



- Integrated NB-IoT/LTE Cat. M1 modem
- Packet data transmission
- Option of a soldered-in MIM card replacing the SIM card
- SMA connector for external GSM antenna
- IP68 housing: 2 m for 24 hours
- 5 digital inputs/2 counter inputs
- Interface in the form of an adapter for reading data from heat meters
- Diagnostic LEDs
- Built-in battery pack
- Smart energy management
- Data logger
- Remote configuration, updates and diagnostics
- USB-C port for local configuration
- Up to 5 years of operation on the internal battery (up to 10 years on the optional lithium battery)
- 1-wire port for an external temperature sensor
- 3-year warranty



The MT-058 is a new-generation battery-powered telemetry module. The use of a modem supporting energy-efficient LTE Cat. M1 and NB-IoT technologies reduces energy consumption to previously unattainable levels. By utilising the mechanisms offered by these technologies, which reduce the energy required for data transmission, the device's operating time can be as long as 5 years (depending on conditions and configuration), effectively reducing the costs of operating and maintaining the device. Additionally, in networks supporting PSM mode, it is possible to send queries to the module, which will be buffered until the next time the modem is awakened.

The compact housing with an IP68 rating allows the device to be used in harsh environmental conditions, e.g. when collecting data from water meters or flow meters whilst simultaneously monitoring pressure, or detecting flooding in district heating or water supply networks.

A unique feature of the MT-058 module is its ability to use either a set of batteries or an external power source, such as a solar-powered rechargeable battery. In the absence of an external power supply, the device will automatically switch to its internal power source.

The module has 5 binary inputs, two of which can be configured as counter inputs, counting pulses from water meters and bidirectional flow meters. At the same time, the inputs can be configured as alarm inputs, where an alarm event will be triggered upon a change of state, e.g. as a result of a door or telecommunications cabinet being opened, or a signal being transmitted from an external device.

The 0–5 V analogue input allows for the connection of an external sensor, e.g. a pressure sensor. The device supplies a 5 V voltage to power it.

The 1-wire interface is designed for connecting an external temperature sensor.

Optionally, the device can be fitted with a temperature and humidity sensor mounted on the outside of the housing.



Thanks to the built-in internal adapter, the module enables data to be read from the heat meter. The integrated processor allows the meter type and reading frequency to be configured.

The internal data logger enables more effective energy consumption management and allows data to be recorded even during temporary loss of radio signal. Event-based or cyclic transmission allows the device's operating mode to be adapted to the user's needs whilst optimising energy consumption. The battery voltage is constantly monitored and transmitted along with the other measurement data.

The device can use a standard SIM (Subscriber Identification Module) card or, optionally, a MIM (Machine Identification Module) card, soldered during the production stage as part of the surface-mount electronics assembly process, which further enhances the device's reliability. Thanks to these features, the device is ideal for measurement, data logging and alarm applications in locations without an external power supply.

**General**

Dimensions (L x W x H)	151 x 80 x 60 mm
Mounting method	4 holes, 63x127 mm
Operating temperature	-20 to +60 °C
Protection class	IP 68: 2 m for 24 hours
Housing material	polycarbonate (UL94V-0)

**Modem**

Modem type	Nordic nRF9160		
Modem bands			
LTE Cat-M1:	B1, B2, B3, B4, B5, B8, B12, B13, B14, B18, B19, B20, B25, B26, B28, B66		
Cat-NB1/NB2:	B1, B2, B3, B4, B5, B8, B12, B13, B17, B19, B20, B25, B26, B28, B66		
Antenna	50 Ω		

**Internal power supply**

4.5 V alkaline battery pack	7,8 Ah	Operating time up to 5 years
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**External power supply**

Supply voltage range	7–24 V DC
Maximum current draw	0.3 A

**Binary inputs I1-I5**

Polarity of normally open contacts	3.3 V
Counting frequency (50% duty cycle), I1-I2 only	250 Hz max.
Minimum pulse width – operation as a pulse input, I1-I2 only	2 ms
Minimum pulse width – operation as a binary input, I1-I2 only	2 ms

**Analogue inputs AI1 (with 5 V DC supply)**

Measuring range	0–5 V DC
Resolution	12 bits
Accuracy	± 0.5 %

**Data logger**

Memory type	FLASH
Maximum number of records	28 000

**1-wire port**

Compatible with temperature sensor	DS18B20
Supply voltage	3.3 V

**Temperature and humidity sensor (optional)**

Typical temperature accuracy	1°C
Temperature measurement range	-20 to +60 °C
Typical relative humidity accuracy	3 %RH
Operating relative humidity range	0–100 %RH

**Additional options**

Option to install a MIM card	
Bracket for internal size D lithium battery	

**Drawings and dimensions (all dimensions in millimetres)**

