

Modbus I/O Module

MODEL	DESCRIPTION
SfAR-1M-1TI1DO	Modbus I/O module with 1 temperature input and 1 digital output



APPLICATION AND USE

SfAR-1M-1TI1DO is designed for controlling ON/OFF heaters in accordance with temperature measurement. The module has 1 temperature input (TI) and 1 digital output (DO). The temperature input can work with the most popular resistance temperature sensors and a wide range of thermocouples. The digital output is an NPN transistor output. All inputs and outputs are isolated from the logic with opto-isolators. A built-in RS485 interface allows an easy connection over the Modbus RTU/ASCII protocol. A 32-bit ARM core processor provides fast processing and communication. The module is equipped with a set of LEDs used to indicate the status of I/Os, power supply, and RS485 communication.

Configuration of the module is carried out with our free software, the SfAR Configurator. A built-in mini USB allows for performing a primary configuration of the unit without additional power supply.

FEATURES

- 1 temperature input
- 1 digital output
- Support for the most popular sensor types: PT100, PT500, PT1000, NI100, KTY81-110 (2 and 3-wire) and the most popular types of thermocouples: J, K, T, N, S, R, B
- Measurement resolution 0.1°C
- Built-in LEDs for device status indication
- Modbus RTU/ASCII communication
- Baud rate: 2400-115200 bps
- Up to 128 modules on the bus
- Built-in mini USB type B port for configuration
- Space-saving housing, DIN rail mounting

TECHNICAL SPECIFICATION

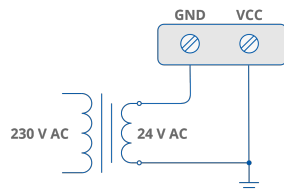
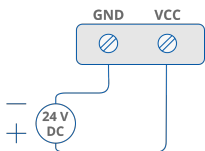
DESCRIPTION		SfAR-1M-1TI1DO
Power supply	Voltage	10-38 V DC; 10-28 V AC
Temperature input	Number of inputs	1
	Voltage input	0-256 mV, resolution 10 μ V 0-2048 mV, resolution 100 μ V
	Resistance input	0-8000 Ω , resolution 1 Ω Resistance measuring current \sim 250 μ A
	Resistance temperature sensors input	PT100, PT500, PT1000, NI100, KTY81-110 (2- and 3- wire), resolution 0.1 $^{\circ}$ C
	Thermocouples sensors input	J, K, T, N, S, R, B, resolution 0.1 $^{\circ}$ C, cold junction temperature measurement -55 $^{\circ}$ C to +100 $^{\circ}$ C (measurement error \pm 2 $^{\circ}$ C)
	Processing time	150 ms

The performances stated in this sheet can be modified without any prior notice.

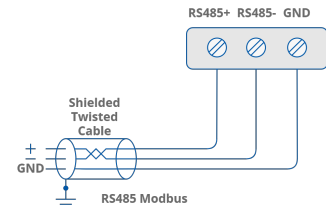
DESCRIPTION		SfAR-1M-1TI1DO
Digital output	Number of outputs	1
	Type	Open collector output (NPN)
	Maximum current load	250 mA
	Maximum voltage load	55 V DC
TX	RS485 interface	Up to 128 devices
	Communication protocol	Modbus RTU/ASCII
	Ports	3-pin screw connector
	Baud rate	2400-115200 bps
USB	mini USB	Type B, for configuration
Ingress protection	IP rating	IP 40 for indoor installation
Temperature	Storage	-40°C to +85°C (-40°F to +185°F)
	Operating	-10°C to +50°C (14°F to 122°F)
Humidity	Relative	5 to 95% RH (without condensation)
Screw connectors	Type	2-pin (power supply), 3-pin (RS485, I/O)
	Maximum cable size	2.5 mm ² (18...12 AWG)
Housing	Material	Self-extinguishing plastic (PC/ABS)
	Cooling	Internal air circulation
	Mounting	DIN (DIN EN 50022 norm)
Dimensions	Width	90.00 mm/3.54 in
	Length	56.40 mm/2.22 in
	Height	17.50 mm/0.69 in

WIRING DIAGRAMS

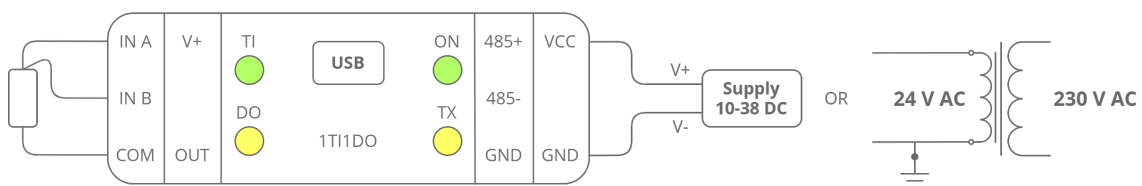
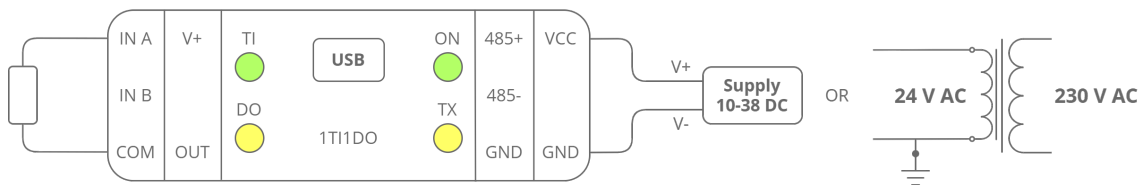
Power Supply



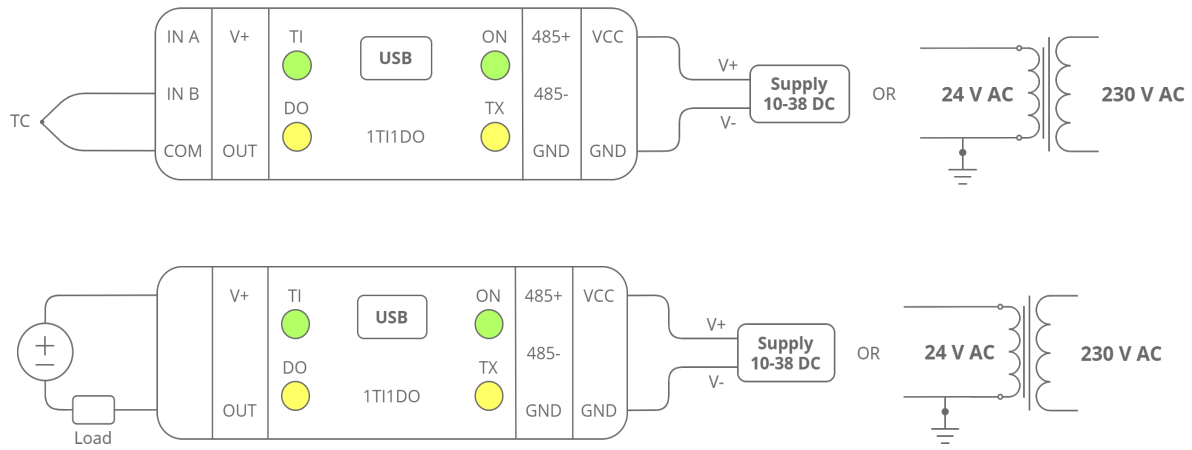
Communication



Temperature Input



Digital Output



APPLICATION EXAMPLE

Switching on/off the fan in the cabinet according to the temperature measurement



DEDICATED SOFTWARE



SfAR Configurator - Windows-based freeware configuration tool made for Modbus I/O modules.

DIMENSIONS [mm]

