## Technical Features

**CONECTABLE PANEL PC 24Vcc**

| | |
|---|---|
| MODEL TYPE | TouchBerry Pi Panel Family |
| Input Voltage | 12 to 24 Vdc ((2.5 A) Polarity protection) |
| Input rated voltage | 24 Vdc |
| Rated Power | 28 W |
| I max. | 1.5 A |
| Size | 7": 22.0 x 15.5 x 6.7<br>10.1": 28.6 x 21.6 x 6.4<br>18.5": 46.2 x 28.7 x 6.8 |
| SRAM | 4/8 GB |
| Communications | I2C, Ethernet, USB (x4), SPI , Wi-Fi, Bluetooth, RTC<br>Select from factory = (Serial TTL/RS-232/RS485 (x2 HALF-Duplex)) |


7" / 10.1"

18.5"


## General Features

| | | |
|---|---|---|
| Power supply voltage | DC power supply | 12 to 24 Vdc |
| Operating voltage range | DC power supply | 11.4 to 25.4 Vdc |
| Power consumption | DC power supply | 28 W MIN. |
| External power supply | Power supply voltage | 24 Vdc |
| Dielectric strength | 1500 Vac at 50/60 Hz for one minute with a leakage current of 10mA max. | |
| Shock resistance | 50 m/s² in the X, Y and Z direction 3 times each, complying with the IEC-60068-2-27:2008 standard. | |
| Ambient temperature (operating) | 0 ° to 45 °C | |
| Ambient humidity (operating) | 10 % to 90 % (no condensation) | |
| Ambient environment (operating) | With no corrosive gas | |
| Ambient temperature (storage) | -20 ° to 60 °C | |
| Power supply holding time | 2 ms min. | |
| Weight | 1137 g (7") / 1673 g (10.1") / 4652 g (18.5") | |

## Touch Screen Specifications

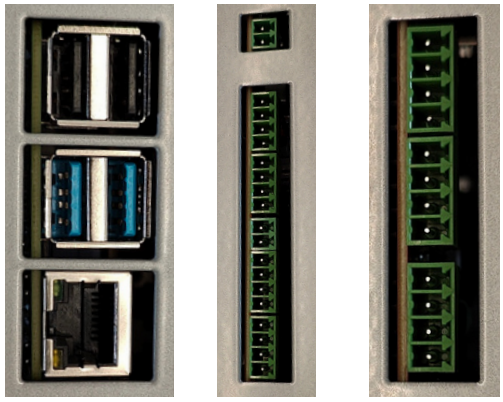
| | |
|---|---|
| Technology | Capacitive Touch Panel, 900 Nits. RTD2662 controller chip. |
| Image Resolution | 7": 1024 x 600<br>10.1": 1280 x 800<br>18.5": 1980 x 1080 |
| Format | 16:9 |
| Size | 7" / 10.1" / 18.5" |
| Display Technology | TFT Type |
| Screen Type | IPS Display |

Bottom side Left side Right side

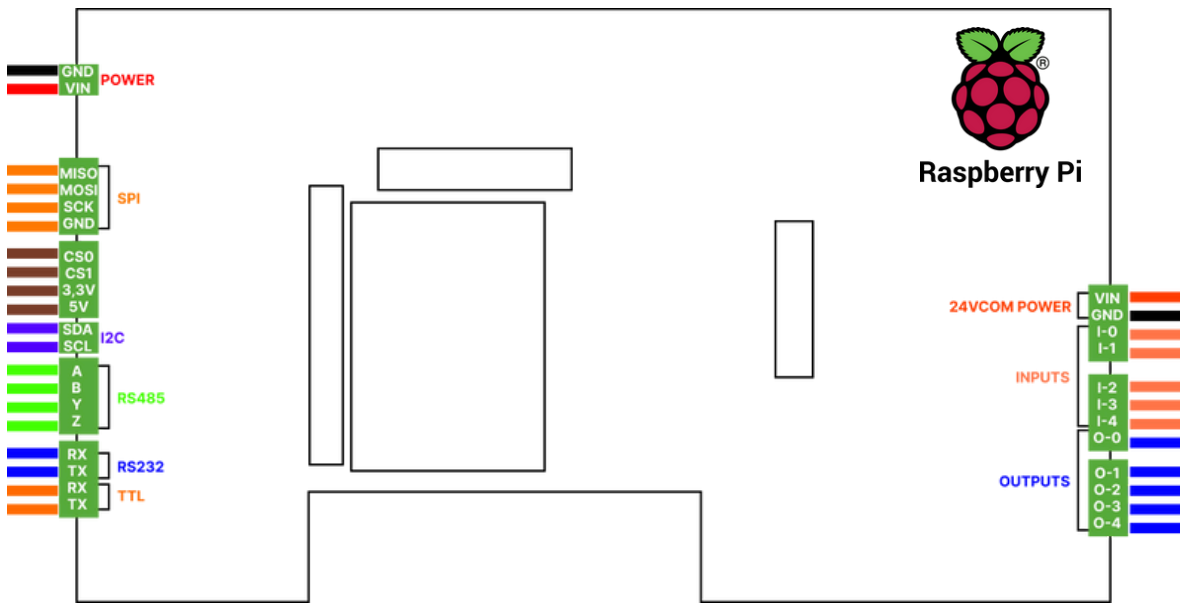
USB 2.0

USB 3.0

Ethernet



## Pinout Scheme



## Additional Specifications

| | |
|---|---|
| **UPS Service** | GPIO_23: RPI's shutdown detector<br>GPIO_24: RPI's power failure warning |
| **RS-485 / RS-232 / Serial TTL** | Select your mode from Factory |
| **SPI Voltage Level** | Configurable by jumper, can be 3,3V or 5V |
| **I2C Voltage Level** | Configurable by jumper, can be 3,3V or 5V |
| **Screen's Power Supply** | 12V @ 2 A |
| **Screen Controller** | GT9271 |

## Reference Table

| Model | RAM Memory | |
|---|---|---|
| | 4 GB RAM | 8 GB RAM |
| 7" | 037003XX0000 | 037004XX0000 |
| 10.1" | 037103XX0000 | 037104XX0000 |
| 18.5" | 037203XX0000 | 037204XX0000 |

## Notes

1. The "**XX**" in the reference number indicates key specifications:
   - **First Character:** Expansion module on Slot 1.
   - **Second Character:** Expansion module on Slot 2.
2. The analog inputs have a **3% tolerance** and a **12-bit resolution** input reference for each analog input expander.

## Working with I/Os

Interaction with I/Os is possible through Bash Scripts, Python Scripts and Terminal commands with easy syntax. Consult the User Guide for more information about this type of scripts.

## I/Os distribution

Inputs:
- 3 Digital Inputs.
- 2 Analog Inputs, configurable by jumpers to be:
  - **0 - 10 Vdc** or **4 - 20 mA**

Outputs:
- 5 Digital Outputs.
- Must be powered between 12-24 Vdc in its correspondent pins.

## I/Os Ranges

- Analogic Input voltage: 0 - 10 Vdc.
- Analogic Input current: 4 - 20 mA.
- Digital I/Os voltage: 5 - 24 Vdc.
- Digitial I/Os current: 250 mA.



## Screen Configuration Menu *

| | |
|---|---|
| **Brightness** | Brightness can be adjusted in the Color Menu that can be accessed with the **first button** located behind the screen |
| **Contrast** | Contrast can be adjusted in the Color Menu that can be accessed with the **first button** located behind the screen |
| **Saturation** | Saturation can be adjusted in the Color Menu that can be accessed with the **first button** located behind the screen |
| **Sound** | Sound can be adjusted using the **two last buttons** located behind the screen. |
| **Sleep Mode** | The screen can be put in Sleep Mode using the **second button** located behind the screen. Pressing the button again will wake up the screen |
| **Display Port** | The display port can be changed to HDMI or VGA using the **middle button** located behind the screen.<br>Industrial Shields Panel PC does not support VGA connection as VGA port is not connected. |

* The Screen Configuration Menu is only available on the 7" and 10.1" Touchberry Pi Panel PCs. This feature is not available on the 18.5" model.

## Main changes compared to previous versions

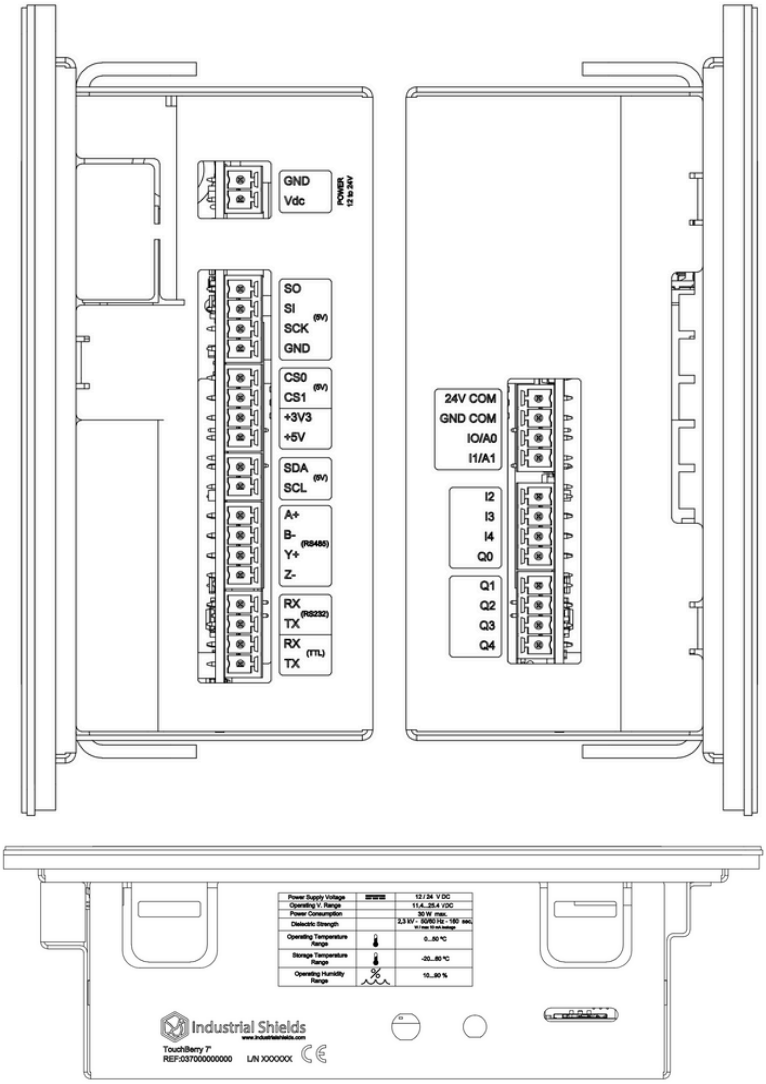
- Introduction of **I/Os** in the new TouchBerry 10.1" Panel PC. **All the model have I/Os**.
- 5 Digital Ouputs, 3 Digital Inputs and 2 Analog Inputs overall.
- New communications have been added: **RS-485 HD/FD**, **RS232** and **Serial TTL**.
- The Screen is now **Capacitive**.

## x1 EXPANSION BOARD SLOTS

Customize one additional communication expansion on your Panel PC and prepare your custom-made project

# TouchBerry Pi Panel PC 7”

## Serigraphy

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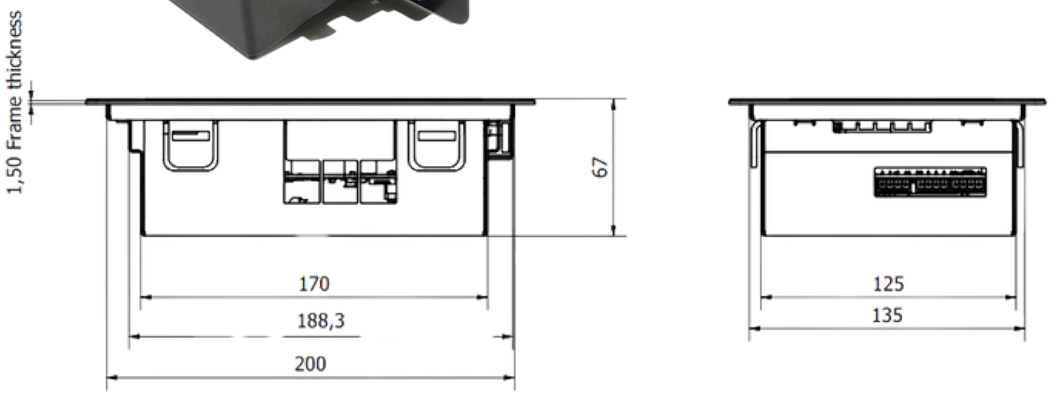
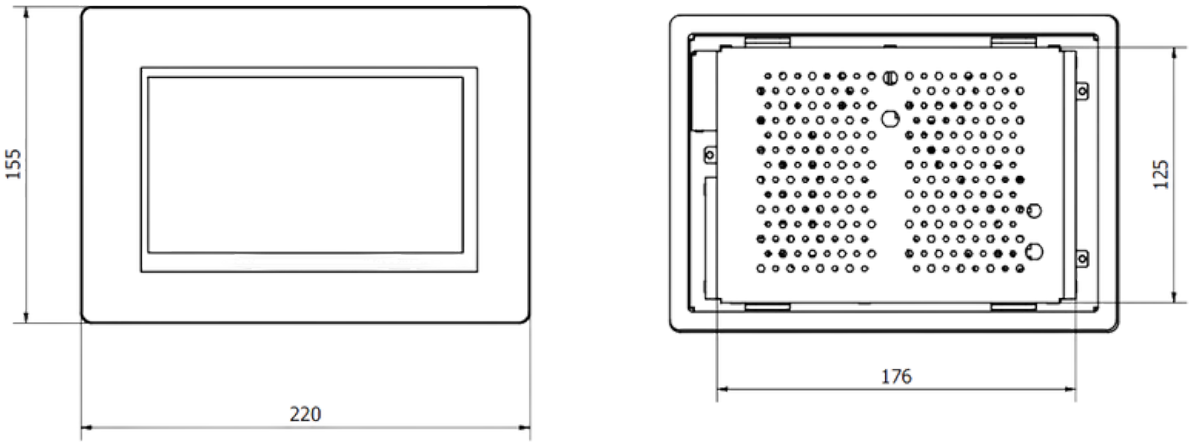
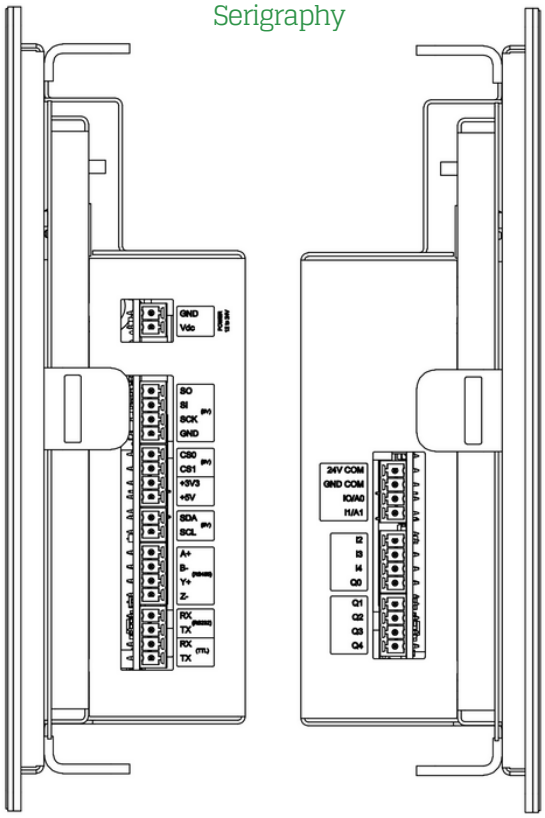
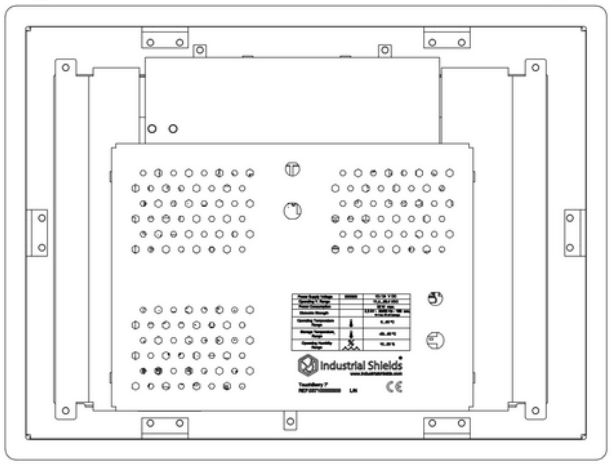


# TouchBerry Pi Panel PC 10.1”

## Serigraphy

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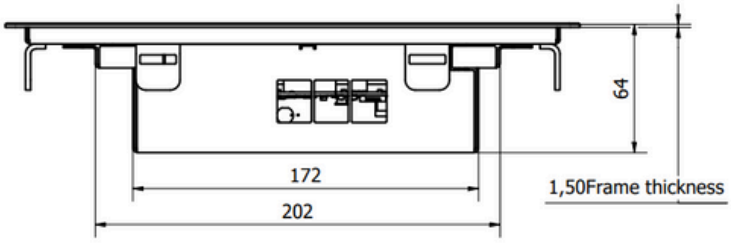
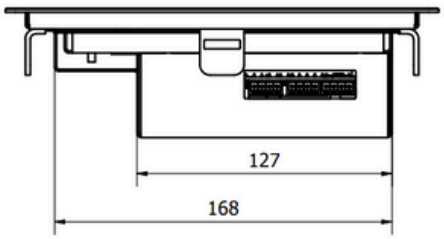
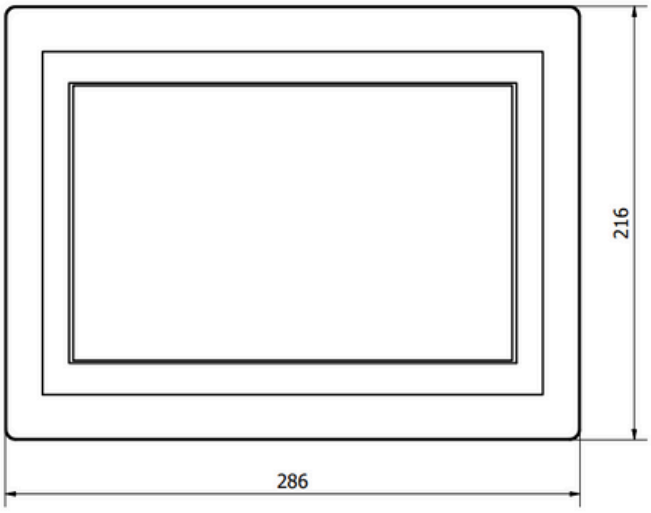
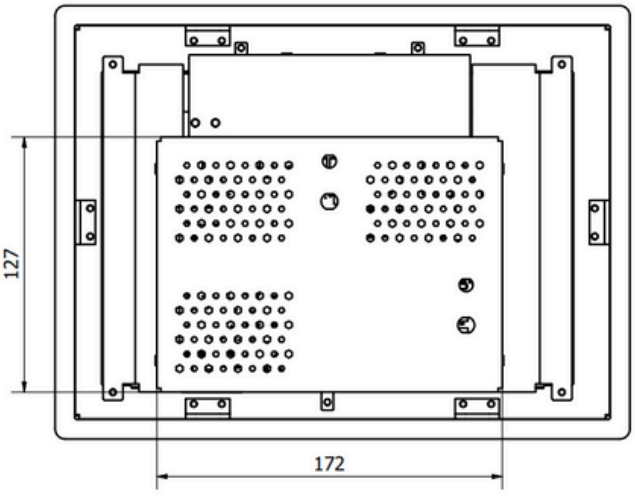


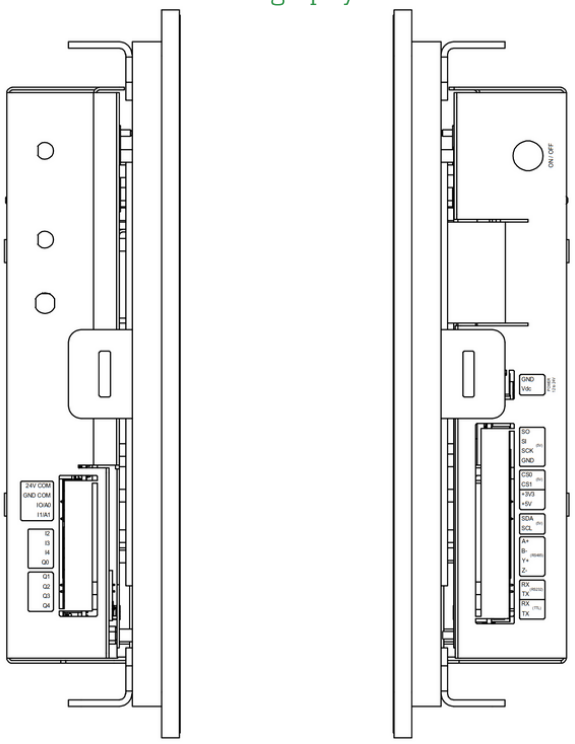



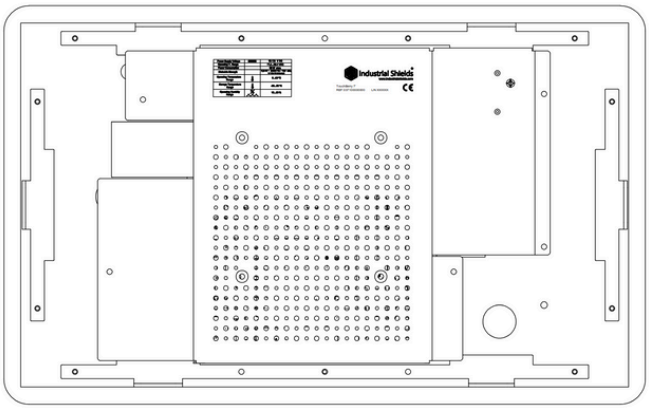



# TouchBerry Pi Panel PC 18.5 ”

## Serigraphy



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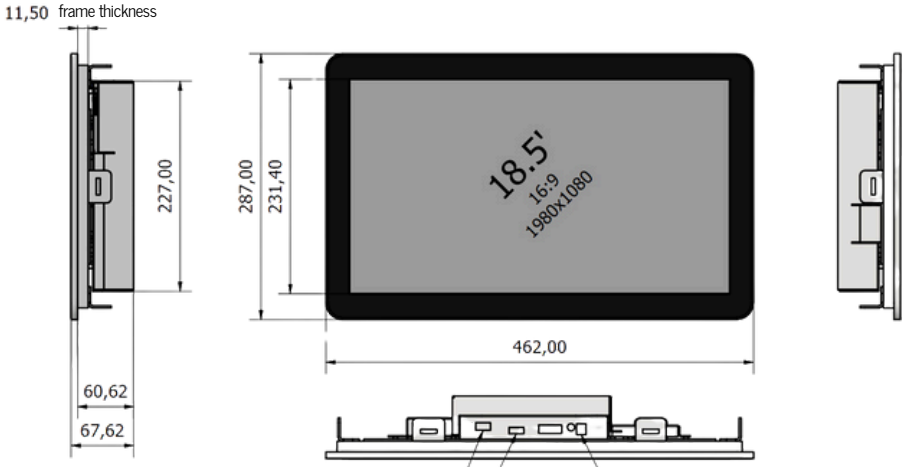


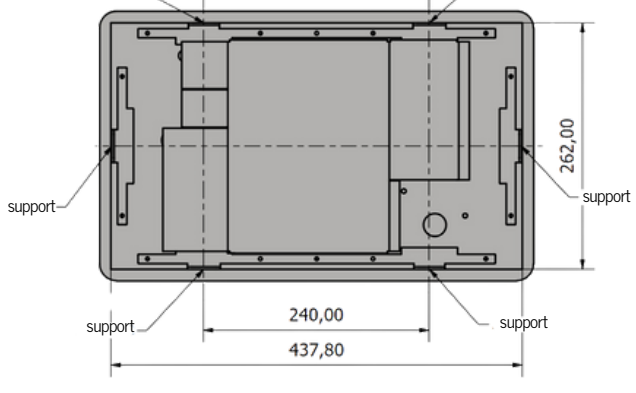


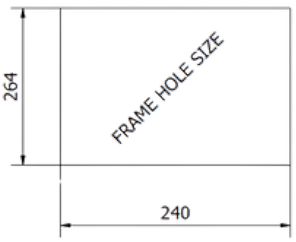

## Performance Specifications

| | |
|---|---|
| **Raspberry Board** | Raspberry Pi 4 B |
| **I/O control method** | Combination of the cyclic scan and immediate refresh processing methods. |
| **Programming language** | Linux applications: Bash Scripts, Python and more!. |
| **CPU** | Broadcom BCM2711, Quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz |
| **Website** | https://www.raspberrypi.org/ |

### Panel PC Access

How to access to the Panel PC's Raspberry:

- Linux users: using ssh specifying the IP address: 10.10.10.20/24 (eth0).

- Windows users: we recommend to use PuTTY ssh client. The IP address have to be specified: 10.10.10.20/24 (eth0).

You can download the latest release of PuTTY here: https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html

### UPS Shield

This Panel PC has integrated an UPS Shield, a device which provides an anti-voltage drop protection system designed to avoid data corruption when the current is suddenly cut off.

### RTC

This Panel PC has integrated the DS3231 Real Time Clock model which is powered by a button battery (CR1216 or CR1220).

### Outputs

After a reboot/power disconnection and reconnection, the UPS will be activated and, until the device is fully initialized again (it will take some seconds), the outputs will maintain their last activation state. For more information about that consult the User Guide.

## Warnings

Unused pins should not be connected. Ignoring the directive may damage the controller.

Before using this product, it is the responsibility of the user to read the product's User Guide and all accompanying documentation.

Industrial Shields PLCs must be powered between 12Vdc and 24Vdc. If a higher voltage is supplied to the equipment can suffer irreversible damage.

Maintenance must be performed by qualified personnel familiarized with the construction, operation, and hazards involved with the control.

Maintenance should be performed with the control out of operation and disconnected from all sources of power.

The Industrial Shields Family PLCs are Open Type Controllers. It is required that you install the Panel PC in a housing, cabinet, or electric control room. Entry to the housing, cabinet, or electric control room should be limited to authorized personnel.

Inside the housing, cabinet or electric control room, the Industrial Shields Panel PLC must be at a minimum distance from the rest of the components of a minimum of 25 cm, it can be severely damaged.

Failure to follow these installation requirements could result in severe personal injury and/or property damage. Always follow these requirements when installing Panel family PCs.

In case of installation or maintenance of the Panel PC please follow the instructions marked in the Installation and Maintenance section on the User Guide.

Do not disconnect equipment when a flammable or combustible atmosphere is present.

Disconnection of equipment when a flammable or combustible atmosphere is present may cause a fire or explosion which could result in death, serious injury and/or property damage.

Inside the encapsulated, there are supercapacitors of 25F which can be dangerous. Be careful with them.

This equipment does **not include galvanic isolation between the grounds** of the different systems. This means that if an external device or sensor that shares the same ground reference (GND) with the system is connected, any potential difference between these grounds could damage the connected components. To avoid issues with interference, ground loops, or damage to external equipment, ensure that all connected devices share the same ground reference or use systems with appropriate isolation. The recommendations in this case are:

- **Connection Review:** Verify that all ground connections are properly made and that there are no significant potential differences between them.
- **Use of Isolation:** Consider using **galvanic isolators** or **isolation transformers** if it is necessary to connect equipment with different ground references.

## Symbology

| | |
|---|---|
| ⎓ | Indicates that the equipment is suitable for direct current only; to identify relevant terminals |
| ~ | Indicates that the equipment is suitable for alternating current only; to identify relevant terminals |
| ⎍ | To identify the control by which a pulse is started. |
| ⏚ | To identify an earth (ground) terminal in cases where neither the symbol 5018 nor 5019 is explicily required. |
| ⊗ | To identify the switch by means of which the signal lamp(s) is (are) switched on or off. |
| CE | CE marking indicates that a product complies with applicable European Union regulations |
| ⚠ | Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury |
| ϟ | To indicate hazards arising from dangerous voltages |

## Technical Support

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