CNVT-USB-RS485-V2 | USB TO MODBUS CONVERTER

Operating instructions

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SAFETY AND PRECAUTIONS

Read all the information, the datasheet, Modbus map, mounting and operating instructions and study the wiring and connection diagram before working with the product. For personal and equipment safety, and for optimum product performance, make sure you entirely understand the contents before installing, using, or maintaining this product.

For safety and licensing (CE) reasons, unauthorised conversion and / or modifications of the product are inadmissible.

The product should not be exposed to abnormal conditions, such as extreme temperatures, direct sunlight or vibrations. Long-term exposure to chemical vapours in high concentration can affect the product performance. Make sure the work environment is as dry as possible; avoid condensation.

All installations shall comply with local health and safety regulations and local electrical standards and approved codes. This product can only be installed by an engineer or a technician who has expert knowledge of the product and safety precautions.

Avoid contacts with energised electrical parts. Always disconnect the power supply before connecting, servicing or repairing the product.

Always verify that you apply appropriate power supply to the product and use appropriate wire size and characteristics. Make sure that all the screws and nuts are well tightened and fuses (if any) are fitted well.

Recycling of equipment and packaging should be taken into consideration and these should be disposed of in accordance with local and national legislation / regulations.

In case there are any questions that are not answered, please contact your technical support or consult a professional.

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CNVT-USB-RS485-V2 | USB TO MODBUS CONVERTER

SENTERA
C O N T R O L S

PRODUCT DESCRIPTION

The CNVT-USB-RS485-V2 is a self-powered USB to Modbus RTU (RS485) converter. The Modbus RTU serial information is automatically converted to serial information on a USB virtual COM port.

ARTICLE CODES

Code	Supply voltage	Imax
CNVT-USB-RS485-V2	5 VDC from USB bus	20 mA

INTENDED AREA OF USE

- Connect Sentera devices with Modbus RTU communication to a computer for monitoring or configuration

TECHNICAL DATA

- Communication: 2-wire, up to 256 nodes
- Max. cable length: 1200m (at 9600 bit/s)
- Baudrate range: 4800 - 230400 b/s
- Connection with RJ45 plug (UTP-cable)
- Input buffer 256 B, output buffer – 256 B
- Installs as a standard Windows COM port
- Operating ambient conditions:
  - temperature: -10—60 ºC
  - rel. humidity: 5—85 % rH (non-condensing)
- Storage temperature: -40—50 ºC

STANDARDS

- Low Voltage Directive 2014/35/EC:
  - EN 60529:1991 Degrees of protection provided by enclosures (IP Code) Amendment AC:1993 to EN 60529
- WEEE 2012/19/EC
- RoHs Directive 2011/65/EC

CE

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WIRING AND CONNECTIONS

Wiring and connections	
RJ45 Sentera Modbus network	
Pin 1	Not connected
Pin 2	Not connected
Pin 3	Modbus RTU communication, signal A
Pin 4	Modbus RTU communication, signal A
Pin 5	Modbus RTU communication, signal /B
Pin 6	Modbus RTU communication, signal /B
Pin 7	Not connected
Pin 8	Not connected

RJ45 socket	USB A socket

MOUNTING & OPERATING INSTRUCTIONS IN STEPS

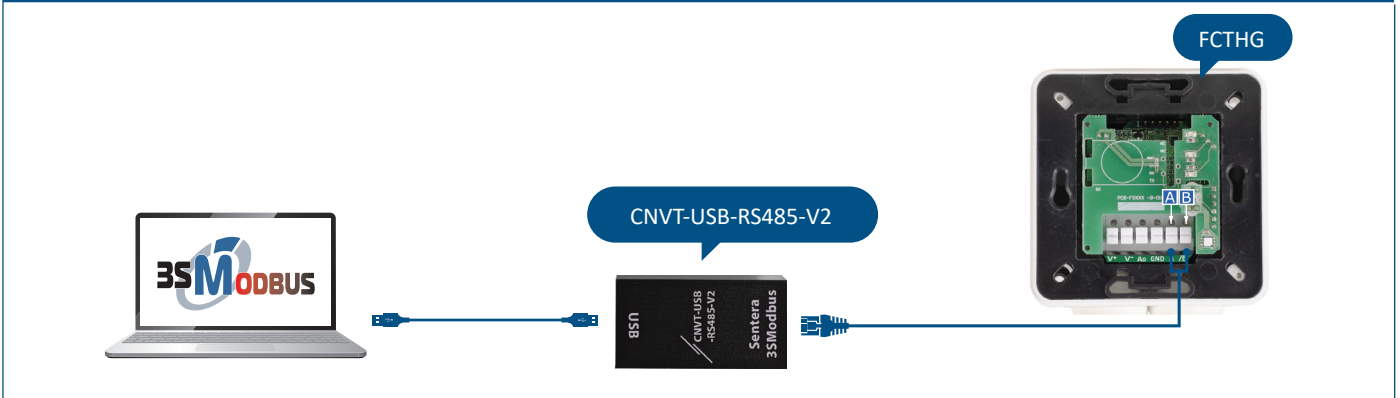Before you start mounting the unit, read carefully **"Safety and Precautions"**.

Follow these steps:

1. You can either use a standard LAN cable or crimp one yourself as shown in the **Wiring and connections** section above).
2. Use a double USB type A cable for data transfer to connect to the USB socket of your computer. See **Fig. 1**.
3. Plug the UTP cable connection with RJ45 from a Sentera product with Modbus RTU communication into the other side of the converter.
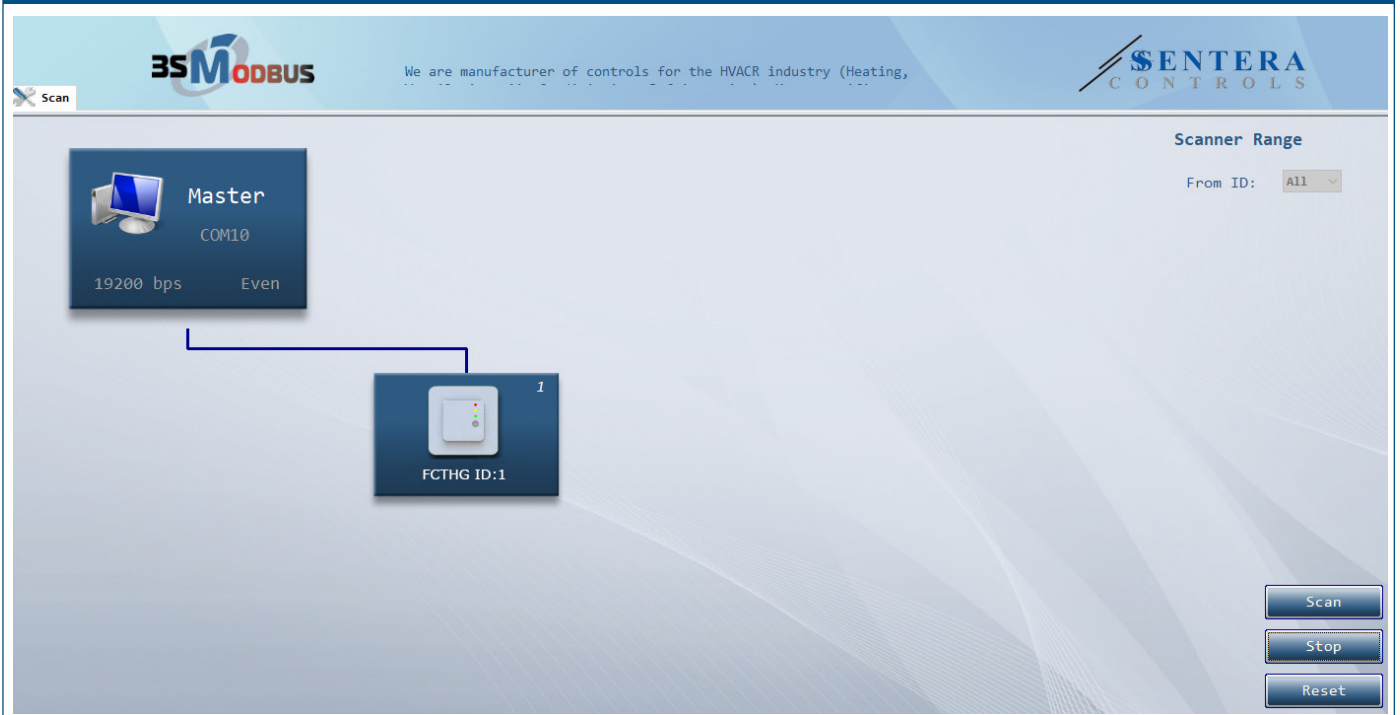
NOTE

Pins 1, 2, 7 and 8 are not internally connected. In case a 24 VDC supply voltage is connected to these pins (Sentera PoM connection), it is not harmful to connect this cable to the converter.
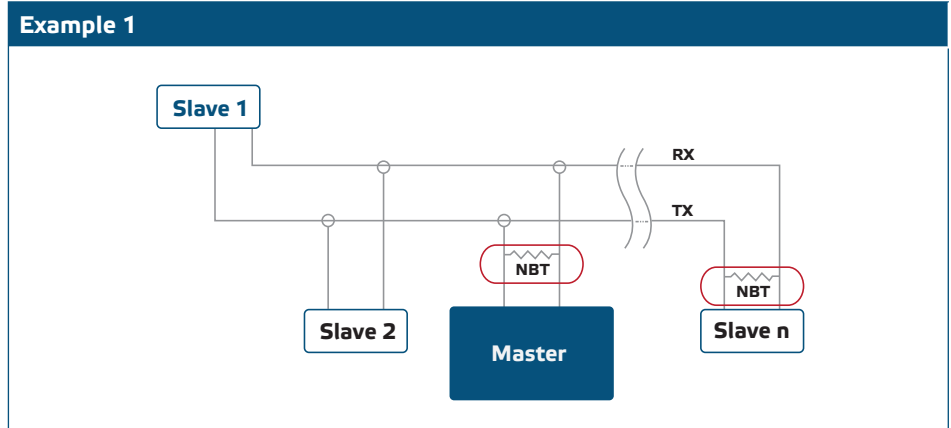
Fig. 1 Connection examples

4. Start the 3SM Center Software Suite and click on the 3SModbus application button. Once you start the application, the computer will scan and automatically recognize the connected device(s) (see **Fig. 2**).

Fig. 2 3SMobdus application

Network Bus Termination (NBT) Resistor

A Network Bus Termination resistor is hardware connected inside CNVT-USB-RS485-V2. To assure correct communication, the NBT needs to be activated in only two devices on the Modbus RTU network.

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Example 1

NOTE

On a Modbus RTU network, two bus terminators (NBTs) need to be activated.

VERIFICATION OF INSTALLATION INSTRUCTIONS

Blinking left LED on the RJ45 socket blinks to indicate data transmission. If the slave device answers – the right LED blinks to indicate that data is received.

Fig. 3 LED indications

TRANSPORT AND STORAGE

Avoid shocks and extreme conditions; stock in original packing.

WARRANTY AND RESTRICTIONS

Two years from the delivery date against defects in manufacturing. Any modifications or alterations to the product after the date of publication relieve the manufacturer of any responsibilities. The manufacturer bears no responsibility for any misprints or mistakes in this data.

MAINTENANCE

In normal conditions this product is maintenance-free. If soiled, clean with a dry or damp cloth. In case of heavy pollution, clean with a non-aggressive product. In these circumstances the unit should be disconnected from the supply. Pay attention that no fluids enter the unit. Only reconnect it to the supply when it is completely dry.