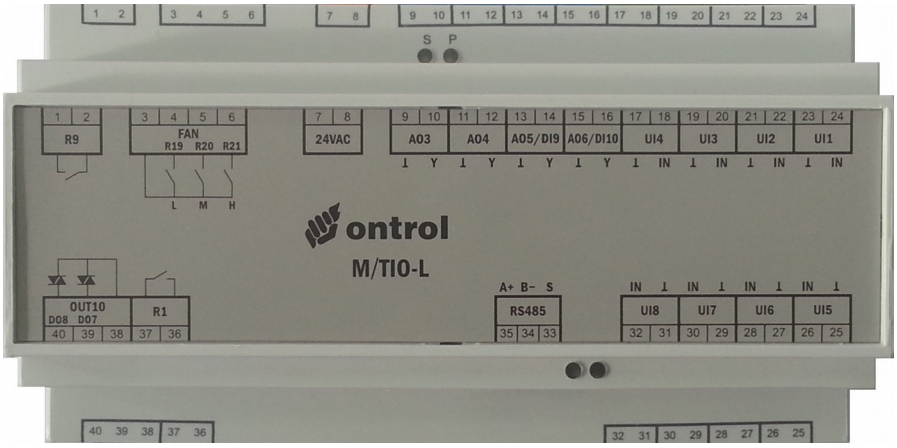
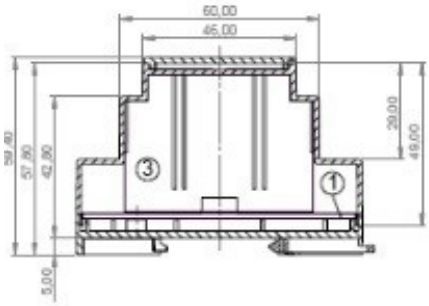
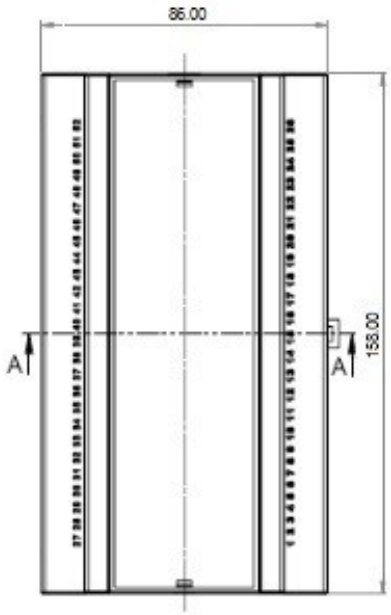
Modbus RTU Input Output Module M-TIO

- Compact Modbus RTU input/output module for the R-ION room controller
- Modbus RTU versions (M-TIO) available
- 220 or 120 or 24 Vac powered versions
- Fused mains power output for field devices
- Compact input/output module version (R-TIO) for the Ontrol's R-ION room controller
- Real-time clock



Dimensions (mm)





Specifications

Operating voltage	230 VAC +10% -5%, 50/60Hz 120 VAC +10% -5%, 50/60Hz 24 VAC +10% -5%, 50/60Hz versions available
Power consumption	Max 3.5 VA (including R-ION touch screen, excluding field devices)
Operating Temperature	5..50 ºC
Storage Temperature	-25..+75 ºC
Relative Humidity	%5...95 Rh, non-condensing
Weight (net / gross)	400 gr / 530 gr 750 gr / 890 gr (aux. 24Vac output versions)
Dimensions	158 x 86 x 60 mm
Installation	Standard 35 mm rail mount
Protection	IP30 according to EN 60529
Connections	Screw terminals, max 1.5 mm² (AWG 16)
Universal inputs	8 inputs (see table for sensor signal compatibility)
Relay outputs	4 Relays, 230 VAC / 5A 1 Relay, 230 VAC / 10A
Triac outputs	2 Triacs, (0.1A@230VAC / 0.5A@24VAC)
Modulating outputs	4 outputs 0(2)-10 VDC, 2mA max (2 configurable as digital in)
Expansion port	Ribbon cable connection to max 2 relay modules (RK4)

Versions

Versions	Supply	Communication
M-TIO-L	24 Vac	RS485 Modbus RTU slave
M-TIO-U	120 Vac	RS485 Modbus RTU slave
M-TIO-H	230 Vac	RS485 Modbus RTU slave

M-TIO

Modbus RTU Input Output Module

M-TIO Description

General

M-TIO modules provide a compact input/output solution for Modbus RTU master controllers.

The unit has incredibly flexible input/output configuration that allows many applications to be controlled by a single device.

A combination with any Modbus wall unit greatly simplifies installation on the wall-unit side, as the IO module can be located close to the terminal unit being controlled, with only communication wiring into the wall unit. The mains powered versions eliminate the need for additional power-supplies or transformers further reducing cost and installation labor.

M-TIO also hosts a battery backed-up real-time-clock.

Universal Inputs

8 inputs are provided, configurable as below:

	Pt1000	NTC	0-10 VDC	Voltage Free Contact
In 1		✓		✓
In 2		✓		✓
In 3		✓		✓
In 4		✓		✓
In 5	✓			✓
In 6	✓		✓	✓
In 7	✓		✓	✓
In 8	✓		✓	✓

Relay Outputs

5 relay outputs are provided. Each relay can be used independently, and a specific set of three can be configured for 3-speed fan control.

Triac Outputs

2 triac outputs are provided with flexible configuration options, allowing control of on/off thermoelectric (PWM) or floating actuators or relays. The triacs can be independently configured to control different loads. However, due to internal connections, all loads must be supplied from the same AC voltage. Floating (three-position) configuration requires use of both triacs.

Modulating Outputs

Four 0-10VDC analog outputs are provided for controlling modulating valve or damper actuators.
Two of these can be configured to function as digital inputs.

Expansion port

Up to two RK4 modules can be connected to the device with a ribbon cable, providing a total of 8 additional relay outputs

Real time clock

4 time-schedules can each be independently associated with a relay output through configuration parameters. Each schedule allows 28 sets of start/stop times per day of the week.

Connections