USER'S MANUAL
MPNC020 series
Digital inputs / outputs

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INDEX

1.0 Introduction

To ensure fast installation and commissioning of described devices, we recommend that you carefully read the information in this manual.

1.1 Personnel Qualification

The products described in this manual are for use only by personnel with experience in PLC programming, or technical specialist in the use of an electrical-driven automation.
MECT Srl is not liable for failures caused by improper usage and damage to MECT devices or other devices, due to the non-compliance to the instructions contained in this manual.
MECT Srl offers technical assistance through its technical office.

1.2 Simbols

Danger
Be compliant to instruction to avoid damages to people or devices.

Warning
To protect the device adhere to instructions .

Attention
Conditions to be met for an effective installation

ESD (Electrostatic Discharge)
Attention: Possible component damage due to electrostatic discharge.

Note
Correct installation steps.

Additional Information

1.3 Glossary

Coupler:	MPNC006
Terminals:	MPNC020 digital input/output module; MPNC030 analog input module; MPNC035 analog output
System:	Coupler together with terminals
TBUS:	Internal communication bus between coupler and terminals.

1.4 Security

Attention
Power down devices before any operation

Attention
MPNC020 must be installed in closets or cabinets accessible only by qualified personnel through a key or a tool.

ESD (Electrostatic Discharge)
The modules contain electronic components that can be destroyed by electrostatic discharge. Every time you handle the modules, be sure that you and the system are connected to ground.

The device does not have an ON-OFF switch and an internal fuse. Power up occurs after applying the correct voltage (please check the power source voltage indicated on the nameplate of the device under "Power"). Provide a supply line as direct as possible and separated from the line that supplies high power components.
For safety, you must provide a two-phase disconnecting switch with fuse located near the device and easily accessible by the operator.
Do not allow in the same power panel high power devices (contactors, motors, drives, ect.), or excessive moisture, heat and corrosive gases.
The devices must be powered by an instrument transformer or by a SELV power supply.

2.0 MPNC System

2.1 System Description

MPNC is a modular system made by a coupler/controller MPNC006 and a set of terminals for different kind of signals (MPNC020; MPNC030 ...). The coupler is a Modbus interface in the MPNC006 version, also processes data from the terminals and makes them available to the fieldbus. The coupler can be connected to both analog and digital Terminals.

2.2 NORMS

Reference standards are listed in the CE conformity declaration on the Mect web site.

2.3 Technical Data

Technical Characteristics	
Material	Polycarbonate, Polyamide 6.6
Power supply	24Vdc +/-15% 3W
Input (PNP 24VDC)	16 for model MPNC020 01
Output (PNP 24VDC)	16 for model MPNC020 02
Max current for every output	500mAdc
Max current for all output	2Adc
Dimension W x H x L - Terminal	 - 22.5 mm x 108 mm x 115 mm
Installation	DIN 35
Climatic Environmental Condition	
Operative Temperature	0 °C ... 50 °C
Storage Temperature	-20 °C ... +85 °C
Relative Humidity	5 % to 95 % without condensation
Safe Electrical Isolation	
Air and creepage distance	acc. to IEC 60664-1
Degree of Pollution acc. o IEC 61131-2	2
Degree of Protection	
Degree of Protection	IP 20

Attention
Install devices in power panel with temperature lower than 55°C

Dimensions

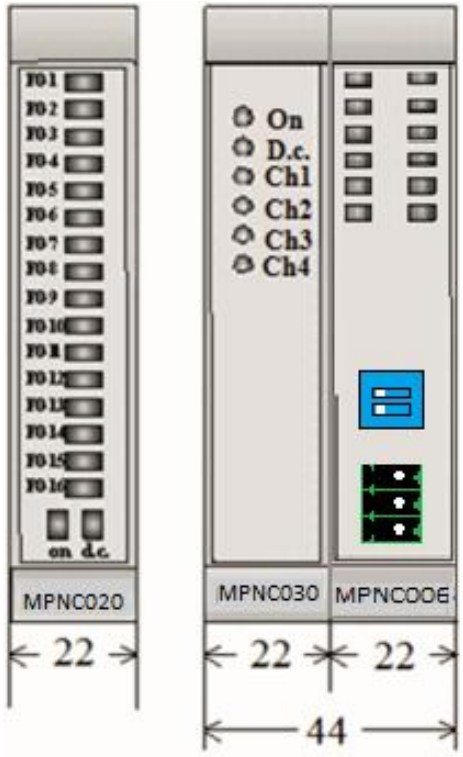


Fig 1: Dimensions

2.4 Installation

2.4.1 Distances

The system must be installed allowing enough space for heat transfer, installation and wiring. Avoiding wires overlapping also prevents electromagnetic compatibility problems.

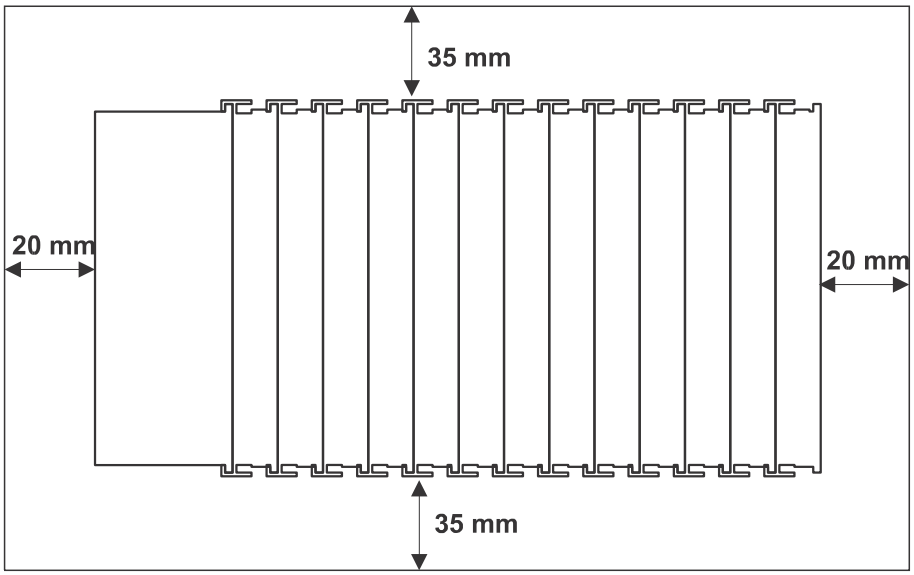


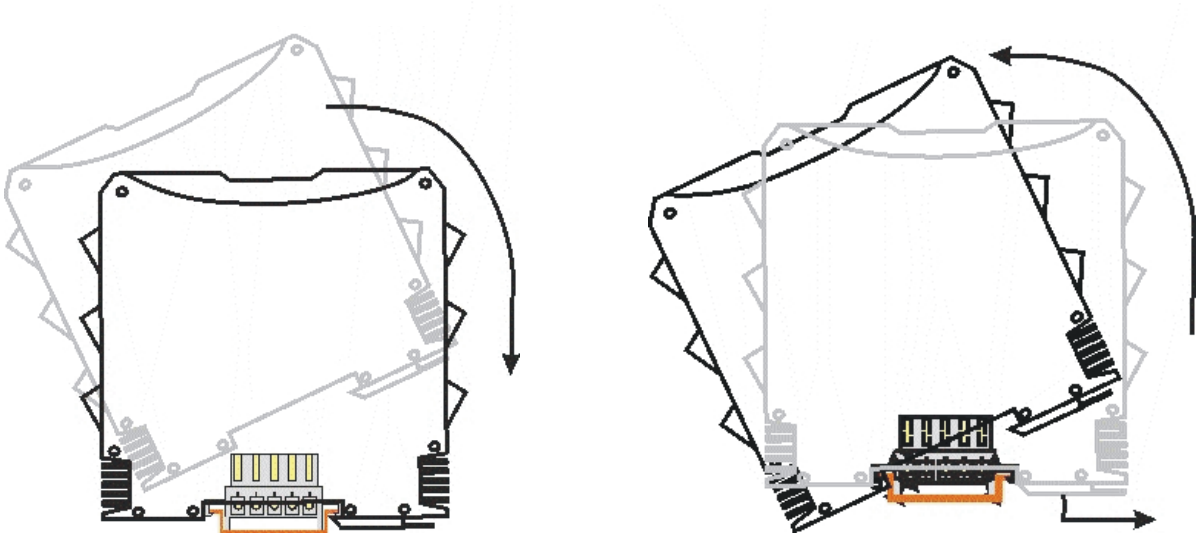
Fig 2: Spaces

2.4.2 Component Adding and Removal

Attention
Be sure that devices are not powered when performing component adding or removal.

2.4.3 Assembly sequence

The insertion and removal of a terminal is made by using the hook at the base of the terminal as shown.
The assembly must begin with the insertion of the coupler MPNC006. After that, the required terminal are inserted in sequence. The DIN rail mounting is ensured by the spring coupling each terminal.



adding terminals removing terminals

Fig 3: Terminal adding and removal

The instruments must be assembled on TBUS as shown below. MPNC006 must be positioned to the right and the nodes to the left.

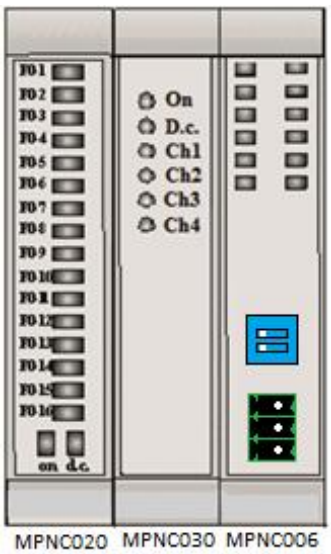


Fig 4: Assembly

2.4.4 DIN Rail and TBUS

All modules must be attached onto a DIN rail type EN 50022 (DIN 35) on which their TBUS connection modules were inserted. TBUS connection modules perform internal communication between the bus coupler and terminals.

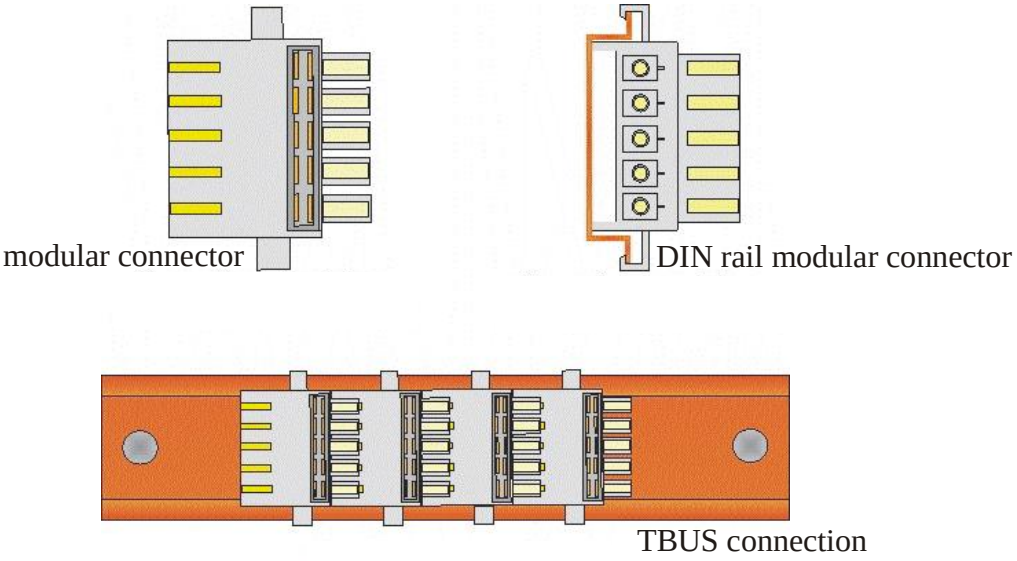


Fig 5: TBUS

2.4.5 Wiring Description

MPNC006 and nodes daisy chain connection

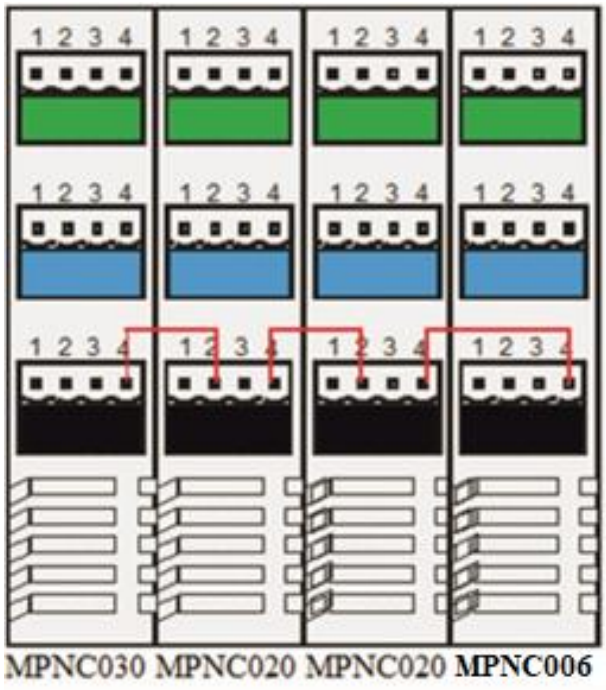


Fig 7: Daisy chain MPNC006

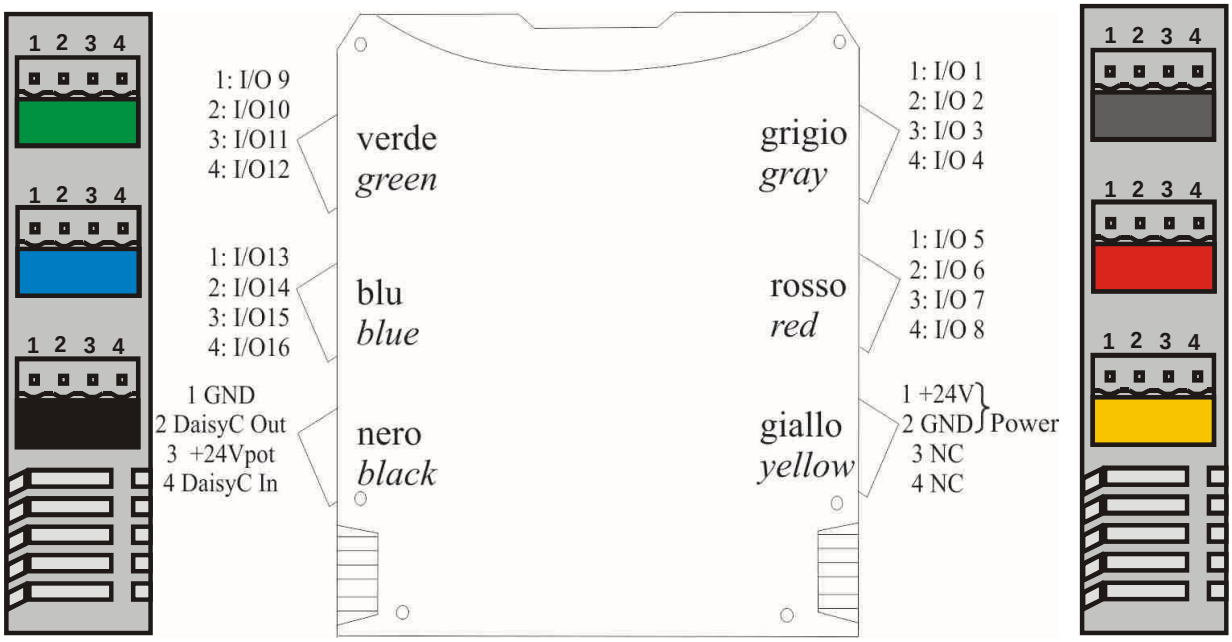
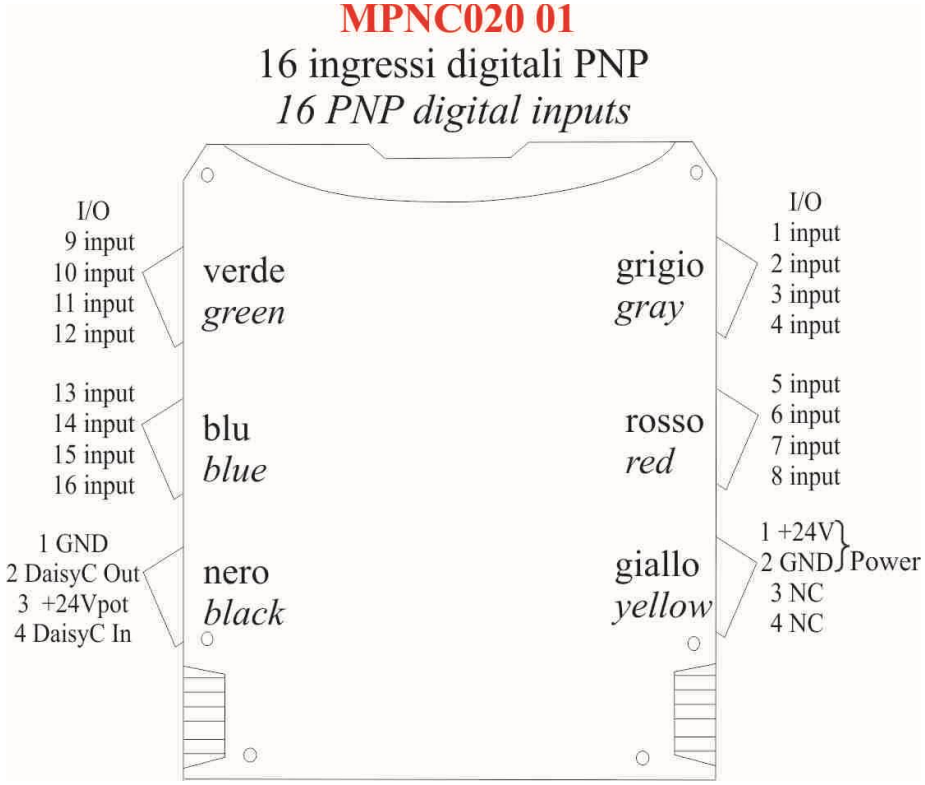


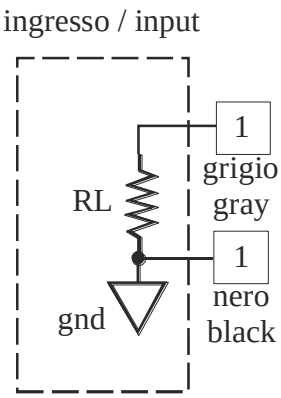
Fig 8: Signals connection

2.5 Models

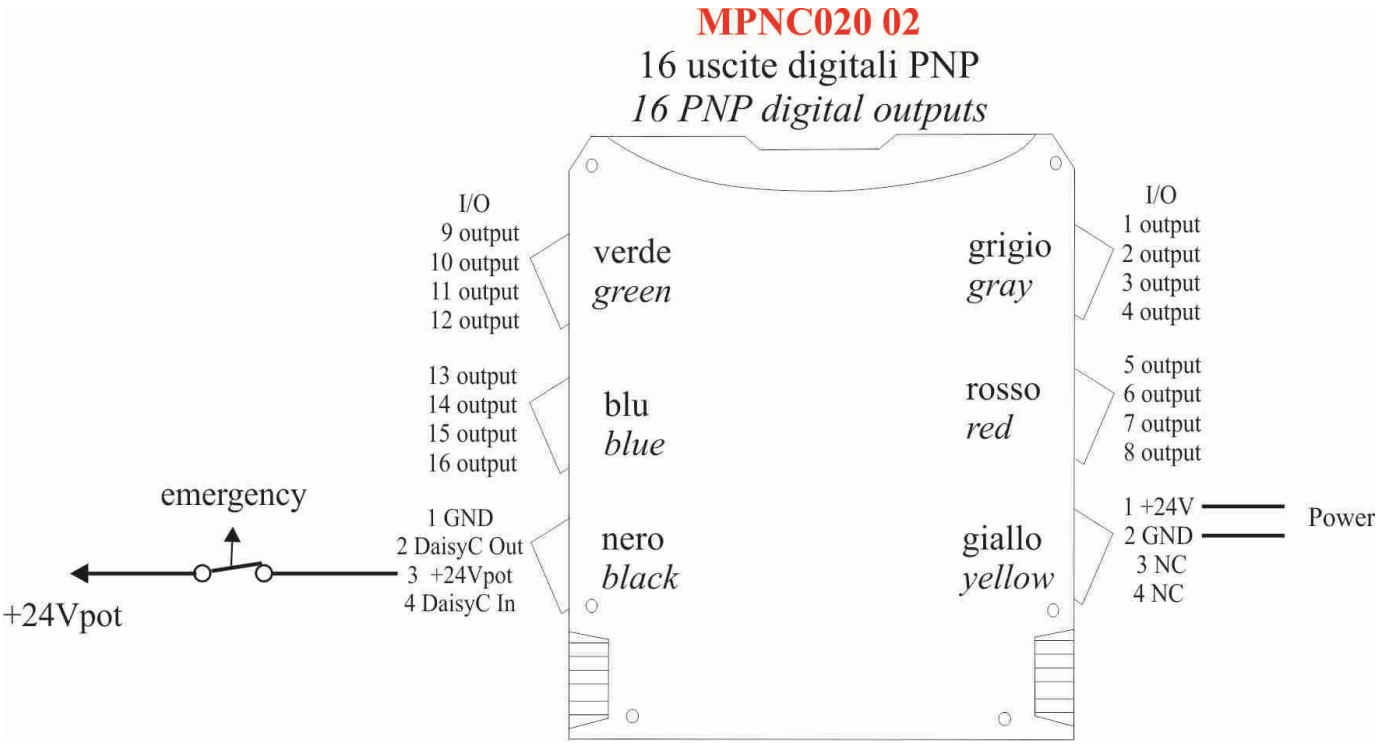
2.5.1 MPNC020 01



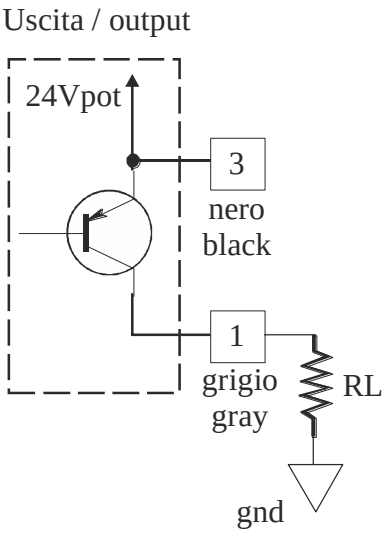
Digital lines are PNP type.



2.5.2 MPNC020 02



Digital lines are PNP type.



2.6 LED

LED	Status	Description
On	Blinking	Terminal not configured
	On	Terminal configured
	Off	Terminal not powered
d.c	Off	Terminal is in reset state Cause: • daisy chain non is not connected • terminale is not powered
	On	daisy chain IN is correctly connected
Ch...	Off	0V
	On	24V