MT-025 v2 – module for remote monitoring, alarm and control applications

MT-025 v2

- Embedded GSM modem
- 2G/4G Cat 1 data packet transmission
- Optional support for LTE450 networks
- Binary inputs/counting (4)
- Relay outputs (4)
- Analog inputs (2)
- USB-C configuration port
- 1-Wire interface
- DIN rail mounting
- Configurable via SMS commands
- Datalogger (up to 28k records)
- Communication port RS-485 (option)
- Removable terminal blocks
- 3-years warranty

Telemetry module MT-025 v2 is a new proposition of the INVENTIA company in the segment of economic solutions. Thanks to its very attractive cost to feature ratio, the new construction is well suited for use in small sites remote monitoring and control systems. It allows monitoring, diagnosis and control of remote devices via text messages (SMS) or/and using data packet transmission over GSM provider network. As option we prepared MT-025 v2 to operate with LTE 450 bands. It provides robust connectivity with increased coverage and deeper signal penetration.

Configurable text messages with a fixed or variable content (e.g. containing current measurement value) are convenient way to provide information to the monitoring center or directly to the defined staff phone numbers. Alarm messages can be generated on binary inputs and binary outputs state change, when measured analog values crosses alarm threshold, by timer and counter flags. Communication via GSM provider network enables secure and reliable communication with higher-order applications (SCADA, database, cloud based systems) allowing to expand the capabilities of the monitoring system using remote communication with difficult to access or distant sites.

MT-025 v2 module has 4 optoisolated binary inputs, which can generate alarm messages to notify supervision. The binary inputs can be configured as pulse inputs. The inputs can be used with S0-pulse interface (option). MT-025 v2 module is also equipped with 2 configurable analogue inputs for measurement of current (4-20 mA) or voltage (0-10 V). The device allows also direct connection of temperature sensors using 1-wire interface (1 channel), configuring it in reading mode readings of a single thermometer or a bus supporting up to 4 temperature sensors. Additionally, the module has four relay outputs. Built-in data logger with capacity of 28 000 entries allows storing the measurements in the module memory.

Typical applications:

- Facility monitoring
- Alarm systems
- Access control
- Preventive diagnostics
- Remote meter reading (ARM)
- Remote control of various devices by SMS or GPRS: gates, pumps, heating, lighting, etc.

Resources:

- Power supply (9,5– 30 V DC)
- 2 analog inputs 0-10 V/4-20 mA
- 4 optoisolated binary/counting inputs, positive logic, S0-pulse interface (option)
- 4 relay outputs
- 2G/4G Cat 1 GSM modem
- Two-way communication MT/SMS
- 1-Wire input (posibility to connect up to 4 temperature sensors)
- USB-C configuration port
- Real Time Clock (RTC) – possible external synchronization
- SIM card socket
- RS-485 port (option) or Isolated RS-485 port (option)

Functionality:

- Two-way communication via SMS and GPRS
- Unsolicited message according to event rules and scheduler
- Analog values measurement:
  - Temperature measurement with 1-Wire sensors;
  - Voltage measurement in 0–10 V range;
  - Current measurement in 4–20 mA range;
  - Possibility of linear scaling results of the measurements to engineering units;
  - 4 alarm levels, alarm hysteresis, filtration & deadband parameters defined exlusively for each analog input
- Control outputs funcionality:
  - Bistable or monostable output with user-defined pulse duration tume;
  - Local control – control output state is changed by events;
  - Remote control – output state is changed by writing via SMS command/GPRS data frame value to module register

WARRANTY 3 YEARS

SMS

4DI/4DO

2AI

DIN RAIL

1-WIRE TEMP

4G

RS-485 option

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MT-025 v2 – module for remote monitoring, alarm and control applications

- Universal Timers funcionality:
  - Synchronization with internal RTC clock
  - User-defined counted time range
- Local and remote configuration via dedicated tools and SMS commands
- Possibility of setting limits for SMS transmission
- Dynamic insertion of variables (e.g. temperature, measurement, binary inputs/outputs state) into SMS text messages
- Sending SMS to single recipient or defined group of recipients
- Configurable alarm levels, hysteresis and deadband for analog inputs
- Diagnostic LEDs (I/O states, successful login to network, signal level, TX and RX activity of GSM modem
- User-friendly configuration tools
- Internal data logger with 28k records capacity
- DIN rail mounting
- 3-year warranty

General

Dimensions (length x width x height)	70x86x58 mm
Weight	165 g
Mounting type	DIN Rail 35 mm
Operating temperature	-25 do +55 °C
Protection class	IP40

GSM modem

Modem type 2G/4G Cat 1	SIMCom A7672E
Region	Europe, Asia
2G	900, 1800 MHz
4G LTE Cat 1	B1, B3, B5, B7, B8, B20

Antenna socket	50 Ω, SMA-F

Power supply

Power voltage range DC (nom. 12 V/24 V)	9,5 – 30 V		
Input current @ 25°C	Idle	Active	Max
12 V DC	0,01 A	0,2 A	1,0 A
24 V DC	0,005 A	0,1 A	0,5 A

Binary inputs I1 – I4*

Input type	voltage, optoisolated
Signal voltage raneg	0 – 30 V
Input ON (1) voltage	>9 V @ 1,5 mA
Input OFF (0) voltage	<3 V @ 0,4 mA
Maximum pulse frequency	250 Hz
Minimum pulse duration	2 ms

* option – posibility to connect S0-pulse interface

Binary outputs Q1 – Q4

Output type	Relay, isolated, NO
Maximum voltage between contacts	250 V AC/30 V DC
Load current	5 A (resistive) 2 A (inductive)
Resistance	< 100 m Ω

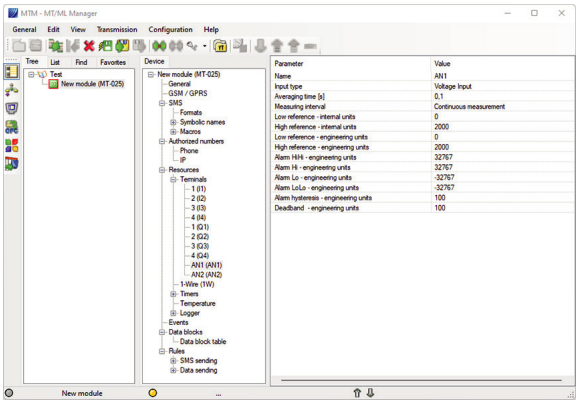
Analog inputs AN1, AN2 – voltage measurement

Measurement range	0 – 10 V
Maximum input voltage	12 V
Input dynamic impedance	213 k Ω typ.
Accurancy	±1,5 % max.
Nonlinearity	±1 % max.

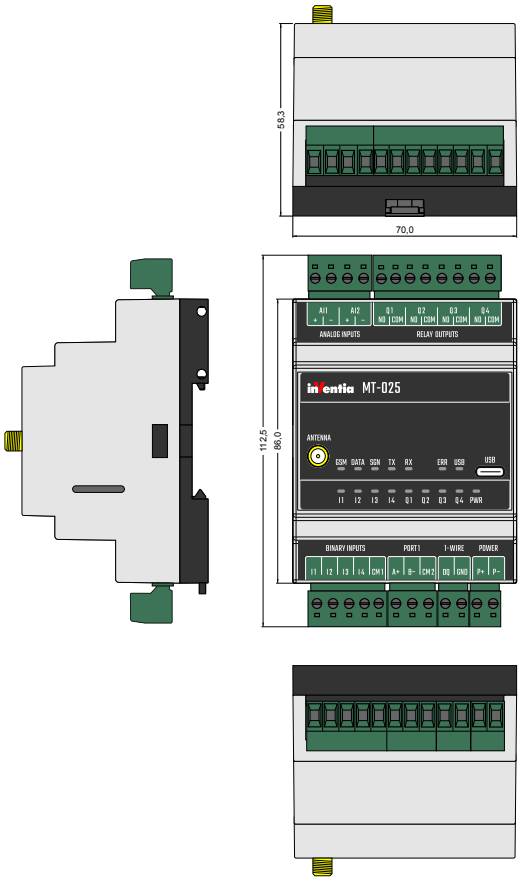
Analog inputs AN1, AN2 – current measurement

Measurement range	4 – 20 mA
Maximum input current	40 mA
Input dynamic impedance	340 Ω typ.
Voltage drop at 20mA	6,9 V
Accurancy	±1,5 % max.
Nonlinearity	±1 % max.

Configuration environment



Drawings and dimensions



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INVENTIA employs certified Quality Assurance System ISO 9001:2015

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