

QUICK START:

1. IP address Configuration :
 - A. The Network Monitor Card default configuration is DHCP. It automatically obtains an IP address from your router.
 - B. If necessary, press the reset button quickly 3 times, the card will restart with a fixed address of 192.168.0.239. This setting is typically used for a direct PC to UPS connections.
 - C. Reset the card by long-pressing the reset button until the blue indicator LED turns off. The Network Monitor Card will be restored to factory default settings.
2. QR code for SMART phone APP (AYI9) download:
3. Visit www.ayi9.com to download the PC monitoring software - SMART9, Server Shutdown Software and API.
4. **Connecting the UPS**
 - Connect the UPS with the AYI9 card to the same network as your PC or smartphone.
 - The Smart9 software or AYI9 app should automatically detect the UPS.



Note 1: If the UPS isn't detected, manually add it in the app by entering the UPS ID (found on a sticker on the back of the UPS).

Note 2: For iPhone users: You may need to start the AYI9 app on a 4G network, then switch to Wi-Fi and search for the UPS again.

5. Configuring your UPS:

You can adjust your UPS settings using the Smart9 software or a web browser. Here's how:

1. **Using Smart9 Software:**
 - Open the Smart9 software on your Windows PC.
 - In the device list, right-click the UPS you want to configure.
 - Select "Configuration" from the menu.
 - This opens the UPS's settings page in your default web browser.
 - Go to the "Parameter Settings" tab and adjust the settings as needed.
2. **Using a Web Browser:**
 - Open your web browser.
 - Enter the UPS's IP address in the address bar (find the IP in the Smart9 software or AYI9 app).
 - Press Enter to access the UPS's settings page.
 - Click the "Parameter Settings" tab and make the desired changes.

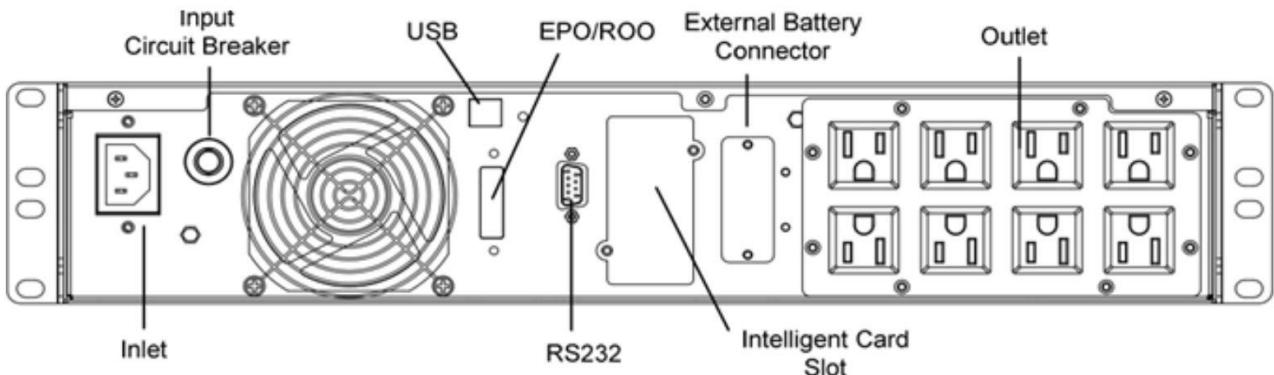
Contents:

1. Installation and network connection.....	3
1.1 Hardware Installation.....	3
1.2 Network Connection.....	3
2. IP address and access password setting and reset	3
2.1 Reset the card to factory default status:	3
2.2 Automatically obtain an IP address	3
2.3 Fixed IP address	3
2.4 Access password setting	4
3. PC software and smart phone APP download and installation	4
3.1 PC monitoring software Smart9, for Windows:.....	4
3.2 SMART PHONE APP download	4
4. The ID/Serial Number of AYI9 NMC card.....	4
4.1 Via PC monitor Windows software.....	4
4.2 Via Smart phone APP.....	4
4.3 Other Methods	5
5. Usage of Smart Phone APP.....	5
5.1 Run the APP	5
5.2 Password Setting.....	6
5.3 Checking the UPS status	6
5.4 Control the UPS	7
5.5 Parameter Setting	7
5.6 Check History Alarm even list	8
5.7 Real Time alarm.....	8
6. Usage PC Windows Monitor Software: SMART9	9
6.1 PC monitoring software Smart9 for Windows:.....	9
6.2 Run the SMART9 Software	9
6.3 Configuration of the UPS	9
7. Server shutdown Software.	12
8. NAS (Network Attached Storage) shutdown function:.....	12
8.1 Synology DiskStation NAS.....	12
9. Application Programming Interface (API).....	12
9.1 Type of API provided :	12

1. Installation and network connection

1.1 Hardware Installation.

The NMC Card is already installed at the factory to the Intelligent Card Slot:



1.2 Network Connection

1. Connect the UPS with the installed AY19 NMC card to your network with an Ethernet cable.
2. Ensure the PC or smartphone used for monitoring is connected to the same network/router.
3. For initial smartphone app connections, it is recommended to connect to the same network/router for automatic detection. Otherwise, manually enter the card's ID number located on a sticker on the back panel.

2. IP address and access password setting and reset

2.1 Reset the card to factory default status:

While the card is powered on, long-press the reset button until the blue indicator LED turns off.

This action clears all configurations, including the access password, and sets the IP address to DHCP (automatically obtain an IP address).

2.2 Automatically obtain an IP address

The AY19 NMC card is configured by default to use DHCP, allowing it to automatically obtain an IP address when connected to a router.

2.3 Fixed IP address

To set a fixed IP address:

1. While the card is powered on, quickly press the reset button three times.
2. The card will restart and assign a fixed IP address of 192.168.0.239.
3. Access the card via a web browser using this IP address for direct PC-to-UPS connections and configure a different fixed IP address if needed.

2.4 Access password setting

For security, set a unique access password when accessing the UPS for the first time using the Smart9 PC software or the AY19 smartphone app. Once set, the UPS can only be accessed with this password until it is physically reset.

3. PC software and smart phone APP download and installation

3.1 PC monitoring software Smart9, for Windows:

- **Download Address:** <https://tyconsystems.com/ups-rm-2kva-115v>
- **Installation:**
 1. Download the Smart9 software.
 2. Double-click the installer and follow the conventional software installation process.
 3. After installation, run the Smart9 software.
 4. If necessary, open UDP ports 9600 and 9601 in your firewall settings and allow “Smart9.exe” in firewall access rules.

3.2 SMART PHONE APP download

Scan the QR code to download the APP for Android or IPHONE



- **Android:** Download the AY19 app apk via <https://tyconsystems.com/ups-rm-2kva-115v>
- **iPhone:** Search for “AY19” in the Apple App Store to download the app for free.

4. The ID/Serial Number of AY19 NMC card

Each AY19 NMC card has a unique, unchangeable ID/Serial number, which can be used to access a UPS installed in a remote network location.

4.1 Via PC monitor Windows software

When the PC and UPS are connected to the same network/router, the Smart9 software automatically detects the UPS and displays its serial number and IP address.

4.2 Via Smart phone APP

The AY19 smartphone app automatically detects all UPS units with AY19 NMC cards connected to the same network/router, displaying their serial numbers and UPS model information.

4.3 Other Methods

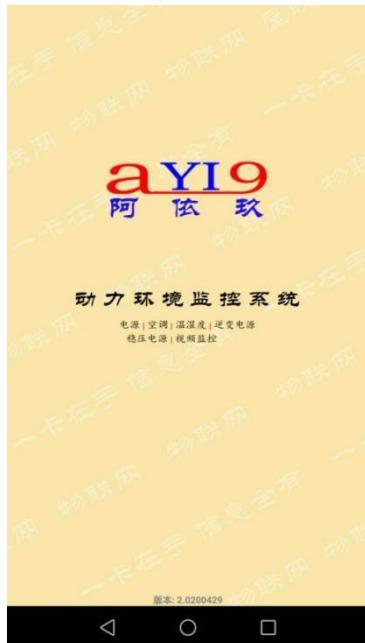
Check the ID/serial number printed on a sticker on the back of the UPS.

Consult the administrator who installed the UPS and card.

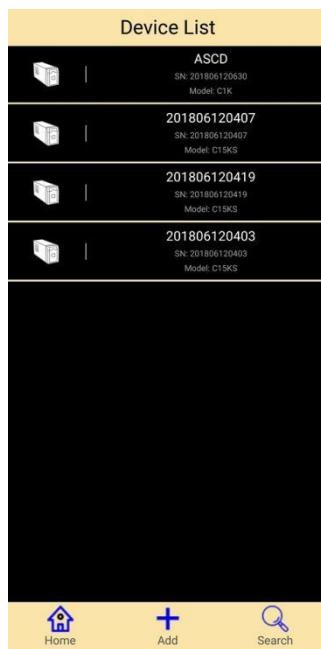
5. Usage of Smart Phone APP

5.1 Run the APP

Run the APP, connected to your wireless network. Then you can see the first page of the APP



After about 10s, the device list should appear.



If the UPS and smartphone are connected to the same network/router, the UPS is automatically detected and listed with its unique serial number and model information. If a new UPS with the AY19 NMC card is installed in the same local area network, click the search button to detect the new UPS.

To add UPS to monitor installed at different local area network, click the Add button , and enter the ID/Serial Number of the AY19 NMC card. You might need get the ID/Serial Number from the administrator who installed the UPS. A password may be needed if the password has been set



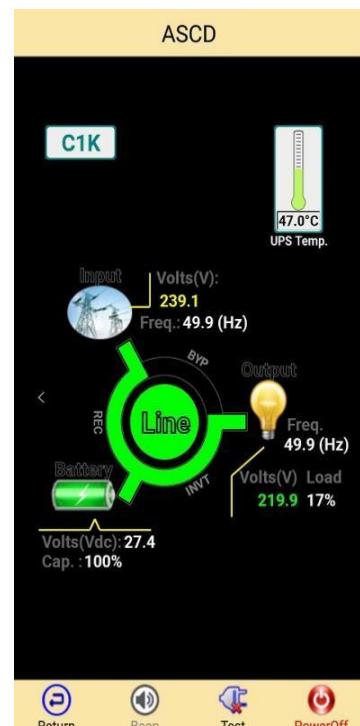
5.2 Password Setting

When accessing a UPS without a password for the first time, the AY19 app will prompt you to set a password. Create and securely store this password, as it will be required for all subsequent access to the UPS. Share the password only with authorized users who need to monitor the same UPS securely.

To clear the password, long-press the reset button on the AY19 Network Monitor Card until the blue indicator LED turns off, restoring the card to its factory default settings.

5.3 Checking the UPS status

Select the UPS in the device list which you want to monitor. The graphic interface will be shown (see the figure to the right). You will see the UPS Model name, operating mode, internal temperature, line voltage, frequency, battery voltage, estimated charge status, output voltage, frequency, loading percentage.



5.4 Control the UPS

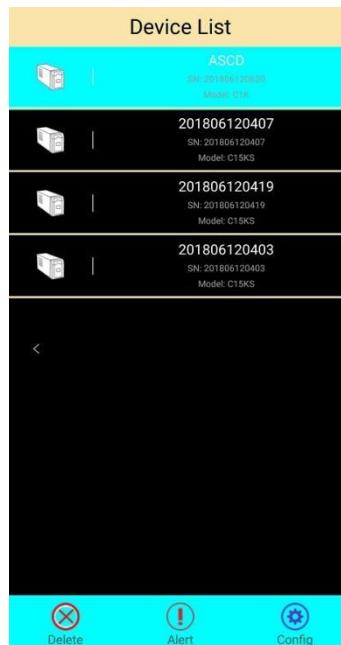
Users can perform the following control actions on the UPS through the AY19 app:

1. Initiate a UPS system check.
2. Turn the UPS off, or turn it on if it is currently off.

The UPS typically notifies the monitoring PC and may wait for the PC to shut down before powering off. This process may take several minutes, depending on the configured wait time. The app may display an "invalid operation" message if a previous action is still in progress and has not yet completed.

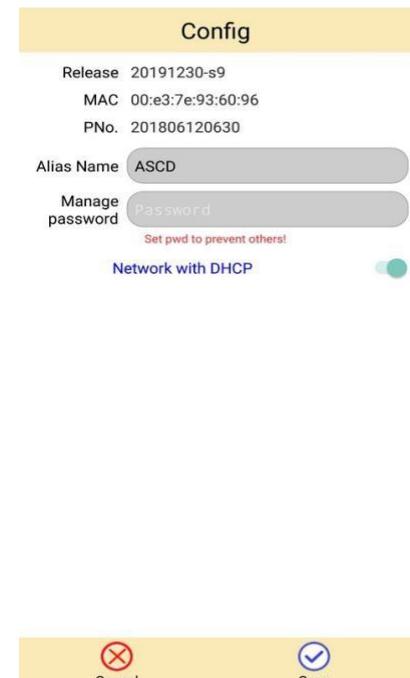
5.5 Parameter Setting

On the Device list Page, long press the target UPS and click Setting button



You can set the Alias name of the target UPS for easy memory, password access, as well as setting the IP address to a DHCP or fixed IP address.

After changing the setting, click save. The NMC card will auto restart to activate the change.



5.6 Check History Alarm even list

On the Device list Page, long-press the target UPS and click Alarm button. The history event list can be accessed.

ASCD	
2020/07/16 10:13:03	12
Utility Normal	
2020/07/16 10:05:11	11
Utility is fail.	
2020/07/15 22:14:55	10
Utility Normal	
2020/07/15 22:08:11	9
Utility is fail.	
2020/07/10 19:25:27	8
Utility Normal	
2020/07/10 19:25:23	7
Utility is fail.	
2020/06/20 18:58:45	6
Utility Normal	
2020/06/20 18:57:37	5
Utility is fail.	
2020/06/08 17:28:09	4
Utility Normal	
2020/06/08 17:12:25	3
Utility is fail.	
2020/06/08 15:24:49	2
Utility Normal	
2020/06/08 15:24:41	1
Utility is fail.	



5.7 Real Time alarm

The UPS automatically pushes alarm notifications to the app when:

- Mains utility fails or recovers.
- Battery level is low.
- Overload occurs.
- Internal warnings or faults are detected.



6. Usage PC Windows Monitor Software: SMART9

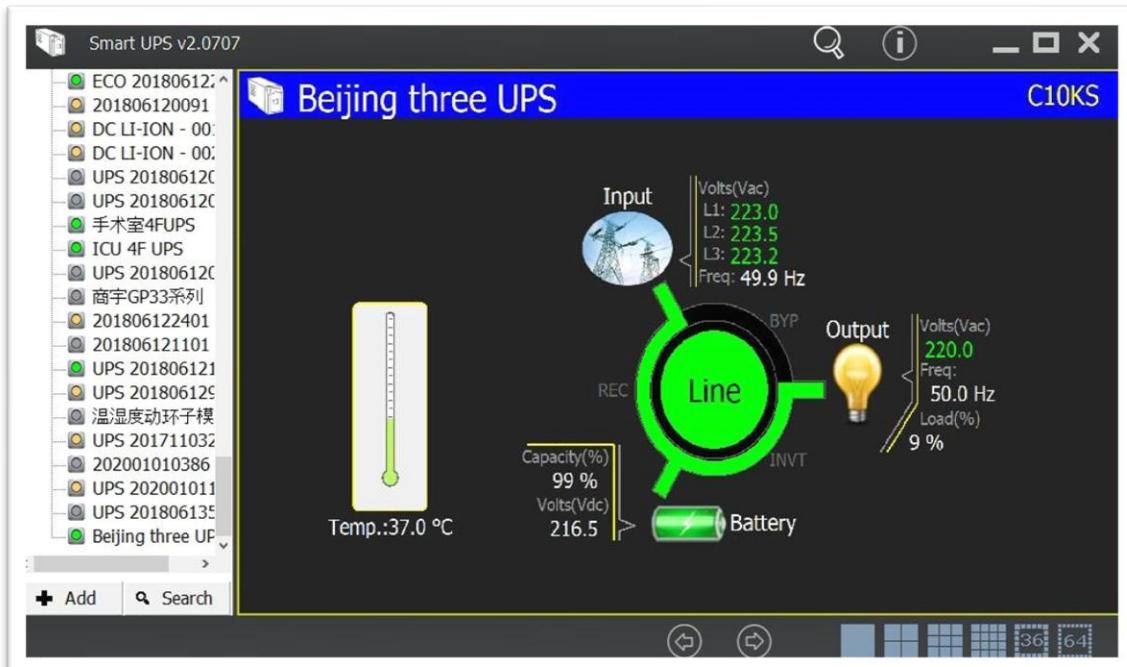
6.1 PC monitoring software Smart9 for Windows:

Download the software from the product page at <https://tyconsystems.com/ups-rm-2kva-115v> and double click to install as conventional software installation, run the SMART9 after installation.

6.2 Run the SMART9 Software

Double click the SMART9 ICON to run the SMART9 application, you will see a user interface as below.

The SMART9 software will automatically detect all the UPS units on the same local area network. They will be listed on the left sub-window of the interface. Double click the UPS to show the detailed information on the right-hand window. You can see up to 64 UPS units on a single screen and up to 256 units on 4 screens.



You can also automatically detect the UPS in same local area network. You can add remote UPS units by clicking the ADD button and then entering the ID/Serial Numbers of the remote UPS to monitor. Enter the password of the target UPS if it is set.



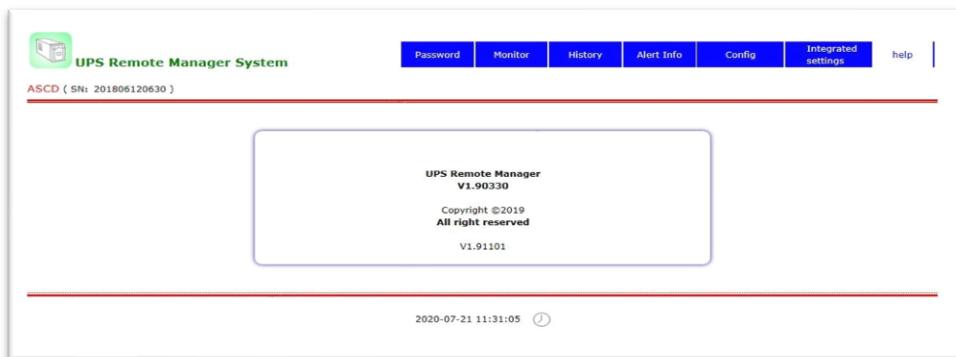
6.3 Configuration of the UPS

To access the configuration settings for a UPS using the Smart9 software, locate the target UPS in the Device List and right-click on it. From the context menu that appears, select the "Config" option. This will launch the default

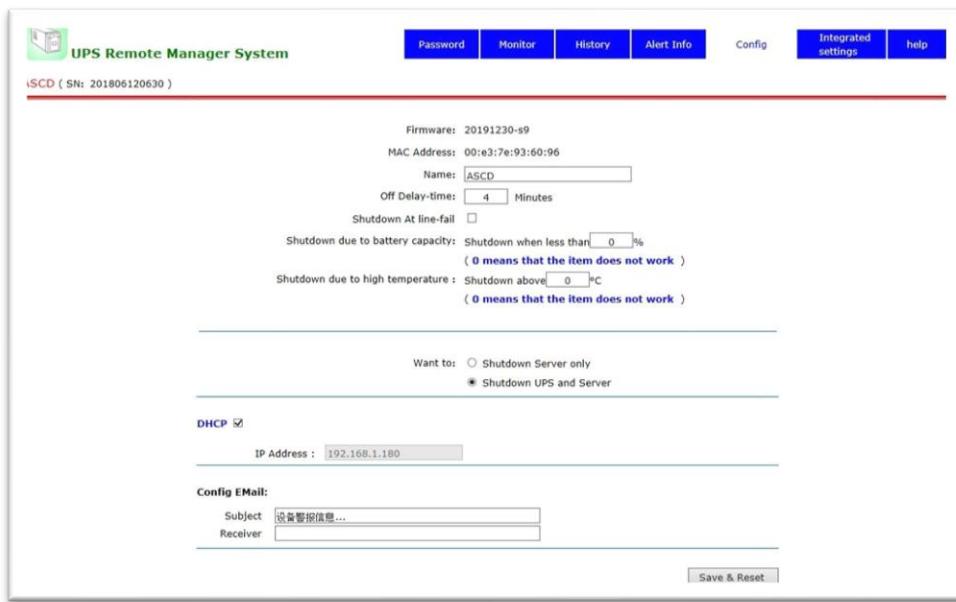
web browser and open the UPS's homepage, which includes a configuration tab where you can adjust various settings.



If the selected UPS and the Windows computer are connected to the same network/router, select "Configure" to configure the UPS.



Click the "Config" tab,



In this window, you can set:

1. The Alias Name of UPS to help you identify the UPS
2. Delay before Shutdown of UPS
3. The Option to turn off the UPS after main utility fails - with delay setting options.
4. UPS Shutdown threshold on battery charge level
5. **UPS shutdown threshold:**

a. Turn Off UPS Upon Mains Utility Failure

1. Enable this option by checking the box.
2. Set a delay time based on the known battery backup time (e.g., 120 minutes for a two-hour backup).
3. If utility power is restored within the delay time, the shutdown process is canceled.

b. Option of action to take when the UPS Turns off:

User can select to turn off the UPS only or Turn off UPS and shutdown server/monitor PC by clicking the check box.

Want to: Shutdown Server only
 Shutdown UPS and Server

To ensure the server/monitor PC shuts down normally, you can set the delay time to wait for a complete server shutdown before the UPS turns off, by setting the delay time:

Off Delay-time: Minutes

c. Turn off the UPS upon the battery charge level low

If the battery backup time is unknown, users can configure the UPS to shut down when the battery charge level falls below a specified threshold. The UPS continuously monitors battery voltage, estimates the charge level, and provides this data to the AY19 NMC monitoring system. Users can set a low-battery threshold to trigger an automatic shutdown. However, for UPS units connected to external batteries, the estimated charge level may be less accurate due to battery condition variations. It is recommended to conduct a real test to ensure the server or monitoring PC has sufficient time to shut down before the battery is fully depleted.

Shutdown due to battery capacity: Shutdown when less than %

(0 means that the item does not work)

d. Turn off the UPS upon internal over-temperature

The UPS is designed to maintain the temperature of critical internal components at safe levels, continuously monitoring and reporting temperature data to the AY19 NMC monitoring system. Users can configure the UPS to initiate a protective shutdown of the UPS and connected server or PC based on temperature thresholds. A range of 80–90°C is typically considered a safe and reasonable threshold for triggering an over-temperature shutdown.

Shutdown due to high temperature : Shutdown above °C

(0 means that the item does not work)

The UPS can be configured to shut down under three conditions: a) mains utility failure, b) low battery charge level, or c) internal over-temperature. These shutdowns can be interrupted if the triggering condition no longer applies, preventing the UPS from turning off if the threshold is no longer exceeded. However, a manual shutdown command issued via the status page button or the AY19 smartphone app is final and cannot be interrupted. Once sent, the UPS will always shut down after the configured delay time, allowing the server or monitoring PC to complete its shutdown process.

7. Server shutdown Software.

A dedicated server shutdown software can be utilized to receive alarm messages from the AY19 NMC card, enabling the server or PC to shut down before the UPS powers off. Note that only servers or PCs located within the same network segment as the target UPS can be shut down using this software.

Server Shutdown software and instructions can be found on our product page at:
<https://tyconsystems.com/ups-rm-2kva-115v>

8. NAS (Network Attached Storage) shutdown function:

Please note, to link NAS with the UPS with AY19 NMC card, the NAS must be located on same network segment as the target UPS, and the target UPS should use a fixed IP.

8.1 Synology DiskStation NAS

8.1.1. Enter the Synology NAS control panel. Select "hardware and power" --> UPS:

- a. Select "Use UPS support", Check "DiskStation...." and set delay time, when the UPS alarm message clears.
- b. Choose "SNMP UPS", and enter the IP address of the UPS - you can find the IP address in APP, monitoring software or the configuration web-page.
- c. Click the "APPLY" button. The NAS control system will find the UPS and show a green CONNECTED ICON at the left side of the status bar.

8.1.2. NAS auto-restart

To enable automatic restart of the NAS when mains utility power is restored, access the NAS control panel and navigate to the "Hardware and Power" section. Select the "General" tab and check the option labeled "Restart after mains utility recovery."

9. Application Programming Interface (API)

9.1 Type of API provided:

The AY19 NMC card offers the following API:

1. TCP + Modbus: Transfer Modbus protocol data with TCP 502 port
2. TCP + Json: Transfer UPS status information and control instruction with TCP 2390 port in JSON format
3. HTTP + Json: Transfer UPS status information and control instruction with HTTP POST method, in JSON format
4. UDP + SNMP: Use SNMP protocol

Note: 1-4 above are accessible via the RJ45 LAN Port

API Documents can be found on the product page at <https://tyconsystems.com/ups-rm-2kva-115v>