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SENECA R-4RTD-8DIDO Series Mixed I O Module

MODEL: R-4RTD-8DIDO Series

PRELIMINARY WARNINGS

The word WARNING preceded by the symbol indicates conditions or actions that put the user's safety at risk. The word ATTENTION preceded by the symbol indicates conditions or actions that might damage the instrument or the connected equipment.

The warranty shall become null and void in the event of improper use or tampering with the module or devices supplied by the manufacturer as necessary for its correct operation, and if the instructions contained in this manual are not followed.

WARNING: The full content of this manual must be read before any operation. The module must only be used by qualified electricians. Specific documentation is available using the QR-CODE shown on page 1.

The module must be repaired and damaged parts replaced by the Manufacturer. The product is sensitive to electrostatic discharges. Take appropriate measures during any operation.
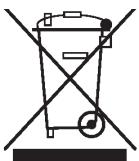
Electrical and electronic waste disposal (applicable in the European Union and other countries with recycling). The symbol on the product or its packaging shows the product

must be surrendered to a collection centre authorized to recycle electrical and electronic waste.

DOCUMENTATION

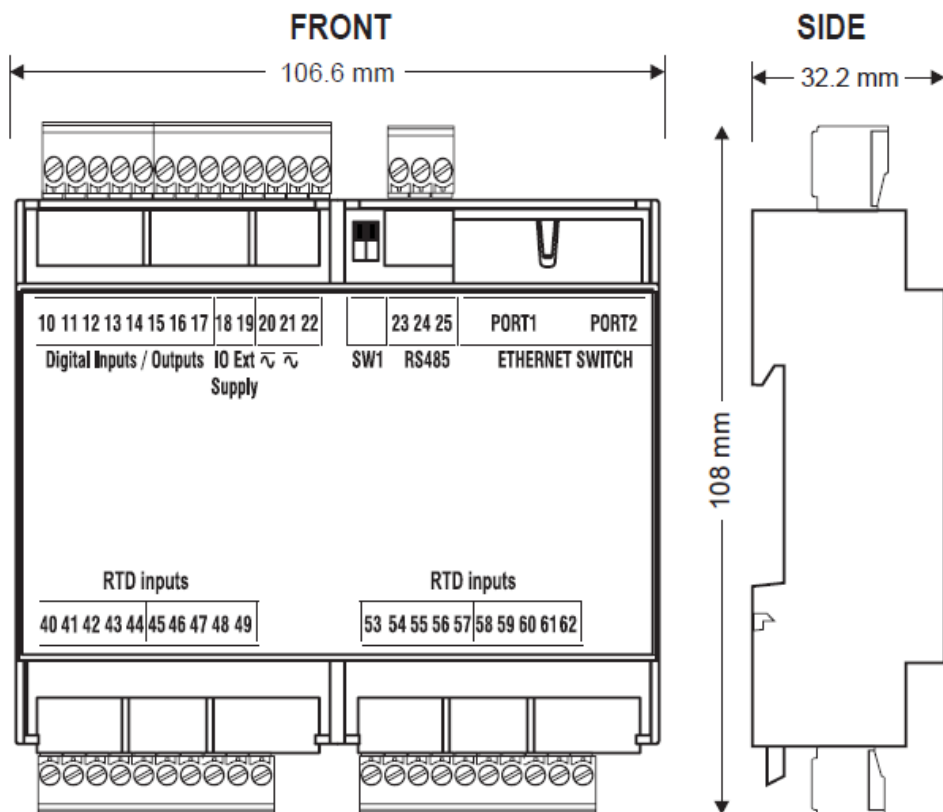SENECA s.r.l.; Via Austria, 26 – 35127 – PADOVA – ITALY; Tel. +39.049.8705359 – Fax +39.049.8706287

CONTACT INFORMATION

- Technical support: supporto@seneca.it
- Product information: commerciale@seneca.it

MODULE LAYOUT

FRONT

106.6 mm

| 10 11 12 13 14 15 16 17 | 18 19 20 21 22 | | 23 24 25 | PORT1 | PORT2 |
| Digital Inputs / Outputs | IO Ext $\sim$ $\sim$ Supply | SW1 | RS485 | ETHERNET SWITCH | |

RTD inputs

40 41 42 43 44 | 45 46 47 48 49

RTD inputs

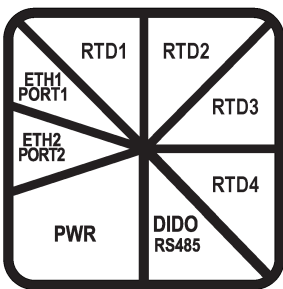53 54 55 56 57 | 58 59 60 61 62

SIDE

32.2 mm

108 mm

Weight: 170 g; Enclosure: UL94-V0 self-extinguishing PC/ABS material, black

SIGNALS VIA LED ON FRONT PANEL

LED	STATUS	LED meaning
IO1/IO8	On	Digital input/output active
	Off	Digital input/output not active
OUT SUP	On	Digital inputs/outputs powered
	Off	Digital inputs/outputs not powered
STS (Status only version R-4RTD-8DIDO)	On	IP address set
	Flashing	Waiting for the IP address from the DHCP
STS (Status only version R-4RTD-8DIDO-P)	On	IP address set
	Flashing	No configured IP address
COM (only version R- 4RTD-8DIDO-P)	Off	No Profinet communication
	Flashing	Profinet communication present
FAIL	On	Digital output in FAIL
RX (only version R- 4RTD-8DIDO)	On	RS485 port wiring error
	Flashing	Reception of data packet completed on RS485
TX (only version R- 4RTD-8DIDO)	Flashing	Transmission of data packet completed on RS485
ETH TRF (Yellow)	Flashing	Packet transit on Ethernet port
ETH LNK (Green)	Flashing	Ethernet port connected

TECHNICAL SPECIFICATIONS

CERTIFICATIONS	CE UKCA
INSULATION	— **1500 Vac**
POWER SUPPLY	Voltage: 10 ÷ 40 Vdc; 19 ÷ 28 Vac; 45 ÷ 65 Hz; Absorption: 2 W
ENVIRONMENTAL CONDITIONS	Operating temperature: from -25°C to 70°C; Humidity: 10% ÷ 90% non condensing. Storage temperature: from -30°C to +85°C Protection rating: IP20
ASSEMBLY	35mm DIN rail IEC EN60715
CONFIGURATION	With built-in WEB server (only version R-4RTD-8DIDO)
CONNECTIONS/ COMMUNICATION PORTS	Removable 3.5 mm pitch terminal block, 1.5 mm^2 max cable section 2 Ethernet (with LAN fault-bypass function) 100 base T on RJ45 1 RS485 port on terminals (only version R-4RTD-8DIDO)
DIGITAL INPUTS	Number of channels: 8; Voltage: Threshold ON: > 11 Vdc; Threshold OFF:< 4 Vdc; Vmax: 24 Vdc; Impedance: 9 kΩ Compliant with IEC61131-2 type 3.
DIGITAL OUTPUTS	Number of channels: 8, MOSFET, PNP; Max voltage/current: 0.2 A; 12 ÷ 24 Vdc, Protected against short-circuit.
RTD INPUTS	Number of channels: 4 with 2, 3 and 4 wires connection. Type and measuring range: - PT100, EN 60751/A2 (ITS-90), -200 ÷ +650°C - PT500, EN 60751/A2 (ITS-90), -200 ÷ +750°C - PT1000, EN 60751/A2 (ITS-90), -200 ÷ +210°C - CU50 GOST 6651-2009, -180 ÷ +200°C - CU100 GOST 6651-2009, -180 ÷ +200°C - NI100, EN 60751/A2 (ITS-90), -60 ÷ +250°C - NI120 DIN 43760, -60 ÷ +250°C - NI1000 DIN 43760, -60 ÷ +250°C Resolution: 24 bit (Adc) Accuracy class: 0.05% on the resistive value Stability (noise): 18 bit ENOB Temperature drift: < 30 ppm/K Sampling time: from 25 to 400 ms Scan time: from 25 to 400 ms for all channels. CMR @50/60 Hz: >100 dB NMR @ 50/60 Hz: >75 dB Sensor detection/interrupted conductors YES, disconnectable Maximum cable resistance: 50 Ω
MEASUREMENT ERROR	Referred to RTD resistive value: 2-wire measurement 0.05 % + cable resistance 3-wire measurement 0.05 % + 0.005 % + per ohm cable resistance 4-wire measurement 0.05 %

Installation

1. Read the entire manual before proceeding with any operation.
2. The module should only be installed by qualified electricians.
3. Use the specific documentation available through the QR-CODE on page 1.
4. Ensure appropriate measures are taken to prevent electrostatic discharges during installation.
5. Dispose of electrical and electronic waste properly at authorized recycling centers.

Module Layout

Front: 106.6 mm x 108 mm

Side: 32.2 mm

Weight: 170 g

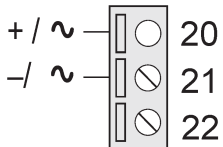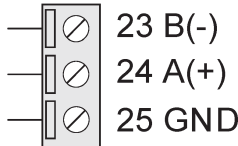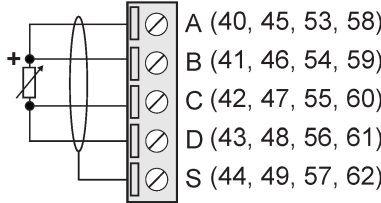**Enclosure:** UL94-V0 self-extinguishing PC/ABS material, black
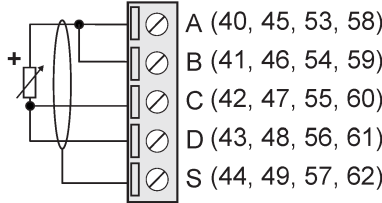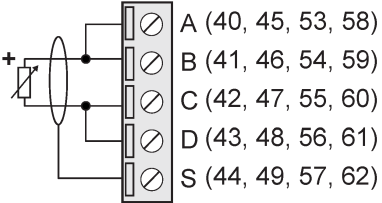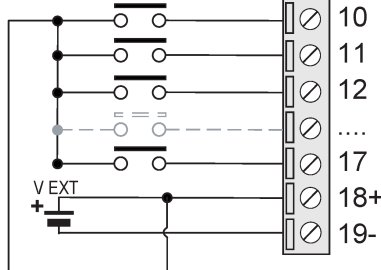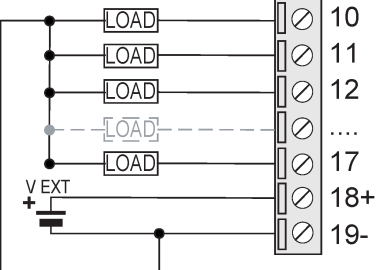
ELECTRICAL CONNECTIONS

The upper power supply limits must not be exceeded, as this could cause serious damage to the module.

Switch the module off before connecting inputs and outputs.

To meet the electromagnetic immunity requirements:

– use shielded signal cables;

– connect the shield to a preferential instrumentation earth system;

– separate shielded cables from other cables used for power installations (transformers, inverters, motors, etc.).

POWER SUPPLY	RS485 SERIAL PORT	
+/ ∿ — 20 –/ ∿ — 21 22	— 23 B(-) — 24 A(+) — 25 GND Connection to the RS485 port. Polarity is not standardised and in some devices may be inverted.	

RTD INPUTS

4 WIRE CONNECTION	3 WIRE CONNECTION	2 WIRE CONNECTION
A (40, 45, 53, 58) B (41, 46, 54, 59) C (42, 47, 55, 60) D (43, 48, 56, 61) S (44, 49, 57, 62)	A (40, 45, 53, 58) B (41, 46, 54, 59) C (42, 47, 55, 60) D (43, 48, 56, 61) S (44, 49, 57, 62)	A (40, 45, 53, 58) B (41, 46, 54, 59) C (42, 47, 55, 60) D (43, 48, 56, 61) S (44, 49, 57, 62)

DIGITAL INPUTS (PNP) With external power	DIGITAL OUTPUTS (PNP) With external power	
10 11 12 .... 17 V EXT 18+ 19- The digital inputs must be powered externally to function properly (V EXT).	LOAD 10 LOAD 11 LOAD 12 LOAD .... LOAD 17 V EXT 18+ 19- The digital outputs must be powered externally to function properly (V EXT).	

SETTING THE DIP-SWITCHES

WARNING

The DIP-switch settings are read only at boot time. At each change, perform a restart.

For use and settings via DIP-SWITCH, see the user manual available on the website on the web page dedicated to the product

SW1 DIP-SWITCH: DEFAULT SETTINGS

SW1		
DIP1	OFF	DEFAULT SETTINGS
DIP2	OFF	

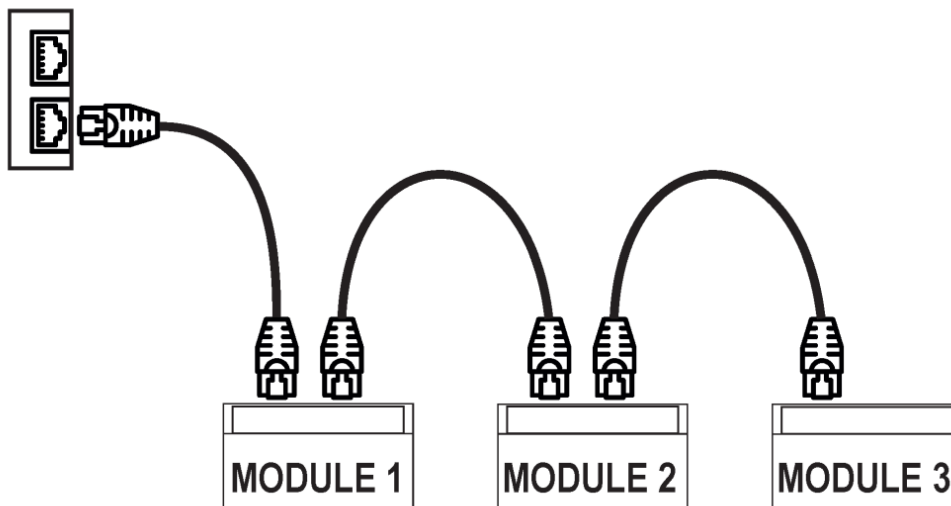DIP-SWITCH SW1 is located on the front of the device.
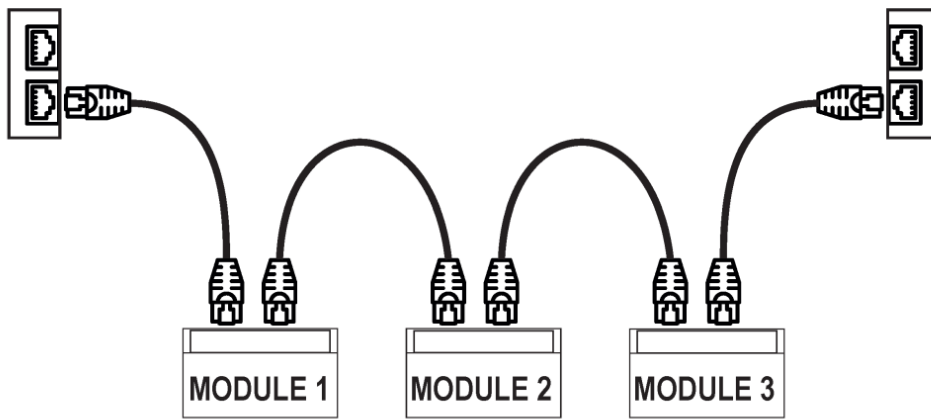
DAISY-CHAIN ETHERNET CONNECTION

CAUTION

IT IS NOT ALLOWED TO CREATE LOOPS WITH ETHERNET CABLES

Using the daisy-chain connection it is not necessary to use switches to connect the devices.

The following examples show the correct connections.
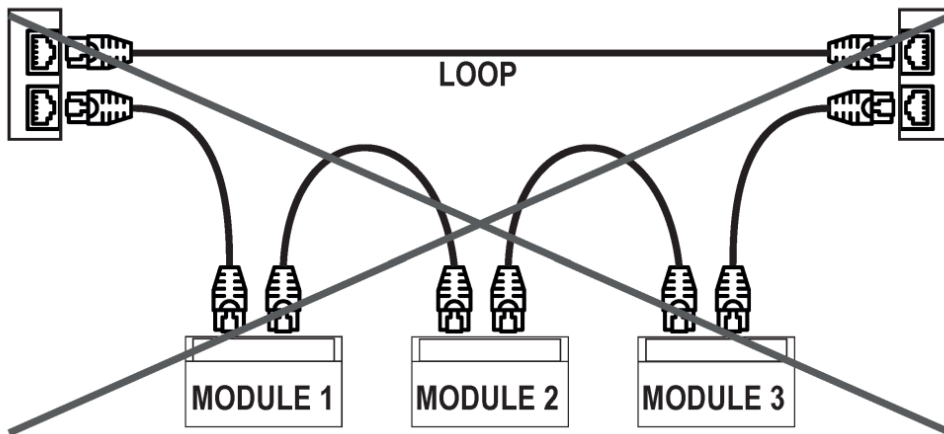
MODULE 1

MODULE 2

MODULE 3

There must be no loops in the Ethernet cabling, otherwise the communication will not work. The modules and switches must be connected eliminating any loops. The following examples show the incorrect connections.

LOOP

MODULE 1
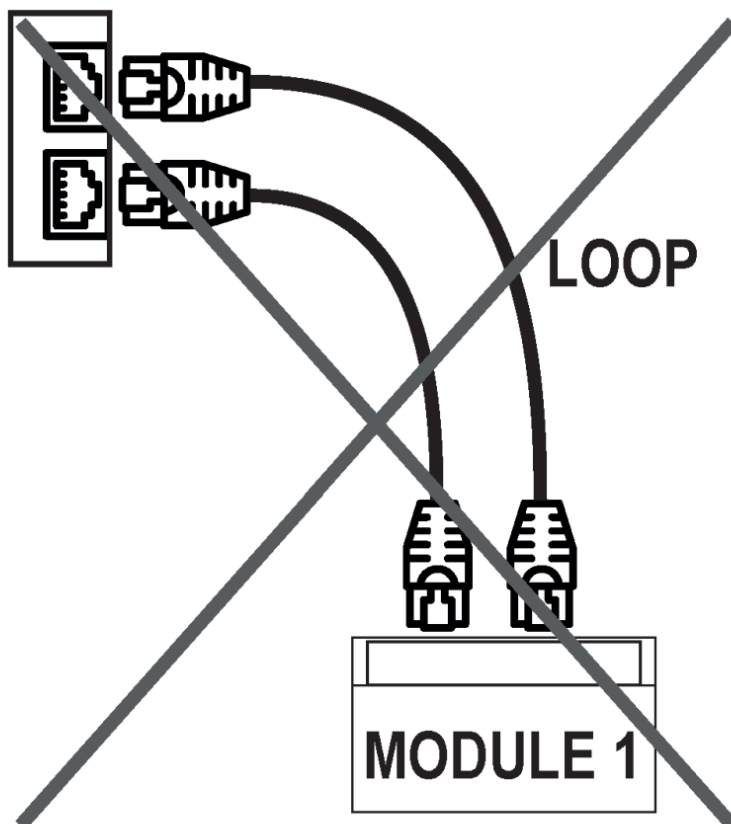
The LAN fault-bypass function allows you to keep the connection between the two Ethernet ports of the device ON, in the event of a power failure. If a device turns off, the chain is not interrupted and the devices downstream of the switched-off one will still be accessible. This function has a limited duration: the connection remains active for a few days, typically 4. The fault-bypass function requires that the sum of the lengths of the two cables connected to the switched off module is less than 100m.

ETHERNET CONNECTION RULES

For the Ethernet cabling between the devices, the use of the unshielded CAT5 or CAT5e cable is required.

FACTORY IP ADDRESS (ONLY R-4RTD-8DIDO)

The default module IP address is static: 192. 168. 90. 101

WEB SERVER

To access the maintenance Web Server, use the following credentials:

Default user: admin

Default password: admin

CAUTION

DO NOT USE DEVICES WITH THE SAME IP ADDRESS IN THE SAME ETHERNET

NETWORK

Specifications

- Certifications: Insulation
- Power Supply: RTD1, RTD2, RTD3, RTD4
- Environmental Conditions: Assembly Configuration Connections/Communication Ports
- Digital Inputs: 8
- Digital Outputs: Voltage Threshold ON: > 11 Vdc; Threshold OFF:< 4 Vdc; Vmax: 24 Vdc; Impedance: 9 k
- RTD Inputs: Compliant with IEC61131-2 type 3

FAQ

Q: Can the module be installed by anyone?

A: No, the module should only be installed by qualified electricians for safety and proper operation.

Q: How should I dispose of the product when no longer in use?

A: The product should be surrendered to authorized collection centers for recycling of electrical and electronic waste.

Q: What should I do if I encounter an LED signal that is not mentioned in the manual?

A: Contact technical support at supporto@seneca.it for assistance.

Documents / Resources

[SENECA R-4RTD-8DIDO Series Mixed I O Module](#) [[pdf](#)] Instruction Manual

R-4RTD-8DIDO Series Mixed I O Module, R-4RTD-8DIDO Series, Mixed I O Module, O Module

References

- [User Manual](#)

Related Posts

[SOLAHART400S4 Solar Module Series Instruction Manual](#)

SOLAHART400S4 Solar Module Series Instruction Manual

[NIDAC Series 4 Presco Interface Module Installation Guide](#)

Series 4 Presco Interface Module

[Surenoo SLG32064A Series Graphic LCD Module User Manual](#)

Surenoo SLG32064A Series Graphic LCD Module User Manual

[SENECA Z-PC Series Data Loggers Instruction Manual](#)

SENECA Z-PC Series Data Loggers Product Information Specifications Product Name: SENECA Z-PC Series Data Loggers Model: Z-LTE Manufacturer:…

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