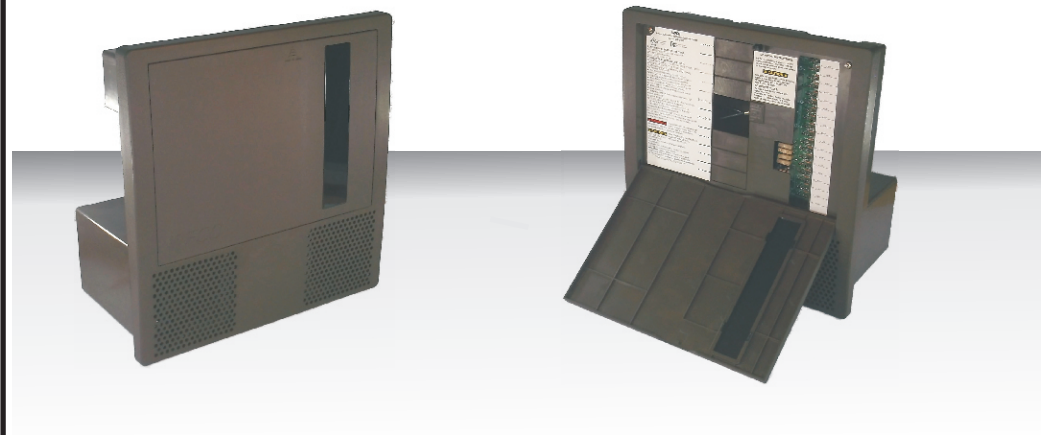


Operator Manual  
For use with WFCO ULTRA III Power Center  
WF-9900 Series  
(model number located on the door assembly label)



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## Installation and Servicing of the WFCO WF-9900 Series Power Center

### ⚠ CAUTION ⚠

This product should be installed by an experienced technician. CAUTION and care must be taken when servicing this equipment. To prevent severe shock or electrocution consult your servicing dealer. No serviceable parts.

### ⚠ WARNING ⚠

This unit employs components that tend to produce arcs or sparks. To prevent fire or explosion, do not install in compartments containing batteries or flammable materials (LP gas).

### ⚠ CAUTION ⚠

For continued protection against risk of fire, or electric shock replace only with same type and ratings of fuse.

### ⚠ CAUTION ⚠

Check on a monthly basis the fluid level in any battery connected to RV charging system.

This product is not ignition protected and should not be installed in an LP compartment.

## INSTALLATION INSTRUCTIONS

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### General Consumer Information

- **Reverse Battery Protection**  
This feature prevents permanent damage to the converter from an incorrect battery connection.
- **Automatic Cooling Fan**  
The fan is variable speed and current controlled.
- **Electronic Current Limiting**  
Automatically shuts down power during overload or short-circuit conditions. Automatically returns to normal operation after conditions are corrected.
- **DC Fuses (12 Volts)**
  - Eighteen 12 Volt circuits; circuits 1 thru 15 rated at 20 amps max. and circuits 16 thru 18 rated at 30 amps max. Circuits 16 thru 18 recommended for slideout use.
  - Reverse battery<sup>®</sup> protection fuses; replace with ATC "Littelfuse" Type 257 fuse or equivalent.
- **AC Circuit Breakers (120/240 Volts) UL Listed**  
Max. Main Circuit Breaker Size: 50 Amp two pole or Equivalent. **Note:** Use only 2-pole circuit breakers for Main Circuit breaker.

Manufacturer:	Model/Cat. No./Type:
EATON	Type BR
ITE/Siemens	Type QP or QT
Square D	Type HOM
Murray	Type MH or MP

Max. Branch Circuit Breaker Size: 20 Amp or 20 Amp Two Pole

Manufacturer:	Model/Cat. No./Type:
EATON	Type BRD
ITE/Siemens	Type QP or QT
Square D	Type HOMT
Murray	Type MHT or MPT

A replacement or additional circuit breaker shall be of the same manufacturer, type designation, and equal or greater interrupting rating.

For Breaker tightening torque ratings, refer to Circuit breaker.

For Neutral and Ground terminal bar torque and wire size refer to the label on the door assembly.

#### Breaker Filler Plates:

Manufacturer:	Model/Cat. No./Type:
WFCO	FP-01 or FP-01B

## Converter Operation Modes

All WFCO power converters are automatic three-stage switching power supplies. The converter senses which mode it needs to be in by checking the RV system voltage.

### The three modes/stages of operation include:

#### **Absorption mode/Normal operation**

Nominal battery charge and supplies power to appliances

#### **Bulk mode/Charge mode**

Fast battery charge and supplies power to appliances

#### **Float mode/Trickle charge**

Trickle battery charge during storage

**Absorption Mode:** During this mode, the converter output is in the 13.6 Vdc range. This is the normal operation mode. This mode provides the 12 Vdc and current required by the 12 Vdc RV appliances, as well as slow charging the battery.

**Bulk Mode:** In this mode, the output voltage of the converter will switch to 14.4 Vdc range for a maximum of four hours. If the converter cycles between “Absorption and Bulk mode”, there could be a shorted battery cell or other issues.

**Float Mode:** In this mode, the converter is charging the battery with a trickle voltage of 13.2 Vdc. When the converter senses a demand (by turning on lights), the converter automatically returns to the “Absorption mode”.



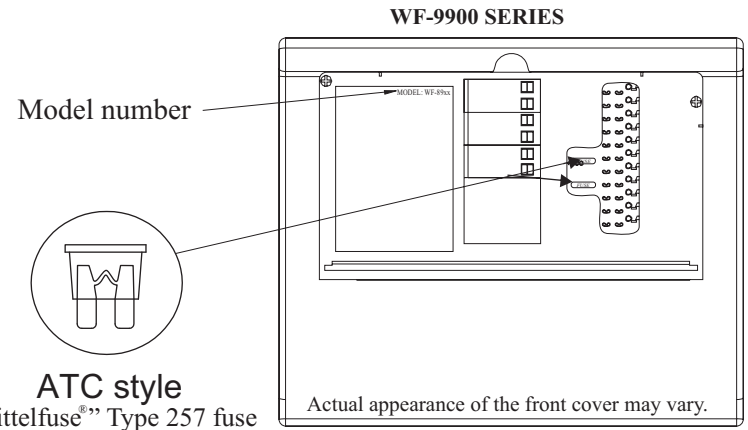
## OPERATIONAL FEATURES

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## Troubleshooting 9900 Series Power Center

If there is no DC output, first check the reverse polarity fuses on the front panel of the WF-9900 Series power center. Then, visually inspect the fuses for any breaks; if none are found, use a continuity tester to check for continuity.



If the reverse polarity fuses are blown, it means the RV battery was accidentally connected in reverse, either at the battery or at the converter. Reconnect properly, then replace the fuse with the same type and amp rating as the original “Littelfuse®” Type 257 automotive-style fuse.

**IMPORTANT:** These fuses protect the converter from damage in the event that the RV battery is accidentally connected in reverse. A reversed battery connection, even for a second is enough to cause the fuse to blow.

The fuse rating that the RV manufacturer suggests for the output fuses will be marked on the unit. Replace only with same type and rating.

## TROUBLESHOOTING INSTRUCTIONS

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## Troubleshooting

**Setp 1:** Make sure RV is plugged into 120 volt shore power. Go to converter and remove the front door assembly. Turn off main breaker and remove the 4 reverse polarity fuses. Check the fuses with a continuity meter to make sure fuses are good.

**Do not** reinstall the fuses back into the converter at this time. Wait approximately one minute, then put main breaker on. Using a DC volt meter, measure voltage between Negative and VCC lugs on the DC fuse board. **See fig. A**

Voltage should read between 13.6 to 13.7 volts DC.

- If converter **does not read** within this voltage range then replace the converter.
- If converter **does read** within this voltage range proceed to Step 2.

**Step 2:** Turn off main breaker. Reduce load in RV by turning off as many 12 DC items (lights, etc..) as possible. Go to the battery and disconnect it.

Go back to the converter and replace the 4 reverse polarity fuses you removed in step 1. Turn the main breaker on. Using a DC voltmeter, measure voltage between Negative and VCC on the DC fuse board. **See Fig.A**

Voltage should read between 13.4 to 13.6 volts DC.

- If converter **does not read** within this voltage range then replace the converter.
- If converter **does read** within this voltage range, start adding load (light, etc..) while monitoring the voltmeter. If voltage drops below 13.4 volts DC replace the converter.
- While adding load (lights, etc..), if voltage remains at the 13.6 to 13.7 volt DC range but no lights come on, this would indicate there is a wiring issue.
- If converter is in the 13.4 to 13.6 volt DC range and most of the DC items (lights, etc..) are on, this would indicate the converter is functioning properly.

**Note: Issues pertaining to the 120 volt AC circuits should be handled by a qualified Technician.**

TROUBLESHOOTING INSTRUCTIONS

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COMPLIANCE

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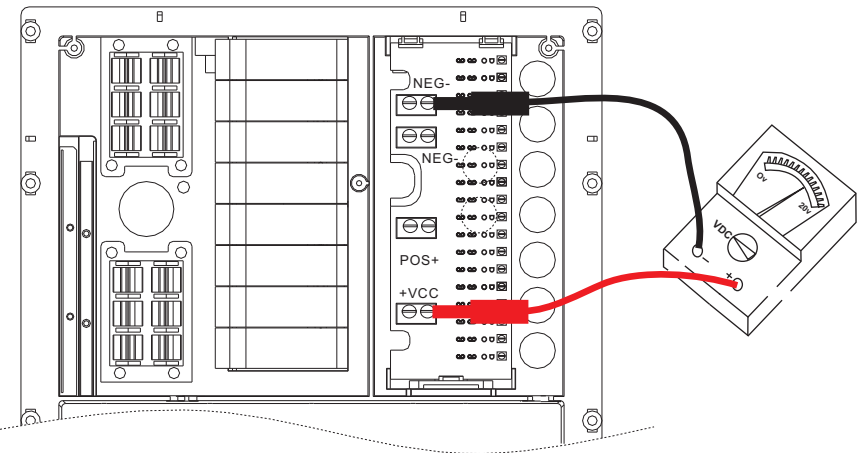
## GENERAL COMPLIANCE INFORMATION

The WF-9900 Series units are UL<sup>®</sup>-Listed, and cUL<sup>®</sup>-Listed (Canadian). They comply with FCC Class B requirement (see below).

### FCC Compliance Class B

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. .

Fig. A





**Consumer Limited Warranty  
for  
WFCO Electronic Products**

WFCO extends to the original owner a Two-Year Limited Product Warranty. This Warranty is in effect from the date of original purchase for a period of two (2) years. This Limited Warranty is extended specifically for and is limited to recreational vehicle application and is valid only within the continental United States, Alaska, Hawaii and the provinces of Canada. WFCO warrants to the owner that its products are free from defects in material and workmanship under normal use and service, based on its intended use and function. This Warranty is limited to the repair or replacement, at WFCO's discretion, of any defective parts or defective assembly. Any implied warranties of merchantability or fitness for intended use are limited in duration unless applicable State Law provides otherwise. You may have other rights as specified by each individual state.

**EXCLUSIONS and LIMITATIONS**

The OEM Warranty specifically does not apply to the following:

Any WFCO product that has been repaired or altered by any unauthorized person. Any damage caused by misuse, faulty installation, testing, negligence or accident or any WFCO product installed in a commercial vehicle.

Any WFCO product whose serial number has been defaced, altered or removed. Any WFCO product whose installation has not been in accordance with the WFCO written instruction. Any consequential damages arising from the loss of use of the product including, but not limited to, inconvenience, loss of service, loss of revenue, loss or damage to personal property and cost of all services performed in removing or replacing the WFCO product. Specifications are subject to change without notice or obligation.

**CONSUMER WARRANTY CLAIM PROCEDURE**

Upon determination and validation by an authorized OEM dealer that a WFCO product has a defect, a Return Goods Authorization (RGA) number will be required before it can be returned. The RGA number can be requested by completing the **Warranty Information Fax Sheet** found at [www.wfcoelectronics.com](http://www.wfcoelectronics.com). Once the form has been completed, email this form along with Proof of Purchase to [warranty@wfcoelectronics.com](mailto:warranty@wfcoelectronics.com) or fax both forms to the Warranty Department at (574) 294-8698. After receipt of the forms, an RGA number will be issued. This number shall appear on all correspondence with warranty service. Upon validation of the warranty, WFCO shall replace or repair the product with a like product. The RGA number shall be placed on the outside of the carton used to return the product, for ease of identification. Do not mark directly on the product. The product must be packaged properly to avoid further damage to the product, which could cause a non-warrantable condition.

**LIMITED WARRANTY**