OWNER'S MANUAL

Power Inverter PID-410

Converts DC Battery Power to AC Household Power

Includes Clamp Adapter with Cables and 12 Volt Accessory Plug with Cables

CAUTION:
Read all Safety Rules and Operating Instructions, and follow them with each use of this product.

Schumacher Electric Corporation
Mount Prospect, IL 60056 U.S.A.

Send Warranty Product Repairs to:
Customer Service Returns
P.O. Box 280, 1025 E. Thompson
Hoopeston, IL 60942-0280
Questions? Call Customer Service: 1-800-621-5485

00-99-000667/0806

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

Before using your PID-410, read and understand this Owner's Manual.

- Keep the inverter well ventilated in order to properly disperse heat generated while it is in use. Make sure there are several inches of clearance around the top and sides and do not block the slots of the inverter.
- Make sure the inverter is not close to any potential source of flammable fumes, gases or clothing.
- Keep the inverter dry.
- DO NOT allow the inverter to come into contact with rain or moisture.
- DO NOT operate the inverter if you, the inverter, the device being operated or any other surfaces that may come in contact with any power source are wet. Water and many other liquids can conduct electricity, which may lead to serious injury.
- Do not place the inverter on or near heating vents, radiators or other sources of heat.
- Do not place the inverter in direct sunlight. The ideal air temperature for operation is between 50° and 80°F.
- Do not use the inverter near an open engine compartment.
- Only connect the power inverter to a 12-volt battery accessory outlet or 12-volt battery. Make sure the AC plug connection is tight.

- Do not modify the AC receptacle in any way.
- Use only 40-amp or 50-amp fuses. (Replaced by certified technician only.)
- This device does not include an internal Ground Fault Circuit Interrupter (GFCI). For GFCI protection, use a Coleman Cable 02822 GFCI outlet.

WARNING: Handling the cord on this product or cords associated with accessories sold with this product, may expose you to lead, a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. ***Wash hands after handling.***

BEFORE USING PID-410 POWER INVERTER

It is important to know the continuous wattage of the device you plan to use with the inverter. The PID-410 must be used with devices drawing 410 watts or less. If the wattage is not marked on the device, an estimate can be made by multiplying the AC input current (Amps) by the AC voltage (110V).

Devices like TVs, fans or electric motors require additional power to start (commonly known as the “starting or peak power”). The PID-410 can supply a momentary surge in wattage; however even devices rated less than the maximum 410 watts can exceed the inverters surge capability and cause an automatic overload shutdown.

Make sure the device you are using is compatible with a modified sine wave inverter.

OPERATING INSTRUCTIONS

Plugging into a 12V accessory outlet:

1. Make sure that the inverter and device to be operated are turned OFF.
2. Unscrew the positive (red) and negative (black) plastic connector knobs from the back of the inverter.
3. Slip the end of the red (positive) 12 volt accessory wire over the red (positive) threaded extension and then screw on the connector knob and tighten so the wire is firmly attached. Repeat the same process for the black wire.
4. Push the PID-410's 12V accessory plug firmly into the 12V accessory outlet. (If connecting in a vehicle, remove the cigarette lighter from its outlet.)
5. Plug the device into the PID-410 AC outlet.

   NOTE: If using more than one device, the total combined wattage of both devices must not exceed 410 watts.
6. Turn the inverter ON. To turn the inverter ON or OFF, press and hold the button marked PRESS AND HOLD FOR ON / OFF. The POWER OUT LED will glow and the display will show 0.
7. Turn the device on. The display will now show the total wattage used by the device. To change the display, press the button marked PRESS TO CHANGE DISPLAY.

   NOTE: If there is a short circuit or power surge in the device, SC will display and the alarm will sound. Press the ON/OFF LED switch to turn off the alarm. If the SC displays after several attempts, there is a short circuit or

the device requires more surge power than the inverter is capable of providing.

8. To disconnect the PID-410, reverse the above steps.

   NOTE: A ''buzzing'' sound emitted from inexpensive sound systems is the result of ineffective filters in the sound system. This can be resolved by purchasing a sound system with a higher quality power supply or higher quality filter.

Connecting to a 12V Battery:

The PID-410 clamps with cables allow quick hook-up to a 12V battery. Make sure the PID-410 and the devices are turned OFF.

1. Unscrew the positive (red) and negative (black) plastic connector knobs from the back of the inverter.
2. Slip the end of the red (positive) battery cable clamp wire over the red (positive) threaded extension and then screw on the connector knob and tighten so the wire is firmly attached. Repeat the same process for the black wire.
3. Connect the red (positive) battery clamp to the positive (+) battery terminal taking care to shield eyes, clothing and hands from battery acid. Connect the black battery clamp to the negative (-) terminal on the battery.
4. Follow steps 4-7 on “Plugging into a 12V accessory outlet”.
5. To disconnect the PID-410, reverse the above steps.

POWER SOURCE

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

Turn OFF the device plugged into the inverter before starting the engine. To maintain battery power, run the engine every 2 to 3 hours for approximately 10 minutes to recharge the battery. While the PID-410 draws very low amperage when not in use, it should be unplugged to avoid battery drain.

USAGE EXAMPLES

Device Type	Estimated Wattage
Cell Phones, MP 3 Players	10 watts
Portable CD	50 watts
Laptop Computers	90 watts
Video Games	100 watts
TVs	300 watts

LED DISPLAY

The LED readouts identify the current status of the PID-410.

VOLTAGE IN: Voltage of vehicle's battery or Portable Power jump starter/DC power source.

VOLTAGE OUT: Voltage supplied to device through AC receptacle.

POWER OUT: Power or wattage supplied to device plugged into the inverter.

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

bAd – Inverter is not functional. See warranty and call Customer Service 800-621-5485 (Hours: 7 a.m. – 4:30 p.m. CST).

Hib – Vehicle's battery voltage is more than 15.5 volts. Inverter will automatically restart after the voltage drops below 15.0 volts.

HiP – The continuous load demand from the device exceeds 410 watts.

HoT – Inverter is overheated and automatically turns off for a period of 1–3 minutes to cool. Make sure inverter is well ventilated. It will automatically restart after it cools.

Lob – Vehicle's battery voltage is less than 10.5 volts.

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

TROUBLESHOOTING

PROBLEM: Alarm is On
Reason*/Solution*

1. **Display shows SC. Device has a short circuit or demands too much surge power.**
   Cycle inverter power OFF and ON.
   If problem persists, use a larger inverter or a smaller device.
   Remove defective device.
   See warranty and call Customer Service 800-621-5485 (Hours: 7 a.m. – 4:30 p.m. CST).
2. **Display shows Lob. 12 Volt battery too low.**
   Recharge/replace low battery.
3. **Display shows Voltage In between 10.5 and 11.0 Volts.**
   12 Volt battery is low.
   Recharge/replace low battery.
   Inverter will automatically shut off after battery voltage reaches 10.5 volts.
4. **Display shows Hib. 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 input voltage returns to 15 volts or less, the inverter will automatically restart.

5. **Display shows HiP. Device demands more than 410 Watts continuous power.**
   Cycle inverter power OFF and ON.
   If problem persists, use a larger inverter or a smaller device.
6. **Display shows HoT. Inverter is too hot.**
   Increase ventilation to inverter.
   Move inverter to a cooler area.
   Reduce the power consumption of the device.
   Inverter will automatically reset after cooling.

PROBLEM: Inverter Does Not Turn On
Reason*/Solution*

1. **Poor contact at terminals.**
   Unplug and reinsert PID-410.
2. **Fuse is blown.**
   A blown fuse is usually caused by reverse polarity or a short circuit within the inverter. To replace, contact a qualified service technician who will diagnose the inverter and replace the fuse with the appropriate replacement.
3. **Inverter may be defective.**
   See warranty and call Customer Service 800-621-5485 (Hours: 7 a.m. – 4:30 p.m. CST).

SPECIFICATIONS

Maximum Continuous Power .....410 Watts
Surge Capacity (Output Wattage).....820 Watts
No Load Current Draw ..... <0.4 Amps
Wave Form.....Modified Sine Wave
Input Voltage Range..... 10.5 – 15.5V DC
Low Battery Alarm..... 10.7V – 11.3V DC
Output Voltage .....110V – 125V AC
Low Battery Shutdown .....10.2V – 10.8V DC
High Battery Shutdown .....15.0V – 16.0V DC
Optimum Efficiency .....>85%
Dimensions.....5”L x 4"W x 2.2"H
Weight ..... Approximately 2.0 lbs.
AC Outlets ..... Two, 110V AC 3-Prong
Fuse.....One, 50 Amp or 40 Amp (ATO spade type)

ACCESSORIES AND REPLACEMENT PARTS

(1) Clamp Adapter with Cables
38-99-001512

(1) 12V Accessory Plug with Cables
38-99-001511

LIMITED WARRANTY

Schumacher Electric Corporation warrants your inverter to be free from defects in material and workmanship, excepting abuse or misuse, for a period of two years from the date of sale to the original user or consumer purchaser. If your inverter malfunctions or fails within the 24-month warranty period because of a defect in material or workmanship, we will repair it without charge or replace it.

This warranty is in lieu of all other express warranties. The duration of any implied warranty, including but not limited to, any implied warranty of merchantability or fitness for a particular purpose made in respect to your unit, is limited to the period of the express warranty set forth above.

For warranty service, **return your inverter as well as proof of purchase** to the factory or a designated agent:

Schumacher Electric Corporation
Warranty Service Department
1025 E. Thompson, P.O. Box 280
Hoopeston, IL 60942-0280
Phone: 800-621-5485 (Hours: 7 a.m. - 4:30 p.m. CST)

You will be responsible for all insurance and freight or other transportation charges to the factory or point of repair. We will return your inverter freight prepaid if repair is covered under warranty. Your inverter should be properly packed to avoid damage in transit since we will not be responsible for any such damage.

In no event shall Schumacher Electric Corporation be liable for consequential damages. Some states do not allow limitations on the length of the implied warranty or the exclusion or limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

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