Telemetry GSM/GPRS/EDGE Module

- Integral, quad band modem GSM/GPRS/EDGE 850/900/1800/1900
- Independent CPU and watchdog system
- Electronics protected with varnish
- GSM/GPRS packet transmission
- 4 configurable binary inputs/outputs
- 2 dedicated binary/counter inputs
- 2 configurable binary/4-20mA analogue inputs/ 0-10V analogue inputs
- 1-Wire port
- Supply output for powering external sensor (5-24V)
- LED status diodes (GSM logon, GPRS logon, GSM signal strength, device activity, status of the module)
- Internal built-in Li-ion battery (1300/2600mAh*) * option
- Energy saving functions for DC supply or solar panel (green line products of Inventia)
- Data logger with capacity of 28000 records
- Remote GPRS configuration, programming, actualizations and diagnostic via GPRS
- Micro USB configuration port
- Option of soldered MIM card replaced SIM or using for redundancy communications

- Internal temperature measurement
- Optional pressure or humidity measurements
- 3 year warranty

MT-331 Telemetry module (replaced the whole MT-30X series of economical family modules) is a modern unit equipped in quad band modem uBlox LEON-G100. MT-331 is keeping aluminum housing and attractive price of economical family and offer resources and possibilities that are available in advanced telemetry devices. Configurable modes of inputs/outputs allow to prepare resources for the specific needs of application. Except 2 dedicated binary inputs user can configured additional 4 inputs (also as counter mode) and additional 2 binary inputs (instead of analogue). In control applications that required outputs user can configured 4 channels. Measure functions can be realized by 2 configurable analogue inputs, mode 4-20mA or 0-10V. Built-in Li-ion battery keeps power on in case of lost the main powers supply. Supply output provide a stabilized voltage for external circuits and measurement sensors, also in energy saving mode.

MT-331 Telemetry module is a green line, energy efficient module compatible with renewable energy sources. Energy saving mode supported with internal built-in LI-ion battery allows to connect external battery's as main supply. Device can be also supply directly from solar panels. In energy saving mode the module "goes to sleep" (as in batteries family modules MT-7xx) and wakes up according to configured schedule or occurrence of some events.

Except standard SIM cards (Subscriber Identification Module) the MT-331 used built-in MIM card (Machine Identification Module) which is soldered in packaging mount process of electronics. Depending from preferences user can use:

- a. Only MIM card, without SIM
- b. Only SIM card, without MIM activation
- c. SIM and MIM card (mobile network redundancy).

Module is equipped with flash memory reserved for capacity of 28000 records data logger with maximal resolution of

1 sec. When actual value of register will be saved with 5 minutes period, the logger can stored measured data of 96 days.

With MT-331 module we supplied free of charge applications: MT-Manager and MTC 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.

Similarly to previous MT-30x family the MT-331 is equipped with stylish aluminum housing with DIN rail connectors. Though the MT-331 is derived from economical Inventia modules series it has got 3 years warranty, like in professional series, and we are sure it will be useful in many professional applications.

Functionality

- Transmission modes:
  - GPRS – packet transmission
  - SMS
- Configurable resources of binary inputs, outputs, counters and analogues
- Data logger with 1 second resolution stored data events in flash memory (capacity 28000 records)
- Remote access to configuration parameters, remote firmware changing
- Configurable access security – IP and Phone list, optional password
- 6 binary inputs can be configured as counters (up to 100Hz, without analogue inputs)
- Unsolicited message according to event rules and scheduler
- Dynamical SMS contents
- DIN rail mounting
- Energy saving function – modem is powered only when transmitting
- User Friendly configuration software

WARRANTY 3 YEARS

MIM

energy efficient

SMS
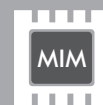
2-8DI /0-4DO

0-2AI

DIN RAIL

3G option

MT-331

General

Size (height x width x depth)	124x63x30 mm
Mass	100 g
Mounting method	DIN Rail 35mm
Operating temperature	0 ... +55 °C for battery 0,8Ah -20 ... +55 °C for battery 2,6Ah
Protection class	IP40

GSM/GPRS Modem

GPRS version:

Modem type	uBlox Leon-G100
GSM	Quad band (850/900/1800/1900)
Antenna	50W

3G version:

Modem type	uBlox Lisa-U2
WCDMA (UMTS)	800/850/900/1700/1900/2100
GSM	Quad band
Antenna	50W

Power supply

Direct current DC	7-30 V		
Mean input current (for 12V DC without external recipients)	Idle 10 mA	Active 180 mA	Max 250 mA
Internal lithium-ion accumulator	1,3 or 2,6 Ah*		

Binary outputs Q1...Q4

Output type	transistor "open drain" type
Recommended mean current for a single Output	100 mA
Maximum current for a single Output	250 mA
Output Resistance in ON state	3 W max.

Binary inputs I1....I8

Input voltage	0 ... 30V
Input resistance I1 ... I6 /Input resistance I7 ... I8	12,7 kW / 15,4 kW
Input voltage ON (1)	> 9V
Input voltage OFF (0)	< 3V
Minimal pulse length "1"	10 ms

Analog inputs 1W, AN1, AN2

Input 1W – temperature measurement

Sensor type	1-Wire DS18B20
Measuring range	-55...+125°C
Accuracy	+/-1°C

Input AN1,AN2 - voltage measurement

Measuring range	0...10V
Max. input voltage	18V
Input resistance	207kW typ.
A/D converter	12 bit
Accuracy	+/-0,5%

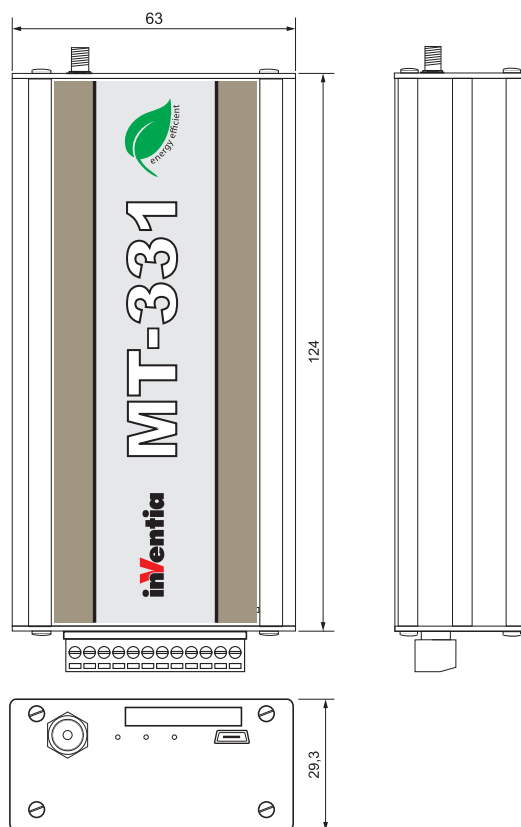**Input AN1,AN2 - current measurement**

Measuring range	4...20mA
Max. input current	50 mA
Dynamic inputs impedance	120W typ.
Voltage drop for 20mA	< 2,4 V max.
A/D converter	12 bit
Accuracy	+/-0,5%

Internal temperature sensor

Sensor type	internal
Measuring range	-25...+80°C
Accuracy	+/-1°C

Sensors powering output VOUT

Output voltage regulation range	5 - 24 V
Regulation step	0,1 V
Max. output current	20 mA at 24 V 40 mA at 5 - 16 V

Configuration application
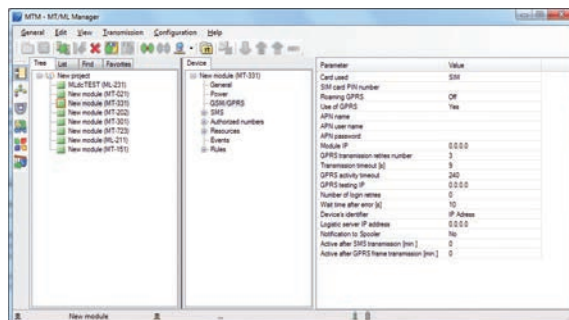
Drawings and dimensions *(all dimensions in milimeters)*

Supplementary information: