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 10.1": 28.6 x 21.6 x 6.4 18.5": 46.2 x 28.7 x 6.8
SRAM	4/8 GB
Communications	I2C, Ethernet, USB (x4), SPI , Wi-Fi & Bluetooth*, RTC Select from factory = (Serial TTL/RS-232/RS485 (Half-Duplex or Full Duplex))

*Not included by default. Talk with the manufacturer before the purchase if you want to include them.

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	2000V for one minute with a leakage current of 5mA 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 10.1": 1280 x 800 18.5": 1980 x 1080
Format	16:9
Size	7" / 10.1" / 18.5"
Display Technology	TFT Type
Screen Type	IPS Display
Screen's Power Supply	12V @ 2 A
Screen Controller	GT9271

Expansion Board Slot

Customize one additional communication expansion on your Raspberry Pi Panel PC:

- **SARA-R412M-02B-03 4G LTE:**
  - **Model:** SARA-R412M-02B-03
  - **Type:** 2G EGPRS, GSM/4G LTE, M1/NB1 (Narrow-Band)
  - **Key Features:** LTE FDD Bands (2/3/4/5/8/12/13/20/26/28), 2G Bands (850-1900MHz), LTE Category M1/NB1, GPRS Multi-slot class 33, etc.
- **LoRa:**
  - **Model:** RN2483 (for Europe/Asia), RN2903 (for NA/Australia)
  - **Type:** LoRa
  - **Key Features:** On-board LoRaWAN protocol stack, ASCII command interface over UART, Castellated SMT pads for easy PCB mounting, Device Firmware Upgrade (DFU) over UART, etc.
- **CANBus:**
  - **Model:** MCP2515
  - **Type:** CAN V2.0B
  - **Key Features:** Speed of up to 1 Mb/s, Receive buffer with masks and filters, High-speed SPI interface (10 MHz), Supports extended frame formats, etc.

Raspberry Pi 4 Pinout Connector

	NC	1	2	Vin	
SDA	GPIO 2	3	4	Vin	
SCL	GPIO 3	5	6	GND	
04	GPIO 4	7	8	GPIO 14	TXD
	GND	9	10	GPIO 15	RXD
RE	GPIO 17	11	12	NC	
DE	GPIO 27	13	14	GND	
03	GPIO 22	15	16	GPIO 23	To Attiny
	NC	17	18	GPIO 24	From Attiny
MOSI	GPIO 10	19	20	NC	
MISO	GPIO 9	21	22	GPIO 25	RST
SCLK	GPIO 11	23	24	GPIO 8	CS0
	GND	25	26	NC	CS1
	NC	27	28	GPIO 1	INT
02	GPIO 5	29	30	GND	
01	GPIO 6	31	32	GPIO 12	RS232TX
RS232RX	GPIO 13	33	34	GND	
00	GPIO 19	35	36	GPIO 16	RXTTL
TXTTL	GPIO 26	37	38	GPIO 20	I2
	GND	39	40	GPIO 21	I3

I2C	SPI	RS-485
RS-232	Serial TTL	UPS
Input	Output	Touch

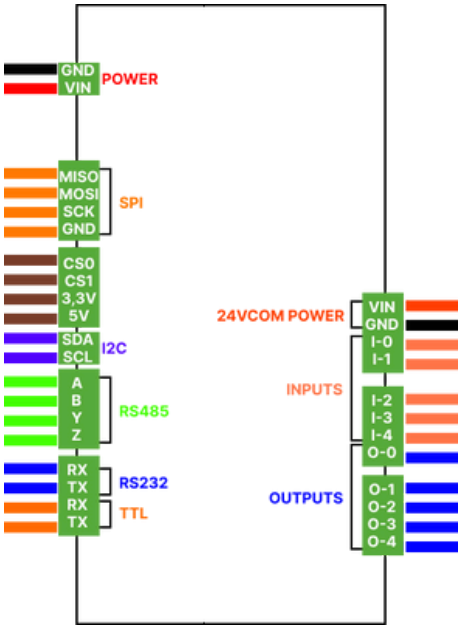
Inputs and Outputs

3 x Digital Inputs
- Voltage range: 5 - 24 Vdc.
- Current: 250 mA.

2 x Analog Inputs
- Configurable via jumpers for 4-20mA or 0-10V
- 3% tolerance and 12-bit resolution

5 x Analog Outputs
- Must be powered between 12-24V

Pinout Scheme



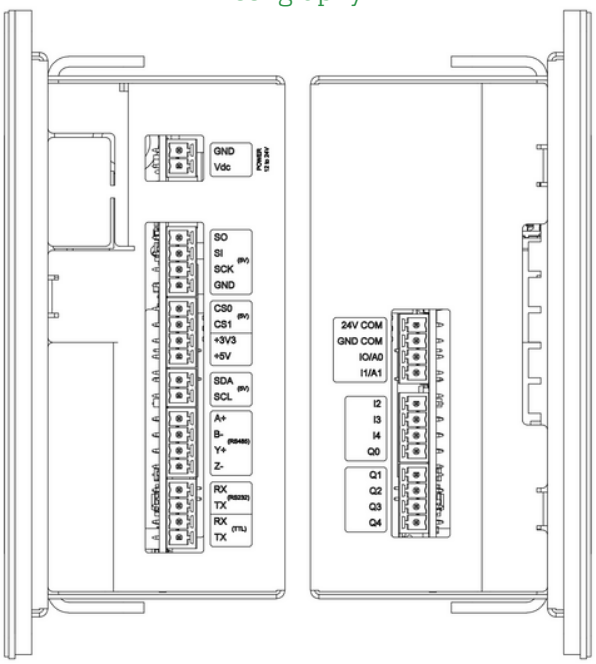
TouchBerry Pi Panel PC 7”

Screen Configuration Menu *

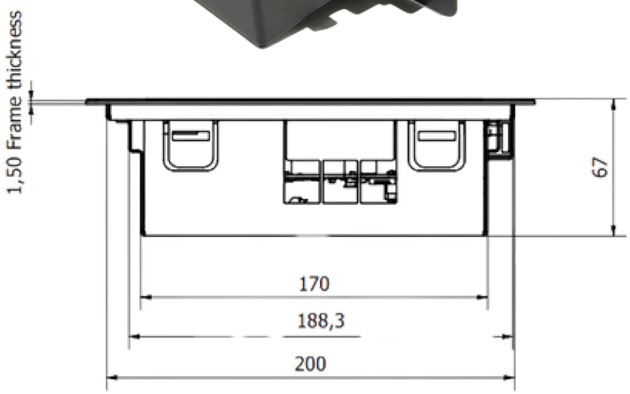
Brightness	Brightness can be adjusted in the Color Menu that can be accessed with the **first button** located behind the screen
Contrast	Contrast can be adjusted in the Color Menu that can be accessed with the **first button** located behind the screen
Saturation	Saturation can be adjusted in the Color 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. Industrial Shields Panel PC does not support VGA connection as VGA port is not connected.

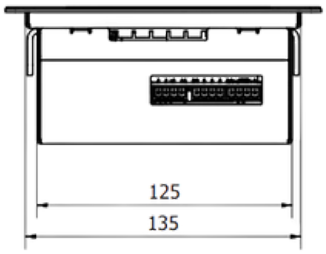
* The Screen Configuration Menu is only available on the 7” Touchberry Pi Panel PC. This feature is not available on the 10.1” or 18.5” model.

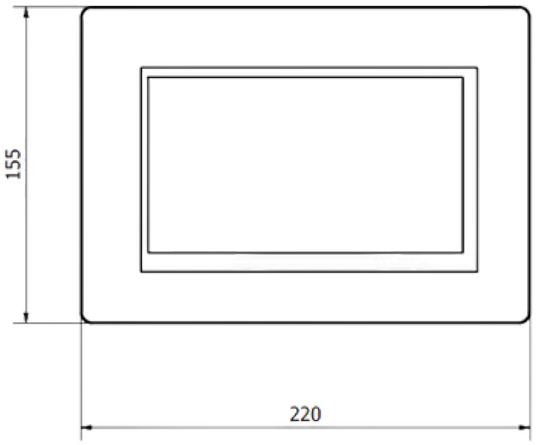
Serigraphy

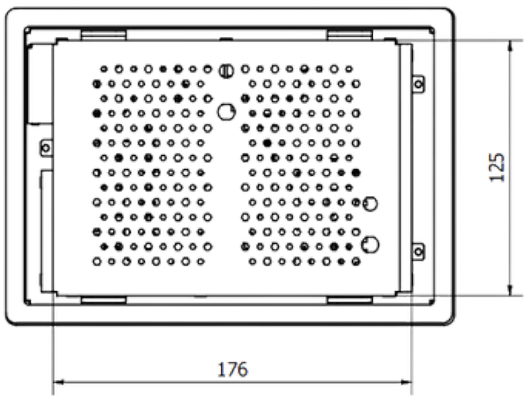


Size



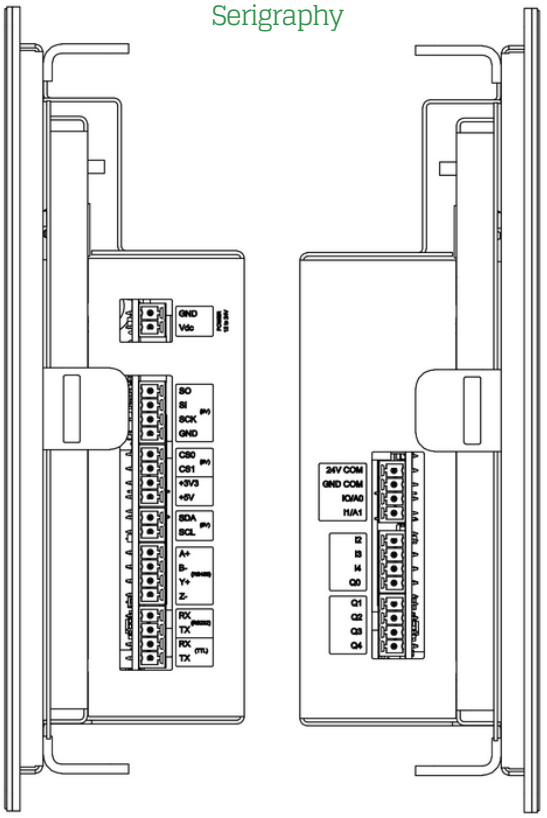


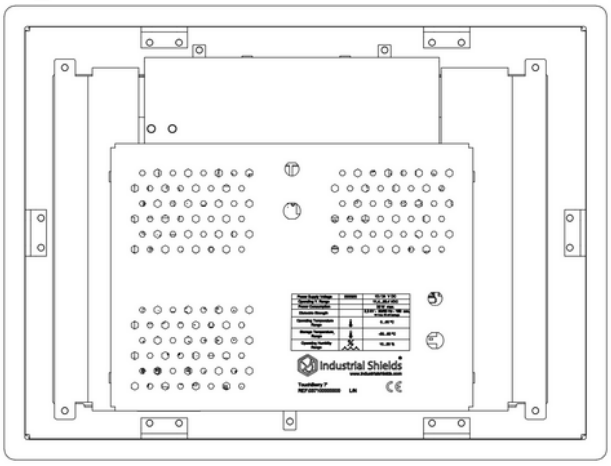




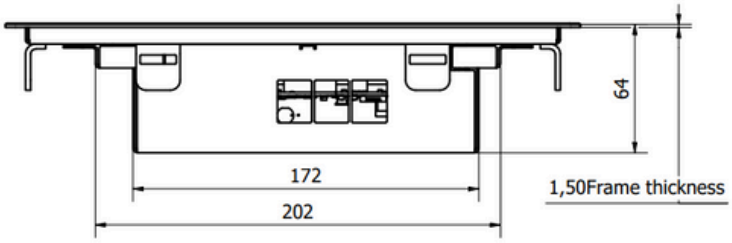
TouchBerry Pi Panel PC 10.1"

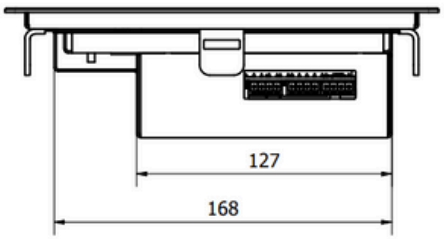
Serigraphy

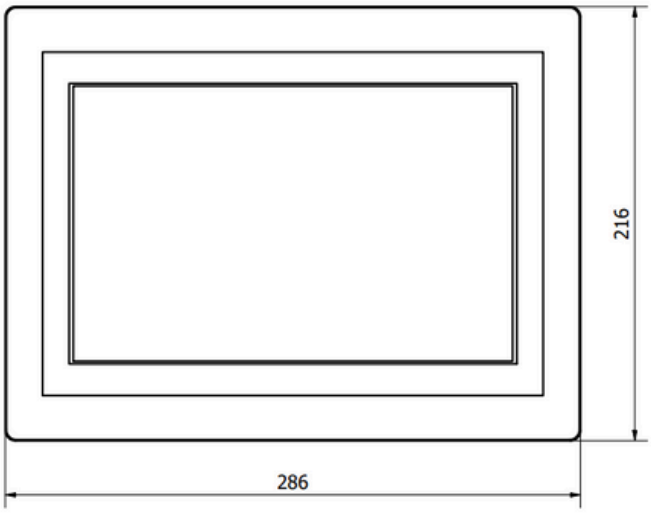


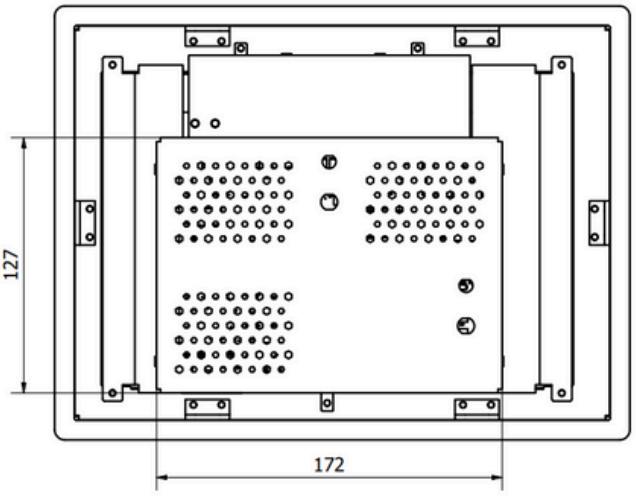


Size



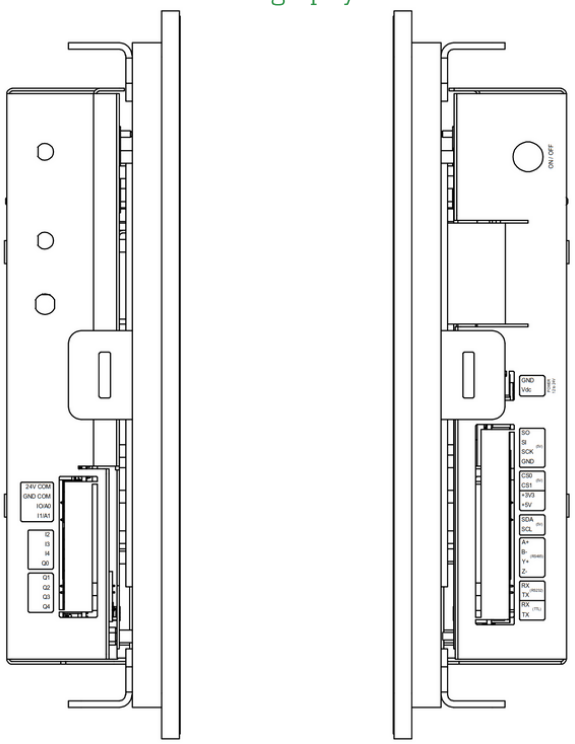


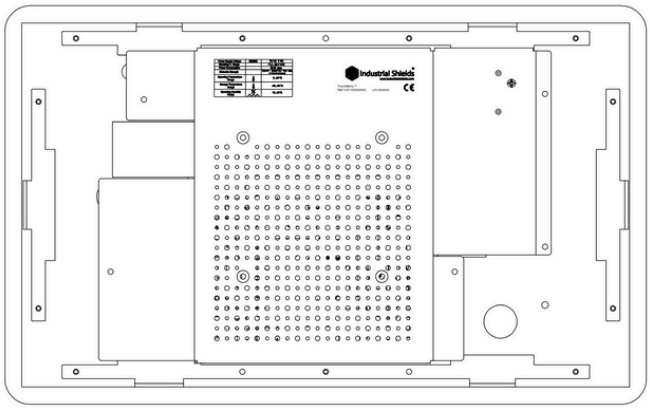




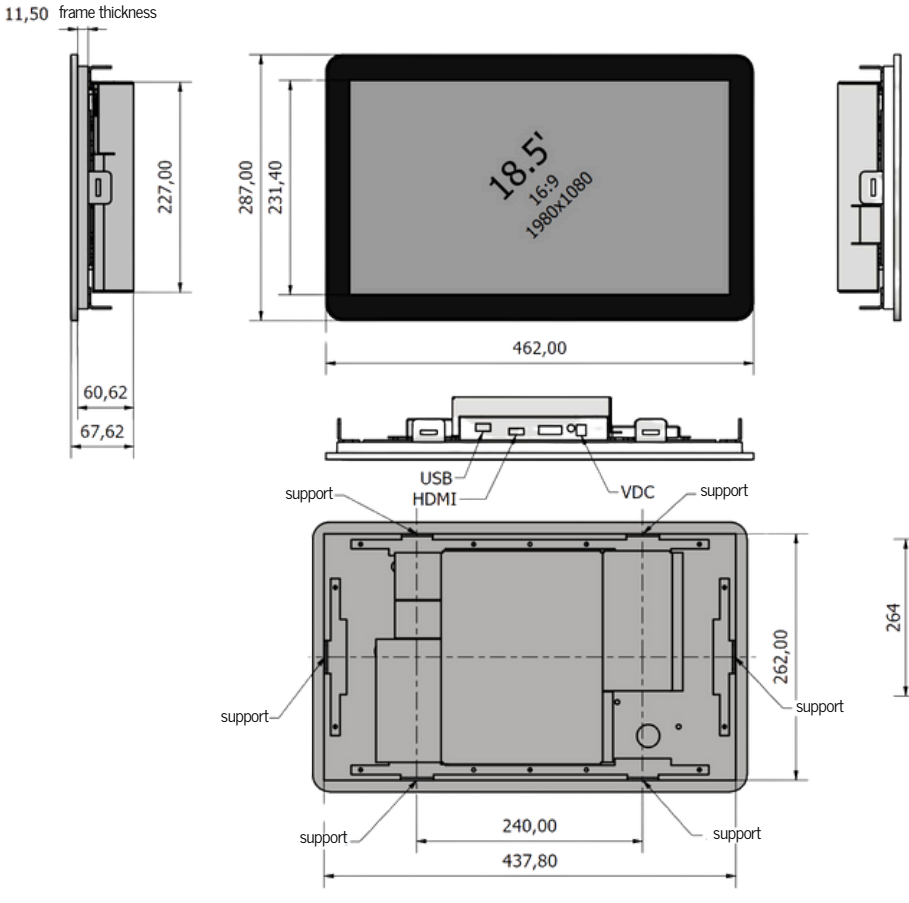
TouchBerry Pi Panel PC 18.5 ”

Serigraphy





Size



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, C++, Node-Red and more!.
CPU	Broadcom BCM2711, Quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz
Website	https://www.raspberrypi.org/

Raspberry Access

How to access to the Touchberry Pi Panel PC:

- Linux users: using ssh specifying the IP address.
- Windows users: we recommend to use PuTTY ssh client. The IP address have to be specified.
  - You can download the latest release of PuTTY here: https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html

UPS Shield

The Touchberry Pi 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

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

References

The references are: 037M0SXYP000

M stands for Device Model:

- M = 1: Model 7"
- M = 2: Model 10.1"
- M = 3: Model 18.5"

S stands for RAM Size:

- S = 3: Model 4GB RAM
- S = 4: Model 8GB RAM

X stands for Expansion Board Slot 1

Y stands for Expansion Board Slot 2

P stands for Protection Grade:

- P = 0: IP20 (Standard)
- P = 1: IP65

Jumper Configurations

The Touchberry Pi Panel PC can be configured with some jumpers:

- SPI Voltage Level Jumper to select between 3,3V and 5V
- I2C Voltage Level Jumper to select between 3,3V and 5V
- Analog Inputs Jumper to select between 4-20mA and 0-10V
- 6 Jumpers to select between RS-485, RS-232 and Serial TTL

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

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 Touchberry Pi 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 Touchberry Pi 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.

Technical Support

You can contact with us using the best channel for you:

support@industrialshields.com

www.industrialshields.com

Visit our Blog, Forum or Ticketing system

Use our chat service

Check the user guides

Visit our Channel

DataSheet Rev. 20250321