

- ⌚ 2G/3G or 2G/NB-IoT/LTE Cat. M1 packet transmission and SMS communication (subject to build option)
- ⌚ 5 binary/counter inputs compatible with potential free contacts (eg. pulse outputs of flowmeters)
- ⌚ 3 analogue 0–5 V DC inputs with configurable alarm thresholds and hysteresis, possibility conversion upto 2 analog signals from 4–20 mA to 0–5 V DC
- ⌚ 2 binary outputs
- ⌚ Keyed power supply 0–5 V DC and 15/24 for external sensors
- ⌚ Lid opening sensor (tampering protection)
- ⌚ Measuring of internal temperature
- ⌚ Intelligent data logger (8/16\* MB Flash RAM with min. write interval of 1 sec., 30/65\* k records capacity)
- ⌚ Configurable schedules and events initiating measurements and data transmission
- ⌚ RTC real time clock
- ⌚ Battery power supply (alkaline or lithium batteries), replaceable
- ⌚ Optimal external supply (MT-CPV)
- ⌚ Build-in algorithms: PRV time, PRV flow, Geonor M-600, Hourly variable alarms
- ⌚ uProg – programming feature
- ⌚ Intelligent power management
- ⌚ USB port for local configuration
- ⌚ Optional communication interface (RS-485 in HV version) or GPS receiver
- ⌚ Local wireless communication over Bluetooth Low Energy
- ⌚ IP 67 enclosure
- ⌚ SMA antenna socket
- ⌚ Operating temperature range -20° to +55 °C for alkaline batteries, -30° to +65 °C for lithium batteries
- ⌚ User friendly communication and configuration software
- ⌚ Software for remote management
- ⌚ Remote firmware upgrade



MT-713 v3 module is a refreshed version of battery powered measuring, logging and transmitting device. Like other modules of MT family the module is a cutting edge design characterized by advanced innovative solutions, easy to configure and integrate with data collecting and processing systems. The spontaneous on event-based or scheduled data transmission helps to minimize energy consumption and transmission costs extending battery life time. Simple compact design in plastic enclosure with IP 67 protection makes the module ideal for harsh environment with no power lines (eg. water supply control wells and chambers). Integrated replaceable battery, with possibility to connect external battery pack set (via additional MT-CPV module) may endure even for 10 years of operation (lithium batteries in conjunction with power saving configuration). Battery voltage is continuously monitored and reported along with measurement data. MT-713 is equipped with 5 binary/counter inputs (adopted to work with potential free contacts) and 3 analogue inputs allowing measuring of parameters like pressure, temperature, level etc. Keyed voltage source powering analogue inputs for measurement interval only

and binary outputs capable to control power supply of external sensors in conjunction with deactivation of internal modem reduces energy consumption to absolute minimum. Measurement data may be logged with precise time stamp in non volatile Flash memory according to configured schedule or on event. Besides measurements the module can report multiple alerts: tampering with enclosure, unauthorized opening of the chamber, long period of missing flow, crossing of predefined level or temperature threshold etc. MT-713 module's resources and functionality may be optimized for particular applications due to many available options (3 or 6\*\* lithium or alkaline battery packs, internal antenna, opaque cover, communication interface for external devices, GPS receiver). User friendly environment for configuration, communication with open interfaces for OPC/ODBC/CSV and remote management comes along with the purchased module. The user may fully benefit from new versions of firmware thanks to remote firmware upgrade functionality.

\* option

\*\* in MT-713 HC with deeper enclosure



5DI/2DO

3AI



RS-485  
MODBUS . RTU  
option

4G



**General**

Dimensions (HxWxD)	122x120x65 (95)* mm
Weight (with batteries)	1030 (1430)* g
Mounting type	4 holes
Operating temperature (alkaline batteries)	-20 do +55 °C
Operating temperature (lithium batteries)	-30 do +65 °C
Protection class	IP 67

**Modem**

Producer / Typ	uBlox SARA-U201	uBlox SARA-R412M
GSM	Quad-Band (850/900/1800/1900) MHz	
UMTS	Five Bands (800/850/900/1900/2100) MHz	---
LTE	---	Cat M1 / NB1 Band: 2, 3, 4, 5, 8, 12, 13, 20, 26, 28
Sender's peak power		
GSM 850/900	+33 dBm (2W)	+33 dBm (2W)
DCS/PCS 1800/1900	+30 dBm (1W)	+30 dBm (1W)
UMTS	+24 dBm (0,25W)	---
LTE Cat M1 / NB1	---	+23 dBm
Data transfer GSM		
DL	GPRS Class 12 85,6 kbps	GPRS Class 33 107 kbps
UL	85,6 kbps	85,6 kbps
Data transfer UMTS		
DL	HSPA 7,2 Mbps (HSDPA Cat. 8)	---
UL	5,7 Mbps (HSUPA Cat. 6)	---
Data transfer LTE		
DL	---	Cat M1 / NB1 300 kbps / 27,2 kbps
UL	---	375 kbps / 62,5 kbps
Antenna	50 Ω	50 Ω
SIM Card	Mini (25 x 15) mm	Mini (25 x 15) mm

**Power supply**

Battery pack:	
- 3 alkaline batteries (6 alkaline batteries)* or	4,5 V/16 Ah (32 Ah)*
- 3 lithium batteries (6 lithium batteries)*	3,6 V/39 Ah (78 Ah)*
Mean modem sleep current	<250 μA
Current consumption with GSM active and no transmission	25 mA

**Analogue inputs AN1 – AN3 (potential, differential)**

Measuring range	0–5 V
Input resistance	>600 k Ω typ.
Resolution	12 bit
Accuracy	± 0,5 %

**Binary/counter inputs I1 – I5**

Contact polarization	3 V
Counting frequency	250 Hz max.
Minimum pulse length	2 ms

**NMOS Q1, Q2 outputs**

Maximum voltage	30 V
Maximum current	250 mA
Switch off current	<50 μA
Resistance	1 Ω

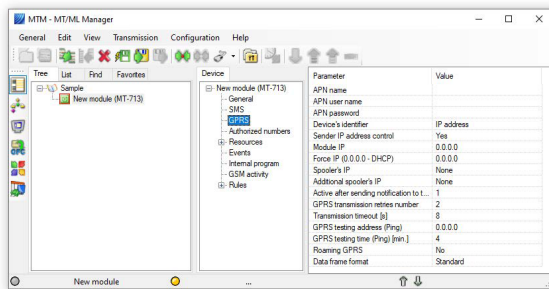
**Configurable voltage output**

Voltage range	0–5,0 V
Resolution	0,1 V
Accuracy	2 %
Maximum current	50 mA

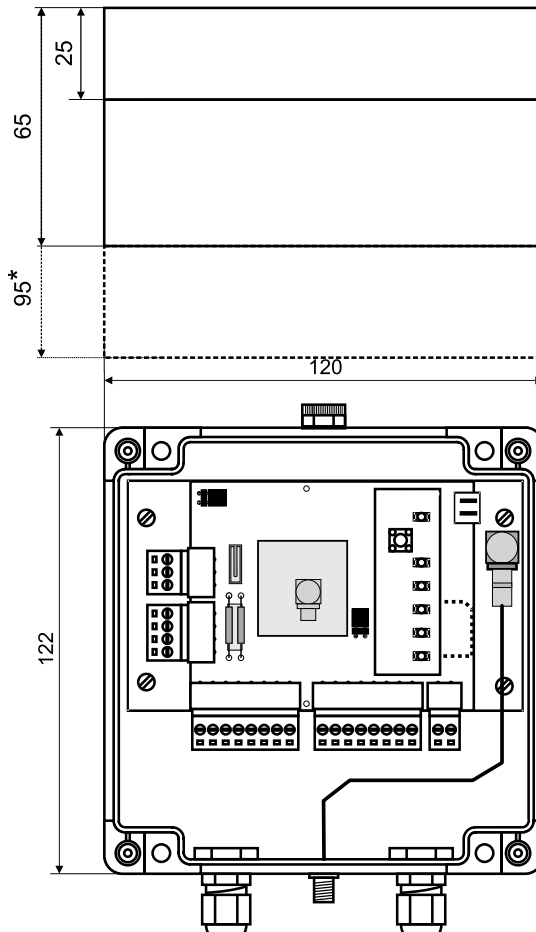
**Logger**

Memory type	FLASH
Memory capacity	8/16 MB
Minimum recording interval	1 s

**Configuration environment**



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



MT-713 v3