

Installation and user's guide

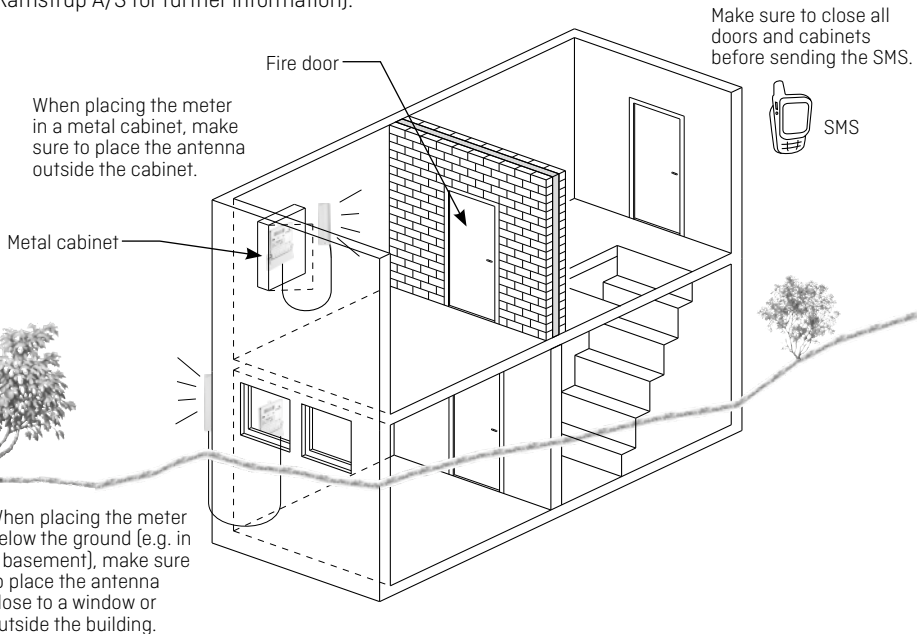
GSM8i 2G

Quick guide

- 1 Read the signal strength on the module's Light Emitting Diodes (LEDs) (min. two LEDs must be switched on).
- 2 If the signal strength is below 2, an external antenna must be installed.
- 3 The external antenna must be placed in 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, test the signal strength by SMS (=signal#). Make sure that the meter cabinet and doors are closed before sending the SMS.

Tips

- Always install an external antenna when the meter is installed 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, 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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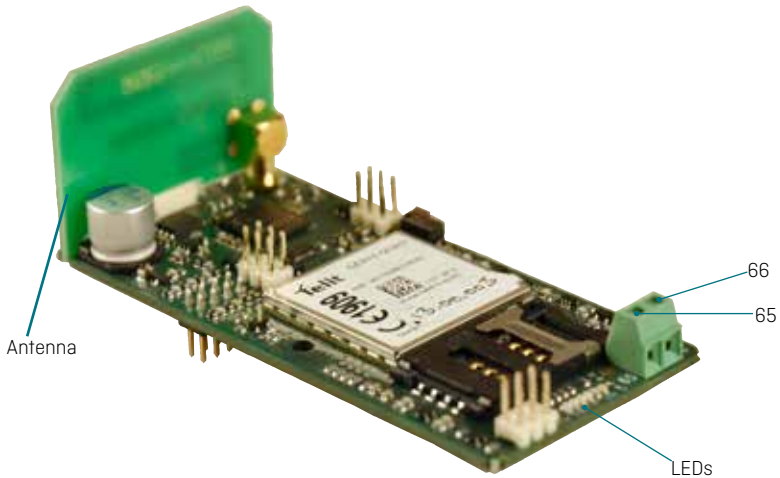
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1 Description

1.1 Description of GSM8i 2G

The module is designed for mounting in Kamstrup 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
- SMS reading of meter and signal strength
- Internal antenna.



1.2 Using GSM8i 2G

The GSM8i 2G module has the following applications:

Top number	Article No.	Function	Meter types	System
681xxxxxxxxx	6819xxxxxxxx	Basic module	Kamstrup 162 from generation L Kamstrup 382 from generation L Kamstrup 351 from generation B Kamstrup OMNIPOWER*	Kamstrup External

*3-parts system

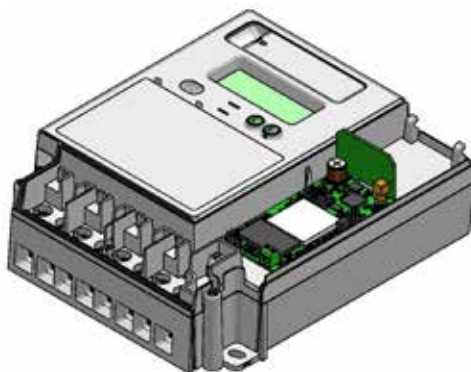
2 Mounting GSM8i 2G

GSM8i 2G, article number 6819xxxxxxx, is supplied via the module connector and can be connected with an external antenna.

2.1 Mounting procedure

Dismount the top cover of the meter.

- 1 Insert SIM card (see "SIM card", page 8).
- 2 Place the module in the meter's module area (please check that the eight module pins are all plugged in).
- 3 When all green diodes on the module stop flashing, the signal strength can be read on the indicator (see "Signal strength indicator", page 7).
- 4 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 8 and "External antenna on GSM8i 2G", page 9.
- 5 Before leaving the installation, check the signal strength by sending an SMS (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 10.

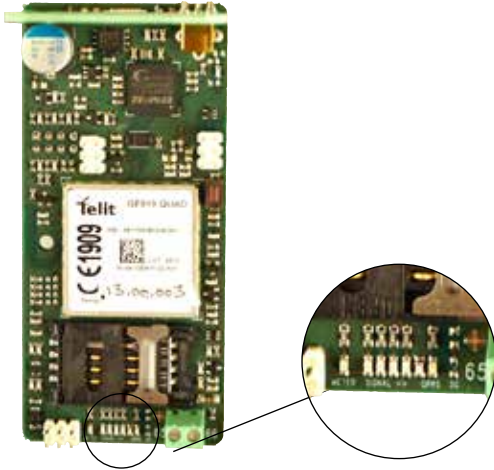


3 Light Emitting Diodes

The LEDs must provide the installer with sufficient knowledge to make a good installation without using external tools.

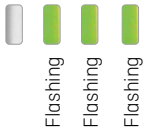
Note: All diodes turn off after 10 minutes
They can be reactivated by pushing the button.

3.1 Positioning of LED

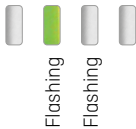


3.2 Start-up

3.2.1 Check of the SIM card



3.2.2 Establishment of connection to the network



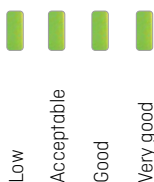
3.2.3 Connected to network and to meter

The network to which the module is connected appears from the diodes at the bottom of the module. More than one diode can be turned on. Furthermore, the red METER diode flashes if there is no connection between meter and module. The GPRS LED is turned on if it has been 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 diodes flashes, it means the following:



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

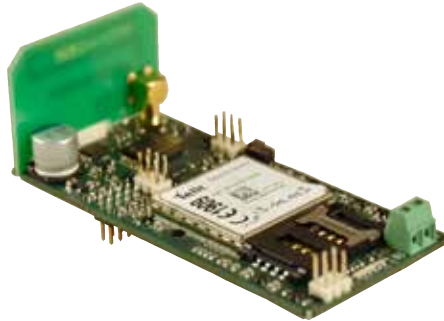
Note: All diodes turn off after 10 minutes
They can be reactivated by pushing the button.

4 SIM card

4.1 Mounting the SIM card

The unit can be ordered with the SIM card mounted from the factory. Please 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 or misuse of SIM cards from GSM8i 2G 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. Next, 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:

GSM/GPRS, DATA/SMS-9.6. kb V110,
PIN code must be disabled, no voice and no pre-paid card can be used.

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:

- Mini Triangle antenna (order No. 6699448)
- Triangle antenna (order No. 6699407 or 6699408)
- Directional antenna (order No. 6699456)

6 External antenna on GSM8i 2G

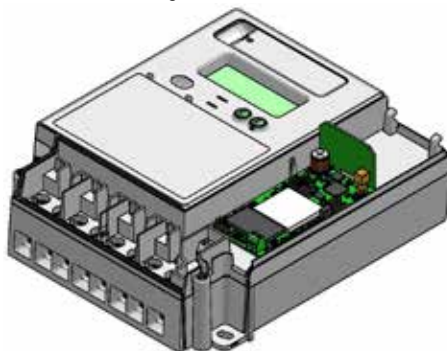
Connect the external antenna to the connector on the module. Be careful to hear a “click” before the two connectors are connected correctly. Do **NOT** use any tools in connection with the mounting of the antenna plug. Place the antenna cable inside the plastic frame of the module, and lead the cable out through the cable channel at the bottom of the electricity meter.

It is important to notice that the internal antenna must **NOT** be mounted together with the external antenna and must therefore be removed.

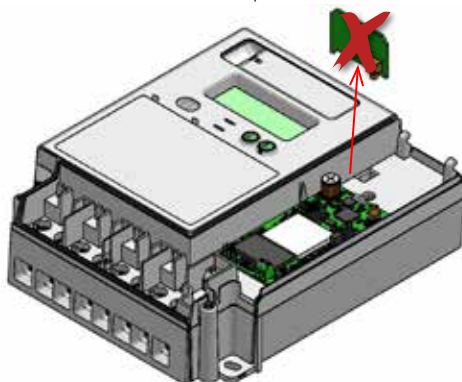
IMPORTANT

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

Mounting of 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 diode flashes constantly	The module has no contact with the meter. Check that the module has been mounted correctly.
The three diodes to the right on the signal indicator flash constantly	The SIM card has not been inserted correctly or is defective.
LED no. 2 flashes	The SIM card is locked.
The GPRS diode does not emit light after start-up	Start-up may take up to 3 min. Ask your telecom supplier if there is a GPRS subscription for the SIM card (check any APN).
Weak mobile signal	Mount an external antenna. Reposition the antenna to find the optimal position, if required.
Try to call the unit.	If there is no connection or if the SIM card is not activated, there will typically be a message (busy signal) from the operator
Send an SMS to the modem, e.g. = SIGNAL# .	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 have been received.
Defective modem	Return the modem to Kamstrup with a precise description of the error.

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	
Syntaks	=STATUS#
Example	=STATUS#
Return reply, correct GSM8i 2G (B1), 2 LEDs (TDC MOBIL), GSM, External (IE), 10.12.16.152 (apndata), Online	

READ_METER - for reading a direct meter (e.g. Kamstrup 382, 162 or 351)	
Syntaks	=READ_METER#
Example	=READ_METER#
Return reply, correct Meter No. 10101010 is read, the meter reading value is 32432 kWh, the power is 343 W, and the meter has operated for 2452 hours.	32432 kWh, 343 W, 2452 Hours, Meter no: 10101010
Return reply, error	NO RESPONSE

SIGNAL - for reading the signal strength	
Syntaks	=SIGNAL#
Example	=SIGNAL#
Return reply, correct Displays the modem's current signal strength on a scale from 0-4 where 4 is best. The signal strength must be minimum 2.	Signal: 2 (0-4) LEDs, GSM
Return reply, error	NO RESPONSE