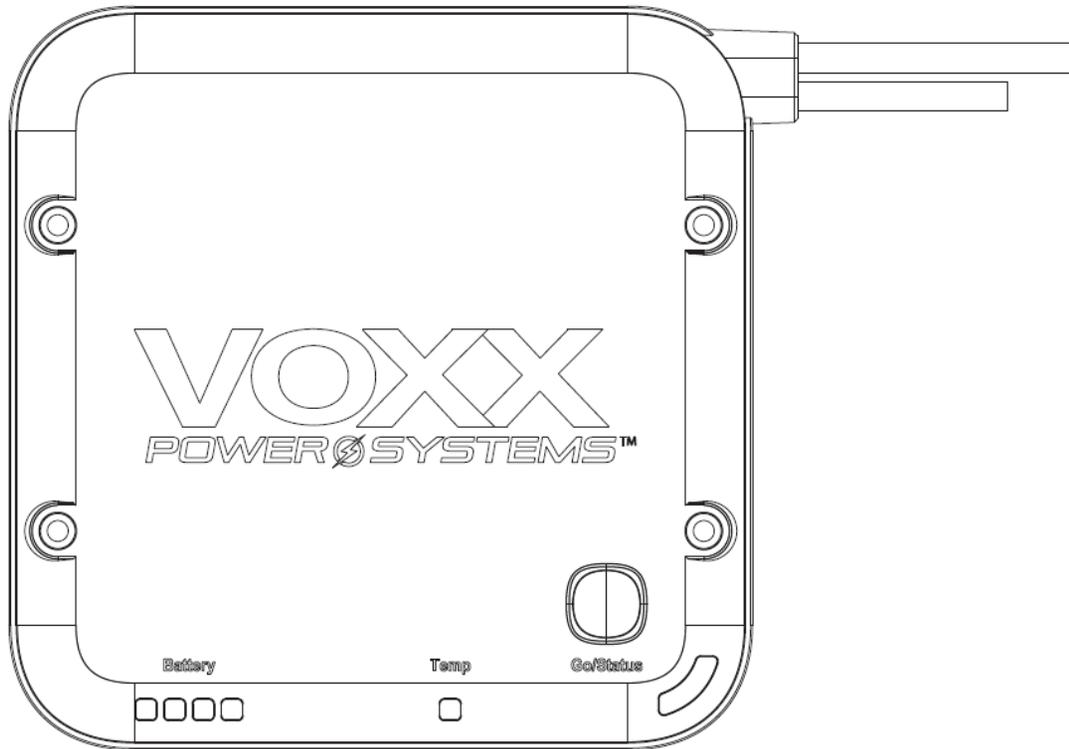


POWV3.5 / 250-9900

INSTALLED BATTERY BACKUP SYSTEM



**OWNER'S
MANUAL**

Congratulations

Congratulations on your purchase of the POWV3.5 Battery Backup System! This product has been designed to provide you with peace of mind that you will always have a reserve power source to start your vehicle in the event your main battery fails. Please read the directions that follow to familiarize yourself with the product to ensure you obtain the best results from your equipment.

Safety Precaution

The POWV3.5 contains a high-power battery that is not user replaceable. No parts of the product are user serviceable. Because the product requires direct connection to the vehicle's electrical system, it is highly recommended that the POWV3.5 be installed by a qualified professional 12v installation technician. The POWV3.5 cables, including those connecting the product to the vehicle's electrical system must be protected from being damaged or shorted. The POWV3.5 is designed with built-in protection circuitry to protect itself, but it will not prevent possible damage to the vehicle in which it is installed if the power lead from the vehicle's battery to the POWV3.5 is shorted. If you have any questions or problems with your product, please contact a Voxx certified retailer, installer, or Voxx Technical Support at 1-800-645-4994.

Important Notice

Installation of the POWV3.5 requires careful planning and preparation. The POWV3.5 should be installed under a seat or in a trunk, in a location where the GO/Status button can be accessed, and the indicator LEDs are visible. It should not be installed in the engine compartment or any other location where it will be exposed to extreme temperatures.

Because the POWV3.5 is an auxiliary power source which provides a jump-start assist to a vehicle battery, it must be connected in parallel with the vehicle's battery to operate. The ground connection should provide a low resistance path to the chassis (if the vehicle has a negatively grounded chassis) or connection can be made directly to the vehicle's negative battery terminal with 4 AWG or larger copper cable. Similarly, the positive connection should provide a low resistance electrical connection to the vehicle's positive battery terminal with 4 AWG or larger copper cable. In order to allow high current amperage to flow freely, no fuse should be used in the electrical path.

Warnings

Do not place or store items near or on top of the POWV3.5 to avoid damage to the system.

The POWV3.5 is covered by multiple patents owned and/or licensed by Voxx International.

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Overview

The POWV3.5 is an on-board battery backup system to provide emergency jump-start (boost) in the event the vehicle's battery is too weak to start the vehicle. It is wired in parallel to the vehicle's starter battery and self-regulates its charge while the engine is running so that it is always ready for use. When needed, the POWV3.5 can be activated by pressing the GO/STATUS button or by using the mobile app. Once activated, the POWV3.5 provides a short pre-charge to the vehicle battery for approximately 5 seconds, following which the vehicle may be started. The POWV3.5 will detect when the engine is running and will automatically deactivate itself.

Features

FEATURE	BENEFIT
Smart Charging	The POWV3.5 charges its internal battery when needed when the engine is running.
Dual Activation Methods	The POWV3.5 can be activated by pressing the GO/Status button on the system itself or by remotely accessing the system using a mobile device with the Voxx Power System mobile app.
Auto awake	The POWV3.5 wakes itself up if a vehicle start was attempted, but the vehicle failed making it ready to provide a jumpstart, and allowing it to be connected to a mobile device using the Voxx Power System mobile app.
Pre-charge vehicle battery	The POWV3.5 provides a pre-charge function that charges the vehicle battery prior to starting, which assists the jump-start process and enables successful jump starts under circumstances where other jump-starters would fail.
High voltage battery	The POWV3.5 uses a higher voltage battery than most jump-starters which provides for an effective pre-charge of the vehicle battery and provides for a more powerful jump-start to start your vehicle when other jump-starters would fail.
High-capacity battery	The POWV3.5 uses a high-capacity battery to provide the starting power to facilitate multiple start attempts under the most demanding circumstances.
Battery heater	The POWV3.5 has an internal battery heater that automatically warms the internal battery allowing for successful jump-starts at temperatures down to -25C.
Deep sleep mode	When the vehicle is idle, the POWV3.5 enters a deep sleep mode that allows the internal battery to stay charged for > 6 months.
Short circuit protection	Triple redundant high-current and short-circuit protection safely prevents activation if the POWV3.5 is shorted and de-activates the POWV3.5 if shorted after being activated.
IP67 Rating	The POWV3.5 has an IP67 environmental rating meaning it can stand up to the harshest vehicle environments including being submerged in water for short periods of time
Mobile App	Allows for remote activation of the POWV3.5 without having to access the physical device.

Accessories

The POWV3.5 is supplied with two vinyl insulated barrel butt connectors to connect the systems power/ground leads to the vehicles electrical system.

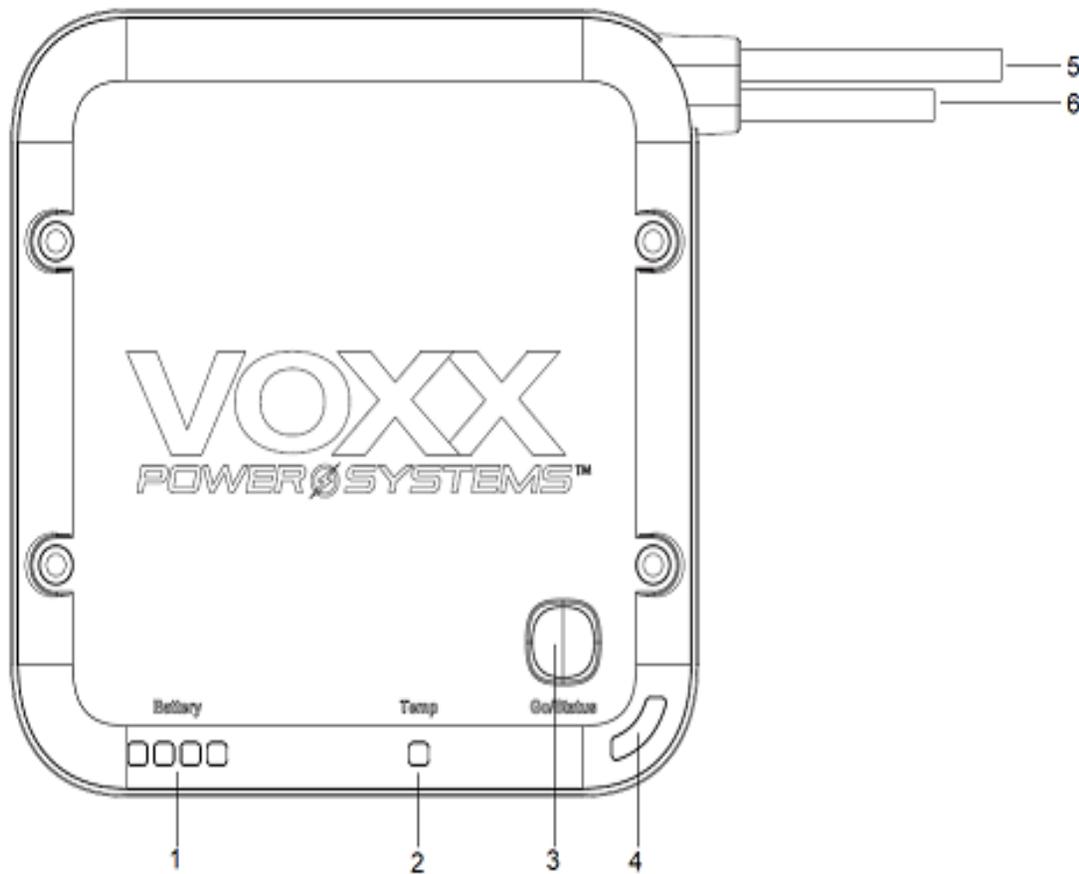


NOTE: The POWV3.5 has 6 AWG power/ground leads coming from the device. The supplied barrel butt connectors accommodate 4 AWG cable for extension runs to the vehicle's battery.

The POWV3.5 is supplied with two 60mm Heat Shrink tubes (red and black) to protect the POWV3.5 6 AWG power/ground connections.



Controls and Indicators Diagram



1. Battery Charge Indicator

This indicator provides information on the charge level of the internal battery.

2. Battery Temperature Indicator

This indicator shows when the internal battery temperature is outside the ideal temperature range to perform a jump-start.

3. Go/Status Button

This button is used to check status of the POWV3.5 and to initiate jump starting.

4. Status Indicator

This indicator provides information on the system status.

5. Positive Charge and Discharge Cable (RED)

This cable provides the positive connection to the vehicle's electrical system to allow for charging of the internal battery and discharging for jump-starting the vehicle.

6. Negative Charge and Discharge Cable (BLACK)

This cable provides negative connection to the vehicle's electrical system to allow for charging of the internal battery and discharging for jump-starting the vehicle.

LED Indicators

The LED indicators provide the following information on the POWV3.5 systems operation.

Status Indicator



Solid Green – Indicates POWV3.5 is activated and ready to provide jump-start.



Blinking Red – Indicates the POWV3.5 is not ready to be activated because there is a connection error, or the battery is too hot to perform a jump start. The TEMP indicator will also flash red if the battery is too hot.



Alternating Yellow and Blue - Indicates internal battery is too cold to provide jump-start and the battery heater has been activated. When the battery has reached operational temperatures after a few minutes, the POWV3.5 will be ready to provide a jump-start.

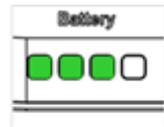


Slowly flashing Green – Indicates POWV3.5 is awake, and all conditions are OK for use. Bluetooth function is active.



Flashing Yellow – Slowly flashing indicates engine running. Fast Flashing indicates POWV3.5 has been activated and providing pre-charge in preparation for a jump-start attempt.

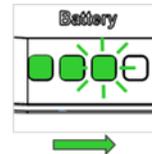
Battery Indicator



One to four Solid Green – Indicates charge level of internal battery. Two or more indicates charge level typically sufficient to jump start vehicle battery.



One Flashing Green – Indicates low charge level.

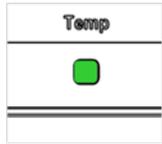


All turning on in sequence – Indicates battery charging.

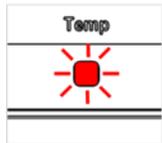
LED Indicators (cont.)

The LED indicators provide the following information on the POWV3.5' s operation.

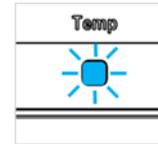
Temperature Indicator



Green – Battery Temp OK



Flashing Red – Battery temperature too high to jump-start.
Let battery cool. If possible, increase ventilation around unit.



Flashing Blue – Battery is cold. Multiple jump-start attempts may be required.

General Installation

Suggested POWV3.5 Mounting Locations:

Because the product requires direct connection to the vehicle's electrical system, it should be installed by a qualified professional installer. Installation of battery backup systems require careful planning and preparation. The POWV3.5 should be installed under a seat or in a trunk in a location where the GO/Status button can be accessed, and the indicator LEDs are visible. It should **NOT** be installed in the engine compartment or any other location where it would be exposed to extreme temperatures or physical damage.



Figure 1- Under Seat



Figure 2 SUV- Luggage Area



Figure 3- Trunk Area

NOTE: The POWV3.5 system has 6 gauge Positive and Negative leads coming from the unit (8" length). These leads will need to be extended and connected directly to the vehicle's battery. The unit releases a massive current to the vehicles battery when activated. Depending on where the system will be installed in relation to the vehicles battery, you will need to determine the proper cable gauge needed based on the length of the run.

POWV3.5 Cable Routing:

Basic electrical wiring precautions should be taken when routing cables from the POWV3.5 to the vehicle's battery. When routing cables under carpet, along door sills, and through firewalls, precaution should be taken to NOT crush, slice, puncture, or damage cables in any way. Make sure that wires routed through a vehicle firewall or trunk are passed through a grommets opening and are protected in wire loom.



Figure 4- Under Carpet/Trim



Figure 5- Along Door Sills



Figure 6- Through Firewall

General Installation (cont.)

POW3.5 Battery Connection

Because the POWV3.5 is an auxiliary power source to provide a jump-start assist, it must be connected parallel with the vehicle's battery to operate. The ground connection should provide a low resistance path to the negative terminal on the vehicle's battery. Similarly, the positive connection should provide a low resistance electrical connection to the positive vehicle terminal of the vehicle's battery. Because high currents will pass from the POWV3.5 when engaged, no fuse should be used in the electrical path. Therefore, it is extremely important that all cable runs between the POWV3.5 and the vehicles battery are secure and free from being compromised.



Figure 7- Battery Terminal

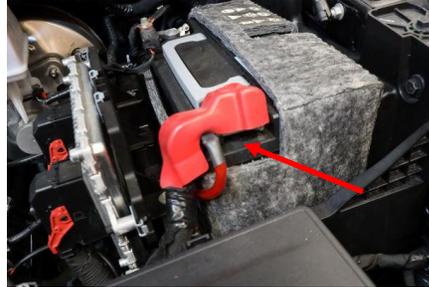


Figure- Positive Connection



Figure 9- Ground Lug Connection

Operation

Once installed into a vehicle, the POWV3.5 wakes up and begins charging its internal battery when the vehicle is running to draw power from the alternator and not the vehicle battery. It continues to charge until it is fully charged, or the vehicle stops running and the unit goes into sleep mode. If charging is not complete when the vehicle stops running, it will continue charging the next time the vehicle is running. This process continues until the internal battery is fully charged. After the initial charge, the POWV3.5 will re-charge its internal battery as needed when the vehicle is running in order to sustain its full charge.

Waking the Unit

The POWV3.5 wakes automatically when the car starts running or when there is a failed vehicle start attempt. The unit may also be wakened manually by pressing the GO/STATUS button once. When the unit wakes, all the LEDs flash once, and the status LED will slowly blink green indicating that the unit is ready to use if needed, unless then engine is running. The unit stays awake for 10 minutes after activation or continuously while the engine is running, and internal battery is charging. While the unit is awake, the Bluetooth radio is active allowing connection with a mobile device running the Voxx Power Systems mobile application.

Connecting with the Mobile App

While the unit is awake, the user can connect with the POWV3.5 using the Voxx Power Systems Mobile app by opening the VOXX Power Systems mobile app and selecting the POWV3.5 attached to the user's vehicle. (See Page 13)

Jump-Starting

Jump-starting a vehicle is a two-step process after the unit is activated; 1) pre-charging and 2) vehicle starting. The POWV3.5 is activated by pressing and holding the GO/STATUS button while the unit is awake, but engine is not running, as indicated by the STATUS indicator slowly flashing Green. The POWV3.5 may also be activated using the Voxx Power Systems mobile application running on a mobile device.

Pre-charging

First, the POWV3.5 is activated which starts a vehicle battery pre-charge interval which lasts for about 5 to 15 seconds. The pre-charge supplies a charge to the vehicles battery which greatly assists the jump-starting process. During the pre-charge interval, the POWV3.5 is connected electrically to the vehicles battery and the STATUS INDICATOR blinks Yellow rapidly. While it is possible to start the vehicle during the pre-charge interval, it is recommended to wait until the interval is complete before attempting a start to ensure the greatest likelihood of success on the first attempt, especially in the most demanding circumstances such as extreme cold.

Operation (cont.)

Vehicle Starting

When the pre-charge interval is complete, the status indicator will illuminate steady Green and you will have 30 seconds to attempt to start the vehicle. If no attempt is made, the POWV3.5 will go back to the awake state, ready to be activated again. After completing a successful start, the unit will automatically deactivate. While the POWV3.5 can provide 10 to 20 jump starts.

When fully charged, the POWV3.5 may limit the number of jump-start attempts to prevent the battery from overheating by de-activating the system. If that occurs, the TEMP INDICATOR will illuminate Red until the unit is ready to activate again.

Temperature Extremes

The POWV3.5 will operate under wide temperature ranges, however, jump-starting performance may be limited or restricted under certain circumstances. The **TEMP** indicator will provide information about the internal POWV3.5 battery temperature when the unit is activated. If the POWV3.5 battery is within the normal operating temperature range, the **TEMP** indicator will be illuminated Green when the Go button is pressed on the POWV3.5 or the unit is activated using the mobile app. If the internal battery is below its ideal operating temperature, the **TEMP** indicator will flash Blue and the **STATUS** indicator will alternately flash Yellow and Blue until the internal battery heater warms the battery to the proper operational temperature. If the internal battery is above its maximum allowable temperature, it will be flash Red indicating it is too hot to use.

Cold Weather Operation

The POWV3.5 can provide a jump-start down to -25C, however, below certain cold thresholds, the internal heater must warm the battery prior to use. Like all batteries, the internal battery efficiency decreases at low temperatures, but the POWV3.5 is equipped with an internal heater that will warm the battery to bring it up to proper operating temperatures prior to activating the pre-charge feature. While the internal battery is warming, the **TEMP** LED will flash Blue and the **STATUS** indicator will alternately flash Yellow and Blue while the POWV3.5 remains disconnected from the vehicle battery. After the battery has reached a minimal operational temperature, the POWV3.5 will initiate the pre-charge feature for approximately 5 to 15 seconds and then the POWV3.5 is ready to provide jump-start assistance. Note, the internal battery heater will continue to warm the POWV3.5 battery during this time, increasing its efficiency since more than one start attempt may be required while the battery continues to heat.

Hot Weather Operation

The POWV3.5's internal battery can be permanently damaged if it is used to jump-start a vehicle when its temperature is above 60C. Therefore, the POWV3.5 will prevent activation when its internal battery exceeds this temperature. This will be indicated by the **TEMP** indicator illuminating solid Red and the **STATUS** indicator flashing Red. If this situation arises, allow the POWV3.5 to cool by increasing air circulation around the unit. This can be achieved by opening doors, windows, the trunk, etc. and waiting until the POWV3.5's internal temperature falls to a safe operational range that will be indicated by the **TEMP** indicator illuminating solid green upon activation.

Mobile App Operation

System Requirements for the Controlling Device

The POWV3.5 system supports Apple Devices (iOS 7.0 and above) and Android devices OS (4.3 and above). Either must support Bluetooth 4.0 or higher.

How to download the Android and Apple Mobile Apps (2 Options)

1. Enter the keyword “Voxx Power System” in the Google Play Store or the Apple App Store search menu to access and download the free App.
2. You can also enter the following into your Web browser:

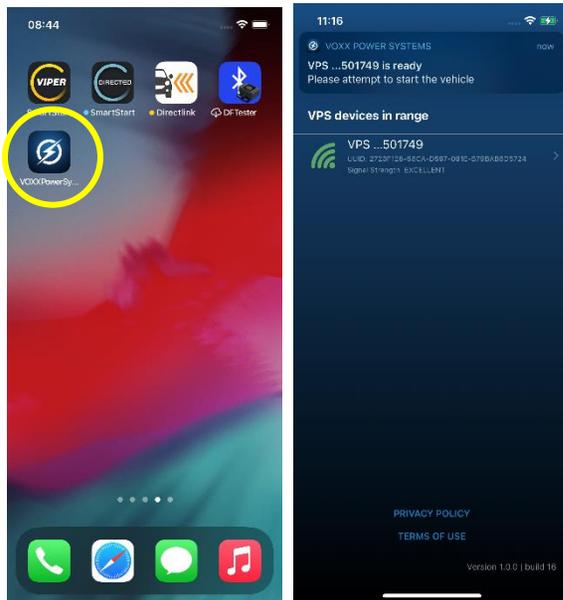
For iOS <https://apps.apple.com/app/id1531103807>

For Android <https://play.google.com/store/apps/details?id=com.voxxautomotive.voxxpowersystems>

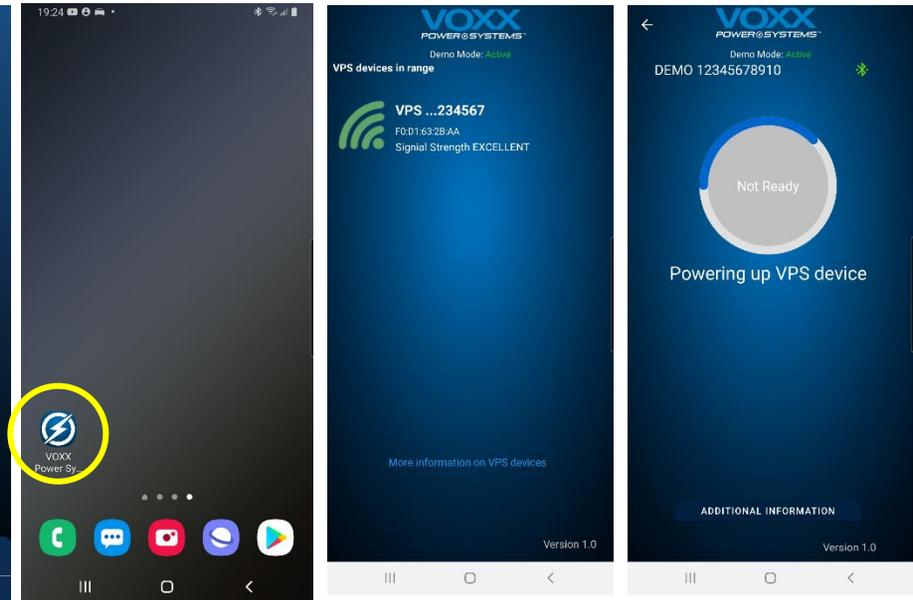
Connecting your Device with the Voxx Power System

Once the App has been downloaded to your device, touch the icon to open the App. The App will automatically list available POWV3.5 units and display them on the screen. The POWV3.5 system closest to the mobile device will be listed at the top. Press to select that system. Press the icon for the POWV3.5 to wake the unit. The screen will show the POWV3.5 waking up ready to be used.

iOS Sequence



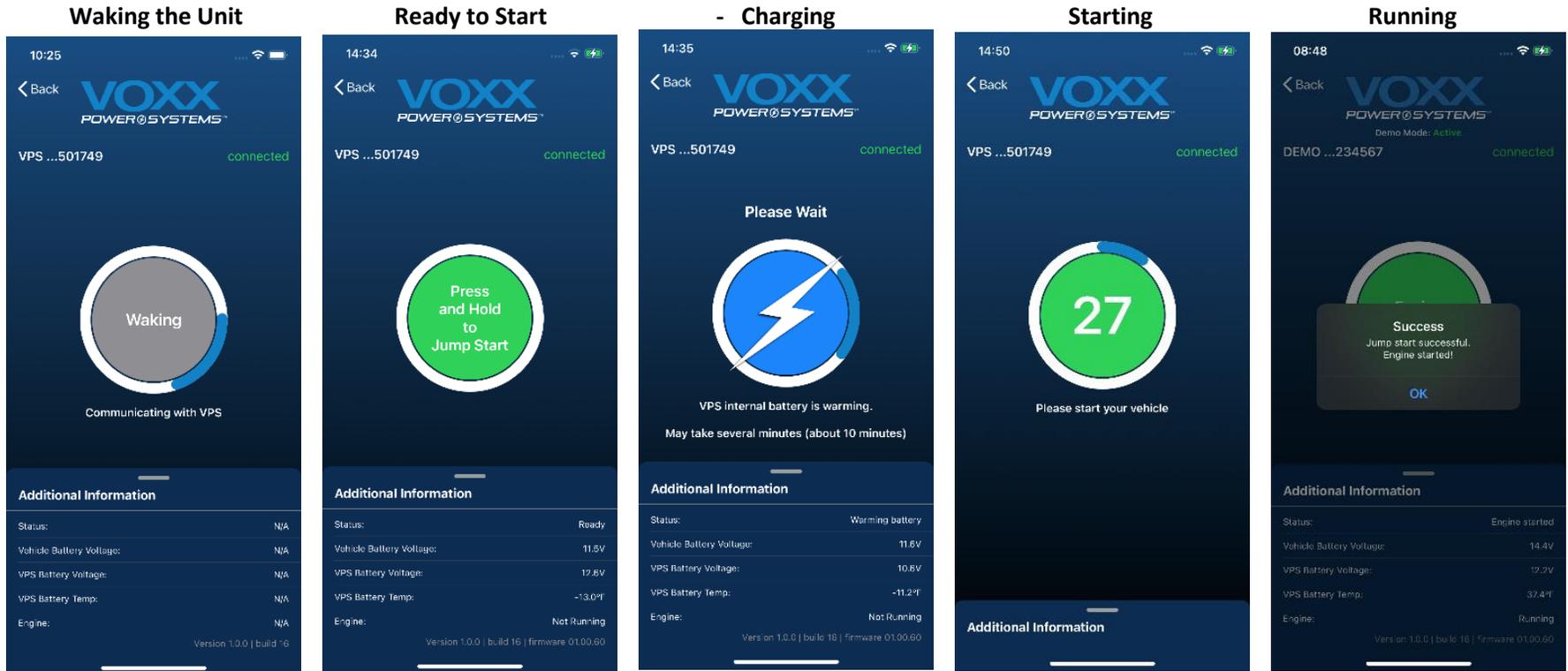
Android Sequence



Mobile App Operation (cont.)

Apple App iOS

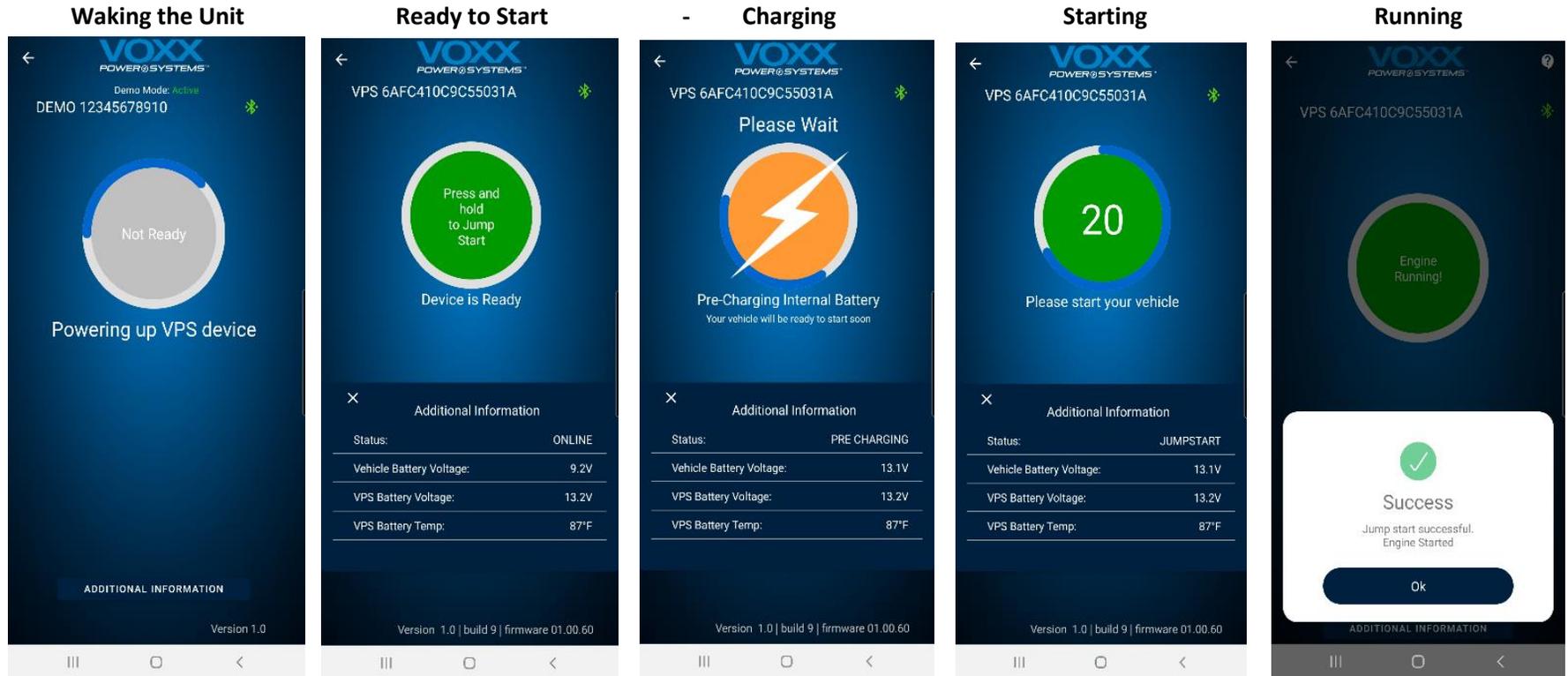
The General procedure on starting the vehicle will be as follows. Due to different scenarios such as weather, outside temperatures, and battery temperatures, the sequence of App events can change.



Mobile App Operation (cont.)

Android App

The General procedure on starting the vehicle will be as follows. Due to different scenarios such as weather, outside temperatures, and battery temperatures the sequence of App events can change.



Troubleshooting

Symptom	Remedy
Unit does not wake upon button press	<p>Internal battery may be discharged below operable level. Run motor or drive for at least one hour and check again.</p> <p>Unit will not operate if not properly installed and connected electrically to the vehicle's battery. The positive (Red wire) must be electrically connected to the positive terminal of the vehicle battery and the negative (Black) wire must be electrically connected to the negative battery terminal. The vehicle battery must be properly installed into the vehicle and connected properly to the vehicle's ignition system. If you suspect these conditions are not met, please consult with your installation professional or a qualified vehicle mechanic to verify proper installation.</p>
Unit will not activate upon button hold or via mobile app	<p>Make sure unit is awake before attempting to activate it as indicated by the STATUS indicator flashing Green slowly. If unit is not awake, press the GO/STATUS indicator or activate using the Voxx Power Systems mobile application.</p> <p>Unit will not activate if certain error conditions exist which will be indicated by the STATUS indicator flashing Red rapidly on the POWV3.5 or notifications received through the Mobile App.</p> <p>If the internal battery is too hot for use because of the environmental temperature or due to many jump-start attempts. The TEMP indicator will illuminate Red until the internal battery has cooled to an acceptable temperature. If ambient environment around unit is hot, try improving air circulation by opening doors, windows or trunk in areas surrounding unit.</p> <p>If the battery charge level is too low to support additional jump-starts. The far-left LED of the BATTERY indicator will flash.</p>
Unit will not connect to mobile device.	<p>Make sure current version of mobile app is installed on the mobile device. Make sure Bluetooth is activated on mobile device.</p>
After unit is activated, vehicle will not start.	<p>Depending on the state of the vehicle battery, and especially under very cold conditions, multiple start attempts may be required.</p> <p>Other issues with the vehicle may also prevent it from starting such as bad connections or corrosion of the battery terminal connections.</p>
Unit does not charge	<p>The unit charges automatically when the internal battery level drops about 10% from its full charge and when the engine is running as indicated by a voltage of at least 13V being provided by the alternator. If the alternator is not functioning properly, the unit will not charge.</p>

General Specifications

The following specifications relate to the POWV3.5

	POWV3.5
Nominal Voltage	12~14V
Peak Current	850Amps
Cranking Current	525 Amps
Battery Capacity	3500 mAh
Jumps Per Charge	> 20 (typically)
Maximum Recommended Engine Size (gasoline)	8 L
Maximum Recommended Engine Size (Diesel)	6 L
Environmental	IP67
Storage Temperature	-40C to 85C
Operating Temperature – Jump Starting	-25C to 60C
Operating Temperature – Non-Jump Starting	-25C to 85C
Charging Current – While Engine is Running	<2A
Charge Retention	> 6 months
Wireless Connectivity	Bluetooth Low Energy (BLE)
Internal Battery Heater for enhanced cold weather performance	Yes

NOTE: Specifications subject to change without notice.