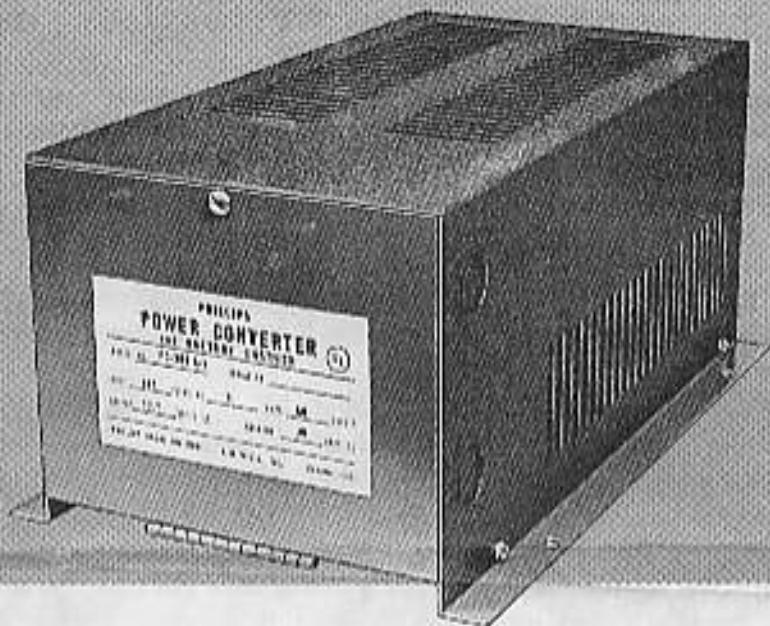


# PHILLIPS

# POWER CONVERTER

## and BATTERY CHARGER



### OPERATION and SERVICE GUIDE for PHILLIPS POWER CONVERTER/CHARGER

\_\_\_ PC-401-A-1

\_\_\_ PC-301-A-1

\_\_\_ PC-201-A-1

**IMPORTANT.....** A complete description of the PHILLIPS PREMIUM WARRANTY PROGRAM covering this unit is contained in this GUIDE. Read warranty program thoroughly — fill out and mail WARRANTY REGISTRATION FORM within 10 days of purchase of Recreational Vehicle.

This PHILLIPS Power Converter/Charger is built specifically for your modern Recreational Vehicle (RV). It contains these functions:

1. Provides 12 Volt DC power to operate all 12 Volt lights and 12 Volt DC motors in your Recreational Vehicle (RV) when connected to an external 110-120 Volt power supply source.
  - A. PC-401-A-1 designed for 40 AMPS maximum continuous load.
  - B. PC-301-A-1 designed for 30 AMPS maximum continuous load.
  - C. PC-201-A-1 designed for 20 AMPS maximum continuous load.
2. Features an AUTOMATIC RELAY to switch between the Converter/Charger and a storage battery (if one is used) for 12 Volt DC power for your RV.
3. Contains an automatic, solid-state POSITIVE CONTROL Battery Charger section by which the storage battery of your RV can be fully charged and maintained at "Full Charge" when the Converter/Charger is connected to the external 110-120 Volt AC power source.

## 1. OPERATION OF 12 VOLT LIGHTS AND MOTORS FROM PHILLIPS POWER CONVERTER/CHARGER

When the Recreational Vehicle (RV) is located where external 110-120 Volt AC power is available, this 120 Volt AC should be connected to the RV. The Converter/Charger will then — through the AUTOMATIC SWITCHING — be switched into the circuit and instantly convert this 120 VAC to 12 Volt DC to operate all the 12 Volt lights and 12 Volt DC motors — up to load limit of Converter.

Model No. PC-401-A-1 is designed to provide a maximum continuous load of 40 AMPS for the above-mentioned 12 Volt electric lights and 12 Volt DC motors.

PC-301-A-1 will provide 30 AMPS.

PC-201-A-1 provides 20 AMPS.

If difficulty is encountered with operation of 12 Volt TVs, radios, stereos, unfiltered fluorescent lights, etc. which require "pure" 12 VDC, check to make sure these items are wired directly into the RV storage battery line rather than into Converter/Charger 12 Volt output — as power converters do not supply "pure" 12 VDC.

### AUTOMATIC-RESET CIRCUIT BREAKER

If the Converter/Charger is equipped with an Automatic-Reset Circuit Breaker and is operated beyond its maximum continuous load limit for an extended period of time, the circuit breaker will automatically "break" the 12 Volt power from the Converter to the 12 Volt lights and motors. In a few seconds the breaker will reset itself and the lights and motors will resume operation — only to shortly again "break".

### REPLACEABLE FUSE(S)

If replaceable fuse(s) are installed in front compartment of Converter/Charger — or are remotely located — for protection of Converter or individual lines to lights and motors, it (they) will "blow" if Converter or individual line is loaded beyond capacity of fuse.

When this "breaking" or "blowing" of the 12 Volt power supply occurs as described above, a portion of the RV 12 Volt load — either lights or motors or both — should be turned off in order to reduce the total load. If replaceable fuse(s) are used, these fuse(s) must be replaced with same size fuse. DO NOT put in larger fuse than indicated.

If the reduction of the load in the RV — as is indicated in paragraphs above — does not stop the "breaking" of the circuit breaker or the "blowing" of the replaceable fuse(s), it is an indication that there may be a "short" somewhere along a RV 12 Volt power line or at a non-fused 12 Volt DC motor. In this case, a check of the RV 12 Volt power line(s) and motors should be made. Locate the "short" and take the necessary steps to repair it.

**IMPORTANT**---- If 12 Volt lights and motors will NOT operate at all when used as indicated in No. 1 above, check to make sure external 110-120 Volt AC power supply is properly attached to RV. Then, with 120 VAC power supply disconnected from RV as a safety measure, make a visual and mechanical inspection of the electrical connection between RV 120 VAC supply point and Converter. This 120 VAC supply connection to Converter will be standard electrical conduit (cable) wiring or optional "quick-disconnect" power cord. Also, inspect front wiring compartment of Converter to make sure various RV 12 Volt light and motor lines are properly wired to Converter — as per instructions in compartment. If necessary, check with your RV dealer or contact our Customer Service Department as indicated in No. 4 below.

## 2. OPERATION OF 12 VOLT LIGHTS AND MOTORS FROM STORAGE BATTERY

When external 110-120 Volt AC power is NOT connected to the Recreational Vehicle, all 12 Volt electric lights and 12 Volt DC motors of the RV will — through the AUTOMATIC SWITCHING — be changed over to the RV storage battery for the necessary 12 Volt power to operate this equipment.

**IMPORTANT**---- When the RV 12 Volt lights and 12 Volt DC motors are operating off the RV 12 Volt storage battery, it is advisable to reduce the amount of 12 Volt equipment in use. In this manner, you will keep the 12 Volt current drain against the storage battery down to a minimum — thus conserving your 12 Volt power source as much as possible. An indication of low battery voltage and excessive drain is the gradual dimming of the 12 Volt lights and slow-down of the 12 Volt motors.

When 120 Volt AC power is again available, reconnect it to the RV. All 12 Volt lights and 12 Volt DC motors will — through the AUTOMATIC SWITCHING — be changed back to the Converter for all necessary 12 Volt DC power — as indicated in No. 1 above.

If 12 Volt lights and motors will NOT operate from storage battery yet will operate properly when used as indicated in No. 1 above, first check battery to make sure it is in good condition and charged. Also, check front wiring compartment of Converter to make sure wiring from battery is properly connected to Converter — as per instructions in compartment. If a fuse or circuit breaker is installed in the line between the battery and Converter, check this. If "blown" or "open", check for overload or "short" in this battery line and correct, DO NOT install oversize fuse.

### 3. CHARGING STORAGE BATTERY OF RECREATIONAL VEHICLE (RV)

When external 110-120 Volt AC power is connected to the RV, the Battery Charger section of the PHILLIPS Converter/Charger will automatically "sense" the condition of the RV storage battery. If it is below "full charge" the Charger section of the Converter/Charger will immediately start charging the battery.

If the storage battery has been drawn down quite low, it will be charged at a relatively high amperage rate. If the storage battery has not been drained severely, it will be charged at a somewhat lower amperage rate. In all cases, the rate of charge will decline as the battery reaches "Full Charge".

After the storage battery actually reaches "Full Charge" the Charger section of the Converter/Charger will shut off and maintain battery at "Full Charge". It will not resume active charging of the battery until it again falls below "Full Charge".

If the Battery Charger section should not operate, check to make certain wires from storage battery are properly attached in front compartment of Converter. If fuses are used, check their condition. "Blown" fuse indicates overload or "short" in lines from Converter to battery.

Check for proper polarity between Converter and battery. If polarity is reversed, a circuit-breaker built-into Charger section will "Open". As soon as polarity-reversal is corrected, the circuit-breaker will "Close" and Charger section will function.

**IMPORTANT**---- Periodic inspection of the RV storage battery should be a part of your normal maintenance procedure. **MAKE SURE THAT THE WATER LEVEL IS ABOVE THE PLATES IN EACH CELL.** Keep the battery terminals clean — do not allow them to become corroded. Be sure wire connections to terminals are tight.

(Continued on reverse side)

CAREFULLY READ WARRANTY ON NEXT PAGE . . . PUT IT IN EFFECT BY MAILING  
INFORMATION REQUESTED WITHIN 10 DAYS OF PURCHASE