

RDPU | UNIVERSAL PROGRAMMABLE CONTROLLER

Mounting and operating instructions



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SAFETY AND PRECAUTIONS



Read all the information, the datasheet, 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 our technical support or consult a professional.

PRODUCT DESCRIPTION

RDPU - Remote Domestic Processing Unit - is a universal programmable controller that requires a dedicated firmware for a specific application. The user interacts with the graphical user interface via a 5" multi-touch capacitive TFT-LCD display. Thanks to the built-in Modbus RTU communication, various HVAC sensors and / or fan speed controllers can be connected to this device via a simple RJ45 connector.

INTENDED AREA OF USE

- Residential and commercial buildings
- For indoor use only

TECHNICAL DATA


LCD-TFT touch screen

- Display size: 5"
- Display type: Capacitive LCD-TFT

Other

- Six RJ45 connectors for Modbus RTU and 24 VDC power supply connection - one to connect the RDPU to a Master system (BMS / configuration tool) and five to control up to 247 slave devices
- Connects to all Sentera sensors / fan speed controllers with Modbus RTU
- Power supply: 24 VDC (PoM)
- Maximum power consumption: 2,4 W
- Nominal power consumption in normal operation: 1,8 W
- I_{max}: 100 mA
- Wall-mounted enclosure
- Protection class: IP30 (according to EN 60529)
- Operating ambient conditions:
 - ▶ temperature: 0–50 °C
 - ▶ rel. humidity: 5–85% rH (non-condensing)
- Storage temperature: -10–50 °C

STANDARDS

- EMC directive 2014/30/EC: 
 - ▶ EN 60730-1:2011 Automatic electrical controls for household and similar use - Part 1: General requirements
 - ▶ EN 61000-6-1:2007 Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments
 - ▶ EN 61000-6-3:2007 Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments Amendments A1:2011 and AC:2012 to EN 61000-6-3
- Low Voltage Directive 2014/35/EC:
 - ▶ EN 60529:1991 Degrees of protection provided by enclosures (IP Code) Amendment AC:1993 to EN 60529
 - ▶ EN 60730-1:2011 Automatic electrical controls for household and similar use - Part 1: General requirements
- WEEE Directive 2012/19/EC
- RoHs Directive 2011/65/EC

WIRING AND CONNECTIONS

Pins 1 & 2	Pins 3 & 4	Pins 5 & 6	Pins 7 & 8
24 VDC	A	/B	GND
Supply voltage (24 VDC)	RS485, Modbus RTU communication, signal A	RS485, Modbus RTU communication, signal /B	Supply voltage, ground



NOTE

The maximum load per channel must not exceed 1,5 A.

MOUNTING INSTRUCTIONS IN STEPS

Before you start mounting the RDPU, read carefully **“Safety and Precautions”**. Choose a smooth surface for installation (a wall, panel, etc.) and proceed with the following mounting steps:

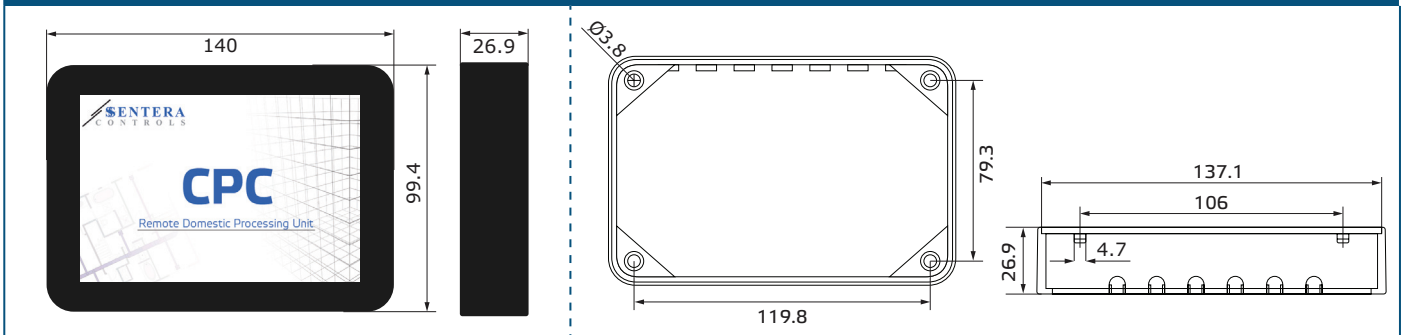
1. Using a flat screwdriver to release the snap-fits, carefully separate the RDPU into its two main components - the display with its plastic enclosure and the mounting ring, see **Fig. 1 Snap-fits release**.

Fig. 1 Snap-fits release



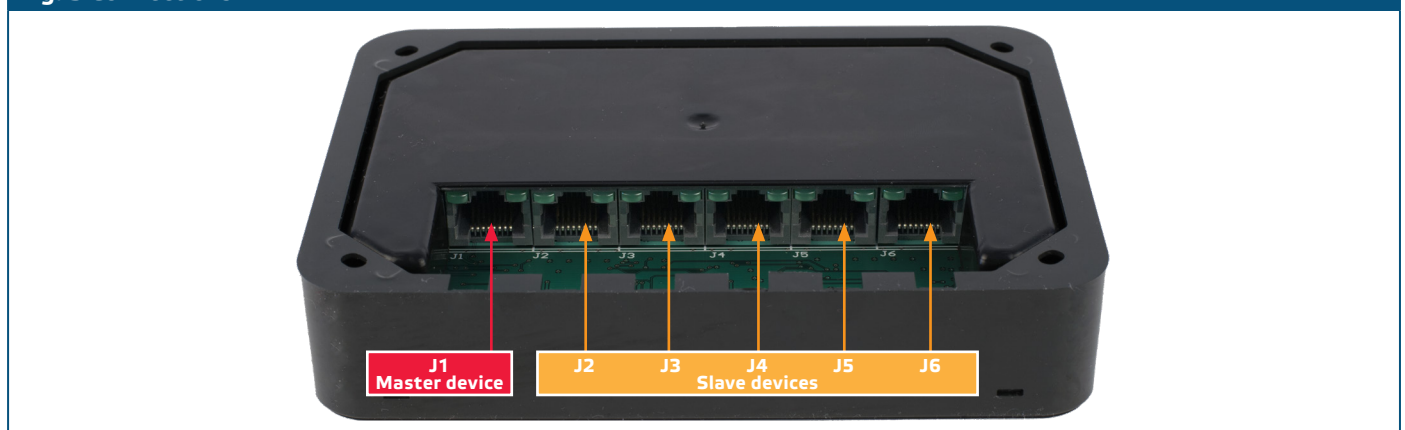
2. Using suitable fastening materials (not supplied), position the mounting ring at least 1,5 m from the floor. Mind the correct mounting position and unit dimensions, see **Fig. 2 Mounting and dimensions**.

Fig. 2 Mounting and dimensions



3. To do the wiring, plug the RJ45 connectors into the sockets at the back of the display enclosure bearing in mind that the RDP controller consists of 6 separate RJ45 Modbus communication ports. The communication is realised via two separate Modbus channels: one for master devices and another for slave devices. The first RJ45 connector "J1" is connected to the first Modbus channel, usually used for connection to a master device (i.e. PC). The other 5 connectors, "J2", "J3", "J4", "J5" and "J6" are connected to the second Modbus channel and are usually used for connection with slave devices (i.e. room sensors / switches, electronic fan speed controllers, etc.), see **Fig. 3 Connections**.

Fig. 3 Connections



4. Put back the display enclosure and carefully snap it in.

VERIFICATION OF INSTALLATION

1. After switching on the power supply, the LCD-TFT screen turns on and the welcome screen is loaded. Please refer to the relevant software user guide for details.
2. If the welcome screen does not load, please check the connections.

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.