

- Binary inputs and outputs
- Analog inputs 4-20 mA (2)
- Serial communication port for external devices (RS 232/422/485), isolated
- Data logger with 0,1 sec. resolution
- RTC Real Time Clock
- Programmable logic controller (PLC)
- Modbus RTU communication protocols
- Removable terminal blocks
- Easy configuration software



8-16DI
/0-8DO

2AI



DIN RAIL

RS-232

RS-232
/422/485

EX-101

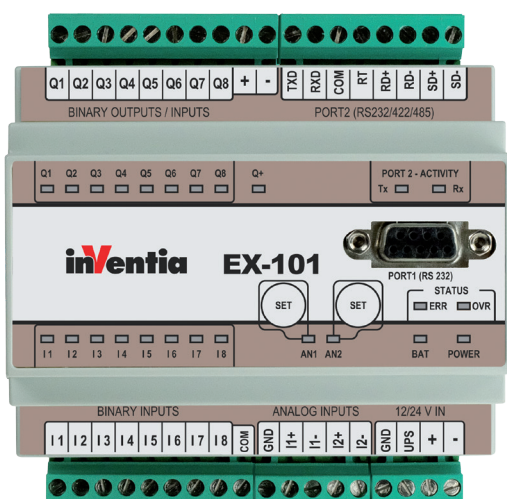
The EX-101 is a extension module for MT family of telemetry modules. It is optimized for use in advanced measurement systems equipped with 12/24V power source. Additionally, it can act as a universal I/O station with galvanically isolated RS232/485/422 Modbus RTU interface. The ability to run local control program allows to use EX-101 module as freely programmable PLC.

Resources

- 8 optoisolated binary / counter inputs 24V DC (I1 – I8)
- 8 configurable binary outputs / inputs / counters 24 V DC (Q1 - Q8)
- 2 optoisolated analog inputs 4-20 mA (8 bit acc./10 bit res.) with configurable hysteresis and filtration
- Isolated serial port RS 232/485/422
- RTC with external synchronization functions
- Firmware Flash memory with local update capability

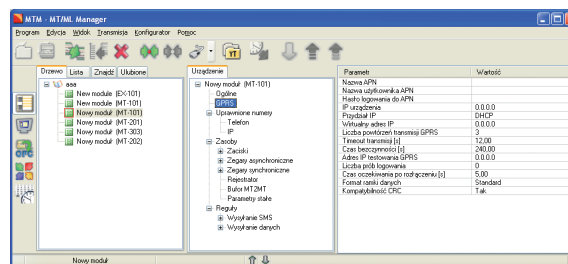
Functionality

- All binary inputs can be configured as counters or frequency-to-analog converters (0-2kHz)
- Programmable control functions using I/O's and configurable, event triggered flags (data logging, output control)
- Unsolicited messaging
- Event triggered Data Logger
- Simple, multipoint alarm configuration for both binary and analog inputs
- Additional manual alarm level setting capability for analog inputs A1, A2 (front panel push buttons)
- External, optoisolated RS 232/422/485 serial port for data transmission
- Configurable access security - password
- DIN rail mounting
- Power supply 12/24V DC, 24 V AC
- Removable terminal blocks
- Diagnostic LED's (status, serial communication activity, I/O status)
- Local logging of measurement results
- Local execution of user program
- 4 programmatic clocks TMRx – Asynchronous and Synchronous
- Can be use like standalone programmable PLC
- Main power failure signalization – FS1_UPS
- Support for external text or graphics modbus displays



Configuration utility

Dimensions (length x width x height)	105 x 86 x 60 mm
Weight	300 g
Mounting	DIN Rail 35 mm
Operating temperature	-20 to +65°C
Protection class	IP20
Max. voltage at all connectors relative to device's GND.	60 Vrms max



Drawings and dimensions (in millimeters)

Voltage range (DC) 12,24V	10,8 – 36 V
AC (24V)	18 – 26,4 Vrms
Input current (A) (for 12V DC)	Active 0,20
Input current (A) (for 24V DC)	Active 0,10

The front view diagram shows the following components from top to bottom:

- A row of 16 small rectangular ports.
- A dimension line indicating a height of 10 units.
- A dimension line indicating a width of 29 units.
- A large rectangular area labeled "105" representing the main body width.
- A row of 16 square ports labeled Q1 through Q8, followed by "+" and "-" symbols, and then TXD, RXD, COM, RT, RD+, RD-, SD+, and SD-.
- A label "BINARY OUTPUTS / INPUTS" under the first eight ports and "PORT2 (RS232/422/485)" under the remaining ports.
- A row of 16 square ports labeled Q1 through Q8, followed by "Q+", and then a section labeled "PORT 2 - ACTIVITY" containing Tx and Rx indicators.
- The brand name "inVenia" and model "EX-101".
- An RS-232 connector icon labeled "PORT1 (RS 232)".
- Status LEDs labeled "STATUS", "ERR", and "OVR".
- Two circular buttons labeled "SET".
- A row of 16 square ports labeled 11 through 18, followed by "LOW", "GND", "I1+", "I1-", "I2+", "I2-", "GND", "U1PS", "+", and "-".
- A label "BINARY INPUTS" under the first eight ports and "ANALOG INPUTS" under the next six ports.
- A label "12/24 V IN" at the far right.
- A power jack icon.
- A row of 16 circular ports.
- A dimension line indicating a height of 86 units.
- A dimension line indicating a width of 109 units.
- A dimension line indicating a distance of 5,08 units from the bottom edge to the start of the input ports.

Input voltage range	-36 – 36 V
Input resistance	5,4 kΩ
Input voltage ON (1)	> 9 V min.
Input voltage OFF (0)	> 3 V max.

Technical drawing of a mechanical part, likely a bracket or support, showing dimensions in millimeters. The drawing includes a side view and a top view.

Side View Dimensions:

- Total height: 86
- Top section height: 26
- Bottom section height: 34
- Right side height: 13
- Right side width: 7
- Right side width: 46
- Right side width: 7

Top View Dimensions:

- Total width: 58
- Left section width: 29
- Right section width: 19

Maximum input voltage	36 V
Input resistance	5,4 k Ω type
Input voltage ON	> 9 V min
Input voltage OFF	< 3 V max.

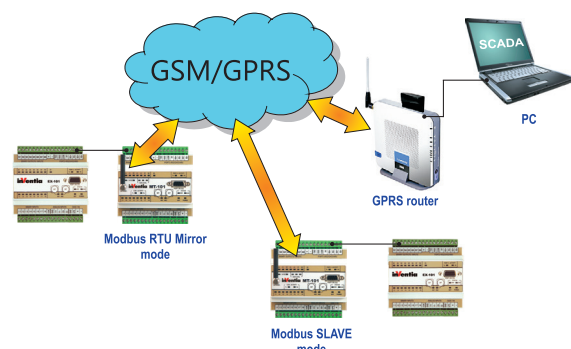
Outputs Q1 – Q8

Recommended average current for single output	50 mA
Single output current	350 mA max.
Mean current for all outputs	400 mA max.
Voltage drop at 350mA	< 3,5 V max.
Off state current	< 0.2 mA max.

Analog inputs A1, A2 (4 – 20 mA)

Input current	4 – 20 mA
Maximum input current	50 mA max.
Dynamic input impedance	25 Ω type
Voltage drop at 20mA	< 5 V max.
A/D converter	10 bits
Accuracy	+/-1,5 % max.
Nonlinearity	+/-1 % max.

Additional info:

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INVENTIA complies with ISO 9001:2008 certified Quality Management System!
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