



Resilient Power Control Module

RPCM



Quick Install Guide

For models: RPCM 3x250, RPCM DELTA

Version 201907121532

1. Congratulations on purchase of your RPCM!

Dear Customer!

Please accept our congratulations on your purchase of RPCM - Resilient Power Control Module. This device will allow you to be in control of your power supply infrastructure with great user experience.

We have paid a lot of attention to craft the device the way we would want it to be for ourselves. In many ways, physically, ergonomically, architecturally, electrically it is designed to be one stop shop for many power control tasks that people meet in many circumstances.

We have made every effort to make RPCM useful both in enterprise environment behind firewall and in less strict environment with access to Internet, where all the power of the Cloud comes to your service.

We have tried to make interfaces as intuitive as possible and prepared detailed documentation to assist you in every case that may be not obvious or expected for this class of equipment.

Bon voyage! We hope you enjoy it!

RCNTEC Team

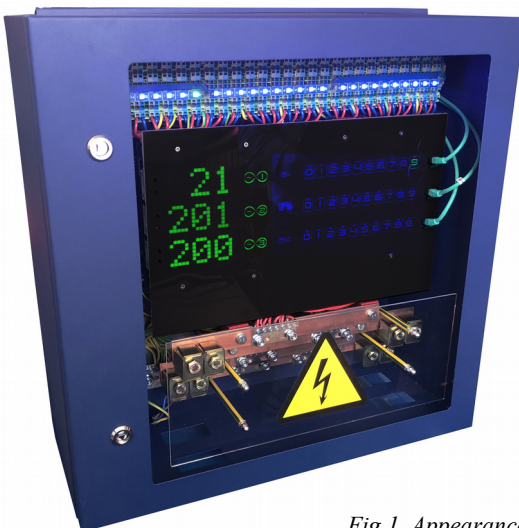
2. General review:

Models RPCM 3x250 and RPCM DELTA are designed for installation with 3 (three) phase input power lines.

RPCM 3x250 is designed for input current 250A and RPCM DELTA — for input current 467A.

RPCM 3x250 is connected in WYE mode (415V/240V), via 3 phase buses, neutral bus and protective ground bus.

RPCM DELTA is connected in DELTA mode (208V), via 3 phase buses and protective ground bus.



Note. For RPCM 3x250 and DELTA, the short-circuit current is 3 iNom or 75 A. To ensure selectivity, the circuit breakers at the inputs must be selected so that the tripping does not occur at short-circuit currents < 75A, the lower threshold of the tripping current of the upstream circuit-breakers must be chosen so that the tripping does not occur at the short-circuit current at the consumer connection point. To ensure complete selectivity, the use of selective circuit breakers with a trip delay at short circuit 10ms is recommended.

Fig.1. Appearance of RPCM 3x250 (the door is closed).

3. Main Elements of RPCM 3x250 and RPCM DELTA

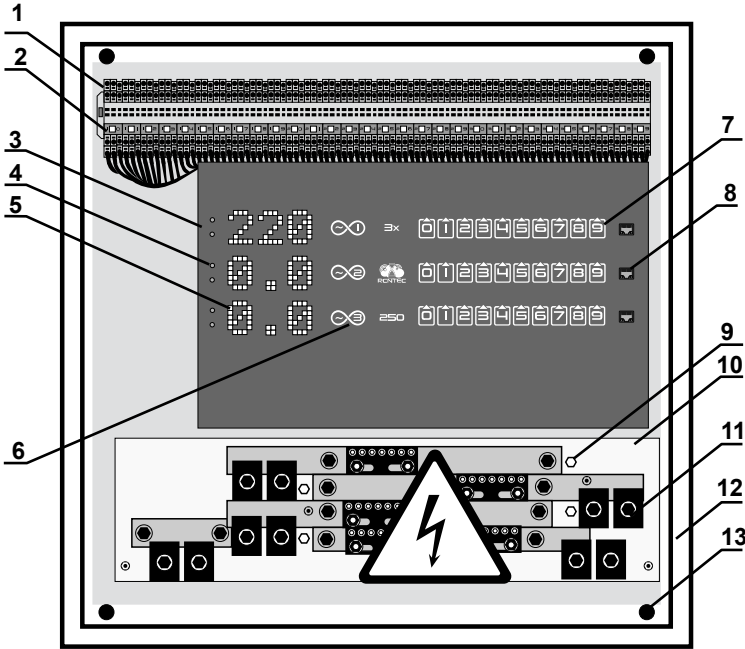


Fig. 2. Main elements.

Legend:

- 1 — terminal block for 90 ports (3 connections for each of 30 outlets);
- 2 — LED indicators outputs (30 indicators per 30 outlets);
- 3 — display panel;
- 4 — control buttons;
- 5 — displays for parameters (voltage, current, IP MAC, Serial name);

- 6 — RPCM unit number;
- 7 — outlets indicators;
- 8 — Ethernet RJ45 socket for network;
- 9 — fastening of transparent insulating shield;
- 10 — transparent insulating shield;
- 11 — terminal blocks with terminals;
- 12 — wall-mounted enclosure;
- 13 — mounting holes.

Power and ground requirements for the RPCM 3x250 model:

- line to neutral voltage $\leq 240V$;
- frequency in the AC network of 50-60 Hz;
- grounding must be connected;
- breakers/turn-off switches used to connect power to RPCM must be easily accessible for shutdown in case of danger.

Power and ground requirements for the RPCM DELTA model:

- line to line voltage $\leq 208V$;
- frequency in the AC network of 50-60 Hz;
- grounding must be connected;
- breakers/turn-off switches used to connect power to RPCM must be easily accessible for shutdown in case of danger.

4. Power Connection for RPCM 3x250 and RPCM DELTA

Power Connection 3x250

RPCM 3x250 connections should be made strictly according to the purpose of the terminals.

The assignment of the terminals for connecting the RPCM 3x250 is shown in Fig. 3.

IMPORTANT! The RPCM 3x250 model must be connected in the WYE mode, that is, there comes 3 phase wires and neutral, as well as a protective conductor (protective ground).

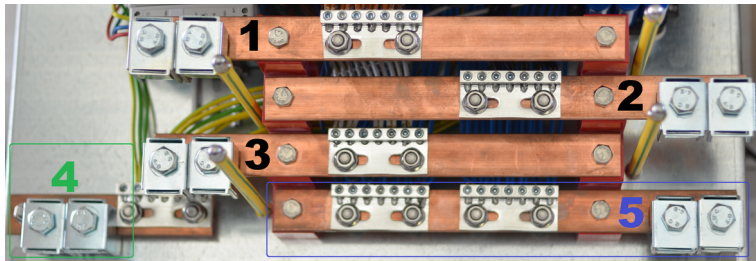


Fig.3. Terminal assignment for RPCM connection 3x250.

Legend:

- 1 — terminal block and terminals for line 1 connection;
- 2 — terminal block and terminals for line 2 connection;
- 3 — terminal block and terminals for line 3 connection;
- 4 — terminal block and terminals for protective ground;
- 5 — terminal block and terminals for connection to neutral.

Power Connection RPCM DELTA

RPCM DELTA connections should be made strictly according to the assignment of the terminals.

The assignment of the terminals for connecting RPCM DELTA is shown in Fig. 4.

IMPORTANT! The RPCM DELTA model must be connected in the DELTA mode, that is, 3 phase wires are fed to the device, as well as a protective conductor (protective ground).

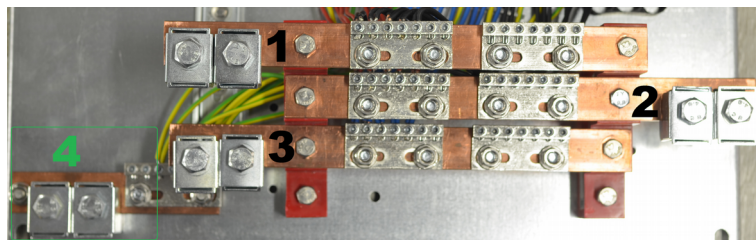


Fig.4. Terminal assignment for RPCM DELTA connection

Legend:

- 1 — terminal block and terminals for line 1 connection;
- 2 — terminal block and terminals for line 2 connection;
- 3 — terminal block and terminals for line 3 connection;
- 4 — terminal block and terminals for protective grounding.

5. Consumers Connection to RPCM 3x250 and RPCM DELTA

There is a terminal block with LED outlets indicators at the top of the RPCM 3x250 and RPCM DELTA.

The color marking is used to recognize outgoing conductors.

For RPCM 3x250:

- brown, black or grey color — line;
- blue color — neutral;
- yellow-green — grounding.

For RPCM DELTA:

- black, grey, or blue color — line
- yellow-green — grounding.

For installation, conductors are used with a specially prepared contact area — stripped from insulation and treated.

The cable is installed using a special terminal tool, that looks like a curved slotted screwdriver:



Fig 5. The special terminal tool.

At first, it is necessary to insert the terminal tool into the rectangular slot of the required terminal and push it as far as possible, without exerting very much effort.

Further, a conductor must be inserted into the round cable hole.

Then remove the tool from the slot on the terminal.

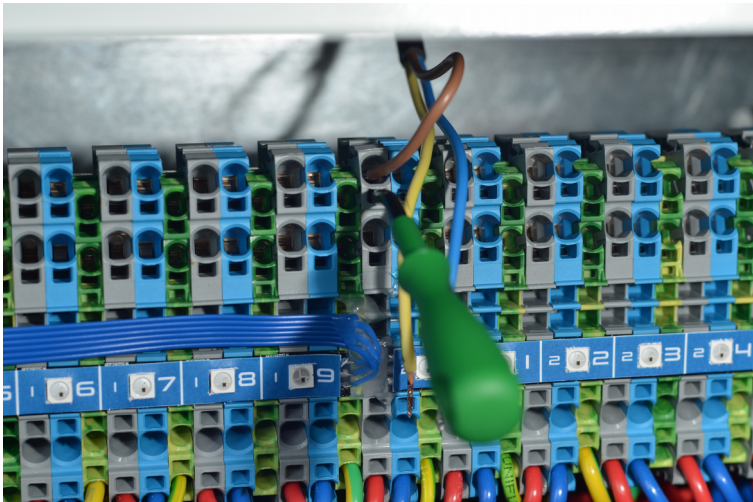


Fig 6. Inserting of a conductor (line) with terminal tool on RPCM 3x250.

6. Connecting via Web Interface

This type of control is based on use of application level protocols: HTTP/(HTTPS). Connection is performed through an Internet browser via standard port 80. The IP address or domain name of the device registered in DNS is indicated in the browser field. For example: *http://192.168.xxx.yyy is our device's IP.*

Authentication is performed using username and password.

Default user name and password:

user name — *rpcadmin* **password** — *rpcpassword*

RPCM's web interface supports an array of browser models and versions:

- Chrome — version 61.0.3163.100 and higher.
- Safari — version 10.1.1 and higher.
- Firefox — version 56.0 and higher.
- Opera — version 48.0.2685.32 and higher.

After going to the specified web-page, the authentication window will open up where you can enter username and password, as well as select a different language for the interface. Then you will be sent to RPCM's main web interface window - the Dashboard, where general information is provided in addition to system controls.

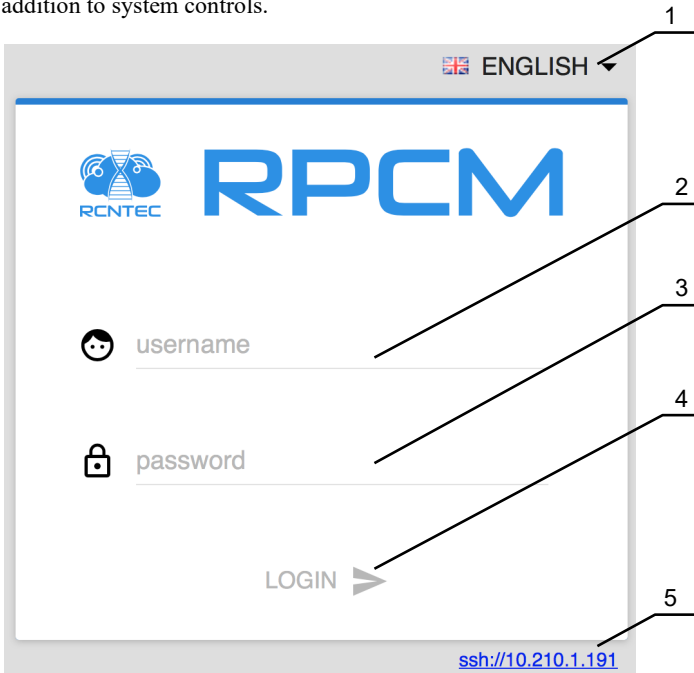


Fig. 7. System entry window

Please Note: For more detailed information about RPCM capabilities, please consult the User Manual available at <http://rpcm.pro/docs>

Legend:

- 1 — Web interface language selection menu
- 2 — Entry field for username
- 3 — Entry field for password
- 4 — LOGIN button to confirm credentials and to enter RPCM's web interface
- 5 — Link for launching SSH-client with this address as a parameter

7. Connecting via SSH

To connect via SSH protocol in UNIX-based systems, it will be sufficient to indicate from within the terminal's emulator the command: `ssh ip_address`.

In the MS Windows environment, you can use the PUTTY program. You will need to configure settings in the Sessions section of this program. If you have any question about SSH clients, e.g. PUTTY, please consult the relevant documentation.

RPCM's system during access via SSH uses username and password authentication.

Default user name and password:

user name — `rpcadmin`

password — `rpcpassword`

Example our device's IP is 192.168.xx.yy:

```
ssh 192.168.xx.yy
```

In response, username and password will be requested:

```
login as: rpcadmin
```

```
rpcadmin@10.210.1.24's password:
```

Alternatively, you can create a username right away:

```
ssh rpcadmin@192.168.xx.yy
```

In this case, the system will request that you enter only the password:

```
rpcadmin@192.168.xx.yy password:
```

```
RPCMcli version 0.7.39 is starting
user rpcadmin successfully authenticated from 192.168.xx.yy, access level superuser
Auto-logout time is set to 3600 seconds

[Serial Name]: GidraPervaya [Temperature]: 28C
[Serial Number]: RU2017101100000002M001DN02 [Ground]: GOOD
[Firmware Version]: 0.9.705 [Firmware Release Date]: 20180831083352
[Software Version]: 0.7.39 [Software Release Date]: 20190205140647
[Model/Hardware Version]: 3250/RPCM 3x250 P1 [Uptime]: 33d+00:59:49
[Force Failback]: OFF [Failback Delay in Seconds]: 0

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[Input 1]: 233V @ 49.99Hz 2.338A 0.493KW
-----
[Output 0]: OFF <admin: ON> 0mA 0W (SHORT)
[Output 1]: ON <admin: ON> 586mA 125W (OVERLOAD)
[Output 2]: ON <admin: ON> 223mA 46W
[Output 3]: ON <admin: ON> 530mA 112W
[Output 4]: ON <admin: ON> 251mA 52W
[Output 5]: ON <admin: ON> 223mA 46W
[Output 6]: ON <admin: ON> 525mA 112W
[Output 7]: ON <admin: ON> 0mA 0W
[Output 8]: ON <admin: ON> 0mA 0W
[Output 9]: OFF <admin: OFF> 0mA 0W

Type 'help' to get suggestions
ZloyZayats [192.168.xx.zz] 0 rpcadmin >
```

Fig. 8. An example of the console screen when logging in via SSH.

8. Requirements for Ambient Conditions During Use

Normal ambient conditions for use of Resilient Power Control Module (RPCM) are the following:

- operation range of ambient temperature is 0-40°C;
- operation range of relative humidity is 45-85% (non-condensing);
- operation range of altitude is 0-2000m.

The surrounding environment is non-explosive, does not contain a considerable amount of conductive dust, vapors, aggressive gases in concentrations that harmfully affect RPCM components and materials.

WARNING! The maximum range of temperature fluctuation during storage is 20°C per hour. Storage temperature is from -20 to 60°C. Prior to activating RPCM, it is necessary to allow the device time of not less than 24 hours to adapt to the new conditions. Physical installation of RPCM may continue during this acclimatization period. If there is condensation even after the 24-hour period, it will be necessary to wait until the specified norms have been reached before you can activate the system.

9. Starting to Operate

Receiving an IP address

IP address is obtained by default via DHCP. If DHCP server is unavailable, RPCM will obtain IP through Automatic Private IP Addressing (APIPA) thanks to Zero Configuration.

When this method of configuring network addresses is used, IP ranging from 169.254.xxx.xxx, Netmask 255.255.0.0 (CIDR standard — 169.254.0.0/16) are automatically assigned.

Determining the IP or MAC address

To find out the IP address, you will need to press the bottom button 3 times in succession (press 4 times for the MAC address. Before pressing the next time, you will need to wait for a reaction to the previous press).

When you press the first time, a running message regarding the electric current level (for example «25Amps») will be displayed. Only numerical figures will be displayed after 5 seconds.

When you press the second time, the power level will be displayed also as a running message. Only numerical figures will be displayed after 5 seconds.

When you press the third time, RPCM will switch over to IP address display mode.

When you press the fourth time, the MAC address will be displayed.

Reset to Factory Settings

To reset the device, hold the top button for this RPCM module. For example 1 of 3 on the front panel for 20 seconds.

Contacts:

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Feedback:

<http://rcntec.com/feedback>

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