

SOu-NB LTE NB-IoT Opto-magnetic clip

LTE NB-IoT module for remote readouts of electricity meters Landis+Gyr, DAISY, ZPA, ...

SOM-NB opto-magnetic clip is an add-on module for type Landis+Gyr, DAISY,, ZPA, ... electricity meters. Installation is done by attaching the clip magnet to the optical interface of the meter. The attachment is magnetic. The module – opto-magnetic clip is intended for wireless data transmission (remote readout) in the form of messages based on the LTE NB-IoT network. The message with data is transmitted in the preconfigured intervals.

Remote reading systems are widely used by operators of energy supply networks. This technology with low investment costs significantly increases efficiency and reduces errors of energy screening (invoicing). Eliminates interference with privacy of customers, reducing security risks for the on-site data gathering workers and generally overall labor costs.



Read and transmitted data

- Meter`s serial Nr.
- Energy counter – Day tariff
- Energy counter – Night tariff
- Quarter-hour increments (option)
- Error and battery status

Technical parameters

Dimensions	41 x 38 x 24(height) mm without antenna
Power supply	Lithium battery, 2/3 AA size
Lifespan of battery	+) 3-5 years (for ECL=0 and 1 transmit per day)
Cover	IP54
Humidity resistance	0 - 99 %
Operating temperature	-10°C / +55°C
Short time temperature	-20°C / +70°C
Storage temperature	+5°C to +35°C / During transportation -20°C

+) In standard operating conditions: Operating temp.: +5°C to +35°C; -10°C < 15 days/year; +55°C < 15 days/year.

Radio communication

Radio protocol	LTE NB-IoT
Frequency	700 - 900 MHz Bands
Output power	max 200 mW
Comm. interface	Opto, EN 61 107, IEC 62 056

Installation

Magnetize the module to the optical interface of the meter. If the meter interface contains 2 optical points, it is necessary to ensure that the optical elements of the module and the meter are opposite each other. Orientation as shown on the previous page.

Activate the module.

When the data is scheduled to be read, the module only reads the last found type of meter. Therefore, if you install the module on another meter, it is always necessary to reactivate the module!

Activation / deactivation of module and sending message

After pressing the button through the small hole near the LED, the module will start flashing at 1 second intervals. Depending on which flashing you release the button, the following functions can be called up:

- 1 flash** Forced read and send (without device activation)
- 3 - 4 flashes** Switching to configuration mode via red LED (option)
- 6 - 10 flashes** Module activation
- 15+ flashes** Deactivation of the module

When activated, the module starts searching for the meter by gradually testing all meter protocols known to it. While searching for the meter and reading data, the module does not respond to the button (it takes up to 3 minutes if the module is not installed on any meter).

The module signals the correct reading with a long 1s LED flash.

Then the module sends a message and confirms again with a long 1s LED flash.

Message sending interval

The activated module sends messages at regular intervals (default 1 per day). Reads only the type of meter found during activation. The read time depends on the protocol, i.e. up to 30s.

The module is governed by the time of the LTE NB-IoT network, if the time data is not provided, the module has a random time data set.

Error message

OK - one 1-second flash,

Error - 3x series of n flashes

series of n flashes:

- 2 flashes the meter does not communicate - the module is not / incorrectly mounted on the meter
- 3 flashes the meter communicates, but - the module is incorrectly mounted on the meter
- all data could not be read - the module does not know the type of meter, it only read data with known coding
- the meter does not provide the required data

Payload (Uplink) – base version without service part and quarter-hour increments

1.B	2.B – 5.B	6.B – 7.B	9.B - 11.B
header	Serial number	Energy T1 [kWh]	Energy T2 [kWh]
0x6X	LSB - MSB	LSB - MSB	LSB - MSB

Header:

mask

- 0x01** Error flag - any non-zero bit of the meter error register sets the flag to 1
- 0x02** reserve
- 0x04** reserve
- 0x08** Low battery