

Installation and user guide

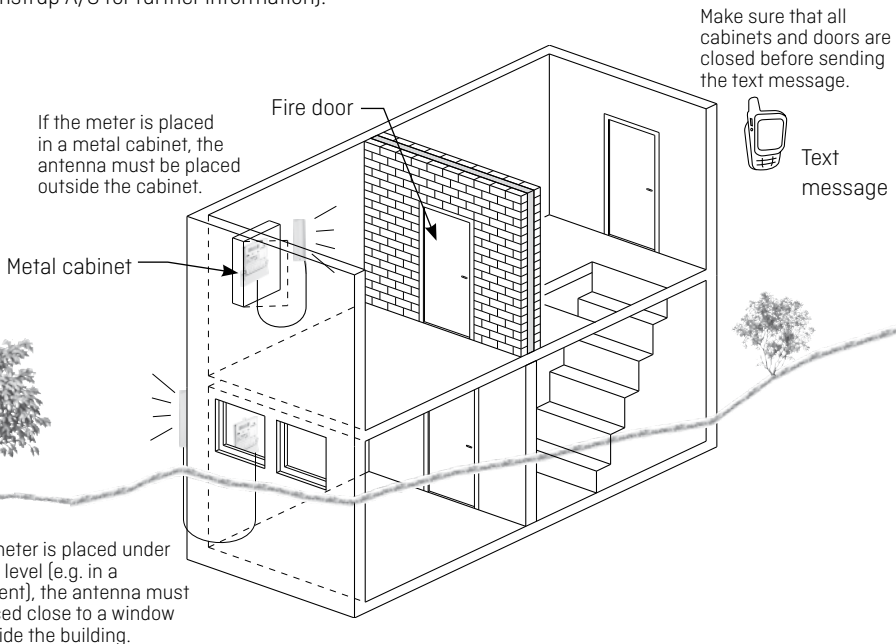
OMNICON® 2G Modem

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 a 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).



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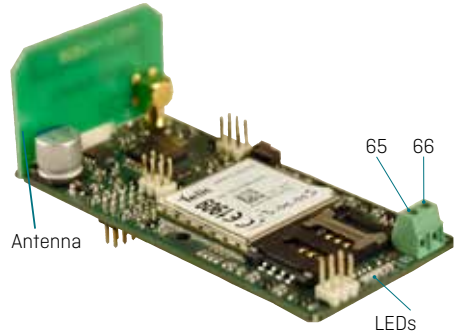
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1 Description

1.1 Description of OMNICON® 2G Modem

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

- The module supports 2G (GSM/GPRS)
- Integrated solution with mounting in the meter's module area
- Plug-and-play installation with clear indication of the signal strength
- Status/pulse input
- Text message reading of meter and signal strength
- Internal antenna



1.2 Use of OMNICON® 2G Modem

The OMNICON® 2G Modem has the following application possibilities:

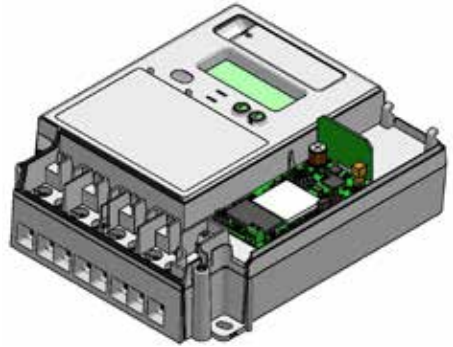
Top number	Article no.	Function	Meter types
681xxxxxxxx	681Axxxxxxxx	Basic module	OMNIPOWER® for OMNIA®

2 Mounting of OMNICON® 2G Modem

OMNICON® 2G Modem, article number 681Axxxxxxx, is supplied through the module connector and can be connected to an external antenna.

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 diodes 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, mount an external antenna. 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.

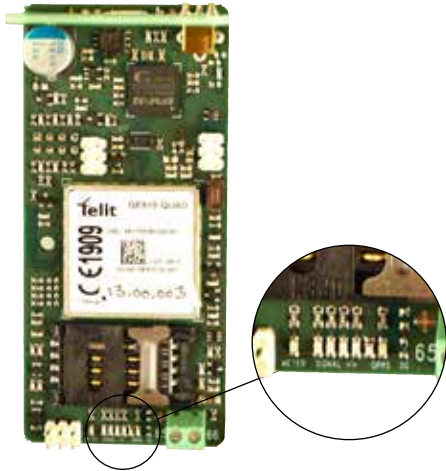


3 Light-emitting diodes

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

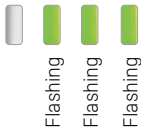
Note: All LEDs turn off after 10 minutes. They can be reactivated by pushing the button.

3.1 LED positions



3.2 Start-up

3.2.1 Check of SIM card



Flashing
Flashing
Flashing

3.2.2 Creation of connection to the network



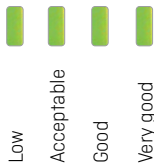
3.2.3 Connected to network and to meter

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.



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
6699458	Discos, 1.5 m cable
6699449	Magnet
6699465	Cavity GSM, 2.5 m cable
6880014	Directional antenna, without cable, with SMA connector

6 External antenna

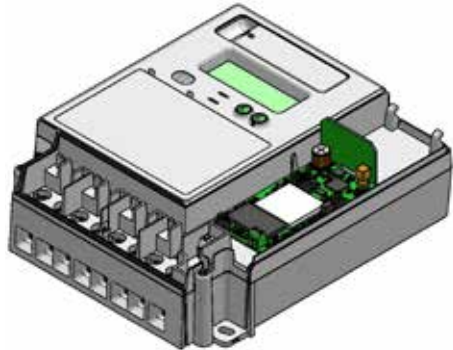
6.1 OMNICON® 2G Modem

Connect the external antenna to the connector on the module. 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.

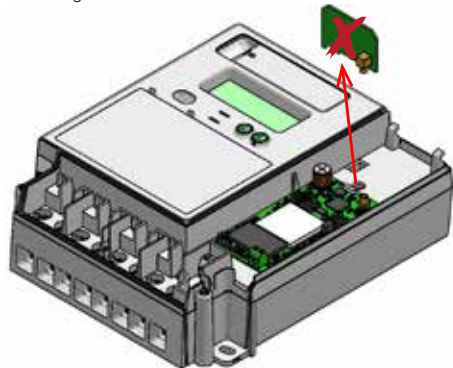
It is important to especially note that the internal antenna **CANNOT** be mounted together with the external antenna and thus must be removed.

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.



Mounting the external antenna



Remove the internal antenna and replace it with an 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	

