INSTALLATION MANUAL

R-32DIDO-2
R-32DIDO-2-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**: Before operating, read this document thoroughly and retain it for future reference. Non-respect of these instructions may reduce performances and safety of the devices and cause danger for people and property. The products must be installed, operated, serviced and maintained by qualified personnel in compliance with applicable standards and regulations. Don't open the device, it does not contain replaceable components, the tripping of the internal fuse (if included) is caused by an internal failure. Don't repair or modify the device, if malfunction or failure should occur during operation, send unit to the factory for inspection. No responsibility is assumed by SENECA for any consequences deriving from the use of this material.
	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-32DIDO-2

DOCUMENTATION
R-32DIDO-2-P

SENECA

QUALITY MANAGEMENT SYSTEM
ISO 9001:2015

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

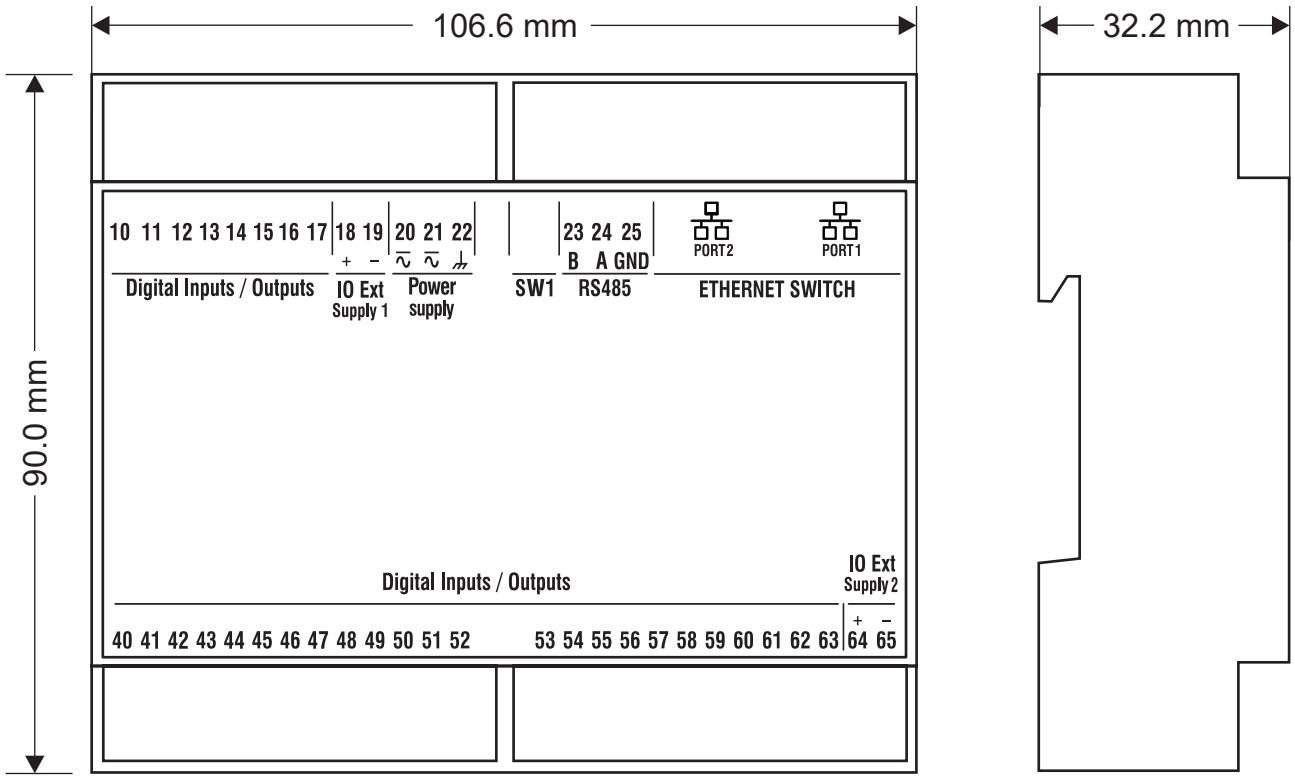
CONTACT INFORMATION

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

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MODULE LAYOUT



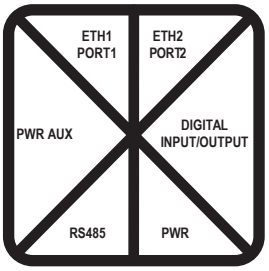
Weight: 170 g; **Enclosure:** UL94-V0 self-extinguishing PC/ABS material, black.

SIGNALS VIA LED ON FRONT PANEL

LED	STATUS	LED meaning
PWR	On	Device powered
	Off	Device not powered
IO1/IO32	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 (R-32DIDO-2 version only)	On	IP address set
	Flashing	Waiting for the IP address from the DHCP
STS (R-32DIDO-2-P version only)	On	IP address set
	Flashing	No IP address configured
COM (R-32DIDO-2-P version only)	Off	No Profinet communication
	Flashing	Profinet communication present
FAIL	On	Digital output in FAIL
	Off	Digital output OK
RX (R-32DIDO-2 version only)	On	RS485 port wiring error
	Flashing	Reception of data packet completed on RS485
TX (R-32DIDO-2 version only)	Flashing	Transmission of data packet completed on RS485
ETH TRF (Yellow)	Flashing	Packet transit on Ethernet port
ETH LNK (Green)	Flashing	The Ethernet port is connected (LINK)

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TECHNICAL SPECIFICATIONS

CERTIFICATIONS	CE UKCA c UL us LISTED 3LUT
INSULATION	 1500 Vac
POWER SUPPLY	Voltage: 11÷40Vdc; 19÷28Vac; 50÷60Hz; Absorption: 3W max; Dissipation: 6.5W max Supplied with limited energy according to UL 61010-1 3rd Ed, section 9.4 or LPS in conformance with UL 60950-1 or Class 2 in compliance with UL 1310 or UL 1585 Pollution degree 2; Overvoltage category II
ENVIRONMENTAL CONDITIONS	Operating temperature: from -25°C to +65°C; Humidity: 10% ÷ 90% non condensing. Storage temperature: from -30°C to +85°C; Protection rating: IP20 (not UL evaluated) Open Type; Altitude up to 2000m
CONFIGURATION	With integrated WEB Server / from profinet environment
CONNECTIONS/ COMMUNICATION PORTS	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 23-24-25 (only R-32DIDO-2 versions)
DIGITAL INPUTS	Number of channels: 32; Voltage: Threshold ON: >11 Vdc; Threshold OFF: < 4 Vdc; Vmax: 24 Vdc; Impedance 9kΩ; Individually configurable. Complies with IEC61131-2 type 3. Separate external power supply for the two output groups: V EXT: 12÷24 Vdc
DIGITAL OUTPUTS	Number of channels: 32, MOSFET, PNP; Max voltage/current: 0.2 A / 24 Vdc Individually configurable Separate external power supply for the two output groups: V EXT: 12÷24 Vdc
COUNTERS:	Number of counters: 32 at 32 bit, maximum speed: 500 Hz (only R-32DIDO-2 versions)

ELECTRICAL CONNECTIONS

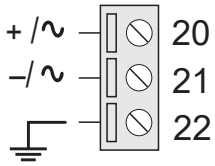
⚠ CAUTION

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.).

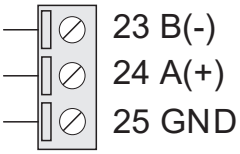
⚠ CAUTION
Use AWG size 14-30, torque 2.3 lb in. (For UL approval)

⚠ CAUTION
Minimum temperature rating of the cable to be connected to the field wiring terminals, 100°C

POWER SUPPLY

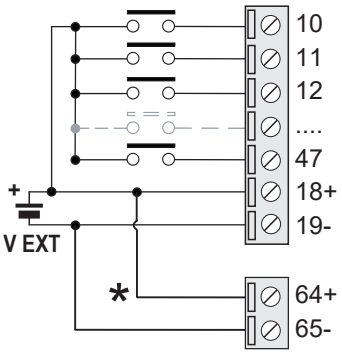


RS485 SERIAL PORT

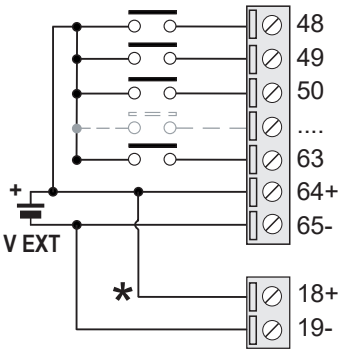


Connection to the RS485 port.
Polarity is not standardised; in some devices of other brands it may be inverted.

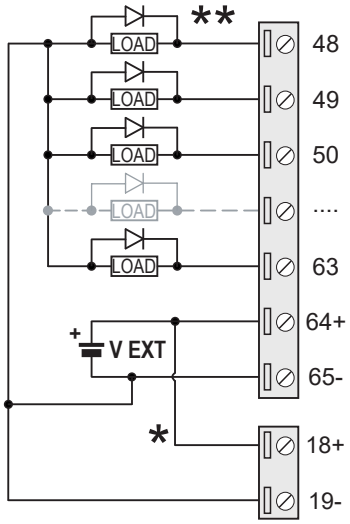
DIGITAL INPUTS (PNP)
Inputs from 1 to 8



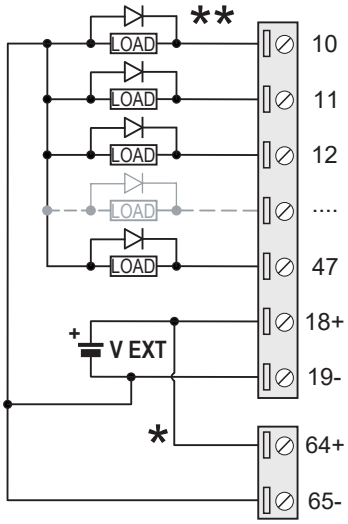
DIGITAL INPUTS (PNP)
Inputs from 9 to 32



DIGITAL OUTPUTS (PNP)
Outputs from 1 to 8



DIGITAL OUTPUTS (PNP)
Outputs from 9 to 32



⚠ CAUTION

*The power supply must be sized according to the expected load at the outputs. Terminals 18-64 and 19-65 can be connected together on the same power supply. Only a Vdc power supply is permitted.

⚠ CAUTION

** It is mandatory to use a protection DIODE for coils/relays in inductive loads, otherwise there is a risk of device failure and voiding of the manufacturer's warranty.
The DIODE is usually provided as an accessory by manufacturers of coils, relays, etc.

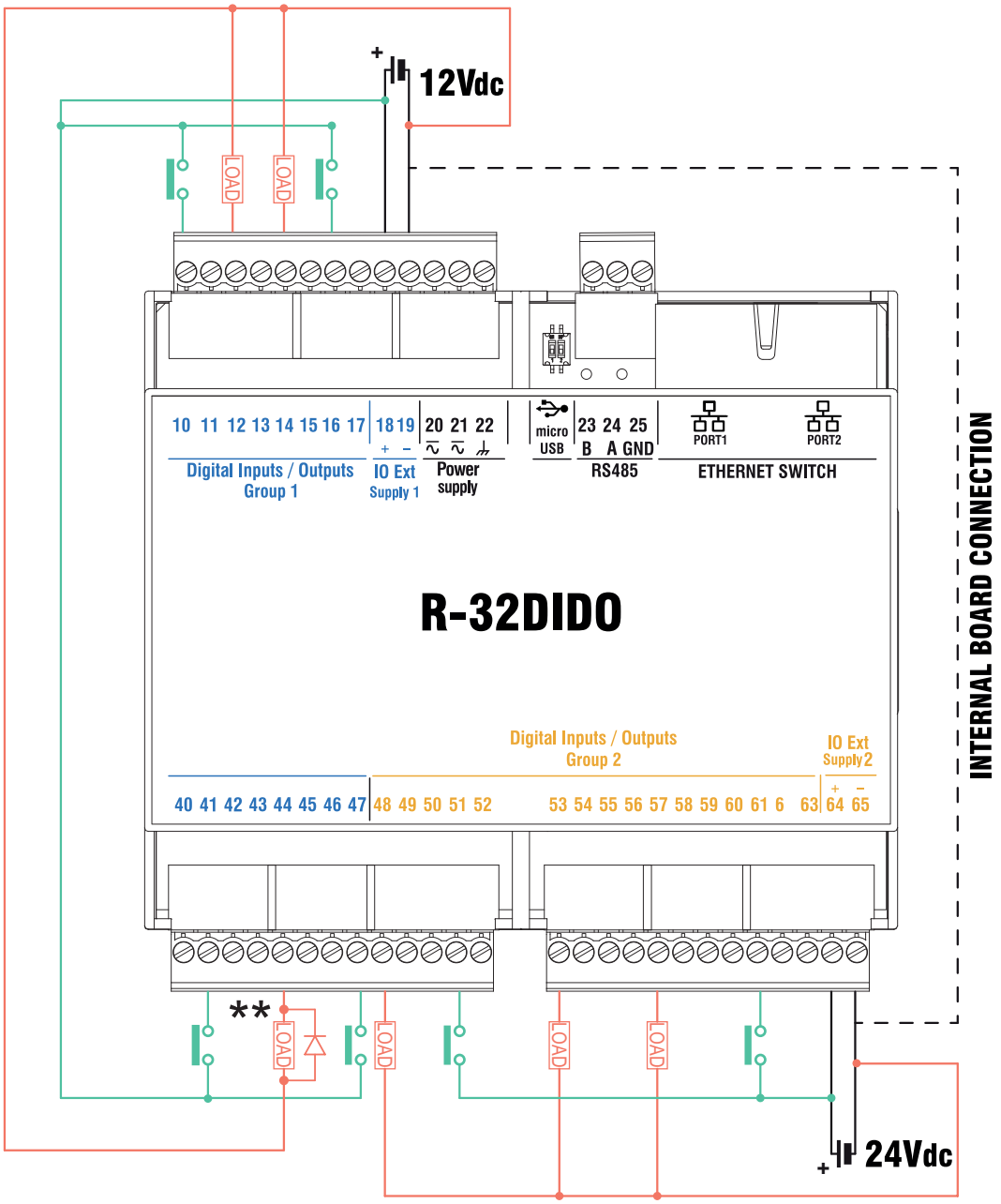
⚠ CAUTION

For correct instrument operation, power the I/Os via the I/O Ext Supply 1 (18-19) and 2 (64-65) terminals at the same time.
The 'OUT SUP' LED lights up to verify a correct power supply.

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EXAMPLE:

In the diagram below we have an application example of a system with four digital inputs and three digital outputs externally powered at 12Vdc and three digital outputs and two digital inputs powered at 24Vdc.



⚠ ATTENTION

The external IO Ext 1 and IO Ext 2 supplies must be powered simultaneously within a range of 12÷24Vdc.
The external IO Ext 1 and IO Ext 2 supplies can have different voltages.

⚠ CAUTION

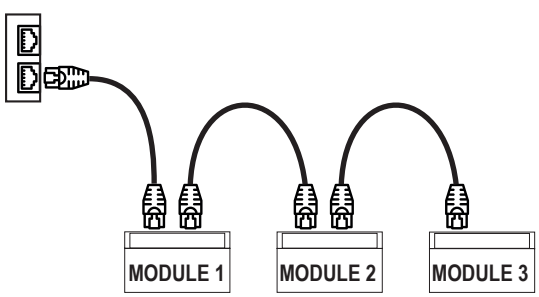
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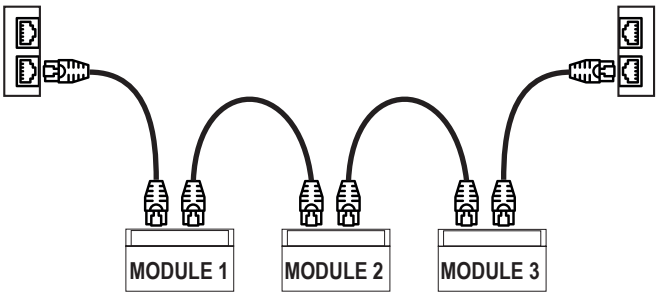
DAISY-CHAIN

⚠ CAUTION

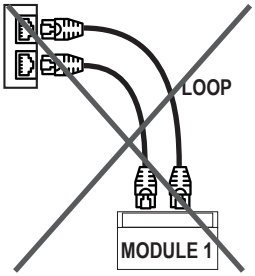
IT IS NOT ALLOWED TO CREATE LOOPS WITH ETHERNET CABLES

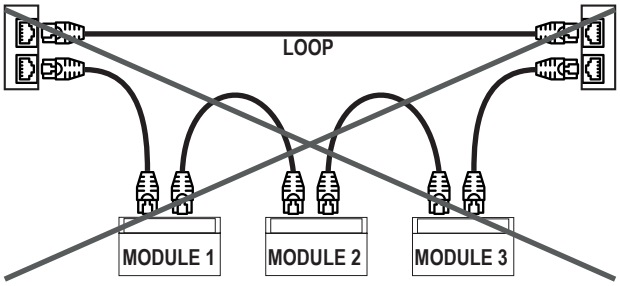
Using the daisy-chain connection it is not necessary to use switches to connect the devices.
The following examples show the correct connections.





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.

ETHERNET CONNECTION RULES

For the Ethernet cabling between the devices, the use of the unshielded CAT5 or CAT5e cable is required.
CAT6 for industrial environments.

FACTORY IP ADDRESS (R-32DIDO-2 ONLY)

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

WEB SERVER

Use the following credentials to access the Maintenance Web Server:
Default user: admin
Default password: admin

⚠ CAUTION

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

DIP - SWITCH SETTINGS

⚠ WARNING

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

For operation and settings via DIP-SWITCH see the user manual available on the product webpage.