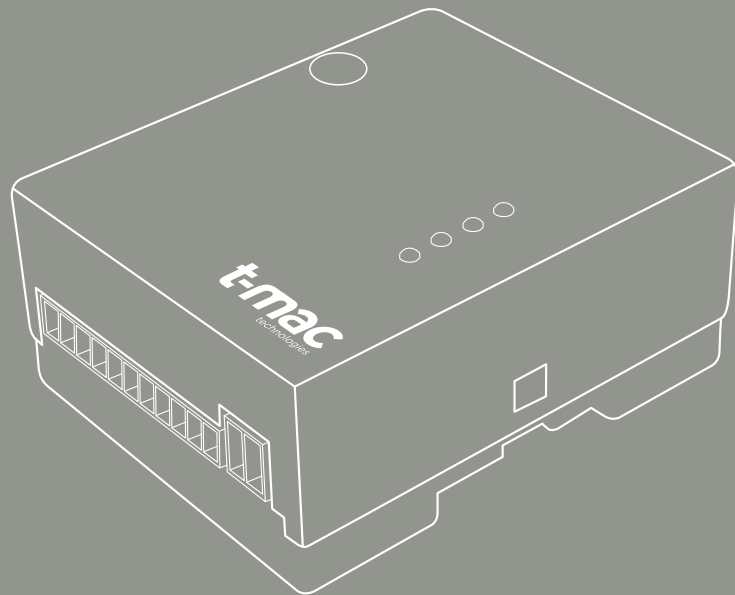


# I/O EXPANSION MODULE

**4 configurable inputs +  
4 analogue outputs**



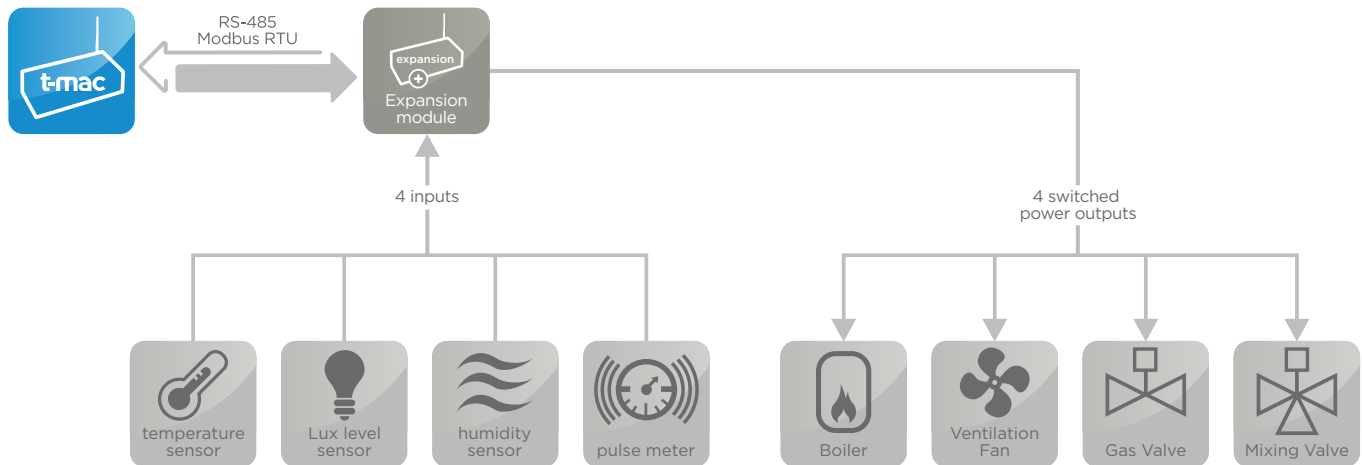
The I/O expansion module can be used to expand the I/O capabilities of any system which has an RS-485 Modbus RTU master (such as t-mac).

The inputs can be individually configured as Digital, 4-20mA, 0-10VDC or 10K thermistor. When set to Digital the inputs can be used to monitor and count pulsed signals from multi utility meters such as electricity, gas and water.

When set to the analogue ranges, the inputs can be used to monitor standard sensors such as temperature, humidity and light level. The 4 analogue 0-10VDC outputs can be used to control equipment and machinery such as boilers, fans and valves.

The counters and (optionally) the analogue output states are backed-up in non-volatile memory in case of power failure. All data is transmitted and received from the module via its RS-485 Modbus RTU interface.

## Connection



# Specifications

## Interface Module

<b>Supply</b>	10-30V DC (50mA typical at 24VDC)
<b>Dimensions</b>	85mm x 70mm x 36mm
<b>Operating temp</b>	0°C to + 40°C
<b>Storage temp</b>	-10°C to + 50°C
<b>Terminals</b>	16 AWG 1.5mm <sup>2</sup>
<b>Status Indicators</b>	4 LEDs for Power, Modbus RX, Modbus TX, Error
<b>Configurable Inputs</b>	4
<b>Analogue 0-10VDC Outputs</b>	4

## Digital Inputs

<b>Counter resolution</b>	32 Bit
<b>Counter frequency</b>	100 Hz
<b>Pulse width</b>	10 ms
<b>Counter mode</b>	Up
<b>Digital input type</b>	Volt-free or open-collector (5V wetting voltage)

## Analogue Inputs

<b>Input types</b>	0-10V, 4-20mA, 10K Thermistor.
<b>Resolution</b>	10 bit
<b>Accuracy</b>	±2% of full range.

## Specifications

### Analogue Outputs

Type of analogue output	0-10VDC
Maximum load current	10mA/channel

### Communications

Interface	RS-485 Modbus RTU
Address	1 default, 10/20/.../140 selectable via DIP switches (1-247 can be set via a Modbus register)
Baud Rate	9600 default ( 1200-57600 can be set via a Modbus register)
Parity	None default (Even/odd can be set via a Modbus register)
Stop bit	1

## Ordering Information

Part No.	Description
001-1221	I/O Expansion Module (4 configurable inputs + 4 analogue outputs)



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