# SIEMENS

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## 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.

#### 

indicates that death or severe personal injury will result if proper precautions are not taken.

#### 

indicates that death or severe personal injury may result if proper precautions are not taken.

#### 

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:

#### 

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.

#### Trademarks

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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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## Introduction

#### Purpose of these operating instructions

This documentation provides you with an overview of the installation and programming of the SIMATIC RF1060R reader. The operating instructions are intended for users and programmers involved in configuration, commissioning and servicing of the SIMATIC RF1060R.

#### **Registered trademarks**

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#### Description

Companies have been using RFID-based identification card systems for years to control access to buildings. With the increasing need for security and growing requirements for documentation, solutions are demanded with which access to machines and plants can be controlled on a user basis. The SIMATIC RF1060R reader provides the option of using employee identification cards also when operating machines. This allows finely graded access concepts to be implemented or user-specific instructions zo be stored - all with one card.



Figure 1-1 Product photo of the SIMATIC RF1060R

The SIMATIC RF1060R is a reader for connection to a Windows based computer. The connection is via a USB interface of the computer. The SIMATIC RF1060R is handled by the computer like a keyboard. This makes it unnecessary to install specific RFID drivers.

On the Siemens support page "Industry Online Support

(https://support.industry.siemens.com/cs/ww/en/view/109741590)" there are functions for accessing the reader in the form of a DLL file with a demo application. With the help of this DLL file you can implement user identification for access to your own applications quickly and simply. To do this, the reader reads out the serial numbers of MIFARE and ISO 15693 transponders. Depending on the card type, the serial number can be 4, 7 or 10 bytes long (MIFARE / ISO 14443)or 8 bytes (ISO 15693).

Please note that serial numbers of transponders that begin with the byte "0x08" are always newly generated by the transponder. This makes an assignment of serial numbers and transponders impossible.

The reader can be addressed and controlled by functions, for example to change the status of the reader or to communicate with a transponder. With the aid of the functions, you can for example control the three-color reader LED. Which functions exist and how you use them is described in this manual.

#### Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions only form one element of such a concept.

Customer is responsible to prevent unauthorized access to its plants, systems, machines and networks. Systems, machines and components should only be connected to the enterprise network or the internet if and to the extent necessary and with appropriate security measures (e.g. use of firewalls and network segmentation) in place.

Additionally, Siemens' guidance on appropriate security measures should be taken into account. For more information about industrial security, please visit Link: (http://www.siemens.com/industrialsecurity)

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends to apply product updates as soon as available and to always use the latest product versions. Use of product versions that are no longer supported, and failure to apply latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under

Link: (http://www.siemens.com/industrialsecurity).

## Installation

Proceed as follows to install the RF1060R reader:

1. Push the reader through the mounting opening intended for this purpose (76 × 48  $\pm$  0.3 mm) ①.

Make sure that the reader locks in place so that it cannot fall out,

- 2. Mount the cover plate on the rear of the reader with the 4 Torx screws (max. 1.5 Nm) ②.
- 3. Tighten the 4 x stud screws (max. 0.5 Nm) ③.
- 4. If required, mount the optional card holder on the front of the reader.

To do this, place the card holder on the side of the reader housing and press it over the reader front so that the card holder locks in place.

#### Note

The thickness of the wall on which the reader is mounted may be a maximum of 7 mm.



Figure 2-1 Mounting the RF1060R

## Installing and commissioning

Proceed as follows to install and commission the SIMATIC RF1060R reader:

1. Connect the RF1060R reader to your PC using the USB cable.

Reaction: The message "A USB device was installed successfully" appears.

 Install DLL drivers and the demo application on your PC using the installation file "RF1060R.exe".

You will find the file on the Internet on the pages of the Industry Online Support (https://support.industry.siemens.com/cs/ww/en/view/109741590).

3. Start the demo application by double-clicking on the file "AccessControlDemo.exe".

You will find more information on the demo application in the section "The demo application (Page 20)".

## Programming interface

#### **General information**

On the Siemens support page "Industry Online Support

(<u>https://support.industry.siemens.com/cs/ww/en/view/109741590</u>)" you will obtain the file "RF1060R.zip". This contains access functions as a DLL file and a demo application that illustrates the use of the DLL file.

With the demo application "AccessControlDemo" you can address the RF1060R directly from your application via the USB interface.. A precompiled DLL file for Windows systems that provides this function is included in the package.

The DLL makes various functions for communication with the reader available for integration in your application. The reader has return values and status codes to inform you of the reader status and execution of the functions.

## 4.1 The functions of the DLL

### 4.1.1 brp\_open\_usb\_session

The function opens a connection to the reader via USB and returns a session key that is required for all functions and continued communication via this connection. If the connection was successfully established, the value "BRP\_OK" is returned

Note that all the following functions can only be executed after you have established a connection to the reader with the function "brp\_open\_usb\_session". If this is not the case, an error is signaled back.

#### Note

#### Parallel operation not possible

Note that with the application, a connection can only be established to one reader at any one time. For this reason "brp\_open\_session" may only be called up once and before it can be called again must first be closed by the function "brp\_close\_session".

After a "brp\_open\_session" the parameter "Handle" must always be = "0". If the parameter ≠ "0", there is either an error or the function "brp\_open\_session" was called up several times in succession.

4.1 The functions of the DLL

#### **Function call**

```
int
brp_open_usb_session(
    int * Handle,
    DWORD ProductID
);
```

#### Description of the parameters

| Para | ameter           | Description   |
|------|------------------|---|
| brp_ | open_usb_session | The parameter opens a connection to the reader via USB                                    |
|      | Handle           | Session key initialized by this function.   |
|      | ProductID        | The product ID of the device to be connected.   |
| Retu | ırn value        | • BRP_OK  |
|      |                  | BRP_ERR_BUSY  |
|      |                  | BRP_ERR_GENERAL_IO  |
|      |                  | BRP_ERR_BUFFER_OVERFLOW   |
|      |                  | BRP_ERR_NO_MORE_HANDLES   |
|      |                  | BRP_ERR_INSUFFICIENT_MEM  |
|      |                  | You will find more information on return values in the section "Return values (Page 18)". |

## 4.1.2 brp\_close\_session

This function terminates an existing USB connection that was established earlier.

#### Function call

```
int
brp_close_session(
    int Handle
);
```

#### Description of the parameters

| Para              | ameter | Description   |
|-------------------|--------|---|
| brp_close_session |        | This parameter terminates a connection.   |
|                   | Handle | The session key returned by the function "brp_open_usb_session()".                        |
| Return value      |        | • BRP_OK  |
|                   |        | BRP_ERR_WRONG_HANDLE  |
|                   |        | You will find more information on return values in the section "Return values (Page 18)". |

## 4.1.3 syscmd\_reset

This function restarts the reader.

Note that after the function "syscmd\_reset" you need to execute the function "brp\_close\_session" followed by "brp\_open\_usb\_session".

## Function call

```
int
syscmd_reset (
    int Handle,
    int * Status
);
```

## Description of the parameters

| Para         | ameter    | Description  |
|--------------|-----------|--|
| syscmd_reset |           | The parameter restarts the reader.   |
|              | Handle    | The session key returned by the function "brp_open_usb_session()".                                       |
|              | Status    | You will find more information on the reader status in the section "Status codes (Page 19)".             |
| Retu         | ırn value | • BRP_OK<br>You will find more information on return values in the section "Return values<br>(Page 18)". |

## 4.1.4 syscmd\_get\_info

The function reads out information about the firmware of the reader.

The value read out contains information on the type of firmware, the version and the serial number of the reader.

## Function call

```
int
syscmd_get_info(
    int Handle,
    char * fws,
    int * Status
);
```

4.1 The functions of the DLL

#### Description of the parameters

| Para  | imeter    | Description   |   |
|---|-----------|---|---|
| syscmd_get_info The parameter reads out information about the firmware of the |           | reads out information about the firmware of the reader.                                   |   |
|   | Handle    | The session ke  | ey returned by the function "brp_open_usb_session()".                             |
|   | fws       | This parameter<br>and the serial r  | r contains information on the type of firmware, the version number of the reader. |
|   |           | Format: xxxx  | r.rr.rr dd/dd/dd sssssss  |
|   |           | xxxx  | Firmware type   |
|   |           | r.rr.rr   | Version (major release, minor release, build ID)                                  |
|   |           | dd/dd/dd  | Date of the version   |
|   |           | SSSSSSS   | Serial number of the reader   |
|   | Status    | You will find me<br>codes (Page 19  | ore information on the reader status in the section "Status 9)".                  |
| Retu  | ırn value | BRP_OK  |   |
|   |           | You will find more information on return values in the section "Return values (Page 18)". |   |

### 4.1.5 syscmd\_get\_boot\_status

The function returns a boot status.

Each bit of the value returned by the function represents an internal component of the reader. If the component of the reader could not be initialized the corresponding bit is set. Check the value of "boot\_status" for the value "0" and output an error or a warning if the values do not match.

#### **Function call**

```
int syscmd_get_boot_status(
    int Handle,
    dword * boot_status,
    int * Status
);
```

## Description of the parameters

| Para        | ameter           | Description  |
|-------------|------------------|--|
| sys-<br>cmd | _get_boot_status | The parameter returns a boot status value.   |
|             | Handle           | The session key returned by the function "brp_open_usb_session()".                           |
|             | boot_status      | Each bit represents an internal component of the reader.                                     |
|             | Status           | You will find more information on the reader status in the section "Status codes (Page 19)". |
| Retu        | urn value        | You will find more information on return values in the section "Return values (Page 18)".    |

#### Note

#### Value of boot status not equal to "0"

If the function returns a value not equal to "0", please contact "Service & Support (Page 29)".

#### 4.1.6 syscmd\_set\_port

You can use this function to assign parameters to the LEDs of the reader.

This function switches the LEDs of the module. With the parameters "port-mask" and "Status" you can assign the different reader statuses one of the 3 LED colors. You will find a list of possible LED colors in the following table.

#### **Function call**

```
int
syscmd_set_port(
    int Handle,
    word port_mask,
    int * Status
);
```

#### Description of the parameters

| Parameter Description |             | Description  |
|-----------------------|-------------|--|
| sysc                  | md_set_port | The parameter sets the LED of the reader.  |
|                       | Handle      | The session key returned by the function "brp_open_usb_session()".                           |
|                       | port_mask   | Each value of the parameter is assigned to a certain LED color.                              |
|                       | Status      | You will find more information on the reader status in the section "Status codes (Page 19)". |
| Return value          |             | • BRP_OK   |
|                       |             | You will find more information on return values in the section "Return values (Page 18)".    |

Table 4-1 Values of the "port\_mask" parameter

| Value  | LED color |
|--------|-----------|
| 0x0000 | □ Off     |
| 0x0001 | 🐺 Green   |
| 0x0002 | 🐺 Red     |
| 0x0003 | 🦉 Orange  |

4.1 The functions of the DLL

## 4.1.7 vhl\_select

With this function you select a card located in the antenna field. If successful, the status "OK" is returned.

The type of the selected card is returned in the parameter "CardType". Note that specification of the card type is achieved with the serial number, the length of the serial number and other information specified at the time of the selection phase. Since there is no guarantee that the serial number is unique, the card type is also not necessarily correct.

If there are several cards in the antenna field of the reader, they are processed by the function "VHLSelect". Whenever "VHLSelect" is called, the currently selected card is changed to the "Hold mode" and the next card is selected. Once all cards have been processed, "VHLSelect" returns the value "NOTAG\_ERR". If you remove a card from the antenna field and put it in again, "VHLSelect" will select the card again. If you want to select cards again without removing them physically from the antenna field, you need to set the "Reselect" parameter to "TRUE".

The "CardTypeMask" parameter allows only specific card families to be selected. If you want to select all cards supported by the hardware of the reader, you need to set the parameter to "0xFFFF". The more significant half byte specifies the card family (1-6) while the less significant half byte (X) refers to the recognized card type.

| CardTypeMask   | CardType | Card family          |
|----------------|----------|----------------------|
| 0x0001 (bit 1) | 0x1X     | ISO 14443 A / mifare |
| 0x0002 (bit 2) | 0x2X     | Reserved             |
| 0x0004 (bit 3) | 0x3X     | ISO 15693            |
| 0x0008 (bit 4) | 0x4X     | ISO 14443 B          |
| 0x0010 (bit 5) | 0x5X     | Reserved             |
| 0x0020 (bit 6) | 0x6X     | Reserved             |

| Table 4- 2 | The different card types and their representation  |
|------------|--|
|            | The unreferrit card types and their representation |

#### Function call

```
int
vhl_select(
    int Handle,
    word CardTypeMask,
    bool Reselect,
    bool AllowConfig,
    byte * CardType,
    int * Status
);
```

### Description of the parameters

| Para         | ameter       | Description  |  |
|--------------|--------------|--|--|
| vhl_s        | select       | With this parameter you select a card located in the antenna field.  |  |
|              | Handle       | The session key returned by the function "brp_open_usb_session()".   |  |
|              | CardTypeMask | The parameter specifies a card family to be recognized. If you want all card families to be recognized, set the parameter to the value "0xFFFF". |  |
|              | Reselect     | The parameter decides whether the card should be reselected.   |  |
|              | AllowConfig  | This value is always "false".  |  |
|              | CardType     | The returned value indicates the card type.  |  |
|              | Status       | You will find more information on the reader status in the section "Status codes (Page 19)".   |  |
| Return value |              | • BRP_OK   |  |
|              |              | You will find more information on return values in the section "Return values (Page 18)".  |  |

## 4.1.8 vhl\_get\_snr

The function returns the serial number of the currently selected card. If the function "vhl\_select" could not be executed earlier or the card is no longer in the field, the value "CARD\_NOT\_SELECTED\_ERR" (Status-Code "0x0102") is returned. In this case, an undefined serial number is returned.

#### **Function call**

```
int
vhl_get_snr(
    int Handle,
    byte * Snr,
    byte * Length,
    int * Status
);
```

## Description of the parameters

| Parameter                                   |        | Description  |  |
|---|--------|--|--|
| vhl_get_snr                                 |        | The parameter returns the serial number of the currently selected card.                      |  |
|   | Handle | The session key returned by the function "brp_open_usb_session()".                           |  |
|   | Snr    | Serial number of the card  |  |
| Length Length of the serial number in bytes |        | Length of the serial number in bytes   |  |
|   | Status | You will find more information on the reader status in the section "Status codes (Page 19)". |  |
| Return value                                |        | • BRP_OK   |  |
|   |        | CARD_NOT_SELECTED_ERR  |  |
|   |        | You will find more information on return values in the section "Return values (Page 18)".    |  |

4.1 The functions of the DLL

## 4.1.9 vhl\_is\_selected

This function checks whether the card selected the last time the "vhl\_select" function executed is still or once again located in the antenna field. If the card is there, the status "OK" is returned.

Note that this function always returns "CARD\_NOT\_SELECTED\_ERR" when a card is shown a card without the "vhl\_select" function being executed first.

### **Function call**

```
int
vhl_is_selected(
    int Handle,
    int * Status
);
```

#### Description of the parameters

| Parameter       |        | Description   |  |  |
|-----------------|--------|---|--|--|
| vhl_is_selected |        | This parameter checks whether the card selected the last time the "vhl_select" function executed is still or once again located in the antenna field. |  |  |
|                 | Handle | The session key returned by the function "brp_open_usb_session()".  |  |  |
|                 | Status | You will find more information on the reader status in the section "Status codes (Page 19)".  |  |  |
| Return value    |        | <ul> <li>BRP_OK</li> <li>You will find more information on return values in the section "Return values (Page 18)".</li> </ul>                         |  |  |

## 4.1.10 Return values

The following table contains a list of the possible values that the reader can return for the various functions.

| Value | Variable                 | Description   |
|-------|--------------------------|---|
| 0x00  | BRP_OK                   | No error has occurred                                     |
| 0x01  | BRP_ERR_STATUS           | The reader has returned a status code that is $\neq$ "0". |
| 0x02  | BRP_ERR_BUSY             | The reader is currently processing a function.            |
| 0x03  | BRP_ERR_IDLE             | The reader is waiting for a function.                     |
| 0x04  | BRP_ERR_TIMEOUT          | The response time has been exceeded.                      |
| 0x05  | BRP_ERR_CORRUPTED_FRAME  | A bad frame was detected.                                 |
| 0x06  | BRP_ERR_UNEXPECTED_FRAME | An unexpected frame was detected.                         |
| 0x07  | BRP_ERR_GENERAL_IO       | The underlying serial port has caused an error.           |
| 0x08  | BRP_ERR_BUFFER_OVERFLOW  | The reader sent more data than expected.                  |
| 0x09  | BRP_ERR_NO_MORE_HANDLES  | There is no free session key.                             |

4.1 The functions of the DLL

| Value | Variable                 | Description   |
|-------|--------------------------|---|
| 0x0A  | BRP_ERR_INSUFFICIENT_MEM | There is not enough memory to generate a new session key. |
| 0x0B  | BRP_ERR_WRONG_HANDLE     | The specified session key does not exist.                 |
| 0x0C  | BRP_ERR_WRONG_PARAMETERS | The parameters of a function are incorrect.               |

### 4.1.11 Status codes

The following table contains a list of the status codes of the VHL command set.

| Value  | Variable                | Description  |
|--------|-------------------------|--|
| 0x0000 | BRP_OK                  | No error   |
| 0x0101 | NOTAG_ERR               | Transponder does not exist or no response.   |
|        |                         | This status code requires reselection of the card with the function "vhl_select".                          |
| 0x0102 | CARD_NOT_SELECTED_ERR   | The function cannot be executed because no tran-<br>sponder is selected.                                   |
| 0x0103 | HF_ERR                  | Communications problems with the transponder.  |
| 0x0104 | CONFIG_ERR              | This value is currently not supported.   |
| 0x0105 | AUTH_ERR                | This value is currently not supported.   |
| 0x0106 | READ_ERR                | The communications sequence is successful, but read-<br>ing failed.  |
| 0x0107 | WRITE_ERR               | This value is currently not supported.   |
| 0x0108 | CONFCARD_READ           | A transponder was recognized.  |
| 0x0109 | INVALID_CARD_FAMILY_ERR | The required transponder type does not match the transponder family of the currently selected transponder. |
| 0x010A | NOT_SUPPORTED_ERR       | This value is currently not supported.   |
| 0x010B | VHL_FORMAT_ERR          | This value is currently not supported.   |

Most of the status codes listed in the table above do not require reselection of the transponder. The only status code that deviates from this rule is "NOTAG\_ERR" This requires reselection of the transponder by the application.

The functions are constructed so that if execution fails, they are automatically repeated. This compensates any communications problems that may occur, e.g. due to bad RF signal quality as a result of external influences.

## 4.2 The demo application

The demo application contained in the file "RF1060R" helps you to understand the available functions.

The available software package contains a demo application based on Windows .NET 3.5 including source code files. This demo application serves as a model on the basis of which you can program your own user application. The demo application includes all the functions described in the following sections and is fully functional. This gives you the opportunity of testing your readers directly using the demo application.

#### Note

#### **Disclaimer of liability**

Note that Siemens AG accepts no liability for the demo application.

## 4.2.1 User interface of the demo application

#### Requirement

To be able to work with the demo application, .NET 3.5 must be installed on your PC and the "RF1060R.exe" file needs to be installed on your PC.

### Working with the demo application

1. Start the demo application by double-clicking on the file "AccessControlDemo.exe".

| AccessControlDemo |                  |
|-------------------|------------------|
| Start Scan        | hơ"              |
| Stopp Scan        |                  |
|                   |                  |
|                   |                  |
|                   |                  |
| Clear             | <b>T</b> .       |
|                   | Version: 0.0.5.1 |

Start ScanStart to scan. The demo program searches for readable transponders in the anten-<br/>na field.Stopp ScanStop scanning.ClearClear the display window.

Figure 4-1 Start window of the demo application

The demo application has 3 buttons and a display area.

The version number of the demo application is shown at the bottom right in the application.

2. Start scanning by clicking the "Start Scan" button.



Figure 4-2 Sample view of a scan

The acquired data is displayed in the display area.

- 3. To clear the display area click the Clear button.
- 4. To stop scanning, click the "Stopp Scan" button.

4.2 The demo application

## 4.2.2 Creating your own application

### Requirement

- You have installed the DLL file and the demo application.
- The reader is connected.

Note that the demo application is capable of running without Microsoft Visual Studio (Express) being installed. You can view the source code with a text editor. To edit the source code you require Microsoft Visual Studio (Express) on your PC.

#### Creating your own application

Follow the steps below to create your own application:

- 1. Establish the connection to the reader ("brp\_open\_usb\_session").
- 2. Check cyclically whether a transponder is located in the read range of the reader ("vhl\_select").

There is transponder in the read range:

- The transponder is recognized.
- Read out the serial number ("vhl\_get\_snr").
- Signal the application that the transponder with the serial number "x" was recognized.
- Check cyclically whether the transponder is still in the read range.

The transponder is no longer within the read range:

- Signal the application that the transponder with the serial number "x" is no longer recognized.
- 3. Terminate the connection to the reader ("brp\_close\_session").

The source code of the demo application can serve as an example for your own application.

## **Technical specifications**

| ·  |  |
|--|--|
|  | 6GT2831-6AA50  |
| Product type designation                           | RF1060R  |
|  |  |
| Radio frequency                                    |  |
| Operating frequency                                | 13.56 MHz  |
|  |  |
|  | 20   |
|  | 30 mm  |
| Maximum transmission speed<br>reader ↔ transponder |  |
| Reading  | • approx. 1.5 KBps   |
| Mechanical specifications                          |  |
| Housing  |  |
| Material   | PC-GF  |
| Color  | • TI-Gray  |
|  |  |
| Interfaces   |  |
| Interface to the communication module              | USB 2.0  |
| Antenna  | integrated   |
| Supply voltage current consumption power loss      |  |
| Power supply                                       | 5 VDC via USB  |
| Current consumption                                | typically 150 mA; max. 300 mA                                      |
|  |  |
| Permitted ambient conditions                       |  |
| Ambient temperature                                |  |
| During operation                                   | <ul> <li>-25 to +55 °C</li> </ul>                                  |
| During transportation and storage                  | • -25 to +55 °C  |
| Degree of protection to EN 60529                   | In the installed status:<br>on the front IP65;<br>on the rear IP20 |
| Shock-resistant to EN 60721-3-7, Class 7 M2        | 300 m/s²   |
| Vibration-resistant to EN 60721-3-7, Class 7 M2    | 50 m/s <sup>2</sup>  |

#### Table 5-1 Technical specifications

| Design, dimensions and weights              |   |
|---|---|
| Dimensions (W $\times$ H $\times$ D)        |   |
| excl. card holder                           | • 90 × 62 × 23.5 mm   |
| Incl. card holder                           | • 99 × 62 × 34.6 mm   |
| Weight                                      | approx. 120 g   |
| Type of mounting                            | Door installation,<br>4 x stud screws (slotted screws) M4 x 20;<br>Tightening torque ≤ 0.5 Nm;<br>4 x Torx screws (EJOT) T10 x 10;<br>Tightening torque ≤ 1.5 Nm;<br>Installation wall thickness maximum 7 mm |
| Cable length reader ↔ communications module | 1.8 m USB connecting cable  |
| Display elements                            | 3 color LED display   |
| Approvals                                   | CE / FCC / IC   |
| MTBF  | 28 years  |

6GT2831-6AA50

## **Dimension drawing**







Figure 6-1 Dimension drawing RF1060R with optional card holder ①

All dimensions in mm

## Appendix

## A.1 Certificates & approvals

#### Table A-1 Country-specific approvals

| Labeling                                    | Description   |  |
|---|---|--|
| ((  | CE according to RED directive 2014/53/EU  |  |
|   | CE according to RoHS directive 2011/65/EU   |  |
| FCC<br>Federal Communications<br>Commission | <ol> <li>Part 15 Clause 15.105:</li> <li>"Note: This equipment has been tested and found to comply with the<br/>limits for a Class B digital device, pursuant to part 15 of the FCC<br/>Rules. These limits are designed to provide reasonable protection<br/>against harmful interference in a residential installation. This equip-<br/>ment generates, uses and can radiate radio frequency energy and, if<br/>not installed and used in accordance with the instructions, may cause<br/>harmful interference to radio communications. However, there is no<br/>guarantee that interference will not occur in a particular installation. If<br/>this equipment does cause harmful interference to radio or television<br/>reception, which can be determined by turning the equipment off and<br/>on, the user is encouraged to try to correct the interference by one or</li> </ol> |  |
|   | more of the following measures:<br>• Recrient or relocate the receiving antenna   |  |
|   | <ul> <li>Increase the separation between the equipment and receiver</li> </ul>  |  |
|   | <ul> <li>Connect the equipment into an outlet on a circuit different from<br/>that to which the receiver is connected.</li> </ul>   |  |
|   | <ul> <li>Consult the dealer or an experienced radio/TV technician for<br/>help."</li> </ul>   |  |
|   | 2) Statement for Part 15 Clause 15.21:  |  |
|   | "Changes or modifications not expressly approved by the party re-<br>sponsible for compliance could void the user's authority to operate<br>the equipment."   |  |
|   | 3) Statement for FCC Part 15.19:  |  |
|   | "This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:  |  |
|   | (1) This device may not cause harmful interference, and   |  |
|   | • (2) this device must accept any interference received, including interference that may cause undesired operation."  |  |

#### Appendix

A.2 Ordering data

| Labeling                 | Description  |
|--------------------------|--|
| Industry Canada Radio    | CAN ICES-3 (B)/NMB-3(B)  |
| Standards Specifications | This device complies with Industry Canada's licence-exempt RSSs.<br>Operation is subject to the following two conditions:  |
|                          | • 1) This device may not cause interference; and   |
|                          | • 2) This device must accept any interference, including interference that may cause undesired operation of the device.  |
|                          | Le présent appareil est conforme aux CNR d'Industrie Canada appli-<br>cables aux appareils radio exempts de licence. L'exploitation est<br>autorisée aux deux conditions suivantes : |
|                          | • 1) l'appareil ne doit pas produire de brouillage;  |
|                          | <ul> <li>2) l'appareil doit accepter tout brouillage radioélectrique subi,<br/>même si le brouillage est susceptible d'en compromettre le fonc-<br/>tionnement.</li> </ul>           |
| EHE                      | Russia, Belarus and Kazakhstan   |
| ANATEL                   | Brazil (ANATEL)  |
| Mexico (IFETEL)          | Mexico (IFETEL)<br>RCPSIRF16-2053  |
| China (CMIIT)            | China (CMIIT)  |
|                          | CMIIT ID: 2016DJ7412   |
|                          | South Korea (KCC)  |
| <u>S</u>                 | MSP-CRM-RF5-RF1060R  |

## A.2 Ordering data

#### Table A-2 Ordering data RF1060R

| Product         | Article number |
|-----------------|----------------|
| SIMATIC RF1060R | 6GT2831-6AA50  |

#### Table A-3 Ordering data accessories

| Product                       |       | Article number |
|-------------------------------|-------|----------------|
| Card holder for RF1060R       |       | 6GT2890-0CA00  |
| Optional USB connecting cable | 0.5 m | 6GT2891-0UE50  |

## A.3 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 home page (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 home page (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/)

### Appendix

A.3 Service & Support