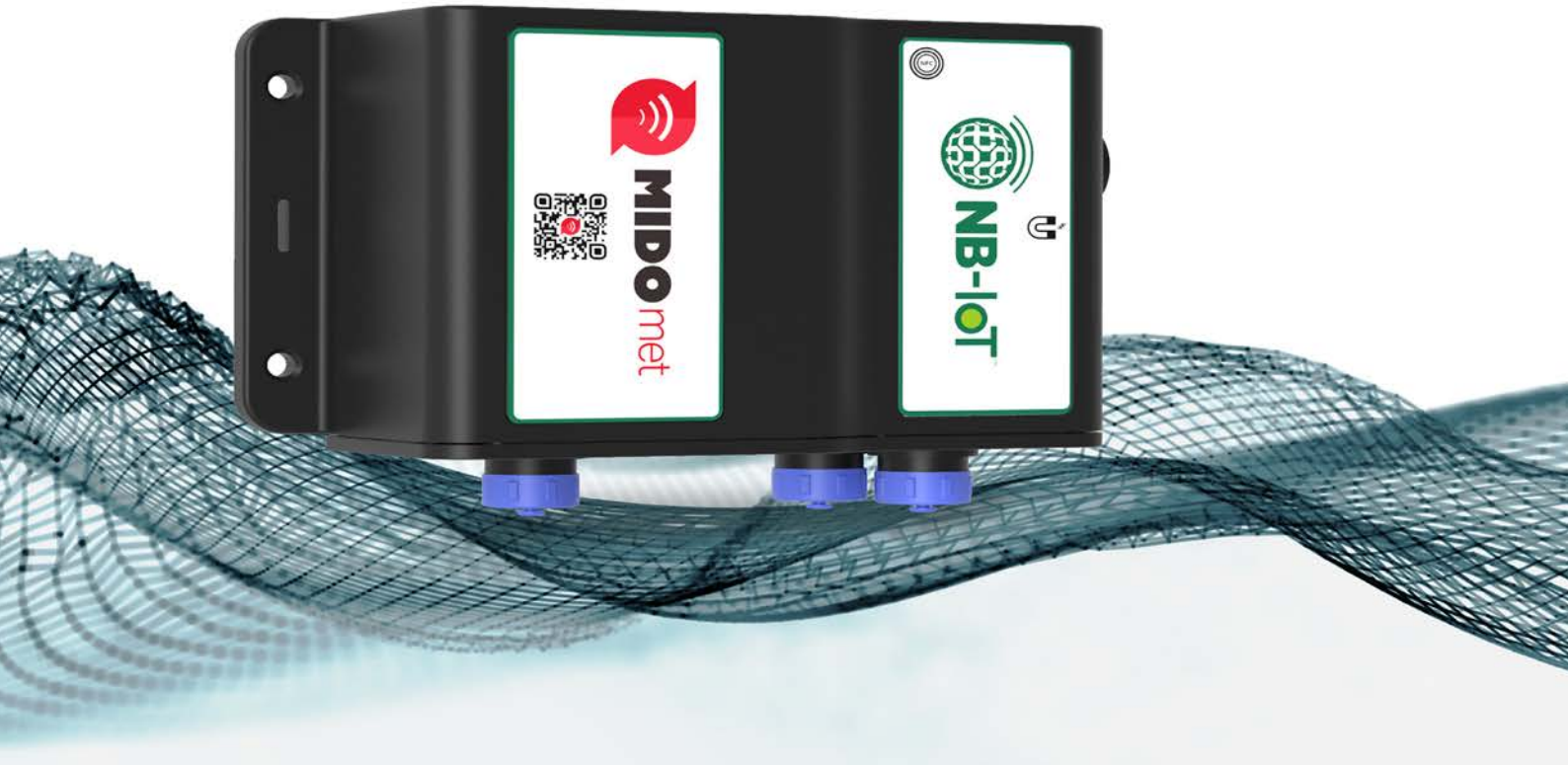
MIDOmet
smart metering

MiDoMet NBIoT Special S

Smart metering via NB-IoT network
easy and reliable



MiDoMet NBIoT Special S

MiDoMet NBIoT Special S is the specialized NBIoT datalogger for **monitoring:**
- pressure,
- flow,
- other a**nalog and/or digital sensors**
- instruments/sensors equipped with serial port **RS485/Modbus.**
- with the possibility of manage **digital or analog outputs**.

Thanks to its analog and digital entrances, it is able to connect to: pressure switch installed on the network, flow meters or generically sensors equipped with 4-20ma/0-20ma output.
It also has digital or analog outputs that allow interaction with external peripherals, for example with the aim of managing hydrovalves. The Datologger is also equipped with a serial port RS485 (Modbus).
The data stored by the Midomet Nibot Special S are remotely transferred via NB-Iot network and using the MQTT or MQTTS open protocol, this allows data integration in any third-party management system.

FEATURES

- Nr 4 digital inputs of which: nr.3 for connection to impulse emitters and nr.1 on-off status monitoring.
- Up to 2 analog inputs 4-20ma or 0-20ma or 0-5V
- Up to 2 digital outputs: 0-5V or 0-12V or nr.1 analogue release 0-5V 12V powered (optional)
- Serial module (RS485/ModBus)
- 4G NBIoT connectivity
- Resistant to hostile environments with IP68 protection
- Self-powered (more than 10 years of autonomy and replaceable battery)

The device is equipped with a separate battery sector, isolated from the electronics one, to allow the **easy replacement** and at the same time to guarantee the **IP68** protection, thanks to which it is possible to install it in hostile environments or even in immersion.

With MiDoMet NBIoT it is possible to create an **NBIoT fixed network remote reading system**, to remotely read data from digital sensors, overcoming the limits of a concentrator network,and reaching the most remote users, thanks to the use of the 4G NBIoT communication network.

The device is supplied **complete with SIM and connectivity** for the entire duration of the service (* Plug & BeFree contract) avoiding to sign agreements with NB-IoT suppliers.

REMOTE METER READING
for billing purposes or network monitoring

IP68 GRADE PROTECTION
Can be installed even in hostile enviroment

COLLECT DATA FROM SENSORS
Interface 4-20 mA,0-5V or Serial RS485 ModBus

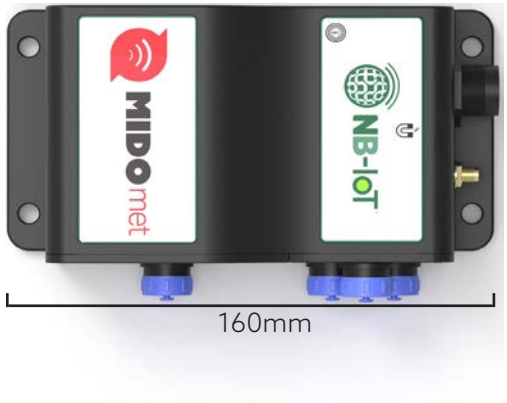
OPEN PROTOCOLS
MQTT
MQTTS

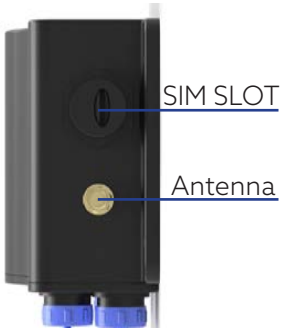
Via Vico II Cairoli, 4 **Lauria** (**PZ**) - Italy
tel: **+39 0971 1680051**

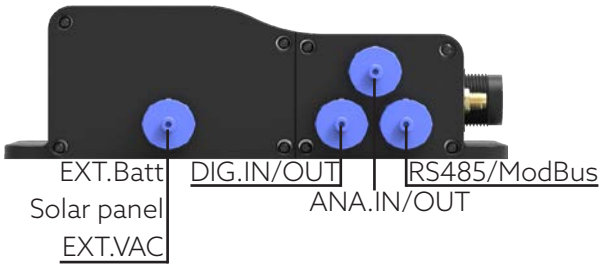
email: **info@midomet.com**
www.midomet.com

Via Poledrelli, 21 **Ferrara** (**FE**) - Italy
tel: **+39 0532 1640011**

DIMENSIONS







FUNCTIONALITY

Guaranteed performances in terms of number and frequency of transmissions

The reading sampling takes place by default every 60 minutes, and every day the 24 readings are sent. This configuration guarantees a battery life that is up to 10 years.

Furthermore, thanks to the bidirectionality of the communication, sampling frequency and data sending frequency can be changed remotely, for example to start sampling campaigns at a higher frequency up to a sample every 5 minutes to analyse one or more defined points.

Data and alarms

The Mido in each communication message reports in the header all the info necessary for the message reconstruction of information relating to digital entrances: num. impulses, unit of measurement, multiplies and analogue: unit of measurement (bar, mt, but, V, etc.).

It is possible to configure the asynchronous communication of the alarm on the overflow of the minimum and maximum threshold of the thresholds of the analog probes and on the variation of the state/alarm on the entrance of the state.

Modbus serial communication on RS485

Midomet Special S is equipped with Modbus RS485 serial port which allows connection with all Modbus equipment (sensors, radar, counters flow) on the networks. Connection, management and control of Modbus sensors via RS485 input through **20 programmable registers via the supplied app**.

eDRX: Communication and sending controls remotely in real time

Thanks to the **eDRX mode** (if configured) the Midomet can interact almost in real time with the remote server to:

- change iputs configuration,
- change the sets for alarms configuration,
- receive activation profiles,
- have an immediate sending of data or/and of the state.

The Narrow Band connection can be configured with EDRX active. In this mode the MiDo receives and elaborates, with a certain frequency (a few minutes),paging messages*.

*affects the duration of the batteries

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NFC interface and APP

You can locally access the device via the NFC interface and the supplied app with your smartphone, to view information relating to the data inputs such as: pressure/levels, flow rates, total litres/cubic meters, voltage/internal battery status, etc.

Through the menu it is possible to carry out several operations:

- Input configuration,
- Output configuration,
- Configuration of the parameters to allow the timed execution of sequences and controls, aimed to manage the Set Point of the hydrovalve through the door OA or OD.
- Communication with the server for sending data,
- Execution of NBIOT signal test.

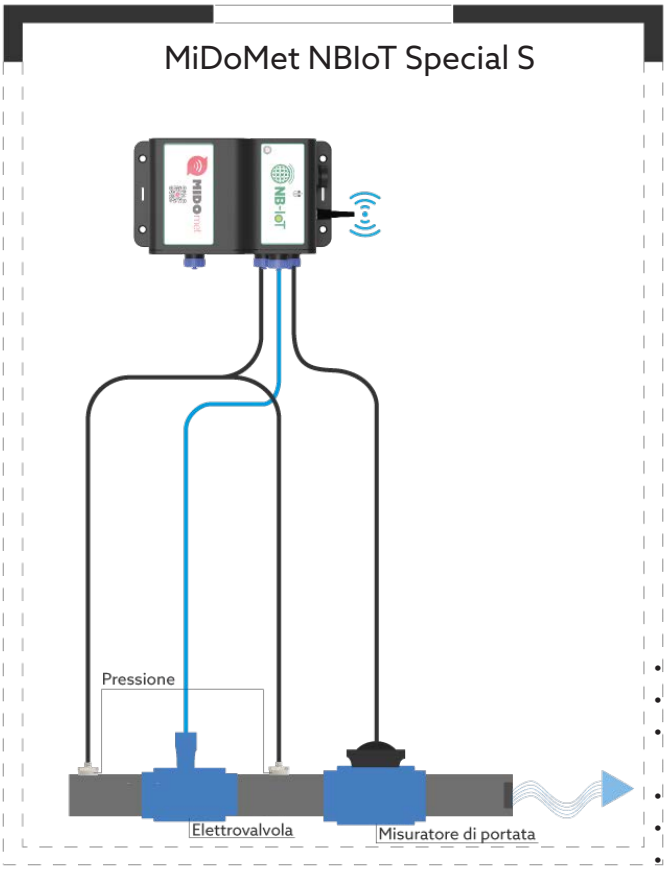
Interaction with magnetic button and LED

The device is equipped with a magnetic button, which can be activated through a simple magnet. Thanks to the presence of a LED on the membrane it is possible to interact with the device to make timely checks, such as: the verification of the narrow band coverage in the position of the Installation, and the verification of the success of the connection with the remote server.

Remote configuration

In Midomet NBIoT **communication is bidirectional** and allows the device to receive commands and/or to configure the parameters remotely:

- configuration of analog and digital entrances,
- Configuration of the parameters to allow the timed execution of sequences and controls aimed at command through the door o or or or the setting of the Set Point of the hydrovate.
- Configuration of communication parameters (SIM, operator, frequency band) and the remote server,
- Configuration sampling and data transmission parameters,
- Possible alignment/realignment of the counting value with the mechanical counter.



Communication protocol and interoperability with third party data management systems

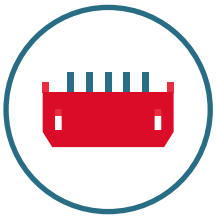
MiDoMet NBIoT is an **open and interoperable device**, data can be easily integrated into third-party or pre-existing information systems, thanks to the standard protocol used: **MQTT(or MQTTS)**.

MiDoMet Soft &Cloud

Otherwise, the system can be supplied complete with **MiDoMet Soft cloud software**. MiDoMet Soft is a software created for the analysis and management of data relating to smart metering systems, which allows operators a constant analysis of the data, a simple and immediate supervision of the network, as well as being promptly alerted in the event of an alarm exceeding the thresholds.

Compliant:

RoSH2 Directive 2011/65/EU
RED 2014/53/EU: radio device;
EMC Directive 2014/30/CE: electromagnetic compatibility;
Directive 2014/35/CE: low voltage;
Protection: CEI EN 60529;
Regulation (CE) n. 1907/2006 REACH



INPUTS

Inputs	4 Digital IN + 2 analog IN 4-20mA o 0-5V
Retrofitting	Can be integrated on previously installed meters
Seriale	Serial module RS485/ModBus

ANALISYS

Cpu	Arm® Cortex-M4 32-bit
Storage	DataFlash 4MByte + 64KBit di Backup

POWER

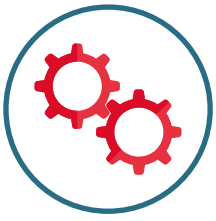
Battery	Replaceable 9000mAh Battery Pack + HPC1520 backup
External Power (optional)	220vac (AC/DC transformer inside, IP68 connection cable supplied)
Solar Panel (optional)	4W panel with 6-cell ER18650 battery pack. Total capacity 18000mAh

COMMUNICATION

NBIoT Modem	SIM7020E NBIoT
Supported Protocol	MQTT /MQTTS
Antenna	Internal antenna Or External one (optional)

INTERFACES

External access	NFC e APP
Interaction	Magnetic Key
Visual signal	Led Light



MECHANICAL CHARACTERISTICS

Assembly	dowels Ø 6
Temperature cond.	Working temperatures:-20/55 C °
Protection Level	IP68

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INCLUDED ACCESSORIES

MD.CAB.LIYY.4P

Cable for digital input (output) wiring 50cm Unitronic® LiYY 26AWG + IP68 4 pin gold-plated brass connector + sealing cap

MD.CAB.LIFYY.3P

Serial wiring cable 50 cm Unitronic® LifYY 26AWG complete with IP68 3-pin brass connector with gold plating and sealing cap

MD.CAB.LIFYY.4P

50cm Unitronic® LifYY 26AWG analogue input wiring cable complete with IP68 4-pin gold-plated brass connector and sealing cap

OPTIONAL ACCESSORIES

MD.ANT.EXT.2DB

External antenna with IP68 protection

MD.CON.14

P68 splitter connector (1 input wire and 4 output wires) for digital inputs for wiring pulse emitters or digital outputs

MD.SIM.HD

External SIM HOLDER for Nano SIM IP68 and sealing cap

MD.JBOX.M686S

IP68 connector for serial port wiring

MD.BATT.36V

Additional external 38Ah battery pack.

MD.PRO.COAX.1M

Coaxial extension cable SMA (male) to SMA (female) RG174 length 1m

MD.JBOX.M686

IP68 compensation chamber for relative pressure or level sensor complete with breathing valve

CONFIGURATION OPTIONS

						POWER SUPPLY		
VERSION	**Digital Inputs**	**Analog Inputs**	**MODBUS RS485**	**Output Optional***	**Antenna****	**Battery**	**220V Power Supply**	**Solar Panel**
MD.NB.1.16B.6	4 (3+1 ON-OFF)	2	1	1	Internal	Internal 9000mAh + HPC1520		
MD.NB.1.16B.6.VA	4 (3+1 ON-OFF)	2	1	1	Internal	HPC1520***	MD.ALI.1.2.36	
MD.NB.1.16B.6.PS	4 (3+1 ON-OFF)	2	1	1	Internal	HPC1520***		MD.PS.4W

*Up to 2 digital outputs: 0-5V or 0-12V or 1 0-5V analogue output powered by 12V to be agreed on the specified needs
**External antenna option available ***Backup battery pulse capacitor

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