

# USER'S MANUAL for TP4070 OEM



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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 OEM

PLC: TP4070 OEM

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 OEM 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

<b>PLC Hardware Features</b>	
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	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.
Protection degree	IP00
<b>PLC Software Features</b>	
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
<b>Fieldbus Features</b>	
Modbus RTU	2-wire Master/Slave

<b>Power Supply Voltage</b>	
24 ± 20% Vdc	
Power consumption	6W

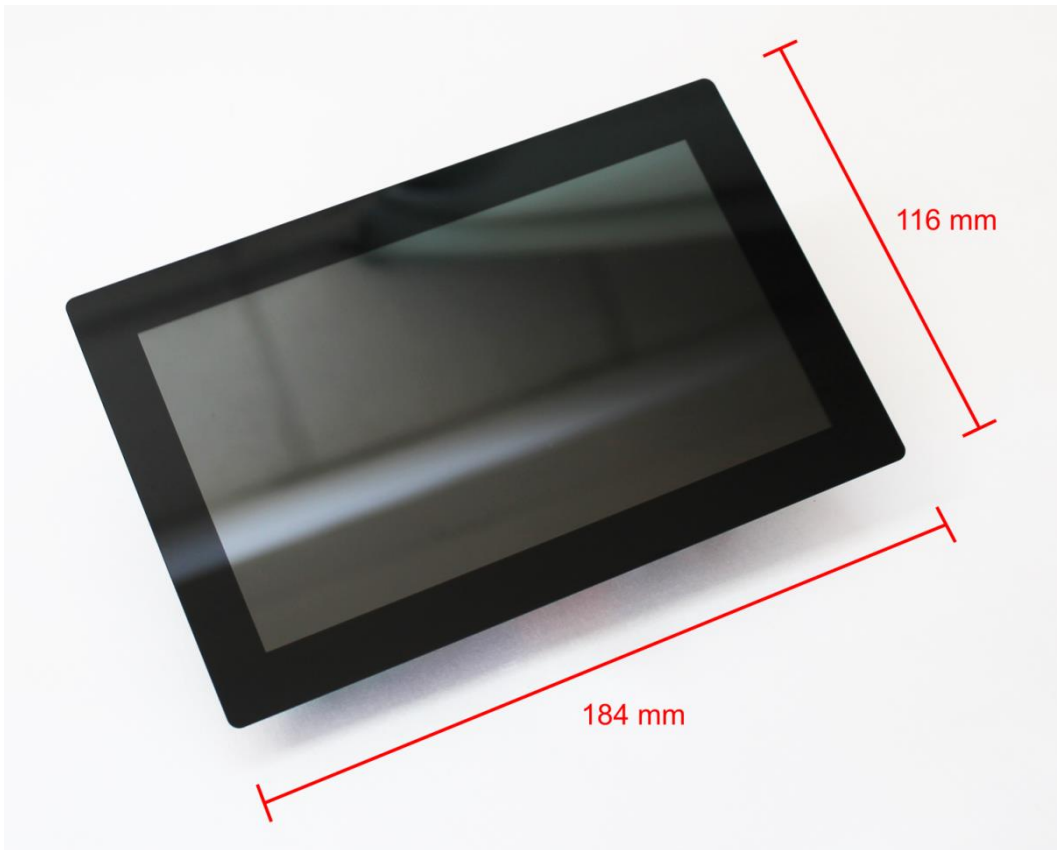
**Electromagnetic compatibility**

Reference standard: IEC 61131-2:2017

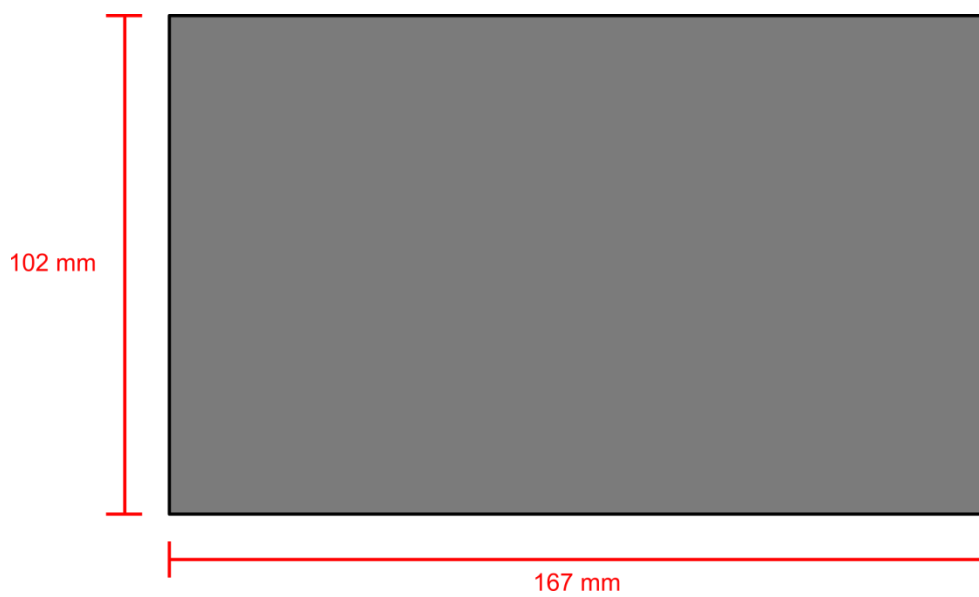
Precautions: USB cable < 1 m; LAN and serial cables < 30 m.

## 2 Mechanics

### 2.1 External Dimensions



### 2.2 Drilling Template



### 2.3 *Depth*



### 2.4 *Mounting*

The TP4070 OEM is equipped, on the rear side of the frame, with a double-sided adhesive tape allowing direct panel mounting without screws or brackets. Remove the protective film from the adhesive tape and insert the panel into the designated opening.

**Note:** Fixing strength may vary depending on the type of application, environment, and especially the supporting structure on which the glass is installed. The double-sided adhesive tape ensures excellent adhesion on flat CNC-machined aluminum and steel surfaces. For non-perfectly flat surfaces (e.g., plastic) or applications subject to humidity and/or vibration, **it is recommended to integrate the fixing with flexible sealant** Loctite 9220x310ml Teroson MS 9220.

### 3 TP4070 OEM Wiring

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

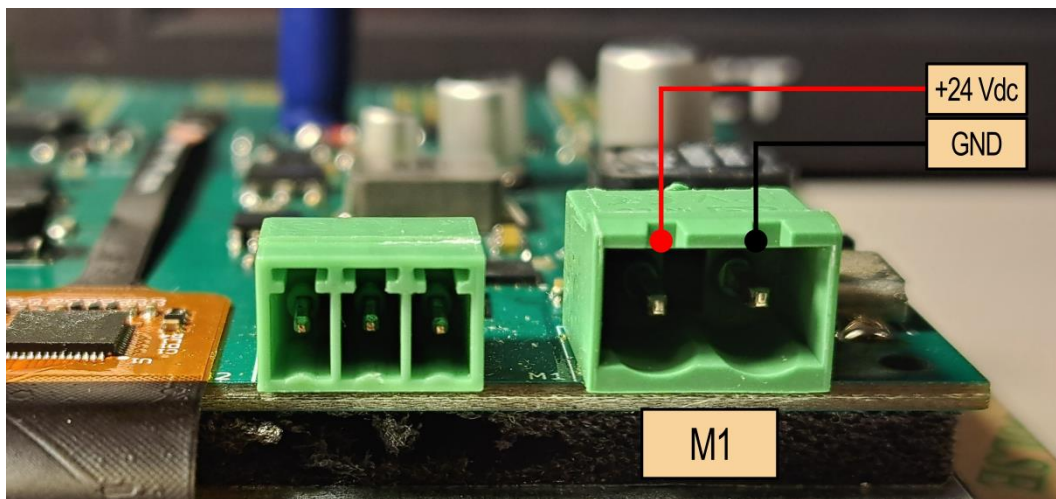


Table 2

ID	TP4070 OEM	
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

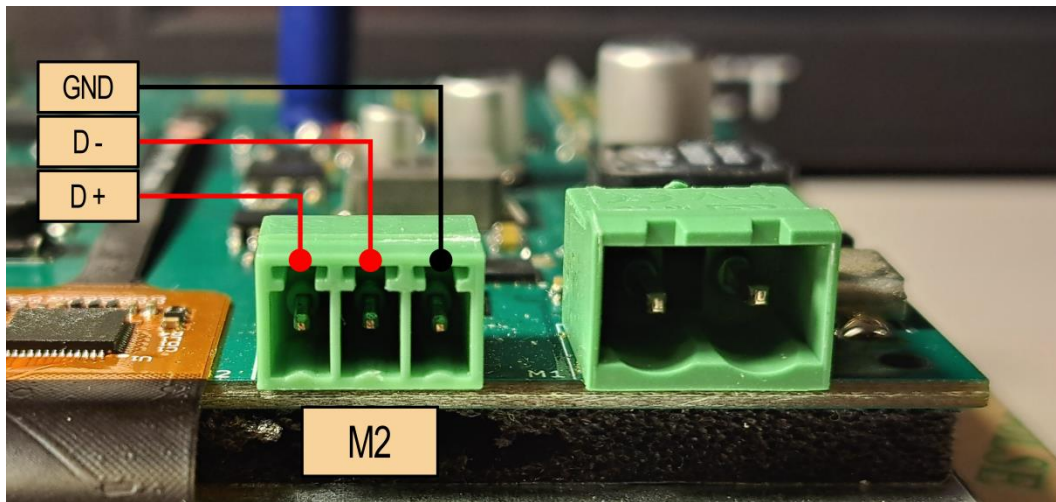
#### 3.1 Power Supply

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



3.2 **RS485 Serial**

The TP4070 OEM 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 OEM power supply, the installation of a 2 A 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 OEM 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 OEM 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 OEM and a personal computer can be either straight-through or crossover.