# R-8AI-8DIDO

## 8-CH UNIVERSAL ANALOG INPUTS AND 8-CH DIGITAL I/O's MODBUS RTU/MODBUS TCP-IP MODULE

## Highlights

- **Power supply: 10..40 Vdc; 19..28 Vac**

- **Max isolation: 1.5 kVac**

- **Universal analog input: Nr.8 channels mA, V, mV, TC J, K, T, E, N, R, S, B, L, Pt100 / Cold junction (1 channel)**

- **Digital Inputs/Outputs: No.8 channels PNP, Mosfet, Peer-to-Peer**

- **ADC: 24 bit**

- **Update time: 25 ms per channel**

- **Communication protocols: ModBUS RTU, ModBUS TCP-IP**

- **Integrated networking functions: Daisy Chain, Fault-By-Pass, Pass-Through**

- **Configuration: DIP Switch, Web Server**

The R-8AI-8DIDO is a mixed data acquisition module (analog/digital) from the R Series, designed for flexible wiring needs, compact installation spaces (only 32 mm thick), and high-density I/O applications. The module can handle up to 8 measurement channels for analog signals (mA, V, mV) or temperature sensors (8 thermocouples, 1 Pt100). It also provides 8 PNP/Mosfet digital channels, configurable as inputs or outputs.

The instrument features 5-way isolation up to 1.5 kV. It supports both Modbus TCP-IP communication with dual 100 Mbps Ethernet interfaces and serial RS485 communication with Modbus RTU protocol, accommodating up to 64 nodes without a repeater and a maximum speed of 115 kbps. Configuration of the R-8AI-8DIO-2 can be done through DiP Switch and a Web Server.

Equipped with a high-resolution 24-bit ADC, the module offers a precision class of 0.1%. The update time is 25 ms per single channel. R-8AI-8DIDO supports all advanced networking features of the R Series: daisy chain (Ethernet chain connection), fault-bypass (active communication even in case of failure), passthrough (ModBUS gateway functionality), peer-to-peer (remote replication of digital signals).

www.seneca.it

## MIXED I/O MODULE

### R-8AI-8DIDO



**8-CH universal analog inputs, 8-CH digital inputs/outputs (2xETH) Modbus TCP-IP / Modbus RTU module**

### GENERAL DATA

| | |
|---|---|
| Powe supply | 10..40 Vdc; 19..28 Vac |
| Power consumption | 3 W max |
| Status LED indicators | Power supply<br>Inputs / Outputs status<br>STS (IP address / DHCP)<br>IP powered / assigned<br>RX / TX (RS485 data reception / transmission)<br>Ethernet TRF / LNK (packet traffic / Ethernet link status) |
| Isolation | 1.500 Vac (3 ways) |
| Protection degree | IP20 |
| Operating temperature | -25…+65°C |
| Storage temperature | -30…+85°C |
| Connections | Removable 3-way screw terminals, 3.5 mm pitch<br>RJ45 connectors |
| Dimension (wxhxd) | 106 x 90 x 32 mm |
| Weight | 170 g |
| Housing | PC/ABS self-extinguish UL94-V0<br>RAL 7035 grey color |
| Programming | DIP switch<br>Web server |
| Special features | Dual Ethernet Daisy Chain<br>LAN fault bypass (dual Ethernet)<br>up to 32 Peer-to-Peer rules (I/O Mirror)<br>Modbus Passthrough (TCP-IP to RS485) |
| Certifications | CE, UKCA |
| Installation | DIN rail mounting (IEC EN 60715), wall / panel mounting |

### COMMUNICATION

| | |
|---|---|
| Ethernet ports | Nr. 2 Ethernet ports (with LAN fault-bypass function), 100Base-T on RJ45 |
| Serial ports | Nr.1 RS485 port on M23–M24–M25 terminals |
| Speed | Up to 115.200 bps (RS485) / 100 Mbps (TCP-IP) |
| Supported protocols | ModBUS RTU<br>ModBUS TCP-IP<br>http |

### ANALOG INPUTS

| | |
|---|---|
| Channels | 8 |
| Type and range | V (±30 V)<br>mV (± 150 mV)<br>mA (± 24 mA)<br>TC: J, K, T, E, N, R, S, B, L<br>Pt100 / cold joint - input 1 (-200..+650°C) |
| ADC | 24 bit |
| Update time | 25 ms per channel |
| Thermal drift | 50 ppm |
| Accuracy | 0,1% f.s (0,1°C Pt100) |

### DIGITAL CHANNELS

| | |
|---|---|
| Channels | Nr.8 individually configurable I/O channels |
| Type and range | Input: ON/OFF: > 9 V; < 4 V; Vmax: 28 V<br>Output: MOSFET, PNP; voltage / current max.: 0,2 A / 28 V |

### ORDER CODES

| Codes | Description |
|---|---|
| **MIXED I/O MODULE** | |
| R-8AI-8DIDO-2 | 8-CH universal analog inputs, 8-CH digital inputs/outputs (2xETH) Modbus TCP-IP / Modbus RTU module |
| **ACCESSORIES** | |
| CE-RJ45-RJ45-R | Ethernet cable (RJ45 / RJ45) |

## APPLICATION EXAMPLES

### TEMPERATURE CONTROL
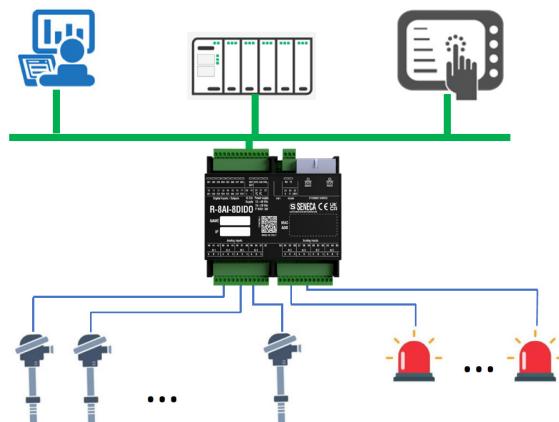


### ACQUISITION OF PROCESS MEASURES
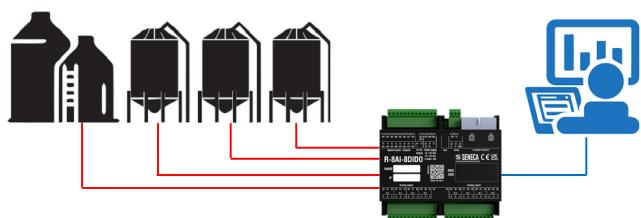


## SPECIAL FEATURES

### DAISY-CHAIN CONNECTION

REDUCED WIRING, MINIMUM INFRASTRUCTURE COSTS AND INSTALLATION FLEXIBILITY
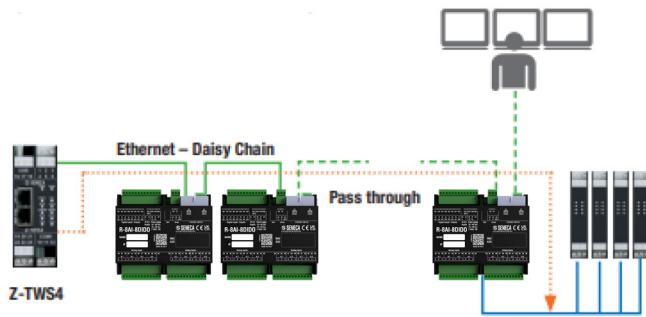


### FAULT BYPASS

MAINTAINING THE ETHERNET CHAIN CONNECTION EVEN IN THE EVENT OF A MODULE FAILURE
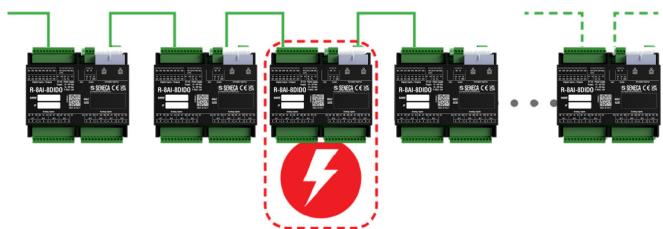
![SENECA]

Via Austria, 26 • 35127 Padova - (I) - Tel. +39 049 87.05.359
Fax +39 049 87.06.287 • www.seneca.it • info@seneca.it