# Data Sheet

# ESP32 Open IoT and IIoT Gateways (P01 & P02)

Open IoT Gateway is also called as a PAC (Programmable Automation Controller). PAC products combine the functionality and openness of a PC, the reliability of a programmable logic unit like PLC and the intelligence of I/O modules with flexible software tools for a wide range of applications from data acquisition, process control, motion control to energy and building management.

Our PAC family includes FreeRTOS PACs and MicroPython PACs for different requirements in OS, CPU and development platform.

The P01 and P02 Gateways are based on **ESP32 Xtensa LX6**.

**P01 P02**


**Features**

- **Open IoT gateway**
- **ESD protection for the RS485 data line**
- **Power supply: +12 to +30 VDC**
- **Transmission speed up to 115200 bps**
- **Tx, Rx and power LED indicators**
- **RS485 embedded termination 120 ohm**
- **Optional WiFi**
- **Operating temperatures: -40°C to +75°C**
- **DIN-rail mounting**
- **Dimensions: 90x56.4x22.5 mm**
- **3 years warranty**
- **Customization of OEM is welcomed**

# Specifications

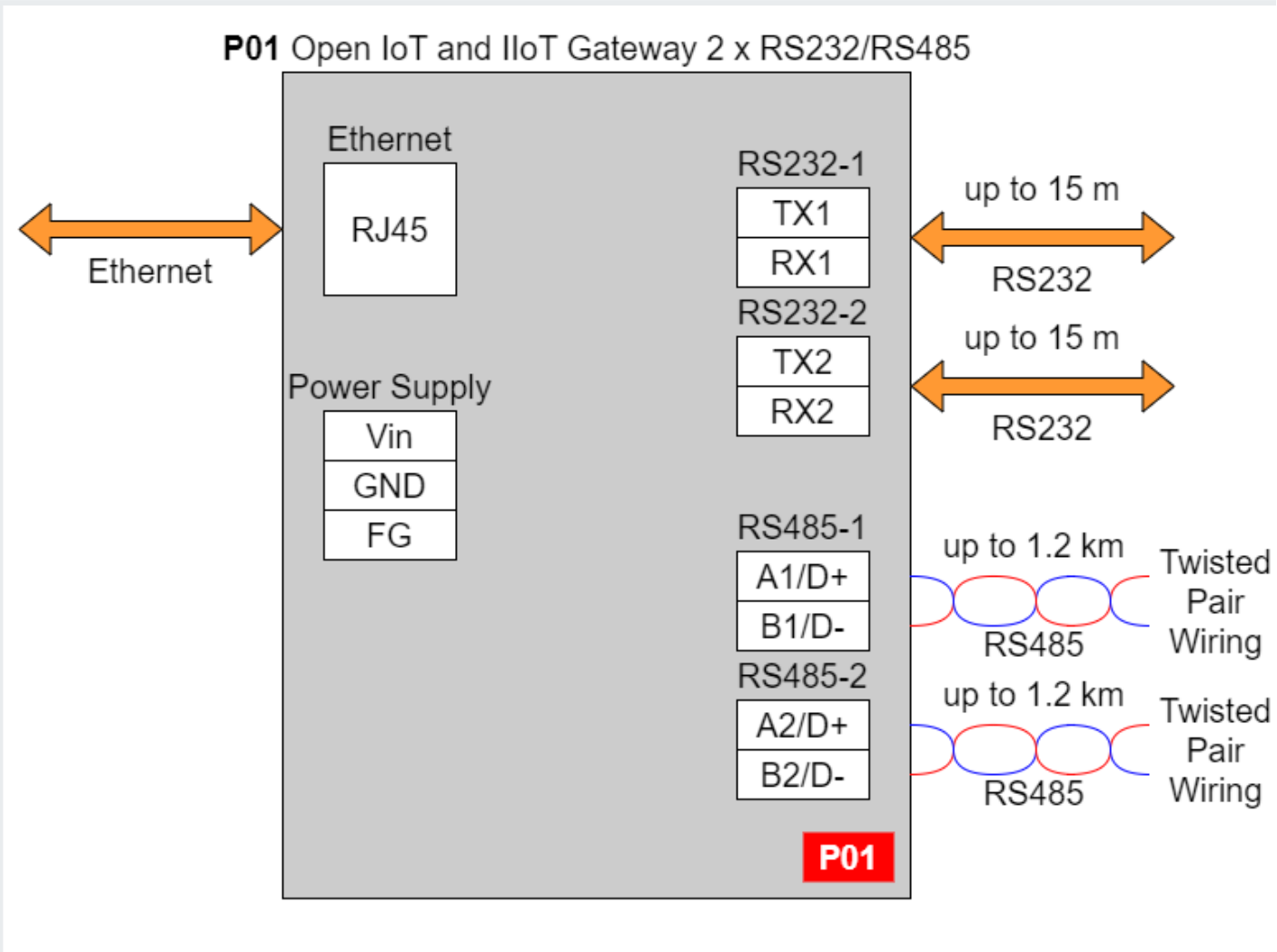
| Redisage PN | | P01 | P02 |
|---|---|---|---|
| Ports | RS232 | - | - |
| | RS485 | - | - |
| | RS232/RS485 | 2x | 2x |
| Microcontroller | | ESP32 | |

| Redisage PN | | P01 | P02 |
|---|---|---|---|
| WiFi | | N/A | 802.11 b/g/n 150 Mbps / 2.4 GHz |
| Bluetooth | | N/A | v4.2 BR/EDR and BLE |
| SMA socket connector for WiFi/BT antenna | | ✕ | white_check_mark |
| Tactile switch | | white_check_mark | ✕ |
| Power | Voltage | 12-30 VDC | |
| | Power | < 1 W | |
| Frame ground protection | | yes | |
| Baud rate | | up to 115200 bps | |
| LED indicators | | power, link activity, programmable RGB | |
| RS485 termination | | 120 ohm manually enabled | |
| Connector | RS232/RS485 | 8-pin terminal block max. 2.5 $mm^2$ wire | |
| | Power | 3-pin terminal block max. 2.5 $mm^2$ wire | |
| | Ethernet | RJ45 | |
| Transmission distance | RS485 | max. 1,200 m at 9.6 kbps; max. 400 m at 115.2 kbps (Belden 9841 2P twisted-pair cable, if different cables are used, the transmission distance may change) | |
| | RS232 | max. 15 m at 115.2 kbps | |
| Mounting and enclosure | | DIN rail, plastic PA - UL 94 V0, black/green | |

| Redisage PN | P01 | P02 |
|---|---|---|
| Temperatures | -40°C to +75°C operating and storage | |
| Humidity | 10 - 90% RH, non-condensing | |
| ESD protection | ±4 kV contact discharge / ±8 kV air discharge | |
| Certification | CE, RoHS | |

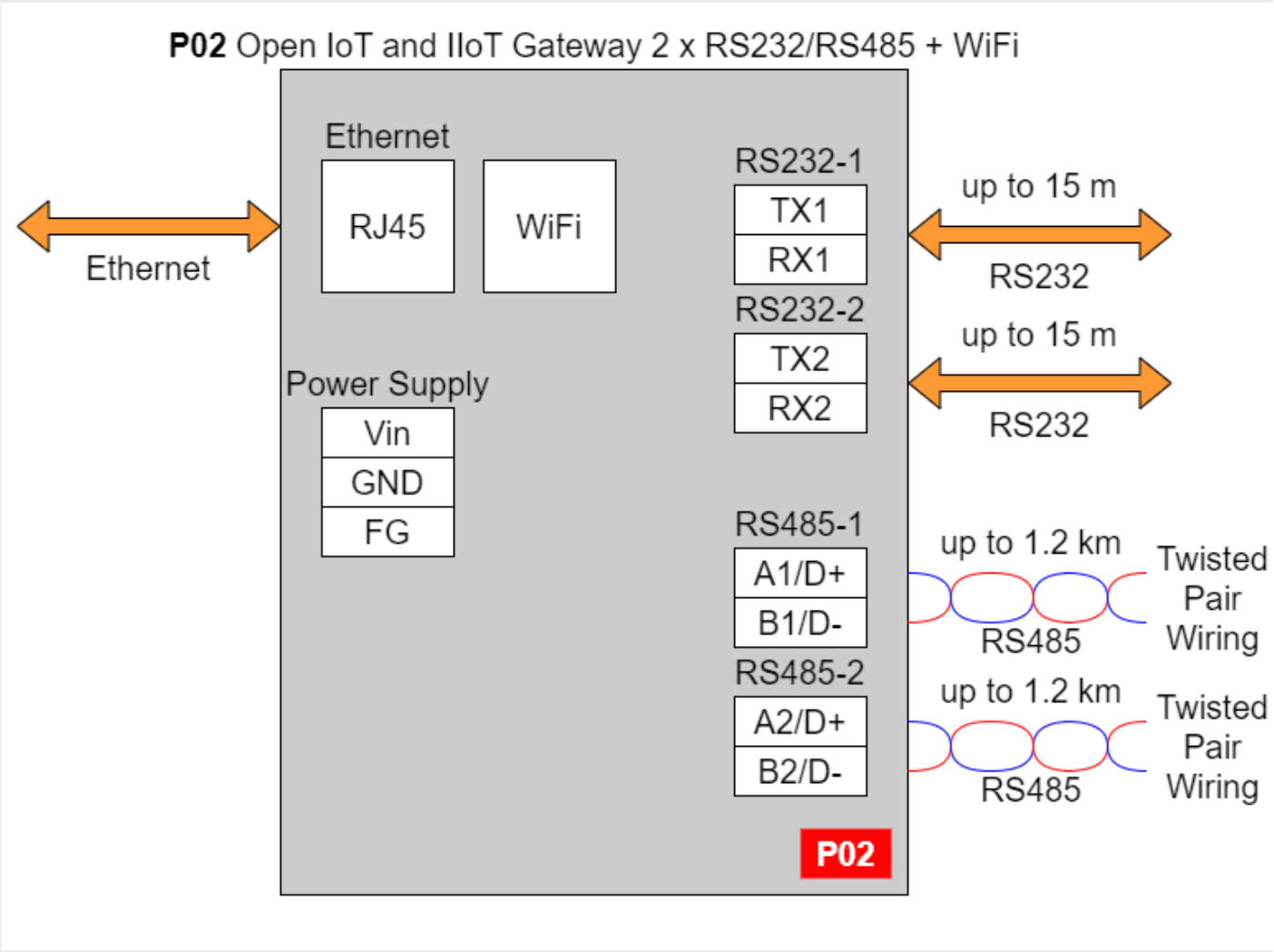
# Variants

## P01 - Open IoT and IIoT Gateway 2 x RS232/RS485




In the P01 gateway user should use only RS232 or only RS485 interface of one port as they occupy the same internal bus of the device.

# P02 - Open IoT and IIoT Gateway 2 x RS232/RS485 + WiFi




In the P02 gateway user should use only RS232 or only RS485 interface of one port as they occupy the same internal bus of the device.

# Frame ground FG

Electronic circuits are constantly prone to electrostatic discharge ESD. Redisage Electronics modules feature a design for the frame ground terminal block FG. The frame ground provides a path for bypassing ESD, which provides enhanced static protection ESD abilities and ensures the module is more reliable. Connecting FG terminal block to the earth ground will bypass the ESD disturbances outside the device so will provide a better level of protection against ESD.

Frame Ground FG connection reference drawing is provided below.

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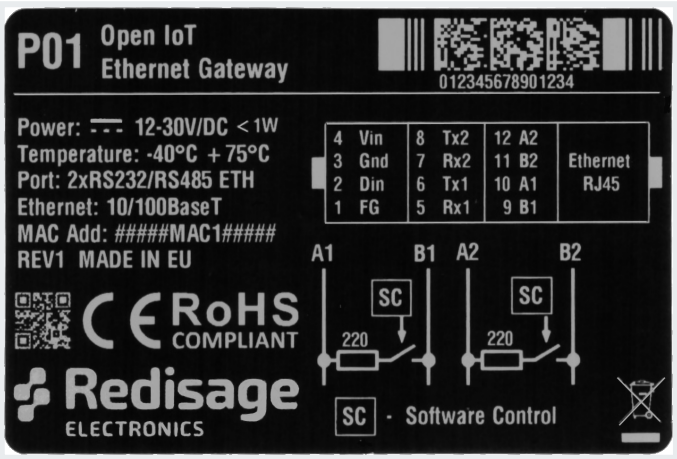
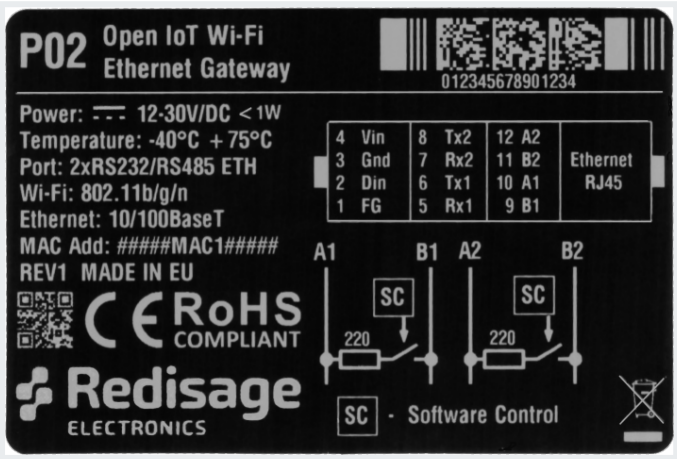
If earth ground is not available FG can be left floating or it can be connected with the power supply GND.

# Pin assignments

**P01**

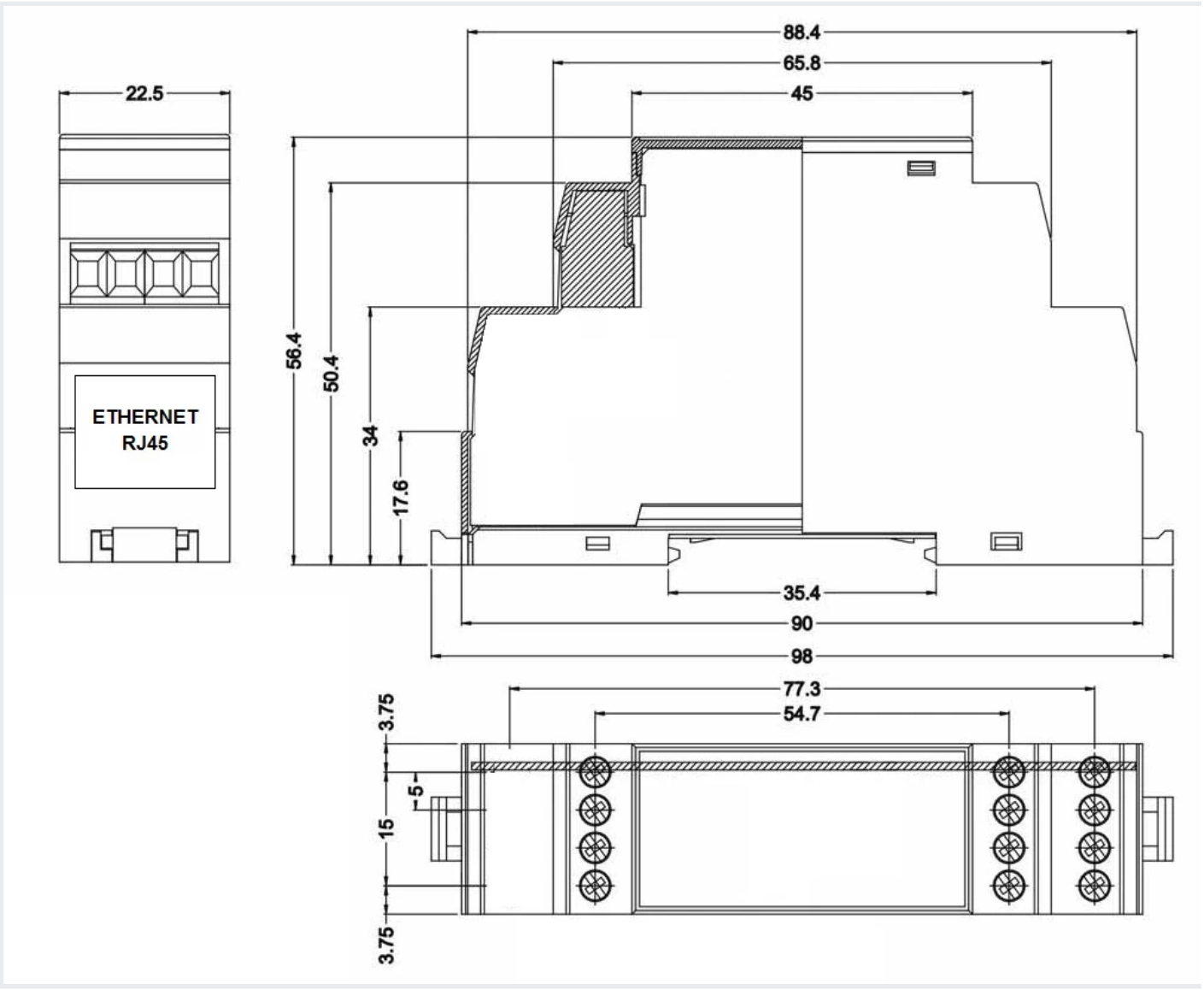



**P02**




# Enclosure dimensions

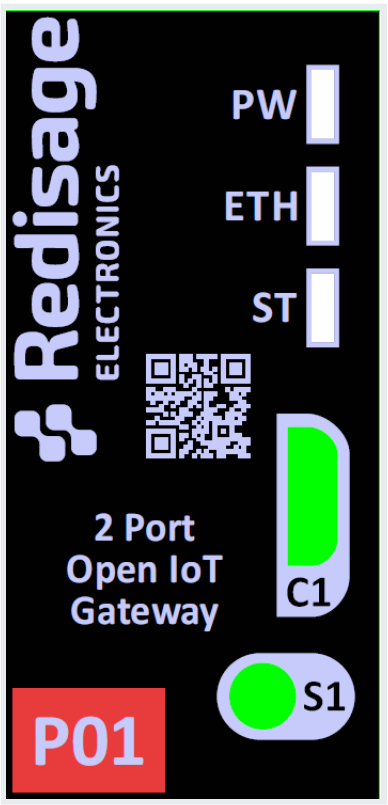
2U Module Enclosure
98 x 22.5 x 56.4
Units: mm




# LED indicators

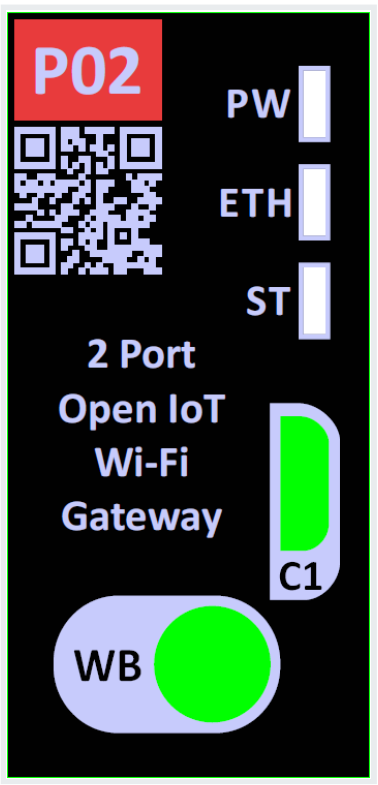
## P01

- PW LED Blue - Power
- ETH LED Green - Network activity
- ST LED Red / Green / Blue - programmable LED




## P02

- PW LED Blue - Power
- ETH LED Green - Network activity
- ST LED Red / Green / Blue - programmable LED



# Additional notes

| Related information and links | | |
|---|---|---|
| Ordering information | Accessories | Similar products |

# Products family sample photo


https://redisage.com

**DISCLAMER NOTES**
ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

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SR-D

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