

Model TP4070 USER MANUAL



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ME7122_00
05/26

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1 Introduction

To ensure quick installation and commissioning of the described devices, we recommend carefully following the information provided in this manual.

1.1 Personnel Qualification

The products described in this manual must be used exclusively by personnel experienced in PLC programming or by technicians specialized in the use of electrical devices for automation.

MECT S.r.l. declines any responsibility for malfunctions and damage caused by improper use of MECT devices due to failure to comply with the information contained in this manual.

MECT S.r.l. provides a technical support laboratory.

1.2 Symbols

**Danger**

Observe this information to protect people from harm.

**Warning**

Observe this information to protect the device.

**Caution**

Conditions that must be observed for more effective installation.

**ESD (Electrostatic Discharge)**

Warning: possibility of damage to components due to electrostatic discharge

**Note**

Steps to follow for correct installation

**Additional Information**

1.3 Nomenclature

Operator panel: TP4070

PLC: TP4070

HMI: Human Machine Interface

1.4 Safety



Caution

Switch off the devices before operating on the terminals



ESD (Electrostatic Discharge)

The modules are equipped with electronic components that may be damaged by electrostatic discharge. Whenever handling the modules, ensure that the environment is properly grounded.

The device does not have an ON-OFF switch or an internal fuse; power-on occurs immediately after supplying the correct power voltage (check the power supply value indicated on the device label under “Power Supply”). Provide a power line as direct as possible and separate from the line supplying power elements.

For safety regulations, it is necessary to install a two-pole isolating switch with fuse close to the device and easily accessible to the operator.

Avoid installing power components (contactors, motors, drives, etc.), excessive humidity, heat sources, and corrosive gases in the same enclosure.

The devices must be powered by safety transformers or SELV-type power supplies.

1.5 Features

The TP4070 is based on a microprocessor system featuring a Broadcom BCM2711 SoC with a 1.5 GHz 64-bit quad-core ARM Cortex-A72 processor.

Table 1

PLC Hardware Features	
PLC Processor	Broadcom BCM2711 SoC with a 1.5 GHz 64-bit quad-core ARM Cortex-A72
RAM	2GB
eMMC	8GB
Real Time Clock	Present with supercapacitor
Screen 7"	TFT 1024 x 600 pixel 16M colors
Touch screen	Capacitive
Ethernet 0	1 Gb/s with auto-negotiation
USB 1	Host 2.0
RS485	2-wire serial
Micro SD	N.A.
Case	Metallic
Frontal protection degree	IP65
PLC Software Features	
Operating system	Raspbian OS 64bit
Graphics	Based on QT 4.8.7 libraries
ModBus fieldbus	Modbus RTU and Modbus TCP
Mass storage	Historical data storage capability
Fieldbus Features	
Modbus RTU	2-wire Master/Slave
Power Supply Voltage	
24 ± 20%Vdc	
Power consumption	6W

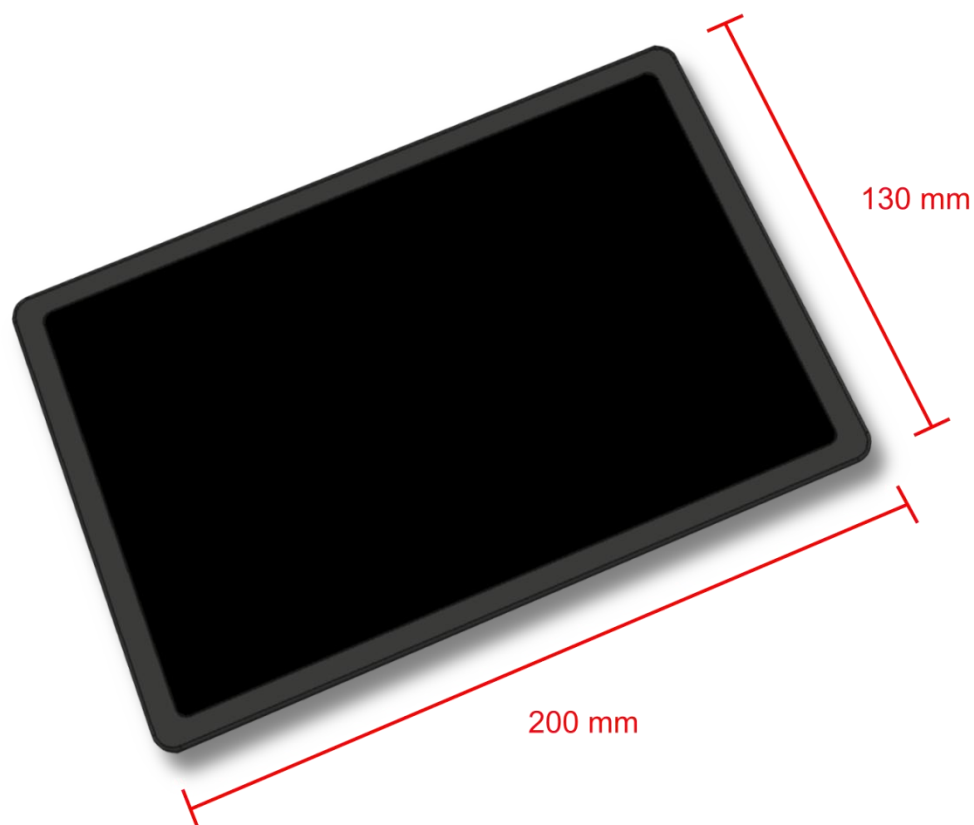
Electromagnetic compatibility

Reference standard: IEC 61131-2:2017

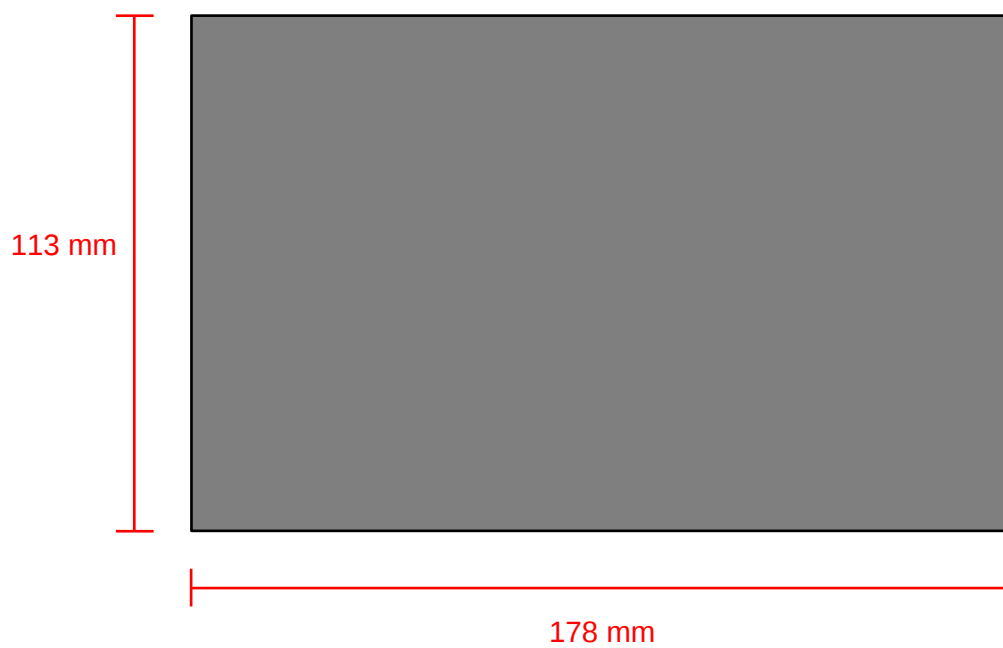
Precautions: USB cable < 1 m; LAN and serial cables < 30 m.

2 Mechanics

2.1 External Dimensions



2.2 Drilling Template



2.3 Depth



2.4 Mounting

The TP4070 is designed to be installed inside a cabinet or electrical enclosure using the two included metal brackets.

1. Insert the rear part of the panel into the previously prepared cut-out, making sure that the front side rests correctly against the surface of the enclosure.
2. Then position the mounting brackets on the sides of the rear part of the panel, in the dedicated slots.
3. Tighten the bracket screws evenly until they come into contact with the inner surface of the enclosure, ensuring that the panel is stable and correctly secured in position.

3 TP4070 Wiring

The following figure shows the layout of the connectors on the panel.

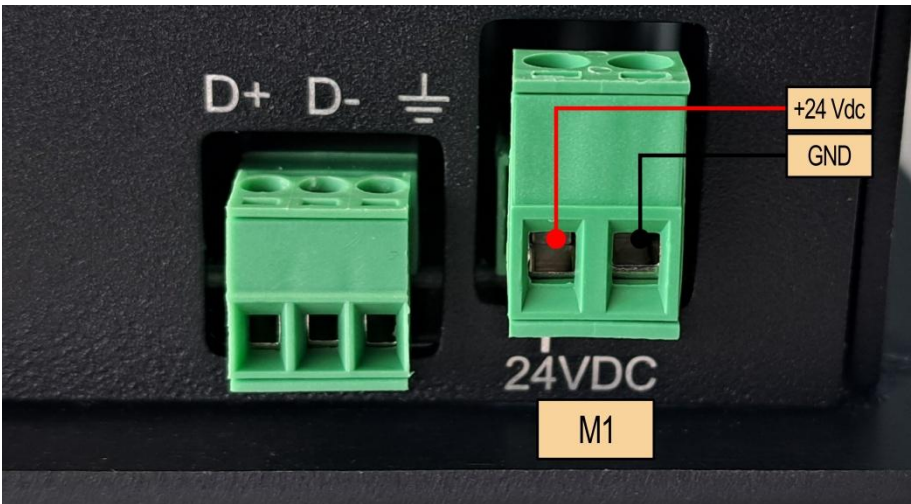


Table 2

ID	TP4070	
M1	Panel power supply	24 ± 20%Vdc 250mA
M2	RS485	GND D – (UART3) M.S. SERIAL PORT D + (UART3) M.S. SERIAL PORT
ETH 0	Ethernet 1Gb (IP default 192.168.5.211)	Bit rate max: 1Gbit/sec
USB 1	USB A 1	Host 2.0

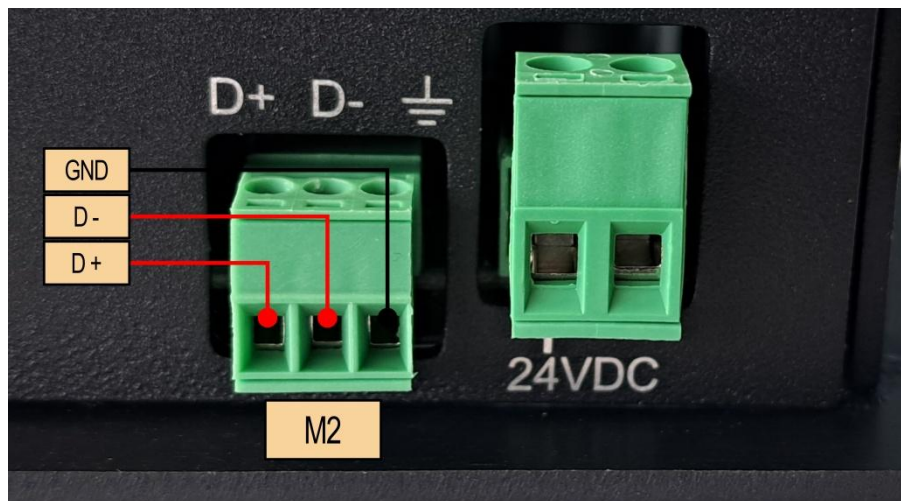
3.1 Power Supply

If the panel is powered at the nominal voltage of 24 Vdc ±20%, a power supply capable of delivering a minimum current of 2A must be used. Removable terminal blocks are included.



3.2 RS485 Serial

The TP4070 provides 1 RS485 channel. The connection is shown in the following figure. Removable terminal blocks are included.



3.3 Insulation

The device does not provide galvanic isolation zones between inputs, outputs, and power supply.

3.4 Fuses

The system does not include internal fuses. However, for protection of the input stage of the operator panel/PLC TP4070 power supply, the installation of a 2A fuse is recommended.



Caution

Using an incorrect power supply voltage may cause irreversible damage to the devices.

3.5 Peripherals



3.5.1 USB

The TP4070 features a USB 2.0 host port, which can be used to:

- Save process data
- Connect USB interface peripherals such as printers, mouse, keyboard, Wi-Fi dongle, barcode readers, etc.
- Software updates

3.5.2 Ethernet

The TP4070 operator panel/PLC is equipped with a 1 Gbit/s auto-negotiating Ethernet port (default static IP address 192.168.5.211).

The connection cable between the TP4070 and a personal computer can be either straight-through or crossover.