kamstrup

Installation and User Guide

Cellular / NB-IoT Wall Antenna

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Content

General information

This external antenna fits with Kamstrup NB-IoT water meters.

Connection to the NB-IoT meter is with a 3-pin AMI plug.

The antenna cable must never be shortened or damaged.

The antenna supports the following frequencies: 698-760 MHz, 790-960 MHz, and 1710-2690 MHz.

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

The following variants are available:

Antenna	6699-666	2 m	Cellular / NB-IoT
	6699-668	7.5 m	Cellular / NB-IoT

Mounting the antenna

The antenna must be mounted in upright position.

Avoid covering the antenna.

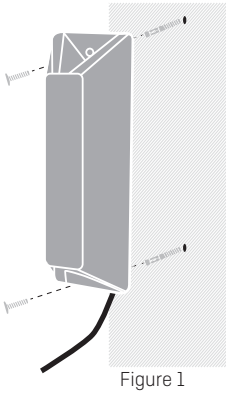


Figure 1

The antenna can be installed indoors or outdoors. Outdoors is preferable.

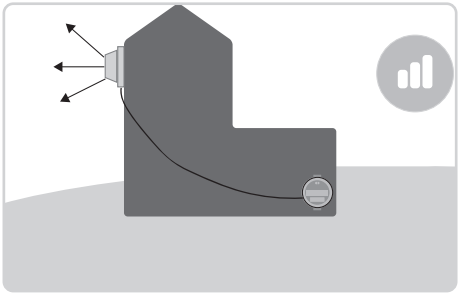


Figure 2

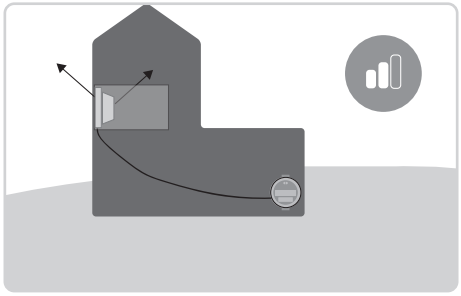


Figure 3

The antenna must be mounted in a vertical position as high as possible.

If indoor installation is necessary it is preferable that the antenna be mounted adjacent to a window and above ground level, see figure 3. For the best signal placement, see figure 4.

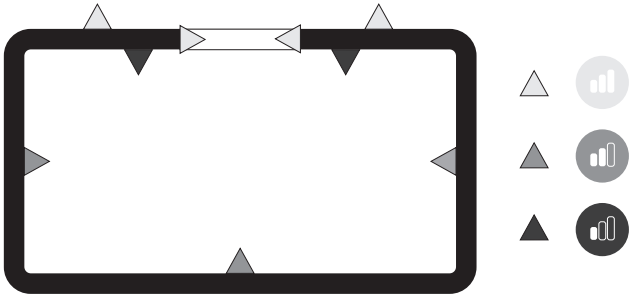
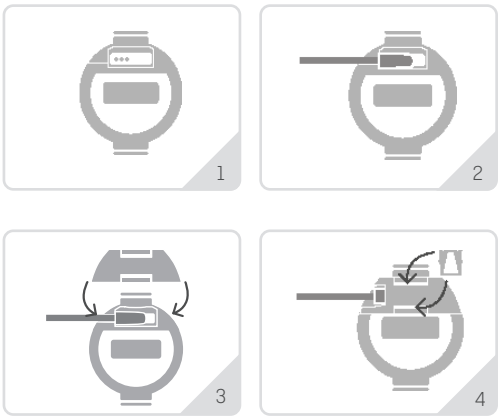
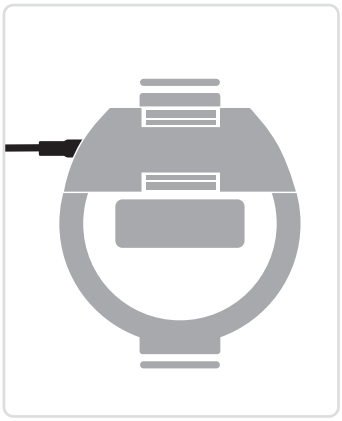


Figure 4

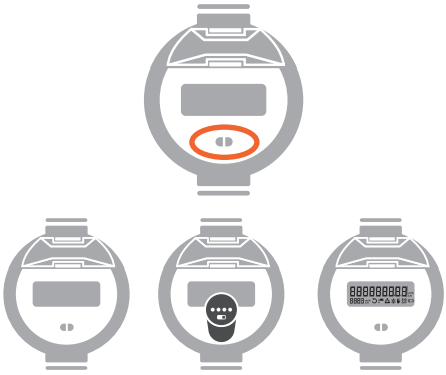
Connecting to meter

Connecting the antenna to an NB-IoT water meter.





Radio activation with in-display menu



1 – 2 – 3 sec

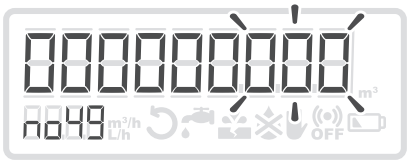
Activate the menu by holding a magnet over the meters “optical IR interface” for 3 seconds.

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

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:

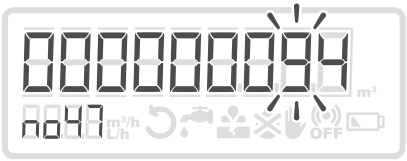
- 255: No call/connection tried yet
- 0: Transmission success
- 1: Awaiting registration on network
- 3: Awaiting acknowledgment
- 5: Missing antenna
- 7: Transmission success, but not all data delivered
- 10: Transmission pending
- 33: Connection pending

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”**.

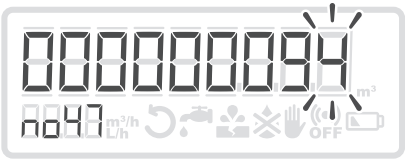
The second last digit (9) shows the network connection:

- 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	

Canadian complience statement

English:

This device complies with Industry Canada license-exempt RSS standard(s). 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.

Complies with the Canadian ICES-003 Class B specifications.

This device complies with RSS 247 of Industry Canada. This Class B device meets all the requirements of the Canadian interference-causing equipment regulations.

This device IC: 22376-2023NB82 and has been approved by Innovation, Science and Economic Development Canada to operate with the antenna listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Antenna type	Maximum gain
ClickOn antenna	0 dBi
Wall antenna	2.2 dBi

Must be installed to provide a separation distance of at least 20 cm from all persons.

Canadian complience statement

Français:

Cet appareil est conforme aux normes CNR exemptes de licence d'Industrie Canada. Le fonctionnement est soumis aux deux conditions suivantes:

(1) Cet appareil ne doit pas provoquer d'interférences et

(2) Cet appareil doit accepter toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité de l'appareil. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada. Cet appareil est conforme à la norme canadienne RSS 247. Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Cet appareil contient IC: 22376-2023NB82 a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés cidessous, avec le gain maximal autorisé indiqué. Les types d'antenne non inclus dans cette liste et ayant un gain supérieur au gain maximum indiqué pour tout type répertorié sont strictement interdits pour l'utilisation avec cet appareil.

Antenna type	Maximum gain
ClickOn antenna	0 dBi
Wall antenna	2.2 dBi

Warning Doit être installé de façon à respecter une distance de minimum 20 cm à toute personne.

FCC Cautions

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of FCC rules.

Operation is subject to the following 2 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.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

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