kamstrup

Installation and user guide

OMNICON® 4G Modem with last gasp

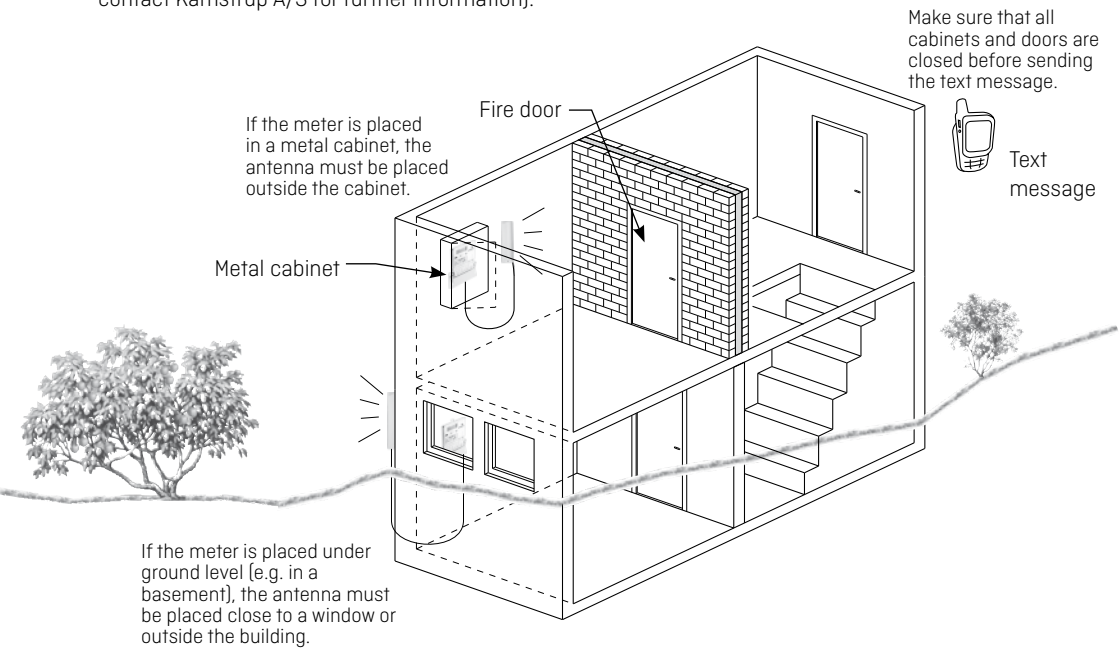
Kamstrup A/S · Industrivej 28, Stilling · DK-8660 Skanderborg · T: +45 89 93 10 00 · info@kamstrup.com · kamstrup.com

Quick guide

1 Read the signal strength on the module LEDs (minimum two must be on).
2 If the signal strength is below 2, an external antenna must be installed.
3 The external antenna must be placed at a location that optimises the reception of the signal. Change the position of the antenna until the best position has been found.
4 Before leaving the installation, you must test the signal strength via text message (**=STATUS#**). The meter housing and the doors must be closed before sending the text message.

1 Tips

- Always install an external antenna when installing the unit in a metal cabinet. The antenna must be placed outside the cabinet.
- Use quad-band GSM antennas to optimise the performance.
- Note that fire doors as well as concrete and metal plates disturb and weaken the GSM signal.
- It is possible to order directional antennas for areas with very poor signal conditions (please contact Kamstrup A/S for further information).



Contents

1 Description

1.1 Description OMNICON® 4G Modem with last gasp

The module is designed for mounting in OMNIPOWER® electricity meters.

It is available in three variants.

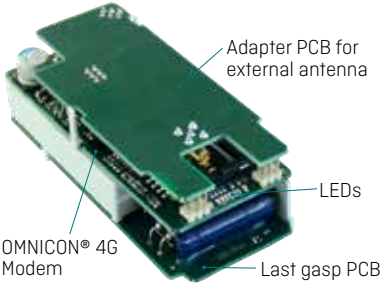
681Gxxxxx is always delivered with internal antenna and the possibility of external antenna using an adapter PCB. It cannot be used with add-on modules.

681Hxxxxx must always use an external antenna and it can be used with add-on modules.

681Jxxxxx is delivered with an adapter PCB. It cannot be used with add-on modules.

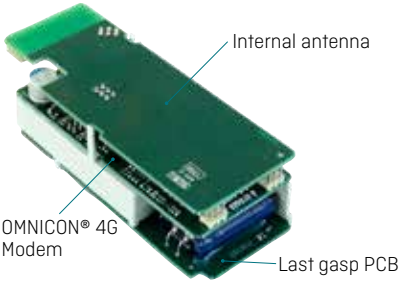
- The module supports 4G (GPRS/EDGE/LTE CAT1)
- Integrated solution with mounting in the meter's module area
- Plug-and-play installation with clear indication of the signal strength
- Text message reading of meter and signal strength
- Last gasp

OMNICON® 4G - 681Jxxxx



OMNICON® 4G - 681Hxxxx

OMNICON® 4G - 681Gxxxx



1.2 Use of OMNICON® 4G Modem with last gasp

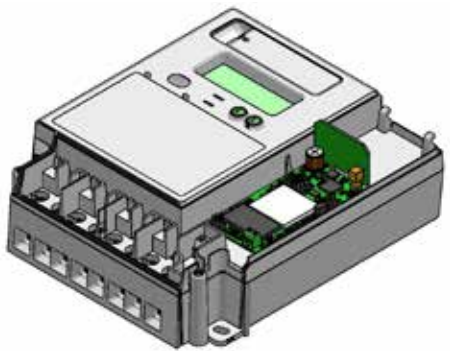
OMNICON ® 4G Modem has the following application possibilities:

Top number	Article no.	Function	Meter types
681xxxxxxxxx	681Gxxxxxxxx	Basic module	OMNIPOWER® for OMNIA® and third-party systems
681xxxxxxxxx	681Hxxxxxxxx	Basic module	OMNIPOWER® for OMNIA® and third-party systems
681xxxxxxxxx	681Jxxxxxxxx	Basismodul	OMNIPOWER® for OMNIA® and third-party systems

2 Mounting of OMNICON® 4G Modem

OMNICON® 4G Modem is supplied via the module connector.

2.1 Mounting order



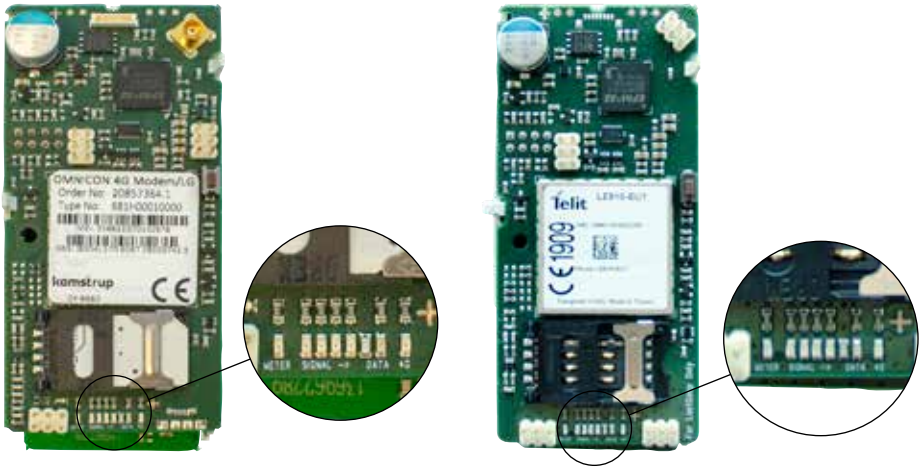
1. Dismount the top cover of the meter.
2. Insert SIM card (see “SIM card”, page 8).
3. Place the module in the meter's module area
   (please check that the eight module pins are all plugged in).
4. When all the green LEDs on the module stop flashing, the signal strength is read on the indicator
   (see “Signal strength indicator”, page 7).
5. If the signal strength is not acceptable, an external antenna is mounted. For 681Gxxxx, this requires that the internal antenna is removed.
   (See “Mounting of external antenna (to be ordered separately)”, page 9 and “External antenna”, page 10.
6. Before leaving the installation, check the signal strength by sending a text message (see “SMS commands”, page 11).
   If the module does not indicate normal operating conditions (such as sufficient signal strength), refer to “Error detection help”, page 11.

3 Light-emitting diodes

The LEDs ensure that the installer is provided with sufficient knowledge to make a good installation without using external tools.

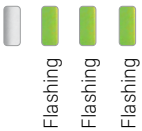
Note: All LEDs turn off after 10 minutes.
They can be reactivated by pushing the button.

3.1 LED positions



3.2 Start-up

3.2.1 Check of SIM card



3.2.2 Creation of connection to the network

3.2.3 Connected to network and to meter

The network to which the module is connected appears from the LEDs at the bottom of the module. More than one LED can be on at a time. Furthermore, the red METER LED flashes if there is no connection between the meter and the module. The Data/GPRS LED is lit if the module is assigned an IP address.

3.2.4 Signal strength indicator

When the signal strength is less than 2, an external antenna must be mounted. If an external antenna has already been mounted, it should be repositioned to obtain the required signal strength.

3.2.5 Error indication

If one of the LEDs flashes, it means the following:

1	SIM card protected by PIN code
2	No SIM card
3	Missing network registration
4	Communication error with modem

Note: All LEDs turn off after 10 minutes.
They can be reactivated by pushing the button.

4 SIM card

4.1 Mounting the SIM card

The unit can be ordered with the SIM card mounted from the factory. Check that the card has been inserted. The telephone number of the card appears from a label on the module. Kamstrup A/S cannot be held responsible for theft and misuse of SIM cards from OMNICON® 2G/4G modem units.

When the SIM card holder is opened, the connection to the SIM card is disrupted. When the SIM card has been inserted correctly and the holder is closed, the module starts automatically.

If the unit is supplied without a SIM card, make sure to insert one before using the unit.

The SIM card holder is opened by pushing the bright holder back and carefully tipping it up. Then place the SIM card with the "cut-off" corner in the top left side and with the contacts facing the PCB.

OMNICON® 4G - 681Hxxxx

OMNICON® 4G - 681Gxxxx + 681Jxxxx

4.2 SIM card requirements

The SIM card must fulfil the following requirements:

DATA/SMS, Mini-SIM (standard size)
PIN code must be disabled, no voice and no prepaid card.

5 Mounting of external antenna (to be ordered separately)

External antennas with DC resistance between the inner and outer conductors of 1 K ohms or less are detected automatically. This applies to the following antennas:

66990015	Mini Triangle, 1 m cable, MCX connector
6699448	Mini Triangle, 2.5 m cable, MCX connector
6880013	Mini Triangle, 10 cm cable, SMA connector (can be extended up to 30 m)
6880014	Directional antenna, without cable, with SMA connector (can be extended up to 30 m)

See more antennas and accessories in the antenna guide for OMNIA® (doc. no. 5811-2381).

6 External antenna

6.1 OMNICON® 4G Modem with last gasp

681Gxxxx: The internal 4G antenna is the top PCB, which is lifted gently.

It is replaced by an adapter PCB for external antennas.

On the adapter PCB, an antenna connector for the external antenna is placed.

681Hxxxx + 681Jxxxx: Connect the external antenna to the antenna connector.

Be careful to hear a "click" to ensure that the two connectors are connected correctly. It is **NOT** allowed to use any tools for mounting the antenna connector.

Place the antenna cable inside the plastic frame of the module, and lead the cable out through the cable channel at the bottom of the electricity meter.

IMPORTANT

To ensure that the external antenna is mounted in such a way that it optimises the reception conditions, the signal indicator on the module must be observed (see "Light Emitting Diodes", page 6). Change the position of the external antenna until the best position has been found.

OMNICON® 4G module - **681Gxxxx** with internal antenna.

OMNICON® 4G module - **681Jxxxx** with adapter PCB for external antenna.

OMNICON® 4G module - **681Hxxxx** for external antenna.

7 Error detection help

Note: SMS commands must be sent in either capital letters or small letters.

The METER LED flashes constantly	The module has no contact with the meter. Check that the module has been mounted correctly
The three LEDs to the right on the signal indicator flash constantly	The SIM card has not been inserted correctly or is defective.
If LED no. 2 flashes	SIM card is locked.
The GPRS/Data LED does not emit light after start-up	It may take up to 3 minutes. Ask the telecom supplier if there is a GPRS subscription for the SIM card (check APN, if necessary).
In case of weak mobile signal	Mount an external antenna. Reposition the antenna to find the optimal position, if required.
Send a text message to the modem, e.g. **=STATUS#**	The unit must respond with the signal strength of the module.
Always complete by performing a control reading from the reading system	Call the utility to make sure that meter data has been received by the reading system.
Defective modem	Enclose a precise description of the error and return it to Kamstrup.

8 SMS commands

Note: SMS commands must be sent in either capital letters or small letters.
Capital and small letters must not be mixed in the same SMS command.

STATUS	
Syntax	**=STATUS#**
Example	**=STATUS#**
Return reply, correct OMNIA® (B7), 2 LEDs (TDC MOBIL), GSM, Antenna, 10.12.16.152 (apndata), Online, 3555	