

MW501 **Communicative module, Modbus RTU, 1 analog input 0 – 10 V**



Summary MW501 is communicative device with 1 analog input 0-10 V. They use Modbus RTU / RS485.

Applications

- HVAC systems – voltage measurement.
- Input module 1× AI for general use.

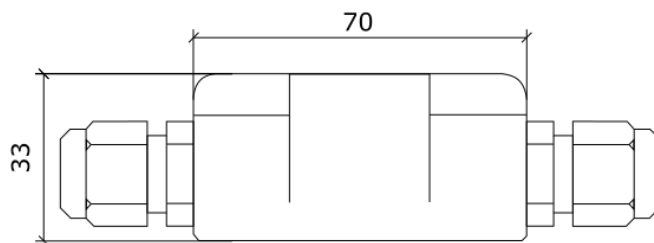
Functions The MW501 module has 1 analog input. The resolution of the A/D converter is 16 bits. Suitable for mounting to wall or any other flat surface. The value from the A/D converter can be read from the corresponding modbus map register. see below.

See details in the Modbus map (<https://www.domat-int.com/en/modbus-tables>).

Technical data	Power	10...35 V DC, 14...24 V AC
	Consumption	typically 0.3 W; max. 2 W
	Input	1× analog input
	Measuring range	0...10V DC
	Galvanic isolation input	no
	A/D converter accuracy	16 bit
	Measurement error	measurement deviation for all measured quantities is 0.25 % of the entire range.
	Communication bus	Modbus RTU / RS485 (1200...115200 bps)
	Galvanic isolation	1 kV
	Cover	polyamide
	Dimensions	70 × 63 × 33 mm, without cable glands, see drawing below
	Protection degree	IP65 (EN 60529 + A2:2019)
	Terminals	screw terminals for wires 0.35...1.5 mm ² ; outer cable diameter 4...8 mm
	Ambient conditions according to EN IEC 60721-3-3 ed. 2: 2019	class 3K22 (operational) class 1K21 (storage)

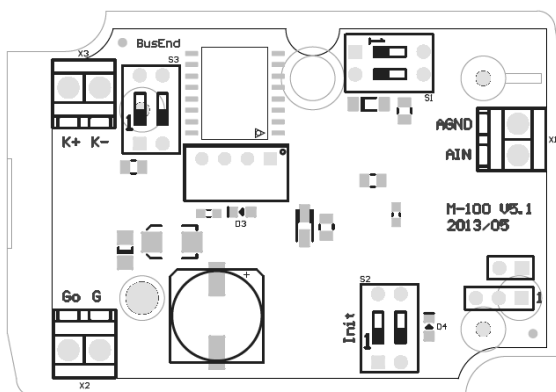
Ambient conditions	class 3M11 (mechanical requirements) ambient temperature -5...45 °C, rH 5...85 %. condensation, precipitation, ice or icing etc. not allowed. for instalation in higher altitude is necessary to consider reduction of dieletrical stability and reduced air cooling (EN IEC 60664-1 ed.3:2020). if not specified otherwise.
Standards of conformity	EMC EN IEC 61000-6-2 ed. 4:2019, EN IEC 61000-6-4 ed. 3:2019 (industrial environment) Electrical safety EN IEC 62368-1 ed. 2:2020+A11:2020 Restriction of hazardous substances (RoHS) EN IEC 63000:2019

Dimensions



Dimensions are in *mm*.

Terminals



Terminals and connectors

G	Power
G0	Power
K+	Communication RS485+
K-	Communication RS485-
Ain	Analogue input 0...10 V DC
AGND	Analogue input common

LED

PWR	green, power on
RS485 TX	red; transmission on the bus

DIP

BUS END	both ON terminate the bus (set if the device is the first or
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the last on the bus)

INIT sets the initial communication parameters: Modbus address 1, baudrate 9600 bps.

The devices are set to the initial communication parameters by default. INIT the device only if the factory default settings shall be retrieved. Proceed as follows:

- connect the device over RS485 to a PC with configuration software ModComTool
- set the INIT switch to ON
- connect power (to terminals G, G0)
- search the device in the program (Scan)
- set INIT to OFF
- in ModComTool double click the device
- click to the „Initialization“ button in ModComTool
- switch the power off and on again.

Installation

Use a flat screwdriver to open the cover of the plastic housing. Connect the cabling according to the terminal description. Recommended wire crosssection is 0,35 - 1,5 mm² (outer cable diameter 4 - 8 mm). To keep the protection degree, the cable gland must be fastened and the cover put back after installation. The module is fixed to wall or any other flat surface using two screws (not included).

The module is intended for operation in a normal, non-aggressive environment. They can be installed in any position. No maintenance is necessary.

Modbus

The sensor is addressed over the ModComTool. Default Modbus address is 1, communication parameters 9600, N, 8, 1. Measured voltage is in **register 6** formatted as follows:

*register value = measured value in V * 1000*

thus

measured value in V = register value / 1000

See details in the Modbus map (<https://www.domat-int.com/en/modbus-tables>).

Safety note

The device is designed for monitoring and control of heating, ventilation, and air conditioning systems. It must not be used for protection of persons against health risks or death, as a safety element, or in applications where its failure could lead to physical or property damage or environmental damage. All risks related to device operation must be considered together with design, installation, and operation of the entire control system which the device is part of.

**Changes in
versions**

05/2021 — First release of the data sheet.