

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

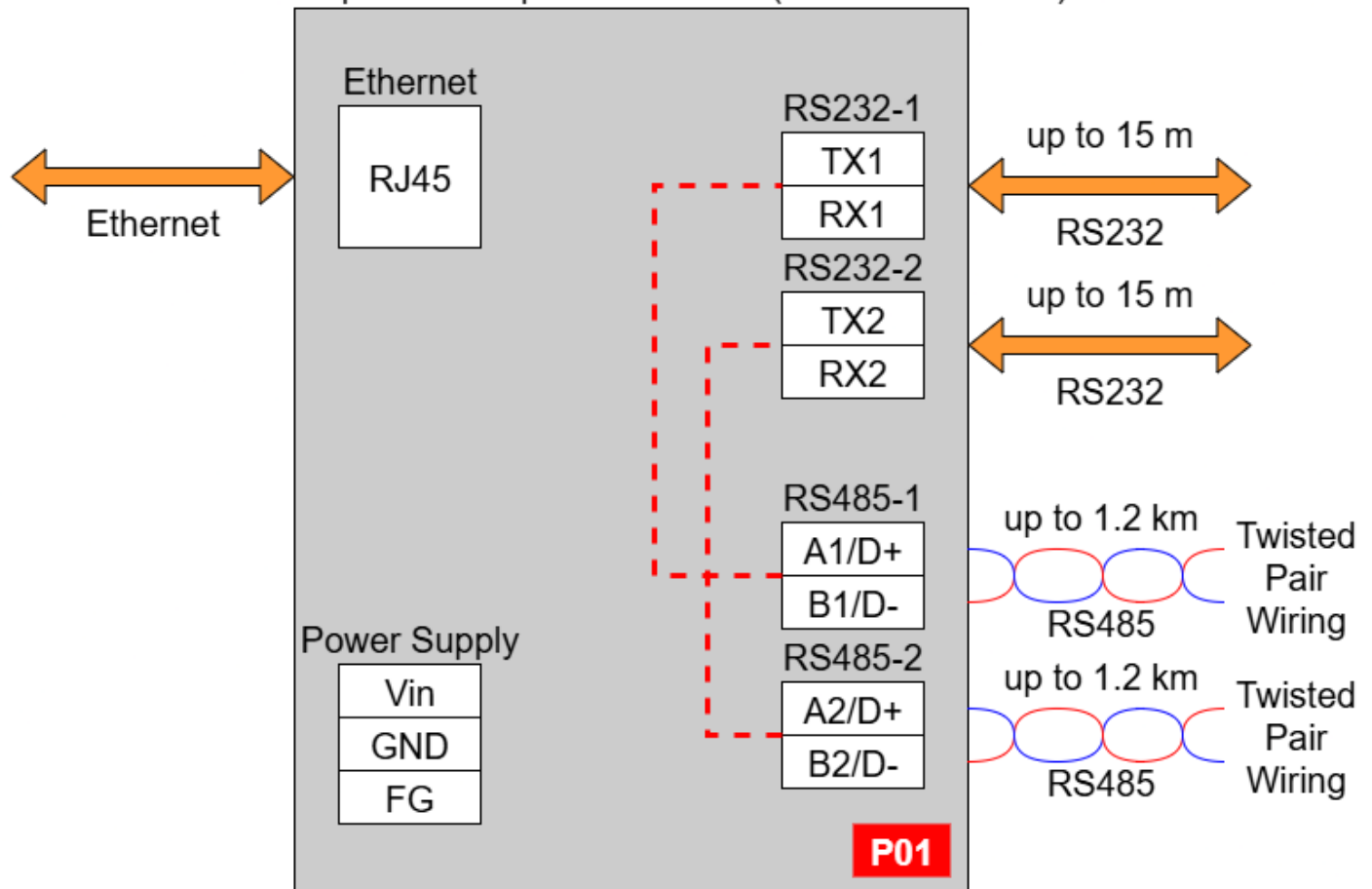
Redisage PN		P01	P02
Ports	RS232	-	-
	RS485	-	-
	RS232/RS485	2x	2x
Microcontroller		ESP32	
Wi-Fi®		N/A	802.11 b/g/n 150 Mbps / 2.4 GHz
SMA socket connector for 2.4G antenna		☐	☒
Tactile switch		☒	☐
Power	Voltage	12-30 VDC	
	Power	< 1 W	
Frame ground protection		yes	
Baud rate		up to 115200 bps	
LED indicators		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	

Redisage PN		P01	P02
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	
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, EMC, LVD	
Norms		61000-6-2 - Immunity standard for industrial environments 61000-6-4 - Emission standard for industrial environments	

Variants

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

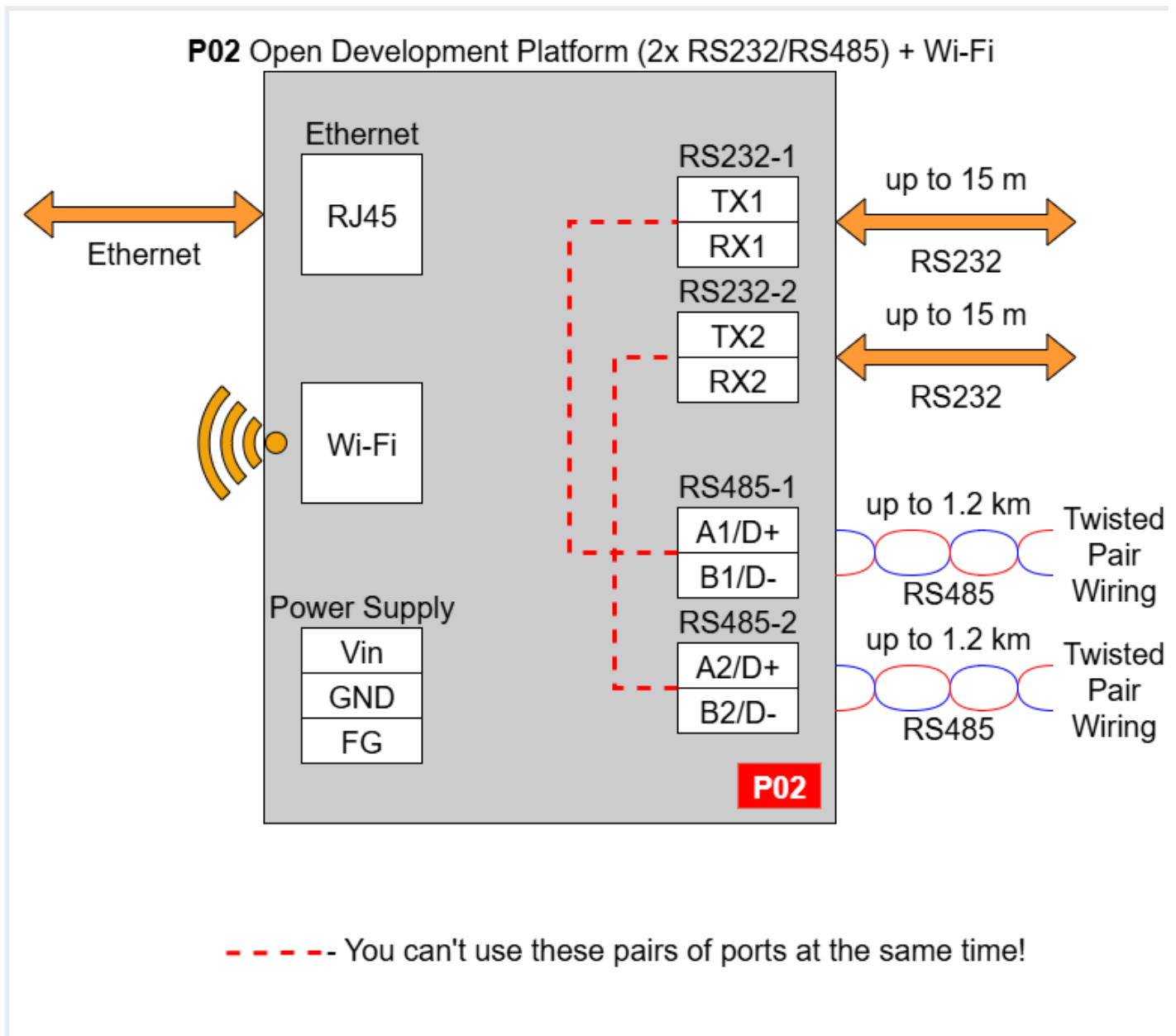
P01 Open Development Platform (2x RS232/RS485)



- - - - You can't use these pairs of ports at the same time!

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. It means, don't use pairs: RS232-1 & RS485-1 at the same time and RS232-2 & RS485-2 at the same time!

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



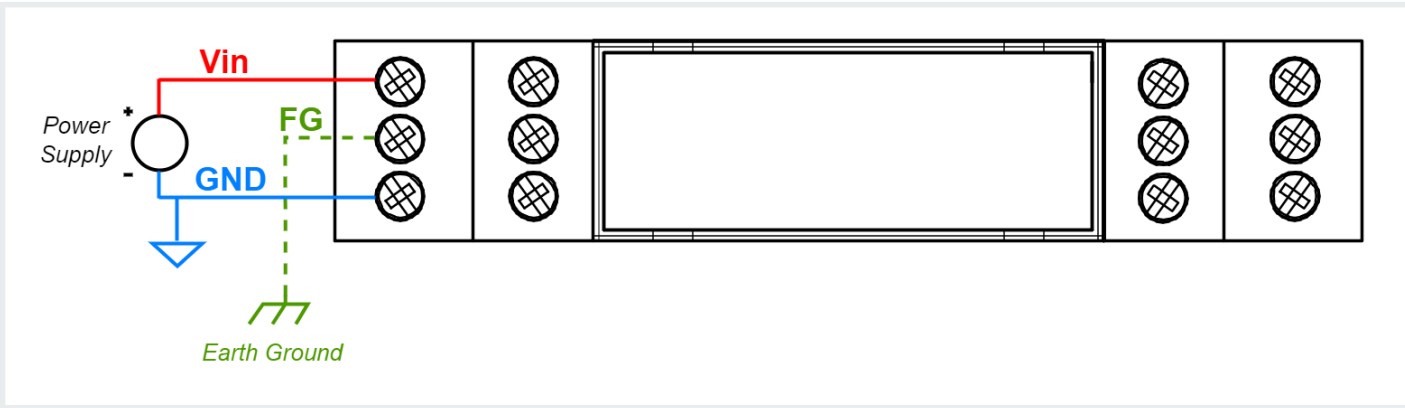
In the P02 gateway user should use only RS232 or only RS485 interface of one port as they occupy the same internal bus of the device. It means, don't use pairs: RS232-1 & RS485-1 at the same time and RS232-2 & RS485-2 at the same time!

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.



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

Pin assignments

P01

P01 Open IoT Ethernet Gateway

012345678901234

Power: 12-30V/DC <1W
Temperature: -40°C + 75°C
Port: 2xRS232/RS485 ETH
Ethernet: 10/100BaseT
MAC Add: #####MAC1#####
REV1 MADE IN EU

4 Vin	8 Tx2	12 A2
3 Gnd	7 Rx2	11 B2
2 Din	6 Tx1	10 A1
1 FG	5 Rx1	9 B1

Ethernet RJ45

A1 B1 A2 B2

SC SC

220 220

SC - Software Control

RoHS COMPLIANT

Redisage ELECTRONICS

P02

P02 Open IoT Wi-Fi Ethernet Gateway

012345678901234

Power: 12-30V/DC <1W
Temperature: -40°C + 75°C
Port: 2xRS232/RS485 ETH
Wi-Fi: 802.11b/g/n
Ethernet: 10/100BaseT
MAC Add: #####MAC1#####
REV1 MADE IN EU

4 Vin	8 Tx2	12 A2
3 Gnd	7 Rx2	11 B2
2 Din	6 Tx1	10 A1
1 FG	5 Rx1	9 B1

Ethernet RJ45

A1 B1 A2 B2

SC SC

220 220

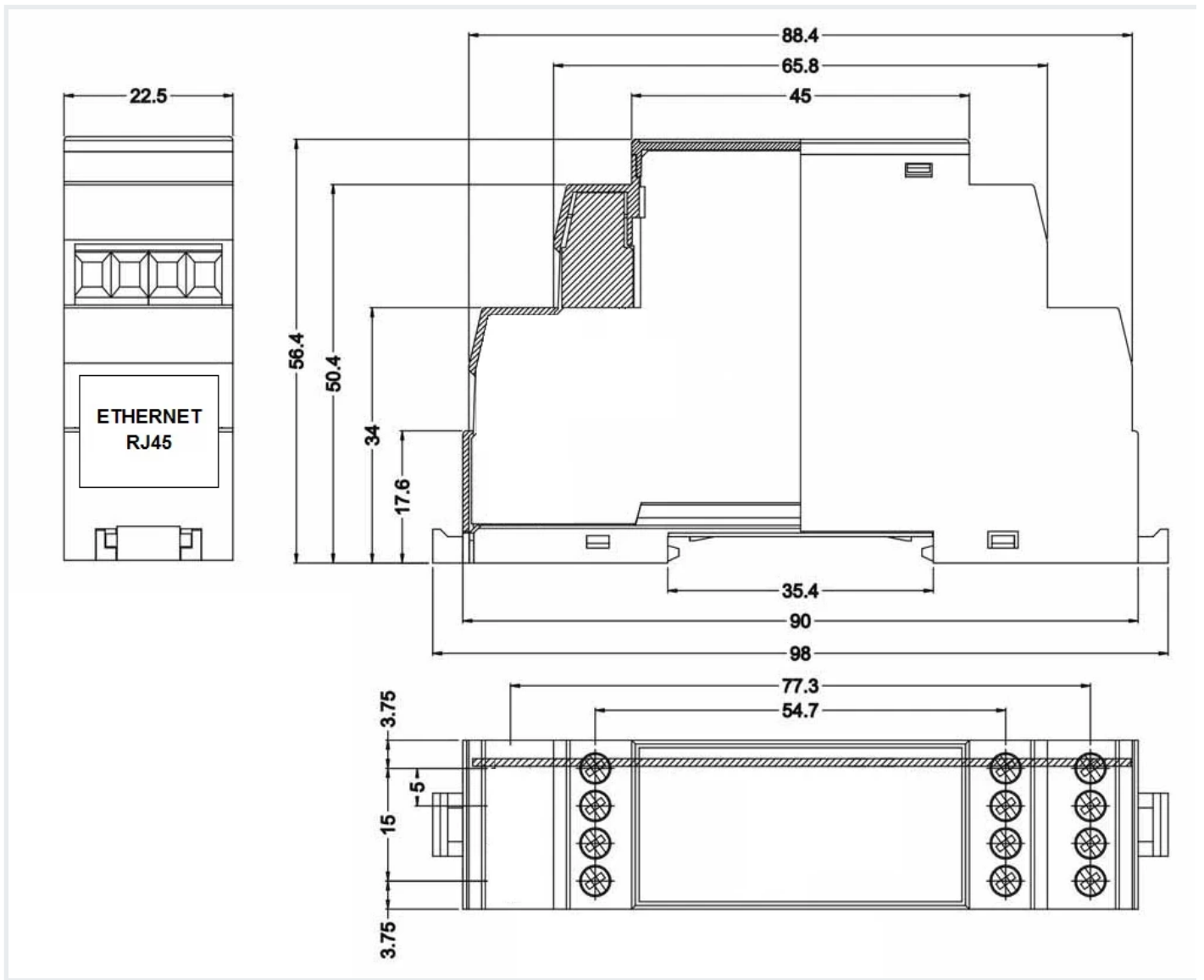
SC - Software Control

RoHS COMPLIANT

Redisage ELECTRONICS

Enclosure dimensions

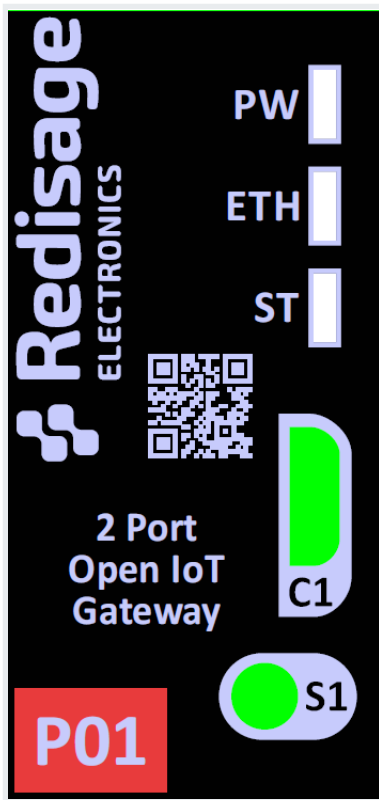
2U Module Enclosure
98 x 22.5 x 56.4
Units: mm



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

Wi-Fi® is a registered trademark of Wi-Fi Alliance®.

Related information and links		
Ordering information	Accessories	Similar products

Products family sample photo



<https://redisage.com>

DISCLAIMER NOTES

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SR-D

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