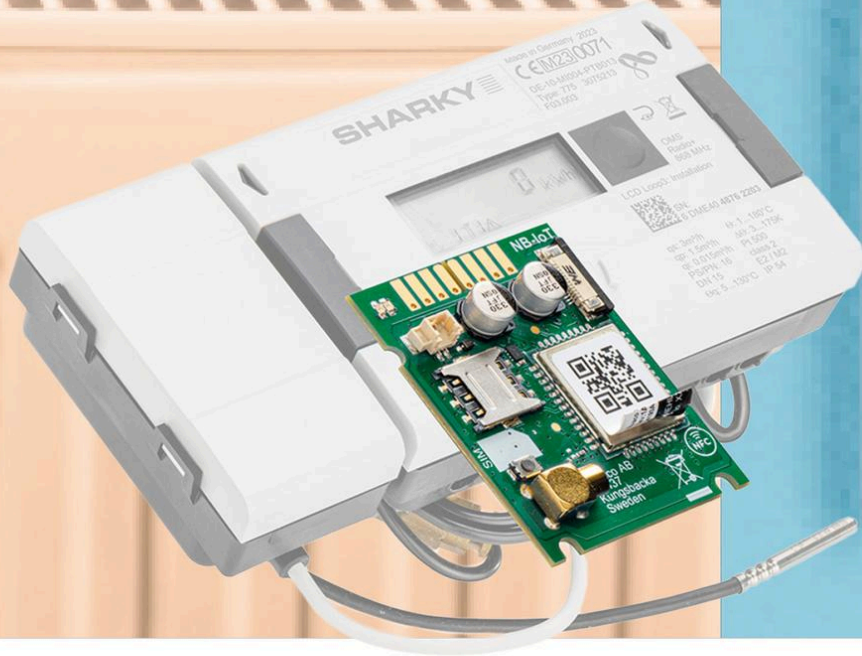


NB-IOT MODULE

ENERGY METER | ULTRASONIC

DIEHL
Metering



APPLICATION

The NB-IoT module is mounted inside a SHARKY 775 to deliver meter data to a receiving server via a NB-IoT network. The product is ideal for applications where long range and high energy-efficiency are required and a lower bandwidth is not a concern.

FEATURES

- ▶ Designed for SHARKY 775
- ▶ 2 different message formats
- ▶ Battery powered module
- ▶ Up to 13 years lifetime
- ▶ Internal or external antenna
- ▶ NFC interface

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PRINCIPLE OF OPERATION

The NB-IoT module is installed in slot 1 of a SHARKY 775.

Please make sure a SIM card (size: Nano) has been mounted before activating the module.

Upon delivery, the SHARKY NB-IoT module needs to be activated via the OTC mobile application. Please check the User guide for activation process.

In addition, the NB-IoT module can easily be retrofitted into an already deployed SHARKY meter.

MAIN CHARACTERISTICS

NB-IoT Module	
Supply voltage	External mounted battery (D-Cell)
Battery lifetime	Up to 13 years* based on ECL0 and hourly reading sent once / day
Dimensions	mm 43 x 37 x 9
Antenna connector	MCX female; internal antenna or optional external antenna option
SIM card	Slide, size Nano

* Standard conditions of use and temperature.

ELECTRICAL CHARACTERISTICS

NB-IoT Module	
Nominal Voltage	VDC 3.0
Power consumption (max)	mA 400
Power consumption (sleep mode)	µA 6

ENVIRONMENTAL SPECIFICATIONS

NB-IoT Module	
Operating temperature	°C + 5 ... 55
Operating humidity	% 0 ... 93, RH (relative humidity), no condensation
Operating altitude	m 2000
Pollution degree	Degree 1
Usage environment	Inside the meter (IP 54)
Storage temperature	°C -20 ... +60

MOBILE NETWORK CHARACTERISTICS

NB-IoT Module	
Band	20, 8, 3
3GPP	Release 14 (NB2)
Transmit power (EIRP)	dBm 23.0
Receiver sensitivity	dBm -135
Activation	OTC App

NB-IOT MODULE DATA

NB-IoT Module	
Supported Protocols	LwM2M, MQTT-SN
Security	DTLS 1.2
Storage on module	>10 000 readings (circular buffer)
Time sync source	Network
Default Readout interval	60 min
Default Transmit interval	1440 min

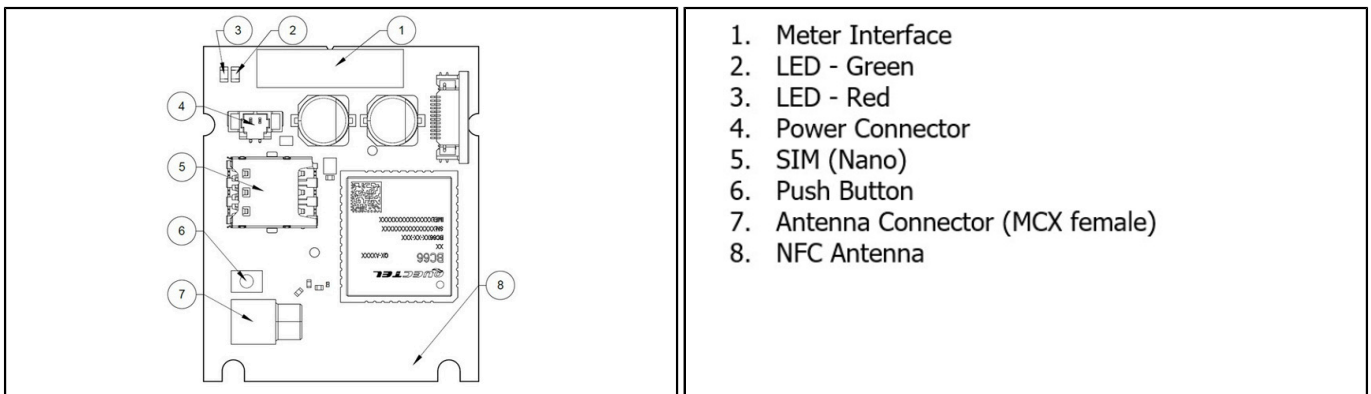
NB-IOT MODULE

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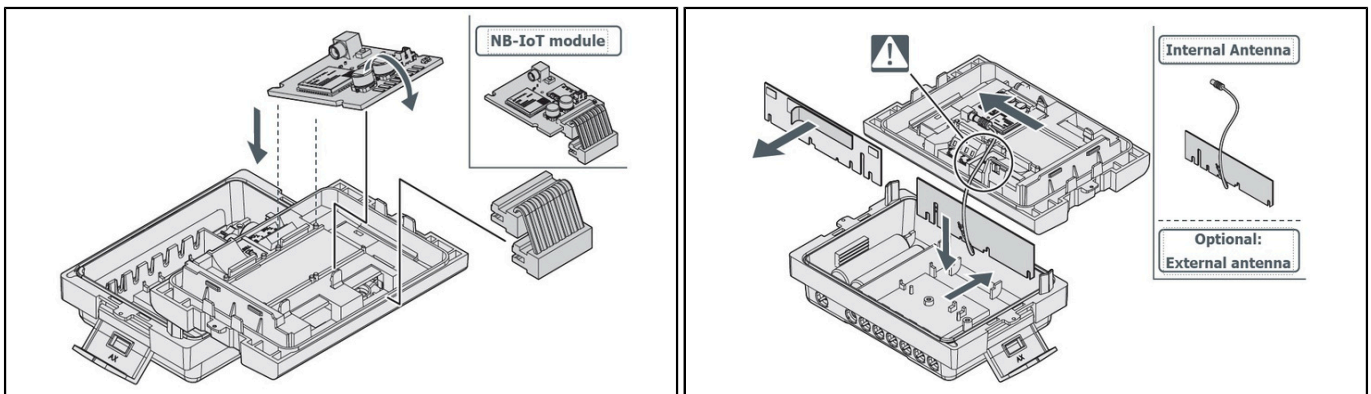
TELEGRAM CONTENT

	Standard	Extended
Data and time	x	x
Meter ID	x	x
Energy	x	x
Tariff 1 Energy (cooling energy)		x
Tariff 2 Energy (heat energy)		x
Volume (m ³)	x	x
Power (W)	x	x
Flow rate (m ³ /h)	x	x
Forward temperature (°C)	x	x
Return temperature (°C)	x	x
Alarm codes	x	x

PRODUCT DRAWING



MODULE MOUNTING



NB-IOT MODULE

ENERGY METER | ULTRASONIC

NFC ACTIVATION



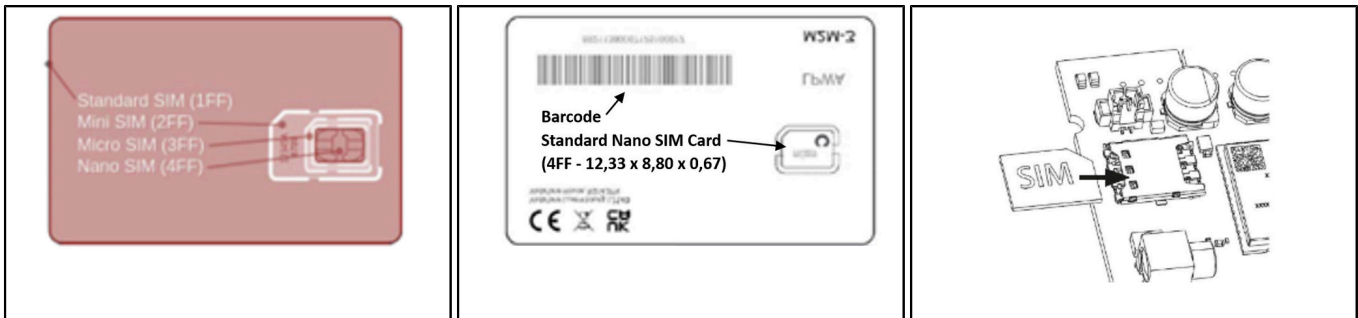
Make sure to locate the NFC antenna on your phone. When you scan or write new configurations to the module, you should place the phone's NFC antenna as close as possible to the NFC antenna of the module. The NFC is reachable from back side of the meter or from top when lid is removed.

By default, the product is set to passive mode, which means no messages will be transmitted from the device. There are two ways to activate the product:

- ▶ Press and hold down the push button (6) for at least 5 seconds until the green LED (2) lights up.
- ▶ Via the OTC mobile application. Go to the Apply tab, set the Power mode to "Active", push "Apply" and place the phone on the back side of the meter, next to the module. Make sure to hold the phone still until the phone vibrates.

Upon start-up, the module will attempt to connect to the mobile network. The phase is indicated by short flashes on the green LED. After successfully connecting to the mobile network, the green LED will light up for 8 seconds, as indicated by the figure above.

SIM CARD INFORMATION



- ▶ Barcode or QR code required.
- ▶ For customer SIM card please note:

A label needs to be on the SIM card packaging with following information:

1. Diehl Metering article number
2. Network provider name
3. Quantity

- ▶ Purchasing a SIM card and its deactivation and activation according to the rates set for the usage needs must be handled by the customer.

SECURITY AND ACCESS CONTROL

- ▶ CMi6160 has a configuration lock feature, which prevents unauthorized access to the module.
- ▶ When configuration lock has been enabled, a Product Access Key (PAK) will be needed to access the device via NFC.
- ▶ The Product Access Key is claimed by the end-user to his One-Touch Commissioning (OTC) account via the Elvaco OTC App or the OTC web interface.