


Linux panel PC Model LPC4190 USER MANUAL



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INDEX

- 1 Introduction..... 2
 - 1.1 Staff qualification..... 2
 - 1.2 Symbols..... 2
 - 1.3 Safety 3
 - 1.4 Characteristics..... 4
- 2 Mechanics 5
 - 2.1 Drilling template 5
 - 2.2 Depth..... 5
- 3 LPC4190 Wiring..... 6
 - 3.1 Power supply..... 6
 - 3.2 Digital inputs..... 7
 - 3.3 Digital outputs..... 7
 - 3.4 RS485 Serials..... 8
 - 3.5 Terminal block tip size M2..... 8
 - 3.6 Isolations 8
 - 3.7 Fuses..... 8
 - 3.8 Peripherals..... 9
 - 3.8.1 USB 9
 - 3.8.2 Ethernet 9

1 Introduction

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

1.1 Staff qualification

The products described in this manual are to be used exclusively by personnel with experience in programming, or technicians specialized in the use of electrical devices. MECT Srl declines all responsibility for malfunctions and damages caused by improper use of MECT devices, due to failure to comply with the information contained in this manual. MECT Srl has a technical assistance laboratory.

1.2 Symbols

**Danger**

Please follow this information to protect people from harm.

**Warning**

Please follow this information to protect your device.

**Attention**

Conditions that must be observed for a more effective installation.

**ESD (Electrostatic Discharge)**

Warning: Possibility of damage to components due to electrostatic discharges.

**Note**

Steps to follow for a correct installation.

**Additional Information**

1.3 Safety

**Attention**

Turn off devices before working on terminals
ESD (Electrostatic Discharge)



The modules are equipped with electronic components that can be damaged by electrostatic discharge. Whenever you handle the modules, make sure that the environment is well grounded.

The instrument does not have an ON-OFF switch and an internal fuse, but it switches on immediately after supplying the correct supply voltage (check the supply voltage value indicated on the instrument label under the heading “Power”). Provide a power supply line that is as direct as possible and separate from the line that supplies the power elements.

For safety reasons, it is necessary to provide a two-phase disconnect switch with fuse located near the appliance and easily accessible by the operator.

Avoid having power elements (contactors, motors, drives, etc.), excessive humidity, heat sources and corrosive gases in the same panel.

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

1.4 Characteristics

Broadcom BCM2711 SoC with a 1.5 GHz 64-bit quad-core ARM Cortex-A72 microprocessor system.

Table 1

| Hardware Features | |
|--|---|
| Processor | Broadcom BCM2711 SoC with a 1.5 GHz 64-bit quad-core ARM Cortex-A72 |
| RAM | 2GB (4GB or 8GB options) |
| eMMC | 8GB (16GB or 32GB options) |
| Real Time Clock | Present with rechargeable buffer battery/supercapacitor |
| Screen 19" | TFT 1920 x 1080 pixels 16M colors |
| Touch screen | Capacitive |
| Ethernet 0 | 1Gb/s in auto-recognition |
| Ethernet 1 | 10Mbit/s - 100Mbit/s in self-recognition |
| USB 1 | Host 2.0 |
| USB 2 | Host 2.0 |
| RS485 – SERIAL PORT 0 on screen printing | 2-wire serial - /dev/ttyAMA3 (RTS su GPIO7) |
| RS485 – SERIAL PORT 3 on screen printing | 2-wire serial - /dev/ttyAMA4 (RTS su GPIO11) |
| Micro SD | NA |
| Case | Metallic |
| Protection level | IP65 |
| Software Features | |
| Operating system | Linux Raspberry Pi OS 13 (Trixie) 64 bit |
| Supply voltage | |
| 12 ÷ 36VDC | |
| Power absorbed | 12W digital outputs excluded |

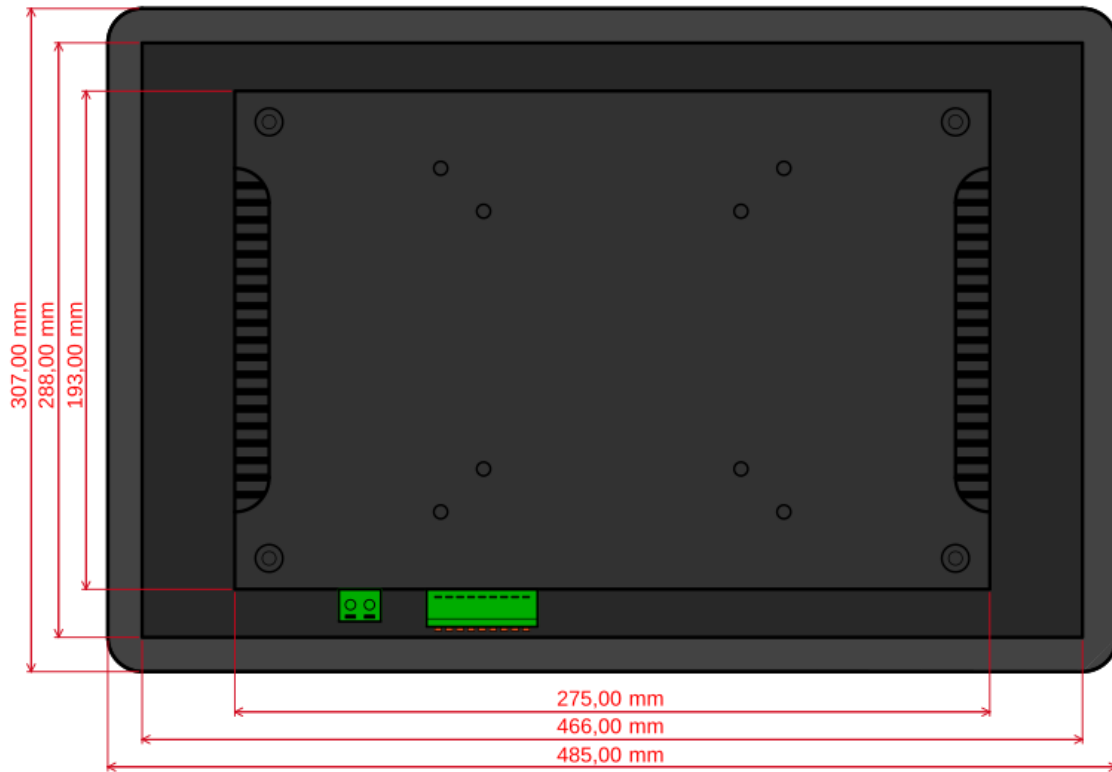
Electromagnetic compatibility

Reference standard: IEC61131-2:2017

Precautions: USB cable < 1m; Digital I/O < 3m; LAN and serial < 30m.

2 Mechanics

Metal case.



2.1 Drilling template



2.2 Depth



3 LPC4190 Wiring

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

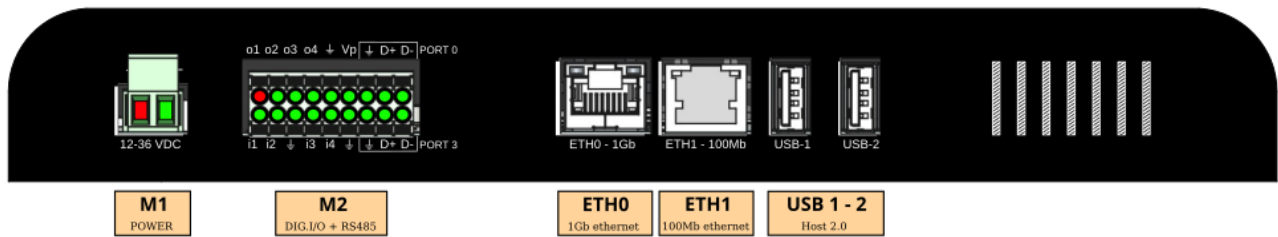


Table 2

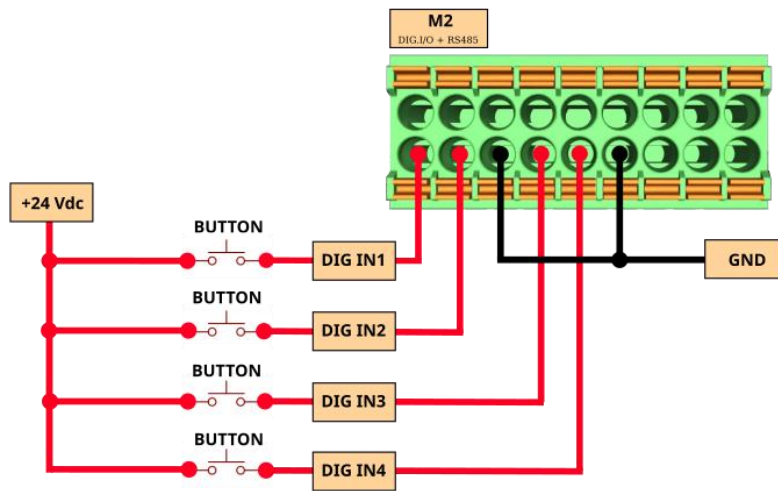
| ID | LPC4190 | |
|-------|---|---|
| M1 | Panel power supply | 24Vdc 600mA |
| M2 | | <p>1 line 4 output active-high</p> <p>2 line 5 output active-high</p> <p>3 line 6 output active-high</p> <p>4 line 7 output active-high</p> <p>5 GND</p> <p>6 VPOT</p> <p>7 GND</p> <p>8 D0 + (UART3) /dev/ttyAMA3</p> <p>9 D0 – (UART3) /dev/ttyAMA3</p> <p>10 line 0 input active-high</p> <p>11 line 1 input active-high</p> <p>12 GND</p> <p>13 line 2 input active-high</p> <p>14 line 3 input active-high</p> <p>15 GND</p> <p>16 GND</p> <p>17 D1 + (UART4) /dev/ttyAMA4</p> <p>18 D1 – (UART4) /dev/ttyAMA4</p> |
| ETH0 | Ethernet 1Gb (IP default in DHCP) | Bit rate max: 1Gbit/sec |
| ETH1 | Ethernet 100Mb (IP default:192.168.5.211) | Bit rate max: 100Mbit/sec |
| USB 1 | USB A 1 | Host 2.0 |
| USB 2 | USB A 2 | Host 2.0 |

3.1 Power supply

If the panel is powered at the nominal voltage of 24Vdc, a power supply that can supply at least 2A is required.

3.2 Digital inputs

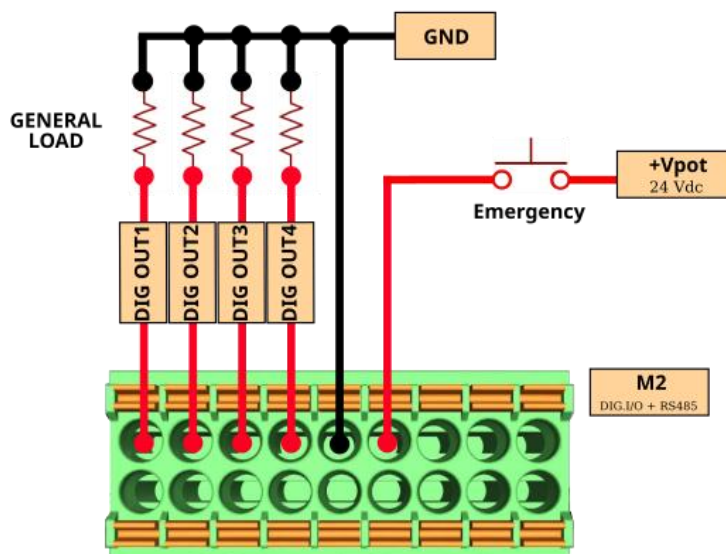
The LPC4190 panel PC has 4 PNP digital inputs available. The connection is shown in the following figure.



3.3 Digital outputs

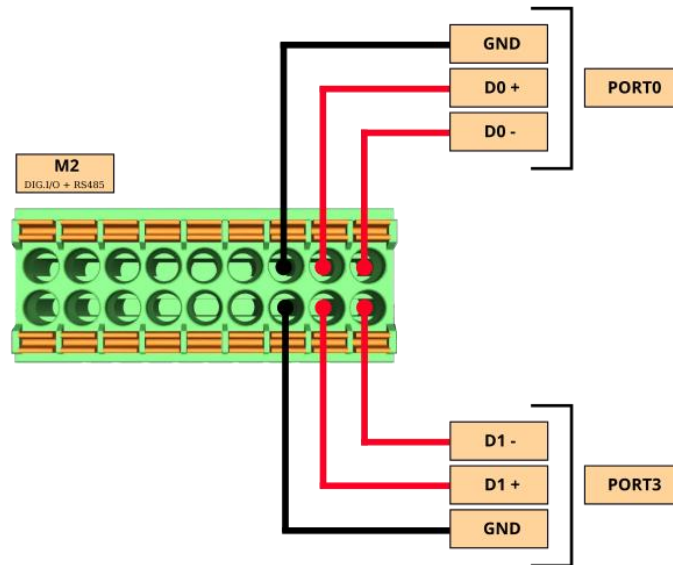
The LPC4190 panel PC has 4 PNP digital outputs available. The connection is shown in the following figure.

Note: The power supply for the digital outputs must be brought to terminal 6.



3.4 RS485 Serials

The LPC4190 panel PC has 2 RS485 channels available. The connection is shown in the following figure.



3.5 Terminal block tip size M2

For wiring on terminal block M2, which contains digital inputs and outputs as well as RS485, we recommend using the following socket terminals:

1. conductor diameter 0.34mm² and terminal length 10mm
2. conductor diameter 0.5mm² and terminal length 10mm
3. conductor diameter 1mm² and terminal length 10mm

3.6 Isolations

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

3.7 Fuses

The system does not provide internal fuses, however, to protect the input stage of the LPC4190 panel PC power supply, it is recommended to insert a 2A fuse.



Attention

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

3.8 Peripherals

3.8.1 USB

The LPC4190 panel PC features two USB 2.0 host ports , which can be used for:

- Save process data
- Connect peripherals with USB interface such as printers, mice, keyboards, barcode scanners, etc.
- Software Updates

3.8.2 Ethernet

The LPC4190 panel PC is equipped with two Ethernet ports, one 10/100Mbit/s in autonegotiation (default static IP address 192.168.5.211), the other 1Gbit/s (default IP address in DHCP), furthermore the connection cable between the LPC4190 and a personal computer can be either direct or crossed.