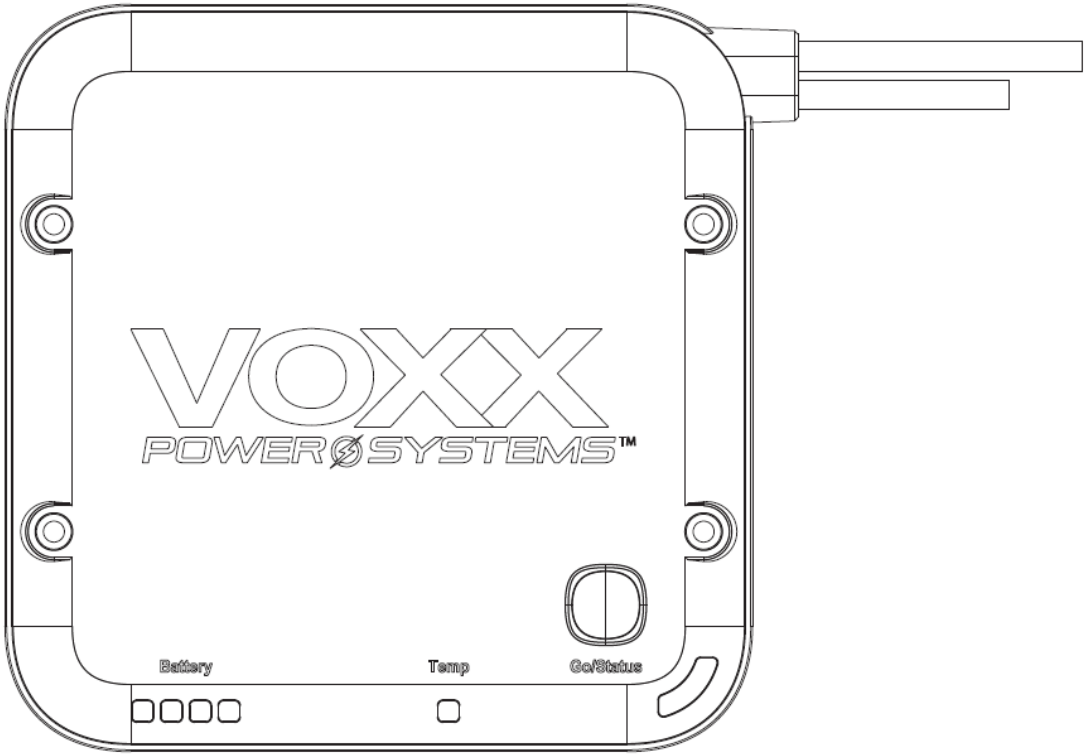
POWV3.5 / 250-9900

INSTALLED BATTERY BACKUP SYSTEM



INSTALLATION 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 is to be installed inside of a vehicles cabin or trunk, and as such, it is important to use the proper gauge cable to maintain the current needed for operation of the POWV3.5. It is also extremely important that the power cable is protected from being damaged or shorted in its run from the POWV3.5 to the vehicle's battery. 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. Similarly, the positive connection should provide a low resistance electrical connection to the vehicle's positive battery terminal. The gauge of cable to be used is dependent on the distance from the POWV3.5 to the vehicle's battery (See Installation Manual for Wire Gauge/Distance Guide). To allow high current amperage to flow freely once the POWV3.5 is engaged, no fuse should be used in the electrical path since most 12v fuses and/or circuit breakers are not designed to withstand high current amperage flow. This also requires special attention to wire routing so that no potential shorting of the power cable occurs.

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 licensed to Voxx International.

Patents/Pending Patents: US10840732B2, US20210135466A1, US20200136408A1

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Overview

The POWV3.5 is an on-board jump-starter 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 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 or by remotely accessing it using a mobile device with the Voxx Power System mobile app.
Auto awake	The POWV3.5 awakes itself if a vehicle start was attempted, but the vehicle failed to start.
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 provide 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 -40C.
Deep sleep mode	When car is idle, POWV3.5 enters a deep sleep mode to allow for internal battery to stay charged for > 6 months.
Short circuit protection	Triple redundant high-current and short-circuit protection safely prevents activation if POWV3.5 senses a short circuit.
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.
Mobile App	Allows for remote activation of the POWV3.5 without having to access the physical device. (iOS and Android) *

*** iOS and Android names are trademarks™ or registered® trademarks of their respective holders. Use of them does not imply any affiliation with or endorsement by them. All specifications are subject to change without notice.**

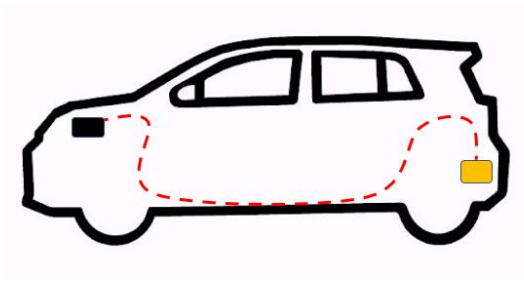
Accessories

The POWV3.5 is supplied with two vinyl insulated barrel style butt connectors to extend the POWV3.5's 6 AWG power leads to the vehicles battery. Please refer to the Cable Gauge/Distance chart to determine the proper gauge cable needed for the power cable run.

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

WARNING: True Copper/Pure Copper cabling meeting SAE standards must be used to ensure proper operation of the POWV3.5 system. SGT/SGR/SGX rated cables are recommended. Any cable utilizing material other than True/Pure Copper (i.e., aluminum can cause damage to the POWV3.5 and possibly lead to overheating of the cable that could create an overheating/Fire risk.

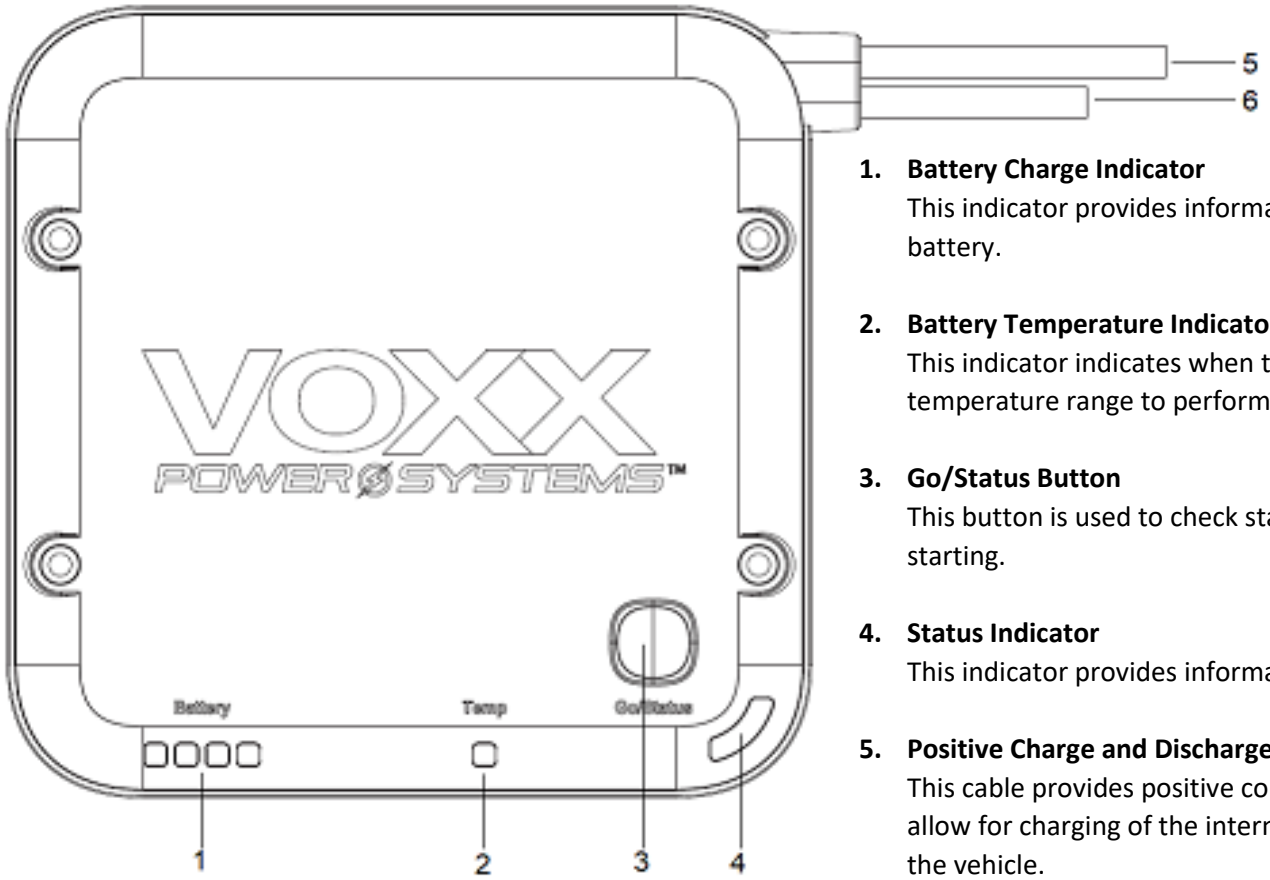
NOTE: 4 AWG of True Copper cable is required for installations up to 20' between the Vehicle battery and where the POWV3.5 is installed. Installations that exceed 20' between the Vehicle Battery and the POWV3.5 system will require <2 AWG.



4 AWG < 20'

2 AWG or 0/1 AWG >20"

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 indicates when the 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**
   This cable provides 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**
   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.

General Installation

POW3.5 Mounting Location

Because the product requires direct connection to the vehicle's electrical system, it must be installed by a qualified professional installer. 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 would be exposed to extreme temperatures.

Figure 1- Under Seat

Figure 2 SUV- Luggage Area

Figure 3- Trunk Area

POW3.5 Cable Routing

Basic electrical wiring precautions should be taken when routing cables from the POWV3.5 to the Factory battery. When routing cables under carpet, along door sills, and through fire walls, precaution should be taken to NOT crush, slice or damage cables. Routing of the power cable requires special attention. Unlike other long power runs for electronics within a vehicle that are generally fused, the POWV3.5, once engaged, releases <525 Amps of current. Fuses and circuit breakers commonly found for 12v applications do not allow for such high current bursts of power so special care when routing the power wire is required to prevent damage to the vehicle because of electrical shorting of the power cable. All cable runs should be free from potential shorting, especially when routing through firewalls where wires should be protected with wire loom and run through a factory or aftermarket gromet.

Figure 4- Under Carpet/Trim

Figure 5- Along Door Sills

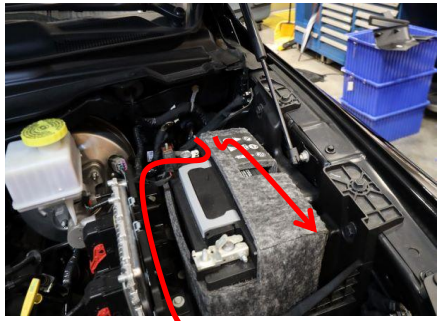


Figure 6- Firewall

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 chassis (if the vehicle has a negatively grounded chassis) or negative vehicle battery terminal. Similarly, the positive connection should provide a low resistance electrical connection to the positive vehicle battery terminal. The gauge of cable to be used is dependent on the distance from the POWV3.5 to the vehicle's battery (See Wire Gauge/Distance Guide). In order to allow high currents to pass, no fuse should be used in the electrical path.

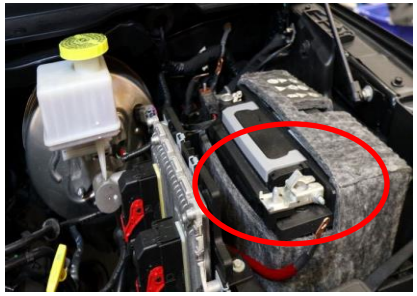


Figure 7- Battery Terminal

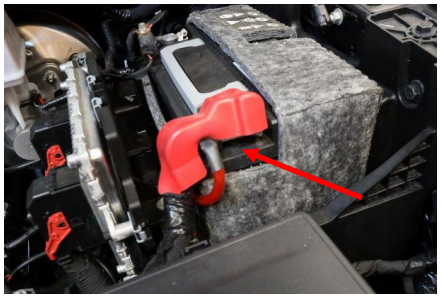


Figure- Positive Connection

Figure 9- Ground Lug Connection

Warning: Improper installation will void the warranty.

System test

Once Installed, the POWV3.5 wakes up. The Status indicator will be slow flashing green light. This will indicate all connections are good and ready for use. If the GO/STATUS button is pushed once the Battery level and temp lights will show current status.

If the POWV3.5 has connections errors the status indicator will blink red. Check all connections.

Troubleshooting

Symptom	Remedy
Unit does not wake upon button press	Internal battery may be discharged below operable level. Run motor or drive for at least one hour and check again. Unit will not operate if not properly installed and connected electrically to the vehicle 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.
Unit will not activate upon button hold or via mobile app	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. Unit will not activate if certain error conditions exist which will be indicated by the STATUS indicator flashing red rapidly and one or more active indicators. If the internal battery is too hot for use because of the environmental temperature or due to a large number of 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. If the battery charge level is too low to support additional jump-starts, the far-left LED of the BATTERY indicator will flash.
Unit will not connect to mobile device.	Make sure current version of mobile app in installed on mobile device. Make sure Bluetooth is activated on mobile device.
After unit is activated, car will not start.	Depending on the state of the vehicle battery, and especially under very cold conditions, multiple start attempts may be required. Other issues with the vehicle may also prevent it from starting.
Unit does not charge	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.

General Specifications

The following specifications relate to the POWV3.5

	POWV3.5	**POWV6.0**
Nominal Voltage	13.3V	13.3V
Peak Current	850Amps	1200 Amps
Cranking Current	525 Amps	900 Amps
Battery Capacity	3500 mAh	6000 mAh
Jumps Per Charge	> 20 (typically)	> 20 (typically)
Maximum Recommended Engine Size (gasoline)	8 L	12 L
Maximum Recommended Engine Size (Diesel)	6 L	10 L
Environmental	IP67	IP67
Storage Temperature	-40C to 85C	-40C to 85C
Operating Temperature – Jump Starting	-40C to 60C	-40C to 60C
Operating Temperature – Non Jump Starting	-40 to 85C	-40 to 85C
Charging Current – While Engine is Running	1.2A	1.2A
Charge Retention	> 6 months	> 6 months
Wireless Connectivity	Bluetooth Low Energy (BLE)	Bluetooth Low Energy (BLE)
Internal Battery Heater for enhanced cold weather performance	Yes	Yes