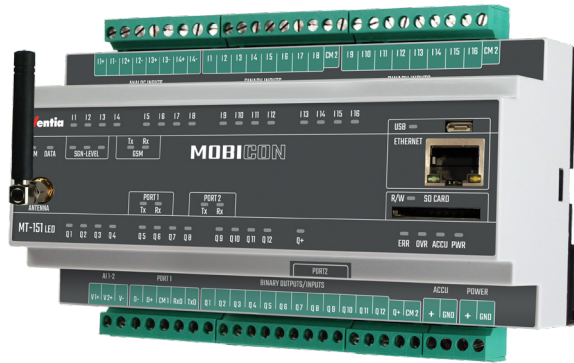


- Programmable logic controller (PLC), CODESYS® advanced programming environment (free of charge)
- Programming according to INTERNATIONAL STANDARD IEC 61131-3
- Embedded GSM 2G/4G modem
- Dual-SIM technology (passive) – access to 2 independent GSM networks ensures superior availability
- 16 binary inputs (galvanic isolation)
- 12 binary outputs, selectively configurable as inputs (galvanic isolation)
- 4 analog inputs 4–20 mA (galvanic isolation)
- 2 analog inputs 0–10 V (w/o galvanic isolation)
- Ethernet port 10Base-T/100Base-TX
- RS-232/485 serial port for external devices (galvanic isolation)
- RS-232 port with 5 V feeding for operator panels
- 48 diagnostic LEDs
- Battery buffered power supply (SLA battery support)
- Data logger with 0,1 sec resolution (SD card support)



- FlexSerial – programmable handling of non-standard serial protocols
- Standard communication protocols (MODBUS RTU, MODBUS TCP, M-BUS,\* IEC 60870-5-104\*, GENIbus\*)
- Remote configuration, programming, diagnostics and firmware upgrade over network

MT-151 LED v3 LTE is a family of new generation telemetry controller for demanding tasks and applications. MT-151 LED v3 LTE model is a professional, industrial design combining functionality of programmable logic controller, data logger, protocol converter and wireless communication interface for packet transmission over 2G/4G networks or/and Ethernet interface. CODESYS combines advanced technical features with easy to use environment.

Dual-SIM technology ensures superior level of GSM network availability, with redundant channel of data transmission. Ethernet port provides powerful capabilities of integration with other devices and systems of the user.

48 diagnostic LEDs signal actual status and operation of the module. With compact, robust design, integral GSM modem, attractive technical features and easy to use configuration tools the MT-151 LED v3 LTE controller is an optimal solution for demanding wireless telemetry, control, diagnostic, surveillance and alarm systems.

### Resources:

- CODESYS RUNTIME SYSTEM (RTS) 256 kB FLASH memory, 64 kB RAM
- Creating user programs using free CODESYS Development System (in accordance with IEC 61131) – with debug option
- 16 optoisolated binary/counter inputs 12/24 V DC (I1 – I16), positive logic
- 12 optoisolated binary outputs 12/24 V DC (Q1 – Q12), positive logic – selectively configurable as inputs
- 4 optoisolated analog inputs 4–20 mA (accuracy 0,2%, 15-bit resolution @ 1 sec interval) with configurable hysteresis and filtration
- 2 single-ended analog inputs 0–10 V
- Ethernet port 10Base-T/100Base-TX
- Isolated RS-232/485 serial port

\* option

- RS-232 serial port with 5 V / 500 mA feeding
- USB port for local configuration and programming
- Interface for backup 12 V SLA battery – charging support
- 2 SIM holders – Dual-SIM support (2G/4G network redundancy)
- Embedded temperature sensor
- 48 status LEDs (I/O states, successful login to GSM/LTE network, active data session, signal level, RX and TX activity of GSM modem, RX and TX activity of communication ports, operations on SD card, module status, primary and backup power source)
- Internal flags and registers for user application program
- Possibility to flash firmware remotely
- Data and Event logger supporting SD card
- RTC with external synchronization functions

### Functionality:

- Transmission modes:
  - » 2G/4G – packet transmission
  - » SMS
  - » e-mail (without SSL)
- Access to module resources using standard protocols MODBUS RTU, MODBUS TCP, Open, Open2
- Intelligent packet routing and Multimaster support in MODBUS mode
- Binary inputs configurable as counting inputs (upto 2 kHz) – I1- I4
- Programmable control logic using I/Os, timers, counters, flags and registers for triggering events (data transmission/recording, SMS transmission, e-mail transmission, setting outputs and internal registers, etc.)
- Event based transmission (unsolicited messaging) triggered by change of binary input state, internal flag state, by reaching alarm level of analog input, by true condition



16-28DI  
/12DO

6AI



DIN RAIL

RS-232

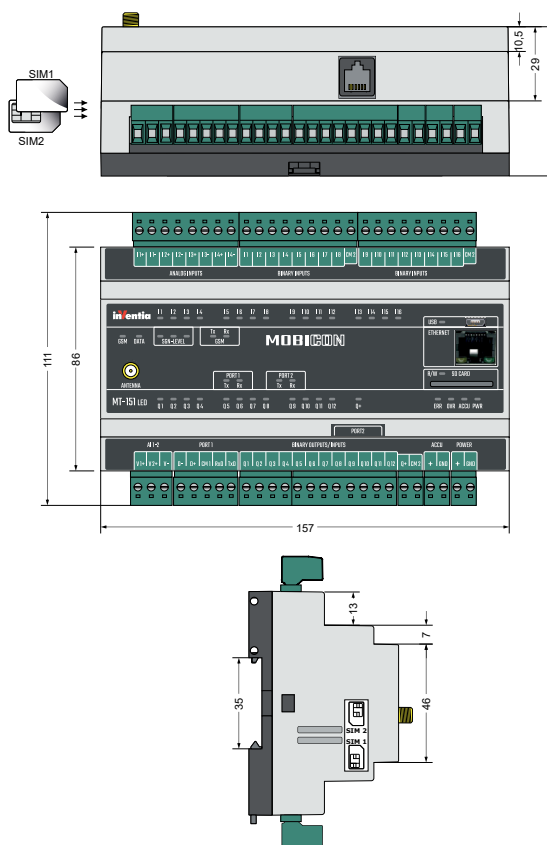
RS-232/485

4G



- Configurable SMS messages triggered by alarms and scheduled
- Dynamic fields in SMS/e-mail text
- Configurable alarm levels, hysteresis, deadband and filtration for analog inputs
- Data and event recording on SD card with 0,1 sec res.
- Transmission of data from external devices connected to RS-232/485 serial port
- 5 V feeding provided for external device connected to RS-232 serial port (e.g. operator panel, GPS receiver)
- Configurable events based on mirrored resources of external devices
- Remote configuration and programming over network
- Configurable access security – list of authorized IPs and ph. numbers, optional password
- DIN rail mounting
- Supply voltage 12/24 V DC (24 V DC in case of using connected external battery)
- Built-in management of external SLA backup battery
- Built-in advanced auto-diagnostics
- Detachable terminal blocks

## Drawings and dimensions (all dimensions in millimeters)



### General

Dimensions (L x W x H)	157 x 86 x 58 mm
Weight	382 g
Fixing	DIN Rail 35 mm
Operating temperature	-20 do +65 °C
Operating humidity	up to 95%, noncondensing
Protection class	IP40

### Modem\*,\*\*

Modem type	<b>SIMCom A7672E</b>
Region	Europe, Asia
2G	900, 1800 MHz
4G (LTE Cat 1)	Band 1, 3, 5, 7, 8, 20
Antenna socket	50Ω, SMA-F

\* depending on the mounted modem

\*\* modem versions are available to serve other regions of the world

### Inputs I1 – I16\*

Input voltage range	0 – 30 V
Input current	2,4 mA
Input voltage ON (1)	> 9,4 V
Input voltage OFF (0)	< 8,4 V

\* according to IEC 61131-2 for switch type 1 and 3

### Inputs Q1 – Q12\*

Maximum input voltage	30 V
Input current	2,4 mA
Input voltage ON (1)	>9,4 V
Input voltage OFF (0)	<8,4 V

\* according to IEC 61131-2 for switch type 1 and 3

### Analog inputs 0 – 10 V (2)

Input voltage range	0 – 10 V
Maximum input voltage	20 V
Input impedance	197 kΩ typ.
A/D converter resolution	16 bits
Accuracy (@ 25 °C)	0,5 %

### Outputs Q1 – Q12

Maximum output current	100 mA
Voltage drop @ 100 mA	<0,5 V
OFF state current	<100 μA

### Analog inputs 4 – 20 mA (4)

Input current range	4 – 20 mA
Maximum input current	50 mA
Dynamic input impedance	55 Ω typ.
Voltage drop @ 20 mA	< 5 V
A/D converter resolution	15 bits
Accuracy (@ 25 °C)	0,2 %

### Power supply

DC (nom. 12/24 V)	10,8 – 30 V		
Input current (@ 24 VDC)	Idle	Active	Max.
	0,06 A	0,25 A	1,00 A