

# SIEMENS

## SIMATIC Ident

## RFID systems




## SIMATIC RF622T

### Compact Operating Instructions

## Legal information

### Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

 <b>DANGER</b>
indicates that death or severe personal injury <b>will</b> result if proper precautions are not taken.
 <b>WARNING</b>
indicates that death or severe personal injury <b>may</b> result if proper precautions are not taken.
 <b>CAUTION</b>
indicates that minor personal injury can result if proper precautions are not taken.
<b>NOTICE</b>
indicates that property damage can result if proper precautions are not taken.


If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

### Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

### Proper use of Siemens products

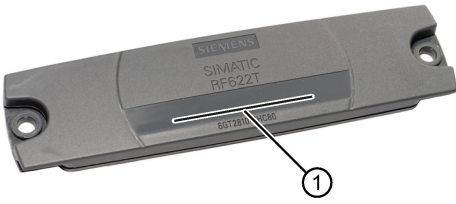
Note the following:

 <b>WARNING</b>
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

# 1 Features

The SIMATIC RF622T is a passive and maintenance-free data carrier. It operates on the basis of the UHF Class 1 Gen 2 technology and has a fast FRAM user memory of 3,424 bytes.

The SIMATIC RF622T achieves a read range of up to 3 m on a non-metallic surface and 1 m on metallic containers with a spacer. This means that the RF622T allows numerous uses in the widest range of applications.

SIMATIC RF622T	Characteristics	
	Area of application	Industrial plant management, RFID identification of tools and containers.
	Frequency band	860 ... 960 MHz
	Air interface	according to ISO°18000-6C
	Memory	EPC 496 bits User memory: 3424 bytes
	Write range	<ul style="list-style-type: none"> <li>• Up to 3 m on a non-metallic surface <sup>1)</sup></li> <li>• Up to 1 m on metal with spacer <sup>1)</sup></li> </ul>
	Read range	<ul style="list-style-type: none"> <li>• Up to 3 m on a non-metallic surface <sup>1)</sup></li> <li>• Up to 1 m on metal with spacer <sup>1)</sup></li> </ul>
	Mounting	2 x M4 screws
	Labeling area ①	Possible types of labeling: <ul style="list-style-type: none"> <li>• Barcode</li> <li>• Data matrix code</li> <li>• Labeling in plain text</li> </ul> It can be labeled with an adhesive label or by laser.

<sup>1)</sup> Depending on the environment

# 2 Ordering data

Table 2-1 Ordering data RF622T

	Article number
SIMATIC RF622T Packaging unit: 10 per pack	6GT2810-4HC80

Table 2-2 Ordering data for RF622T

	Article number
Spacer for SIMATIC RF622T Packaging unit: 10 per pack	6GT2898-3AA00

### 3 Presetting of the EPC memory

The first 12 bytes of the EPC memory ("0x00 - 0x0B") are preset. As of byte 13 ("0x0C") the EPC memory is not preset.

Table 3-1 Presetting of the EPC memory

<b>Address UID</b>	0x00	...	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B
<b>Address with FB (UID)</b>	0xFF00	...	0xFF04	0xFF05	0xFF06	0xFF07	0xFF08	0xFF09	0xFF0A	0xFF0B
<b>Value</b>	0x00	...	0x00	Transponder type (0x5E) <sup>1)</sup>	Year produced <sup>1)</sup>	Month produced <sup>1)</sup>	Day produced <sup>1)</sup>	Consecutive no. <sup>1)</sup>		

<sup>1)</sup> In the following table, these values are described in greater detail.

Table 3-2 Explanation of the values

Transponder type	Year produced	Month produced	Day produced	Consecutive no. <sup>1)</sup>		
RF622T = 0x5E	2015 = 0x0F	Jan. = 0x01	01 = 0x01	0x00	0x00	0x01
--	2016 = 0x10	Feb. = 0x02	02 = 0x02	0x00	0x00	0x02
--	...	...	...	...	...	...
--	...	Dec. = 0x0C	31 = 0x1F	0xFF	0xFF	0xFF

<sup>1)</sup> The consecutive number is counted absolutely and is therefore unique.

### 4 Read ranges

Table 4-1 Read ranges of transponders at a room temperature of +25 °C (all ranges in m)

	SIMATIC RF622T metal-free surface	SIMATIC RF622T with spacer on metal
<b>SIMATIC RF620R</b>		
with internal antenna	1.8	0.7
with RF620A	0.2	0.1
with RF640A	2.0	0.4
with RF642A	3.0	0.9
with RF660A	4.0	1.0
<b>SIMATIC RF630R</b>		
with RF620A	0.2	0.1
with RF640A	2.0	0.4
with RF642A	3.0	0.9
with RF660A	3.0	0.9

	<b>SIMATIC RF622T metal-free surface</b>	<b>SIMATIC RF622T with spacer on metal</b>
<b>SIMATIC RF640R</b>		
with internal antenna	3.0	0.8
with RF620A	0.4	0.2
with RF640A	2.5	0.7
with RF642A	3.0	1.0
with RF660A	3.0	0.9
<b>SIMATIC RF650R</b>		
with RF620A	0.4	0.2
with RF640A	2.5	0.7
with RF642A	3.0	1.0
with RF660A	3.0	0.9
<b>SIMATIC RF670R</b>		
with RF620A	0.4	0.2
with RF640A	2.5	0.7
with RF642A	3.0	1.0
with RF660A	3.0	0.9
<b>SIMATIC RF680R</b>		
with RF620A	0.4	0.2
with RF640A	2.5	0.7
with RF642A	3.0	1.0
with RF660A	3.0	0.9
<b>SIMATIC RF685R</b>		
with internal antenna	3.0	0.9
with RF620A	0.4	0.2
with RF640A	2.5	0.7
with RF642A	3.0	1.0
with RF660A	3.0	0.9

The specified read ranges apply only to single tag mode (one transponder in the antenna field) and depend on the environments in which they are used. If there is more than one transponder in the antenna field, the ranges may be reduced.

## 5 Technical specifications

Table 5-1 Technical specifications of SIMATIC RF622T

<b>6GT2810-4HC80</b>	
Product designation	SIMATIC RF622T
<b>Memory</b>	
Chip (manufacturer/type)	Fujitsu MB97R803
Memory configuration	
<ul style="list-style-type: none"> <li>• EPC</li> <li>• User memory</li> <li>• TID</li> </ul>	<ul style="list-style-type: none"> <li>• 496 bits</li> <li>• 3424 bytes</li> <li>• 256 bits <sup>1)</sup></li> </ul>
Write cycles (min., at 22 °C)	> 10 <sup>10</sup>
Data retention (at 55 °C)	10 years
<b>Mechanical specifications</b>	
Material	Plastic PA12, silicone-free
Color	Anthracite
Antenna material	Aluminum
Type of antenna	Shortened dipole
<b>Electrical data</b>	
Air interface	ISO 18000-6C
Polarization direction	Linear
Frequency band	860 ... 960 MHz
Write/read distance	
<ul style="list-style-type: none"> <li>• Write</li> <li>• Read</li> </ul>	<ul style="list-style-type: none"> <li>• Up to 3 m on a non-metallic surface <sup>2)</sup></li> <li>• Up to 1 m on metal with spacer <sup>2)</sup></li> <li>• Up to 3 m on a non-metallic surface <sup>2)</sup></li> <li>• Up to 1 m on metal with spacer <sup>2)</sup></li> </ul>
<b>Permitted ambient conditions</b>	
Ambient temperature	
<ul style="list-style-type: none"> <li>• In operation, during write/read access</li> <li>• In operation, outside write/read access</li> <li>• During transportation and storage</li> </ul>	<ul style="list-style-type: none"> <li>• -20 ... +85 °C</li> <li>• -40 ... +85 °C</li> <li>• -40 ... +85 °C</li> </ul>
Distance from metal	Secured with spacer (6GT2898-3AA00)
Torsion and bending load	not permitted
Degree of protection	IP67

**Design, dimensions and weight**

## Dimensions (L x W x H)

• Transponder	• 120 × 30 × 6.5 mm
• Spacer	• 130 × 31.5 × 12 mm
• Transponder with spacer	• 130 × 31.5 × 15 mm

## Weight

• Transponder	• 14 g
• Spacer	• 8 g

Type of mounting 2 x M4 screws

Tightening torque ≤ 1 Nm at room temperature

- 1) In the current chip version of the transponder, the TID can be written to. It is not recommended that you use the TID as user memory.
- 2) Depending on the environment

**6 Certificates and approvals**

Certificate	Description
CE	Conformity with R&TTE directive Compliant according to EU Directive 2002/95/EC
FCC Federal Communications Commission	Passive labels and transponders comply with the valid regulations; certification is not required.

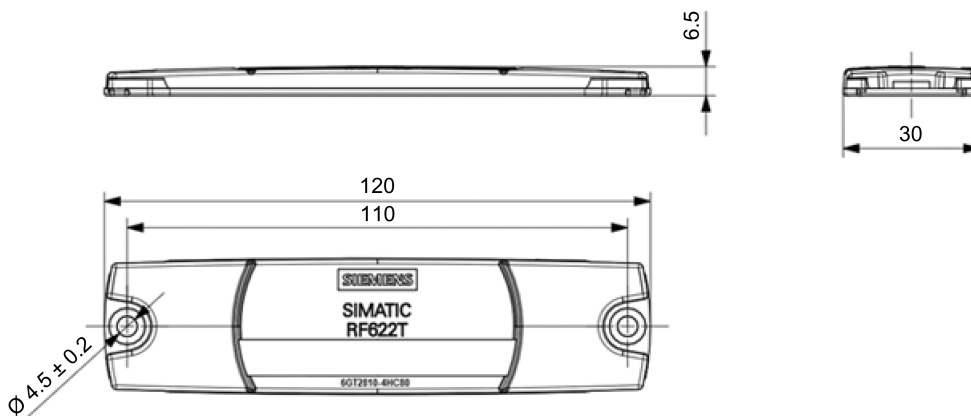
**7 Dimension drawing**

Figure 7-1 Dimension drawing RF622T

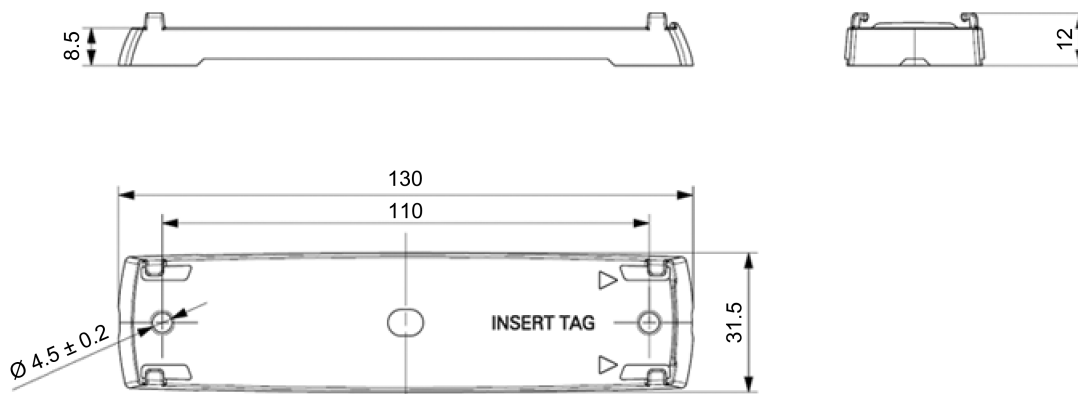


Figure 7-2 Dimension drawing spacer RF622T



Figure 7-3 Dimension drawing RF622T mounted

All dimensions in mm; tolerances unless indicated otherwise  $\pm 0.5$  mm.

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SIMATIC RF622T  
 C79000-G8976-C401-01, 03/2015