

PRIMARY SUMP PUMP BACKUP POWER SYSTEM

INSTALLATION AND OPERATING INSTRUCTIONS



Specifications

Model #	INVRIC20
Input Voltage	DC 12V
Amp Rating	12.5A
Output Voltage	AC100V / 110V $\pm 10\%$
Battery Charging Current	10A
Rated Power	1500W
Size	18.1" x 7.8" x 3.1"
Weight	13.4 lbs.
Color	Black

Performance

Output Comparison		
Model	Competitive Inverter	Richtech Inverter
Battery	12v 75AH at full charge	12v 75AH at full charge
Pump	Richtech 1/2 HP Cast Iron	Richtech 1/2 HP Cast Iron
Output Volume	792 Gal	3,505 Gal

NOTICE: INSTALLER - Please provide this manual to the property owner responsible for the service and maintenance of the sump pump system.

GENERAL INFORMATION

To ensure safe and reliable operation, please carefully read this service and installation manual in its entirety before installing and / or using this product. Reasonable care and safe methods in according with sound plumbing practices should be strictly adhered to. Before installation, refer to and understand all relevant local plumbing and electrical codes.

DO NOT THROW AWAY THIS MANUAL. Keep it in a safe place so that you may refer to it for periodic service and maintenance.

Always disconnect the power before servicing this product. Failure to do so may result in serious injury or death. Consult with a qualified electrician if you are unsure of the power source or cannot determine whether power has been properly disconnected

SAFETY INFORMATION



WARNING

- Risk of electric Shock. Always disconnect power before servicing.
- Do not make any electrical connections while standing on a wet surface or with wet hands.
- Electrical Connections and wiring for a pump installation should only be made by qualified personnel.
- This equipment is only for use on 115 volt and is equipped with an approved 3-conductor cord and 3-prong, grounding-type plug. To reduce the risk of electric shock, be certain that it is connected to a properly grounded, grounding type receptacle.
- For proper and safe operation, the temperature range where this unit is to be installed is 40°F to 120°F and well ventilated. Avoid installing in direct sunlight.
- DO NOT bypass grounding wires or remove the ground prong from the plug.
- DO NOT use an extension cord.
- NEVER plug this unit into an outlet while standing on a wet surface.
- NEVER lift this product by the electrical power cord.
- NEVER attempt to open or service this unit while it is connected to an electrical power supply.
- DO NOT pump gasoline or any flammable liquid near this unit. Explosion, fire or serious injury or death may result from pumping gasoline or any flammable liquid with this product.
- To reduce risk of electrical shock, fully read and understand the operating and installation instructions accompanying this unit BEFORE attempting to install or operate this unit.
- Know the application, limitations, and potential hazards.
- Periodically inspect sump, pump and system components.
- Maintain at least 12 inches of clearance around this unit after installed. Do not store anything on top of this unit. This surfaces of this unit may become hot to the touch, particularly during periods of high demand / use.
- Keep free of debris and foreign objects. Perform routine maintenance as required.

Personal Safety:

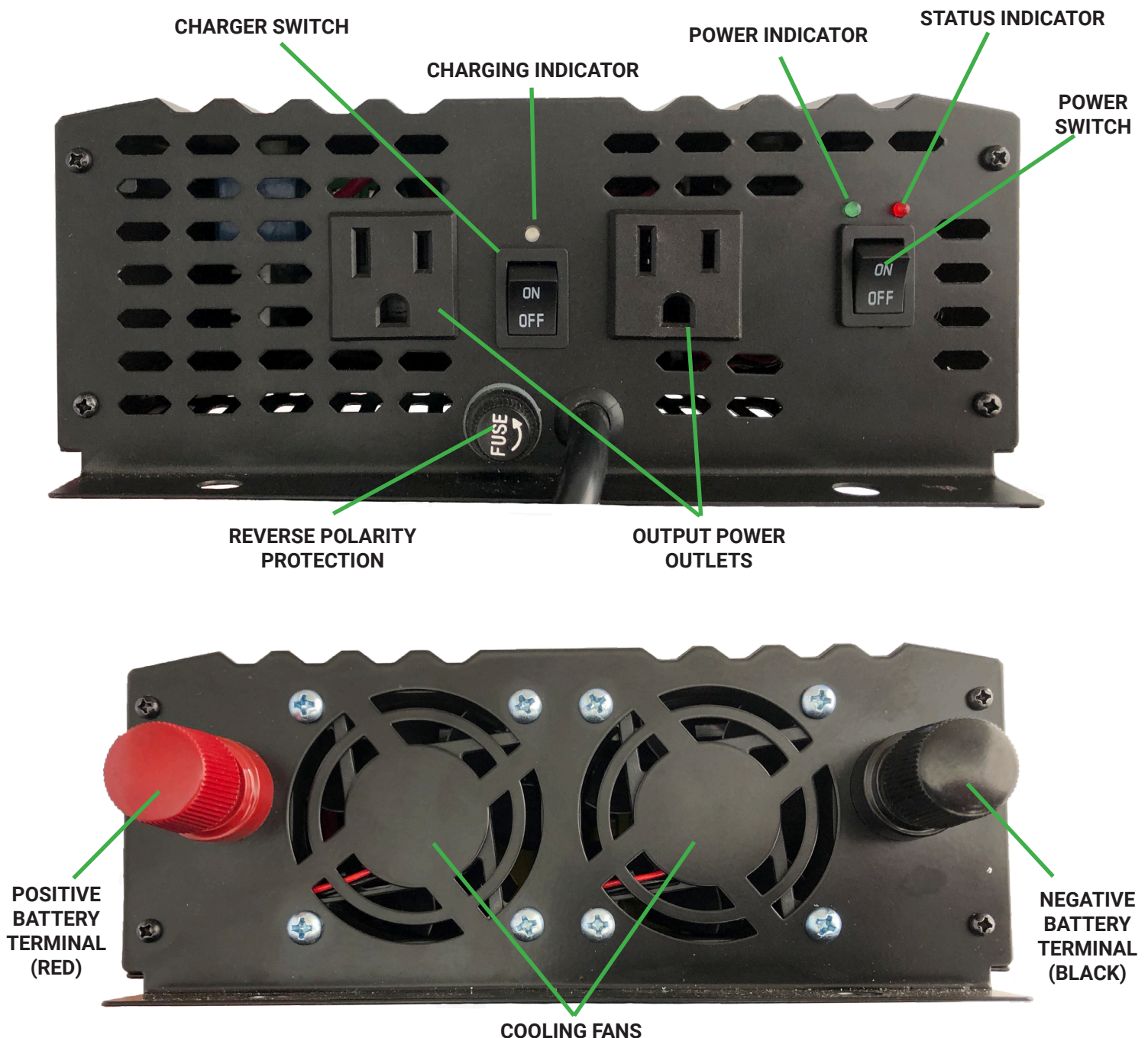
- Wear safety glasses at all times when working with pump systems.
- Keep work area clean, uncluttered and properly lighted – replace all unused tools and equipment.
- Keep visitors at a safe distance from work area.
- Make workshop child-proof – with padlocks, master switches, and by removing starter keys.
- When wiring an electrically driven pump, follow all electrical and safety codes that apply.

OPERATION

When 120VAC household power is available to the Power Unit and the unit is powered ON (Power Indicator is "GREEN"), household power is directly routed through to both of the Output Power Outlets on this unit. While the CHARGER SWITCH in the on position, the Power Unit is also charging the deep cycle battery. The Charging Indicator will be "RED" while charging the battery and "GREEN" once the battery is fully charged. When you loose household power, the Power Unit will automatically activate and convert your 12VDC Battery to 120 VAC Pure Sine Wave output at both of the Power Unit Outlets.

It is recommended that you keep both the Charger Switch and the Power Switch in the "ON" position unless you are changing the battery or performing other maintenance on the unit.

The STATUS INDICATOR LED will turn RED when the Power Unit is overloaded, overheating, low household voltage, or a short circuit. See Troubleshooting Guide for more information.



INSTALLATION

1. Mount the power unit on the wall at least 36 inches off the floor and within 3 feet of a 120 VAC electrical outlet. Secure to the wall studs or anchor securely to a block wall. Make sure to keep all sides of the power unit clear of obstructions by at least 12". DO NOT PLUG THE POWER UNIT INTO THE 120VAC OUTLET AT THIS TIME.
2. Connect the BLACK battery lead to the BLACK terminal on the power unit. Tighten the terminal retention knob securely by hand. Do not use any tools to tighten as this may break the retention knob.
3. Connect the RED battery lead to the RED terminal on the power unit. Tighten the terminal retention knob securely by hand. Do not use any tools to tighten the terminal retention knob as this may break the retention knob.
4. Connect the BLACK battery lead to the BLACK terminal on your 12 VDC Deep Cycle Battery. Secure the connection per the battery manufacturer's recommendation.
5. Connect the RED battery lead to the RED terminal on your 12 VDC Deep Cycle Battery. Secure the connection per the battery manufacturer's recommendation.
6. Plug the power unit into the 120 VAC outlet.
7. Confirm that the Charger Switch and Power Switch are in the "OFF" Position. Plug your sump pump into either of the two 120 VAC Output Power Outlets.
8. Turn on both the Charger Switch and the Power Switch. The LEDs above both switches should be green. Your system is now properly setup.

TEST

To verify that your system is setup properly to operate in the event of a power failure:

1. Unplug the Power Unit from the 120VAC Outlet.
2. Lift the float switch on your sump pump. The pump should operate normally. The Power Unit is now converting the 12VDC from your battery into a pure sine wave 120 VAC output to your pump.
3. Plug your Power Unit back into your home's 120 VAC Outlet.

TROUBLESHOOTING



WARNING

Always disconnect the power unit from power sources before handling. This guide is designed to help identify reasons for potential operating problems. It is not a service guide. Dismantling of the power unit voids warranty. Servicing of power unit should be referred to the factory or its authorized service centers.

NOTE: The manufacturer assumes no responsibility for injury or damage associated with disassembly or modification of the power unit. Consult with customer service before attempting any disassembly.

PUMP DOES NOT RUN OR HUM.

1. Power Unit Fuse/Overload Protection tripped or loose. Check / replace fuse.
2. Water level in pit may be too low to activate switch. Add more water to pit.
3. Plug on power cord may not be making contact in receptacle. Check security and connection.
4. If the pump is using the series (piggyback) cord plug, the plugs may not be connected tightly together.
5. Float may be obstructed. Make sure float is free and not interfering with the pit wall or other obstruction.
6. If all symptoms check OK, the motor winding may be open. Consult factory.

TROUBLESHOOTING

(CONTINUED)

PUMP RUNS OR HUMS BUT DOES NOT DELIVER WATER.

1. Check valve may be installed backwards or is defective. Check to make sure it is installed properly and flapper in valve is free to move.
2. Discharge line may be blocked or frozen. Check to see if line passes through cold areas or is blocked.
3. Vertical lift may be beyond pump's capability. See chart below for your pump's maximum lift capability.
4. Check to see if inlet screen of pump is plugged or the impeller is jammed. Clean inlet and impeller as needed.
5. Pump Impeller may be jammed. Check for foreign material such as construction debris, stones, etc. that might be preventing the impeller from rotating. Reminder: Make sure pump is disconnected from power source before checking inlet and impeller area.

PUMP RUNS AND REMOVES WATER BUT DOES NOT SHUT OFF.

1. Float is stuck in the "on" position. Check to make sure the float is free to move up and down without obstruction.
2. Switch may be defective. Consult factory.

PUMP RUNS BUT DELIVERS VERY LITTLE WATER.

1. Vertical lift is approaching the pump's maximum lift capability. Refer to the above maximum lift chart.
2. Pump's inlet is partially blocked. Check to make sure the inlet is clear of debris.
3. Discharge line is partially blocked. Check line for blockage.
4. Check valve is not opening all the way. Check for defective, reversed, or blocked check valve.

PUMP CYCLES TOO OFTEN OR RUNS CONSTANTLY

1. Check Valve may have failed causing discharged water to return to the sump pit. Cycle pump and look for water rushing back through the pump inlet. Replace Check Valve as necessary.
2. Pump May be sized incorrectly. Check with your local plumber for recommendation.
3. Pump Inlet may be blocked. Unplug pump from power source and clean inlet.

SYSTEM STATUS LED IS RED

A RED Power Indicator LED is a sign of system trouble. Make sure that the cooling fans are clear of any obstacles and debris. Check your household voltage to make sure it is at least 110 VAC. If you are using both outlets, make sure the combined wattage does not exceed 1500 WATTS on a continuous basis. The Power Unit will automatically shut down, an alarm will sound and the System Status LED will turn RED when the load exceeds 120% of the rated 1500 Watts.

LOW VOLTAGE ALARM

When the Battery voltage falls below 10.4 VDC, an audible alarm will sound to indicate that it needs to be recharged. Make sure that the Charger Switch is in the ON position.

MAINTENANCE

The power unit should be checked frequently for debris and/or build up on the cooling fans which may interfere with proper flow to cool the unit during operation. The cooling fans should be cleaned with a vacuum to remove any buildup at least every 3 months or more frequently if the unit is mounted in an area where excess dust or debris may be present.

Deep Cycle Batteries generally last between 3 to 5 years in a sump pump backup installation. It is recommended that the battery is tested every 6 months to ensure it is ready for service.

FOR YOUR RECORDS

Model Number _____

Serial Number _____

Date of Purchase _____

Place of Purchase _____

Installed by: _____

