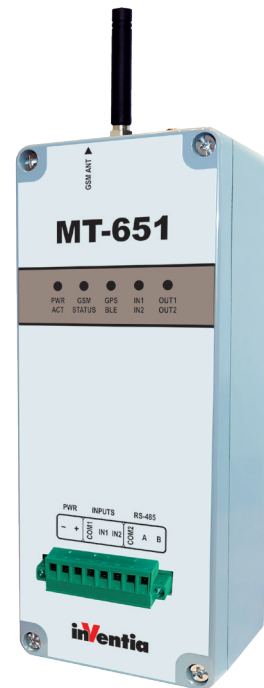


- 6 measurement channels
- Measurement of AC and DC voltages
- Measurement in the range of microvolts
- GSM/GPRS/EDGE and UMTS/HSDPA packet transmission
- Dual-SIM technology
- Additional binary inputs and outputs
- Battery power supply (external power source as optional)
- Built-in GPS receiver with internal antenna and accelerometer
- Internal temperature sensor
- Local communication over USB, RS485 and Bluetooth Low Energy \*
- Remote communication via GPRS and SMS
- 3 years warranty



2DI/2DO

6AI



DIN RAIL



RS-485

3G

MT-651

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 actualization, MT-Data 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 Quad Band GSM modem
  - 2G (GSM/GPRS EDGE 900/1800)
  - 3G (UMTS/HSPA+ 900/2100)
- Communication interfaces: USB, RS-485, Bluetooth 4.x\*
- 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 0-10V or 0-100V) and 1 dedicated input 0-100mV)
- 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 180000 records)
- Possibility to store data on the microSD card
- 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

\* OPTION

**General**

Dimensions without connectors (length x width x height)	190mm x 75mm x55mm
Weight	900 g
Operating temperature	-20...+55°C
Protection class	IP65

**GSM/GPRS Modem**

Modem type	uBlox Sara-U201*	uBlox Sara-U270
Frequency range:	2G: 850/900/1800/1900 MHz 3G: 800/850/900/1900/2100 MHz	2G: 900/1800 MHz 3G: 900/2100 MHz
Antenna	50Ω	
GSM antenna connector	SMA-m	

\* OPTION

**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 Active Max	800 μA 70 mA, 200 mA (charging) 0,7 A

**Inputs IN1, IN2**

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

**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)**

<b>0-100mV input: mVA, mVB</b>		
Measurement range	±100 mV	
Measurement resolution	1 μV	
Accuracy DC	±0,1 %	
Input resistance	> 1 MΩ	
<b>0-100V input: ANA1, ANA2, ANB1, ANB2</b>		
Measurement range DC	±10 V; ±100 V	
Measurement range AC	100 V	
Accuracy DC	±0,1 %	
Input resistance	> 10 MΩ	

**Internal temperature sensor**

Accuracy	±1 °C
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**GPS receiver**

Time synchronization accuracy	±1 ms
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**Communication interfaces RS-485, USB, BLE**

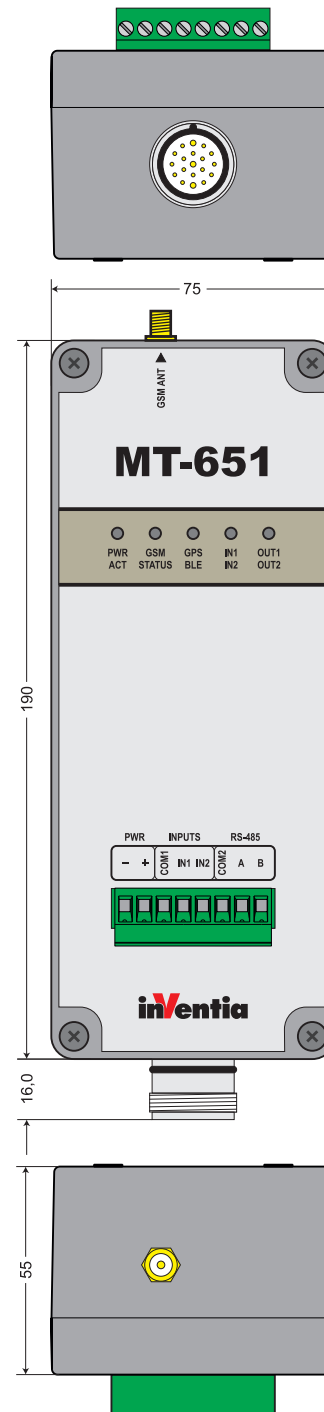
Wired	RS-485 (optoisolated) USB (Non Isolated, internal)
Wireless (remote)	Bluetooth 4.x, BLE*

\* OPTION

**Datalogger**

Capacity (internal memory)	180 000 records
Data storage on microSD card	Depends on the capacity of microSD card Support for 32GB microSD cards

**Drawings and dimensions (in millimeters)**



**Supplementary information:**



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INVENTIA complies with ISO 9001:2015 certified Quality Management System!  
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