



8-16DI
/8DO

3AI/1AO

DIN RAIL

RS-232/485

4G



- 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
- 8 binary inputs (galvanic isolation)
- 8 configurable binary inputs/outputs (galvanic isolation)
- 3 analog inputs 4–20 mA (galvanic isolation)
- 1 analog output 4–20 mA (galvanic isolation)
- Ethernet port 10Base-T/100Base-TX
- RS-232/485 serial port for external devices
- Diagnostic LEDs
- Redundant power inputs
- Real Time Clock (RTC)
- Data logger with 0.1 sec. resolution
- Standard communication protocols (Modbus RTU, Modbus TCP)



- FlexSerial - programmable handling of non-standard serial protocols
- Remote configuration, programming, diagnostics and firmware upgrade (OTA)
- Industrial design, DIN rail mounting, screw terminals
- 3-year warranty

The MT-121 telemetry controller is designed to carry out various tasks in industrial, process and building automation. It features the CODESYS® runtime environment, enabling the solution to combine advanced technical functions with ease of use. In addition, the device features a built-in data logger, a transmission protocol converter and a wireless communication interface, enabling data transmission over 2G/4G networks. Dual-SIM technology ensures transmission reliability through access to two independent 2G/4G networks.

Its industrial design, galvanic isolation of resources, carefully selected technical parameters and user-friendly configuration tools are key advantages that make the MT-121 the optimal solution for wireless telemetry, monitoring, diagnostics and control systems requiring a high level of reliability. The module can be powered from two redundant power supplies with a wide DC voltage range (11–30 V). The analogue output allows for the smooth control of an external device. The available Ethernet port enables the connection of an extensive network of peripheral devices supporting ModBus TCP.

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)
- Integral, global communication modem 2G/4G
- 8 binary inputs
- 8 binary inputs/outputs
- 3 analog inputs 4–20 mA (galvanic isolation)
- 1 analog output 4–20 mA (galvanic isolation)
- Ethernet port

- RS-232/485 serial port for external devices with galvanic isolation (monitoring, diagnostics)
- 4 counter/binary inputs
- 2 power inputs
- Internal non-volatile memory for configuration data with remote update option
- Data and event logger in Flash memory (8 MB)
- Dual-SIM
- Real Time Clock (RTC)
- Diagnostic LEDs
- Configurable USB-C port

Functionality:

- Transmission modes:
 - » 2G/4G – packet transmission
 - » SMS
 - » Ethernet
- Access to module resources using standard protocols ModbusRTU and Modbus TCP
- Packet transmission from/to devices connected by serial port
- Intelligent packet routing and Multimaster support in Modbus mode
- Transparent mode packet sending
- 4 binary inputs which can be configured as counter inputs
- Event based transmission (unsolicited messaging) triggered by change of binary input state, internal flag state, by reaching alarm level of analog input
- Unauthorized access protection in the form of authorized phone numbers and IP addresses list (optionally a configuration password)

- Configurable SMS messages triggered by events, internal flags and scheduled
- Dynamic fields in SMS text
- Configurable alarm levels, hysteresis, deadband and filtration for analog inputs
- Data logger with 0.1 sec. resolution
- Remote configuration and programming over network
- Intuitive configuration tools
- Easy service center software integration
- LEDs (module status, GSM communication activity, GSM signal level, DATA activity, serial communication activity, binary inputs/outputs status, analog input threshold exceeded, USB port activity, Ethernet port activity, power supply input)
- Detachable terminal blocks
- Supply voltage 12/24 V DC
- DIN rail mounting

General

Dimensions (L x W x H)	105 x 86 x 59 mm
Weight	268 g
Fixing	DIN Rail 35mm
Operating temperature	-25°C do +55°C
Protection class	IP 20

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

Binary inputs I1–I8, IQ1–IQ8

Input type	voltage, galvanic isolation
Supply voltage range (IQ+ – IQ–)	11 – 30 V
Input voltage range for Ix	0 – 30 V
Input voltage ON (I)	>10 V @ 2,4 mA
Input voltage OFF (O)	<8 V @ 2,0 mA
Maximum pulse frequency (for I1 – I4)	250 Hz
Maximum pulse length (for I1 – I4)	1 ms

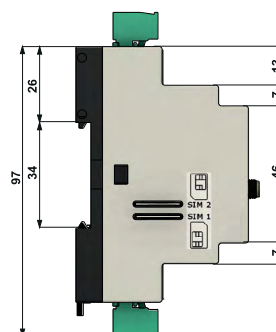
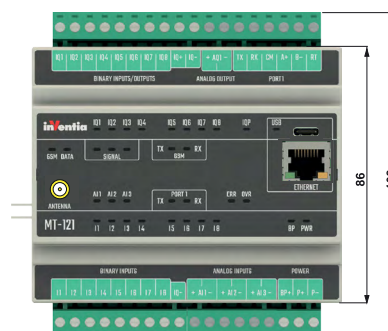
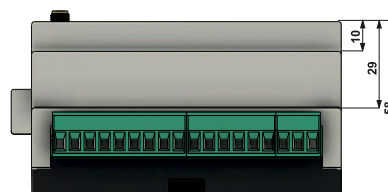
Binary outputs IQ1–IQ8

Output type	semiconductor, NO
Supply voltage range (IQ+ – IQ–)	11 – 30 V
Maximum single output load current	0,2 A
Voltage drop (IQ+ – IQx)	@0,1 A 0,91 V typ. @0,2 A 1,02 V typ.

Power supply

DC (nom. 12 V / 24 V)	11 – 30 V DC		
Input current (typ.) @ 25°C	Idle	Active	Max.
12 V DC	0,04 A	0,1 A	1,0 A
24 V DC	0,02 A	0,05 A	0,5 A

Drawings and dimensions (all dimensions in millimeters)



Analog inputs AI1–AI3

Input type	current, galvanic isolation
Measuring range	4 – 20 mA
Maximum input current	50 mA
Dynamic input impedance	51 Ω typ.
A/D converter resolution	14 bits
Voltage drop @ 20mA	< 5 V
Accuracy	±0.2 %

Analog output AQ1

Output type	passive (external power required), galvanic isolation
Output range	4 – 20 mA
Maximum output current	50 mA
Supply voltage range	7,5 – 30 V
Accuracy	±0.2 %