



OWNERS MANUAL

Model

XI75DU

Power Converter

Converts 12V DC battery power to 120V AC household power



PLEASE SAVE THIS OWNERS MANUAL AND READ BEFORE EACH USE.

This manual will explain how to use the converter safely and effectively. Please read and follow these instructions and precautions carefully.

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1. IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS.

- 1.1 SAVE THESE INSTRUCTIONS** – This manual will show you how to use your converter safely and effectively. Please read, understand and follow these instructions and precautions carefully, as this manual contains important safety and operating instructions.
- WARNING:** The converter output is 120V AC and can shock or electrocute the same as any ordinary household AC wall outlet.
- WARNING:** Pursuant to California Proposition 65, this product contains chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.
- 1.2** Do not cover or obstruct the converter's vents.
- 1.3** Use the converter in a well-ventilated area.
- 1.4** This converter is not intended for use by children.
- 1.5** Do not expose the converter to rain or snow.
- 1.6** Ensure that the converter is located away from normal traffic areas.
- 1.7** Use only accessories recommended or sold by the manufacturer.
- 1.8** Do not operate the converter with damaged or undersized wiring.
- 1.9** Do not operate the converter if it has received a sharp blow, been dropped or otherwise damaged in any way; take it to a qualified service person.
- 1.10** Do not disassemble the converter; take it to a qualified service person when service or repair is required. Incorrect reassembly may result in a risk of fire or electric shock.
- 1.11** Make sure the converter is not close to any potential source of flammable fumes, gases or clothing.
- 1.12** Do not place the converter in areas such as battery compartments or engine compartments where fumes or gases may accumulate.
- 1.13** Disconnect both AC and DC power from the converter before attempting any cleaning.
- 1.14** DO NOT operate the converter if you, the converter, the device being operated or any other surfaces that may come into contact with any power source are wet. Water and many other liquids can conduct electricity, which may lead to serious injury or death.
- 1.15** Do not place the converter in direct sunlight. The ideal air temperature for operation is between 50° and 80°F.
- 1.16** Only connect the power converter to a 12 volt accessory outlet or 12 volt battery.
- 1.17** Do not attempt to connect the converter to any other power source, including an AC power source.
- 1.18** Do not modify the AC or USB receptacle in any way.
- 1.19** Do not try extending or otherwise changing the 12 volt power cord attached to your converter.

- 1.20 Incorrect operation of your converter may result in damage and personal injury.
- 1.21 This device does not include an internal Ground Fault Circuit Interrupter (GFCI). For GFCI protection, use a Coleman Cable 02822 GFCI outlet.

2. PERSONAL SAFETY PRECAUTIONS

- 2.1 **Restrictions on Use:** This converter may not be used in life support devices or systems. Failure of this converter can reasonably be expected to cause failure of that life support device or system, or to affect the safety or effectiveness of that device or system.
- 2.2 Wear complete eye and clothing protection when working near lead-acid batteries. Always have someone nearby for help.
- 2.3 Remove all personal metal items from your body, such as rings, bracelets, necklaces and watches. A lead-acid battery can produce a short circuit current high enough to weld a ring to metal, causing a severe burn.
- 2.4 Never smoke or allow a spark or flame in the vicinity of the battery or engine.

3. BEFORE USING YOUR CONVERTER

- This converter is designed to be used with a single battery, up to group 31 (130 Ah or smaller). The recommended source of power is a 12 Volt deep-cycle battery, due to their high reserve capacity. Automotive batteries are recommended for only a short period of time of an hour or less.
- Do not use the converter with a product that draws a higher wattage than the converter can provide, as this may cause damage to the converter and product.

When you turn on a device or a tool that runs on a motor, the device goes through 2 stages:

1. **Start Up** – Requiring an initial surge of power (commonly known as the “starting” or “peak” load).
2. **Continuous Operation** – Power consumption drops (commonly known as the “continuous load”).

The wattage (WATTS) or amperes (AMPS) can normally be found stamped or printed on most devices and equipment, or in the user’s manual. Otherwise, contact the manufacturer to find out whether the device you want to use is compatible with a modified sine wave.

To calculate the wattage: $\text{Wattage} = \text{AMPS} \times 120 \text{ (AC Voltage)}$.

To calculate the starting load: $\text{Starting Load} = 2 \times \text{wattage}$.

In general, the startup load of the device or power tool determines whether your converter has the capability to power it.

Always run a test to establish whether the converter will operate a particular piece of equipment or device. In the event of a power overload, the converter is designed to automatically shut down.

This safety feature prevents damaging the converter while testing devices and equipment within the wattage range of the converter.

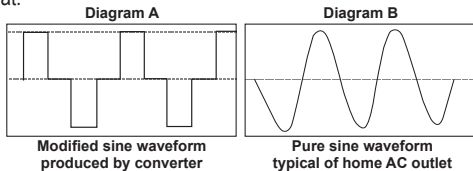
When using the vehicle's 12 volt accessory port, this converter is designed to supply 60 to 70 watts when the vehicle is not running. With the vehicle's engine running, it can supply up to 100 watts. To use the full output, you must connect the converter directly to your battery.

NOTE: The 100 watt limit is to accommodate the fuse ratings for all vehicles. Some vehicles may allow the full output. If the vehicle fuse blows when you switch on the device you are trying to use, you have to either use a smaller device or you must connect the converter directly to the battery.

IMPORTANT: This converter uses a modified sine waveform (diagram A) which is not quite the same as power company electricity (diagram B). For the following devices, we strongly recommend that you use caution and check the device's manual to make sure it is compatible with modified sine waveform.

1. Switch mode power supplies
2. Linear power supplies
3. Class 2 transformers
4. Line filter capacitors
5. Shaded pole motors
6. Fan motors
7. Microwave ovens
8. Fluorescent and high intensity lamps (with a ballast)
9. Transformer less battery chargers

Using the converter with any of these devices may cause the device to run warmer or overheat.



IMPORTANT: If you are using the power converter to operate a battery charger, monitor the temperature of the battery charger for about 10 minutes. If the battery charger becomes abnormally warm, disconnect it from the converter immediately.

NOTE: You can use an extension cord from the converter to the device without significantly decreasing the power being generated by the converter. For best operating results, the extension cord should be no longer than 50 feet.

4. CONNECTING CONVERTER CABLES

The converter and power source must be in the OFF mode.

IMPORTANT: Make sure to connect your converter only to a 12 volt power supply.

CONVERTER CONNECTION:

1. Locate the positive and negative plastic terminals located on the back of the converter and remove the terminal caps completely.
2. Install the positive (red) cable ring lug onto the positive (red) terminal screw. Install the negative (black) cable ring lug onto the negative (black) terminal screw. Tighten each terminal so that the cable cannot come loose.

CONNECTING CONVERTER CABLE TO A VEHICLE (100 watts maximum):

1. Remove the cigarette lighter from its outlet.
2. Push the 12 volt power plug firmly into the outlet.




CONNECTING CONVERTER CABLES TO 12V BATTERY OR 12V POWER SOURCE:

1. Keep hands, hair, clothing and jewelry clear of battery terminals.
2. Wear eye protection and protective clothing.
3. Connect the positive (red) converter terminal cable to the power source positive (+) or battery terminal. Make sure the connection is secure.
4. Connect the negative (black) converter terminal cable to the power source negative (-) or battery terminal. Make sure the connection is secure.
5. To disconnect the converter, reverse the above steps.


NOTE: The internal speaker may make a brief “beep” when the converter is being connected to or disconnected from the 12 volt power source.

CAUTION: Failure to make the correct connections will result in blown fuses and permanent damage to the converter.

5. OPERATING INSTRUCTIONS

1. Connect the converter (see *Connecting Converter Cables* section).
2. Make sure the device to be operated is turned OFF.
3. Plug the device into the converter AC outlet.
4. Press and hold the ON/OFF  button to turn the converter on. (The internal speaker will make a brief “beep”. This is normal.) The Wattage out **W**- LED will glow and the digital display will show .
5. Turn the device on. The display will now show the total wattage used by the device. To change the digital display, press the Display  button.
6. To disconnect, reverse the above procedure.

NOTE: If more than one device is to be powered, start one device at a time to avoid a power surge and overloading the converter. The surge load of each device should not exceed the converter's Continuous Operation wattage rate.

IMPORTANT: If there is a short circuit or power surge in the device, 5C will display and the alarm will sound. Press the ON/OFF  button to turn off the alarm. If the 5C displays after several attempts, there is a short circuit or the device requires more "starting" or "peak" load than the converter is capable of providing.


NOTE: After two 5C events, the converter will go into a mandatory 10 second cool-down period before it will turn on again.

IMPORTANT: If you are using the power inverter to operate a battery charger, monitor the temperature of the battery charger for about 10 minutes. If the battery charger becomes abnormally warm, disconnect it from the inverter immediately.

NOTE: You can use an extension cord from the inverter to the device without significantly decreasing the power being generated by the inverter. For best operating results, the extension cord should be no longer than 50 feet.

USING THE USB PORT

The USB port provides up to 2A at 5V DC.

1. Plug the device into the USB port.
2. Press and hold the ON/OFF  button to turn the converter on. (The internal speaker will make a brief "beep". This is normal.)
3. Turn the USB device on.
4. Reverse these steps when finished using the USB port.

USING THE CONVERTER TO OPERATE A TV OR AUDIO DEVICE

The converter is shielded and filtered to minimize signal interference. Despite this, some interference may occur with your television picture, especially with weak signals. Below are some suggestions to try and improve reception.

1. Try altering the position of the converter, antenna cables, and television power cord. Add an extension cord from the converter to the TV, to isolate its power cord and antenna cables from the 12 volt power source.
2. Try coiling the television power cord and the input cables running from the 12 volt power source to the converter.
3. Affix one or several "Ferrite Data Line Filters" to the television power cord. Ferrite Data Line Filters can be purchased at most electronic supply stores.

NOTE: You may hear a "buzzing" sound being emitted from inexpensive sound systems when operated with the converter. This is due to ineffective filters in the sound system's power supply. Unfortunately, this problem can only be resolved by purchasing a sound system with a higher quality power supply or higher quality filter.

6. POWER SOURCE

Your average automobile or marine battery at full charge will provide an ample power supply to the converter for approximately 3 hours when the engine is off. The actual length of time the converter will function depends on the age and condition of the battery and the power demand being placed by the device being operated with the converter.

If you decide to use the converter while the engine is off, we recommend you turn OFF the device plugged into the converter and disconnect the converter's plug from the 12 volt accessory outlet before starting the engine. To maintain battery power, start the engine every 2 to 3 hours and let it run for approximately 10 minutes to recharge the battery.

Although it is not necessary to disconnect the converter when turning over the engine, it may briefly cease to operate as the battery voltage decreases. While the converter draws very low amperage when not in use, it should be unplugged to avoid battery drain.

7. HOW POWER CONVERTERS WORK

There are two stages involved in converting 12 volt DC (battery) power into 120V AC (household voltage):

STAGE 1: The power converter uses a DC to DC transformer to increase the 12-volt DC input voltage from the power source to 145 volt DC.

STAGE 2: The converter then converts the 145 volt DC into 120 volts AC (household voltage) using advanced MOSFET transistors in a full bridge configuration. A "modified sine wave" waveform is generated by this conversion.


8. LED DISPLAY

The LED display identifies the current status of the converter.

VOLTS IN v_{in} : The voltage of the vehicle's battery, Portable Power jump starter or DC power source.

VOLTS OUT v_{out} : The voltage supplied to the device through the AC receptacle.

WATTAGE OUT w_{out} : The power or wattage supplied to the device plugged into the converter.

An audio alarm will sound when any of the following codes display. To stop the alarm, press the ON/OFF  button:

bAd – The converter is not functional.

H ib – The vehicle's battery voltage is more than 15.5 volts. The converter will automatically restart after the voltage drops below 15.0 volts.

H_{iP} – The continuous load demand from the device exceeds the converter's wattage output.

$H_{\Delta E}$ – The converter is overheated and automatically turns off for a period of 1 to 3 minutes to cool. Make sure the inverter is well ventilated. It will automatically restart after it cools.

$L_{\Delta b}$ – The vehicle's battery voltage is less than 10.5 volts.

SC – Short circuit, power surge or overload in the device.

9. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REASON/SOLUTION
Alarm is on.	Display shows SC . Device has a short circuit or demands too much surge power.	Cycle the converter power OFF and ON. If problem persists, use a larger converter or a smaller device. Remove the defective device.
	Display shows $L_{\Delta b}$. 12 volt battery is too low.	Recharge/replace battery.
	Display shows voltage in between 10.5-11.0 volts.	12 volt battery is low. Recharge/replace battery. The converter will automatically shut off after battery voltage reaches 10.5-volts.
	Display shows H_{iB} . 12 volt voltage is too high.	If in a vehicle, repair/replace the alternator or charging system. Use a properly sized and rated 12 volt battery. If the input voltage returns to 15 volts or less, the converter will automatically restart.
	Display shows H_{iP} . Device demands more than the converter's continuous power rating.	Cycle the converter power OFF and ON. If problem persists, use a larger converter or a smaller device.
Display shows $H_{\Delta E}$. Converter is too hot.	Increase the ventilation to the converter. Move the converter to a cooler area. Reduce the power consumption of the device. The converter will automatically reset after cooling.	

PROBLEM	POSSIBLE CAUSE	REASON/SOLUTION
Converter does not turn on.	Poor contact at terminals	Check for poor connection to battery or power supply. Make sure connection points are clean. Rock clamps back and forth for a better connection.
	Fuse has blown.	A blown fuse is usually caused by reverse polarity or a short circuit within the converter. Contact a qualified service technician to replace the fuse(s) with the appropriate replacement(s).

10. SPECIFICATIONS

Maximum continuous output.....	750 Watts
Surge capacity (0.1 second).....	1500 Watts
No load current draw	<0.5A
Input voltage range	10.5V – 15.5V DC
Output voltage range	120V±5% AC
Optimum efficiency	85%

11. REPLACEMENT PARTS

12V accessory plug with cables.....	3899003535Z
Battery cable with clamps (red and black).....	3899003534Z

12. LIMITED WARRANTY

SCHUMACHER ELECTRIC CORPORATION, 801 E. BUSINESS CENTER DRIVE, MOUNT PROSPECT, IL 60056-2179, MAKES THIS LIMITED WARRANTY TO THE ORIGINAL RETAIL PURCHASER OF THIS PRODUCT. THIS LIMITED WARRANTY IS NOT TRANSFERABLE OR ASSIGNABLE.

Schumacher Electric Corporation (the “Manufacturer”) warrants this converter for two (2) years from the date of purchase at retail against defective material or workmanship that may occur under normal use and care. If your unit is not free from defective material or workmanship, Manufacturer’s obligation under this warranty is solely to repair or replace your product with a new or reconditioned unit at the option of the Manufacturer. It is the obligation of the purchaser to forward the unit, along with proof of purchase and mailing charges prepaid to the Manufacturer or its authorized representatives in order for repair or replacement to occur.

Manufacturer does not provide any warranty for any accessories used with this product that are not manufactured by Schumacher Electric Corporation and approved for use with this product. This Limited Warranty is void if the product is misused, subjected to careless handling, repaired, or modified by anyone other than Manufacturer or if this unit is resold through an unauthorized retailer.

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