ML-231 – GPS/GPRS tracking module

ML-231

- Specialized module for vehicle tracking and monitoring
- Integral, 50 channels GPS module with highest sensitivity (-162 dBm) in SuperSense® technology
- Integral, 4-band, GSM modem
- Binary inputs and outputs
- Efficient fuel measuring
- Driver identification
- Monitoring the temperature of cargo during transportation
- Cargo doors monitoring, preventing cargo theft and protecting refrigerated loads
- Construction equipment monitoring, included load/unload processes
- GPS Snowplow tracking (materials usage reporting)
- Large data recorder 30k records
- 2 serial ports RS-TTL (3V) - one of them RS-485*
- 3 axis accelerometer
- Configuration via SMS
- Audio input and output*

** option*

The ML-231 location module is a specialized telemetry unit dedicated to solutions in many industries, using the monitoring functionality, the status of specific parameters and the current position of a given object.

The design of the module based on the latest GPS/GSM technology ensures precise location and reliable operation in changing conditions of GSM propagation.

The module is made in accordance with the requirements of automotive structures. It is successfully used in the transport of goods, construction and public services. The module is compatible with additional components and the configurator, which allows you to adjust the device in terms of the presentation of specific appearances, such as: the temperature level, door opening signaling, loading and unloading signaling, sprinkling and plowing signaling.

Resources:

- 5 binary inputs including:
  - dedicated ignition ON detection
  - dedicated alarm detection input
  - 2 general purpose binary inputs (with counting and scaling function)
  - 1 ground sensitive binary input
- 2 binary outputs
- 2 voltage analogue inputs
  - frequency measurement
  - average value computing
  - max value detection
  - differential measurement
  - voltage measuring with alarm thresholds
  - precise fuel level measuring
- Main supply input with voltage monitoring
- Auxiliary supply with voltage monitoring
- 2 1-Wire inputs (Dallas iButton) for driver identification and temperature measuring

Audio input & output (for loudspeaker and microphone)*

Functionality:

- Cyclical position calculation on GPS signal base
- Monitoring of analogue and binary inputs and outputs
- Monitoring of fuel level and rapid level falls
- Speed monitoring/speeding/stopping
- Binary inputs signal filtration eliminates signal interference
- Additive or subtractive pulse counting on I3 and I4 inputs allows variable flow meter connections.
- Controlling binary outputs according to internal logic and remote commands
- Detection of missing GPS signal
- Reporting according to defined distance and time criteria as well as driving direction change
- Transmission of information as a result of triggering predefined event
- Logging of data in case of missing GSM communication
- Transmission modes
  - GPRS – packet transmission
  - SMS
  - e-mail
- Configurable transmission in home network and in roaming
- Dynamic SMS composing allowing transmission of current measurements values
- Configurable SMS limits
- Local or remote configuration via GPRS
- Configurable access permissions – list of authorized IP addresses and phone numbers
- Monitoring of main and auxiliary supply voltage
- Diagnostic LED facilitating module's start
- Detachable connector and antenna sockets
- Dedicated local connection socket for PC for configuration and verification of parameters
- Possibility to extend the functionality of the module with external accessories
- 3-axis acceleration measurement
  - motion detection
  - collision detection (with 60 seconds log*)

** option*

WARRANTY 3 YEARS

MIM

SMS

e-mail

GPS

5DI/2DO

2AI

RS-485 option

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General

Dimensions (length x width x height)	112 x 65 x 23,5 mm
Weight	110 g
Mounting mode	Velcro/Strap
Operating temperature	-20 do +55 °C
Protection class	IP 40

GSM/GPRS Modem

Modem type	µblox SARA-G350
GSM	Quad band (850/900/1800/1900)
GPRS class	10
Antenna	50 Ω SMA socket

GPS Receiver

Receiver type	µblox NEO-6
Sensitivity	-162 dBm Super Sense® Indoor GPS
Channel number	50
Antenna	Active 3 V MCX connector

Power Supply

DC voltage	9 – 30 V		
Input current (mA) (for 13,8 V)	Max 200	Idle 35	Power Save <10
Input current (mA) (for 27 V)	Max 100	Idle 20	Power Save <10

Inputs I1 – I5

Input voltage range	0 – 30 VDC
Input resistance	22 kΩ
Input voltage ON (1)	>7 V
Input voltage OFF (0)	<2,5 V
Frequency range in counter mode (I 3, I 4)	50 Hz
Minimum pulse width "1"	20 ms

Output 1, 2

Recommended average current for single output	250 mA
Voltage drop at 250 mA	0,3 V
OFF current	20 µA
Application	Immobilizer, parking mode, LED/BUZZER signalling, others

Input 1-Wire 1, 2

Standard	Dallas I-Button
Application	driver authorization temperature measurement

Analogue Inputs

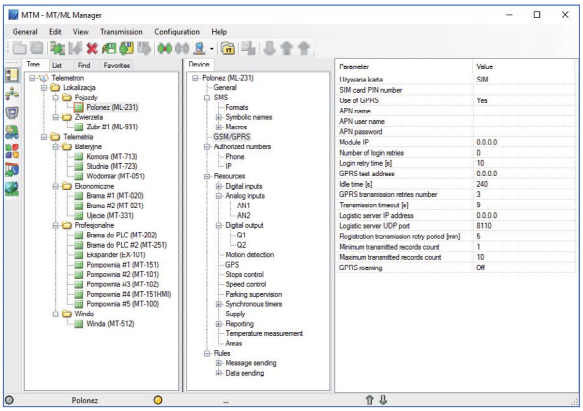
Measurment range	0 – 10 V*
Input Resistance	200 kΩ
A / D converter	12 bits

* with the possibility to increase the scope

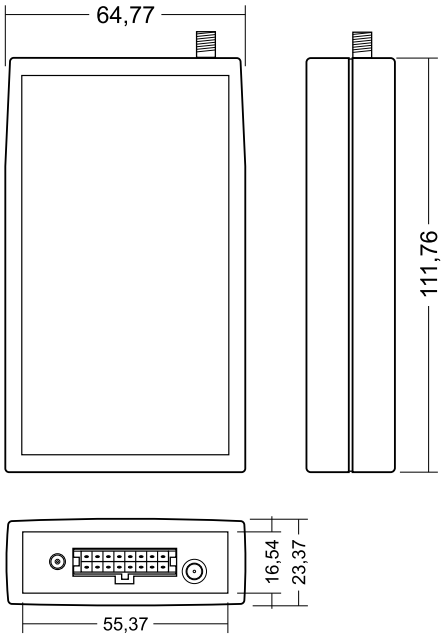
Serial ports

Standard	RS-TTL (3 V)
Optional	RS-485
Application	External expansion modules (CAN, RFID)

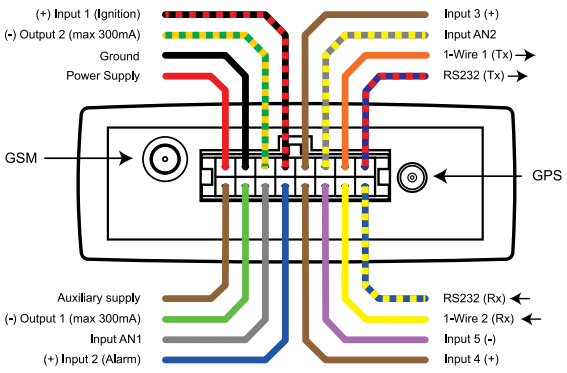
Configuration environment



Drawings and dimensions (all dimensions in milimeters)



Connections



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