Data Sheet

Serial Port Server (C20 - C25)

Serial Port Server is a complete hardware and software solution for creating remote communication ports. The software part can be uploaded to any of the Redisage C20 - C25 Ethernet Converters. It provides a communication between a LAN host and a device equipped with RS232/RS485 serial interfaces. A dedicated app makes it easy and fast to configure and deploy. There is a possibility to create virtual COM ports with the Redisage Configurator to minimize number of cables.

Features

- Ethernet 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

C20 - C22 are a products family of reliable converters based on the **ESP32 Xtensa LX6** microcontroller, extending the capabilities of industrial devices.
C23 - C25 are a products family of reliable converters based on the **STM32F4** microcontroller, extending the capabilities of industrial devices.

The addition of a network interface allows remote access and full control over communication via a computer.

The user performs the basic configuration of transmission parameters in a browser or via a Telnet/serial console.

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

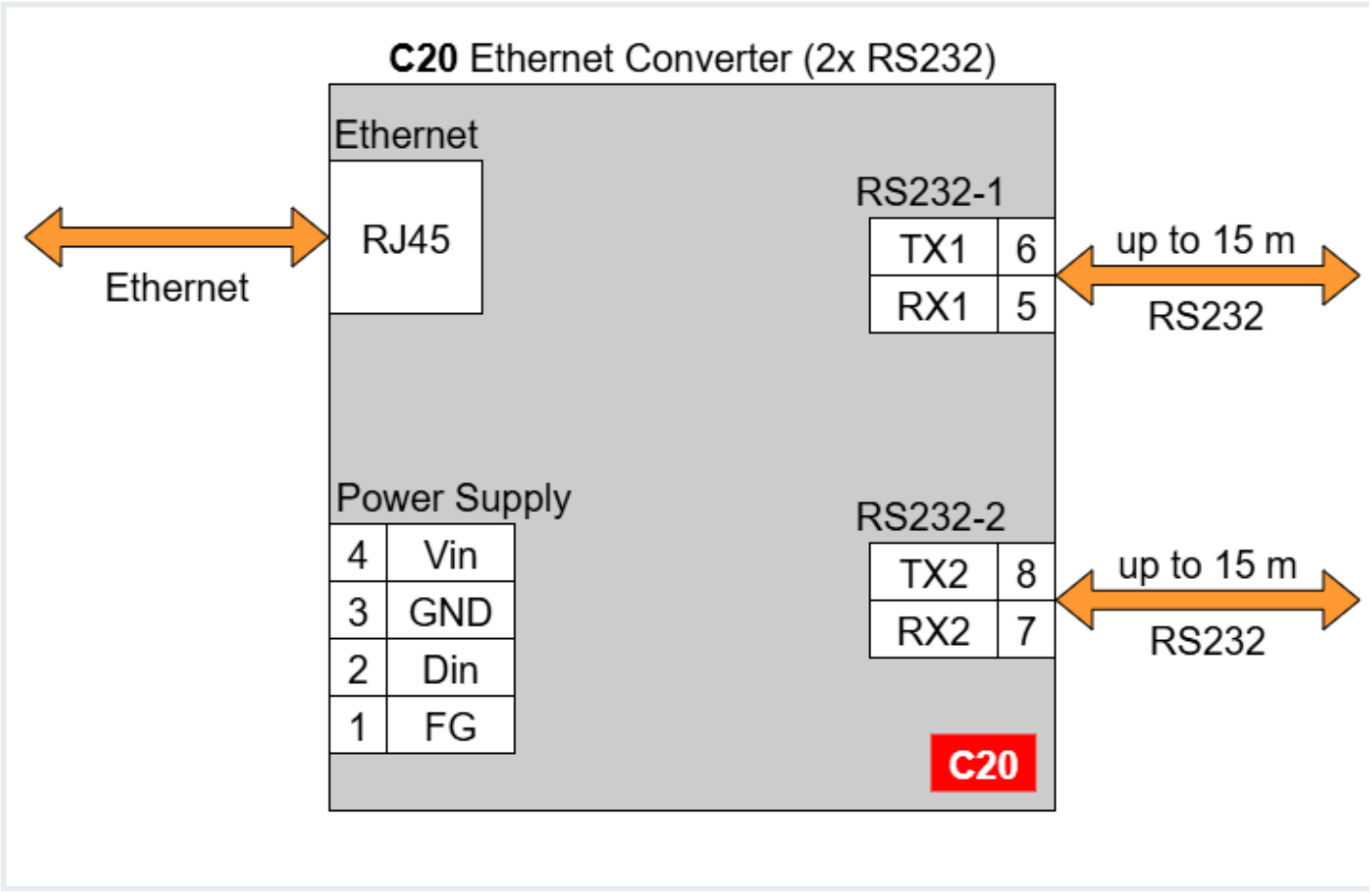
Specifications

Redisage PN		**C20**	**C21**	**C22**	**C23**	**C24**	**C25**
Ports	RS232	2x	-	-	4x	-	2x
	RS485	-	1x	-	-	4x	2x
	RS232/RS485	-	-	2x	-	-	-
Microcontroller		ESP32			STM32F4		
WiFi		N/A					
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					

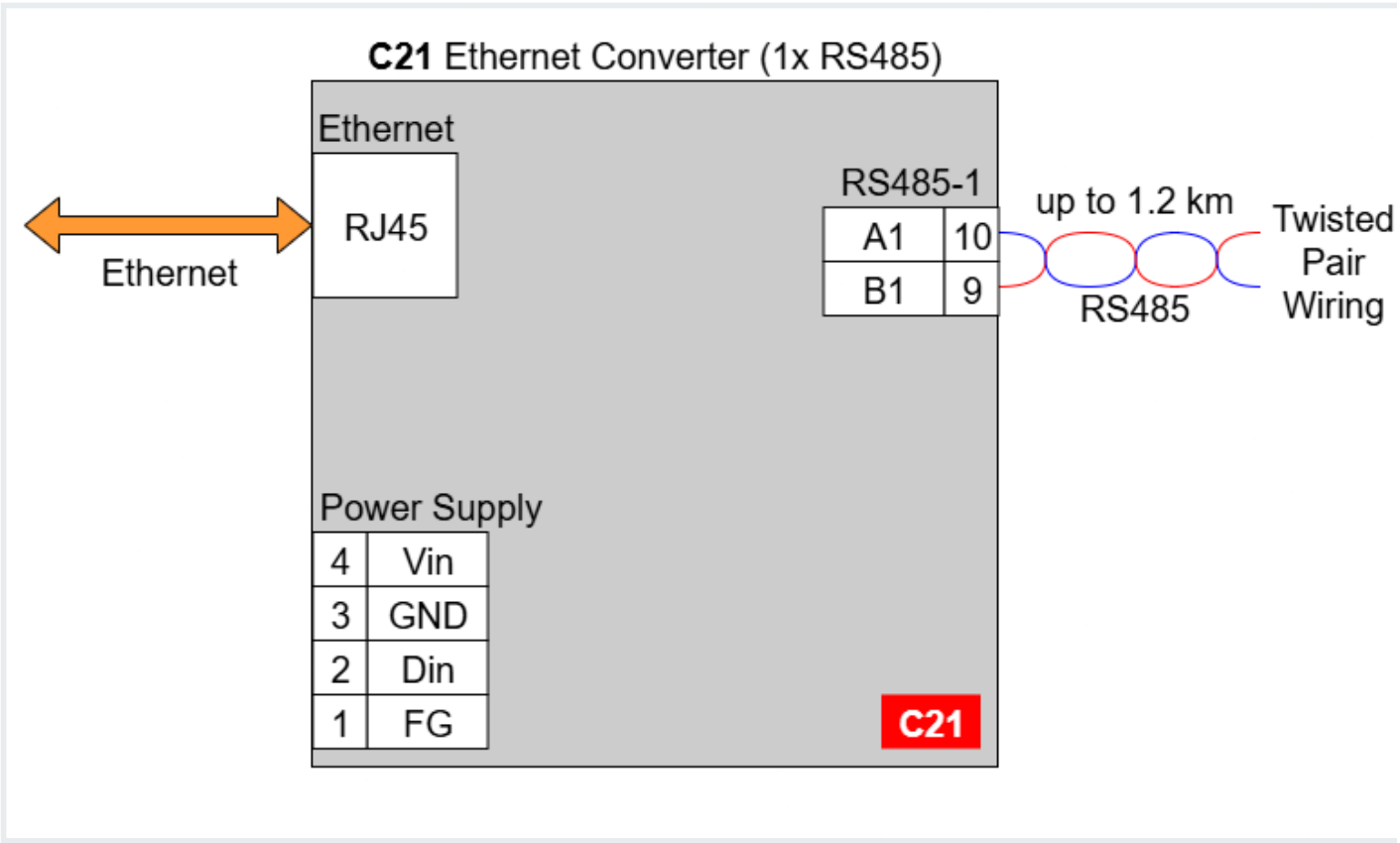
Redisage PN		C20	C21	C22	C23	C24	C25
Transmission distance	RS485	max. 1,200 m at 9.6 kbps; max. 400 m at 115.2 kbps (Belden 9841 2P twisted-pair cable, if different cables are used, the transmission distance may change)					
	RS232	max. 15 m at 115.2 kbps					
Mounting and enclosure		DIN rail, plastic 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

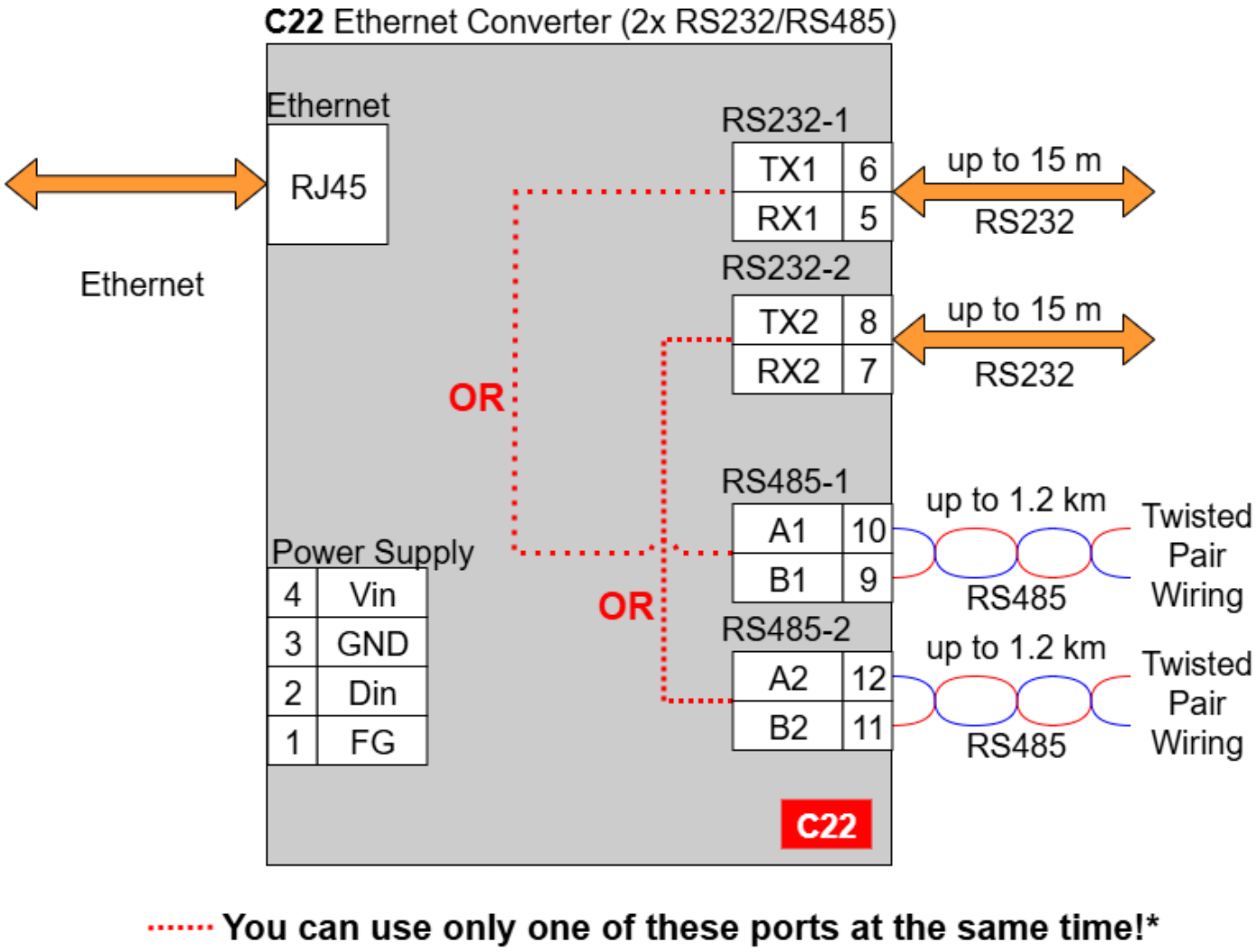
C20 - Serial Port Server (2x RS232)



C21 - Serial Port Server (1x RS485)

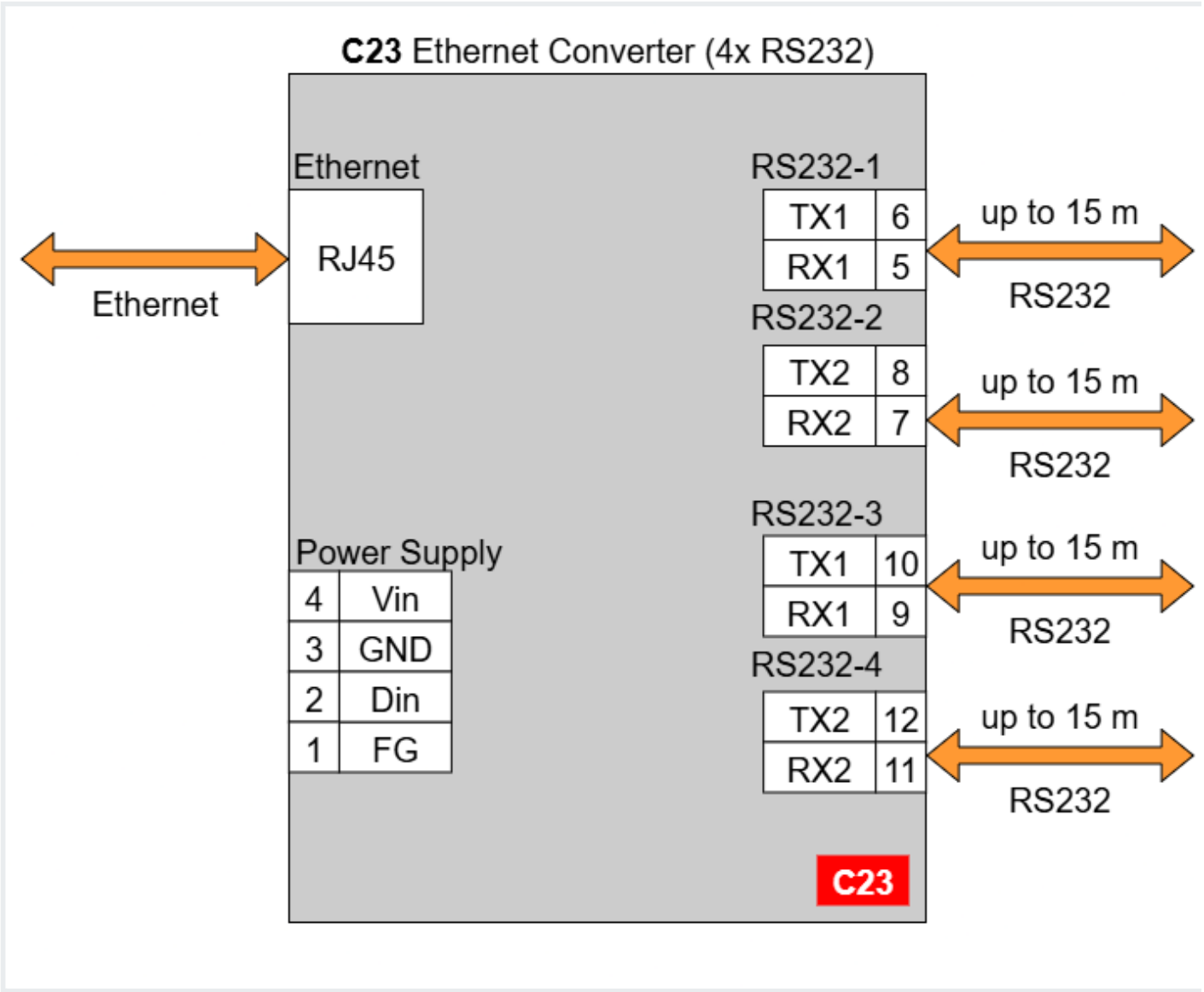


C22 - Serial Port Server (2x RS232/RS485)

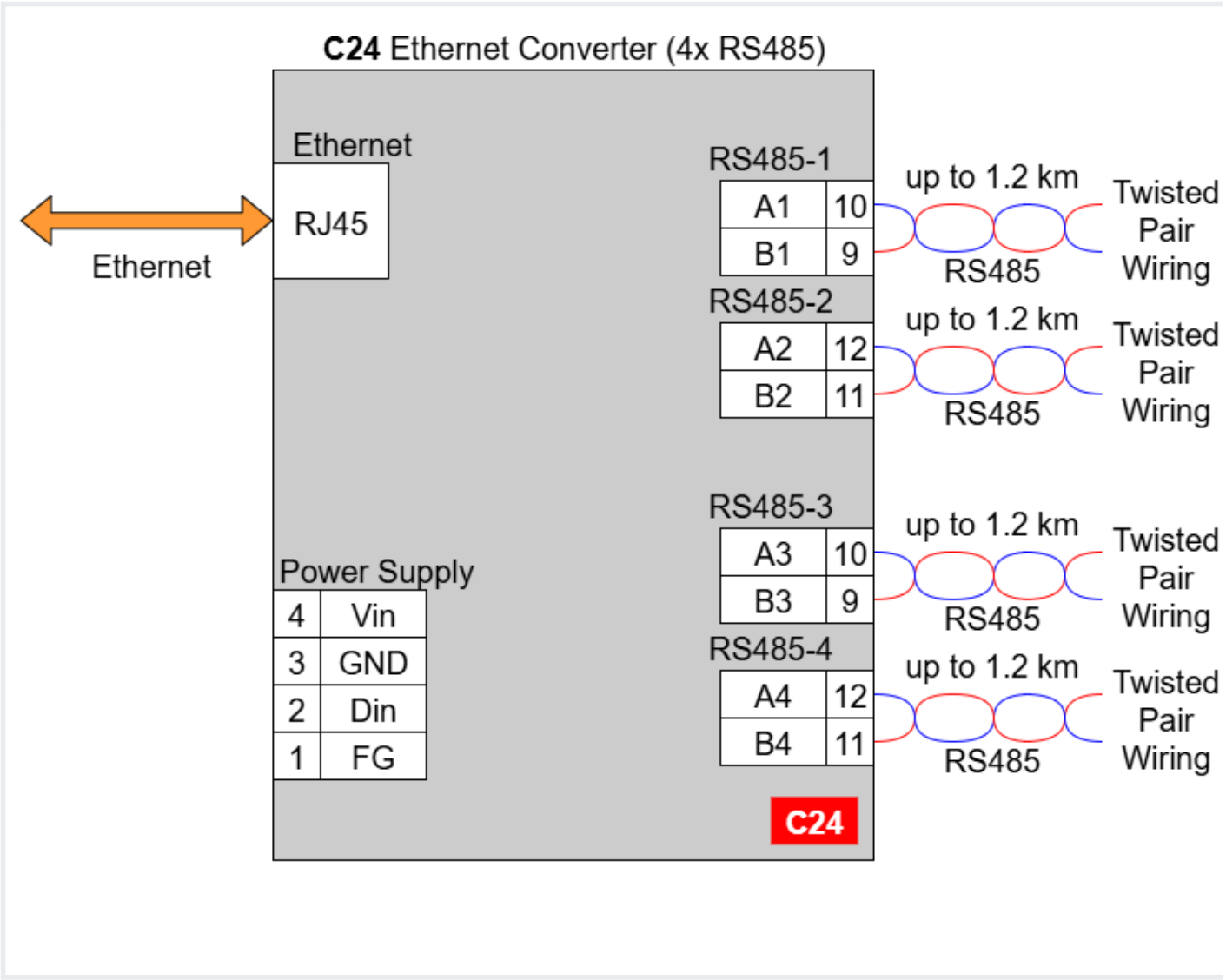


* In the C22 converter user should use only RS232 or only RS485 interface of one port as they occupy the same internal bus of the device. It means, you can't use ports: RS232-1 & RS485-1 at the same time and RS232-2 & RS485-2 at the same time!

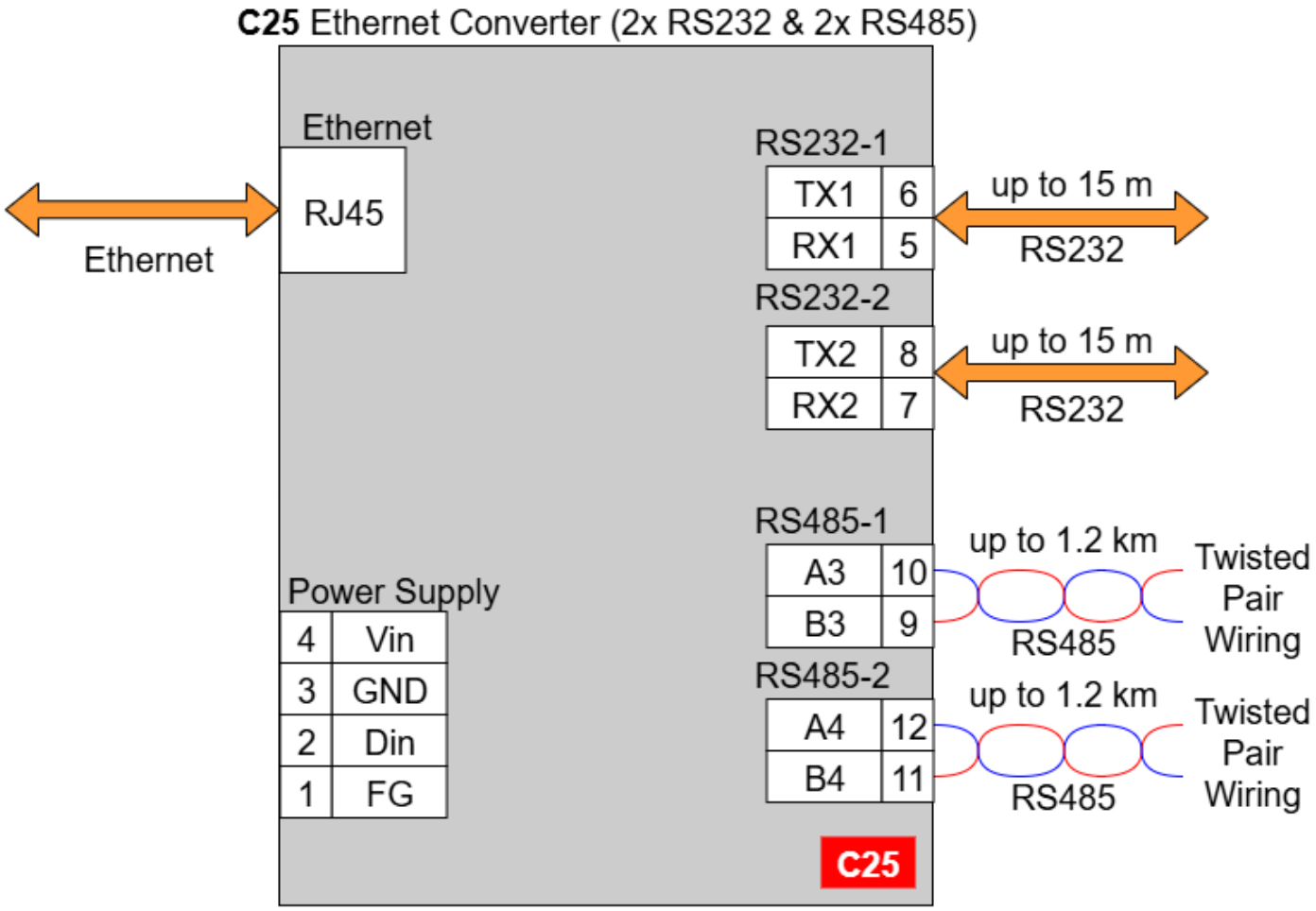
C23 - Serial Port Server (4x RS232)



C24 - Serial Port Server (4x RS485)



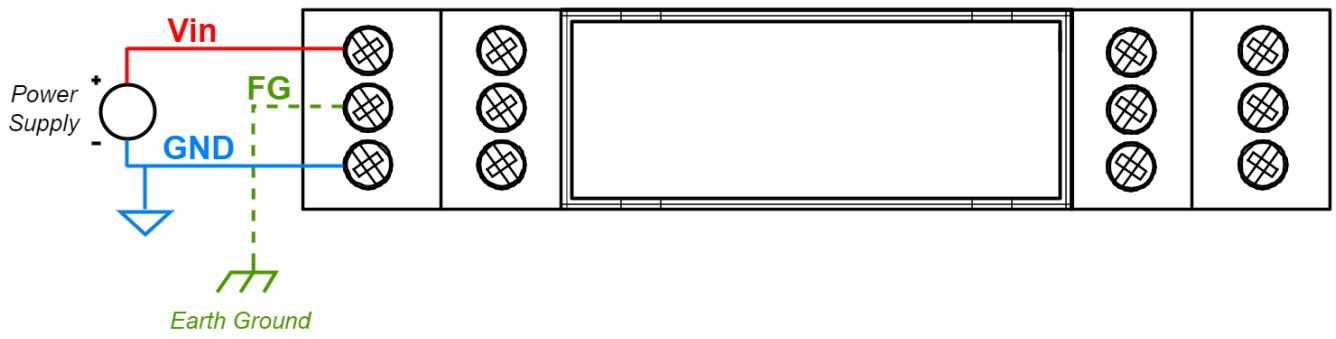
C25 - Serial Port Server (2x RS232 & 2x RS485)



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.

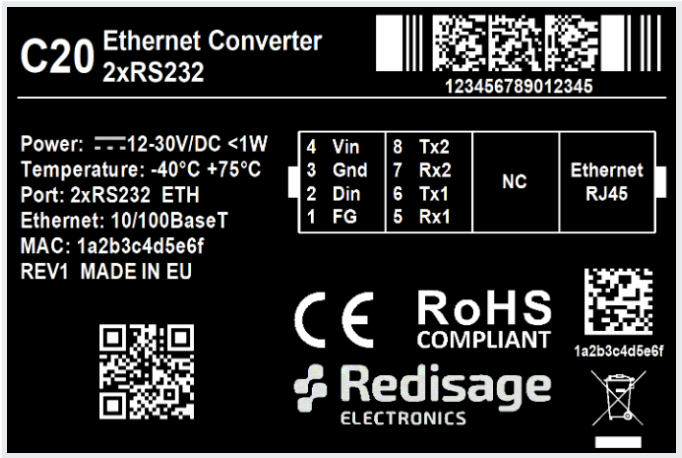
Frame Ground FG connection reference drawing is provided below.



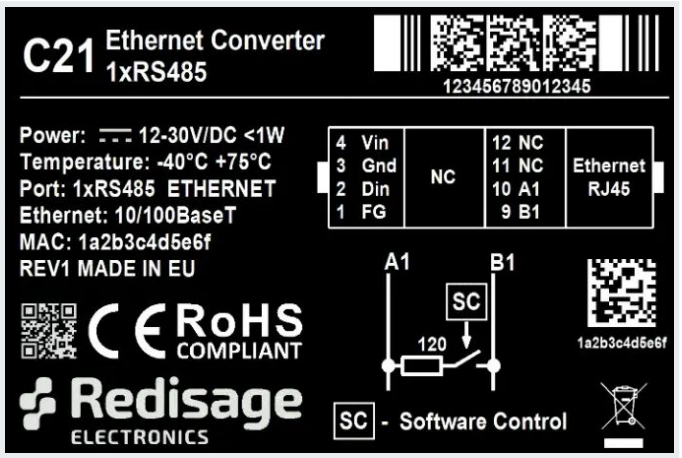
If earth ground is not available FG can be left floating or it can be connected with the power supply GND.

Pin assignments

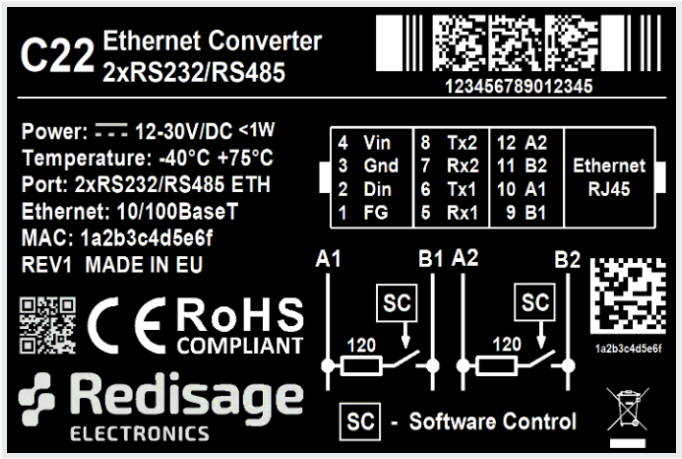
C20



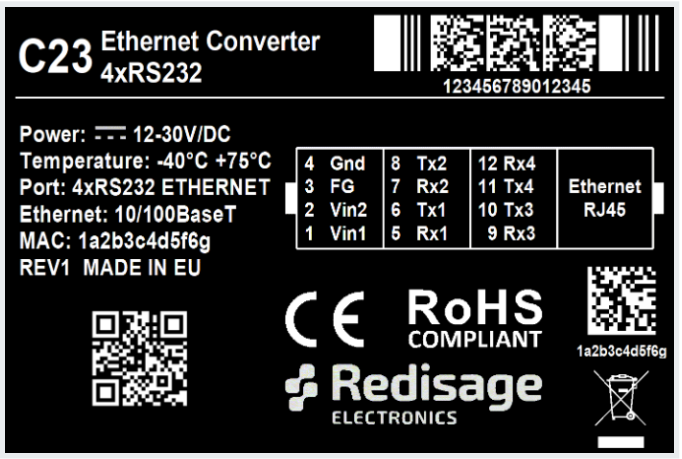
C21



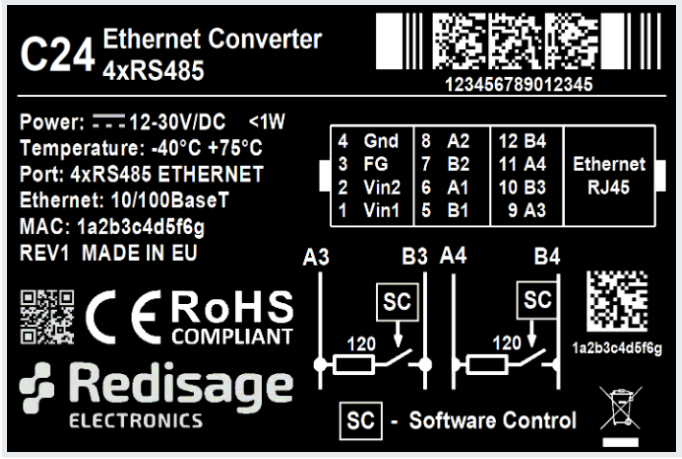
C22



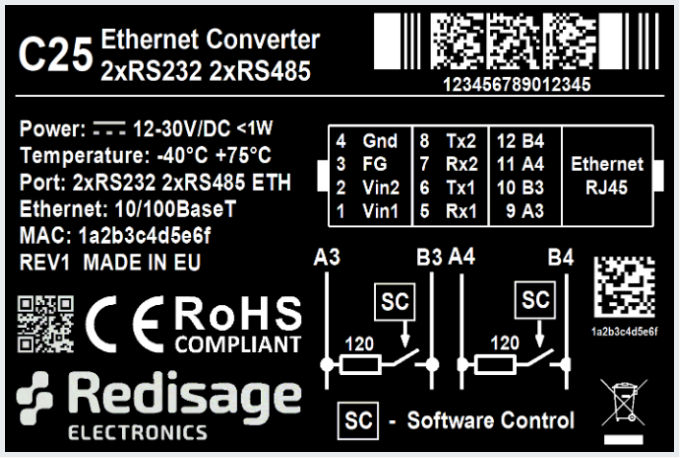
C23



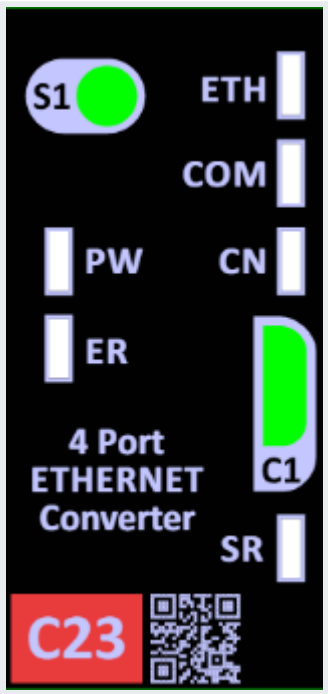
C24



C25

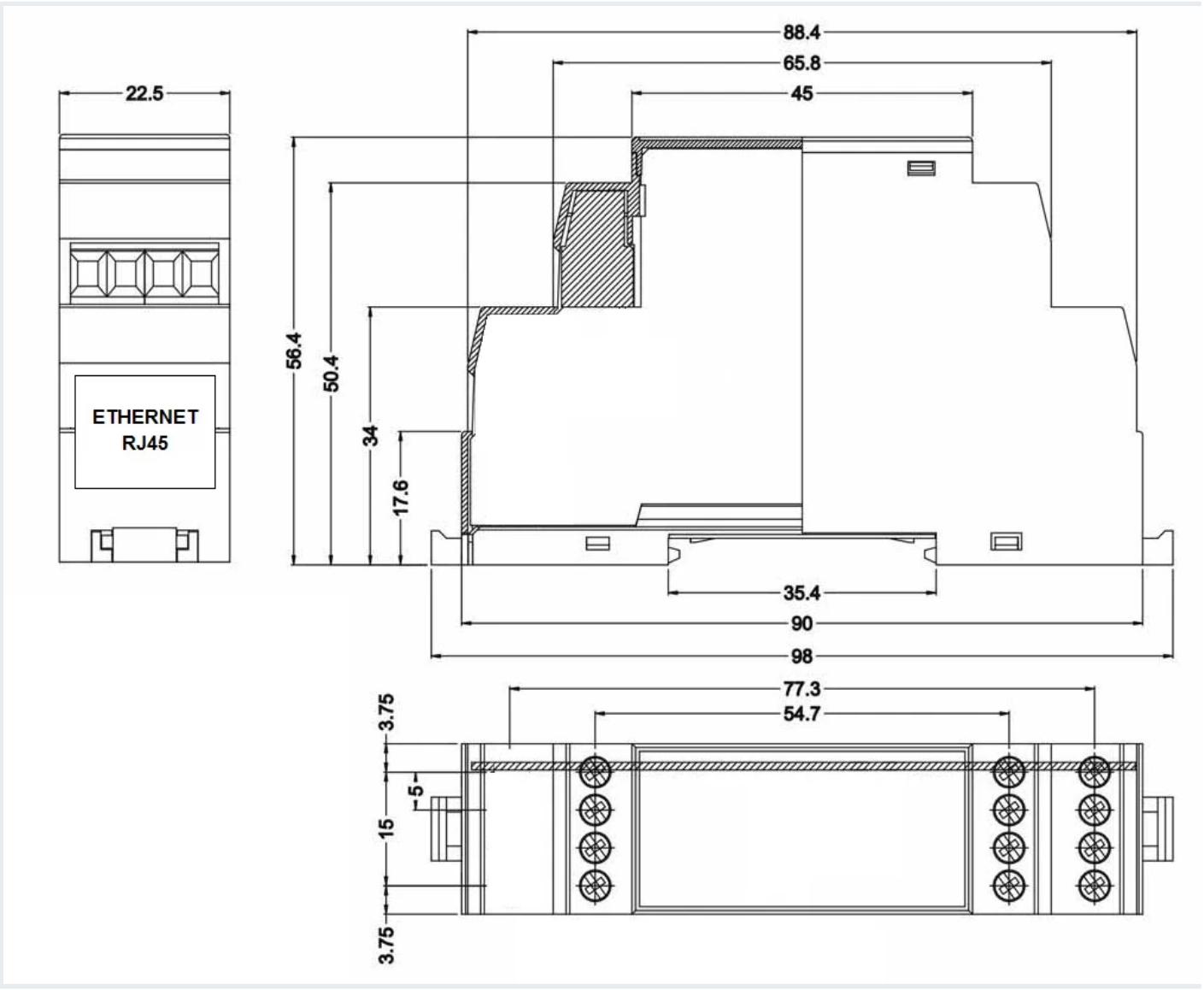


LED indicators

Converters C20 - C22			Converters C23 - C25		
					
LED indicator	**Color**	**Function**	**LED indicator**	**Color**	**Function**
PW	Blue	Power	PW	Blue	Power
ETH	Green	Network activity	ETH	Green	Network activity
ST	Orange	Console mode	CN	Yellow	Console mode
	Red	Service mode	COM	Green	RS232/RS485 activity
			SR	Red	Service mode
			ER	Yellow	Error

Enclosure dimensions

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



Getting started

Power supply

Serial Port Servers C20 - C25 have wide voltage power input (12-30 VDC) and the power consumption is less than 1W.

Reset to factory defaults

Reset to factory defaults is possible on the web page in the device section or using the service mode.

Service mode

Procedure to enter service mode for C20 - C22 converters

- Turn off the power of the device.
- Connect Ethernet converter to the dedicated USB/UART converter via the microUSB port.
- Connect the USB/UART converter to the PC.
- Open the serial console (default baud rate is 115200 bps).
- Press and hold the S1 button.
- Turn on the power.
- Wait until the ST indicator (red LED) lights up.
- Release the S1 button.
- If the process is successful, service commands can be typed into the terminal.

Procedure to enter service mode for C23 - C25 converters

- Install STM32 Virtual COM Port Driver (if it was not done before).
- Turn off the power of the device.
- Connect Ethernet converter directly to the PC (the dedicated USB/UART converter is not obligatory).
- Open the serial console (default baud rate is 115200 bps).
- Press and hold the S1 button.
- Turn on the power.
- Wait until the ST indicator (red LED) lights up.
- Release the S1 button.
- If the process is successful, service commands can be typed into the terminal.

List of commands in the service mode

Command	Description
help	Print the help.
credits	Print current credits value for this device.
dev_ident	Print the device identification value.
restart	Restart the system.
serial_num	Print the serial number of this device.
version	Display the bootloader version.
xmodem	Download image to the internal flash using xmodem.
defaults	Reset application variables to defaults.
ipconfig	Print or change the network configuration.
flash_read	Read bytes from flash memory.
md	Read bytes from memory address.

> In the service mode, the “ipconfig” command can only show a last static IP address.

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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