Data Sheet

Modbus Ethernet Wi-Fi® Gateways (G11 - G13)

Features

- 2-mode Ethernet/Wi-Fi Modbus Gateway
- Ethernet/Wi-Fi converter to RS232/RS485
- 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
- Operating temperatures: -40°C to +75°C
- DIN rail mounting
- Dimensions: 90x56.4x22.5 mm
- 3 years warranty
- Customization of OEM is welcomed

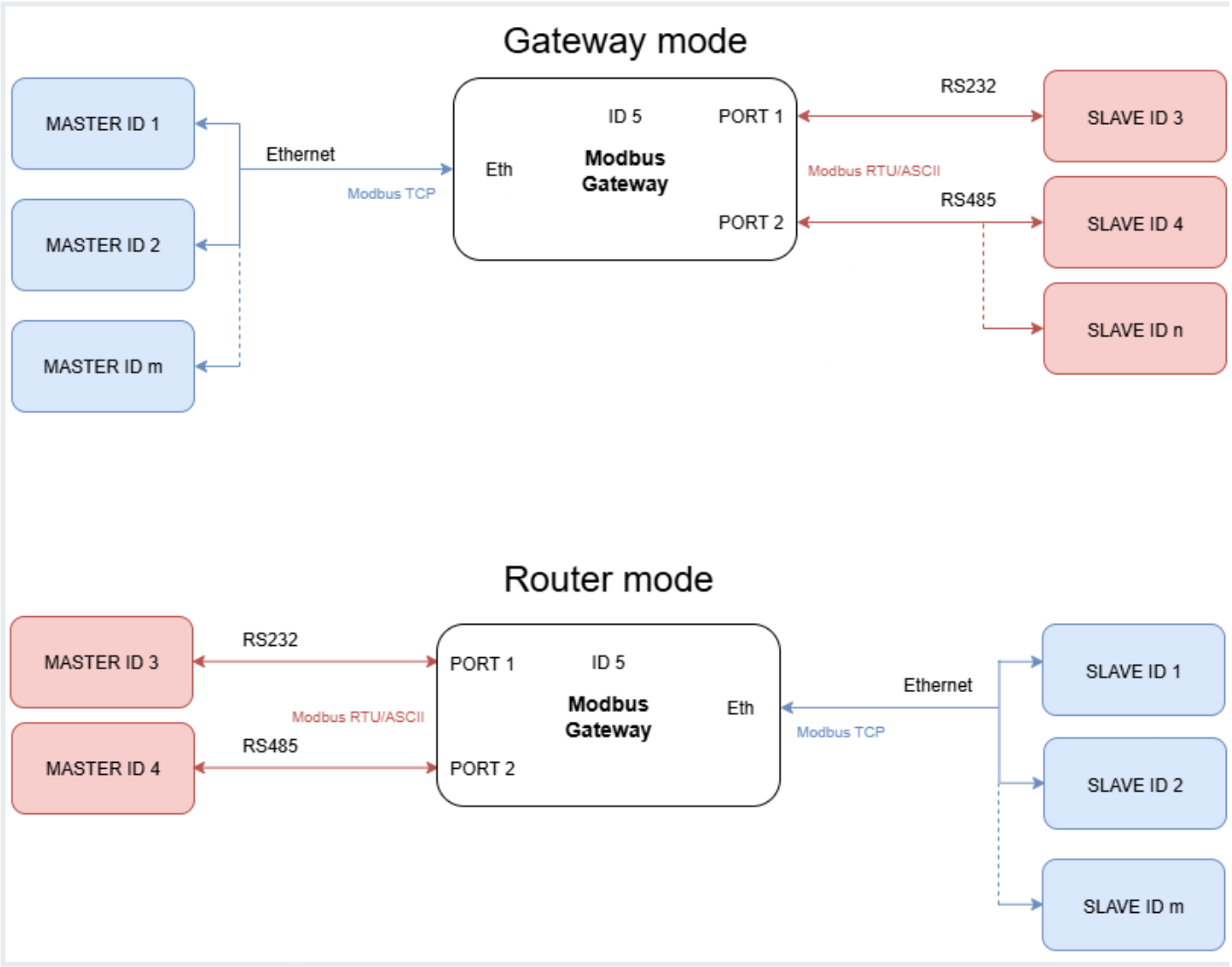
Introduction

Devices are based on G11 - G13 gateways (**ESP32 Xtensa LX6 microcontroller**) depending on needed ports and interfaces.

Dedicated EMC integrated circuits guarantee improved connection quality by limiting the impact of interference typical for an industrial environment.

Modbus gateways allow data transmission between LAN hosts, Wi-Fi hosts, and serial devices by converting Modbus protocols (Modbus TCP and Modbus RTU/ASCII). They are intended to be used in industrial networks especially in the field of Industry 4.0 but not only. Apart from extending the capabilities of industrial devices, they can be also adapted up to user’s requirements and needs.

Transmission is carried out by two modes: Gateway and Router. In the Gateway mode, the port is used to communicate with Slave devices, but in the Router mode with Master devices. It is also possible to set up different modes on every port. Block diagrams below describe how each of these modes works.



The device has max 20 sockets open in Gateway mode and max 8 in Router mode. It is possible to increase this value at client's request.

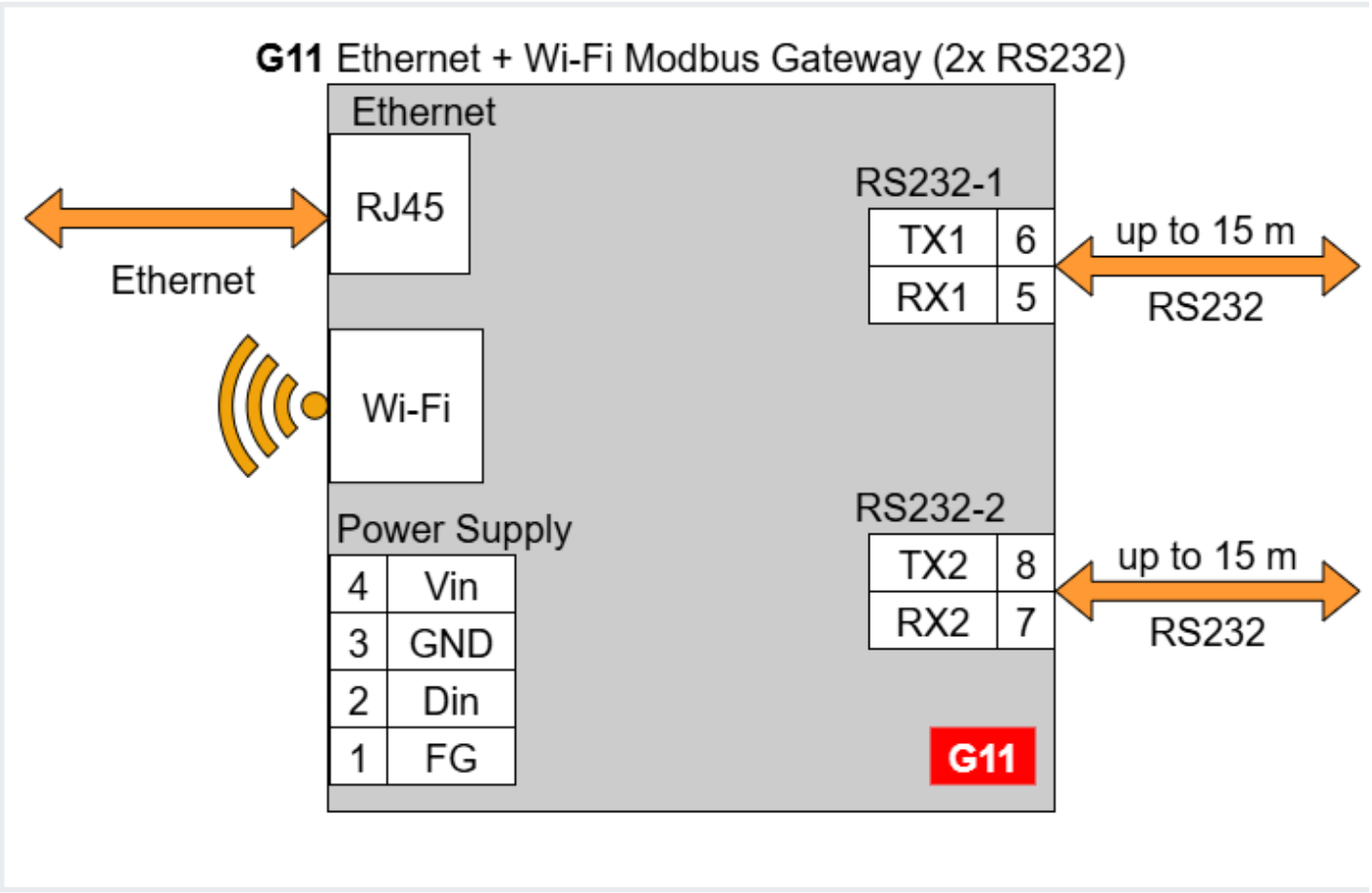
Specification

Redisage PN		G11	G12	G13
Ports	RS232	2x	-	-
	RS485	-	1x	-
	RS232/RS485	-	-	2x
Microcontroller		ESP32		
WiFi		2.4 GHz b/g/n		

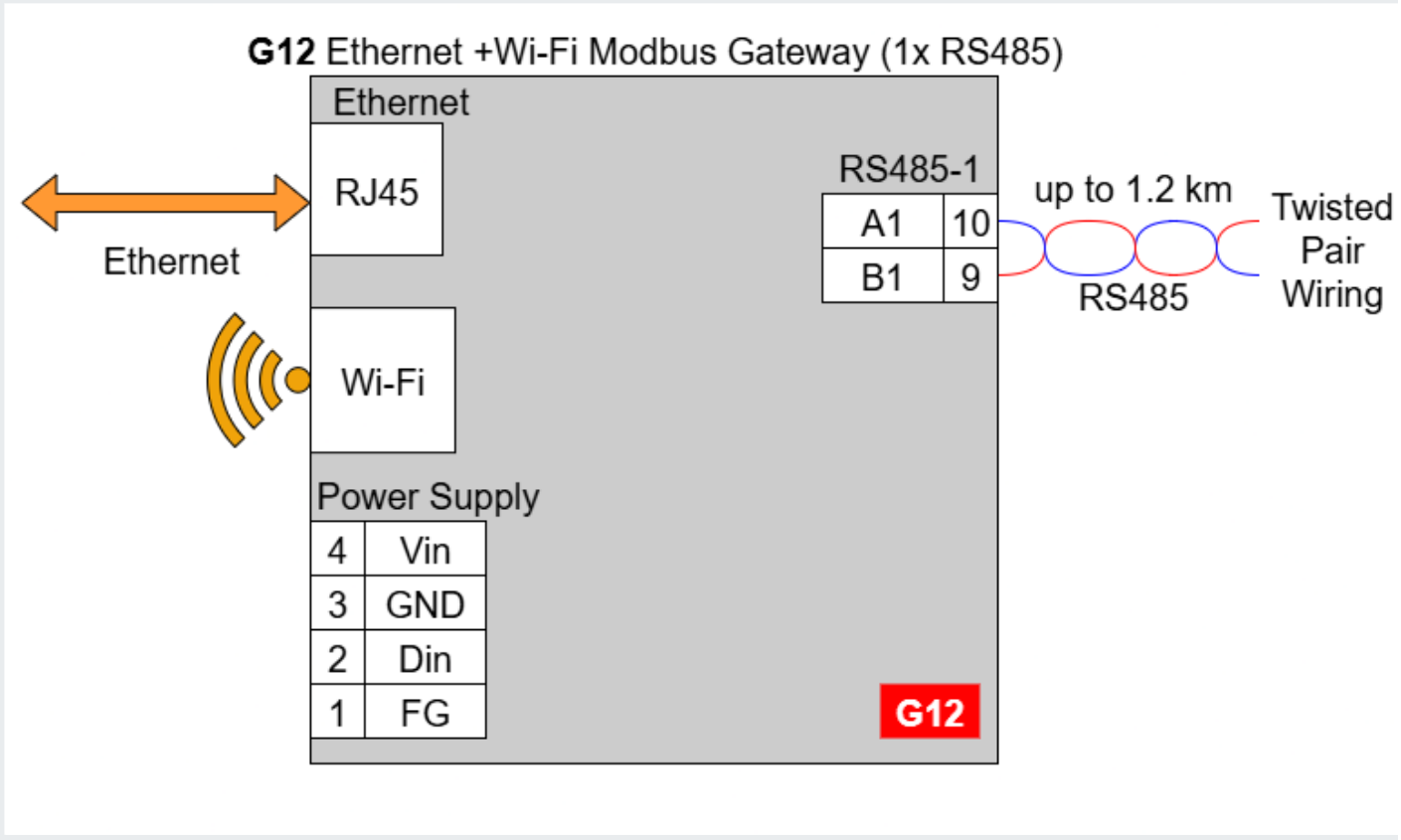
Redisage PN		G11	G12	G13
Power	Voltage	12-30 VDC		
	Power	< 1 W		
Frame ground connection		yes		
Baud rate		up to 115200 bps		
LED indicators		communication Tx, Rx and power		
RS485 termination		120 ohm manually enabled		
Connector	RS232/RS485	8-pin terminal block max. 2.5 mm^2 wire		
	Power	3-pin terminal 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		
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, RED		
Norms		61000-6-2 - Immunity standard for industrial environments 61000-6-4 - Emission standard for industrial environments EN 300 328 – Data transmission equipment operating in the 2,4 GHz band		

Variants

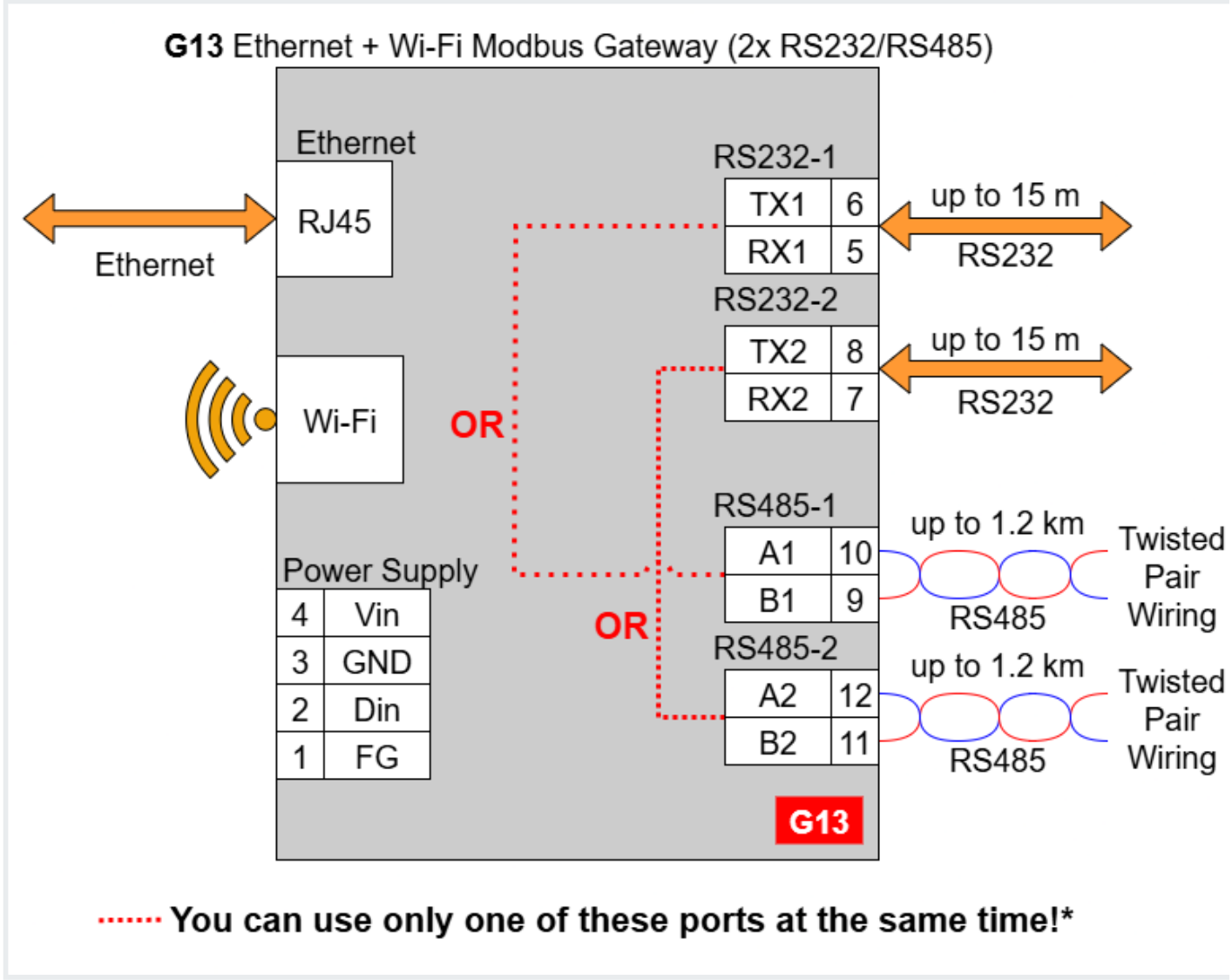
G11 - Ethernet + Wi-Fi Modbus Gateway 2 x RS232



G12 - Ethernet + Wi-Fi Modbus Gateway 1 x RS485



G13 - Ethernet Modbus Gateway 2 x RS232/RS485

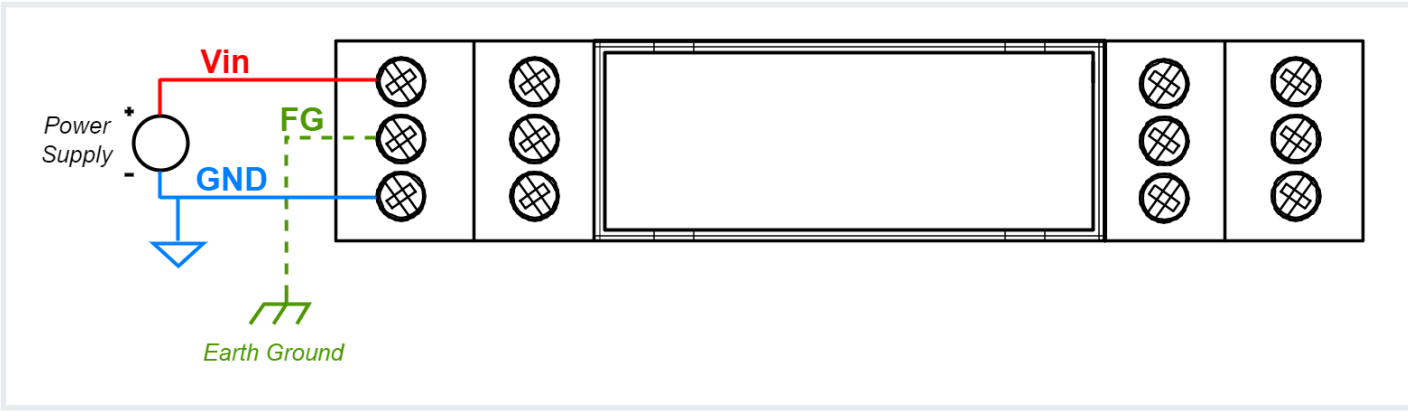


In the G13 gateway user should use only RS232 or only RS485 interface of one port as they occupy the same internal bus of the device. It means, don't use pairs: RS232-1 & RS485-1 at the same time and RS232-2 & RS485-2 at the same time!

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.

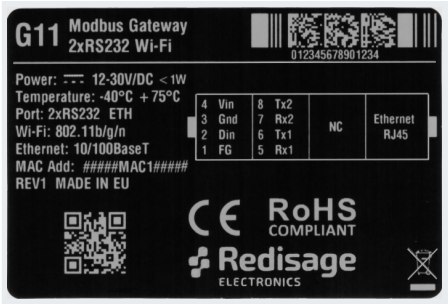
Frame Ground FG connection reference drawing is provided below.



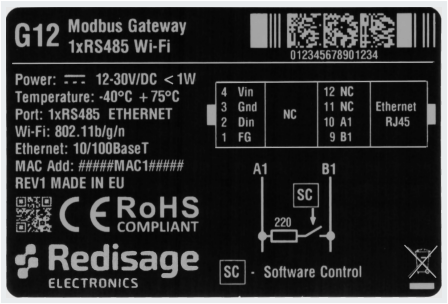
If earth ground is not available FG can be left floating or it can be connected with the power supply GND.

Pin assignments

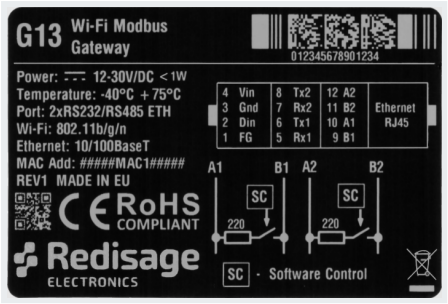
G11



G12



G13



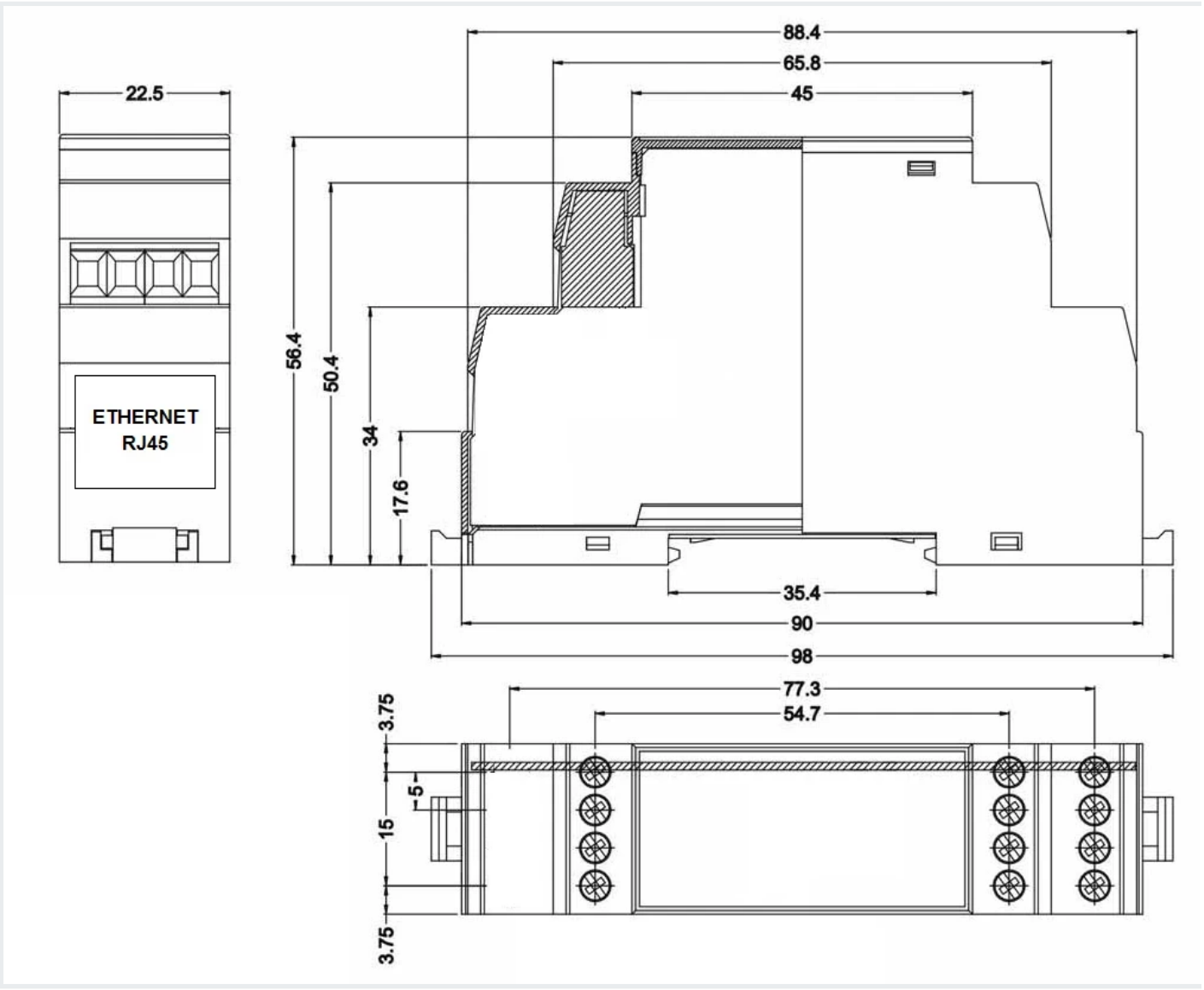
LED indicators

Modbus Gateways G11 - G13

LED indicator	Color	Function
PW	Blue	Power
ETH	Green	Network activity
ST	Orange	Console mode
	Red	Service mode

Enclosure dimensions

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



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

DISCLAMER NOTES

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SR-D

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