RCNTEC
Resilient Cloud and Network TEChnologies

Resilient Power Control Module

RPCM

Quick Install Guide

For models:

RPCM 1502 (16A)
RPCM 1532 (32A)
RPCM ME 1563 (63A - Mining Edition)

Version 201908210021

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. Mounting onto a Rack

1. Install the cage (mounting) nuts as shown in the Fig. 1.
2. Place RPCM on the rack and secure it as shown in Fig. 2.
3. Prepare to connect the power lines as shown in Fig. 3.
4. Connect the power cables to the inputs.
5. Plug in the IEC-320-C14 connectors for connecting the devices to be supplied with power to the outlets.

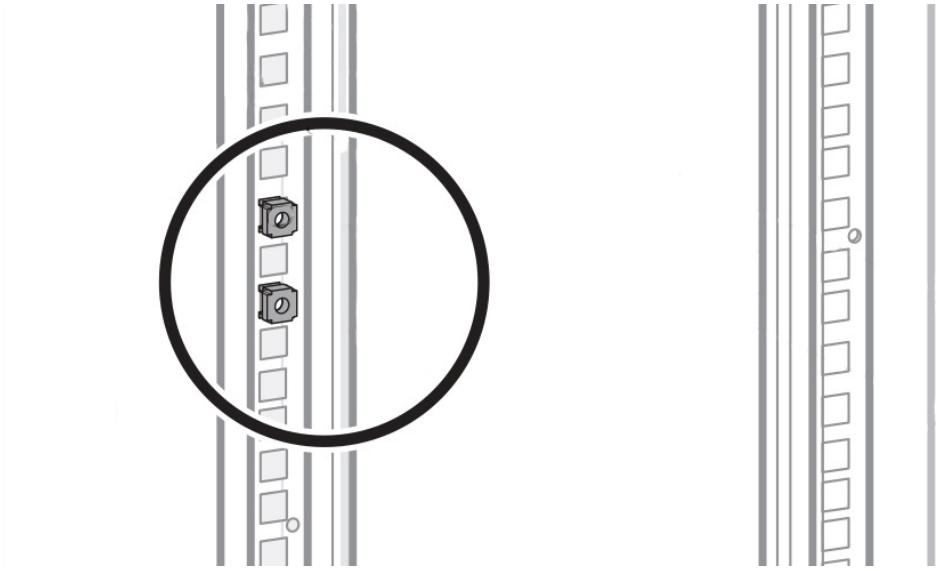


Fig.1. Installation of mounting cage nuts on rack

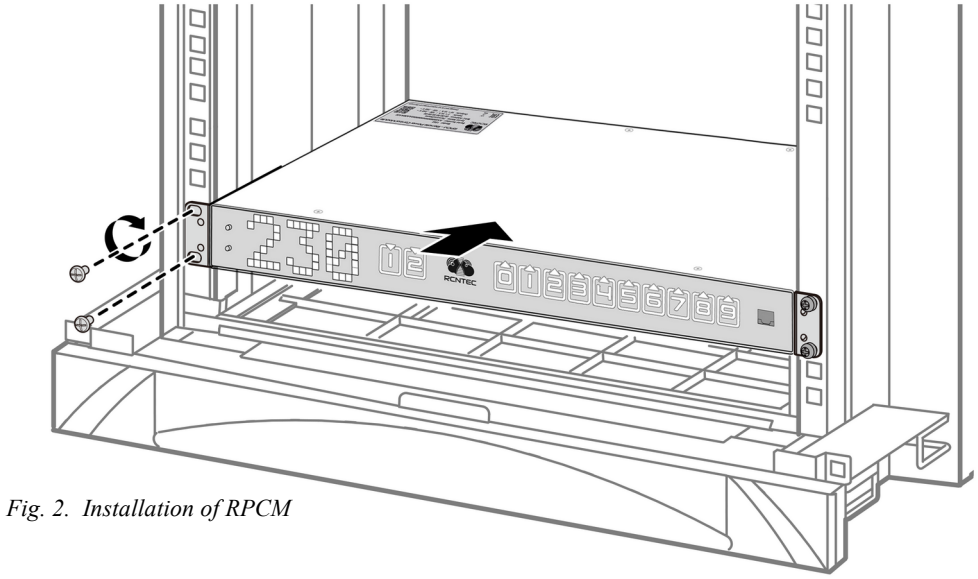
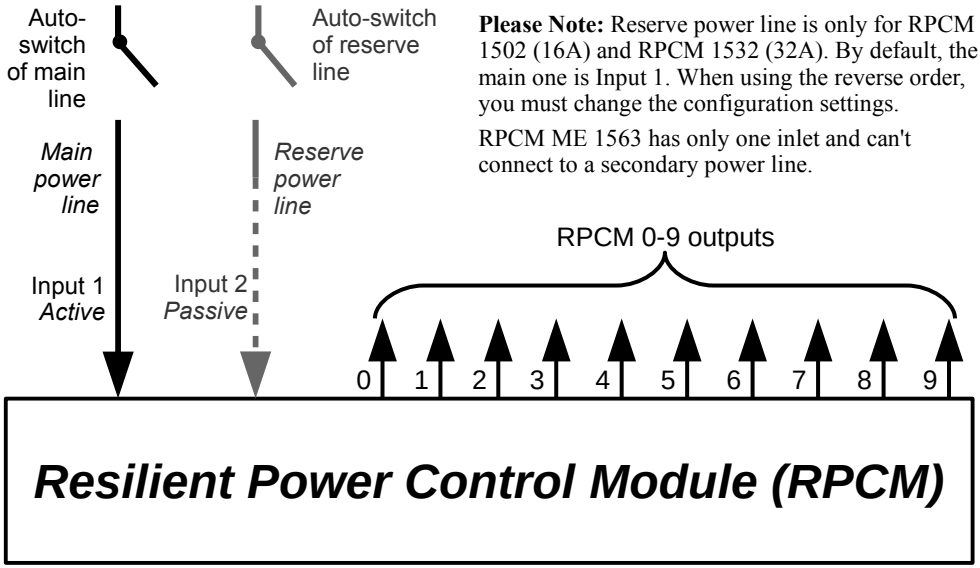


Fig. 2. Installation of RPCM

Please Note: Note. In order to prevent short-circuit protection of the terminals in the RPCM from tripping circuit breakers installed on the inputs, it is necessary to ensure complete selectivity of protection.
For RPCM 1502, RPCM 1532, RPCM ME 1563, the operation current of protection against short circuit on the terminals RPCM ~ 7 to 17 iNom for 10A or from ~ 70 to ~ 170 A, the response time for short circuit is about 2 milliseconds. the upper threshold of the tripping current of the upstream circuit breakers must be chosen so that the tripping does not occur at the fault current measured at the point connect the consumer. To ensure complete selectivity, the use of selective circuit breakers with a trip delay at short circuit 10ms is recommended.



Please Note: Reserve power line is only for RPCM 1502 (16A) and RPCM 1532 (32A). By default, the main one is Input 1. When using the reverse order, you must change the configuration settings.

RPCM ME 1563 has only one inlet and can't connect to a secondary power line.

Fig. 3. Wiring Diagram for Resilient Power Control Module

3. External Elements

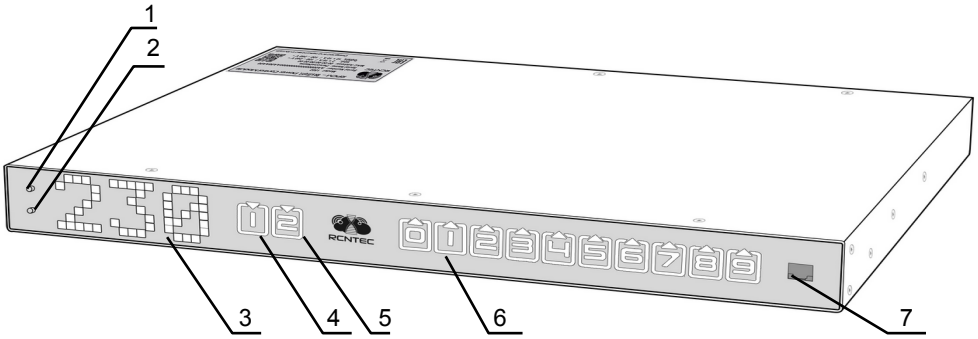


Fig. 4. Elements on the front panel of RPCM 1502 (16A) and RPCM 1532 (32A)

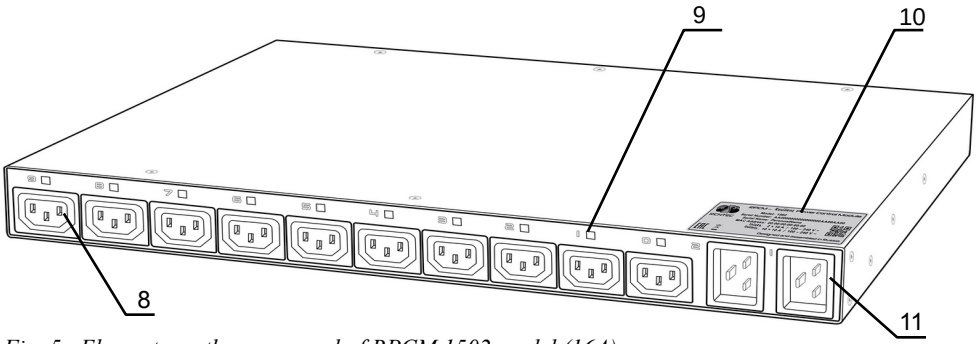


Fig. 5. Elements on the rear panel of RPCM 1502 model (16A)

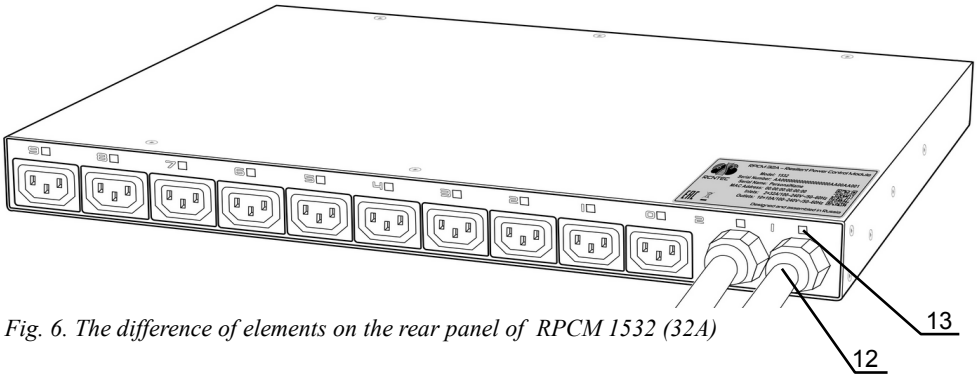


Fig. 6. The difference of elements on the rear panel of RPCM 1532 (32A)

Designation:

1 — Top control button
2 — Bottom control button
3 — System status indicator
4 — Input indicator 1
5 — Input indicator 2
6 — Outlet indicators 0-9
7 — Ethernet control port RJ45
8 — Outlets 0-9
9 — LED outlet indicators 0-9
10 — Serial tag
11 — Inputs 1-2 of RPCM 1502
12 — Inputs 1-2 of RPCM 1532
13 — Inputs indicators 1-2 of RPCM 1532
14 — One input indicator of RPCM ME 1563
15 — One input of RPCM ME 1563

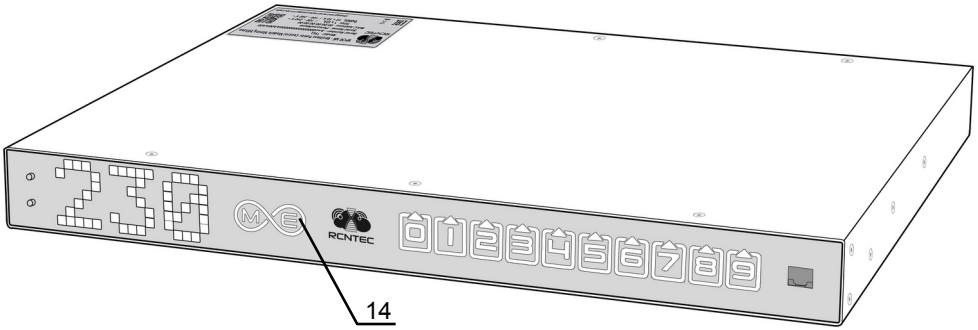


Fig. 7. The difference of elements on the front panel of RPCM ME 1563 (63A — Mining Edition)

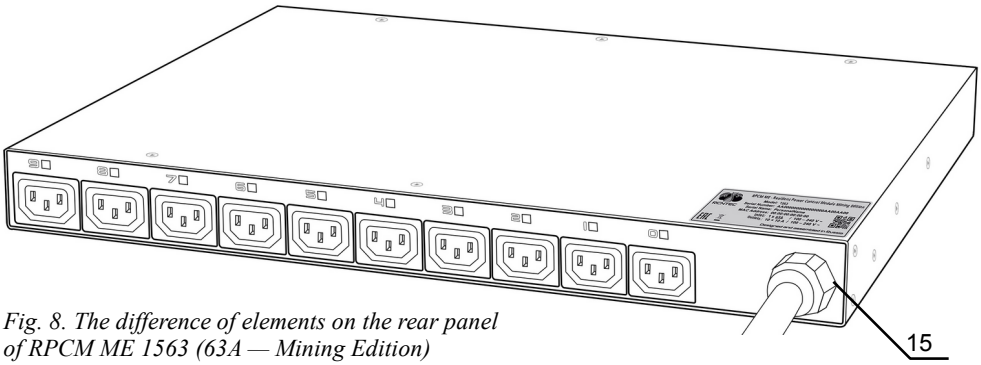


Fig. 8. The difference of elements on the rear panel of RPCM ME 1563 (63A — Mining Edition)

4. Starting to Operate

Reset to Factory Settings

To reset the device, hold the top button on the front panel for 20 seconds.

Receiving an IP address

IP address is obtained by default via DHCP. If there is no DHCP server or it is temporarily 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 «10Amps») 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.

5. 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 — *rpcmadmin* **password — *rpcmpassword***

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

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

After going to the specified webpage, 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.

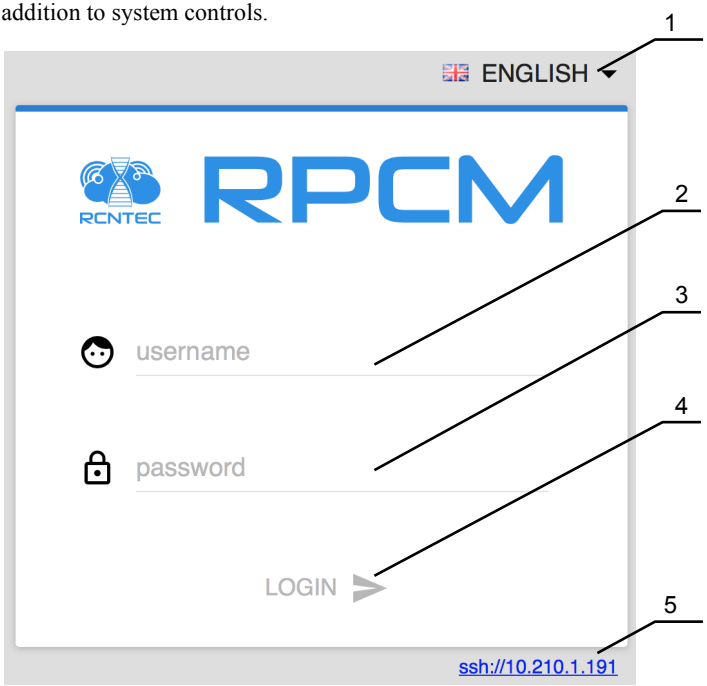


Fig. 9. System entry window

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

Designation:

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

6. 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 — *rpcmadmin*
password — *rpcmpassword*

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: rpcmadmin
rpcmadmin@10.210.1.24's password:
```

Alternatively, you can create a username right away:

```
ssh rpcmadmin@192.168.xx.yy
```

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

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

```
RPCMCli version 0.7.7 is starting
user rpcmadmin successfully authenticated from 192.168.xx.yy, access level
superuser
Auto-logout time is set to 3600 seconds

     [Serial Name]: SuperGeroy                    [Temperature]: 28C
   [Serial Number]: RU2017101100000002M001DN01        [Ground]: GOOD
[Firmware Version]: 0.9.454                    [Release Date]: 20180515164154
[Software Version]: 0.7.7             [Software Release Date]: 20180515185713
          [Uptime]: 02:20:32          [Model/Hardware Version]: 1502/RPCM
  [Force Failback]: OFF           [Failback Delay in Seconds]: 0
--------------------------------------------------------------------------------
         [Input 1]: 233V @ 49.99Hz    2.338A   0.493KW (ACTIVE, PRIORITY)
         [Input 2]: 232V @ 49.99Hz    0.000A   0.000KW
--------------------------------------------------------------------------------
        [Output 0]:  OFF <admin:  ON>     0mA      0W   (OVERLOAD)
        [Output 1]:   ON <admin:  ON>   251mA     52W   (OVERLOAD)
        [Output 2]:   ON <admin:  ON>   223mA     46W
        [Output 3]:   ON <admin:  ON>   530mA    112W
        [Output 4]:   ON <admin:  ON>   586mA    125W
        [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
SuperGeroy [192.168.xx.yy] 0 rpcmadmin >
```

Fig. 10. An example of the console screen when logging in via SSH for the RPCM 1502 or RPCM 1532 models (RPCM ME 1563 has one input)

7. Power and Grounding Requirements

Voltage < 240V. Frequency is 50-60Hz in a power grid.
Electric current level <16A for RPCM 1502, <32A for RPCM 1532 and <63A for RPCM ME 1563.
Voltage supply requirements:

- for RPCM 1502 — two power cables with IEC-320-C19 connectors,
- for RPCM 1532 — two sockets for plugging the 2P+E 32A 250V connectors,
- for RPCM ME 1563 — one socket for plugging the 2P+E 63A 250V.

NOTE: if only one cable is connected, the RPCM 1502 or RPCM 1532 will function properly except for the ATS operation.

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. Inspection before Installing and Using

During inspection of the exterior, the following are to be determined:

- there are no defects on and damages to the external surfaces of the product;
- there is a seal and it is intact.

The quality of the modules' plug assembly must ensure reliable contact with connecting elements and eliminate inadvertent disconnection.

Electric connectors must ensure uninterrupted performance of technical support components and external connectors must allow peripheral devices to be turned off and connected during regular operation mode without loss in connection quality and ensure reliable electrical and mechanical contact.

The surface area of RPCM and slots used must be free of chips, scratches, dents, and other defects.

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