

Z-PC Line



Z-D-OUT

Modbus Module with 5 relay for Digital Outputs

Installation Manual

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General Specifications

- 5 SPST relay outputs N.O. with common line, capacity 5 A-250 Vac resistive, 2 A inductive
- Pull-out terminals, section 2.5 mm²
- Possibility of setting relays as N.O. or N.C. (rest status).
- Setting of relay safety status at start-up or in the event of no communication.
- Safety time settable from 0,5 s to 2,5 s.
- Possibility of ON-LINE configuration.RS485 serial communication with Modbus Rtu protocol, maximum 32 nodes.
- 2500 Vac output insulation with respect to remaining low voltage circuits
- · Power supply and serial connection wiring facilitated by means of a bus that can be housed in the DIN guide. The terminals can still be used.
- · Insertion into and removal from bus without interrupting communication or system power
- Communication times below 10 ms (@ 38400 Baud).
- Connection distance up to 1200 m.

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Technical Specifications

INPUTS

Type output	5 SPST N.O .relay outputs with common line
Number of Channels	5
Maximum rated current	5 A
Maximum switching voltage	250 Vac
Relay working voltage	24 V _{DC}
Pick-Up Relay	18 V
Drop-Out Relay	2,4 V
Relay absorbed current	9 mA
Operate / release time relay	5/2 ms

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ENVIRONMENTAL CONDITION Temperature 30 ..90% a 40°C non condening Humidity Altitude Up to 2000 m a.s.l. Storage -20 +85°C Temperature Protection IP20

CONNECTIONS

Removable 3-way crew terminals, 3,5 pitch Rear IDC10 connector for DIN 46277 rail Connections

DIMENSIONS / BOX

Dimensioni	L: 100 mm; H: 112 mm; W: 17,5 mm	
Contenitore	PBT, colore nero	
ISOLATIONS	STANDARDS	

1500 V_{AC} a tre punti:

The module complies with the following standards:



EN61010-1/2001 (safety). All circuits must be isolated from the other circuits under

EN61000-6-4/2002-10 (electromagnetic

dangerous voltage with double isolation. The power supply transformer must comply with En60742: "Isolated transformers and safety transformers".

ADDITIONAL NOTES:

= : Isolations 1500 V

MODBUS

Communicat

Power supply

Use in Pollution Degree 2 Environment Power Supply must be Class 2.

Digital Outputs

When supplied by an Isolated Limited Voltage/Limited Current power supply a fuse rated max 2.5 A shall be installed in the field.



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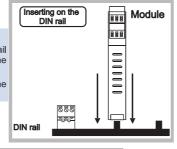
Installation Rules

The module is designed to be installed in vertical position on a DIN 46277 rail. In order to ensure optimum performance and the longest working life, the module(s) must be supplied adequate ventilation and no raceways or other objects that obstruct the ventilation slots. Never install modules above sources of heat, we recommend installation in the lower part of the control panel

Inserting on the DIN rail

As it is illustrated in the next figure:

- 1) Insert the rear IDC10 connector on a DIN rail free slot (the inserting is univocal since the connectors are polarized).
- 2) Tighten the two locks placed at the sides of the rear IDC10 connector to fix the module

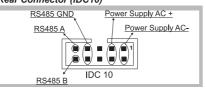


Electrical Connections

POWER SUPPLY AND MODBUS INTERFACE

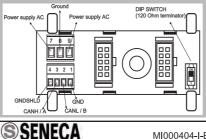
Power Supply and CAN/MODBUS interface are available by using the bus for the Seneca DIN rail, by the rear IDC10 connector or by Z-PC-DINAL1-35 accessory.

Rear Connector (IDC10)



In the figure the meaning of the IDC10 connector pins is showed, in the case the user decides to provide the signals directly through it.

Z-PC-DINAL1-35 Accessory Use



In case of Z-PC-DINAL-1-35 accessory use, the signals may be provided by terminal blocks. The figure shows the meaning of the terminals and the position of the DIPswitch (present on each DIN rail supports listed on Accessories) for network termination (not used in case of Modbus network). GNDSHLD: Shield to protect the

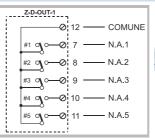
connection cables (recommended). MI000404-I-E ENGLISH 4/8

POWER SUPPLY



Terminals 2 and 3 can be used to provide the module with power supply as an alternative to connection using the Z-PC-DINx bus. The upper limits mus not be exceeded as this can seriously damage the module. If the power supply source is not protected against overload, a safety fuse with a max. permissible value of 2.5 A must be installed in the power supply line.

DIGITAL OUTPUTS



Note: The maximum current that can flow through the COMMON terminal is 12A

MODBUS RS485



Connection for RS485 communication using the Modbus master system as an alternative to the Z-PC-DINx bus.

Note: the indication of the RS485 connection polarity is not standardised and in some masters may be inverted.

Modbus connection rules

1) Install the modules on the DIN rail (max 120).

2) Connect the remote modules using cables of proper length. On the table the following data about the cables length are provided:

-Bus Length: Modbus network maximum length as a function of the Baud rate. It is the lenght of the cables which connect the two bus terminators modules (see Scheme 1).

-Drop Length: maximum length of a drop line (see Scheme 1) as a function of the Baud Rate.

Schema 1



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1200 m

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For the best performances, the use of special shielded cables is recommended (BELDEN 9841 cable for example).

DIP-switch settings

The DIP-switches position defines the module Modbus communication parameters: Address and Baud Rate. In the following figure the Baud Rate and Address values are listed as a function of the DIP-switches position

DIP SWITCH STATUS

POSITION	BAUD RATE	POSITION	INDIRIZZO	POSITION	TERMINATOR
00xxxxxxx	9600	xx000001xx	# 1	xxxxxxxx0	Disable
01xxxxxxxxx	19200	xx000010xx	# 2	xxxxxxxxx1	Enable
10xxxxxxxx	38400				
11xxxxxxxx	57600	xx1111111xx	# 63		
POSITION	BAUD RATE	POSITION	INDIRIZZO		
xx000000	From EEprom	xx000000	From EEprom		

Note: when switches from 3 to 8 are in OFF, comunication settings are retrieved from **EEprom**

Digital Outputs

In the Modbus register 40002 is possible to see the state of outputs or change the state of them. Bits 0 to 4 in 40002 register respectively represent the status of output from 1 to 5.

Besides you can set up the output in a state of security when the bus communication is

MODBUS REGISTER

Holding register

Register	Name	Description
40002	ОИТРИТ	Input 1: 40002.0 Input 2: 40002.1 Input 3: 40002.2 Input 4: 40002.3 Input 5: 40002.4 The active status of the output is obtained by

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Counting can be set to increase or decrease by Bit No. 1 in Register 40005 (EPRFLG).

Coil register

Register	Name	Description
00001	OUTPUT 1	Active status output 1. See register 40015.0
00002	OUTPUT 2	Active status output 2. See register 40015.0
00003	OUTPUT 3	Active status output 3. See register 40015.0
00004	OUTPUT 4	Active status output 4. See register 40015.0
00005	OUTPUT 5	Active status output 5. See register 40015.0

LEDS Signallings

LED	STATE	Meaning of LEDS
PWR	On	Power supply presence.
FAIL	Blinking	Error settings.
	On	Fault/Failure.
RX	Blinking	Recived data from RS485.
	On	Verify the connection.
TX	Blinking	Recived data from RS485.
	On	Verify the connection.

Factory settings

Tutti i DIP-switch in OFF

- Modbus protocol / Communication parameters : 38400 8,N,1 Addr. 1
- Digital Outputs : DISABLE Statesafe : DISABLE
- Safetime : DISABI F
- Inversion relay status : DISABLE

Variations of standard parameters are possible by using configuration softwares Z-NET and EASY-Z-PC (www.seneca.it).

For more information about a list of all regiater and their function consult the USER

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Disposal of Electrical & Electronic Equipment (Applicable throughout the European Union and other European countries with separate collections programs). This symbol, found on your producr or on its packaging, indicates that this product should not be treated as household waste when you wish to dispose of it. Instead, it should handed over to an applicable collection point for the recycling of electrical & electronic equipment. By ensuring this product is didposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate disposal of this product. The recycling of materials will help to conserve natural resources. For more detailed information about the recycling of the product, please contact your local city office, waste disposal service of the retail store where you purchased this product.

