

## Antennas

### 6.1 RF660A antenna

#### 6.1.1 RF660A description

The RF660A is a stationary antenna, specially designed for the RF660R reader.

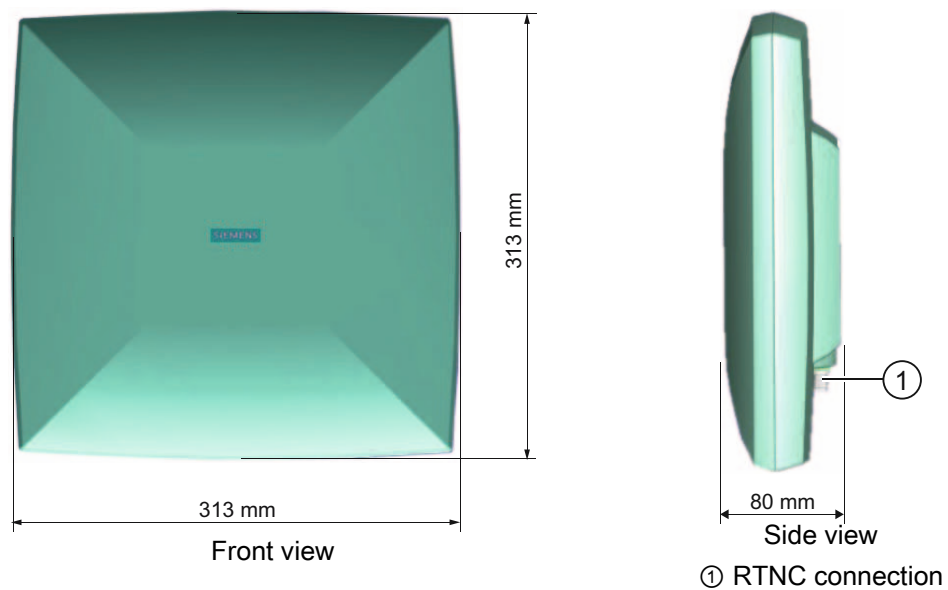
The antenna is available in two different frequency ranges that have been specified for the regions of Europe and USA.

#### Frequency range

- The antenna for Europe operate in the frequency range of 865 to 868 MHz
- The antenna for the USA operate in the frequency range of 902 to 928 MHz

#### Design of the RF660A

The antenna is installed in a rectangular plastic housing.



### Radiating/receiving characteristic

The characteristic curve is shown for horizontal alignment and for a frequency of 865 MHz.

The radiating/receiving angle of the antenna is defined by the angle between the two 3dB points.

Figure 6-1 Effective range of radiation (at 865 MHz, horizontal alignment)

### Ordering data

| Description       | Machine-Readable Product Code |
|-------------------|-------------------------------|
| RF660A for Europe | 6GT2 810-0AA00                |
| RF660A for USA    | 6GT2 810-0AA01                |

## 6.1.2 Application Planning

### Specified minimum spacing of antennas

The following diagram shows the specified minimum and maximum spacings for mounting antennas:

A minimum spacing of 50 cm is necessary between the antenna and liquids or metals. The distance between the antenna and the floor should also be at least 50 cm.

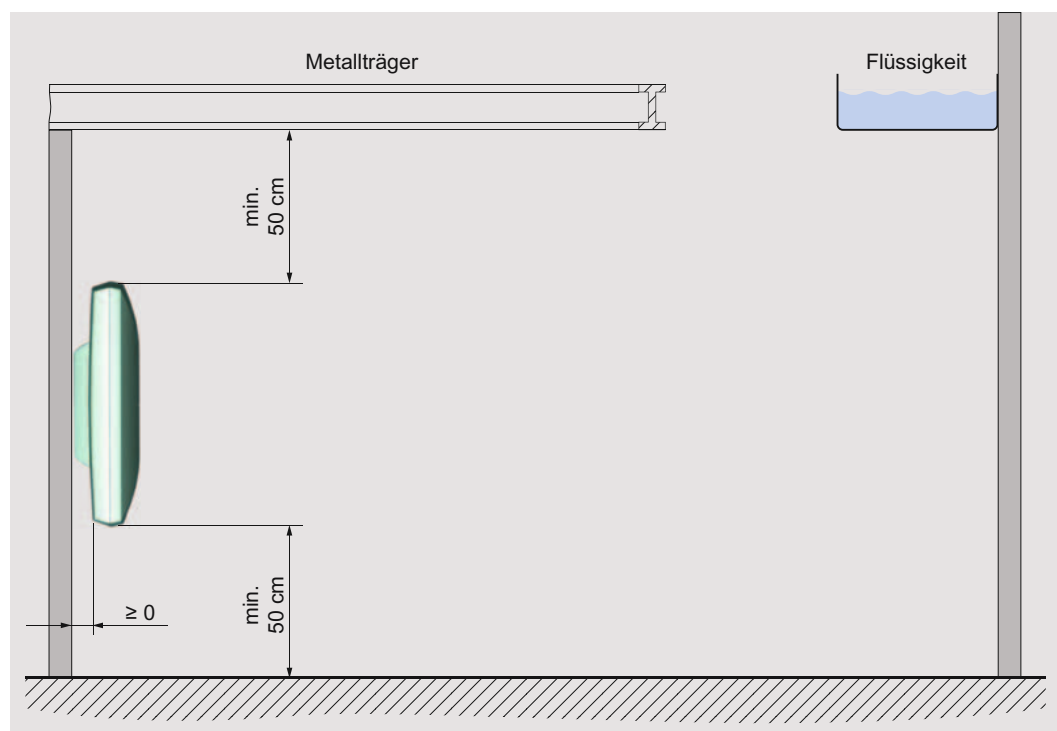


Figure 6-2 Distance to the environment

The distance between two antennas mounted alongside each other or one above the other should be at least 20 to 50 cm.

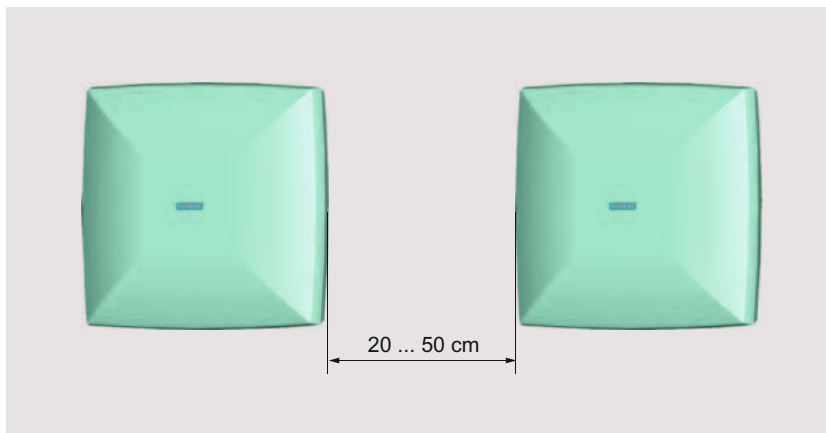


Figure 6-3 Antennas mounted adjacently horizontally or vertically

For a portal configuration, the distance between two antennas that are connected to the same reader is up to 3.5 m (in Europe) or 4 m (in the USA).

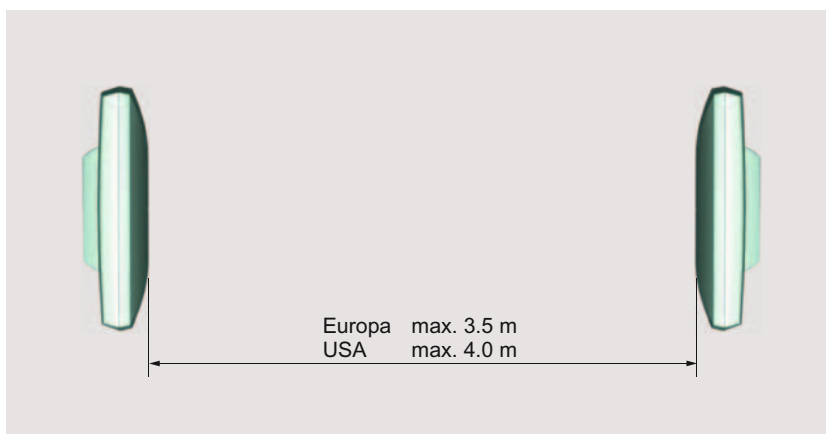


Figure 6-4 Portal configuration

### 6.1.3 Installation /Mounting

The RF660A antenna can be fixed to any firm support.

#### Mounting types

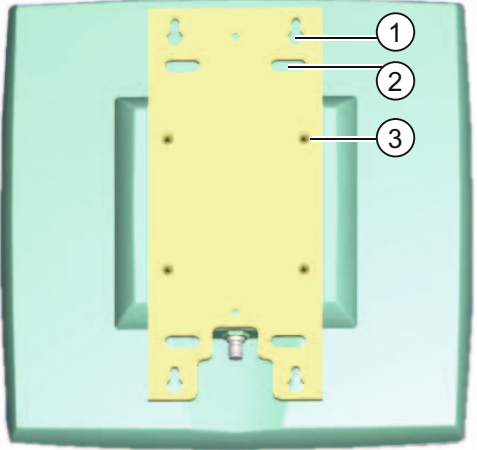
Two systems are available for fixing the antenna:

- Rigid fixing with VESA 100 x 100
- Flexible fixing with VESA 75 x 75

#### Fixing with VESA 100 x 100

Rigid fixing with an antenna adapter plate is suitable for:

- Wall mounting on solid foundations
- Mast mounting

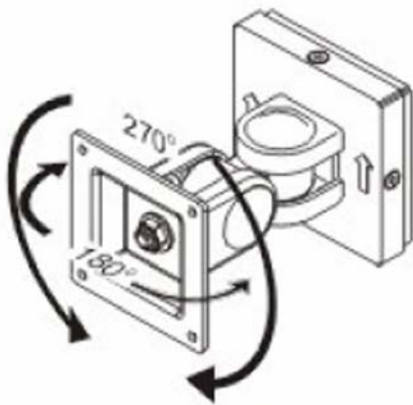
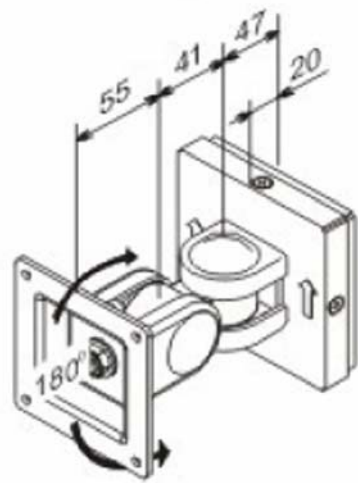
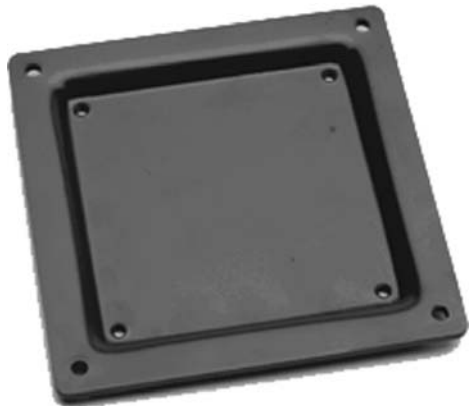
| Antenna with antenna adapter plate  | Description   |
|---|---|
|  | <ul style="list-style-type: none"> <li>① Keyhole for wall mounting (4 x)</li> <li>① Elongated hole for mast mounting (4 x)</li> <li>③ Standardized VESA fixing holes (4 x)</li> </ul> |

6.1 RF660A antenna

| Antenna with antenna adapter plate   | Description   |
|--|---|
| <p>Technical drawing of the antenna with antenna adapter plate. The drawing shows a vertical plate with various mounting holes and dimensions. The total height is 270 mm. Dimensions for fixing holes are provided along the top and left edges. A central vertical dashed line indicates symmetry. Hole diameters are specified as Ø 4.5, Ø 6, and Ø 11.</p> | <p>Dimensions for fixing holes<br/>All dimensions in mm</p> |

### Fixing with VESA 75 x 75

Flexible mounting is possible using the VESA 75 x 75 mounting set.

| VESA 75 x 75 mounting set   | Description   |
|---|---|
|    | <p>Swivel range of wall mounting</p>                                  |
|   | <p>Distances for wall mounting</p>                                    |
|  | <p>VESA adapter plate<br/>from VESA 75 x 75<br/>to VESA 100 x 100</p> |

### 6.1.4 Connecting an antenna to a reader

#### Connecting an RF660A

Preassembled standard cables in lengths of 10 m and 20 m with the optimal impedance are available for connection.

The cable between antenna and reader can be up to 20 m in length.

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#### Notice

Only use original Siemens antenna cables

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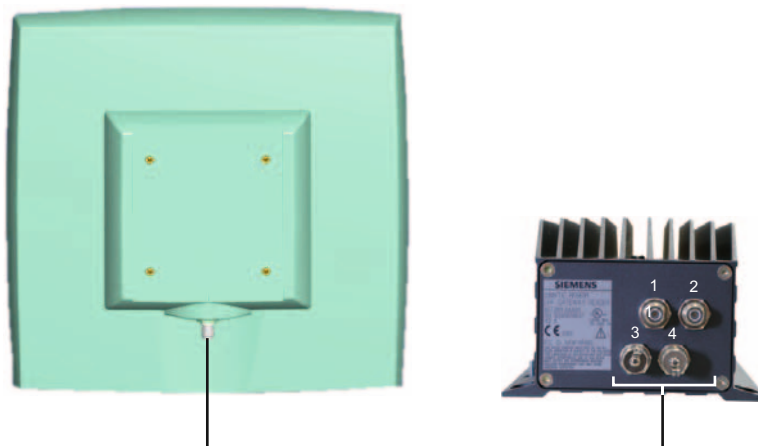


Figure 6-5 Rear of antenna with RTNC connection

When less than four antennas are used, we recommend that the antennas are connected to the reader as follows.

| Number of antennas | Connections on the reader |
|--------------------|---------------------------|
| 2 antennas         | ANT 1, ANT 2              |
| 3 antennas         | ANT 1, ANT 2, ANT 3       |



### 6.1.5 Technical specifications

|                                 | <b>RF660A antenna 865-868</b> | <b>RF660A antenna 902-928</b> |
|---------------------------------|-------------------------------|-------------------------------|
| Frequency range                 | 865-868 MHz                   | 902-928 MHz                   |
| Impedance                       | 50 Ohm nominal                | 50 Ohm nominal                |
| Antenna amplification           | 5-7 dBil                      | > 6 dBic                      |
| VSWR                            | 2:1 max.                      | 2:1 max.                      |
| Polarization                    | RH circular                   | RH circular                   |
| Radiating/receiving angle       | 55°-60°                       | 60° - 75°                     |
| Connector                       | RTNC                          | RTNC                          |
| Degree of protection            | IP 65                         | IP 65                         |
| Permissible ambient temperature | -25° C to +75° C              | -25° C to +75° C              |

