INSTALLATION MANUAL

R-16DI-8DO
R-16DI-8DO-P

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 via 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
R-16DI-8DO

DOCUMENTATION
R-16DI-8DO-P

ISO 9001:2015

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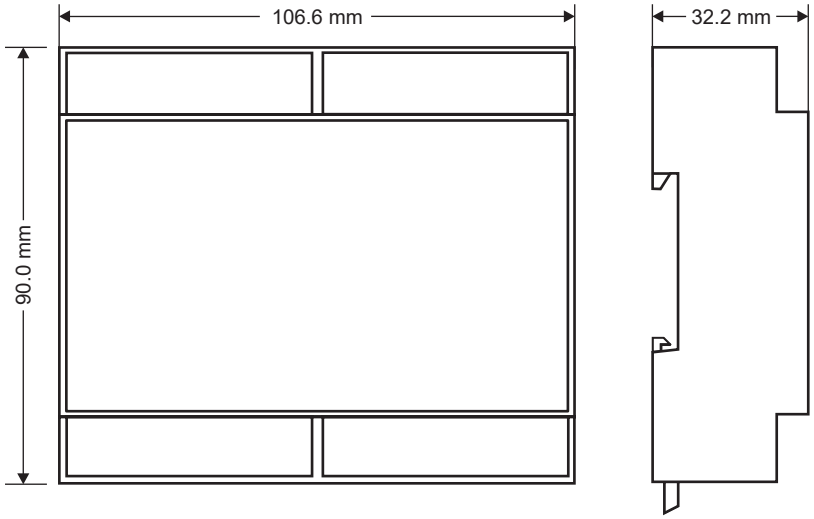
CONTACT INFORMATION

Technical support	support@seneca.it	Product information	sales@seneca.it

MODULE LAYOUT

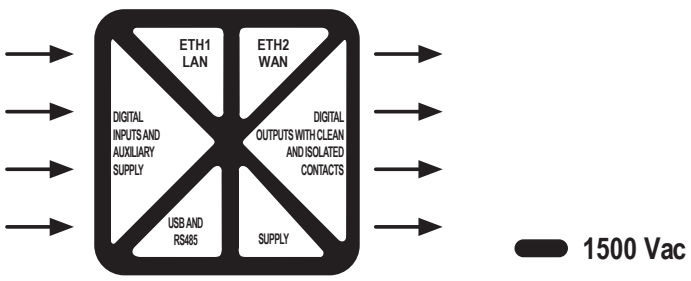


Weight: 170 g; **Enclosure:** UL94-V0 self-extinguishing PC/ABS material, black.

SIGNALS VIA LED ON FRONT PANEL

LED	STATUS	LED meaning
PWR	On	Device on and auxiliary power supply present
	Off	Device OFF and no auxiliary power supply
IO From 1 to 16	On	Status of input enabled
	Off	Status of input disabled
DO From 1 to 8	On	Output enabled
	Off	Output disabled
STS	On	IP address set
	Flashing	Waiting for the IP address from the DHCP
FAIL	On	Digital output check failed
	Off	Digital output check passed
TX (Only version R-16DI-8DO)	On	RS485 connection check
	Flashing	Transmission of data packet completed on RS485
RX (Only version R-16DI-8DO)	On	RS485 connection check
	Flashing	Reception of data packet completed on RS485
ETH TRF (Yellow)	Flashing	Packet transit on Ethernet port
ETH LNK (Green)	Flashing	Ethernet port connected
COM (Only version R-16DI-8DO-P)	Flashing	Profinet communication active
	Off	No Profinet communication

TECHNICAL SPECIFICATIONS

STANDARDS	**EN61000-6-4** Electromagnetic emissions, industrial environment. **EN61000-6-2** Electromagnetic immunity, industrial environment. **EN60950** Safety
INSULATION	

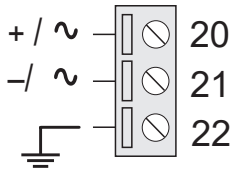
ENVIRONMENTAL CONDITIONS	Temperature: -25°C ÷ +65°C Humidity: 30% ÷ 90% non condensing. Storage temperature: -30°C ÷ + 85°C Protection rating: IP20
ASSEMBLY	DIN rail 35mm IEC EN60715, wall or panel with screws.
CONFIGURATION	With built-in WEB server (only version R-16DI-8DO)
CONNECTIONS	Terminals 3.5 mm pitch, Micro USB connector and double RJ45 connector
POWER SUPPLY	Voltage: 10 ÷ 40 Vdc; 19 ÷ 28 Vac; 50 ÷ 60 Hz, max. absorption: 3 W
COMMUNICATION PORTS	RSW485 on terminal 23 - 24 - 25 (only version R-16DI-8DO) USB: micro-USB input for programming (only version R-16DI-8DO)
ETHERNET PORTS	2 Ethernet ports (with LAN fault-bypass function) 100 base-T on RJ45.
AUX. VOLTAGE OUTPUT	Max voltage/current: 12 Vdc / 40 mA
DIGITAL INPUT	Number of channels: 16; voltage: OFF/ON threshold: 0 ÷ 8 V / 9 ÷ 30 V Absorbed current: 2.25 mA; compliant with: IEC6113-2 Type 1 & 3
COUNTERS:	No. of counters: 16; Maximum frequency: 5 kHz, 32-bit retentive counters (only R-16DI-8DO)
DIGITAL OUTPUTS	Number of channels: 8; Tipo: SPST free contact relay; Max voltage/current: 30 V ac-dc / 1 A; Duration of contacts: 5 • 10^5 mec.op. / 10^6 op. with load

ELECTRICAL CONNECTIONS

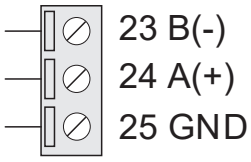
CAUTION

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

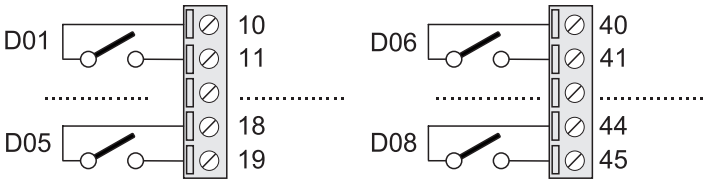


SERIAL PORT RS485

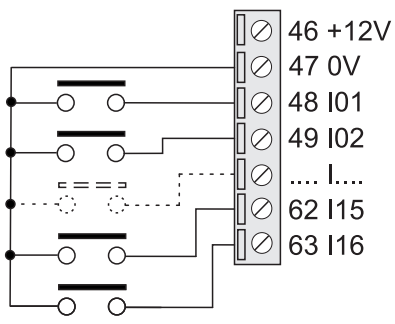


This function is present only in the R-16DI-8DO model

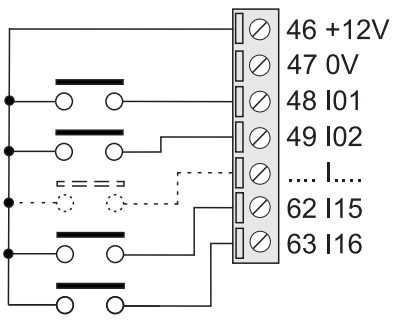
DIGITAL OUTPUTS



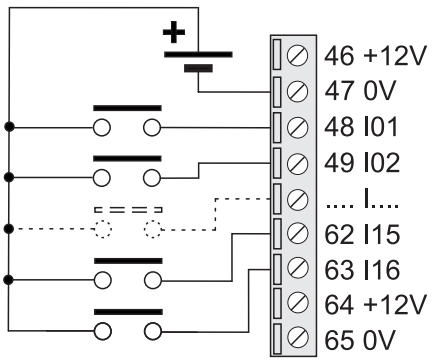
DIGITAL INPUTS



NPN with internal power



PNP with internal power



PNP with external power
Max. voltage 28 Vdc

ETHERNET CONNECTION RULES

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

FACTORY IP ADDRESS

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

WEB SERVER

To access the maintenance Web Server with the factory IP address above, use the following credentials:
Account User : admin; **Password** : admin

⚠ CAUTION

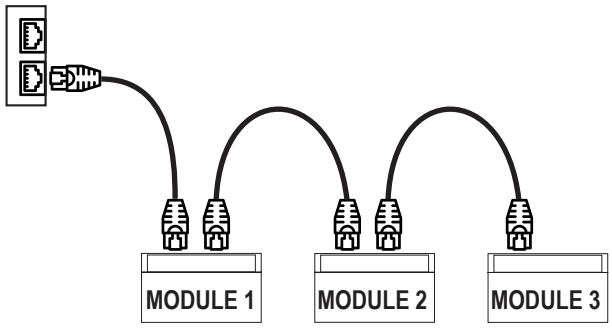
DO NOT USE DEVICES WITH THE SAME IP ADDRESS IN THE SAME ETHERNET NETWORK.

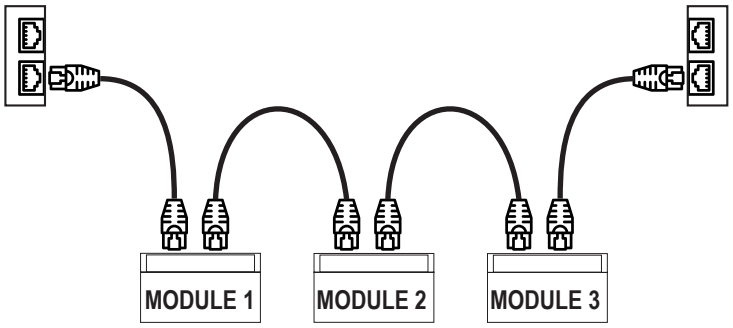
DAISY-CHAIN ETHERNET CONNECTION

⚠ CAUTION

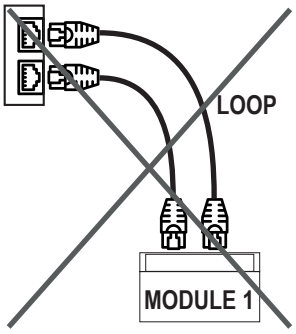
IT IS NOT ALLOWED TO CREATE LOOPS WITH ETHERNET CABLES

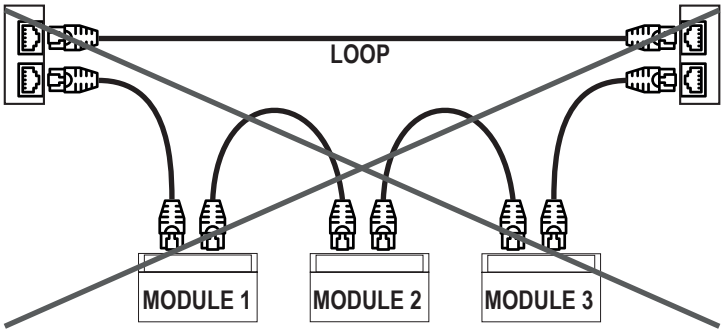
Using the daisy-chain connection it is not necessary to use switches to connect the devices.
The following examples show the correct connections.





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.





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.