SfAR-S-6TI

Modbus I/O Module

MODEL	DESCRIPTION
SfAR-S-6TI	Modbus I/O module with 6 temperature inputs

APPLICATION AND USE

SfAR-S-6TI is designed to be applied wherever multiple points of temperature measurements are required. Supporting a wide range of temperature sensors and thermocouples makes it a perfect choice for, for example, a chemical or power industry. Thanks to 2 digital outputs and built-in logic in the module, it can be used as a PLC I/O extension and as a standalone application controller. The module has 6 temperature inputs (TI) and 2 digital outputs (O). Temperature inputs can work with the most popular resistance temperature sensors and a wide range of thermocouples. Digital outputs are NPN transistor outputs. All inputs and outputs are isolated from the logic with optoisolators. 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 without an additional power supply. The module has been equipped with the Quick Connector system to simplify installation. Using a dedicated SfAR-S-LINK cable allows for connecting up to 10 modules, which provide both RS485 communication and external power supply.

FEATURES

- 6 temperature inputs
- 2 digital outputs
- Support for the most popular sensor types: PT100, PT500, PT1000, NI100, KTY81-110 (2- and 3- wire), and the most popular thermocouples types: 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
- DIP switch for configuration
- Quick Connector for grouping modules and providing power and communication

TECHNICAL SPECIFICATION

DESCRIPTION		SfAR-S-6TI
Power supply	Voltage	10-38 V DC; 10-28 V AC
Temperature input	Number of inputs	1
	Voltage input	0 to 2048 mV (0.1 mV resolution) 0 to 256 mV (0.01 mV resolution)
	Resistance input	0-8000 Ω, resolution 1 Ω Resistance measuring current ~250 µA
	Resistance temperature sensors input	PT100, PT500, PT1000, NI100, KTY81-110 (2- and 3- wire), resolution 0.1 °C

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

DESCRIPTION		SfAR-S-6TI
Temperature input	Thermocouples sensors input	J, K, T, N, S, R, B, resolution 0.1°C, Cold junction temperature measurement -55°C to +100°C (measurement error ±1°C)
	Processing time	150 ms
Digital output	Number of outputs	2
	Type	Open collector output (NPN)
	Maximum current load	500 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), 10-pin (I/O)
	Maximum cable size	2.5 mm2 (18...12 AWG)
Housing	Material	Self-extinguishing plastic (PC/ABS)
	Cooling	Internal air circulation
	Mounting	DIN (DIN EN 50022 norm)
Dimensions	Width	119.10 mm/4.69 in
	Length	101.00 mm/3.98 in
	Height	22.70 mm/0.89 in

WIRING DIAGRAMS

Power Supply
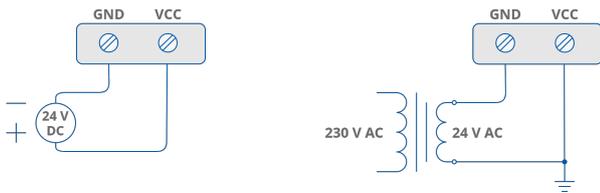
Communication
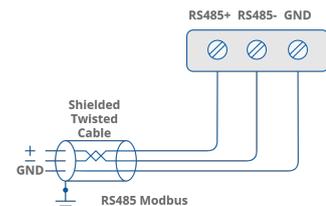
Temperature Input

Digital Output

| 1A | 1B | COM | 2A | 2B | COM | 3A | 3B | COM | DO1 |

| 1A | 1B | COM | 2A | 2B | COM | 3A | 3B | COM | DO1 |

24 V DC

Max. 0.5 A
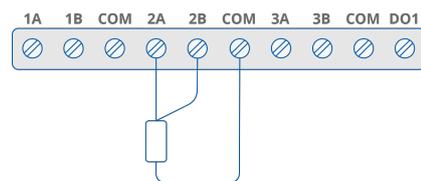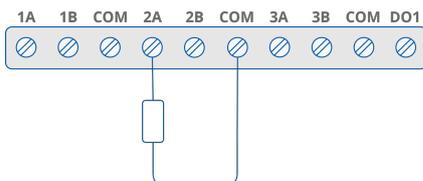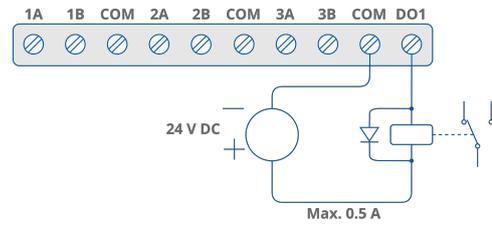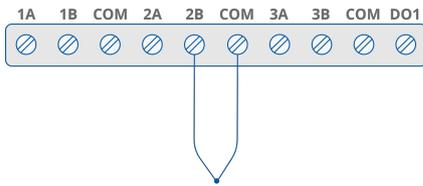
DEDICATED SOFTWARE

SfAR

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

APPLICATION EXAMPLE

Modbus TCP/IP   IP

IP Connectivity

PLC   SfAR-S-ETH

Modbus RTU (SfAR-S Modbus modules)

Serial Bus

Field Devices

| EBV100 | MVC503R + VMB8A | MVC503R + VMB8 | EBV125 | MVC503R + VMB8 |

DIMENSIONS [mm]