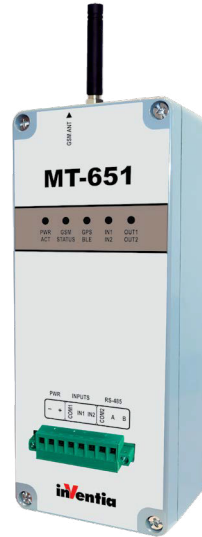


- ⌚ Embedded GSM 2G/3G modem
- ⌚ 6 measurement channels
- ⌚ Measurement of AC and DC voltages
- ⌚ Measurement in the range of microvolts
- ⌚ Dual-SIM technology (passive) – access to 2 independent GSM networks ensures superior availability
- ⌚ Additional binary inputs and outputs
- ⌚ Battery power supply (external power source as optional)
- ⌚ Built-in GPS receiver with internal antenna and accelerometer
- ⌚ Internal temperature sensor
- ⌚ Local communication over USB
- ⌚ Communication via RS-485 (galvanic isolation)
- ⌚ Remote communication via GPRS and SMS
- ⌚ 5 diagnostic LEDs
- ⌚ Round signals socket with M23 diameter and detachable terminal blocks
- ⌚ Real Time Clock (RTC) synchronized with UTC time delivered by GPS or Glonass system
- ⌚ Data logger with 0,1s resolution and 180k records capacity
- ⌚ Remote configuration, diagnostics and firmware upgrade (OTA)
- ⌚ 3 years warranty



MT-651 telemetry module provides compact and high specification solution for remote monitoring and controlling of pipeline cathodic protection systems, tanks and other metal structures buried in the ground or submerged in water. The flexibility of module configuration allows you to adjust it to a series of installations – from the simplest to the most complex. Internal resources of the device allow for easy and secure remote configuration and implemented data protection mechanisms ensure safe operation of the system.

MT-651 module is dedicated to the system where power lines are not available.

With MT-651 module we supplied free of charge applications: MTManager for remote and local configuration, resources monitoring and firmware upgrade, MTData Provider (OPC server, relation data base data saving engine) for communications environment for Microsoft Windows. These applications allow easy integration with available on the market popular SCADA systems.

**Functionality**

- ⌚ Mounting in the ø100 mm measurement bollard
- ⌚ Power supply by internal battery pack (external as optional)
- ⌚ Built-in GSM modem
  - » 2G (GSM/GPRS EDGE 850/900/1800/1900)
  - » 3G (UMTS/HSPA+ 800/850/900/1900/2100)
- ⌚ Communication interfaces: USB, RS-485 (galvanic isolation)
- ⌚ Dual-SIM technology – access to 2 independent GSM networks ensures superior availability
- ⌚ 2 binary inputs (one of them operates with pull up to the ground, one voltage sens.)

- ⌚ 2 optoisolated groups of analog inputs where each of them contains 2 differential inputs (configurable measurement range 0-10 V or 0-100 V) and 1 dedicated input 0-100 mV)
- ⌚ 2 optoisolated binary outputs (one NC type, second for control external bistable relay)
- ⌚ Execute of measurements in the synchronous mode
- ⌚ Scheduler of measurements and tasks with possibility of modification by user
- ⌚ Built-in GPS receiver for time synchronization
- ⌚ The accelerometer to detect tampering with the device or the devastation attempts (included unauthorized movement)
- ⌚ Remote configuration, communication, monitoring and firmware upgrade via GPRS
- ⌚ Internal temperature sensor
- ⌚ Detection of main power failure and battery monitoring
- ⌚ 5 status LEDs (digital I/O states, Power supply status, GSM status and activity, GPS status)
- ⌚ Data logger with 0,1 second resolution stored data events in flash memory (capacity 180 000 records)
- ⌚ Ability to integrate with SCADA system (OPC DA, OPC UA, ODBC and CSV support)
- ⌚ Transmission mode:
  - » GPRS/HSDPA - packet transmission
  - » SMS
- ⌚ Configurable access security – IP and Phone list, optional password
- ⌚ User friendly configuration software
- ⌚ Open communication protocol OPEN2



2DI/2DO

2DI/2DO  
6AI

6AI



DIN RAIL



RS - 485



**General**

Dimensions (HxWxD)	190 mm x 75 mm x 55 mm
Weight	900 g
Operating temperature	-20...+55 °C
Protection class	IP 65

**GSM/GPRS Modem**

Modem type	uBlox Sara-U270
Frequency range:	2G: 850/900/1800/1900 MHz 3G: 800/850/900/1900/2100 MHz
Antenna	50 Ω
GSM antenna connector	SMA-M

**Power supply**

Voltage range (DC)	7-30 V	
Internal battery pack	3 lithium batteries 3xLSH14 (3,6 V) 10,8 V; 17,4 Ah capacity	
Input current (for 24V)	Idle	800 μA
	Active	70 mA, 200 mA (charging)
	Max	0,7 A

**Inputs IN1, IN2**

Input voltage range	0...+30 V
Input resistance	60 kΩ typ.
Input voltage ON (1)	> 9 V min
Input voltage OFF (0)	< 3 V max.
Minimum pulse length	5 ms

**Outputs OUT1, OUT2**

Voltage switching AC/DC	220 V
Single output current	1,5 A
Maximum switching power	50 W, 100 VA

**Two group of optoisolated input with common ground (ANA, ANB)**

0-100 mV input: mVA, mVB	
Measurement range	±100 mV
Measurement resolution	1 uV
Accuracy DC	±0,1 %
Input resistance	>1 M Ω
0-100 V input: ANA1, ANA2, ANB1, ANB2	
Measurement range DC	±10 V; ±100 V
Measurement range AC	10 V; 100 V
Accuracy DC	±0,1 %
Input resistance	>10 M Ω

**Internal temperature sensor**

Accuracy	±1 °C
----------	-------

**GPS receiver**

Time synchronization accuracy	±1 ms
-------------------------------	-------

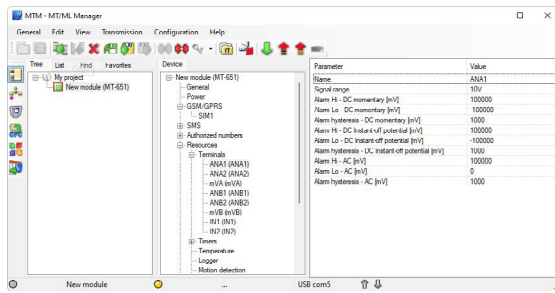
**Communication interfaces RS-485, USB**

Wired	RS-485 (optoisolated) USB (Non Isolated, internal)
-------	---

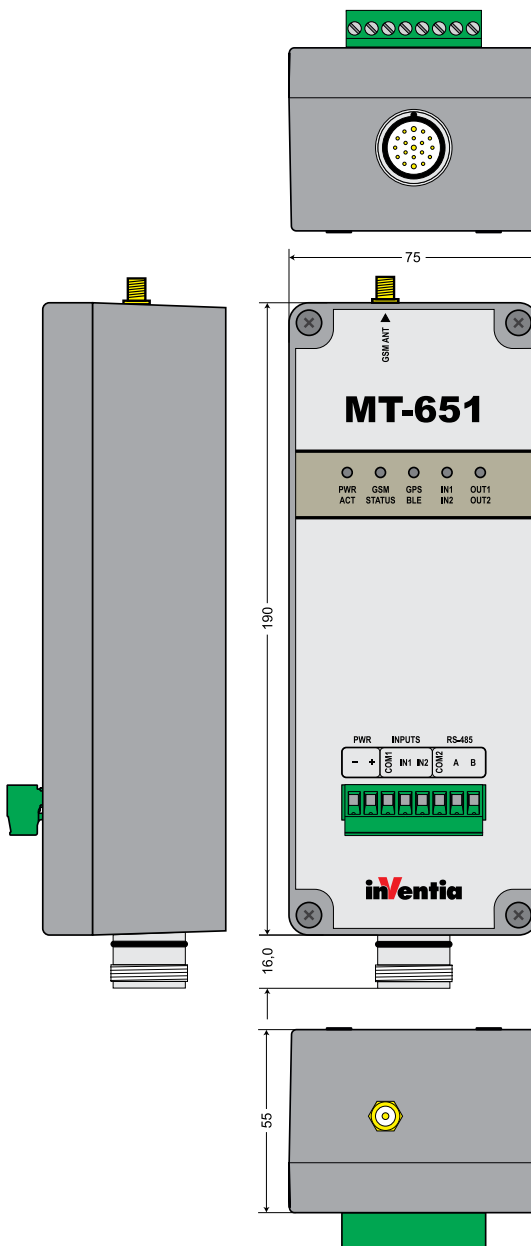
**Datalogger**

Capacity (internal memory)	180 000 records
----------------------------	-----------------

**Configuration environment**



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



**MT-651**