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RP210
Parametric Graphic Room Panel

Modbus

Features
- Parametric configuration in line with the project
- Parameter support for 11 components
- Manuel or automatic fan control
- Manuel or automatic heating/cooling changeover
- Auto, heating, cooling, and fan modes
- User temperature setting limitation
- Weekly Schedule
- Modbus communication
- Adjustable user parameters
- Graphic LCD display
- Analysis screen
- Language selection
- Screen saver logo selection

Applications
This product can be used with all Modbus master-supported freely programmable devices, especially the Smallart Controller series.

Notes on Usage
Please read the document carefully. RP210 room panel has been designed and manufactured with the latest technological developments and safety rules. Safety warnings must be observed to prevent injury and property damage.

Safety Advice-Caution
The device must be installed, maintained, and repaired by authorized personnel. The device should be powered with 24V AC / 12-30V DC supply.

Order Information

Product Code	Definition	Power	Communication
RP210	Room Panel	Max. 1W	Modbus RTU

Technical Specifications

Power Supply	24V AC / 12-30V DC
Power Consumption	Max. 1W
Electrical Connection	Screw terminals, each terminal can accept 2 × 1.5 mm2 or 1 × 2.5 mm2 wire.
Battery for Real Time Clock (RTC)	Lithium CR1220 3.3V
Temperature Measurement Type	NTC
Temperature Measuring Range	-9.9°C … +99.9°C
Resolution	0.1 °C

Communication	RS485
Communication Protocol	Modbus RTU (Slave)
Communication Cabling	Shielded Twisted Pair (STP), RS485 Data Communication Cable 2 x 2 x 0.34...0.75mm²
Set Point Range	5°C ... 45°C (Adjustable)
Dimensions	112 x 85 x 28.5 mm (W x H x D)
Montage	(2 x 2 x 0.34...0.75mm²) Shielded and Twisted Pair Cable
Protection Class	IP30

Mounting Location

The room panel is suggested to be installed indoors, a place with around 1,5m height above the floor so that it measures the average room temperature. It should be away from direct sunlight, any cover, or any heat source, to avoid false signals for temperature control. The mounting location of the room panel is less critical if external temperature sensors are used.

Mounting Instruction

1. Seperate the thermostat
2. Lever the portable terminals block
3. Wiring connected to the terminal block
4. Install the terminal block
5. Fix the back plate to the wall
6. Press the face panel to the back panel
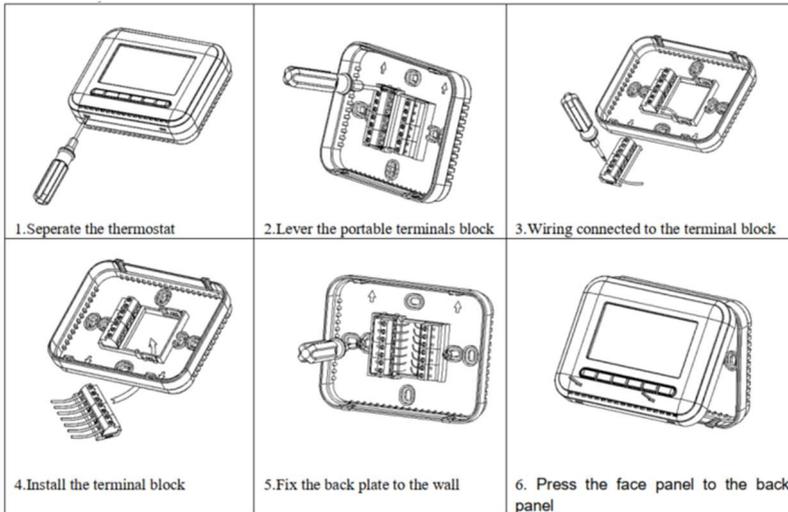
Note: Be sure to connect all the wires according to the wiring diagrams and keep them away from water, mud, and other materials to prevent the unit from breaking down!

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Wiring Diagram
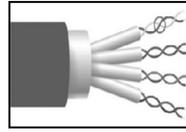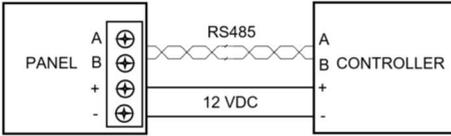
(2 x 2 x 0,34...0,75mm²)
Use shielded and Twisted Pair cables.

Keypad and Display Definitions

⏻ → On/Off Key

M → Menu Key

✺ → Fan/ESC Key

✓ → Confirm Key

▲ → Up Key

▼ → Down Key

Home Screen and Operations

• On / Off: Use the relevant key to turn the device on and off.

• Setpoint Value: Select the SET with the **Up** and **Down** keys, enter the operation with the **Confirm** key, change the set with the **Up** and **Down** keys, and exit with the **Confirm** key again. Default value range is 5°C-45°C.

• Mode Selection: Select the MODE with the **Up** and **Down** keys, enter the operation with the **Confirm** key, change the mode with the **Up** and **Down** keys, and exit with the **Confirm** key again.

• Menu Entry: Press the **Menu** key on the main screen to enter the menu screen. You can enter the weekly time program and settings section by highlighting the screen you want to view and pressing the **Confirm** key.

• Exit Screen: Press the **ESC** key to exit from any screen.

• Analysis Screen Shortcut: Press the **ESC** key for 5 seconds to display the analysis menu.

• Service Menu Shortcut: Press both the **Menu** and **Down** keys for 5 seconds to display the service menu.

• Configuration Menu: Press both the **Menu** and **ESC** keys for 5 seconds to display the configuration menu.

• ASP and VNT enable points must be activated via communication so that the pacco and fan status can be displayed on the main screen.

ASP View Enable: Communication Parameter **182**
ASP Pacco View Enable: Communication Parameter **183**
VNT View Enable: Communication Parameter **201**
VNT Pacco View Enable: Communication Parameter **202**

Weekly Programming
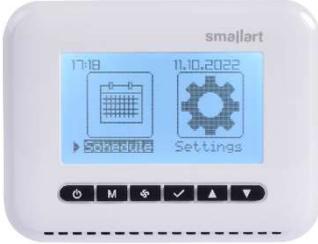
Enter the menu with the **Menu** key from the main screen. From here, enter the **"Weekly Schedule"** screen with the **Confirm** key.

1. Press the **Confirm** key to enter the "ON" section. Set the hour and minute values that the device will be turned on with the below information.
2. After the "ON" section settings are completed, press the **Menu** key to enter the "OFF" section. Set the hour and minute values that the device will be turned off with the below information.

Use the **Up** and **Down** keys to set the hour and minute values that the device will be turned on or off. Use the **Menu** key to switch between the hour and minute. Save settings with the **Confirm** key.

You can set the opening and closing times for each day of the week separately by using the **Up** and **Down** keys.

After completing your operations, press the **ESC** button to enter the weekly program enable/disable section. The weekly schedule can be activated by selecting "Enable" with **Confirm** button.

Note: When the Weekly Schedule setting is set to "Enable", the clock icon will appear on the screen and the on/off key will be locked. On/off control of the device will not be possible via the room panel.
Weekly Program Active: Communication Parameter **373**
Weekly Program Status: Communication Parameter **375**

Note: If the "Weekly Time Schedule is Disabled!" warning is displayed after entering the weekly schedule screen, activate the weekly program enable point by making it "1".

Note: Make sure that the time and date are set correctly so that there is no error in the process.

Weekly Program Enable: Communication Parameter **21**

Settings

Enter the menu with the **Menu** key from the main screen. From here, enter the **"Settings"** screen with the **Confirm** key.

When the Settings screen opened, the Analysis, Brightness, Language, Clock, System Settings, and Information screens will appear. Switch between these screens with the **Up** and **Down** keys then use **Confirm** key to enter the selected screen.

1. Analysis Screen

The room panel analysis screen contains 11 component screens and their parameters that can be configured in line with the projects besides sensors and alarms screens. Related screens can be activated and displayed on the analysis screen via communication. There is an activation and value point for each line within the screens. The activation points of the screen that are desired to display can be accessed from the related section of the communication menu.

Details about the screens and parameters that can be selected in the analysis screen are given in the table below.

Analysis Screen	Reading Parameters		Writing Parameters	
Sensors	o Fresh Air Temp. o Supply Air Temp. o Return Air Temp. o Room Temp. o Outside Air Temp. o Fresh Air RH o Supply Air RH o Return RH	o Room RH o Outside Air RH o Return Air Quality o Return Air CO2 o Room Quality o Room CO2 o Room Diff. Press.		
Ventilator	o Command Status o Positioning	o Pressure o Flow	• Pressure Set • Flow Set • Speed Set	
Aspirator	o Command Status o Positioning	o Pressure o Flow	• Pressure Set • Flow Set • Speed Set	
Valve Actuators	o Heating Valve o Cooling Valve o Pre-Heating Valve	o Heating Valve o Cooling Valve o Pre-Heating Valve		
Damper Actuators	o Fresh Air Damper o Exhaust Air Damper o Mix Air Damper o Return Air Damper	o Bypass Damper o Return Air Damper o Bypass Damper		
Damper Actuators Feedback	o Fresh Air Damper o Exhaust Air Damper o Mix Air Damper o Return Air Damper	o Bypass Damper o Return Air Damper o Bypass Damper		
DX Battery	o Command Status o Status	o Positioning o Input Temp.	• Mode	
Electrical Heater	o 1. Stage Command o 1. Stage Command o 2. Stage Command	o 2. Stage Status o 3. Stage Command o 3. Stage Status		
Humidifier	o Command Status o Status	o Positioning	• System • RH Set	
Rotor	o Command Status o Status	o H-0-A Switch o Speed	• System • Speed Set	
Compressor	o Command Status o Status o Pressure(bar)	o Solenoid Valve o 4-Way Valve		
Condenser	o Command Status o Status	o H-0-A Switch o Speed	• Speed Set	

For Example,

ASP Screen Activation: When Communication Parameter **182** is set to "1" the Aspirator screen opens.

ASP Command Status Activation: When Communication Parameter **187** is set to "1" the Command Status line is displayed. To open the line that is desired to display, the activation value of that line should be set to "1" over the communication. The line or screen that isn't desired to display can be closed by making the screen/line activation value "0".

Each line has the parameter name, value, and unit. Detailed information about all lines can be found in the communication menu. There is a "•" sign at the beginning of some lines. The values with this sign can be changed on the panel. The section that is desired to change can be opened with the **Confirm** key. The value can be changed with the **Up** and **Down** keys and saved with the **Confirm** key. The example for the aspirator screen also applies to other screens.

The **Menu** or **Up** and **Down** keys can be switched between the screens.

Each alarm and sensor correspond to one bit in the binary number system. To observe the sensors on the sensors screen, enter the bit value of the sensor into the "Active Sensor List" parameter via communication. There is information about sensors and bit values in the communication menu. For detailed information, the "Sensors" heading can be viewed in the communication menu.

For example,

Freeze Alarm corresponds to the 1st bit. The F7 Filter Alarm corresponds to the 2nd bit. To display these two alarms on the alarms screen, set the "Remote Alarm 1" parameter value to "3". For all alarm lines to appear, set the "Remote Alarm" parameter value to "-1".
RemoteAlarm1: All alarms between 1-16 can be displayed from Communication Parameter **176**.
RemoteAlarm2: All alarms between 17-32 can be displayed from Communication Parameter **177**.
RemoteAlarm3: All alarms between 33-48 can be displayed from Communication Parameter **178**.
RemoteAlarm4: All alarms between 49-65 can be displayed from Communication Parameter **179**.

The Outside Air Temperature Sensor corresponds to the 1st bit. The Return Air Temperature Sensor corresponds to the 3rd bit. For these two sensors to be displayed on the sensors screen, set the "Active Sensor Buffer" parameter value to "4". For all sensor lines to appear, set the "Active Sensor Buffer" parameter value to "-1".
Active Sensor Buffer: Communication Parameter **374**

2. Brightness Display

Screen brightness can be adjusted with the **Up** and **Down** keys.

3. Language Selection

Select language with the **Up** and **Down** keys. Choose "Türkçe" or "English" than confirm with the **Confirm** key.

4. Clock Settings

To open settings section, press **Confirm** key on the option that will change. Clock setting can be changed with **Up** and **Down** keys. Switch between hours and minutes with the **Menu** key. Changes made can be saved with the **Confirm** key.

The time display format can be selected as 12 or 24. Switch between options with the **Up** ve **Down** key. Selection can be saved with the **Confirm** key.

When date settings are made, the current day will be updated automatically.

5. System Settings

System Settings can be accessed by pressing and holding the **Menu** and **Down** keys together for 5 seconds on the main screen or by logging into the system settings menu from the user menu. The system setting menu can be accessed by entering the password "0203". Switching between digits is made with the **Menu** key. The digit value can be increased or decreased with the **Up** and **Down** keys. The password is confirmed with the **Confirm** key.

Technical user settings related to the panel are made in this section. To make changes in the parameters, select the parameter with the **Up** and **Down** keys. Select the parameter with the **Confirm** key. Change the digit value with the **Up** and **Down** keys. Switch between digits with the **Menu** key. Save changes with the **Confirm** key.

• Screen saver selection;

- • 0: Blank screen is shown.
- • 1: Time, date, and temperature values are displayed.
- • 2: Controlled according to logo selection.

• Logo Selection; This parameter determines the screen that will be displayed when the device is first turned on. Screen saver determines the screen that will be displayed when "0" is selected.

- • 0: Blank screen is shown.
- • 1: The Smallart logo is displayed.

• Communication Error: If the room panel experiences a communication error, if this parameter is "Enable", the communication error is displayed. If it is "Disable", the communication error is not displayed.
Note: If the communication error is "Enable", a value must be written to the "Communication Counter" parameter via communication.
Communication Counter: Communication Parameter **9**

• User Menu Password: The value entered in this parameter will be the user menu password.

• Advanced System Settings: User settings related to the control card are made in this section. Parameter changes can be made as explained above.

6. Information

The information screen contains general information about the device.

Configuration Menu
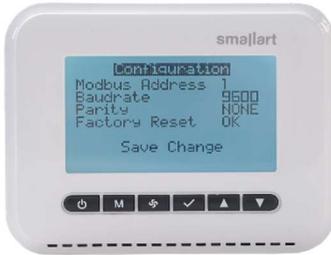
The configuration menu can be accessed by pressing the **Menu** and **ESC** keys together for 5 seconds on the main screen or by entering the information screen from the user menu and pressing the **Menu** key from there. Enter the configuration menu by typing the password "0203". Switching between digits is made with the **Menu** key. The digit value can be increased or decreased with the **Up** and **Down** keys. The password is confirmed with the **Confirm** key.

Modbus address (1-247), baud rate, and parity values can be changed from the configuration menu. Don't forget to click "**Save Change**" after completing your changes.

Factory Reset: To reset all changes select "Restore Factory Settings" and press **Confirm** key. When you come to the **OK** text, pressed **Confirm** key again. The device will return to its default state.

Press the **ESC** key to exit without any operation.

Internal Sensor Error: (ERR:1)
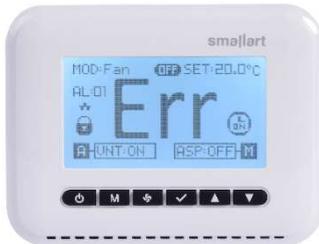
An internal sensor error occurs when the sensor on the room panel fails. This error is displayed only if the temperature type shown on the panel selected "Internal Temperature Sensor". In the analysis screen, this alarm is displayed as the ERR1 alarm.

Temperature Type Selection: Communication Parameter **371**
- 0: Internal temperature sensor
- 1: Return air temperature sensor
- 2: Supply air temperature sensor
- 3: Room temperature sensor

Communication Error

The communication error occurs if the communication counter is not set. A value should be given to the "Communication Counter" in communication list. Value counts down every second. When the counter reaches "0", "Connection Error" is displayed on the screen.
Communication Counter: Communication Parameter **9**

Dimensions