

SIEMENS

SIMATIC Ident

RFID systems




SIMATIC RF630L (6GT2810-2AE83-0AX0)

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.

 DANGER
indicates that death or severe personal injury will result if proper precautions are not taken.
 WARNING
indicates that death or severe personal injury may result if proper precautions are not taken.
 CAUTION
indicates that minor personal injury can result if proper precautions are not taken.
NOTICE
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:

 WARNING
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 Characteristics

The SIMATIC RF630L Smartlabel is a passive, maintenance-free data carrier based on UHF Class 1 Gen2 technology that is used to store the "Electronic Product Code" (EPC).

The Smartlabel has numerous possible uses in a wide range of applications and allows efficient logistics throughout the process chain.

SIMATIC RF630L Smartlabel	Features	
	Application	Simple identification such as barcode replacement, in warehouse and distribution logistics, right through to product identification. The Smartlabel is especially suitable for container management with washing processes.
	Frequency band	860 to 930 MHz
	Air interface	According to ISO 18000-63
	Memory	<ul style="list-style-type: none"> • EPC memory: 16 bytes / 128 bits • EPC ID: 12 bytes / 96 bits ¹⁾ • User memory: 0 bytes / 0 bits
	Read range	Max. 7 m ²⁾
	Mounting	Self-adhesive for mounting on plastic; Not suitable for direct mounting on metal.

¹⁾ preassigned

²⁾ Depending on the environment, the reader/antennas used and the set power

2 Ordering data

Table 2-1 Ordering data RF630L Smartlabel

Product	Article number
SIMATIC RF630L Smartlabel	6GT2810-2AE83-0AX0

Delivery

SIMATIC RF630L smart label is supplied in the following form:

- 10 000 Smartlabels per packaging unit: 10 rolls with 1 000 labels each
Minimum order quantity: 1 packaging unit (10 000 pcs.)

3 EPC ID

The Smartlabel is preassigned a 12-byte (96-bit) EPC ID by the manufacturer. The EPC ID is assigned continuously by the chip manufacturer.

4 Field data

Table 4-1 Field data of the RF630L with SIMATIC RF610R / RF615R

Antenna	Read range in meters [m]
Internal antenna	3.0
RF615A	0.5
RF620A / RF622A	0.6
RF642A	5.0
RF650A	3.0
RF660A	4.0
RF680A (circular)	3.2

Table 4-2 Field data of the RF630L with SIMATIC RF650R

Antenna	Read range in meters [m]
RF615A	0.6
RF620A / RF622A	0.7
RF642A	7.0
RF650A	3.2
RF660A	6,5
RF680A (circular)	3.5

Table 4-3 Field data of the RF630L with SIMATIC RF680R / RF685R

Antenna	Read range in meters [m]
Internal antenna	3.5
RF615A	0.7
RF620A / RF622A	0.7
RF642A	7.0
RF650A	3.5
RF660A	6,5
RF680A (circular)	3.5

5 Technical specifications

Table 5-1 Technical specifications of SIMATIC RF630L Smartlabel

6GT2810-2AE83-0AX0	
Product designation	SIMATIC RF630L Smartlabel
Radio frequency	
Operating frequency	860 to 930 MHz
Memory	
Chip (manufacturer/type)	NXP / UCODE 8
Memory type	EEPROM
Memory configuration	
<ul style="list-style-type: none"> • EPC ID • User memory • TID 	<ul style="list-style-type: none"> • 12 bytes / 96 bits • 0 bytes / 0 bits • 12 bytes / 96 bits
Number of write cycles (typical, at 22 °C)	> 100 000
Number of read cycles (typical, at 22 °C)	> 10 ¹⁴
Data retention (at ≤ 55 °C)	20 years
Electrical data	
Range	
<ul style="list-style-type: none"> • Writing • Reading 	<ul style="list-style-type: none"> • ≤ 4 m¹⁾ • ≤ 7 m¹⁾
Protocol	EPCglobal Class 1 Gen 2 / ISO 18000-63
Transmission speed	≤ 320 kbps
Polarization	Linear, parallel to the long side of the smart label
Mechanical specifications	
Material	PET
Silicone-free	Yes
Color	White
Antenna material	Aluminum
Type of antenna	Dipole
Printing	Can be printed using heat transfer technique
Roll core diameter	76.2 mm
Roll outer diameter	≤ 160 mm
Type of mounting	Single-sided adhesive (self-adhesive labels); acrylate glue, permanent adhesion See section "Applying adhesive smart labels (Page 6)".

Permitted ambient conditions

Ambient temperature

- | | |
|---|---|
| • In operation, during write/read access | • -25 to +130 °C |
| • In operation, outside write/read access | • -25 to +130 °C |
| • During storage | • +5 °C to +25 °C
at a humidity of 45% to 55%
The storage period is 2 years due to the durability of the adhesive |

Distance from metal	Not suitable for mounting directly on metal
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Degree of protection	IP67 ²⁾
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Resistance to mechanical stress	Torsion and bending stress conditionally permissible
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Design, dimensions, and weight

Dimensions (L x W)	75 (±1) × 25 (±1) mm
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Label spacing	31.1 (±1) mm
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Weight	Approx. 0.2 g
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Inlay position	Centered
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Label thickness without liner	300 µm (±20%)
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¹⁾ Depending on the environment, the employed reader/the antennas and the set power

²⁾ When affixed and if the environmental conditions are adhered to.

6 Certificates and approvals

Table 6-1 Certificates and approvals

Labeling	Description
	Conformity with the RED directive 2014/53/EU Conformity with the RoHS directive 2011/65/EU
 Federal Communications Commission	Passive labels and transponders comply with the valid regulations; certification is not required.

7 Dimension drawing

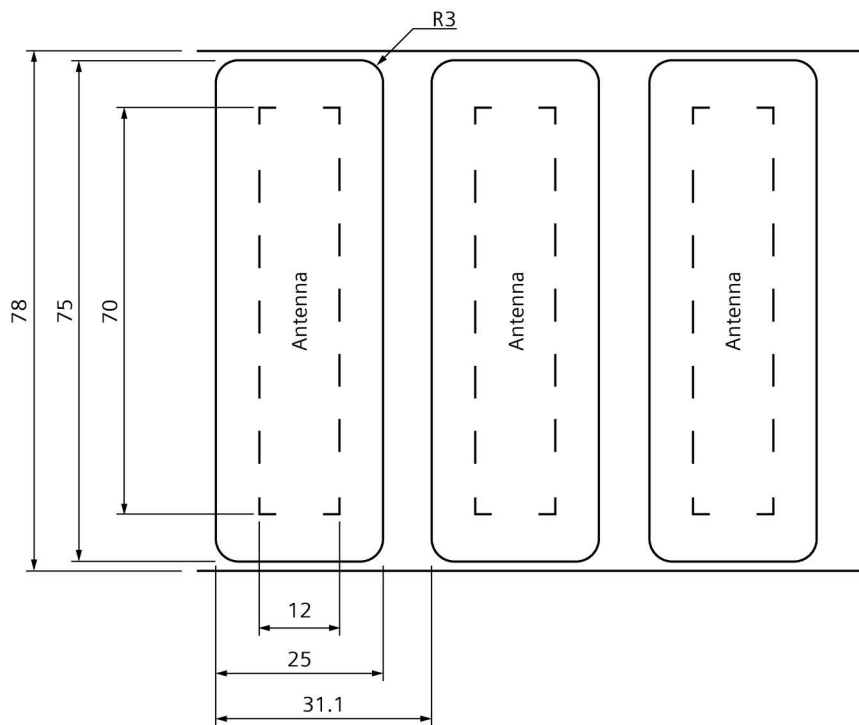


Figure 7-1 Dimension drawing SIMATIC RF630L Smartlabel (75 × 25 mm)

All dimensions in mm

8 Applying adhesive smart labels

When applying adhesive smart labels, observe the following points:

- Ambient temperature: +10 °C to +30 °C
- Make sure that the surface to which the label is to adhere is dry and free of dirt, oil residue and release agents. If necessary, clean the surface before applying the smart label. Please note that contaminations on the surface, e.g. caused by surface particles or oxidation layers, may reduce the adhesive property and the durability of the smart label.
- The smart label should be adhered to the surface immediately after the carrier material is removed by pressing it evenly and firmly onto the surface.
- Sufficient adhesion (initial bond) of the smart label will be given within about 20 minutes. Maximum adhesive strength of the smart label is reached after about 24 hours.

9 Storage and transportation

NOTICE

Notes on storage and transportation of rolls

Note the following information on the storage and transportation of rolls:

- Protect the transponders from direct sunlight and heat (e.g. heating appliances).
- Prior to use, store the label rolls in the polyethylene bag or the shrink film of the original packaging.
- Store the label rolls in a cool and dry location.
Ideal conditions: 18 °C ±5 °C, 40-60 % humidity
- Stack several label rolls lying flat and centered one above the other.
- Avoid external pressure (e.g. a narrow box).

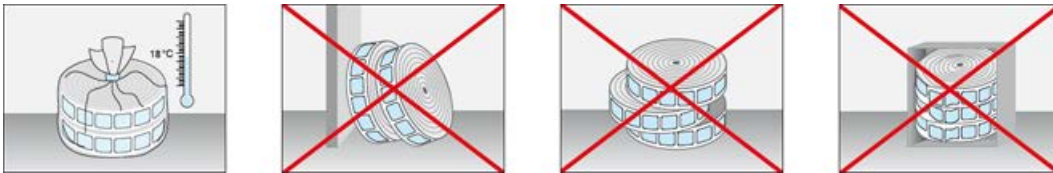


Figure 9-1 Storage of transponders

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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