of MDS D261

8.12 MDS D324

8.12.1 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 of ISO transponders (MDS D) (Page 56)."
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP67; IPx9K

8.12.2 Ordering data

Table 8- 28 Ordering data MDS D324

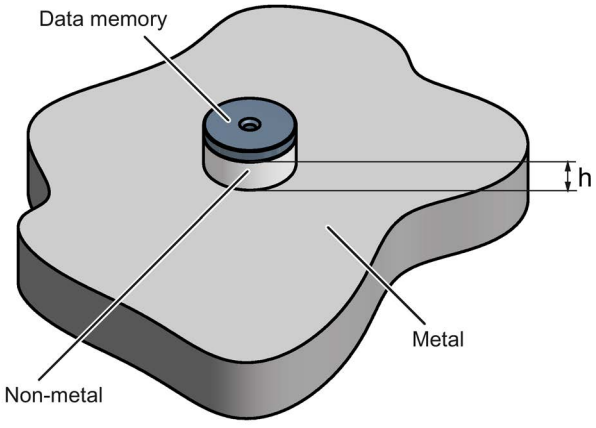
	Article number
MDS D324	6GT2600-3AC00

Table 8- 29 Ordering data MDS D324 accessories

	Article number
Spacer	6GT2690-0AK00

8.12.3 Mounting on metal

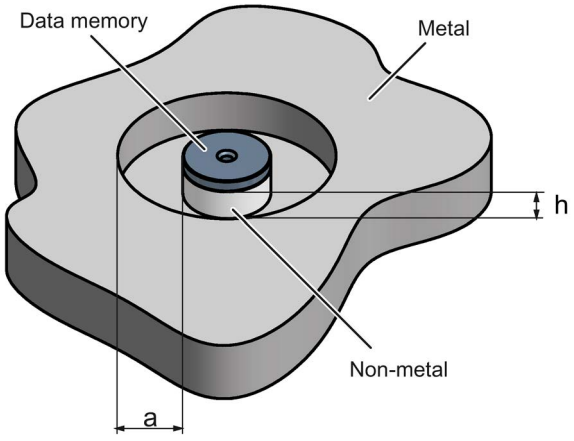
Mounting on metal



h ≥ 15 mm

Figure 8-25 Mounting the MDS D124/D324/D424/D524/E624 and RF320T on metal with spacer

Flush-mounting



h ≥ 15 mm

a ≥ 25 mm

Figure 8-26 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.

8.12.4 Technical specifications

Table 8- 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

	6GT2600-3AC00
Write/read distance (S_g)	Dependent on the reader used, see section "Field data of ISO transponders (MDS D) (Page 56)"
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
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.

8.12.5 Dimension drawing

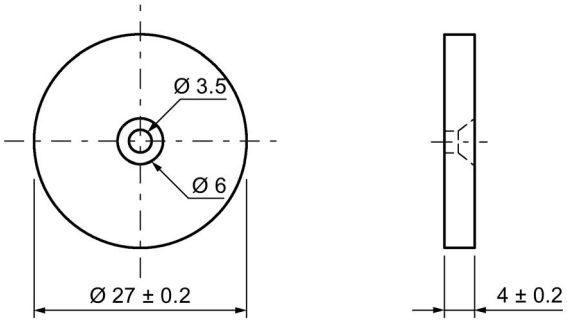


Figure 8-27 Dimension drawing of MDS D324

All dimensions in mm

8.13 MDS D339

8.13.1 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 of ISO transponders (MDS D) (Page 56).
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

8.13.2 Ordering data

Table 8- 31 Ordering data for MDS D339

	Article number
MDS D339	6GT2600-3AA10

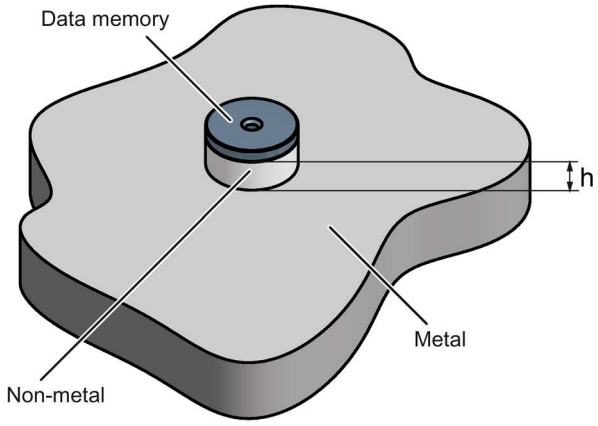
Table 8- 32 Ordering data for MDS D339 accessories

	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

8.13.3 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 "Ordering data (Page 326)").

Mounting on metal

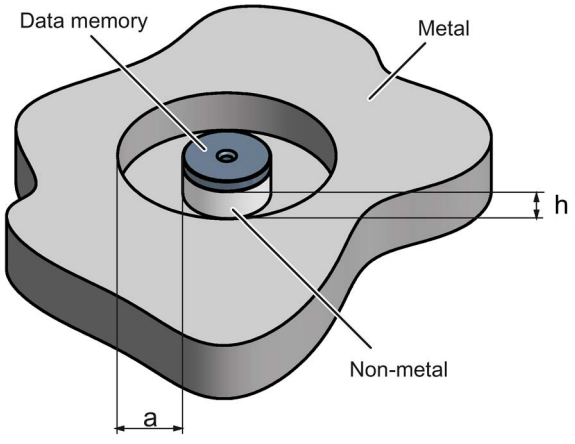


h ≥ 30 mm

Figure 8-28 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 8-29 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.

8.13.4 Cleaning the mobile data memory

Note

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 cleaning agents listed in the section "Chemical resistance of the MDS".

8.13.5 Technical specifications

Table 8- 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 of ISO transponders (MDS D) (Page 56)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• PPS

	6GT2600-3AA10
• 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
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).

8.13.6 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

8.13.7 Dimensional drawing

MDS D339

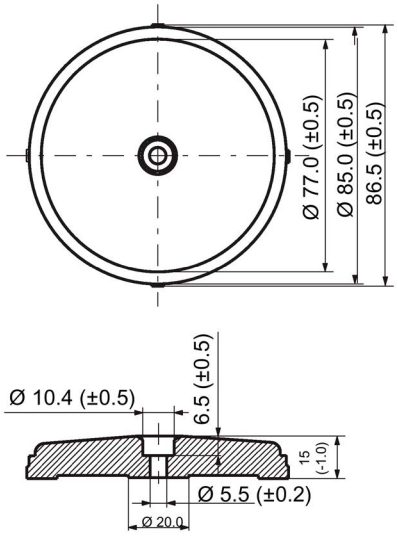


Figure 8-30 Dimension drawing of the MDS D339

Dimensions in mm

8.14 MDS D400

8.14.1 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 of ISO transponders (MDS D) (Page 56)"
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP67

8.14.2 Ordering data

Table 8- 34 Ordering data of MDS D400

	Article number
MDS D400	6GT2600-4AD00

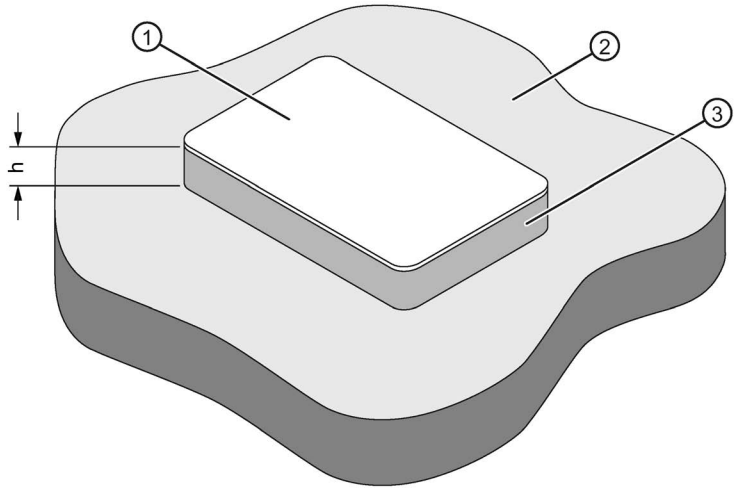
Table 8- 35 Ordering data of MDS D400 accessories

	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

8.14.3 Mounting on metal

Mounting on metal

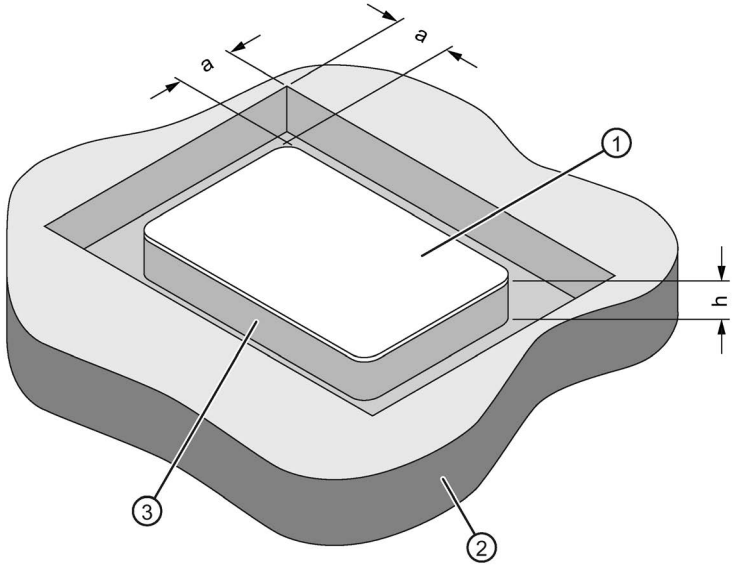
It is possible to mount the MDS D400 on metal.



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

Figure 8-31 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 8-32 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.

8.14.4 Technical specifications

Table 8- 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 of ISO transponders (MDS D) (Page 56)"
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.

8.14.5 Dimension drawing

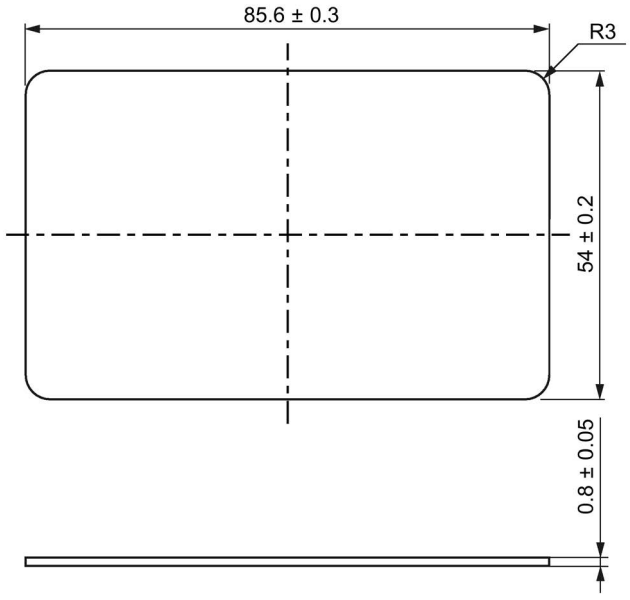


Figure 8-33 Dimensional drawing MDS D400 (dimensions in mm)

8.15 MDS D421

8.15.1 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 of ISO transponders (MDS D) (Page 56)"
	Mounting on metal	Yes, flush-mounted in metal
	ISO standard	ISO 15693
	Degree of protection	IP67/IPx9K

8.15.2 Ordering data

Table 8- 37 Ordering data of MDS D421

	Article number
MDS D421	6GT2600-4AE00

8.15.3 Mounting on metal

Mounting on metal

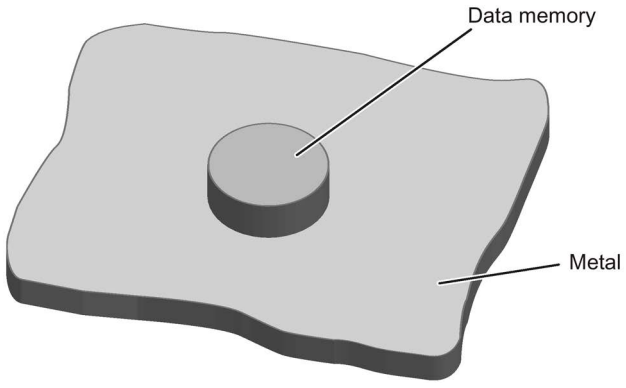


Figure 8-34 Mounting of MDS D421/D521/E623 on metal

Flush-mounting

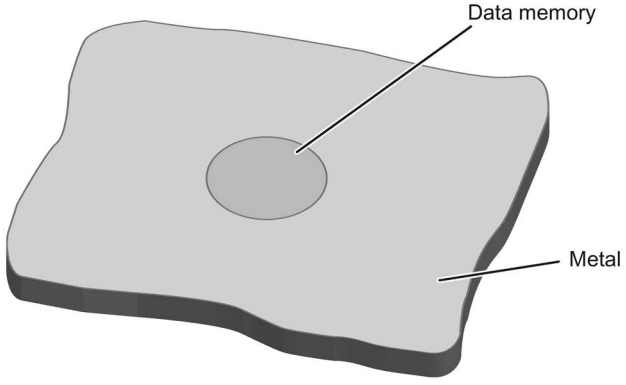


Figure 8-35 Mounting of MDS D421/D521/E623 in metal

Flush-mounting of the MDS in metal with tools

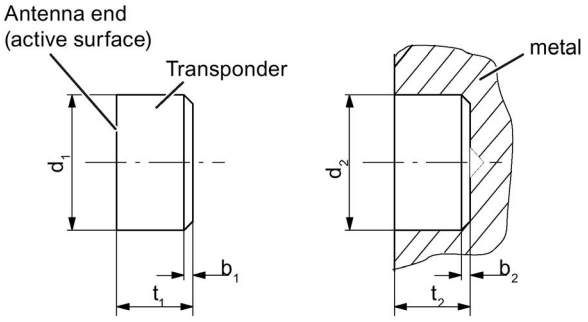


Figure 8-36 Flush-mounting of MDS D421/D521/E623 in metal with tools

b_1	0.5 x 45°	b_2	0.3 x 45° or R0.3
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 transponder using your fingers; with antenna side to the outside (see figure above)
- Remove residues of adhesive
- Allow to cure according to the manufacturer's instructions
- Flush-mounting of the transponder in metal with tools

Installation examples

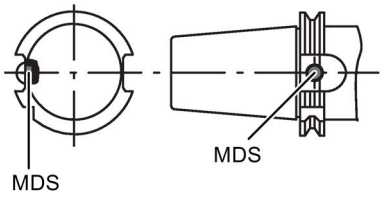


Figure 8-37 Installation example of MDS D421/D521/E623 in a steep cone

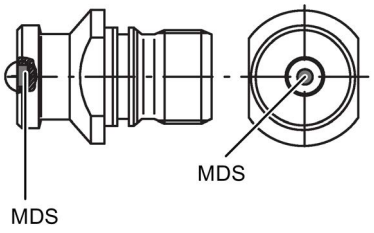


Figure 8-38 Installation example of MDS D421/D521/E623 in a stud bolt

8.15.4 Technical specifications

Table 8- 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 of ISO transponders (MDS D) (Page 56)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• Epoxy resin
• Color	• Black

	6GT2600-4AE00
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	• 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.

8.15.5 Dimension drawing

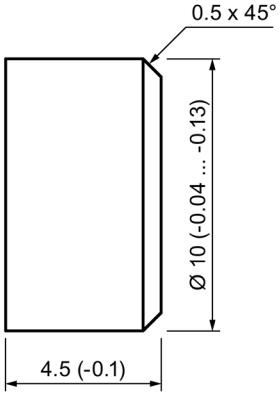


Figure 8-39 Dimension drawing of MDS D421

All dimensions in mm

8.16 MDS D422

8.16.1 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 of ISO transponders (MDS D) (Page 56).
	Mounting on metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68

8.16.2 Ordering data

Table 8- 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

8.16.3 Mounting in metal

Flush-mounting

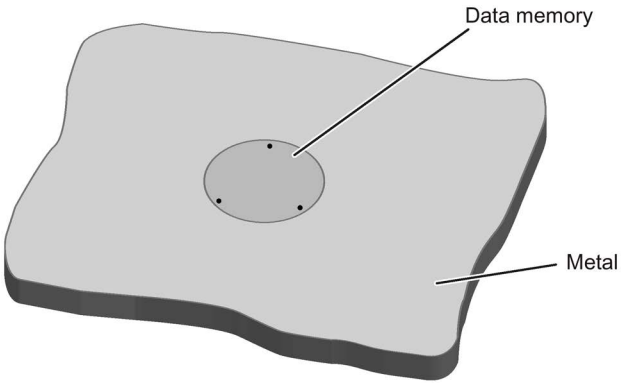


Figure 8-40 Mounting of MDS D422 in metal

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

8.16.4 Technical specifications

Table 8- 40 Technical specifications for the MDS D422

		6GT2600-4AF00
Product type designation	SIMATIC MDS D422	
Memory		
Memory configuration		

	6GT2600-4AF00
• 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 of ISO transponders (MDS D) (Page 56)"
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

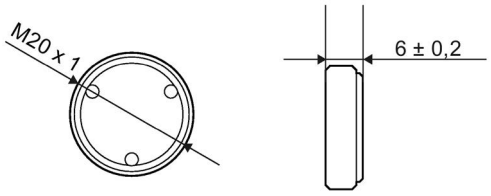
Permitted ambient conditions	
Ambient temperature	
• during write/read access	• -25 to +85 °C
• outside the read/write field	• -40 to +100 °C
• during storage	• -40 to +100 °C
Degree of protection to EN 60529	IP68 2 hours, 2 bar, +20 °C
Shock according to EN 60721-3-7 Class 7M3[1)]	500 m/s²
Vibration 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.

8.16.5 Dimension drawing



Dimensions in mm

Figure 8-41 Dimensional drawing of MDS D422

8.17 MDS D423

8.17.1 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 of ISO transponders (MDS D) (Page 56)"
	Mounting on metal	Yes, flush-mounted in metal
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

8.17.2 Ordering data

Table 8- 41 Ordering data of MDS D423

	Article number
MDS D423	6GT2600-4AA00

Table 8- 42 Ordering data of MDS D423 accessories

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

8.17.3 Mounting on metal

Mounting on metal

Direct mounting of the MDS D423 on metal is possible.

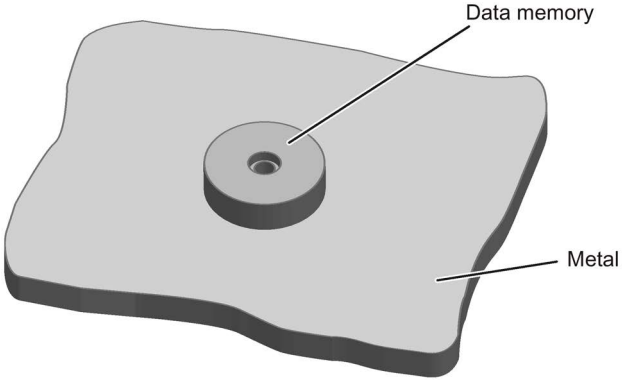
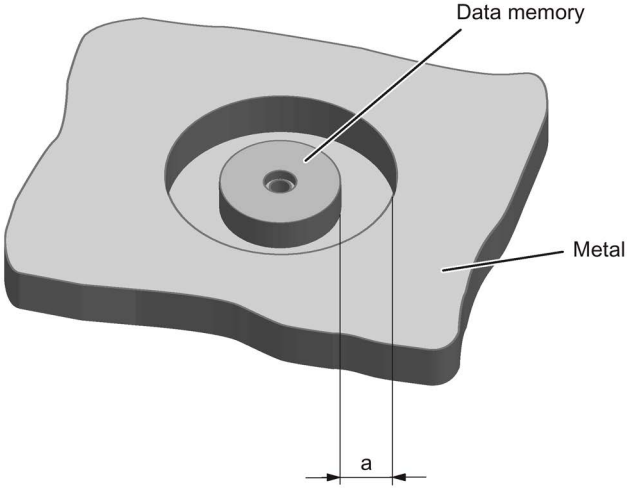


Figure 8-42 Mounting the MDS D423 on metal

Flush-mounted in metal

It is possible to mount the MDS D423 in metal.



a ≥ 10 mm

Figure 8-43 Flush-mounting of the MDS D423 in metal with 10 mm clearance

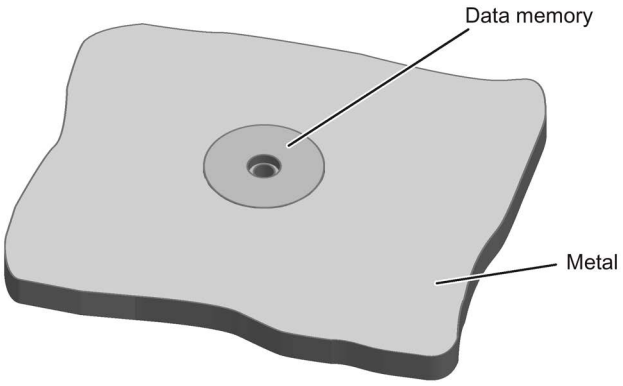


Figure 8-44 Flush-mounting of the MDS D423 in metal without clearance

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.

8.17.4 Technical specifications

Table 8- 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 of ISO transponders (MDS D) (Page 56)"
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 °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 • 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

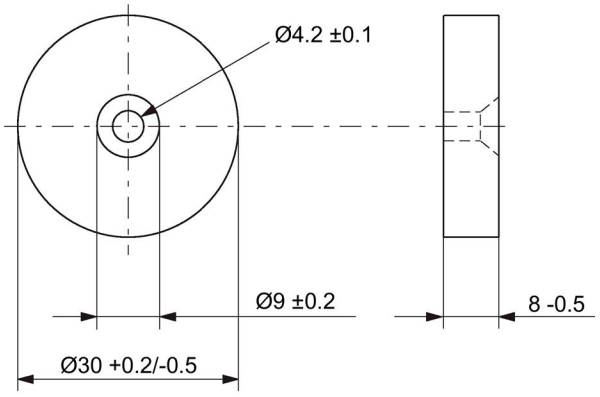
Design, dimensions and weight

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.

8.17.5 Dimensional drawing



Dimensions in mm

Figure 8-45 Dimension drawing for MDS D423

8.18 MDS D424

8.18.1 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 of ISO transponders (MDS D) (Page 56)."
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP67; IPx9K

8.18.2 Ordering data

Table 8- 44 Ordering data of MDS D424

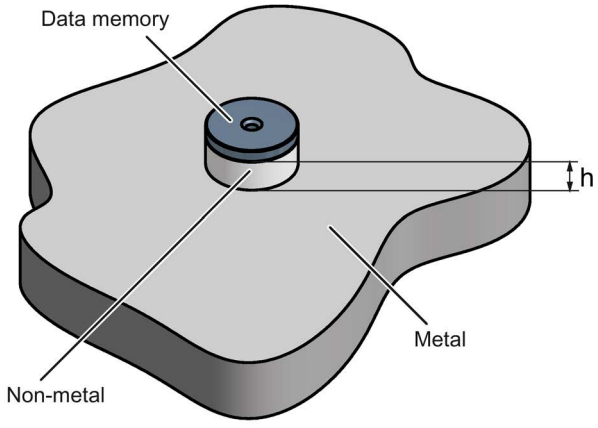
	Article number
MDS D424	6GT2600-4AC00

Table 8- 45 Ordering data of MDS D424 accessories

	Article number
Spacer	6GT2690-0AK00

8.18.3 Mounting on metal

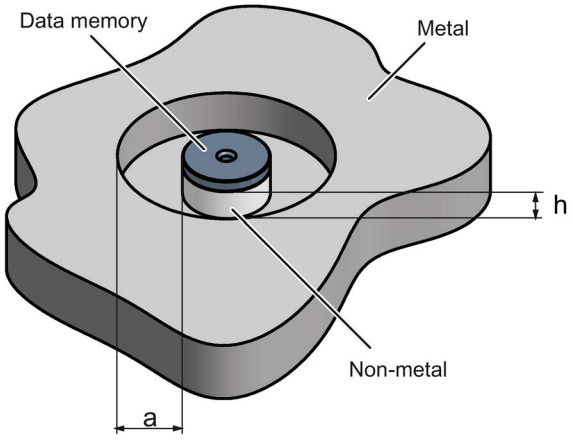
Mounting on metal



h ≥ 15 mm

Figure 8-46 Mounting the MDS D124/D324/D424/D524/E624 and RF320T on metal with spacer

Flush-mounting



h ≥ 15 mm

a ≥ 25 mm

Figure 8-47 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.

8.18.4 Technical specifications

Table 8- 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 of ISO transponders (MDS D) (Page 56)"
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.

8.18.5 Dimension drawing

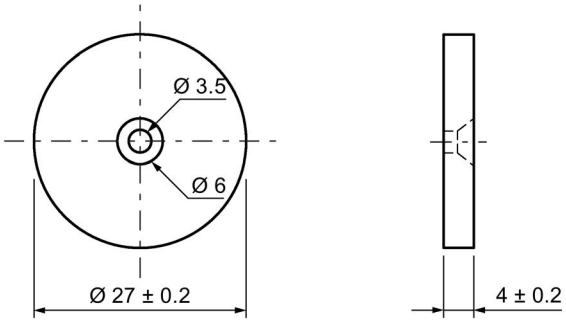


Figure 8-48 Dimension drawing of MDS D424

All dimensions in mm

8.19 MDS D425

8.19.1 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 of ISO transponders (MDS D) (Page 56)".
	Mounting on metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

8.19.2 Ordering data

Table 8- 47 Ordering data of MDS D425

	Article number
MDS D425	6GT2600-4AG00

8.19.3 Application example

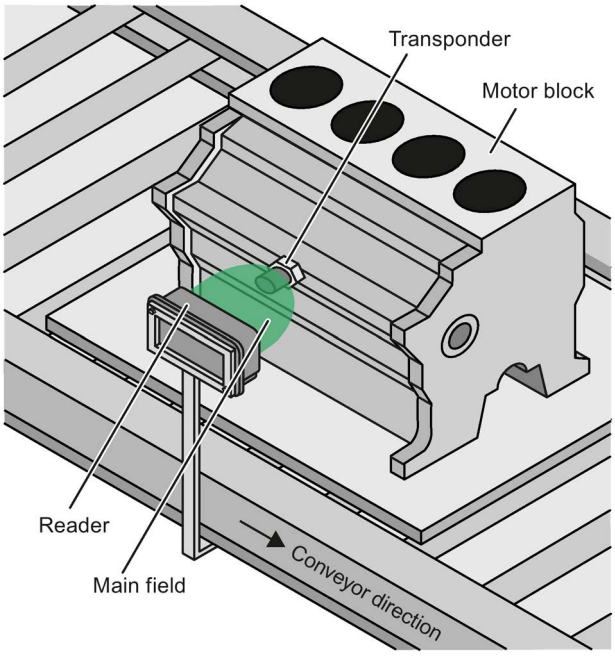


Figure 8-49 Application example

8.19.4 Technical specifications

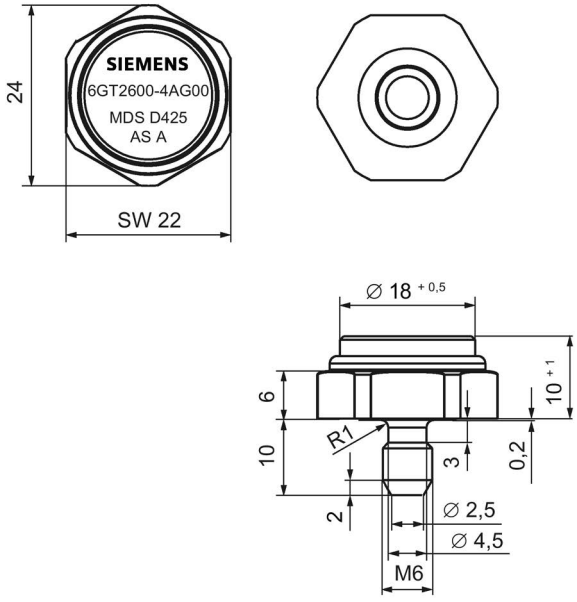
Table 8- 48 Technical specifications for the MDS D425

	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 of ISO transponders (MDS D) (Page 56)"
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/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 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.

8.19.5 Dimension drawing



Dimensions in mm

Figure 8-50 Dimension drawing of MDS D425

8.20 MDS D426

8.20.1 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 of ISO transponders (MDS D) (Page 56)
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP68

8.20.2 Ordering data

Table 8- 49 Ordering data of MDS D426

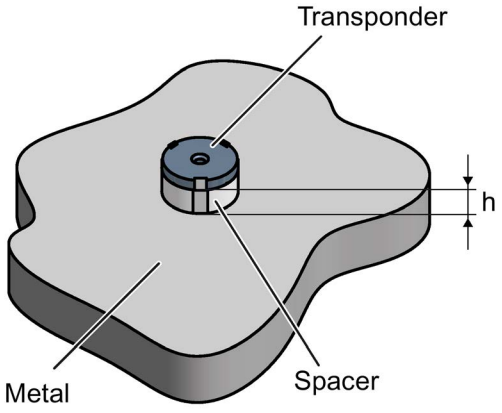
	Article number
MDS D426	6GT2600-4AH00

Table 8- 50 Ordering data of MDS D426 accessories

	Article number
Spacer	6GT2690-0AL00

8.20.3 Mounting on metal

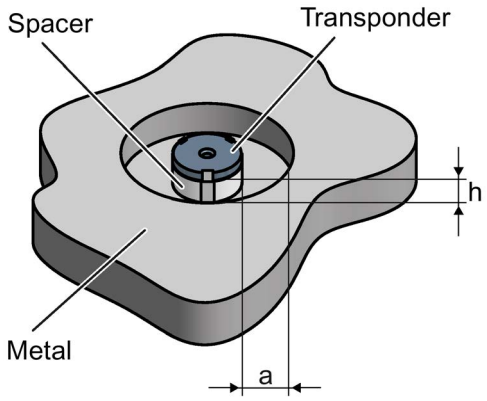
Mounting on metal



h ≥ 25 mm

Figure 8-51 Mounting the MDS D126 / D426 / D526 on metal with spacer

Flush-mounted in metal



h ≥ 25 mm

a ≥ 50 mm

Figure 8-52 Flush installation of the MDS D126 / D426 / D526 in metal with spacer

8.20.4 Technical specifications

Table 8- 51 Technical specifications for the MDS D426

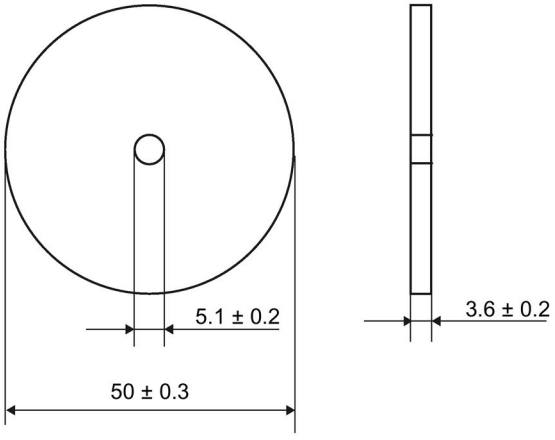
	6GT2600-4AH00
Product type designation	SIMATIC MDS D426
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 2000 bytes FRAM
• OTP memory	• 16 bytes FRAM
Read cycles (at < 40 °C)	> 10^{12}
Write cycles (at < 40 °C)	> 10^{12}
Data retention time (at < 40 °C)	> 10 years
Write/read distance (S_g)	Dependent on the reader used, see section "Field data of ISO transponders (MDS D) (Page 56)"
MTBF (Mean Time Between Failures)	228 years
Mechanical specifications	
Housing	
• Material	• Plastic PA 6.6 GF
• Color	• Black
Recommended distance to metal	≥ 25 mm

	6GT2600-4AH00
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)]	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.

8.20.5 Dimension drawing



Dimensions in mm

Figure 8-53 Dimension drawing of MDS D426

8.21 MDS D428

8.21.1 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 of ISO transponders (MDS D) (Page 56)"
	Mounting on metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

8.21.2 Ordering data

Table 8- 52 Ordering data of MDS D428

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

8.21.3 Application example

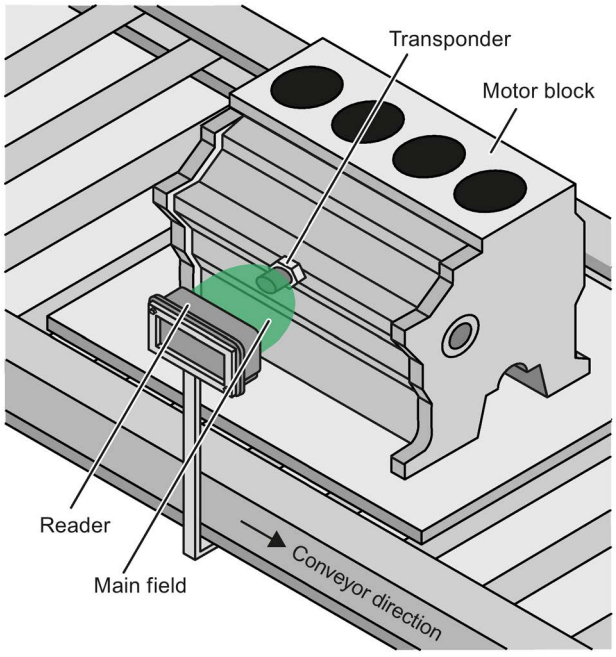


Figure 8-54 Application example

8.21.4 Technical specifications

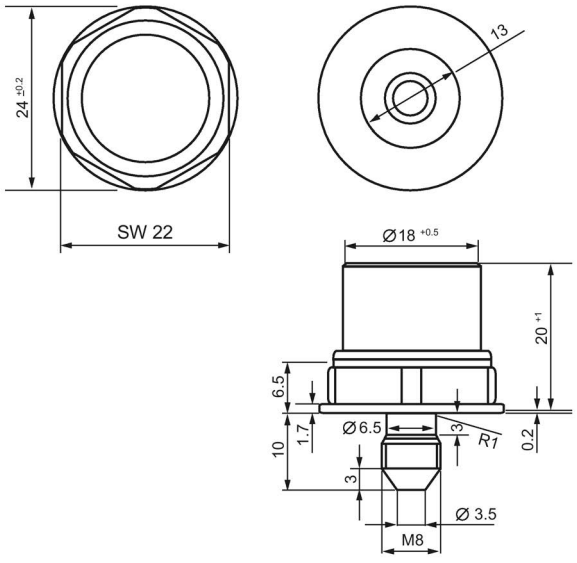
Table 8- 53 Technical specifications for the MDS D428

	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 of ISO transponders (MDS D) (Page 56)"
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 °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.

8.21.5 Dimension drawing



Dimensions in mm

Figure 8-55 Dimension drawing of MDS D428

8.22 MDS D460

8.22.1 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 of ISO transponders (MDS D) (Page 56).
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP67/IPx9K

8.22.2 Ordering data

Table 8- 54 Ordering data of MDS D460

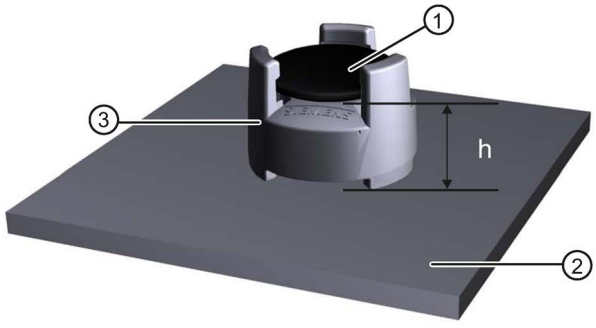
	Article number
MDS D460	6GT2600-4AB00

Table 8- 55 Ordering data of MDS D460 accessories

	Article number
Spacer	6GT2690-0AG00

8.22.3 Mounting on metal

Mounting option on metal with spacer



① Transponder
② Metal
③ Spacer
h ≥ 10 mm

Figure 8-56 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!

8.22.4 Technical specifications

Table 8- 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 of ISO transponders (MDS D) (Page 56)"
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/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)	16 x 3 mm

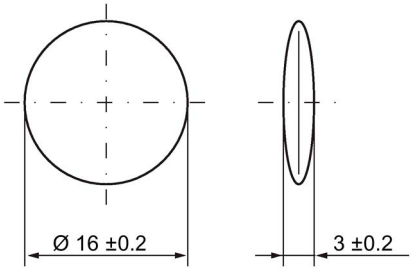
	6GT2600-4AB00
Weight	3 g
Type of mounting	• Glued [2] • With spacer

[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.

8.22.5 Dimension drawings

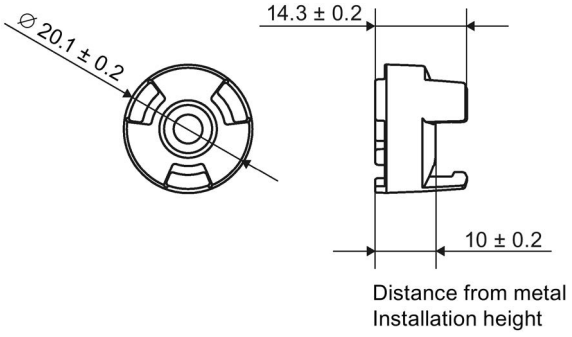
Dimensional drawing of MDS D460



Dimensions in mm

Figure 8-57 Dimensional drawing of MDS D460

Dimensional drawing of spacer



Dimensions in mm

Figure 8-58 Dimensional drawing of spacer

8.23 MDS D521

8.23.1 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 of ISO transponders (MDS D) (Page 56)"
	Mounting on metal	Yes, flush-mounted in metal
	ISO standard	ISO 15693
	Degree of protection	IP67/IPx9K

8.23.2 Ordering data

Table 8- 57 Ordering data for MDS D521

	Article number
MDS D521	6GT2600-5AE00

8.23.3 Mounting on metal

Mounting on metal

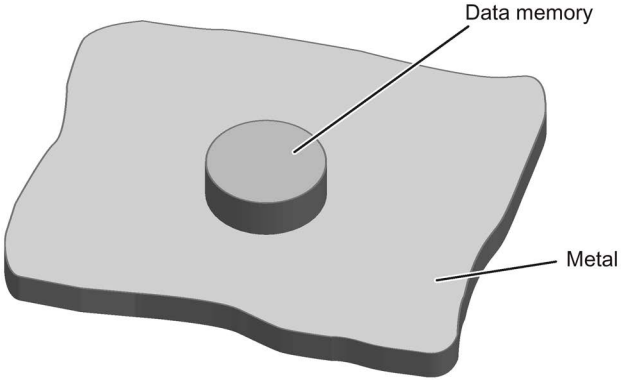


Figure 8-59 Mounting of MDS D421/D521/E623 on metal

Flush-mounting

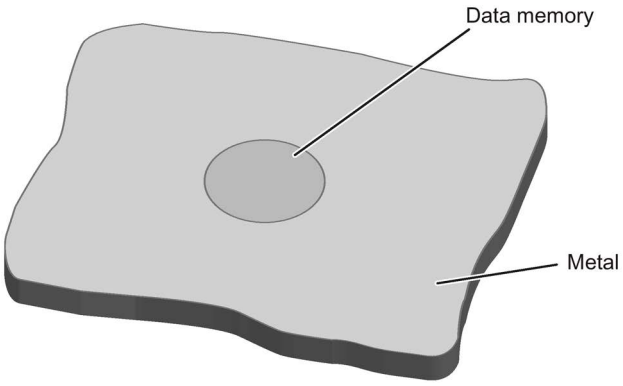


Figure 8-60 Mounting of MDS D421/D521/E623 in metal

Flush-mounting of the MDS in metal with tools

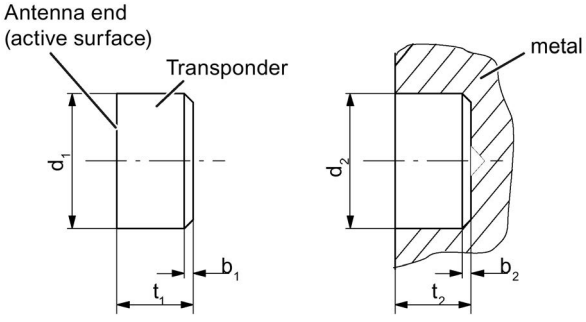


Figure 8-61 Flush-mounting of MDS D421/D521/E623 in metal with tools

b_1	0.5 x 45°	b_2	0.3 x 45° or R0.3
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 transponder using your fingers; with antenna side to the outside (see figure above)
- Remove residues of adhesive
- Allow to cure according to the manufacturer's instructions
- Flush-mounting of the transponder in metal with tools

Installation examples

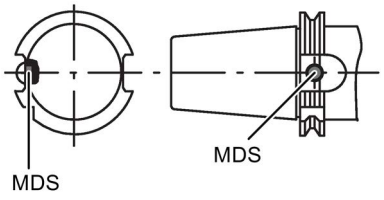


Figure 8-62 Installation example of MDS D421/D521/E623 in a steep cone

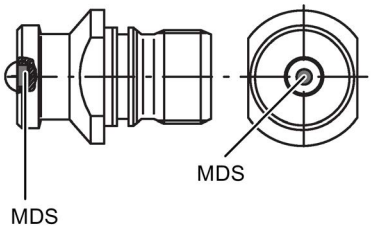


Figure 8-63 Installation example of MDS D421/D521/E623 in a stud bolt

8.23.4 Technical specifications

Table 8- 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 of ISO transponders (MDS D) (Page 56)"
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/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)	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.

8.23.5 Dimension drawing

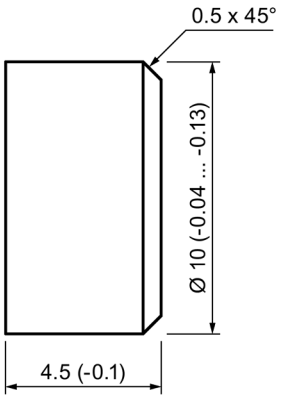


Figure 8-64 Dimension drawing of MDS D521

All dimensions in mm

8.24 MDS D522

8.24.1 Characteristics

MDS D522	Characteristics	
	Area of application	Identification of metallic workpiece holders, workpieces or containers
	Memory size	8192 bytes of FRAM user memory
	Write/read range	See "Field data of ISO transponders (MDS D) (Page 56)."
	Mounting in metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68

8.24.2 Ordering data

Table 8- 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

8.24.3 Mounting in metal

Flush-mounting

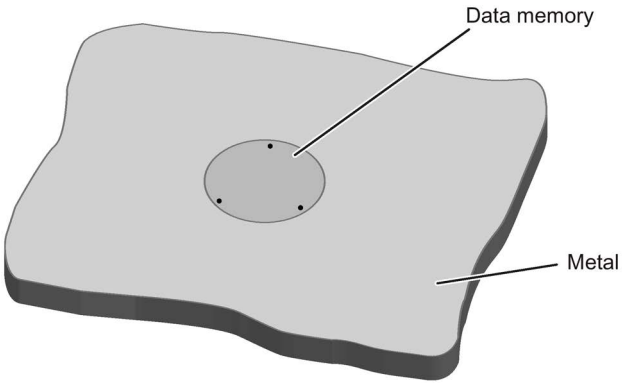


Figure 8-65 Mounting of MDS D522 in metal

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

8.24.4 Technical specifications

Table 8- 60 Technical specifications for MDS D522

		6GT2600-5AF00
Product type designation	SIMATIC MDS D522	
Memory		
Memory configuration		

	6GT2600-5AF00
• 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 of ISO transponders (MDS D) (Page 56)"
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
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.

8.24.5 Dimension drawing

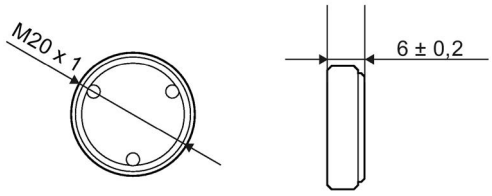


Figure 8-66 Dimensional drawing of MDS D522

All dimensions in mm

8.25 MDS D522 special variant

8.25.1 Characteristics

MDS D522 special version	Characteristics	
	Area of application	Identification of metallic workpiece holders or work-pieces
	Memory size	8192 bytes of FRAM user memory
	Write/read range	See "Field data of ISO transponders (MDS D) (Page 56)."
	Mounting in metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68

8.25.2 Ordering data

Table 8- 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

8.25.3 Mounting in metal

Flush-mounting

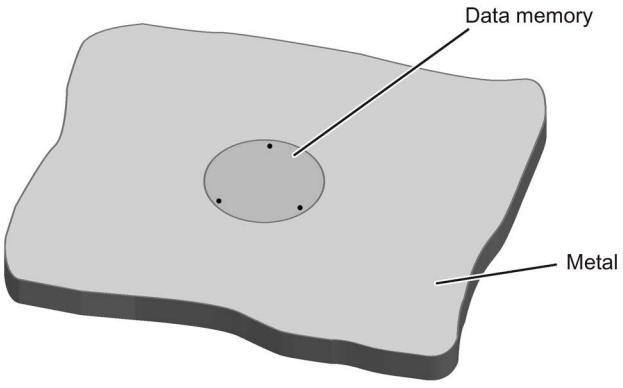


Figure 8-67 Flush installation of the MDS D522 special version in metal without clearance

8.25.4 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.

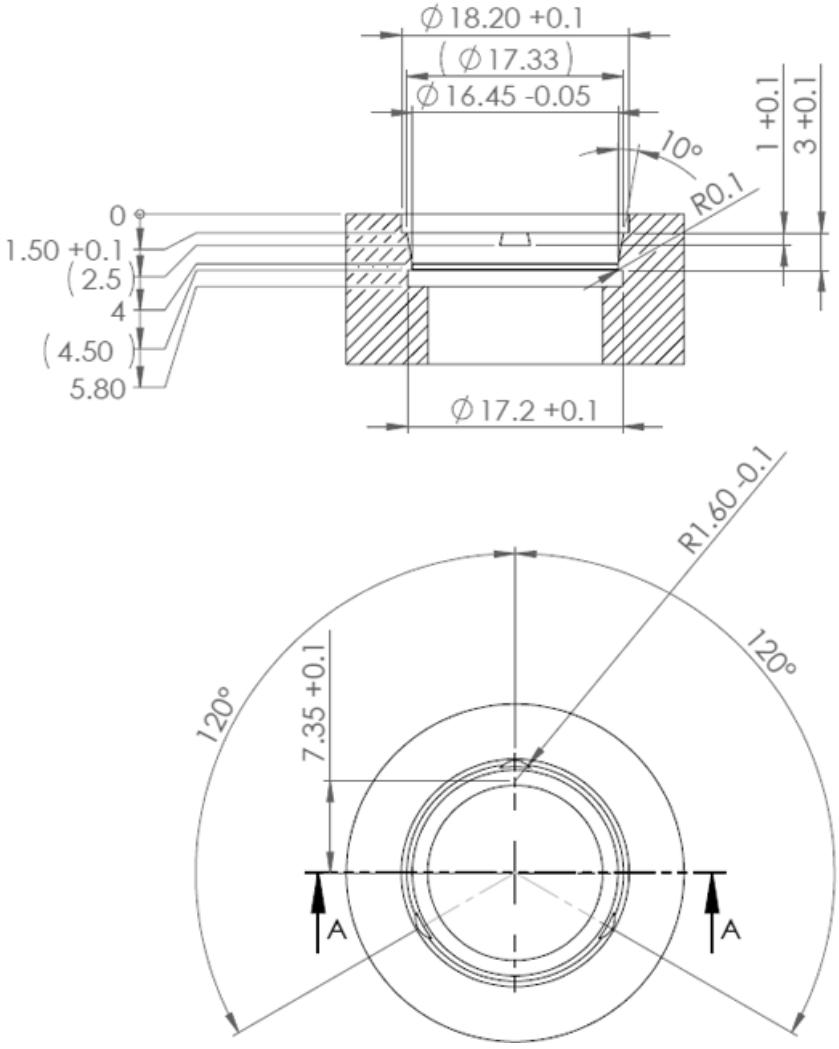


Figure 8-68 Dimension drawing: Workpiece drill hole for mounting the MDS D522 special version

8.25.5 Technical specifications

Table 8- 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 of ISO transponders (MDS D) (Page 56)"
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/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)	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.

8.25.6 Dimensional drawing

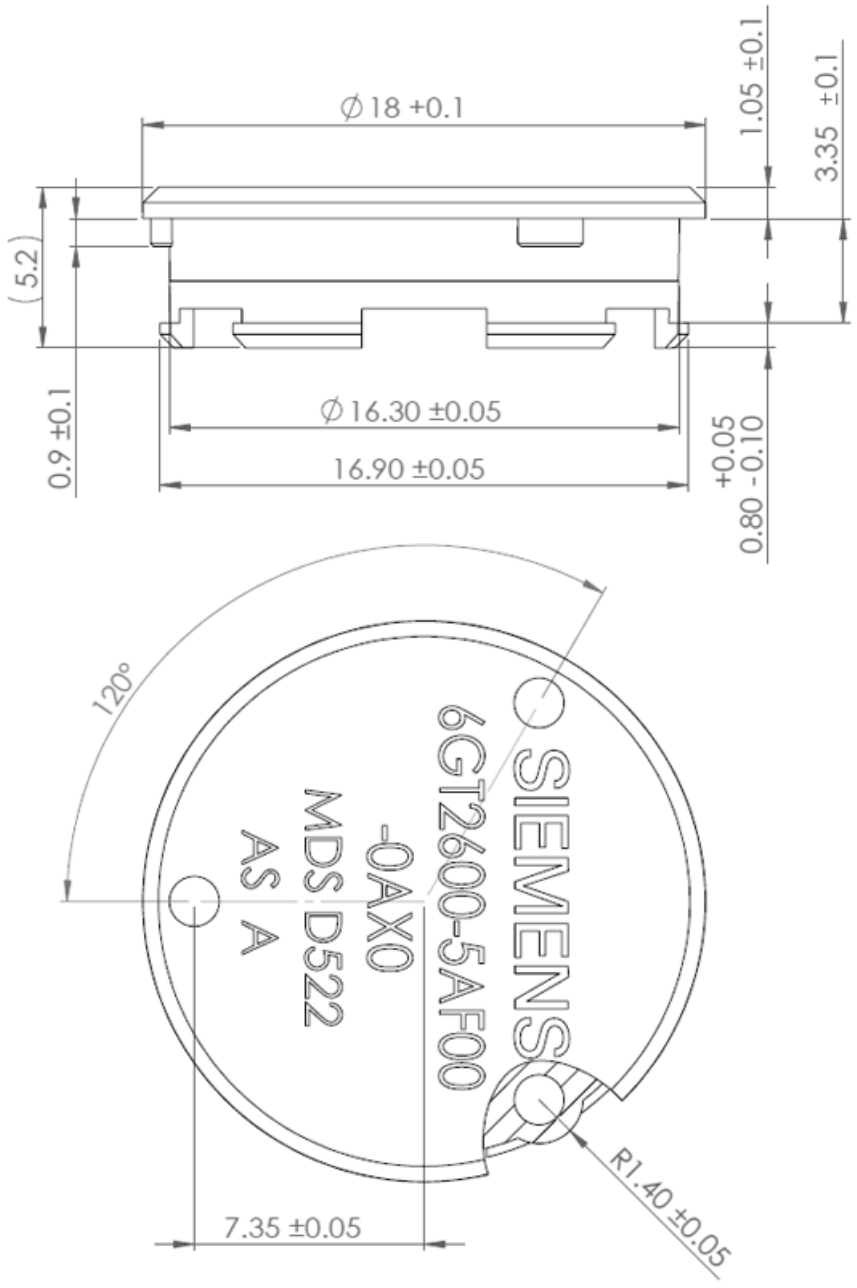


Figure 8-69 Dimension drawing MDS D522 special version

All dimensions in mm

8.26 MDS D524

8.26.1 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 of ISO transponders (MDS D) (Page 56)."
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP67; IPx9K

8.26.2 Ordering data

Table 8- 63 Ordering data for MDS D524

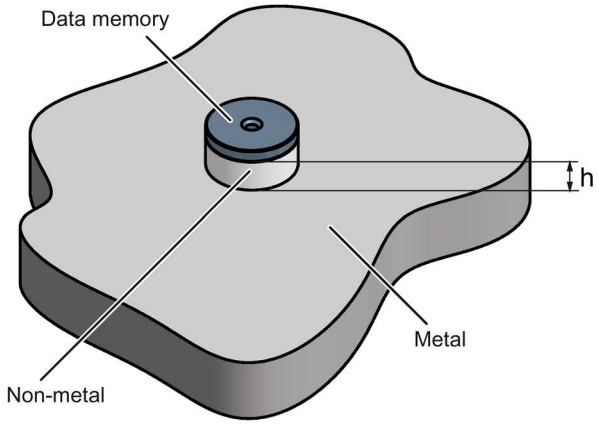
	Article number
MDS D524	6GT2600-5AC00

Table 8- 64 Ordering data of MDS D524 accessories

	Article number
Spacer	6GT2690-0AK00

8.26.3 Mounting on metal

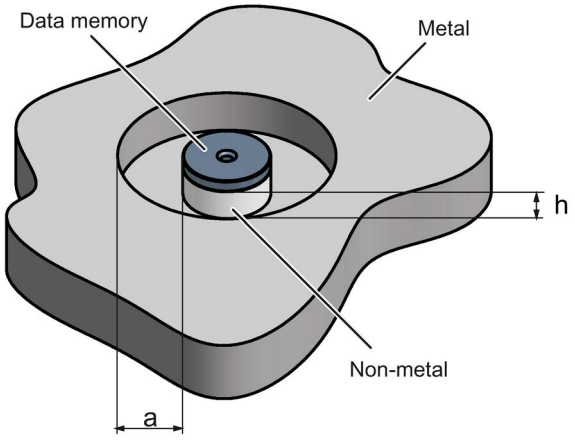
Mounting on metal



h ≥ 15 mm

Figure 8-70 Mounting the MDS D124/D324/D424/D524/E624 and RF320T on metal with spacer

Flush-mounting



h ≥ 15 mm

a ≥ 25 mm

Figure 8-71 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.

8.26.4 Technical specifications

Table 8- 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 of ISO transponders (MDS D) (Page 56)"
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.

8.26.5 Dimension drawing

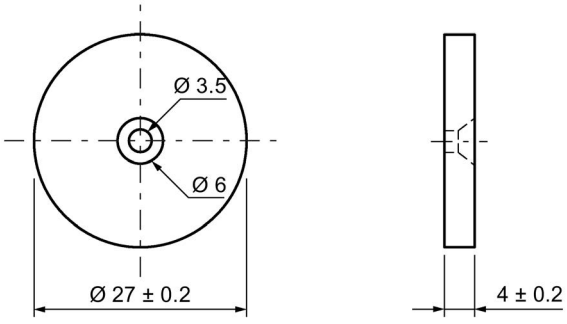


Figure 8-72 Dimensional drawing of MDS D524

All dimensions in mm

8.27 MDS D525

8.27.1 Characteristics

MDS D525	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 D525; can therefore also be used under extreme environmental conditions without problems
	Memory size	8192 bytes of FRAM user memory
	Write/read range	See section "Field data of ISO transponders (MDS D) (Page 56)".
	Mounting on metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

8.27.2 Ordering data

Table 8- 66 Ordering data for MDS D525

	Article number
MDS D525	6GT2600-5AG00

8.27.3 Application example

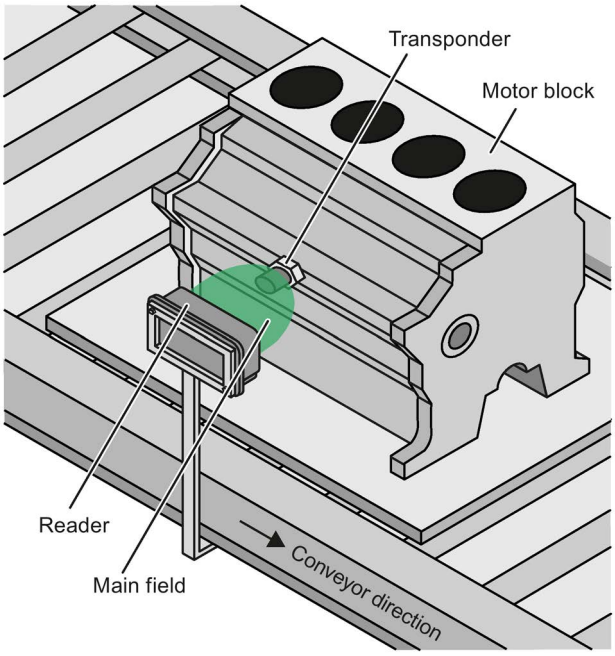


Figure 8-73 Application example

8.27.4 Technical specifications

Table 8- 67 Technical specifications for MDS D525

	6GT2600-5AG00
Product type designation	SIMATIC MDS D525
Memory	
Memory configuration	
• UID	• 8 bytes
• User memory	• 8192 bytes FRAM
• OPT 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 of ISO transponders (MDS D) (Page 56)"
MTBF (Mean Time Between Failures)	228 years

	6GT2600-5AG00
Mechanical specifications	
Enclosure	
• 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-resistant to IEC 68-2-27[1)]	500 m/s^2
Vibration-resistant to IEC 68-2-6[1)]	200 m/s^2
Torsion and bending load	Not permitted
Design, dimensions and weights	
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.

8.27.5 Dimension drawing

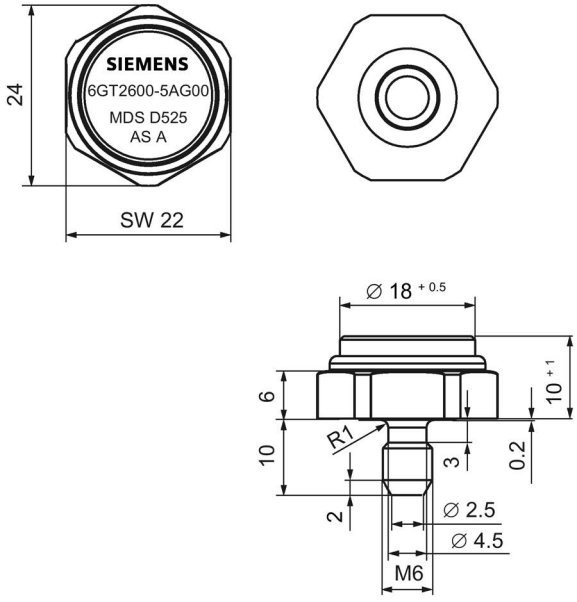


Figure 8-74 Dimensional drawing of MDS D525

All dimensions in mm

8.28 MDS D526

8.28.1 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 of ISO transponders (MDS D) (Page 56)."
	Mounting on metal	Yes, with spacer
	ISO standard	ISO 15693
	Degree of protection	IP68

8.28.2 Ordering data

Table 8- 68 Ordering data for MDS D526

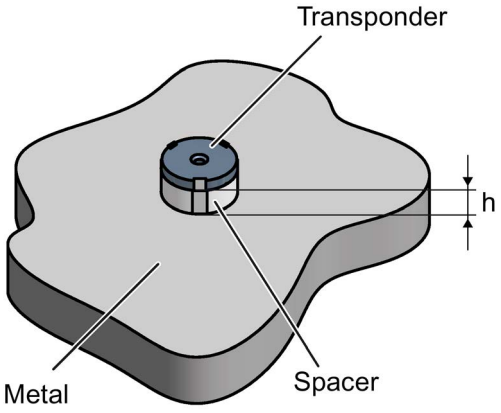
	Article number
MDS D526	6GT2600-5AH00

Table 8- 69 Ordering data for MDS D526 accessories

	Article number
Spacer	6GT2690-0AL00

8.28.3 Mounting on metal

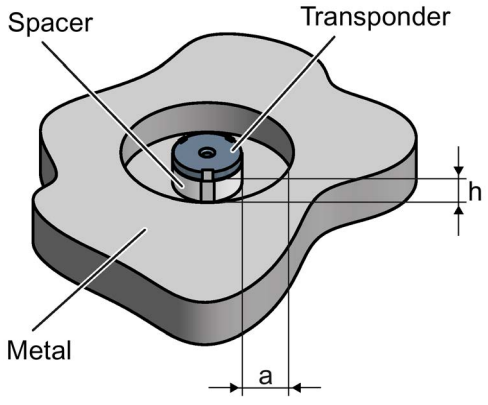
Mounting on metal



h ≥ 25 mm

Figure 8-75 Mounting the MDS D126 / D426 / D526 on metal with spacer

Flush-mounted in metal



h ≥ 25 mm

a ≥ 50 mm

Figure 8-76 Flush installation of the MDS D126 / D426 / D526 in metal with spacer

8.28.4 Technical specifications

Table 8- 70 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 of ISO transponders (MDS D) (Page 56)"
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.

8.28.5 Dimension drawing

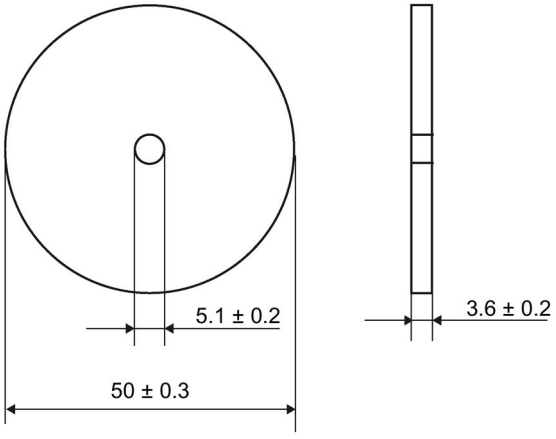


Figure 8-77 Dimensional drawing of MDS D526

All dimensions in mm

8.29 MDS D528

8.29.1 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 of ISO transponders (MDS D) (Page 56)"
	Mounting on metal	Yes
	ISO standard	ISO 15693
	Degree of protection	IP68/IPx9K

8.29.2 Ordering data

Table 8- 71 Ordering data for MDS D528

	Article number
MDS D528	6GT2600-5AK00

8.29.3 Application example

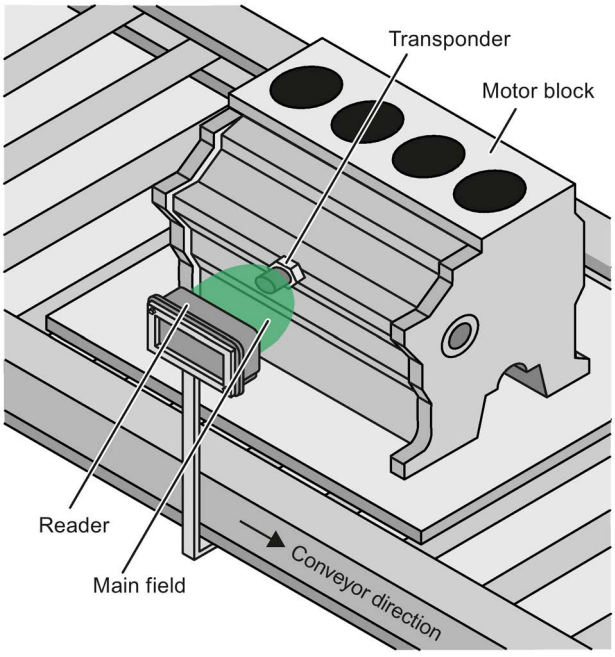


Figure 8-78 Application example

8.29.4 Technical specifications

Table 8- 72 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 of ISO transponders (MDS D) (Page 56)"
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 ℃
• 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/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 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.

8.29.5 Dimension drawing

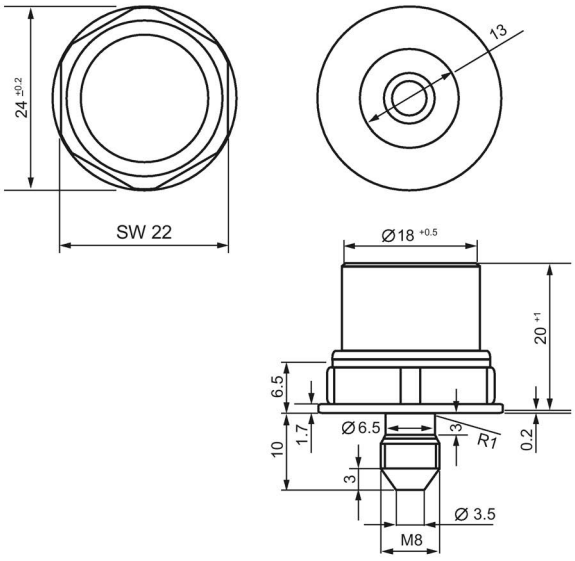


Figure 8-79 Dimensional drawing of MDS D528

All dimensions in mm

System integration

9

The communication modules (interface modules) are links between the RFID components (reader and transponder) and the higher-level controllers (e.g. SIMATIC S7), or PCs or computers.

9.1 Introduction

The readers are connected to the controller via the following interface or communications modules:

- ASM 456
- ASM 475
- SIMATIC RF120C
- SIMATIC RF160C
- SIMATIC RF170C
- SIMATIC RF180C
- SIMATIC RF182C
- RFID 181EIP

Function blocks, interface modules/communication modules and readers

Function blocks are used for integration into the SIMATIC. You will find information on the following blocks on the Internet in "Industry Online Support (https://support.industry.siemens.com/cs/ww/en/ps/14971)".

- Ident profile and Ident blocks, standard function for RFID systems

  The Ident library linked into the TIA Portal as of STEP 7 Basic / Professional V14 SP 1
- RFID standard profile; standard functions for RFID systems
- FB 45 for MOBY U, MOBY D, RF200, RF300
- FB 55
- RF160C communications module with FC 44

Interface modules/communication modules and function blocks

The following table shows the most important characteristics of the interface modules/communications modules.

Table 9- 1 Overview of interface modules/communication modules

ASM/ communications module	Interfaces to the application (PLC)	Interfaces to the reader	Reader connections	Dimensions (W x H x D)	Temperature range	Degree of protection
ASM 456	PROFIBUS DP-V1	2 x 8-pin connector socket, M12	2 (parallel)	60 x 210 x 54 or 79 mm	0 ℃ to +55 ℃	IP67
ASM 475	S7-300 (central), ET200M (PROFIBUS)	Via screw terminals in front connector	2 (parallel)	40 x 125 x 120 mm	0 ℃ to +60 ℃	IP20
SIMATIC RF120C	S7-1200 (central)	9-pin D-sub socket	1	30 x 100 x 75 mm	0 ℃ to +55 ℃	IP20
SIMATIC RF160C	PROFIBUS DP / DP-V0	2 x 8-pin connector socket, M12	2 (parallel)	60 x 210 x 30 mm	0 ℃ to +55 ℃	IP67
SIMATIC RF170C	PROFIBUS DP-V1 PROFINET IO	2 x 8-pin connector socket, M12	2 (parallel)	90 x 130 x 60 mm	-25 °C to +55 °C	IP67
SIMATIC RF180C	PROFINET IO	2 x 8-pin connector socket, M12	2 (parallel)	60 x 210 x 54 mm	0 °C to +60° C	IP67
SIMATIC RF182C	TCP/IP	2 x 8-pin connector socket, M12	2 (parallel)	60 x 210 x 30 mm	0 ℃ to +60 ℃	IP67
RFID 181EIP	Ethernet IP	2 x 8-pin connector socket, M12	2 (parallel)	60 x 210 x 54 mm	0 °C to +60° C	IP67

The following table shows the program blocks compatible with the interface modules/communications modules.

Table 9- 2 Compatible program blocks

ASM/ communications module	Compatible program blocks in conjunction with ...		
	S7-300 / S7-400 and STEP 7 Classic V5.5	S7-300 / S7-400 and STEP 7 Basic/Professional	S7-1200 / S7-1500 and STEP 7 Basic/Professional
ASM 456	FB 45 FB 55 FC 56 Standard profile V1.19 Ident profile	FB 45 FB 55 FC 56 Ident profile Ident blocks	Ident profile Ident blocks PIB_1200_UID_001KB PIB_1200_UID_032KB
ASM 475	FB 45 FB 55	FB 45 FB 55	--
SIMATIC RF120C	--	--	Ident profile Ident blocks PIB_1200_UID_001KB PIB_1200_UID_032KB

ASM/ communications module	Compatible program blocks in conjunction with ...		
	S7-300 / S7-400 and STEP 7 Classic V5.5	S7-300 / S7-400 and STEP 7 Basic/Professional	S7-1200 / S7-1500 and STEP 7 Basic/Professional
SIMATIC RF160C	FC 44 Application blocks for RF160C	FC 44 Application blocks for RF160C	Application blocks for RF160C
SIMATIC RF170C	FB 45 FB 55	FB 45 FB 55	Ident profile Ident blocks PIB_1200_UID_001KB PIB_1200_UID_032KB
SIMATIC RF180C	FB 45 FB 55 Standard profile V1.19 Ident profile	FB 45 FB 55 Ident profile Ident blocks	Ident profile Ident blocks PIB_1200_UID_001KB PIB_1200_UID_032KB

9.2 ASM 456

Configured with ASM 456

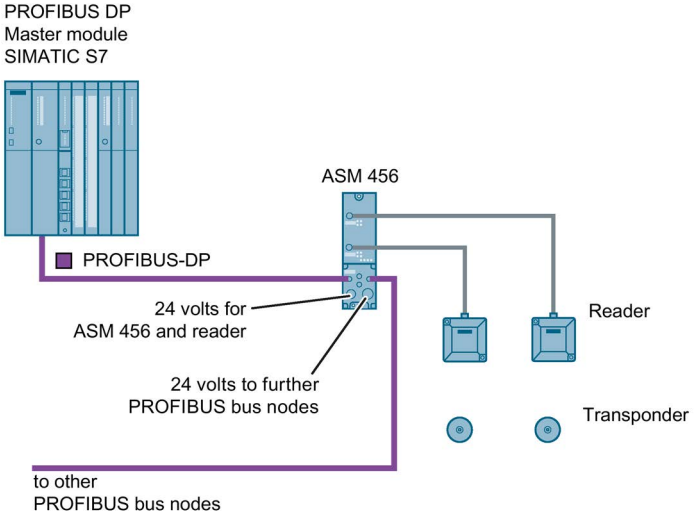


Figure 9-1 Configuration of ASM 456

For more detailed information, please refer to ASM 456 Operating Instructions (https://support.industry.siemens.com/cs/ww/en/view/32629442).

9.3 ASM 475

9.3.1 Features

Area of application

The ASM 475 interface module acting as the link between all RF300 systems and SIMATIC S7-300 performs the functions of a communication module. It can be operated centrally in the S7-300 or decentrally in an ET200M.

As many as eight ASM 475 interface modules can be plugged into one SIMATIC S7-300 rack and operated. In a configuration with several racks (max. four), the ASM 475 can be plugged into and operated on any rack. This means that as many as 32 ASMs can be operated in the maximum configuration of a SIMATIC S7-300. The ASM can also be operated in the ET 200M distributed I/O on PROFIBUS. Operation in an S7-400 environment is therefore problem-free. Up to 7 ASMs can be operated on each ET 200M.

Error messages and operating statuses are indicated by LEDs.
Since there is electrical isolation between the read/write device and the SIMATIC S7-300 bus, a configuration that is immune to interference is possible.

Figure 9-2 Interface module ASM 475

The ASM 475 with the article number 6GT2002-0GA10 is a module that can be set in the parameters. The basic functions of the module are then already specified when the module is configured in HW Config (e.g. standard addressing).

The data in the MDS is accessed direct by means of physical addresses using the ASM 475. Operation in a SIMATIC S7 is controlled by the function block FB 45.

ASM 475 and FB 45 form a unit that is used for reading the data of the MDS simply and at optimal speed.

9.3.2 Ordering data

Table 9- 3 Ordering data for ASM 475

	Article number
ASM 475 interface module for SIMATIC S7 2 x RF3xxR reader with RS-422 can be connected in parallel, without front connector	6GT2002-0GA10

Table 9- 4 Ordering data for ASM 475 accessories

	Article number
Front connector (1 x per ASM)	6ES7392-1AJ00-0AA0
Connecting cable ASM 475 ↔ RF3xxR	
Plug-in cable, pre-assembled, length: 2 m (standard length)	6GT2891-0EH20
Plug-in cable, pre-assembled, length: 5 m	6GT2891-0EH50
Terminal element (1 x per reader cable)	6ES7390-5BA00-0AA0
Shield connecting element	6ES7390-5AA00-0AA0

The plug-in cables 6GT2891-4Fxx can be used as extension cables.

9.3.3 Indicators

Bezel and indicator elements

The figure below illustrates the bezel of the ASM 475 and the inside of the front door complete with the associated connection diagram. The read/write devices must be connected to the ASM in accordance with the connection diagram.

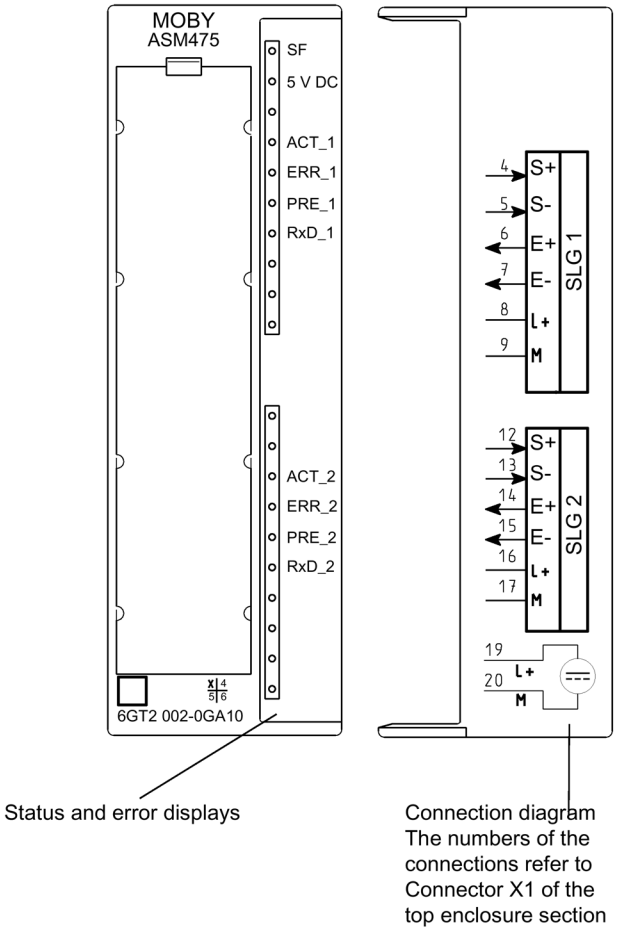


Figure 9-3 Bezel and inside of the front door of the ASM 475

Display elements on the ASM

Table 9- 5 Function of the LEDs on the ASM 475

Light emitting diode	Meaning
SF	System fault (hardware error on ASM)
DC 5V	24 V are connected to ASM and the 5 V voltage on ASM is OK.
ACT_1, ACT_2	The corresponding reader is active in processing a user command.
ERR_1, ERR_2	A flashing pattern indicates the last error to occur. This display can be reset using the parameter Option 1.
PRE_1, PRE_2	Indicates the presence of a transponder.
RxD_1, RxD_2	Indicates live communication with the reader. In the event of a fault on the reader, this display may also be lit.

On the ASM 475, further operating states are indicated with the LEDs PRE, ERR and SF:

Table 9- 6 Operating status display on ASM 475 via LEDs

SF	PRE_1	ERR_1	PRE_2	ERR_2	Meaning
ON	OFF/ON	ON (perm.)	OFF/ON	ON (perm.)	Hardware is defective (RAM, Flash, etc.)
ON	OFF	ON	OFF	OFF	Charger is defective (can only be repaired in the factory).
OFF	2 Hz	OFF	2 Hz	OFF	Firmware loading is active or no firmware detected • Firmware download • ASM must not be switched off
OFF	2 Hz	2 Hz	2 Hz	2 Hz	Firmware loading terminated with errors • Restart required • Load firmware again • Check update files
Any value	5 Hz	5 Hz	5 Hz	5 Hz	Operating system error • Switch ASM off/on
OFF	OFF	1 flash every 2 s	OFF	1 flash every 2 s	ASM has booted and is waiting for a RESET (init_run) from the user.

9.3.4 Configuration

Centralized configuration with SIMATIC S7-300

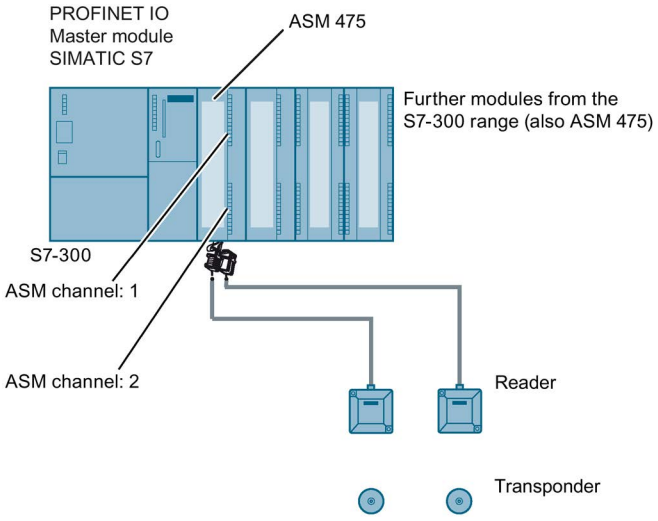


Figure 9-4 Configuration of ASM 475 central

Distributed configuration with ET200M

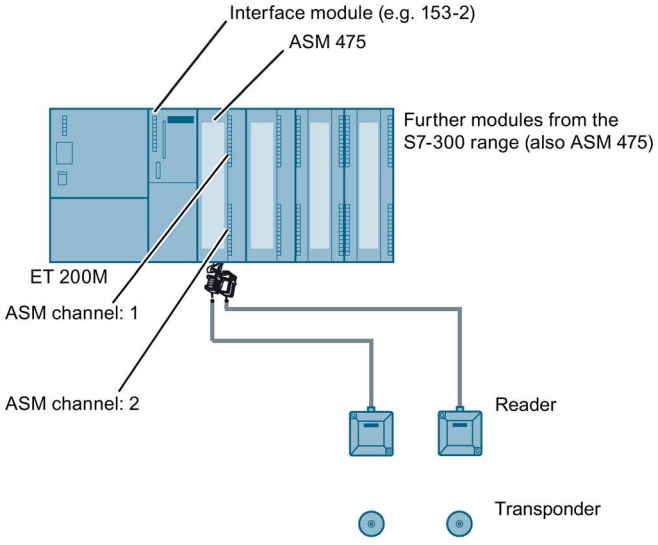


Figure 9-5 Configuration of ASM 475 distributed

Reader connection system

You will find more information on the reader connector technology in the section "Reader RF3xxR (RS422) with ASM 475 (Page 438)".

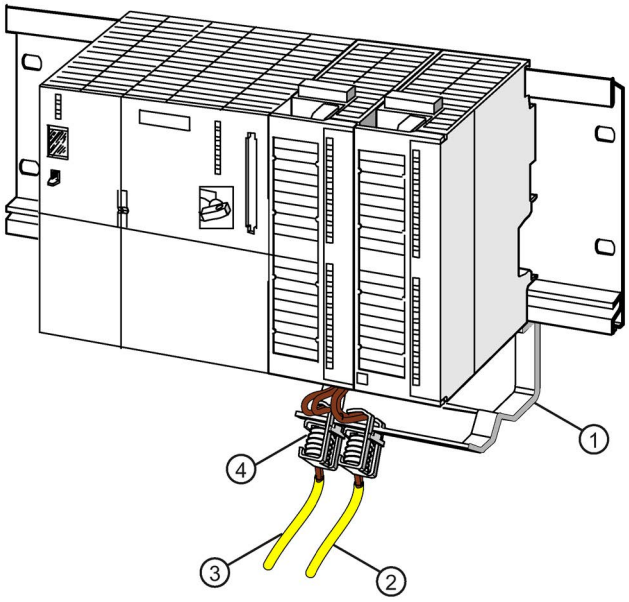
Cable installation

Signal	Pin on M12 connect-or	Cable	Labeling
24 VDC	1	white	1 Reader 2 8 -16
TX -	2	brown	1 Reader 2 7-15
GND	3	Green	1 Reader 2 9-17
TX +	4	Yellow	1 Reader 2 6-14
RX +	5	Gray	1 Reader 2 4-12
RX -	6	Pink	1 Reader 2 5-13
Shield	8 +	-	

Cable assignment for connection of an RF300 reader to ASM 475

9.3.5 Shield connection

When the reader is connected to the ASM 475, the cable shield must be connected to a shield terminal. Shield terminals and holding clips are standard components of the product spectrum of S7-300.



① Holding bracket
② Cable to 2nd reader
③ Cable to 1st reader
④ Shield terminal

Figure 9-6 Shield terminal ASM 475

9.3.6 Technical data

Table 9- 7 Technical specifications for ASM 475

	6GT2002-0GA10
Product type designation	ASM 475 communications module
Interfaces	
Design of the interface point-to-point link	RS-422
Number of connectable readers	2
Electrical connector design	
• Backplane bus	• S7-300 backplane bus
• PROFIBUS interface	• (according to the head module)
• Industrial Ethernet interface	• (according to the head module)

	6GT2002-0GA10
• Supply voltage	• Screw-type or spring-loaded terminals
Design of the interface to the reader for communication	Screw-type or spring-loaded terminals

Mechanical specifications

Housing	
• Material	• Noryl
• Color	• Anthracite

Supply voltage, current consumption, power loss

Supply voltage	24 VDC
Typical current consumption	
• Without connected devices	• 0.1 A
• Including connected devices	• 1.0 A
Power dissipation of the module, typ.	2 Watts
Current consumption from I/O bus, max.	80 mA
Electrical isolation between S7-300 and RF300	Yes
Fuse 24 V for the reader	Yes, electronic

Permitted ambient conditions

Ambient temperature	
• During operation (horizontal installation)	0 ... +60 °C
• During operation (vertical installation)	0 ... +40 °C
• During transportation and storage	-40 ... +70 °C
Degree of protection	IP20
Shock-resistant to IEC 61131-2	150 m/s^2
Vibration-resistant to IEC 61131-2	10 m/s^2

Design, dimensions and weight

Dimensions (L x W x H)	120 x 40 x 125 mm
Weight	0.2 kg
Type of mounting	S7-300 rack
Cable length for RS-422 interface, maximum	1000 m

Product properties, functions, components general

LED display design	• 4 LEDs per reader connector • 2 LEDs for device status
Product function transponder file handler addressable	Yes

	6GT2002-0GA10
Protocol supported S7 communication	Yes

Product functions management, configuration, engineering	
Type of parameter assignment	Object manager, GSD
Type of programming	FB 45, FB 55, FC 56 (FC 45/55 with restricted functionality)
Type of computer-based communication	2 words cyclic, 238 bytes acyclic
Transponder addressing	Direct access via addresses
Commands	Initialize transponder, read data from transponder, write data to transponder

Standards, specifications, approvals	
Proof of suitability	CE, FCC, UL/CSA

9.4 RF120C

Configuration with RF120C

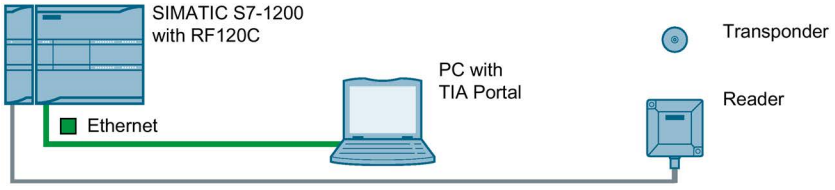


Figure 9-7 Configuration RF120C

For more detailed information, refer to the section " RF120C communications module (https://support.industry.siemens.com/cs/ww/en/view/77485950)".

9.5 RF160C

Configuration with RF160C

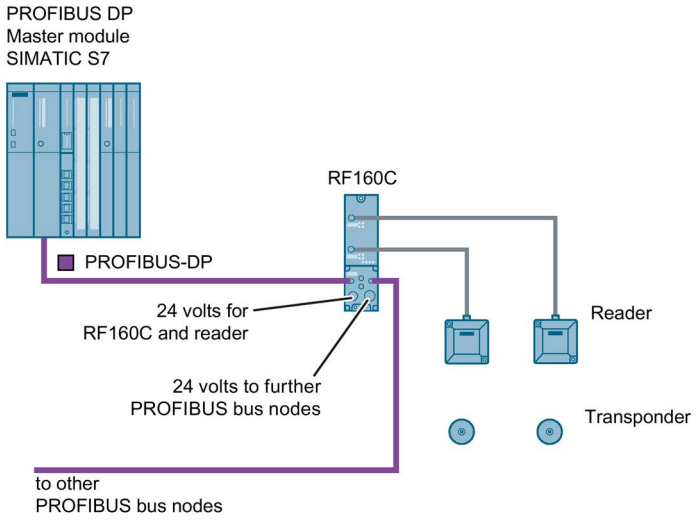


Figure 9-8 Configuration RF160C

For more detailed information, refer to Operating Instructions RF160C (https://support.industry.siemens.com/cs/ww/en/view/42788808).

9.6 RF170C

Configuration with RF170C

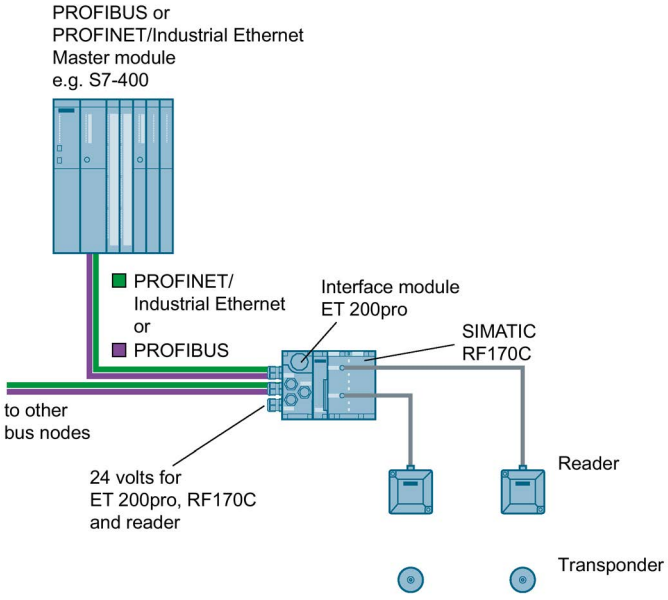


Figure 9-9 Configuration RF170C

For more detailed information, please refer to SIMATIC RF170C Operating Instructions (https://support.industry.siemens.com/cs/ww/en/view/32622825).

9.7 RF180C

Configured with RF180C

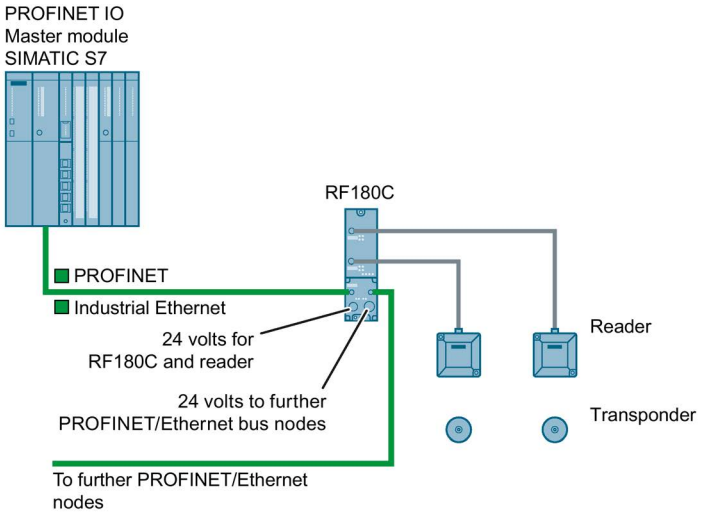


Figure 9-10 Configuration of RF180C

For more detailed information, refer to SIMATIC RF180C Operating Instructions (https://support.industry.siemens.com/cs/ww/en/view/30012157).

9.8 RF182C

Configuration with RF182C

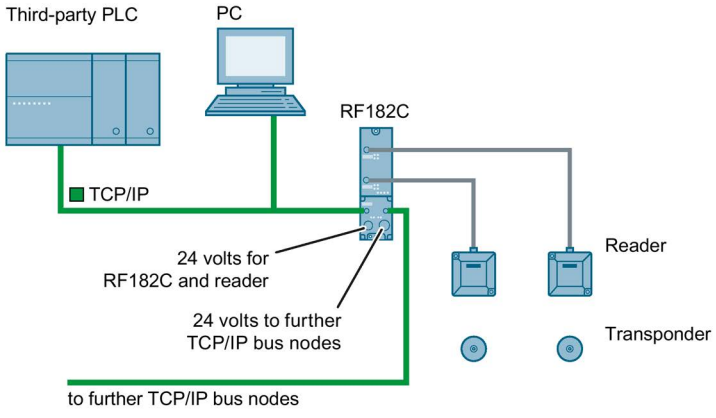


Figure 9-11 Configuration with RF182C

For more detailed information, refer to SIMATIC RF182C Operating Instructions (https://support.industry.siemens.com/cs/ww/en/view/38507897).

System diagnostics

10

10.1 Error codes of the RF300 readers

Error codes of the RF300 readers

Note

Validity of the error codes

The following error codes apply only to RF300 readers with an RS-422 interface (except for Scanmode).

You have the following options to read out the error code:

- Directly on the reader/communication module by counting the flashing pattern of the red error LED
- With the Ident profile at the output variable "Status"

  Take into consideration the structure of the output variable in the table below ("0xE&FE$$00"; "&" = 1 ... 5; "$$" = error code).
- with FB 45 / FB 55 variable "error_MOBY"

Table 10- 1 Error codes of the readers

Flashing of the red LED operating display on the reader	Error code (hexa-decimal)	Description
00	00	No error
02	01	Presence error; possible causes: • The active command was not carried out completely • The transponder left the antenna field while the command was being processed • Communication problem between reader and transponder
05	05	Parameter assignment error, possible causes: • Unknown command • Incorrect parameter • Function not allowed
06	06	Air interface faulty
11	0B	The MDS E transponder could not be successfully authenticated.

Flashing of the red LED operating display on the reader	Error code (hexa-decimal)	Description
12	0C	The transponder memory cannot be written, possible causes: • Hardware fault (memory faulty) • Memory write-protected (corresponding OTP area has already been written)
13	0D	Error in the specified memory address (access attempted to non-existent or non-accessible memory areas).
19	13	Buffer overflow: Insufficient buffer available in the reader for saving the command
20	14	Major system fault (hardware fault)
21	15	Parameter assignment error: bad parameter in RESET command
24	18	Command was sent to a reader that has not yet been initialized
25	19	Previous command is still active
28	1C	Antenna is not identified Possible causes: • Antenna is not connected. • Antenna cable is defective.
30	1E	Incorrect number of characters in frame
31	1F	Running command canceled by "RESET" command

10.2 Diagnostics functions - STEP 7

10.2.1 Overview

Extended diagnostic functions with SIMATIC RF300

With SIMATIC RF300, extended diagnostics functions are available with STEP 7 Classic / Basic / Professional which simplify commissioning and maintenance.

Extensive diagnostics functions for the SIMATIC RF300 readers with the TIA Portal for STEP 7 Basic / Professional are being planned. With the aid of the Ident profile and the Ident blocks, you can make different diagnostics queries.

You can access this diagnostics data using the SIMATIC function blocks and the commands "Reader status" and "Tag status" (SLG-STATUS and MDS-STATUS). These two commands can each be called with various attributes or modes (subcommands) for which corresponding data structures (UDTs) are defined.

Table 10- 2 In RF300 mode

Command	Attributes (mode)	Meaning
Reader-Status (SLG-STATUS)	0x81 (01)	Hardware and firmware configuration, parameterization status
	0x86 (06)	Communication error counter, current command status
Tag-Status (MDS-STATUS)	0x81 (01)	Serial number of the transponder (UID), memory configuration. EEPROM write-protection status
	0x82 (02)	Serial number of the transponder (UID), HF field strength value, communication error counter, presence counter (duration)
	0x83 (03)	Serial number of the transponder (UID), transponder type identified in the antenna field (number = tag type, see Reset - "ftim" parameter), memory configuration, write protection status (OTP), size and number of blocks in the user memory

Overview of the diagnostic functions

Table 10- 3 In ISO mode: ISO 15693, ISO 18000-03 or ISO 14443

Command	Attributes	Meaning
Reader-Status (SLG-STATUS)	0x81 (01)	Hardware and firmware configuration, parameterization status
	0x86 (06)	Communication error counter, current command status
Tag-Status (MDS-STATUS)	0x83 (03)	Serial number of the transponder (UID), transponder type identified in the antenna field (number = tag type, see Reset - "ftim" parameter), memory configuration, write protection status (OTP), size and number of blocks in the user memory

10.2.2 Reader diagnostics with "reader status" (SLG-STATUS)

With this command you can query the status and diagnostics data of the reader.

Note

Scope of the described UDTs

Note that below only the variables are listed that are relevant for the RF300 system. You will find the full UDTs in the manual "Ident Profile and Ident Blocks".

Attributes "0x81" (mode 01), corresponds to UDT 110

Table 10- 4 Input parameter

Name	Type	Possible Values (hexadecimal)	Comment
hardware	char		Type of hardware
		00	= RF310R, RF340R, RF350R
		01	= RF380R
		02	= RF310R (ISO)
		03	= RF380R (ISO)
		04	= RF340R (ISO), RF350R (ISO)
		05	= RF310R (ISO)
		0A	= RF310R, 2nd generation
		0B	= RF340R, 2nd generation
		0C	= RF350R, 2nd generation
		0D	= RF380R, 2nd generation
hardware_version	word		HW version
		00 ... FF	= Version (high byte): unused (00)
			HW version
		00 ... FF	= Version (low byte)
			47 = Readers of the 1st generation
			07 = Readers of the 1st generation
			11 = Readers of the 1st generation
			10 = Readers of the 2nd generation
			29 = Readers of the 2nd generation
			2B = Readers of the 2nd generation
			2C = Readers of the 2nd generation
loader_version	word		Version of loader
		00 ... FF	= Version (high byte)
		00 ... FF	= Version (low byte)

Name	Type	Possible Values (hexadecimal)	Comment
firmware	char	00 ... FF	Type of firmware 01, 02, 03 = Readers of the 1st generation F = Full version for readers of the 2nd generation P = Pilot version for readers of the 2nd generation
firmware_version	word		Firmware version
		00 ... FF	= Version (high byte)
		00 ... FF	= Version (low byte)
driver	char		Driver version 3964R
		31	= 3964R
		32	= ASCII
		33	= ASCII/ScanMode
driver_version	word		Version of driver
		00 ... FF	= Version (high byte)
		00 ... FF	= Version (low byte)
interface	byte		Interface type
		01	= RS422
		02	= RS232 (only RF380R)
baud	byte		Transmission speed
		01	= 19.2 Kbaud
		03	= 57.6 kBaud
		05	= 115,2 Kbaud
distance_limiting_SLG	byte	--	Readers of the 1st generation: With this parameter you can change the transmit power (output power) of the RF380R reader of the 1st generation (6GT2801-3AB10). When doing this, remember that the change to the transmit power will affect the detection in the limit range (upper/ lower operating distance), as well as the minimum distance that is to be maintained between adjacent RF380Rs. Settings outside the specified range have the effect that the default value (1.25 W) will be set. In this case for reasons of compatibility there is no error message. Readers of the 2nd generation: This setting is not necessary with the RF380R readers of the 2nd generation (6GT2801-3BAx0) because the power limits are optimized automatically depending on the reader-transponder distance. For reasons of compatibility this setting can nevertheless be made. Note that the values "02", "03" and "04" bring about a reduction of the power of approximately 50%.
			Transmit power
		02	0.5 W
		03	0.75 W
		04	1.0
		05	1.25 W (default)
		06	1.5 W
		07	1.75 W

Name	Type	Possible Values (hexadecimal)	Comment
		08	2.0 W
multitag_SLG	byte		Number of transponders that can be processed in the antenna field
		01	= Single tag mode
field_ON_time_SLG	byte		Selection of the transponder types used
		00	= RF300 (RF3xxT)
		01	= ISO 15693 general
		03	= ISO 15693 (Infineon, MDS D3xx)
		04	= ISO 15693 (Fujitsu - 2 kB, MDS D4xx)
		05	= ISO 15693 (NXP, MDS D1xx)
		06	= ISO 15693 (TI, MDS D2xx)
		07	= ISO 15693 (STM, MDS D261)
		08	= ISO 15693 (Fujitsu - 8 kB, MDS D5xx)
		0E	= ISO (setting with "scanning_time" and "fcon")
		10	= RF300 (RF3xxT)
		20	= ISO 14443 (MOBY E, E6xx)
		31	= General Mode
		FF	= Setting with "scanning_time" and "fcon"
status_ant	byte		Status of the antenna
		01	= Antenna is on
		02	= antenna is off
MDS_control	byte		Presence check
		00	= Operation without presence check
		01	= Operation with presence check (antenna is permanently switched on.)
		04	= Operation without presence check (antenna is switched off.) The antenna is only switched on when one of the following commands is sent.
			Read, Write, Init, Tag-Status

Attributes "0x86" (mode 06), corresponds to UDT 280

Table 10- 5 Error counter

Name	Type	Possible Values (hexadecimal)	Comment
FZP	byte	00 ... FF	= Error counter, passive (errors during idle time)
ABZ			= Abort counter
CFZ			= Code error counter
SFZ			= Signature error counter
CRCFZ			= CRC error counter
BSTAT			= Current command status
ASMFZ			= Interface problems to host (CM/PC) parity, BCC, frame error

Note

Counter values are deleted.

Note that the counter values are deleted after they have been read out (command "Reader status" or "SLG-STATUS").

Explanations:

- "FZP": counts interference pulses when communication with a transponder is not taking place (e.g. electromagnetic interference caused by contactors, motors, etc.). Counter values can, however, also be generated when a transponder is located at the edge of the field even when there is no external interference.
- "ABZ", "CFZ", "SFZ" and "CRCFZ" are counters for protocol errors which may occur during reader-transponder communication. This can be caused by unsuitable reader/transponder positioning (e.g. transponder on field boundary, several transponders in the antenna field) or external EMC interference.

To ensure clear diagnostics of the quality of communication, it is recommended that a "Reader status" (SLG STATUS) command with attribute "0x86" (mode 06) is executed following receipt of the presence message to reset the error counters.

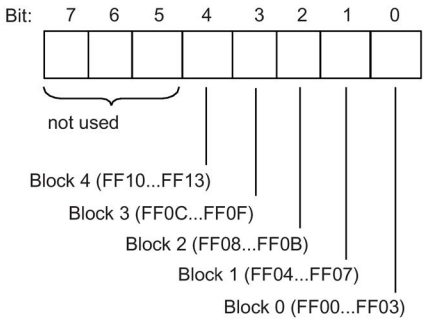
The protocol error counters are not mutually independent. If a code error (CFZ) occurs, this will cause a signature (SFZ) or CRC- (CRCFZ) error.

- "BSTAT" is the status for the most recently executed command. A value other than 0 means that the previous command was repeated by the reader due to faults (see above).
- "ASMFZ" signals line-conducted communication interference between the communications module and the reader. Faults of this type can be caused by contact problems on the connector or the cable connection.

10.2.3 Transponder diagnostics with "Tag status" (MDS-STATUS)

With this command you can query the status and diagnostics data from the transponder currently located in the antenna field.

Attribute "0x04" (mode 01), corresponds to UDT 260 (only for RF300 transponders)

Name	Type	Possible Values (hexadecimal)	Comment
UID	array[1…8] byte	000000005555555 ... 00000000FFFFFFFF	Unique identifier = b0-31: 4 byte TAG ID, b32-63: 0
MDS_type	byte	01 02 03 04	Transponder memory configuration = Transponder without FRAM = Transponder with FRAM 8 KB = Transponder with FRAM 32 KB = Transponder with FRAM 64 KB
Lock_state	byte	0 ... FF	EEPROM write protection status  Write protection status: 0 = block not protected (r/w) 1 = block protected (ro)

Attribute "0x82" (mode 02), corresponds to UDT 270 (only for RF300 transponders)

Name	Type	Possible Values (hexadecimal)	Comment
UID	array[1…8] byte	0000000055555555 ... 00000000FFFFFFFF	Unique identifier = b0-31: 4 byte TAG ID, b32-63: 0
LFD	byte	0 ... FF	= Value for field strength determined in the transponder
FZP	byte	0 ... FF	= Error counter (passive) → errors during idle time
FZA	byte	0 ... FF	= Error counter (active)
ANWZ	byte	0 ... FF	= Presence counter

Note

Counter values are deleted.

All counter values are deleted when the transponder exits the antenna field or when the antenna is switched off.

Explanations:

- "LFD" is a measured value for the field strength that is determined in the transponder. The lower the value, the higher the field strength.
- "FZP" counts interference pulses when communication with a transponder is not taking place (e.g. electromagnetic interference caused by contactors, motors, etc.). Counter values can also be generated when a transponder is located at the edge of the field even when there is no external interference.
- "FZA" counts errors that can occur during reader-to-transponder communication. This can be caused by unsuitable reader/transponder positioning (e.g. transponder on field boundary, several data carriers in the field) or external electromagnetic interference.
- "ANWZ" is the value for the time that the transponder remains in the field before the "Tag-Status" (MDS STATUS) with attribute "0x82" (mode 02) is executed. A time step is 10 ms. The maximum time that can be recorded is therefore 2.5 s.

Attribute "0x83" (mode 03), corresponds to UDT 230

Name	Type	Possible Values (hexadecimal)	Comment
UID	array[1…8] byte	0000000000000000 ... FFFFFFFFFFFFFFFF	Unique identifier =8 byte UID, MSB first
MDS_type	byte	00 03 04 05 06 07 08 11 12 13 14 21 22 23	Transponder type (vendor, identification) = ISO 15693 general = ISO 15693 (Infineon, MDS D3xx) = ISO 15693 (Fujitsu - 2 kB, MDS D4xx) = ISO 15693 (NXP, MDS D1xx) = ISO 15693 (TI, MDS D200) = ISO 15693 (STM, MDS D261) = ISO 15693 (Fujitsu - 8 kB, MDS D5xx) = RF300 transponder (0 kB) = RF300 transponder (8 kB) = RF300 transponder (32 kB) = RF300 transponder (64 kB) = ISO 14443 (NXP, 1 kB, MDS E) = ISO 14443 (Infineon, 1 kB, MDS E) = ISO 14443 (NXP, 4 kB, MDS E)
IC_version	byte	0 ... FF	Chip version
size	byte	0 ... FF	Memory size in bytes depending on transponder type, e.g. MDS D3xx: 992 bytes
lock_state	byte	0 ... FF	Lock state, OTP information: One bit is used per block (4 x 4 bytes or 2 x 8 bytes) (bit = 1: block is locked) Example: 01 = Block 1 of address FF80 ... FF83 is locked or 03 = Block 1 and 2 of address FF80 ... FF87 are locked, e.g. for the Philips SL2 ICS20 (MDS D124, D160 or D100). This chip provides a usable memory with 112 bytes EEPROM from address 0000 - 006F (total OTP area "0060 ... 006F"). In this memory, the locked area corresponds to the addresses 0060 ... 0063 or 0060 ... 0067
block_size	byte	0 ... FF	Block size of the transponder depending on transponder type, e.g. MDS D3xx: 4 bytes
nr_of_blocks	byte	0 ... FF	Number of blocks depending on transponder type, e.g. MDS D3xx: 248 bytes

Appendix A

A.1 Certificates and approvals

All the latest RFID radio approvals are available on the Internet (http://www.siemens.com/rfid-approvals).

Labeling	Description
CE	Conformity acc. to the RED EU directive

Notes on CE marking

The following applies to the system described in this documentation:
The CE marking on a device indicates the corresponding approval.

DIN ISO 9001 certificate

The quality assurance system for the entire product process (development, production, and marketing) at Siemens fulfills the requirements of ISO 9001 (corresponds to EN29001: 1987).

This has been certified by DQS (the German society for the certification of quality management systems).

EQ-Net certificate no.: 1323-01

Country-specific approvals

Safety

If the device has one of the following markings the corresponding approval has been obtained:

Labeling	Description
UL	Underwriters Laboratories (UL) to UL 60950 Standard (I.T.E), UL508 or UL61010-1/UL61010-2-201 (IND.CONT.EQ)
c UL	Underwriters Laboratories (UL) according to Canadian standard C22.2 No. 60950 (I.T.E), C22.2 No. 142 or C22.2 NO. 61010-1-12 (IND.CONT.EQ)
c UL us	Underwriters Laboratories (UL) according to Standard UL 60950, Report E11 5352 and Canadian standard C22.2 No. 60950 (I.T.E), UL508 or UL61010-1/UL61010-2-201 (IND.CONT.EQ) and C22.2 No. 142 or C22.2 NO. 61010-1-12 (IND.CONT.EQ)

Labeling	Description
	UL recognition mark
	Canadian Standard Association (CSA) acc. to standard C22.2. No. 60950 (LR 81690), C22.2 No. 142 or C22.2 NO. 61010-1-12 (LR 63533)
 NRTL	Canadian Standard Association (CSA) acc. to American Standard UL 60950 (LR 81690), UL508 or UL61010-1/UL61010-2-201 (LR 63533)
	This product meets the requirements of the AS/NZS 3548 Norm.
	USA (FCC) This device complies with Part 15 of the FCC Rules. FCC ID: NXW-RF...
Canada (IC)	Canada (IC) This device complies with Industry Canada licence-exempt RSS standard(s). IC: 267X-RF...
	Russia, Belarus and Kazakhstan
 ANATEL	Brazil (ANATEL) ANATEL-ID: XXXX-YY-ZZZZ
Mexico (COFETEL)	Mexico (COFETEL)
	South Africa (ICASA)
China (CMIIT)	China (CMIIT) CMIIT ID: XXXXYYZZZZ
	South Korea (KCC)
	Japan (VCCI)

A.2 Accessories

A.2.1 Transponder holders

Table A- 1 Overview of the transponder holders and spacers

Product photo	Insertable transponders	Characteristics
 6GT2190-0AA00	• MDS D100 • MDS D200 • MDS D400 • MDS E600 • MDS E611 • RF360T	• Spacer for mounting on metal, in conjunction with the fixing pocket 6GT2190-0AB00 • Distance from transponder to metal: 25 mm • Mounting: 4 x M4 screws • Material: PA6 • Weight: 31 g • Dimensions (L x W x H): 110 x 62 x 24 mm
 6GT2190-0AB00	• MDS D100 • MDS D200 • MDS D400 • MDS E600 • MDS E611 • RF360T	• Fixing pocket in conjunction with spacer 6GT2190-0AA00 • Mounting: – Locks into spacer – 2 x screws/nails – Tacked • Material: PA6 • Weight: 12 g • Dimensions (L x W x H): 121 x 57 x 5 mm
 6GT2390-0AA00	• MDS D100 • MDS D200 • MDS D400	• Fixing pocket not suitable for mounting directly on metal • Mounting: 2 x M4 countersunk screws • Material: PA6 • Weight: 21 g • Dimensions (L x W x H): 110 x 65 x 5 mm

Product photo	Insertable transponders	Characteristics
 6GT2690-0AA00	• MDS D139 • MDS D339	• Spacer for mounting on metal • Distance from transponder to metal: 30 mm • Mounting: 1 x M5 stainless steel screw • Tightening torque: 1.5 Nm • Material: PPS • Weight: 50 g • Dimensions (Ø x H): 85 x 30 mm
 6GT2690-0AH00	• MDS D139 • MDS D339	• Quick change holder for mounting on metal • Distance from transponder to metal: 30 mm • Mounting: Screw-in • Material: Stainless steel VA • Weight: 80 g • Dimensions (Ø x H): 22 x 60 mm
 6GT2690-0AH10	• MDS D139 • MDS D339	• Quick change holder for mounting on metal • Distance from transponder to metal: 30 mm • Mounting: Screw-in • Material: Stainless steel VA • Weight: 60 g • Dimensions (Ø x H): 22 x 47 mm
 6GT2690-0AK00	• MDS D124 • MDS D324 • MDS D424 • MDS D524	• Spacer for mounting on metal • Distance from transponder to metal: 15 mm • Mounting: 1 x M4 countersunk screw • Tightening torque: ≤ 1 Nm • Material: PPS • Weight: Approx. 4 g • Remounting cycles: min. 10 • Dimensions (Ø x H): 36 x 22 mm

Product photo	Insertable transponders	Characteristics
 6GT2690-0AL00	• MDS D126 • MDS D426 • MDS D526 • MDS E624	• Spacer for mounting on metal • Distance from transponder to metal: 25 mm • Mounting: 1 x M4 countersunk screw • Tightening torque: ≤ 1 Nm • Material: PA6 • Weight: Approx. 12 g • Remounting cycles: min. 10 • Dimensions (Ø x H): 59 x 30 mm
 6GT2690-0AG00	• MDS D160 • MDS D460	• Spacer for mounting on metal • Distance from transponder to metal: 10 mm • Mounting: 1 x M3 countersunk screw • Material: PA6 • Weight: 2 g • Dimensions (Ø x H): 20 x 14 mm
 6GT2690-0AE00	• MDS D423 • RF330T	• Fixing hood • Mounting: 2 x M4 or 2 x M5 screws with max. head diameter of 9.5 mm • Tightening torque ≤ 0.8 Nm (M4 only with flat washer) • Material: PPS • Weight: 3 g • Dimensions (L x W x H): 49.4 x 20 x 9.8 mm

Dimensional drawings

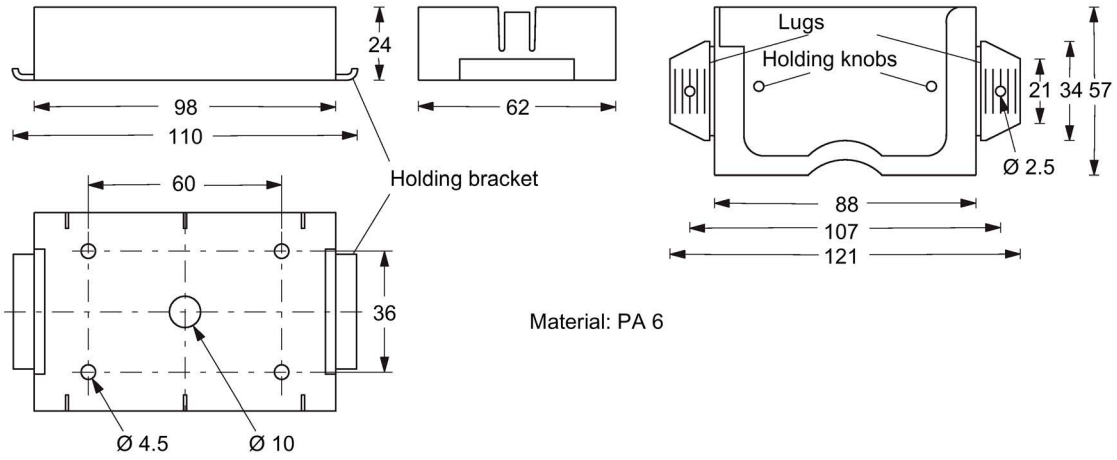


Figure A-1 Dimension drawing of spacer 6GT2190-0AA00 with fixing pocket 6GT2190-0AB00

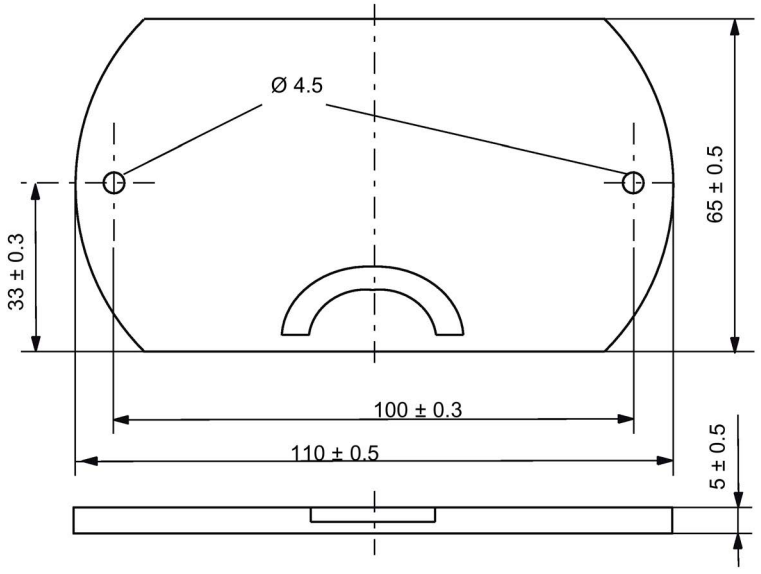


Figure A-2 Dimension drawing of fixing pocket 6GT2390-0AA00

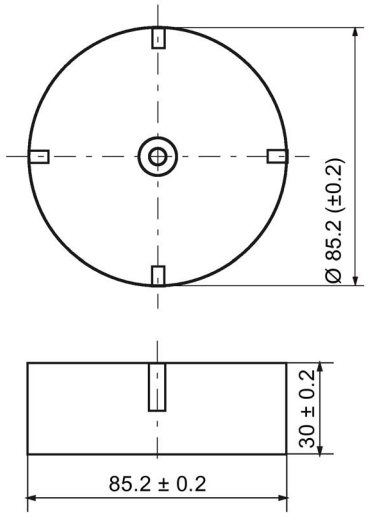


Figure A-3 Dimension drawing of spacer 6GT2690-0AA00

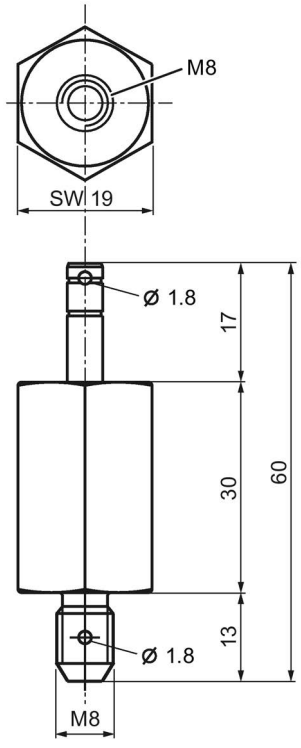


Figure A-4 Dimension drawing of quick change holder 6GT2690-0AH00

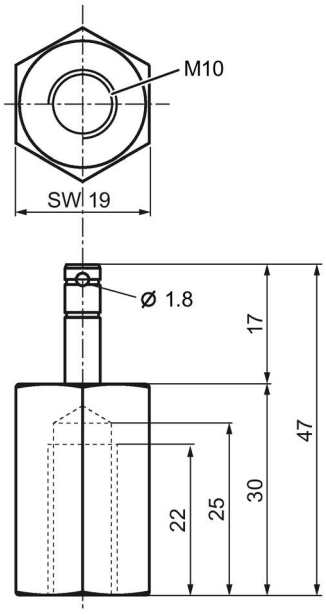


Figure A-5 Dimension drawing of quick change holder 6GT2690-0AH10

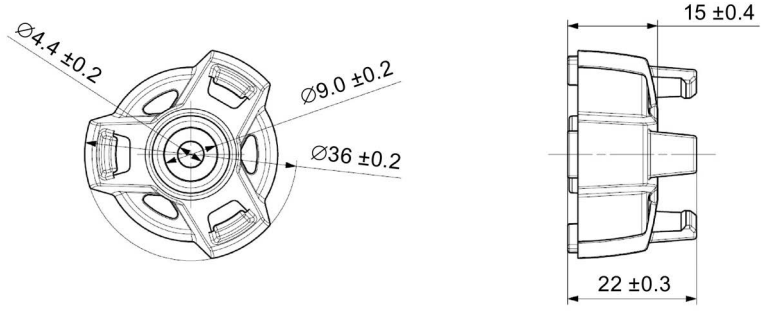


Figure A-6 Dimension drawing of spacer 6GT2690-0AK00

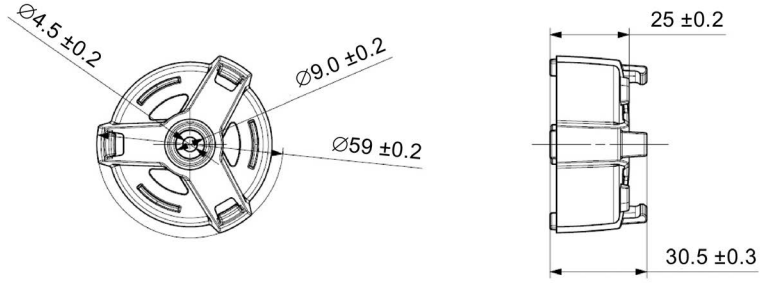


Figure A-7 Dimension drawing of spacer 6GT2690-0AL00

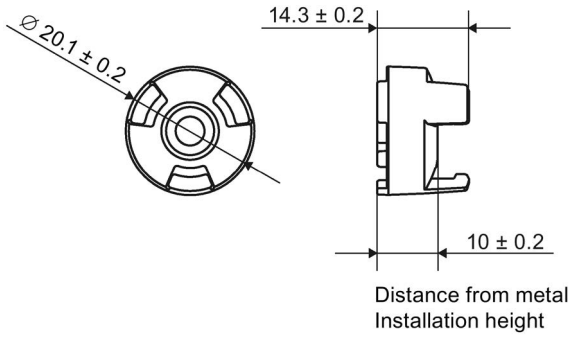


Figure A-8 Dimension drawing of spacer 6GT2690-0AG00

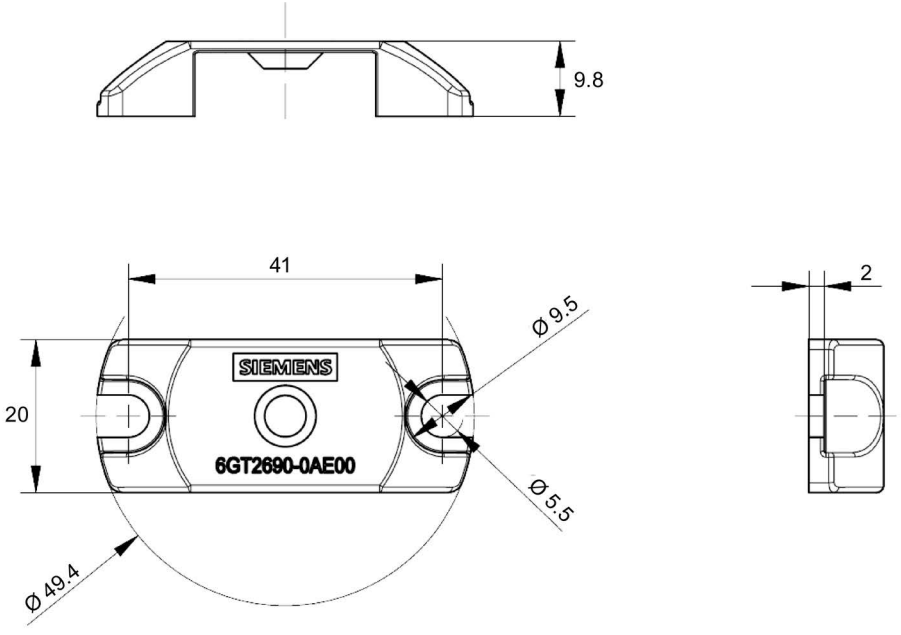


Figure A-9 Dimension drawing of fixing hood 6GT2690-0AE00

A.2.2 MOBY I migration

The RF300 readers of the new generation provide the option of simple migration of existing MOBY I systems to SIMATIC RF300. The so-called MOBY I emulation processes frames of the MOBY I protocol on its serial interface and communicates with the established RF300 transponders.

If the RF300 reader is connected to a communications module with MOBY I capability, the reader automatically recognizes the serial protocol and sets the MOBY I protocol. As a communications module with MOBY I capability, all the communications modules sold for MOBY I count regardless of the mode in which the MOBY I communications modules are operated. This property allows even projects with the ECC mode turned on or with file handlers to be migrated.

Communication modules with MOBY I capability:

RF180C, RFID 181EIP, RF170C, ASM 456, ASM 475, ASM 470, ASM450, ASM 451, ASM 452, ASM 472, ASM 473, ASM 424, ASM 454, ASM 400, CM 422, CM 423, ASM 410, ASM 420, ASM 421, ASM 440, ES030

With the aid of the adapter cable (0.3 m; article number 6GT2091-4VE30) you can migrate existing MOBY I projects without needing to re-cable the connected RFID devices.

The transfer is as usual with MOBY I with a transmission speed of 19.2 kBd. The transmission speed in the application is identical (or slightly slower) than with the original MOBY I hardware.

NOTICE
Changed field geometry When replacing MOBY I components with RF300 components note that the field geometry changes.

Note

LED reaction of the readers in MOBY I mode

Presence and errors are not displayed on the reader. These are only displayed via the connected CM.

Design of the Y adapter

With the aid of the Y adapter (article number 6GT2090-4VE00) a slow migration of a MOBY I application to RF300 is possible. The Y adapter is mounted in the vicinity of a MOBY I SLG. It forwards signals of a communications module both to the MOBY I SLG and to the RF300 reader to be newly installed. The transponder commands are handled either with a MOBY I transponder or with an RF300 transponder. To do this, no change to the MOBY I application is necessary.

① ASM TxD (X1) — Connector for the communications module; SLG plug, 6-pin acc. to EN 175201-804

② Power (X4) — Optional 24 VDC supply voltage; M12 plug, 4-pin

③ MOBY I (X2) — Connector for the MOBY I-SLG; SLG socket (angled), 6-pin acc. to EN 175201-804; cable length: 0.5 m

④ SIMATIC RF300 (X3) — Connector for RF 300 reader; M12 socket, 8-pin, cable length: 0.5 m max. 2 m cable extension permitted

Figure A-10 Connection graphic of the MOBY Y adapter for MOBY I

The operational statuses of the Y-adapter are displayed by four LEDs. The LEDs can adopt the colors yellow and green and the statuses off □, on ■, flashing ▣:

Labeling	LED	Description
ASM TxD (X1)	□	No communication module connected to the Y-adapter.
ASM TxD (X1)	■	A communication module is connected to the Y-adapter.
Power (X4)	□	The Y-adapter is switched off.
Power (X4)	▣	The Y-adapter is switched on. All connected components are supplied with power.

Labeling	LED	Description
Power (X4)		Flashes at 1:1 rate The following options are available: • Supply voltage at X4, but not at X1. • Supply voltage at X1, but not at X4. • No component is connected to either X2 or X3.
Power (X4)		Flashes at 1:10 rate; indicates an error. A transponder is installed on the MOBY I-SLG as well as on the RF300 reader. The user program displays the error "03".
MOBY I (X2)		No MOBY I-SLG connected to the Y-adapter or the MOBY I-SLG does not work.
MOBY I (X2)		A ready MOBY I-SLG is connected to the Y-adapter. If the LED gets brighter, there is communication to a MOBY I transponder.
SIMATIC RF300 (X3)		No RF300 reader connected to the Y-adapter or the RF300 reader does not work.
SIMATIC RF300 (X3)		A ready RF300 reader is connected to the Y-adapter. If the LED gets brighter, there is communication to a RF300 transponder.

Optional supply voltage

Use the optional supply voltage under the following conditions:

- If the communication module (X1) cannot supply the current required for 2 readers and the Y-adapter.
- If long cables between the communication module (X1) and the MOBY I-SLG (X2) cause the voltage at the Y-adapter to drop below the minimum supply voltage of 20 V.

Note

Questions on migration

If you have questions about migration, please contact the Siemens Industry Online Support (section "Service & Support (Page 451)").

Command set

The complete command set of the MOBY I SLGs is supported by the RF300 readers. You will find a list of the commands and a description of the commands in the manuals "FB 45" and "FC 56". These manuals can be found in the archive of the DVD "Ident Systems Software & Documentation" (6GT2080-2AA20).

A.2.3 DVD "Ident Systems Software & Documentation"

The DVD contains:

- FB/FC for SIMATIC, 3964R
- Drivers for DOS / Windows
- C libraries
- PC demonstration program
- RFID documentation in PDF format, especially RFID system manuals, programming instructions and operating instructions

Table A- 2 Ordering data DVD

	Article number
DVD "Ident Systems Software & Documentation"	6GT2080-2AA20

Note

Notes on "Ident Systems Software" and licensing

When purchasing a communication module or an interface module, no software or documentation is supplied. The "Ident Systems Software & Documentation" DVD contains all available FBs/FCs for the SIMATIC, C libraries, demo programs, etc. and needs to be ordered separately. In addition, the DVD contains the complete Ident documentation (German and English) in PDF format.

The purchase of a communications module or an interface module includes a payment for the use of the software, including documentation, on the "Ident Systems Software & Documentation" DVD and the purchaser acquires the right to make copies (copy license) insofar as they are required as part of the customer-specific application or development for the plant.

The contract accompanying the DVD pertaining to the use of software products against a one-off payment also applies.

A.3 Connecting cable

In the following chapter, you will find an overview of the connecting cables between the readers and communication modules or PCs.

A.3.1 RF3xxR reader (RS-422) with ASM 456 / RF160C / RF170C / RF180C / RF182C

Connecting cable with straight connector

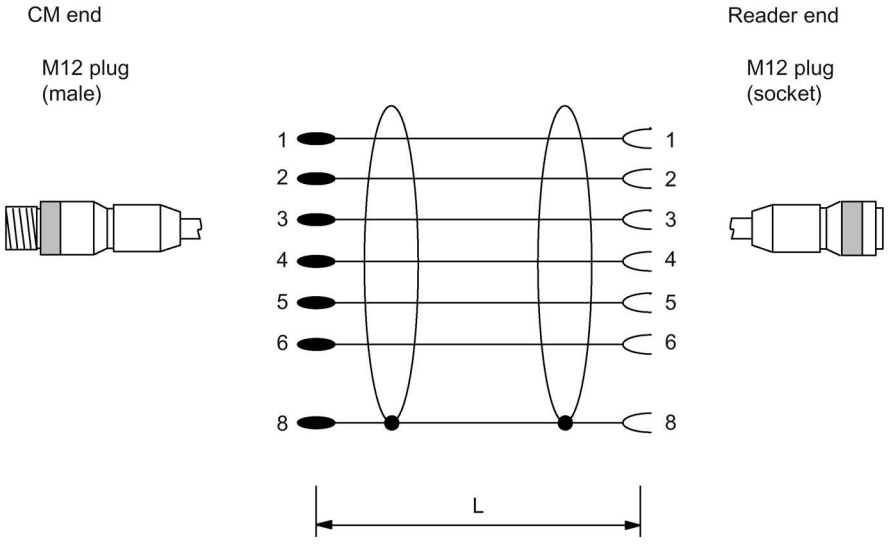


Figure A-11 Connecting cable between ASM 456, RF160C, RF170C, RF180C, RF182C and RF3xxR reader (RS-422)

Table A- 3 Ordering data

Length L	Article number
2 m	6GT2891-4FH20
5 m	6GT2891-4FH50
10 m	6GT2891-4FN10
20 m	6GT2891-4FN20
50 m	6GT2891-4FN50

Connecting cable with angled connector

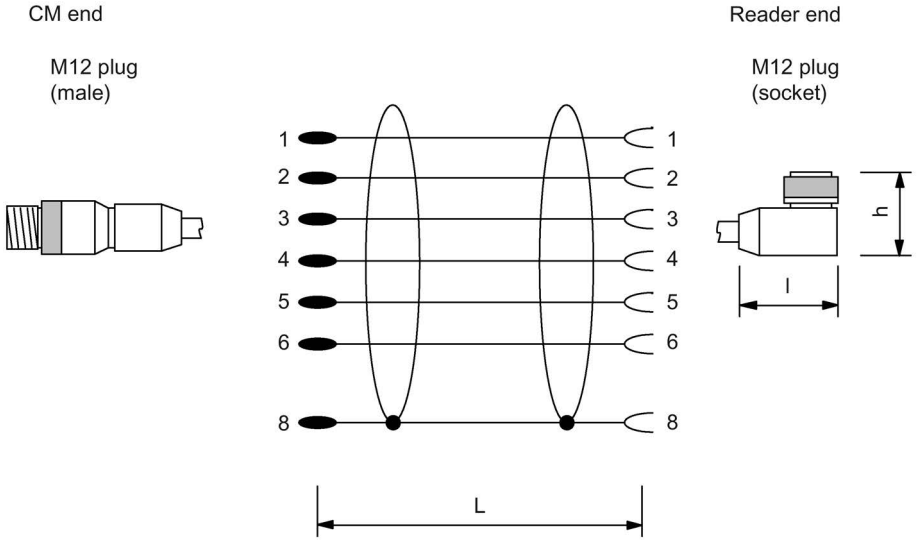


Figure A-12 Connecting cable between ASM 456, RF160C, RF170C, RF180C and RF3xxR reader (RS-422) with angled connector

Table A- 4 Ordering data

Length L	Article number
2 m	6GT2891-4JH20
5 m	6GT2891-4JH50
10 m	6GT2891-4JN10

The angled connector has a height of h = 29 mm and a length of l = 38 mm. Remember that due to the construction, the distance between the edge of the connector and the edge of the reader housing (H) is higher.

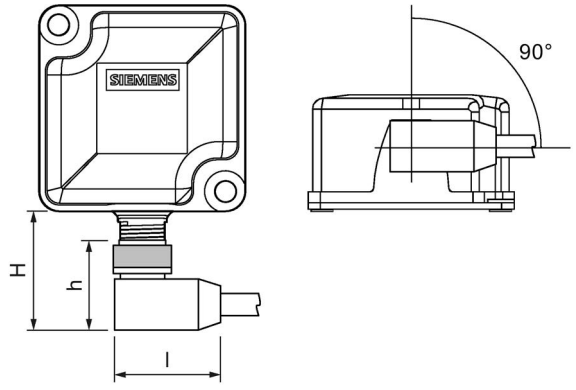


Figure A-13 Distance between connector edge and housing edge

The distance between the connector edge and the housing edge of the reader (H) depends on the reader being used and can be up to 38 mm. If you look at the front of the reader, the angled connector always points to the right and runs parallel to the housing.

A.3.2 Reader RF3xxR (RS422) with ASM 475

Reader connection system

The connecting cable has a length of 2 m (standard) and 5 m. Extensions up to 1000 m are possible with the 6GT2891-4E… plug-in cables.

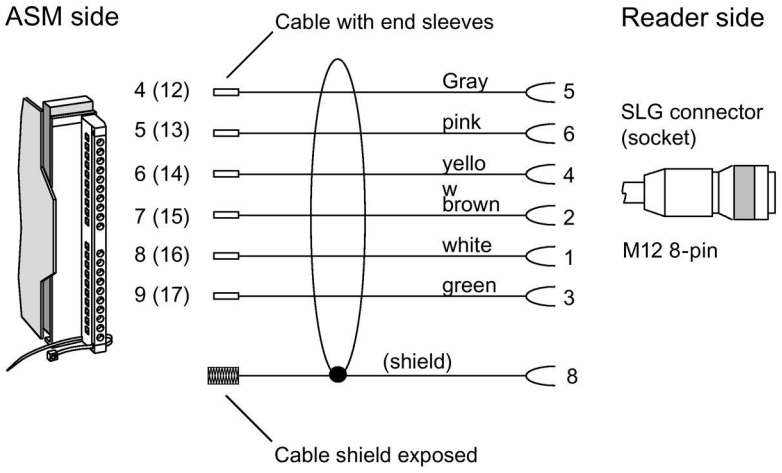


Figure A-14 Structure of the connecting cable between ASM 475 and RF3xx reader with RS-422

Table A- 5 Ordering data

Length L	Article number
2 m	6GT2891-4EH20
5 m	6GT2891-4EH50

A.3.3 Reader RF3xxR (RS-422) with RF120C

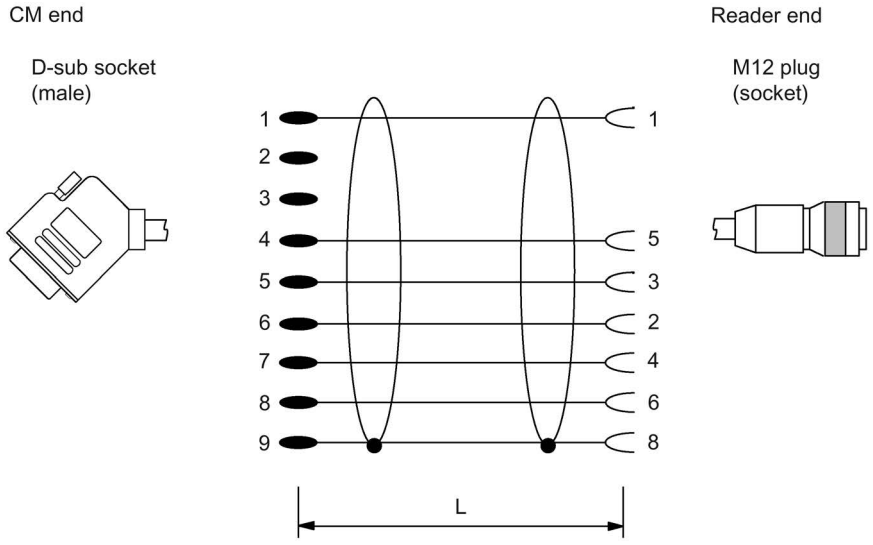


Figure A-15 Connecting cable between RF120C and RF3xxR reader (RS-422)

Table A- 6 Ordering data

Length L	Article number
2 m	6GT2091-4LH20
5 m	6GT2091-4LH50
10 m	6GT2091-4LN10

A.3.4 Reader RF380R (RS232) - PC

The connecting cables have a length of 5 m. The outgoing cable for the power supply has a length of 0.5 m.

With 4-pin power supply connector

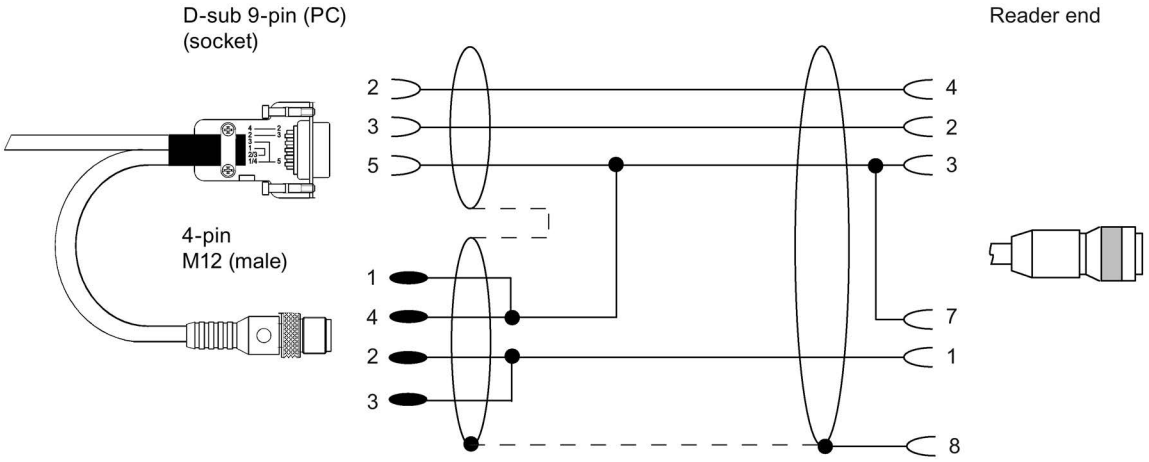


Figure A-16 Connecting cable between PC and RF380R (RS-232) with 4-pin power supply connector

Suitable power supply unit: e.g. wide-range power supply unit

With open ends for the power supply

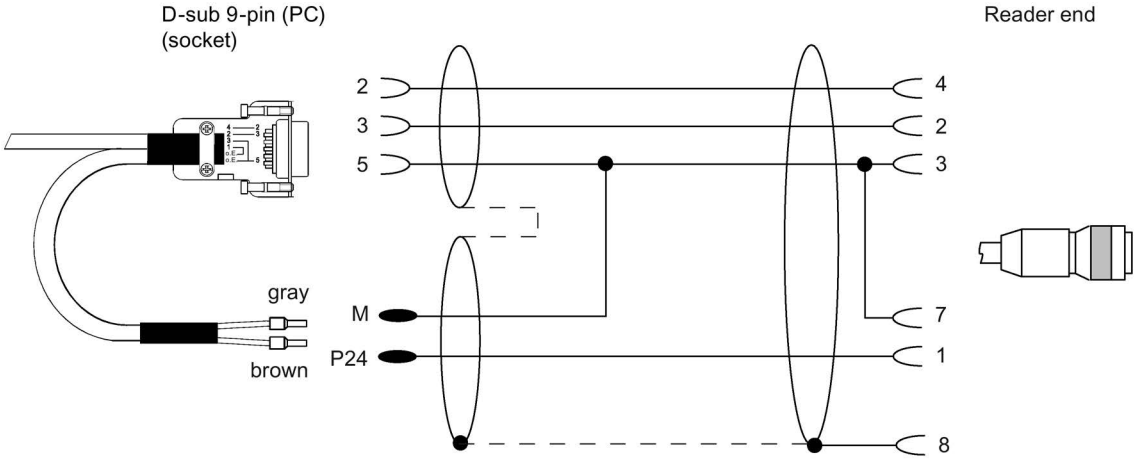


Figure A-17 Connecting cable between PC and RF380R (RS-232) with open ends for the power supply

Table A- 7 Ordering data connecting cable

	Article number
Connecting cable with 4-pin power supply connector (5 m)	6GT2891-4KH50
Connecting cable with open ends (5 m)	6GT2891-4KH50-0AX0

Table A- 8 Ordering data for wide-range power supply unit

	Article number
Wide-range power supply unit for SIMATIC RF-systems (100 - 240 VAC / 24 VDC / 3 A) with 2 m connecting cable with country-specific plug	EU: 6GT2898-0AA00 UK: 6GT2898-0AA10 US: 6GT2898-0AA20

A.4 Ordering data

RF300 components

Note

Product update

Note that readers with the article numbers "6GT2801-xABxx" are being replaced by readers with the article numbers "6GT2801-xBAxx".

Table A- 9 RF300 reader

Reader	Description		Article number
RF310R (RS-422)	• With RS-422 interface (3964R) • IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (L x W x H): 55 x 75 x 30 mm • with integrated antenna • ISO 15693 compatible	horizontal base plate	6GT2801-1AB10
		base plate turned through 90°	6GT2801-1AB10-0AX1
RF310R (Scanmode)	• with RS-422 interface (Scanmode) • IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (L x W x H): 55 x 75 x 30 mm • with integrated antenna • ISO 15693 compatible		6GT2801-1AB20-0AX1

Reader	Description	Article number
RF310R second generation	• With RS-422 interface (3964R) • IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (L x W x H): 55 x 75 x 30 mm • with integrated antenna • ISO 15693 compatible • ISO 14443 (MOBY E) compatible	6GT2801-1BA10
RF340R	• With RS-422 interface (3964R) • IP67 • Operating temperature -25 °C ... +70 °C • Dimensions (L x W x H): 75 x 75 x 41 mm • with integrated antenna • ISO 15693 compatible	6GT2801-2AB10
RF340R 2nd generation	• With RS-422 interface (3964R) • IP67 • Operating temperature -25 °C ... +70 °C • Dimensions (L x W x H): 75 x 75 x 41 mm • with integrated antenna • ISO 15693 compatible • ISO 14443 (MOBY E) compatible	6GT2801-2BA10
RF350R	• With RS-422 interface (3964R) • IP65 • Operating temperature: -25 °C ... +70 °C • Dimensions (L x W x H): 75 x 75 x 41 mm • Reader for external antennas, with the option of connecting ANT 1, ANT 3, ANT 12, ANT 18, ANT 30 • ISO 15693 compatible	6GT2801-4AB10
RF350R 2ndgeneration	• With RS-422 interface (3964R) • IP65 • Operating temperature: -25 °C ... +70 °C • Dimensions (L x W x H): 75 x 75 x 41 mm • Reader for external antennas, with the option of connecting ANT 1, ANT 3, ANT 12, ANT 18, ANT 30 • ISO 15693 compatible • ISO 14443 (MOBY E) compatible	6GT2801-4BA10

Reader	Description	Article number
RF380R	• with RS-422 interface (3964R) and RS-232 interface (3964R) • IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (L x W x H): 160 x 80 x 41 mm • with integrated antenna • ISO 15693 compatible	6GT2801-3AB10
RF380R Scanmode	• with RS-422 interface (Scanmode) and RS-232 interface (Scanmode) • IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (L x W x H): 160 x 80 x 41 mm • with integrated antenna • ISO 15693 compatible	6GT2801-3AB20-0AX1
RF380R 2nd generation	• with RS-422 interface (3964R) and RS-232 interface (3964R) • IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (L x W x H): 160 x 80 x 41 mm • with integrated antenna • ISO 15693 compatible	6GT2801-3BA10
RF382R (Scanmode)	• with RS-422 interface (Scanmode) and RS-232 interface (Scanmode) • IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (L x W x H): 160 x 80 x 41 mm • with integrated antenna • ISO 15693 compatible	6GT2801-3AB20-0AX0
RF350M	• IP54 • Operating temperature: -20 °C ... +55 °C • Dimensions (L x W x H): 250 x 90 x 47 mm • Mobile reader with integrated antenna	6GT2803-1BA00
RF350M	• IP54 • Operating temperature: -20 °C ... +55 °C • Dimensions (L x W x H): 250 x 90 x 47 mm • Mobile reader for external antennas, with the option of connecting ANT 8, ANT 12, ANT 18, ANT 30	6GT2803-1BA10

Table A- 10 RF300 transponder

RF300 transponder	Description	Article number
RF320T	• Memory size: 20 bytes of EEPROM user memory • Dimensions (Ø x H): 27 x 4 mm	6GT2800-1CA00
RF330T	• Memory size: 32 KB FRAM user memory • Dimensions (Ø x H): 30 x 8 mm	6GT2800-5BA00
RF340T (8 KB FRAM)	• Memory size: 8 KB FRAM user memory • Dimensions (L x W x H): 48 x 25 x 15 mm	6GT2800-4BB00
RF340T (32 KB FRAM)	• Memory size: 32 KB FRAM user memory • Dimensions (L x W x H): 48 x 25 x 15 mm	6GT2800-5BB00
RF350T	• Memory size: 32 KB FRAM user memory • Dimensions (L x W x H): 50 x 50 x 20 mm	6GT2800-5BD00
RF360T (8 KB FRAM)	• Memory size: 8 KB FRAM user memory • Dimensions (L x W x H): 85.8 x 54.8 x 2.5 mm	6GT2800-4AC00
RF360T (32 KB FRAM)	• Memory size: 32 KB FRAM user memory • Dimensions (L x W x H): 85.8 x 54.8 x 2.5 mm	6GT2800-5AC00
RF370T (32 KB FRAM)	• Memory size: 32 KB FRAM user memory • Dimensions (L x W x H): 75 x 75 x 41 mm	6GT2800-5BE00
RF370T (64 KB FRAM)	• Memory size: 64 KB FRAM user memory • Dimensions (L x W x H): 75 x 75 x 41 mm	6GT2800-6BE00
RF380T	• Memory size 32 KB FRAM user memory • Dimensions (Ø x H): 114 x 83 mm	6GT2800-5DA00

Table A- 11 ISO transponder

ISO transponder	Description	Article number
MDS D100	• Memory size: 112 bytes of EEPROM user memory • Dimensions (L x W x H): 85.6 x 54 x 0.9 mm • Credit card format	6GT2600-0AD10
MDS D117	• Memory size: 112 bytes of EEPROM user memory • Dimensions (Ø x H): 4 x 5 mm	6GT2600-0AG00
MDS D124	• Memory size: 112 bytes of EEPROM user memory • Dimensions (Ø x H): 27 (±0.2) x 4 (±0.2) mm	6GT2600-0AC10
MDS D126	• Memory size: 112 bytes of EEPROM user memory • Dimensions (Ø x H): 50 x 3.6 mm • Round design with mounting hole	6GT2600-0AE00
MDS D127	• Memory size: 112 bytes of EEPROM user memory • Dimensions (Ø x H): M6 x 5.8 (±0.2) mm	6GT2600-0AF00
MDS D139	• Memory size: 112 bytes of EEPROM user memory • Dimensions (Ø x H): 85 (±0.5) x 15 (-1.0) mm	6GT2600-0AA10
MDS D160	• Memory size: 112 bytes of EEPROM user memory • Dimensions (Ø x H): 16 (±0.2) x 3.0 (±0.2) mm • Laundry transponder for cyclic applications	6GT2600-0AB10
MDS D165	• Memory size: 112 bytes of EEPROM user memory • Dimensions (L x W): 86 x 54 mm • Smartlabel (PET) in credit card format	6GT2600-1AB00-0AX0
MDS D200	• Memory size: 256 bytes of EEPROM user memory • Dimensions (L x W x H): 86 x 54 x 0.8 mm • Credit card format	6GT2600-1AD00-0AX0
MDS D261	• Memory size: 256 bytes of EEPROM user memory • Dimensions (L x W): 55 x 55 mm • Smartlabel (PET), small design	6GT2600-1AA00-0AX0
MDS D324	• Memory size: 992 bytes of EEPROM user memory • Dimensions (Ø x H): 27 (±0.2) x 4 (±0.2) mm	6GT2600-3AC00
MDS D339	• Memory size: 992 bytes of EEPROM user memory • Dimensions (Ø x H): 85 (±0.5) x 15 (-1.0) mm	6GT2600-3AA10
MDS D400	• Memory size: 2000 bytes of FRAM user memory • Dimensions (L x W x H) 85.6 (±0.3) × 54 (±0.2) × 0.8 (±0.05) mm	6GT2600-4AD00
MDS D421	• Memory size: 2000 bytes of FRAM user memory • Dimensions (Ø x H): 10 x 4.5 mm	6GT2600-4AE00

ISO transponder	Description	Article number
MDS D422	• Memory size: 2000 bytes of FRAM user memory • Dimensions (Ø x H): M20 x 6 (±0.2) mm • Can be screwed into metal (flush-mounted)	6GT2600-4AF00
MDS D423	• Memory size: 2000 bytes of FRAM user memory • Dimensions (Ø x H): 30 (+0.2/-0.5) x 8 (-0.5) mm	6GT2600-4AA00
MDS D424	• Memory size: 2000 bytes of FRAM user memory • Dimensions (Ø x H): 27 (±0.2) x 4 (±0.2) mm	6GT2600-4AC00
MDS D425	• Memory size: 2000 bytes of FRAM user memory • Dimensions (Ø x H): 24 X 10 mm; M6 thread • Screw transponder	6GT2600-4AG00
MDS D426	• Memory size: 2000 bytes of FRAM user memory • Dimensions (Ø x H): 50 x 3.6 mm • Round design with mounting hole	6GT2600-4AH00
MDS D428	• Memory size: 2000 bytes of FRAM user memory • Dimensions (Ø x H): 18(±1) x 20(±1) mm (without thread); thread M8	6GT2600-4AK00-0AX0
MDS D460	• Memory size: 2000 bytes of FRAM user memory • Dimensions (Ø x H): 16 (±0.2) x 3.0 (±0.2) mm	6GT2600-4AB00
MDS D521	• Memory size: 8192 bytes of FRAM user memory • Dimensions (Ø x H): 10 x 4.5 mm	6GT2600-5AE00
MDS D522	• Memory size: 8192 bytes of FRAM user memory • Dimensions (Ø x H): M20 x 6 (±0.2) mm • Can be screwed into metal (flush-mounted)	6GT2600-5AF00
MDS D522 **Special variant**	• Memory size: 8192 bytes of FRAM user memory • Dimensions (Ø x H): 18 (+0.1) x 5.2 mm • Can be clipped into metal (flush-mounted)	6GT2600-5AF00-0AX0
MDS D524	• Memory size: 8192 bytes of FRAM user memory • Dimensions (Ø x H): 27 (±0.2) x 4 (±0.2) mm	6GT2600-5AC00
MDS D525	• Memory size: 8192 bytes of FRAM user memory • Dimensions (Ø x H): 24 x 10 (+1.0) mm	6GT2600-5AG00
MDS D526	• Memory size: 8192 bytes of FRAM user memory • Dimensions (Ø x H): 50 x 3.6 mm • Round design with mounting hole	6GT2600-5AH00
MDS D528	• Memory size: 8192 bytes of FRAM user memory • Dimensions (Ø x H): 18(±1) x 20(±1) mm (without thread); thread M8	6GT2600-5AK00

Table A- 12 Communication modules/interface modules

Communications module	Description	Article number
ASM 456	ASM 456 for PROFIBUS DP-V1 max. 2 readers connectable	6GT2002-0ED00
ASM 475	ASM 475 for SIMATIC S7 max. 2 RF3xxR readers with RS-422 can be connected in parallel without a front connector	6GT2002-0GA10
RF120C	Communications module RF120C for SIMATIC S7-1200	6GT2002-0LA00
RF160C	Communications module RF160C for PROFIBUS DP V0 max. 2 readers connectable	6GT2002-0EF00
RF170C	RF170C communications module	6GT2002-0HD00
	RF170C connecting block	6GT2002-1HD00
RF180C	RF180C communications module max. 2 SLGs or readers can be connected	6GT2002-0JD00
	Connecting block M12, 7/8" (5-pin)	6GT2002-1JD00
	Connecting block M12, 7/8" (4-pin)	6GT2002-4JD00
	Push-pull connecting block, RJ-45	6GT2002-2JD00
RF182C	RF182C communications module max. 2 SLGs or readers can be connected	6GT2002-0JD10
	Connecting block M12, 7/8" (5-pin)	6GT2002-1JD00
	Connecting block M12, 7/8" (4-pin)	6GT2002-4JD00
	Push-pull connecting block, RJ-45	6GT2002-2JD00
RFID 181EIP	RF182C communications module max. 2 SLGs or readers can be connected	6GT2002-0JD20
	Connecting block M12, 7/8" (5-pin)	6GT2002-1JD00
	Connecting block M12, 7/8" (4-pin)	6GT2002-4JD00
	Push-pull connecting block, RJ-45	6GT2002-2JD00

Table A- 13 Antennas

Antenna	Description	Article number
ANT 1	• IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (L x W x H): 75 x 75 x 20 mm • incl. an integrated antenna cable 3 m	6GT2398-1CB00
ANT 3	• IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (L x W x H): 50 x 28 x 10 mm • without antenna connecting cable	6GT2398-1CD30-0AX0
	• incl. one plug-in antenna connecting cable 3 m	6GT2398-1CD40-0AX0

Antenna	Description	Article number
ANT 3S	• IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (L x W x H): 50 x 28 x 10 mm • without antenna connecting cable	6GT2398-1CD50-0AX0
	• incl. one plug-in antenna connecting cable 3 m	6GT2398-1CD60-0AX0
ANT 8	• IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (Ø x L): M8 x 40 mm • without antenna connecting cable	6GT2398-1CF00
	• incl. one plug-in antenna connecting cable 3 m	6GT2398-1CF10
ANT 12	• IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (Ø x L): M12 x 40 mm • incl. one integrated antenna connecting cable 0.6 m	6GT2398-1CC10
	• incl. one plug-in antenna connecting cable 3 m	6GT2398-1CC00
ANT 18	• IP67 (front) • Operating temperature: -25 °C ... +70 °C • Dimensions (Ø x L): M18 x 55 mm • incl. one integrated antenna connecting cable 0.6 m	6GT2398-1CA10
	• incl. one plug-in antenna connecting cable 3 m	6GT2398-1CA00
ANT 30	• IP67 • Operating temperature: -25 °C ... +70 °C • Dimensions (Ø x L): M30 x 58 mm • incl. one plug-in antenna connecting cable 3 m	6GT2398-1CD00

Accessories

Table A- 14 Accessories for RF300 reader

Reader	Accessories	Article number
RF380R	RS-232 plug-in cable with 4-pin connector	6GT2891-4KH50
	Plug-in cable RS-232 with open ends (5 m)	6GT2891-4KH50-0AX0
	Plug-in cable RS-232 with D-SUB ↔ M12, 8-pin and with M8, 3-pin power unit connector	6GT2891-4KH50-0AX1

Table A- 15 RF300 transponder accessories

Transponder	Accessories	Article number
RF320T	Spacer (Ø x H): 36 x 22 mm	6GT2690-0AK00
RF330T	Fixing hood (L x W x H): 49.4 x 20 x 9.8 mm	6GT2690-0AE00
RF360T	Spacer (L x W x H): 110 x 62 x 24 mm (in conjunction with fixing pocket 6GT2190-0AB00)	6GT2190-0AA00
	Fixing pocket (L x W x H): 121 x 57 x 5 mm (in conjunction with spacer 6GT2190-0AA00)	6GT2190-0AB00
RF380T	Holder (short version)	6GT2090-0QA00
	Holder (long version)	6GT2090-0QA00-0AX3
	Shrouding cover	6GT2090-0QB00
	Universal holder	6GT2590-0QA00

Table A- 16 Transponder accessories

Transponder	Accessories	Article number
MDS D100 / D200 / D400	Spacer	6GT2190-0AA00
	Fixing pocket	6GT2190-0AB00
	Securing pocket (cannot be mounted directly on metal)	6GT2390-0AA00
MDS D139 / D339	Spacer (Ø x H): 85 x 30 mm	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
MDS D124 / D324 / D424 / D524	Spacer (Ø x H): 36 x 22 mm	6GT2690-0AK00
MDS D126 / D426 / D526 / E624	Spacer (Ø x H): 59 x 30 mm	6GT2690-0AL00
MDS D160 / D460	Spacer (Ø x H): 20 x 14 mm	6GT2690-0AG00
MDS D423	Spacer (L x W x H): 49.4 x 20 x 9.8 mm	6GT2690-0AE00

Table A- 17 Accessory connecting RF300 reader ↔ PC

Connecting cable	Accessories	Article number
RF240R / RF260R / RF290R (RS232) and PC	Connecting cable RS-232 with M12 male connector (4-pin), 5 m	6GT2891-4KH50
	Connecting cable RS-232 with open ends, 5 m	6GT2891-4KH50-0AX0

Table A- 18 Accessories - connecting cable communications module/ASM ↔ reader

Connecting cables	Description Length	Article number
ASM 456 / RF160C / RF170C / RF180C and reader RF3xxR (RS422)	2 m	6GT2891-4FH20
	5 m	6GT2891-4FH50
	10 m	6GT2891-4FN10
	20 m	6GT2891-4FN20
	50 m	6GT2891-4FN50
ASM 456 / RF160C / RF170C / RF180C and RF3xxR reader (RS-422) with angled connector	2 m	6GT2891-4JH20
	5 m	6GT2891-4JH50
	10 m	6GT2891-4JN10
ASM 475 and reader RF3xxR (RS422)	2 m	6GT2891-4EH20
	5 m	6GT2891-4EH50
RF120C and reader RF3xxR (RS422)	2 m	6GT2091-4LH20
	5 m	6GT2091-4LH50
	10 m	6GT2091-4LN10

Table A- 19 RFID accessories, general

RFID general	Article number
DVD "Ident Systems Software & Documentation"	6GT2080-2AA20
Wide-range power supply unit for SIMATIC RF systems (100 - 240 VAC / 24 VDC / 3 A) with country-specific power cable/plug, 2 m	EU: 6GT2898-0AC00
	UK: 6GT2898-0AC10
	US: 6GT2898-0AC20
24 V connecting cable, 5 m	6GT2491-1HH50
M12 connector, 4-pin for wide range power supply unit, pack of 3	6GK1907-0DB10-6AA3

A.5 Service & Support

Industry Online Support

In addition to the product documentation, the comprehensive online information platform of Siemens Industry Online Support at the following Internet address:
Link 1: (https://support.industry.siemens.com/cs/de/en/)

Apart from news, there you will also find:

- Project information: Manuals, FAQs, downloads, application examples etc.
- Contacts, Technical Forum
- The option submitting a support query:
  link 2: (https://support.industry.siemens.com/My/ww/en/requests)
- Our service offer:

  Right across our products and systems, we provide numerous services that support you in every phase of the life of your machine or system - from planning and implementation to commissioning, through to maintenance and modernization.

You will find contact data on the Internet at the following address:
Link 3: (http://w3.siemens.com/aspa_app)

RFID homepage

For general information about our identification systems, visit RFID homepage (http://w3.siemens.com/mcms/identification-systems/).

Online catalog and ordering system

The online catalog and the online ordering system can also be found on the Industry Mall Homepage (https://mall.industry.siemens.com).

SITRAIN - Training for Industry

The training offer includes more than 300 courses on basic topics, extended knowledge and special knowledge as well as advanced training for individual sectors - available at more than 130 locations. Courses can also be organized individually and held locally at your location.

You will find detailed information on the training curriculum and how to contact our customer consultants at the following Internet address:

Link: (http://sitrain.automation.siemens.com/sitrainworld/)

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