Manuals+ — User Manuals Simplified.

iSMACONTROLLI SFAR-S-8AO Modbus I-O Module Instructions

iSMACONTROLLI SFAR-S-8AO Modbus I-O

Contents

SPECIFICATION

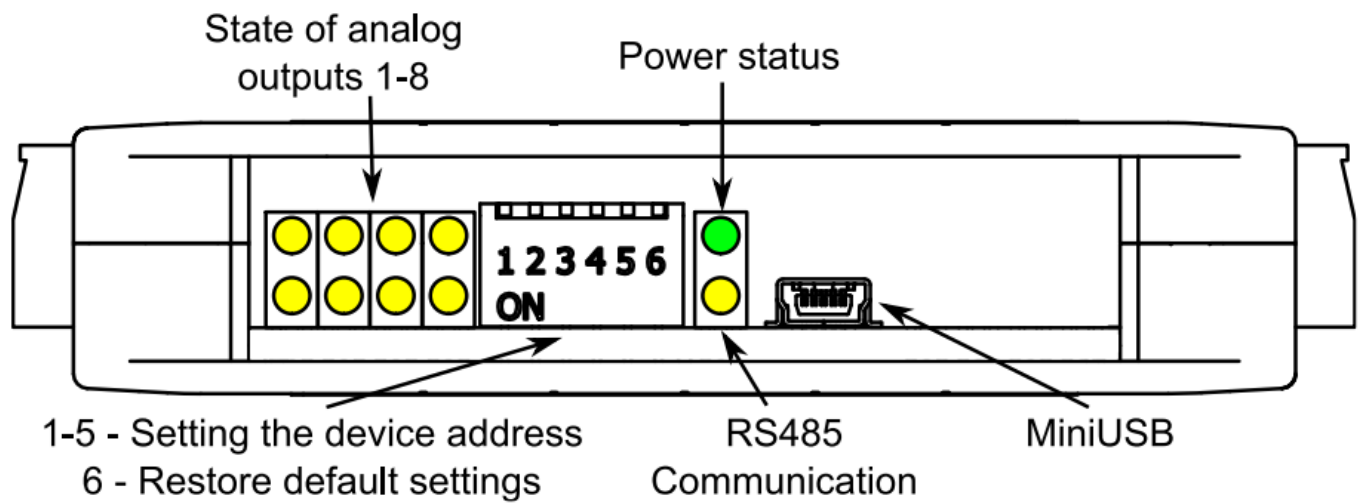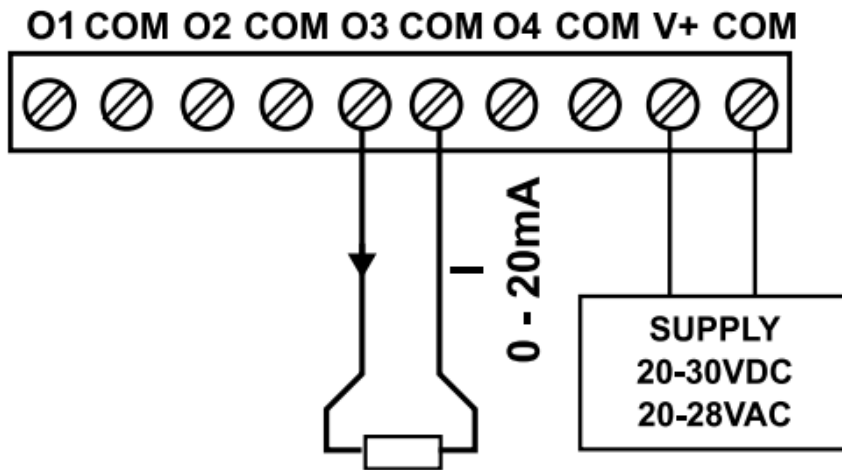|		
Power supply	Voltage	10-38 V DC; 10-28 V AC
	Power consumption	2,4 W @ 24 V DC 3 V A @ 24 V AC
Temperature inputs	6x Resistive or thermocouple configurable, resolution 0,1°C	
Digital outputs	2xTransistor output max 55 V DC, max 500 mA	
Galvanic isolation	Max 1500 Vrms	
Interface	RS485, up to 128 devices on the bus	
Baudrate	From 2400 to 115200 bps	
Ingress protection	IP40 – for indoor installation	
Temperature	Operating -10°C – +50°C; Storage -40°C – +85°C	
Relative humidity	5 to 95% RH (without condensation)	
Connectors	Max 2.5 mm2	
Dimension	119,1 mm x 101 mm x 22,6 mm	
Mounting	DIN rail mounting (DIN EN 50022)	
Housing material	Plastic, self-extinguishing PC/ABS	

JUMPER SETTING

I-CURRENT OUTPUT

V- VOLTAGE OUTPUT

TOP PANEL

State of analog outputs 1-8

Power status

1 2 3 4 5 6
ON

1-5 - Setting the device address
6 - Restore default settings

RS485 Communication

MiniUSB
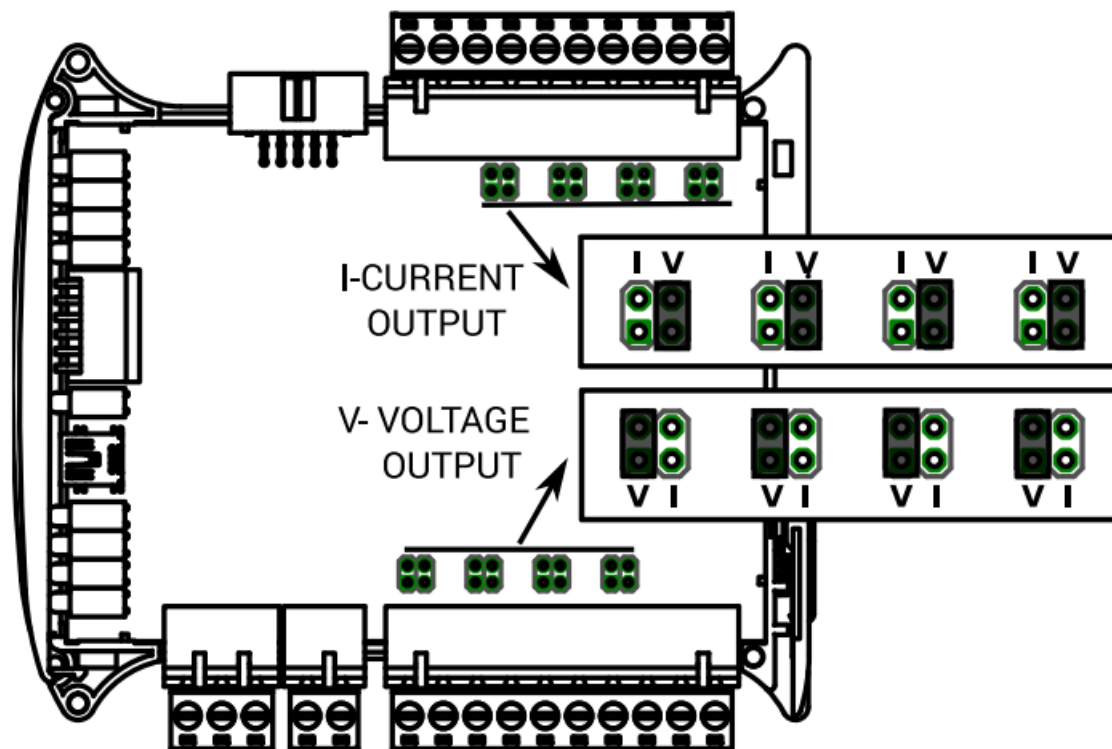
ANALOG OUTPUTS

Current output

O1 COM O2 COM O3 COM O4 COM V+ COM

I 0 - 20mA

SUPPLY
20-30VDC
20-28VAC

Voltage output

O1 COM O2 COM O3 COM O4 COM V+ COM

U 0 - 10V

SUPPLY
20-30VDC
20-28VAC
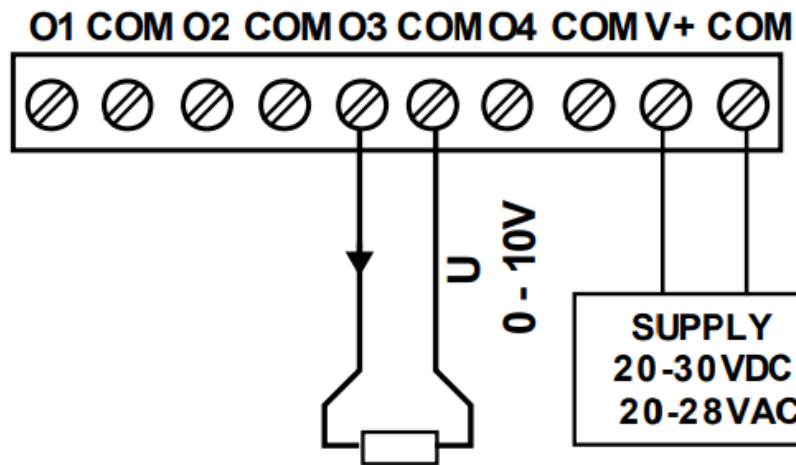
COMMUNICATION

RS485 Communication

485+ 485- GND

RS485+
RS485 -
GND

**Shielded
Twisted Cable**

POWER SUPPLY

DC Voltage

GND VCC

POWER

24V DC +/−

AC Voltage

GND VCC

POWER

24V AC   **230V AC**
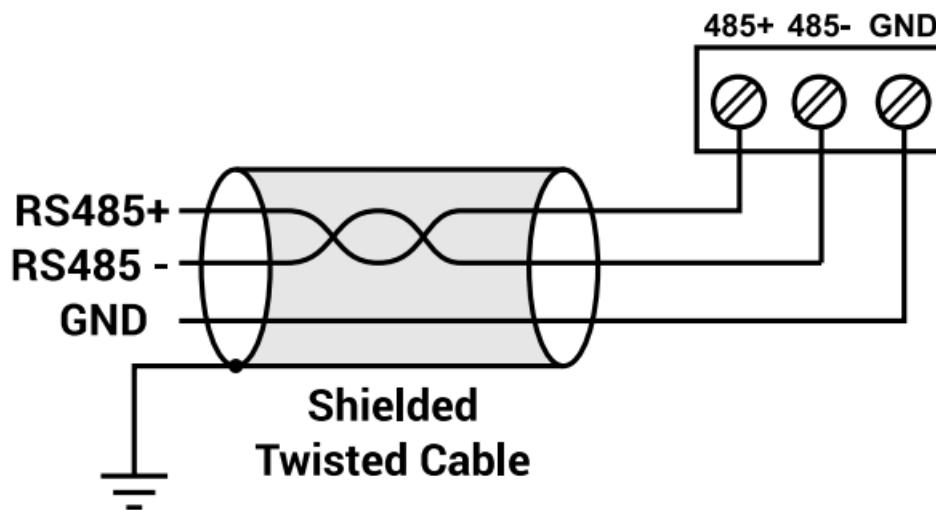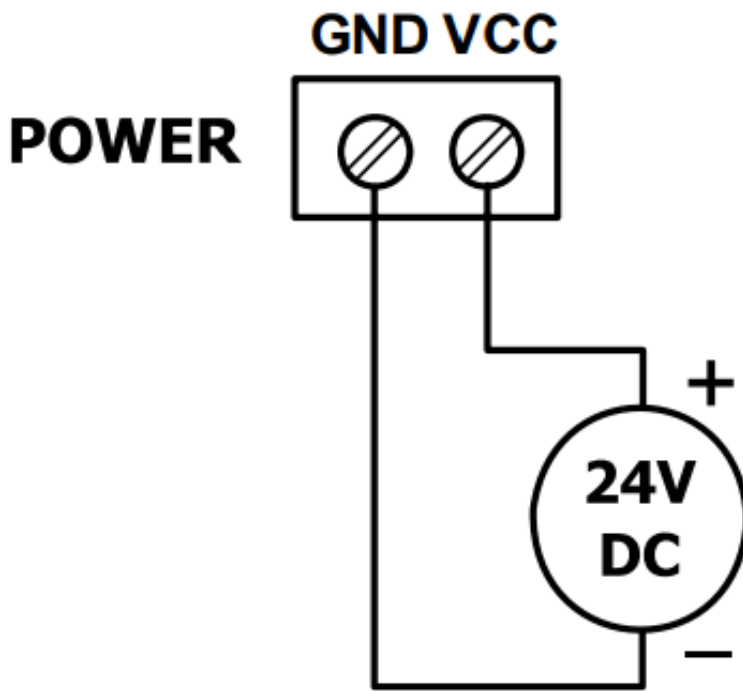
WARNING

- Note, an incorrect wiring of this product can damage it and lead to other hazards. Make sure the product has been correctly wired before turning the power ON.
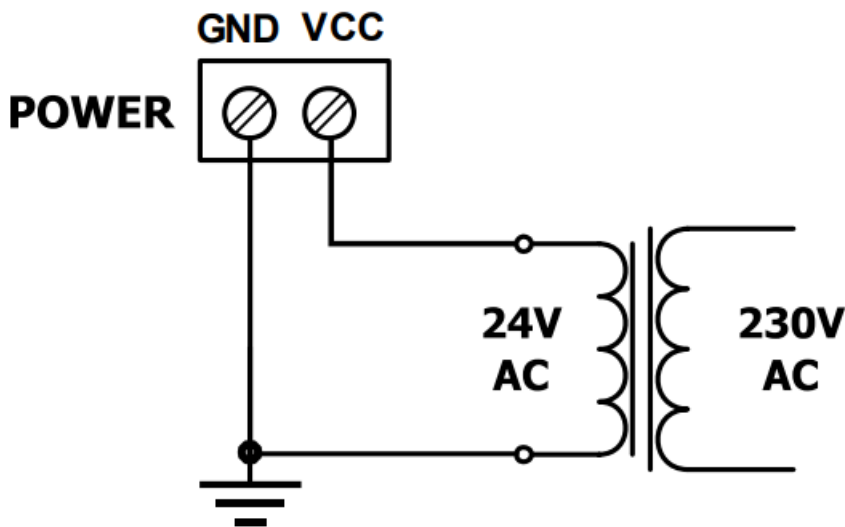- Before wiring, or removing/mounting the product, be sure to turn the power OFF. Failure to do so might cause electric shock.
- Do not touch electrically charged parts such as the power terminals. Doing so might cause electric shock.
- Do not disassemble the product. Doing so might cause electric shock or faulty operation.
- Use the product within the operating ranges recommended in the specification (temperature, humidity, voltage, shock, mounting direction, atmosphere etc.). Failure to do so might cause fire or faulty operation.
- Firmly tighten the wires to the terminal. Insufficient tightening of the wires to the terminal might cause fire

TERMINALS OF THE DEVICE
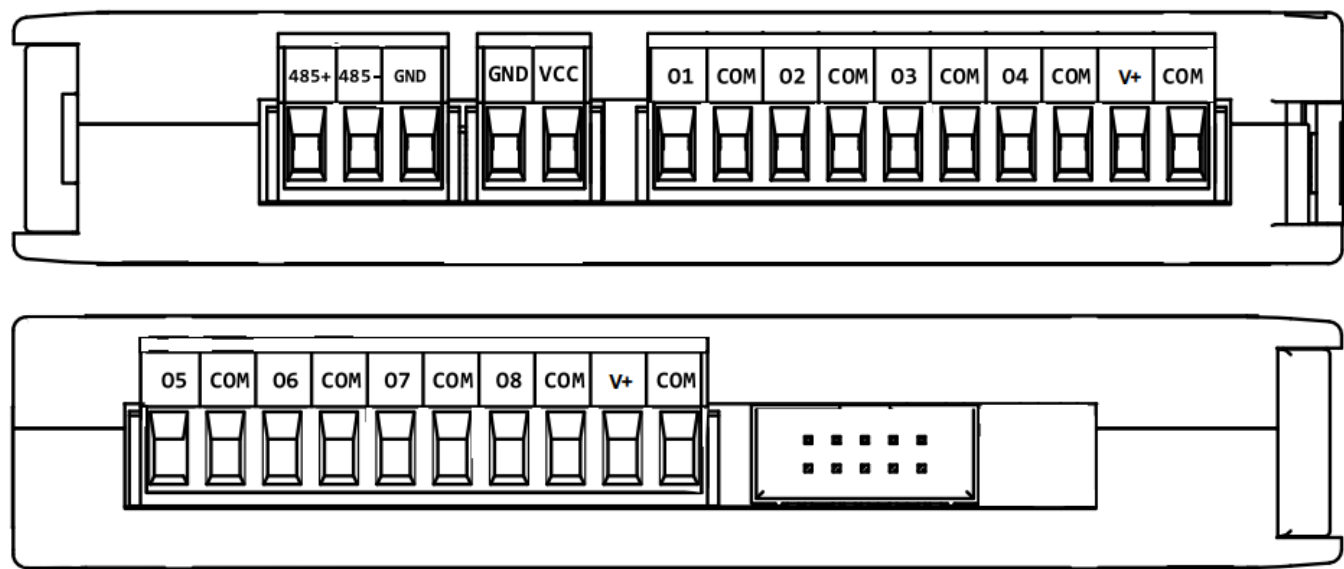
Registered access

Modbus	Dec	Hex	Register Name	Access	Description
30001	0	0x00	Version/Type	Read	Version and Type of the device
30002	1	0x01	Switches	Read	Switches state
40003	2	0x02	Baud rate	Read & Write	RS485 baud rate
40004	3	0x03	Stop Bits & Data Bits	Read & Write	No of Stop bits & Data Bits
40005	4	0x04	Parity	Read & Write	Parity bit
40006	5	0x05	Response Delay	Read & Write	Response delay in ms
40007	6	0x06	Modbus Mode	Read & Write	Modbus Mode (ASCII or RTU)
40009	8	0x08	Watchdog	Read & Write	Watchdog

40033	32	0x20	Received packets LSR (Least Significant Reg.)	Read & Write	No of received packets
40034	33	0x21	Received packets MSR (Most Significant Reg.)	Read & Write	
40035	34	0x22	Incorrect packets LSR	Read & Write	No of received packets with error
40036	35	0x23	Incorrect packets MSR	Read & Write	
40037	36	0x24	Sent packets LSR	Read & Write	No of sent packets
40038	37	0x25	Sent packets MSR	Read & Write	
30051	50	0x32	Outputs	Read	Bit is set if value ≠ 0
40053	52	0x34	Analog output 1	Read & Write	Value of Analog Output: in mV for voltage output (max 10240) in µA for current output 0 – 20 mA (max 20480) in ‰ for current output 4-20 mA (max 1000)
40054	53	0x35	Analog Output 2	Read & Write	
40055	54	0x36	Analog Output 3	Read & Write	
40056	55	0x37	Analog Output 4	Read & Write	
40057	56	0x38	Analog Output 5	Read & Write	
40058	57	0x39	Analog Output 6	Read & Write	
40059	58	0x3A	Analog Output 7	Read & Write	

40060	59	0x3B	Analog Output 8	Read & Write	
40061	60	0x3C	Default output 1 value	Read & Write	Default value of output set when power is on or when watchdog reset occurs
40062	61	0x3D	Default output 2 value	Read & Write	
40063	62	0x3E	Default output 3 value	Read & Write	
40064	63	0x3F	Default output 4 value	Read & Write	
40065	64	0x40	Default output 5 value	Read & Write	
40066	65	0x41	Default output 6 value	Read & Write	
40067	66	0x42	Default output 7 value	Read & Write	
40068	67	0x43	Default output 8 value	Read & Write	
40069	68	0x44	Output 1 setting	Read & Write	Setting of output mode: 0 – output disabled 1. voltage outpu 2. current output 0-20 m 3. current output 4-20 mA Caution! For the change to take effect, you must also set the jumper inside the module.
40070	69	0x45	Output 2 setting	Read & Write	
40071	70	0x46	Output 3 setting	Read & Write	
40072	71	0x47	Output 4 setting	Read & Write	
40073	72	0x48	Output 5 setting	Read & Write	
40074	73	0x49	Output 6 setting	Read & Write	

40075	74	0x4A	Output 7 setting	Read & Write
40076	75	0x4B	Output 8 setting	Read & Write

INSTALLATION GUIDELINE

Please read the instruction before use or operating the device. In case of any questions after reading this document, please contact the iSMA CONTROLLI Support Team (**support@ismacontrolli.com**).

- Before wiring or removing/mounting the product, make sure to turn the power off. Failure to do so might cause an electric shock.
- Improper wiring of the product can damage it and lead to other hazards. Make sure that the product has been correctly wired before turning the power on.
- Do not touch electrically charged parts such as power terminals. Doing so might cause an electric shock.
- Do not disassemble the product. Doing so might cause an electric shock or faulty operation
- Use the product only within the operating ranges recommended in the specification (temperature, humidity, voltage, shock, mounting direction, atmosphere, etc.). Failure to do so might cause a fire or faulty operation.
- Avoid installing the product in close proximity to high-power electrical devices and cables, inductive loads, and switching devices. Proximity of such objects may cause an uncontrolled interference, resulting in an instable operation of the product.
- Proper arrangement of the power and signal cabling affects the operation of the entire control system. Avoid laying the power and signal wiring in parallel cable trays. It can cause interferences in monitored and control signals.
- It is recommended to power controllers/modules with AC/DC power suppliers. They provide better and more stable insulation for devices compared to AC/AC transformer systems, which transmit disturbances and transient phenomena like surges and bursts to devices. They also isolate products from inductive phenomena from other transformers and loads.
- Power supply systems for the product should be protected by external devices limiting overvoltage and effects of lightning discharges.
- Avoid powering the product and its controlled/monitored devices, especially high power and inductive loads, from a single power source. Powering devices from a single power source causes a risk of introducing disturbances from the loads to the control devices.
- If an AC/AC transformer is used to supply control devices, it is strongly recommended to use a maximum 100 VA Class 2 transformer to avoid unwanted inductive effects, which are dangerous for devices.
- Long monitoring and control lines may cause loops in connection with the shared power supply, causing disturbances in the operation of devices, including external communication. It is recommended to use galvanic separators.
- To protect signal and communication lines against external electromagnetic interferences, use properly

grounded shielded cables and ferrite beads.

- Switching the digital output relays of large (exceeding specification) inductive loads can cause interference pulses to the electronics installed inside the product. Therefore, it is recommended to use external relays/contactors, etc. to switch such loads. The use of controllers with triac outputs also limits similar overvoltage phenomena.

- Many cases of disturbances and overvoltage in control systems are generated by switched, inductive loads supplied by alternating mains voltage (AC 120/230 V). If they do not have appropriate built-in noise reduction circuits, it is recommended to use external circuits such as snubbers, varistors, or protection diodes to limit these effects.

🛇 Electrical installation of this product must be done in accordance with national wiring codes and conform to local regulations.

CUSTOMER SUPPORT

iSMA CONTROLLI S.p.A. – Via Carlo Levi 52, 16010 Sant'Olcese (GE) – Italy | **support@ismacontrolli.com**
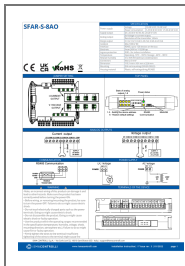**www.ismacontrolli.com**
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st Issue rev. 1 | 05/2022

Documents / Resources

iSMACONTROLLI SFAR-S-8AO Modbus I-O Module [pdf] Instructions
SFAR-S-8AO Modbus I-O Module, SFAR-S-8AO, Modbus I-O Module, I-O Module, Module

References

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