Installation and User Guide

Kamstrup pit antenna II

Kamstrup NB-IoT water meter pit antenna

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Content

General information

This external antenna fits with Kamstrup water meters.

The antenna can be used for pit installation.

The antenna is submersible and the antenna cable must never be shortened or damaged.

The antenna consists of a circular antenna head with a fixed cable down to a capacitive click-on connection for the water meter.

The NB-IoT antenna consists of a circular antenna head with a fixed cable with a 3-pin plug for connecting to the NB-IoT water meter.

The antenna is available in multiple variants and the installation is described in the following paragraphs.
The following variants are available:

Antenna	6697-926 with coupler (2 m cable)
	6697-929 with coupler (7.5 m cable)
	6699-669 with 3-pin plug (2 m cable)
	6699-670 with 3-pin plug (7.5 m cable)

Pit installation

The antenna must be placed on a cover of either cast iron, concrete or composite. It is important to place the antenna horizontally and leveled on a flat surface. The entire underside of the antenna must be supported by the cover to obtain a larger mechanical strength.

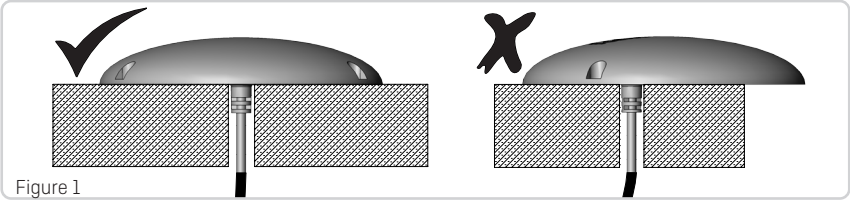


Figure 1

The antenna is mounted with 3 screws that are suitable for the base in question. The box includes screws and rawlplugs that are suitable for mounting in composite or concrete covers. See the drilling template as guide for drilling.

3 Hex screws + anchors and 3 Hex M5 bolt are included. These must be tightened with a torque of 4 Nm +/-10 %. It can optionally also be pop riveted. (not included).

The antenna is designed for light traffic, avoid heavy traffic on the antenna.

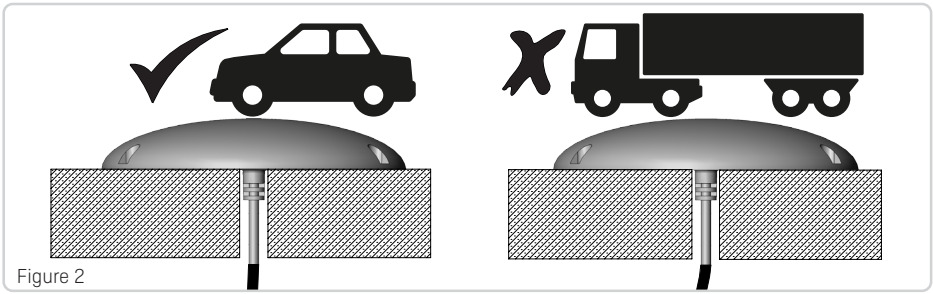


Figure 2

To ensure the antenna's range, it must have possibility of free radiation. This means that the antenna must not be covered by soil, water, leaves, boughs, vehicles, snow or other. An outdoor sealants can be used, to prevent water penetrating through the antenna/lid.

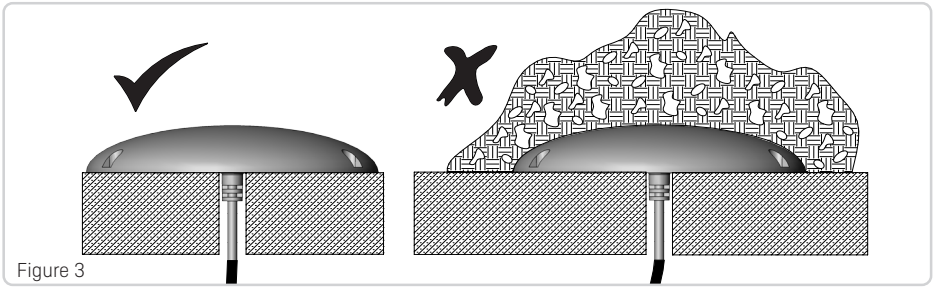


Figure 3

Start installation of the pit antenna by drilling a Ø 13 mm hole in the pit cover for the antenna cable.

Figure 4

Pull the antenna cable through the hole and place the antenna on the pit cover.

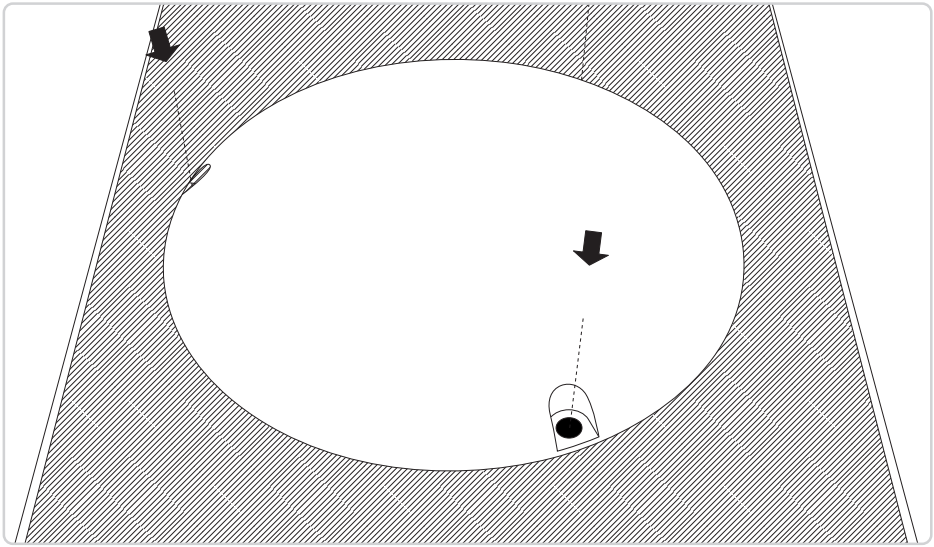


Figure 5

Mark the positions for the three screw holes using the antenna as a template.

Separation of antenna ring

The click-on ring can be separated so that the cable can be led through the installation pipe or the like. Never cut or damage the antenna cable, the antenna cable must not be shortened.

First, detach the wire loop (figure 6), then release the clip from the ring using a pen or screwdriver to wedge it free (figure 7).

Figure 6

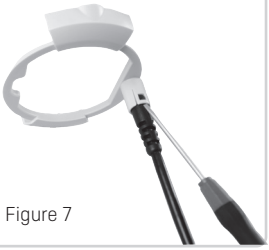


Figure 7

The wire can be re-attached to the loop (figure 8). Clean the wire loop before re-attaching it to the click-on ring. Attach the ring to the meter register (figure 9). Make sure that the antenna cable is at the bottom of the register.

Figure 8

Figure 9

Excess cable must not be tied up tightly as this will reduce the signal.

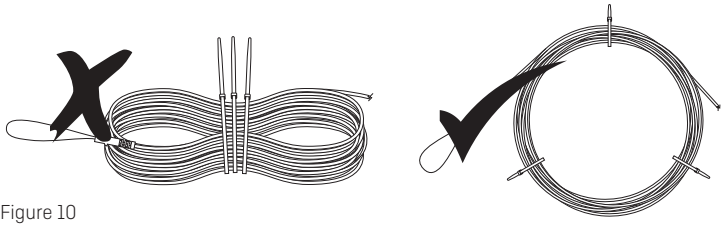


Figure 10

The composite mount is locked with a screw. Tightened with a torque of 2 Nm +/- 10 %.

Connection to meter with coupler

The antenna is connected to the meter by means of a “click-on ring” with a capacitive connection.

It is important that the antenna mount is mounted correctly on the meter as incorrect mounting may result in poor signal transmission.

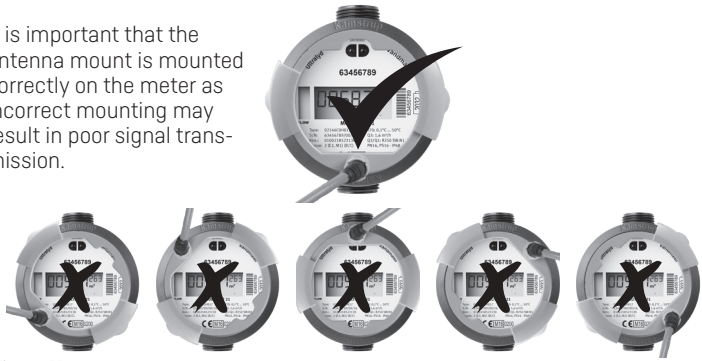
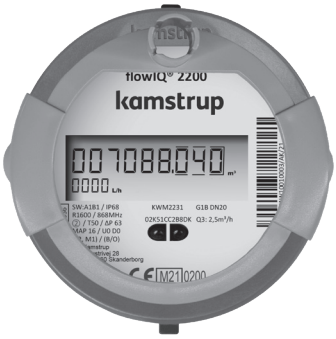


Figure 11

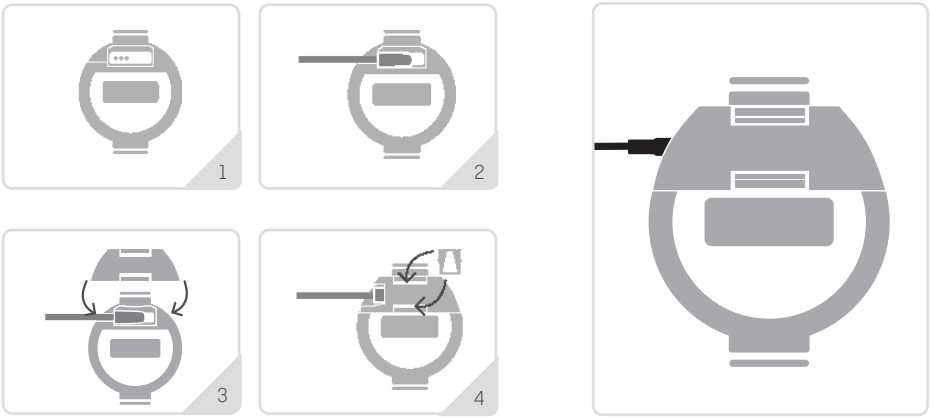
Connecting to flowIQ® 2200 platform with coupler

A different coupler is used for the later generation of the flowIQ® 2200. Use the coupler fitting your meter type.

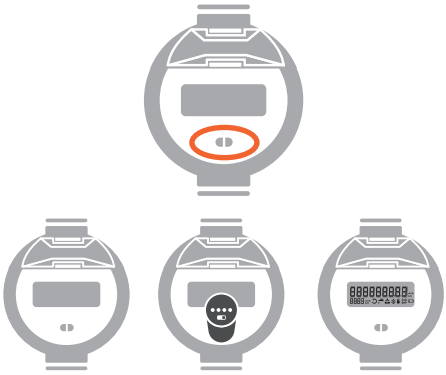


Connecting to NB-IoT water meter

Connecting the antenna to an NB-IoT water meter with 3-pin plug.



Radio activation with in-display menu



1 – 2 – 3 sec

Activate the menu by holding a magnet over the meters “optical IR interface” for 3 seconds.

When activated all the segments in the display will be shown.

Navigate to **“dont CALL”** by placing the magnet on the meters optical read-out for 1 second.

“dont CALL” will start flashing after 5 seconds.

1 second

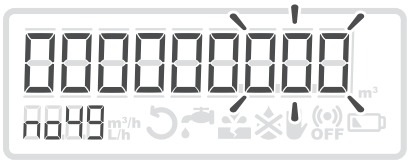
Activate **“do CALL”** by placing the magnet over the optical read-out for 1 second.

1 second

NB-IoT Network performance check

During meter commissioning it is important to do a network performance check by following these steps:

If the meter display does not write "**donE**" in display during commissioning: Check the communication status in the 'in-display menu' **"no49"**.



Typical status codes during installation:

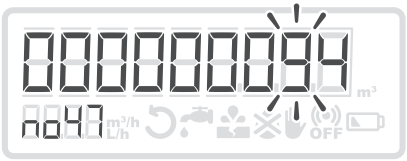
- 255: No call/connection tried yet
- 0: Transmission success
- 1: Awaiting registration on network
- 3: Awaiting acknowledgment
- 5: Missing antenna
- 7: Transmission success, but not all data delivered
- 10: Transmission pending
- 33: Connection pending

See the complete list of communication status codes in "Communication status codes" in the data sheet.

Check the radio link quality status in menu **“no47”**.

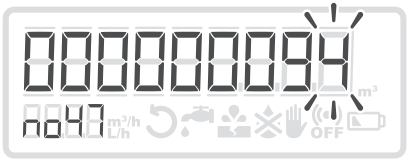
The second last digit (9) shows the network connection:

- 9: Connected to the NB-IoT network
- 0: Not connected to the NB-IoT network



The last digit shows the quality of the connection if the connection is achievable:

- 0: Poor
- 1: Weak
- 2: Medium
- 3: Good
- 4: Excellent



If the last digit is 1 or lower = Connection is NOT OK.

4 = Excellent	Acceptable
3 = Good	
2 = Medium	
1 = Weak	Unacceptable, check antenna connection
0 = Poor	

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