THOR Manufacturing
7050 W. Palmetto Park Rd., Suite 15
Boca Raton, FL 33433
1-866-955-THOR

RD120808

California Proposition 65 Warning

WARNING: This product contains chemicals known to the State of California to cause cancer and/or reproductive harm, birth defects or other reproductive harm.

ADVERTENCIA: Este producto contiene productos quimicos reconocidos por el estado de California que provocan cáncer o daños reproductivo, defectos de nacimineto u otros daños reproductivos.

THOR MANUFACTURING

ETL LISTED US
Intertek

PW Series

Professional Grade Power Inverter

PROFESSIONAL GRADE ETL LISTED PURE SINE WAVE POWER INVERTER

THPW600-ETL

THPW1000-ETL

THPW1500-ETL

THPW2000-ETL

THPW3000-ETL

SAVE THIS INSTRUCTION MANUAL FOR FUTURE REFERENCE.

Instruction Manual
and Warranty Information

READ ALL INSTRUCTIONS

WARNING: Read all instructions before operating your inverter. Failure to follow all instructions may result in electric shock, fire and/or serious injury.

- **AVOID DANGEROUS ENVIRONMENTS.** Don't use inverters in damp or wet locations.
- **KEEP CHILDREN AWAY.** Keep away from children. This is not a toy!
- **STORE INDOORS.** When not in use, inverters should be stored indoors in dry, and high or locked-up places – out of reach of children.
- **DON'T ABUSE CORD.** Never carry inverter by cord or yank the cord to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
- **DISCONNECT INVERTER.** Disconnect the inverter from the power supply when not in use.
- **PROPER COOLING** is essential when operating the inverter. Do not place it near a vehicle's heat vent or in direct sunlight.
- **USE OF ACCESSORIES AND ATTACHMENTS.** The use of any accessory or attachment not recommended by manufacturer for use with this inverter could be hazardous.
- **STAY ALERT.** Use common sense. Do not operate inverter when you are tired.
- **CHECK FOR DAMAGED PARTS.** Any part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual before further use. Do not use inverter if switch does not turn it on and off.
- **DO NOT OPERATE** inverter near flammable liquids or in gaseous or explosive atmospheres. Motors in tools or appliances used with the inverter may spark, and the sparks might ignite fumes.

CAUTION: These inverters are intended for use within land vehicles where not directly exposed to outdoor conditions, and are intended to be employed in accordance with the National Electrical Code, NFPA 70.

SAFETY GUIDELINES AND DEFINITIONS

DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION: Used without the safety alert symbol indicates potentially hazardous situation which, if not avoided, may result in property damage.

RISK OF UNSAFE OPERATION. When using tools or equipment, basic safety precautions should always be followed to reduce the risk of personal injury. Improper operation, maintenance or modification of tools or equipment could result in serious injury and property damage. There are certain applications for which tools and equipment are designed. Manufacturer strongly recommends that this product NOT be modified and/or used for any application other than for which it was designed.

IMPORTANT SAFETY INSTRUCTIONS

WARNING: This product or its power cord may contain lead, a chemical known to the State of California to cause cancer and birth defect or other reproductive harm. Wash hands after handling.

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK:

- DO NOT connect to AC distribution wiring.
- DO NOT make any electrical connections or disconnections in areas designated as IGNITION PROTECTED. This inverter is NOT approved for ignition protected areas.
- NEVER immerse the inverter in water or any other liquid, or use when wet.
- DO NOT insert foreign objects into the inverter's outlets.
- ALWAYS connect the grounding connection on the unit to the appropriate grounding system.

WARNING: TO REDUCE THE RISK OF FIRE:

- Do not operate near flammable materials, fumes or gases.
- DO NOT expose to extreme heat or flames.

CAUTION: TO REDUCE THE RISK OF INJURY OR PROPERTY DAMAGE:

- Remove appliance plug from outlet before working on the appliance.
- DO NOT attempt to connect or set up the inverter or its components while operating your vehicle. Not paying attention to the road may result in a serious accident.
- ALWAYS use the inverter where there is adequate ventilation. Do not block ventilation slots.
- ALWAYS turn the inverter off and disconnect it from the power source when not in use.

- The inverter MUST be connected only to batteries with a nominal output voltage of 12 volts. The unit will not operate from a 6 volt battery and will sustain permanent damage if connected to a 24 volt battery.
- When using this unit in a vehicle, check the vehicle owner's manual for maximum power rating and recommended output. DO NOT install in engine compartment — install in a well ventilated area.
- DO NOT use with positive ground electrical systems.* Reverse polarity connection will result in a blown fuse and may cause permanent damage to the inverter and will void warranty.
  *The majority of modern automobiles, RVs and trucks are negative ground.
- Keep in mind that this inverter may not operate high wattage appliances or equipment that produce heat, such as hair dryers, microwave ovens and toasters.
- Do not open the inverter — there are no user-serviceable parts inside. Opening the inverter will void manufacturer's warranty.
- Do not use this inverter with medical devices. It is not tested for medical applications.
- Install and operate unit only as described in this Instruction Manual.
- Check inverter periodically for wear and tear. Return to manufacturer for replacement of worn or defective parts immediately.

Read And Understand This Instruction Manual Before Using This Inverter.

SAVE THESE INSTRUCTIONS

⚠ WARNING: TO REDUCE THE RISK OF INJURY: FOLLOW THESE INSTRUCTIONS AND THOSE PUBLISHED BY BATTERY MANUFACTURER AND THE MANUFACTURER OF ANY EQUIPMENT YOU INTEND TO USE WITH THIS UNIT. REVIEW CAUTIONARY MARKINGS ON THESE PRODUCTS AND ON ENGINE.

TABLE OF CONTENTS

INTRODUCTION

Thank you for purchasing this **THOR Power Inverter**. Please read this Instruction Manual carefully before use to ensure optimum performance and to avoid damage to this product.

This power inverter is configured to supply continuous power in the form of 120 volt AC outlets and a USB port to run or recharge most household or electronic appliances.

FEATURES

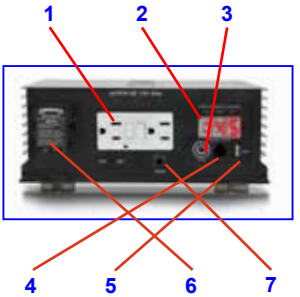
The front Display, indicates power and proper operation of the inverter. This also displays inverter fault codes, if the inverter happens to shut down from over-load or over-temperature condition, or abnormal input voltages. The ON/OFF Switch turns the inverter ON and OFF. The switch can also be used to force reset of inverter circuits by switching it OFF, then back ON again. All models also feature a port to attach a remote control (sold separately).

120 volt AC power is supplied through two North American three-prong type outlets. The outlets can accommodate either two- or three-pin AC plugs.

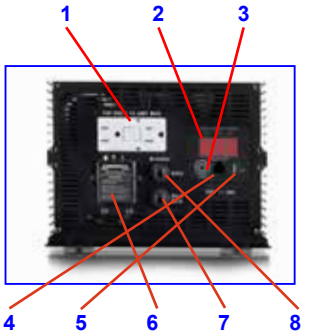
Controls and Functions

FRONT OF UNIT (ALL UNITS)

THPW600 - 1000



THPW2000 - 3000

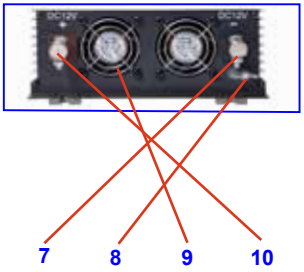


1. Ground Fault Circuit Interrupter (GFCI) duplex outlet
2. Digital display
3. AC On/Off button
4. Remote control port (Remote Sold Separately)
5. USB power Port
6. Hard Wire Terminal Block
7. Thermal Breaker for AC Output Socket and Hardwire connection. (THPW3000)
8. 15A thermal breaker for the GFCI Socket & AC Output L2 (THPW3000)

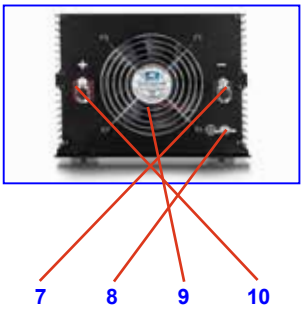
The Protection Switch is a circuit breaker. If the output is exceeded, the breaker will POP and you will have to manually reset it.This circuit breaker will protect the inverter in case of Overload or short circuit. If you have to reset this breaker, you should verify the Startup and Running current requirements for you equipment. Startup may be several times higher than the running rate. and may cause this protection breaker to pop. Example: air conditioners or air compressors have high startup ratings called Locked Rotor Amps tL.R.A.)

BACK OF UNIT (ALL UNITS)

THPW600 - 1500



THPW2000 - 3000



7. Negative (–) DC Power Connection	9. High-Speed Cooling Fans
8. Grounding Post	10. Positive (+) DC Power Connection

HOW THESE INVERTERS WORK

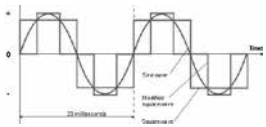
Your inverter converts low voltage DC (direct current) electricity from a battery to 115 volt AC (alternating current) household power in two stages. The first stage is a DC-to-DC conversion process that raises the low voltage DC at the inverter input to 145 volts DC. The second stage converts the high voltage DC into 115 volts, 60 Hz AC.

Power Inverter Output Waveform

The AC output waveform of your inverter is known as a pure sine wave. It is a stepped waveform that has characteristics similar to the sine wave shape of utility power. This type of waveform is suitable for most AC loads, including linear and switching power supplies used in electronic equipment, transformers and small motors.

The pure sine wave produced by this inverter has an RMS (root mean square) voltage of 115 volts. Most AC voltmeters (both digital and analog) are sensitive to the average value of the waveform rather than the RMS value. They are calibrated for RMS voltage under the assumption that the waveform measured will be a pure sine wave. These meters will not correctly read the RMS voltage of a pure sine wave. Non-TRUE RMS meters will read about 20 to 30 volts low when measuring the output of this inverter. For accurate measurement of the output voltage of this unit, use a TRUE RMS reading voltmeter such as a Fluke 87, Fluke 8080A, Beckman 4410 or Triplett 4200.

115 VOLT AC OUTPUT



CAUTIONS

Ensure that total continuous power consumption of all tools and appliances to be used simultaneously with your inverter does not exceed the inverter's continuous wattage rating. Also ensure that start-up wattage for inductive loads does not exceed peak watts for more than a second.

Appliances such as microwave ovens will normally draw more than their rated current and could possibly overload the inverter when operated simultaneously with other appliances. For example: A 600 watt microwave oven draws approximately 940 watts.

Rechargeable Devices

⚠ CAUTIONS

- Some rechargeable devices are designed to be charged by plugging them directly into an AC receptacle. These devices may damage the inverter or the charging circuit.
- When using a rechargeable device with your inverter, monitor its temperature for the initial ten minutes of use to determine if it produces excessive heat. If excessive heat is produced, the device should not be used with your inverter.
- This problem does not occur with most battery-operated appliances and tools. Most of these appliances use a separate charger or transformer that is plugged into an AC receptacle.
- Your inverter is capable of running most chargers and transformers.

POWER SOURCE AND PROTECTIVE FEATURES

Power Source Requirements

Your inverter will operate from input voltages between 10-17 Volts DC. If the voltage drops below 10 volts, an audible low battery warning alarm will sound. If the input voltage drops below 10 volts DC, the inverter will shut down. This feature protects the battery from being completely discharged.

The inverter will also shut down if the input voltage exceeds 17 volts. This protects the inverter against excessive input voltage. Although the inverter has built-in protection against over voltage, it may still be damaged if the input voltage exceeds 17 volts.

Your inverter is engineered to be connected directly to standard electrical and electronic equipment in the manner described in the “Installation” section of this Instruction Manual. Do not connect the inverter to household or RV AC distribution wiring. Do not connect the inverter to any AC load circuit in which the neutral conductor is connected to ground (earth) or to the negative of the DC (battery) power source.

The inverter will operate most AC loads within its power rating. Some induction motors used in refrigerators, freezers, pumps and other motor-operated equipment, require very high surge currents to start them. The inverter may not be able to start some of these motors even though their rated current draw is within specifications for this power inverter. If a motor refuses to start, observe the battery voltage using a DC voltmeter while trying to start the motor. If the battery voltmeter drops below 11 volts while the inverter is attempting to start the motor, this may be why the motor won’t start. Make sure the battery connections are tight and the battery (or batteries) is (are) fully-charged. If the connections are good and the battery is charged, but the voltage still drops below 11 volts, you may need to use a larger battery (or battery combination).

Inductive loads, such as TVs and stereos, require more current to operate than resistive loads of the same wattage rating. Induction motors, as well as some TVs, may require two to six times their rated wattage to start up. Because these inverters have a peak watt power rating, many such appliances and tools may be safely operated. The equipment that needs the highest starting wattage are pumps and compressors that start under load. This equipment can be safely tested. If an overload is detected, the inverter will simply shut down until the overload situation is corrected.

⚠ CAUTIONS

- Exceeding recommended voltage limits will void manufacturer’s warranty.
- NEVER try to use your inverter with any 12 volt DC power source that uses a positive ground. (Most vehicles and boats use negative ground systems.)
- The Power Inverter must be connected only to batteries with a nominal output voltage of 12 volts. The unit will not operate from a 6 volt battery and will sustain permanent damage if connected to a 24 volt battery.
- Reverse polarity connection will result in a blown fuse and may cause permanent damage to the inverter.

Determining Battery Size

To determine the minimum battery size you will need to operate appliances from your inverter, follow these steps:

1. Determine the wattage of each appliance and/or tool you will need to simultaneously operate from the inverter. To do this, read the labels on the equipment to be operated.
2. Estimate the number of hours the equipment will be in use between battery recharges.
3. Determine the total watt-hours of energy use, the total running time and the average power consumption.

Keep in mind that some appliances are not drawing the same power continuously. For example, a typical home-use coffee maker draws 850W / 1000W during brew time (approx. 5 minutes) but maintains the pot temperature at only about 100 watts. Typical use of a microwave is only for a few minutes, sometimes at low power.

Protective Features

The inverter has electronic circuit protection against overload and short circuit conditions; and monitors for the following potentially hazardous conditions:

Low Battery Voltage —This condition is not harmful to the inverter, but could damage the power source. An alarm will sound when input voltage drops below 10.5 volts, and the inverter will automatically shut down when input voltage drops below 10.0 volts. This indicates that the DC (battery) power source needs to be charged, or there is an excessive voltage drop between the battery power source and the inverter. When the condition is corrected, the inverter will automatically restart.

Over Voltage Protection — The inverter will automatically shutdown when input voltage exceeds 16 volts DC.

Overload Protection — The unit will automatically shut down when the continuous draw exceeds the inverter's wattage rating. Reduce the load and manually restart.

Over Temperature Protection — If the temperature inside the inverter reaches 150°F, the unit will automatically shut down. Allow the inverter to cool for at least 15 minutes before restarting after a heat-related shutdown. Unplug the inverter from the power source and disconnect all appliances or tools from the inverter's outlets while cooling.

If the Digital display, displays a fault code follow the steps outlined in the "Troubleshooting" section of this Instruction Manual. The Fault LED will light if there is an excessive voltage drop between the (battery) power source and the inverter.

Note: Reverse polarity or short circuit condition may cause external or internal fuses to open and may cause irreversible damage to the Power Inverter. Take extra care to ensure a proper polarity hook-up.

⚠ CAUTION

- If turning the ON/OFF Switch off, then on again does not reset the inverter, DO NOT ATTEMPT TO OPEN THE INVERTER. Opening the inverter for any reason will void the warranty. The unit must be returned to manufacturer for testing and repair by professional factory technicians.

INSTALLATION

Your inverter will provide you with continuous electrical power when powered by a reliable 12 volt DC source, such as a vehicle battery or a multiple battery configuration. This manual does not describe all of the possible configurations.

Operating Environment

For best operating results, your inverter should be placed on a flat surface, such as the ground, car floor or seat or other solid surface to help diffuse the heat that is generated. Position the inverter as close to the DC power source as possible.

The inverter should only be operated in locations that meet the following criteria:

DRY – Do not allow water and/or other liquids to come into contact with the inverter.

COOL – Ambient air temperature should be between 30°F (–1°C) non-condensing and 105°F (40°C). Do not place the inverter on or near a heating vent or any piece of equipment that is generating heat above room temperature. Keep the inverter out of direct sunlight.

VENTILATED – Allow at least three inches of clearance from other objects to ensure free air circulation around the inverter. Never place items on or over the inverter during operation.

SAFE – Do not locate inverters in an area, room or compartment where explosives or flammable fumes might be present, such as engine rooms, engine compartments and boats or small, un-vented battery compartments.

Quick Operational Test or Emergency Use

You will need:

- A heavy-duty jumper cable set of the specified AWG wire rating
- A fully-charged automobile battery
- A common slip joint plier for loosening and tightening terminal nuts

PROCEDURE

1. Unscrew nuts in input terminal block.
2. Identify the positive and negative terminals on the 12 volt DC battery (or other 12 volt DC power source) and identify the positive and negative terminals on the inverter.
3. Using a set of heavy-duty jumper cables, attach the red cable to the inverter's positive (+) terminal and the black cable to the inverter's negative (–) terminal.
4. Connect the clamps on the other ends of the jumper cables to the corresponding positive (+) and negative (–) terminals on the 12 volt DC vehicle battery (or other 12 volt DC power source). There may be some minor sparking.
5. Turn the inverter ON/OFF Switch on.
6. Plug in a lamp with a 100 watt light bulb and switch the lamp on. If the lamp works normally, the inverter is functioning properly and you can proceed to a permanent installation or continue to use the inverter with low wattage appliances. If the lamp does not light or does not work correctly:
   A. Check all connections and tighten any that may be loose.
   B. Ensure that the source battery has adequate charge.
   C. If steps A and B do not correct the problem, refer to the "Service Information" section of this Instruction Manual for assistance.

Permanent Installation (Refer to THOR inverter Install kits at www.thorpowerproducts.com)

For permanent installation to heavy-duty battery power you will need:

- Terminals to fit cable ends and stud terminals to inverter
- Hardware and battery connector to connect cables to the battery bank
- A single length of AWG cable multi-stranded, flexible, insulated cable for chassis ground connection when using inverter in a household application.
- A holder and fuse.
- Mounting screws, bolts and nuts for mounting the inverter and fuse holder
- A drill for mounting the inverter and fuse holder
- Lead-tin solder, flux, propane torch and an igniter for the torch
- Wire stripper/cutting tool

PRELIMINARY STEPS

The inverter has four slots in its mounting bracket that allow the unit to be fastened against a bulkhead, floor, wall or other flat surface. Ideally, the mounting surface should be cool to the touch. It is more efficient to use longer AC wiring than DC wiring, so install the inverter as close as possible to the 12 volt DC power source.

The inverter should be operated in horizontal position; if it is to be mounted on a wall, mount it horizontally so that indicators, switches, outlets and terminal blocks on the front panel are visible and accessible.

1. If inverter is to be installed in a vehicle, manufacturer recommends that it be shock mounted to either the floor (in a clear, safe area) or on a secure flat surface.
2. Locate a convenient place to mount the inverter and fuse holder.
3. Perform a test routing of the proposed cable length, but don't do any cutting at this time (refer to the diagram in the "Battery Configuration" section of this Instruction Manual).
4. Using an appropriate AWG cable, reposition the inverter and fuse holder if necessary.
5. After you have performed the above preliminary installation steps, proceed with the actual inverter installation.

Contact the manufacturer for any further installation information or questions.

PERMANENT INSTALLATION PROCEDURE

The cables between the power source and inverter should be set up as illustrated in the diagram in the "Battery Configuration" section of this Instruction Manual. Unscrew terminal nuts before beginning permanent installation. Proceed with DC cable and fuse installation as follows:

1. Ensure the inverter's ON/OFF Power Switch is in the off position.
2. Using tools and hardware, mount the inverter to a flat, stable surface.
3. Ensure that mounting hardware does not touch any fuse holder or fuse contacts. Select an appropriate fuse and ensure that the fuse is removed from its holder.
4. Select appropriate cable. Measure the cable twice before cutting.
5. Cut one cable length to connect the negative (–) battery terminal to the inverter's negative terminal, leaving a little slack in the cable.

6. Cut another cable to connect the positive (+) battery terminal to one side of fuse holder, leaving a little slack.
7. Cut the final cable to connect the other side of fuse holder to the inverter's positive (+) terminal.
8. Strip the end insulation of all three cables to 1-inch (2.45 cm).
9. Sweat-solder end of all cables. For safety, do this in an open space because it may require the use of a propane torch.
10. Connect one end of the negative (–) cable to a ring terminal* going to the battery(ies).
11. Connect the short end of the positive (+) cable to a ring terminal* going to the battery(ies).
12. Crimp or clamp ring terminals of the negative (–) and positive (+) cables (going to the battery), but do not connect to the battery yet.
13. Connect the stripped, soldered (longer) end of the positive (+) cable to the red stud marked (+) on the inverter and tighten the retaining nut.
14. Connect the stripped, soldered end of the negative (–) cable to the black stud marked (–) on the inverter and tighten the retaining nut.
15. Connect the other (long) end of the (+) positive cable to one terminal of the heavy-duty fuse holder.
16. Connect the other conductor of the heavy-duty fuse holder to the (short) positive (+) battery terminal.
17. Connect the other end of the (–) negative cable with the ring terminal to the negative (–) battery terminal.
18. Connect an appropriate insulated wire between the chassis grounding screw on the inverter's case and a solid electrical ground to minimize possible electrical noise in TV and radio reception. *Do not connect this wire to the negative DC input terminal.*
19. Ensure that all electrical connections have been tightened.
20. Insert the fuse into the fuse holder. There may be some sparking.
21. Ensure the 12 volt DC power source has an adequate charge.
22. Turn the inverter on and apply a test load to the 120 volt AC outlets.

* Ring terminals are not included and must be supplied by user.

If, after following all of the above steps, the inverter does not perform properly, the source voltage may be too low or the cables may be too long (or the gauge too light). Having checked and corrected these conditions, if necessary, refer to the "Service Information" section of this Instruction Manual for assistance if problems persist.

⚠ CAUTION

- Loose connectors may cause overheated wires and melted insulation.
- Check to make sure you have not reversed the polarity. Damage due to reversed polarity is not covered by manufacturer's warranty.

IMPORTANT CABLE INFORMATION:

Substantial power loss and reduced battery operating time results from inverters installed with cables that are not able to supply full power. Symptoms of low battery power can result from cables that are either excessively long or an insufficient gauge. Marine installations are also subjected to vibration and stresses that exceed those of other mobile installations. Therefore, the installer/operator should be especially aware of the requirements to maintain secure, tight, water-resistant electrical connections and to provide for strain relief for DC cables and appliance wiring. Cable insulation must be the appropriate type for the environment.

CONNECTING THE AC WIRING

AC connections are made on the terminal block located inside the front panel of the inverter.

THPW1000 - 1500 **THPW2000 - 3000**

To connect AC wiring:

1. Disconnect the inverter from the battery.
2. Remove the AC wiring compartment cover.
3. Feed the wires through inverter's case.
4. Following the wiring guide located in the AC wiring compartment, connect the **L**ine (black) and **N**eutral (white wires to the terminal block and tighten securely. The safety (green) wire is connected to the ground screw terminal.
5. Replace the AC wiring compartment cover.

AC Wiring Safety Precautions

Preventing Paralleling of the AC Output the AC output of the unit should never be connected directly to an Electrical Breaker Panel / Load Centre which is also fed from the utility power / generator. Such a direct connection may result in parallel operation of the different power sources and AC power from the utility / generator will be fed back into the unit which will instantly damage the output section of the unit and may also pose a fire and safety hazard. If an Electrical Breaker Panel / Load Center is fed from this unit and this panel is also required to be fed from additional alternate AC sources, the AC power from all the AC sources (like the utility / generator / this inverter) should first be fed to an Automatic / Manual Selector Switch and the output of the Selector Switch should be connected to the Electrical Breaker Panel / Load Center., THOR Manufacturing's Automatic Transfer Switch Model THTS Series is recommended for this application.

Hard Wiring of AC Output to AC Panel boards in RVs / Motor Homes / Trailers /Campers WARNING! RISK OF ELECTRIC SHOCK When this unit is installed in RV / Motor Homes / Trailers / Campers and hard wiring connection is used to feed the AC output of the inverter to the AC Distribution Panel board / Load Center in the vehicle, it is to be ensured that Ground Fault Circuit Interrupter(s) [GFCI] are installed in the vehicle wiring system to protect branch circuits.

EMI and FCC COMPLIANCE These inverters contain internal switching devices that generate conducted and radiated electromagnetic interference (EMI). The EMI is unintentional and cannot be entirely eliminated. The magnitude of EMI is, however, limited by circuit design to acceptable levels as per limits laid down in North American FCC Standard FCC Part 15(B), Class A. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in business / commercial / industrial environments.

These inverters can conduct and radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

REDUCING EMI THROUGH PROPER INSTALLATION The effects of EMI will also depend upon a number of factors external to the inverter like proximity of the inverter to the EMI receptors, types and quality of connecting wires and cables etc. EMI due to factors external to the inverter may be reduced as follows: - Ensure that the inverter is firmly grounded to the ground system of the building or the vehicle - Locate the inverter as far away from the EMI receptors like radio, audio and video devices as possible - Keep the DC side wires between the battery and the inverter as short as possible. - Do NOT keep the battery wires far apart. Keep them taped together to reduce their inductance and induced voltages. This reduces ripple in the battery wires and improves performance and efficiency. - Shield the DC side wires with metal sheathing / copper foil / braiding: - Use coaxial shielded cable for all antenna inputs (instead of 300 ohm twin leads) - Use high quality shielded cables to attach audio and video devices to one another - Limit operation of other high power loads when operating audio / video equipment

CAUTION. Each of the NEMA5-15P outlets is rated for 16A continuous and 20A intermittent. Do not draw more than this rating from each outlet. For drawing the full rated output capacity of 25A of the inverter, use AC output connections for hard wiring (13, Fig 6.1b) as described at Section 8.5.2 below. 2. Do not feed the output from the GFCI receptacle to a Panel board / Load Center where the Neutral is bonded to the Earth Ground. This will trip the GFCI. If the AC output is required to be fed to a Panel board / Load Center, use hard wiring connections. 3. If an extension cord is used from the GFCI outlet, please ensure that the cord is suitable for the rated load and provided with grounding.

AC Output Connections for Hard wiring For connecting the AC output of the inverter to an AC Panel board / Load Center, separate connections are available for hard wiring Compartment contains terminals for AC output. The compartment is covered by Cover Plate with the help of 4 screws. The AC wiring enters through the Strain Relief Clamp . After the connections have been made, tighten the clamp. AC output connections are as follows: Terminal Block with Line “L” and Neutral “N” Terminals. Please note that Line terminal “L” of the AC Terminal Block and the Line terminal on the Line side of the GFCI are internally connected together at the PCB. Similarly, Neutral terminal “N” on the AC Terminal Block and the Neutral terminal on the Line side of the GFCI are internally connected together at the PCB. All external wiring should be in accordance with NFPA 70 / NEC and local wiring codes.

Grounding to Earth or to other Designated Ground For safety, ground the metal chassis of the inverter to the Earth Ground or to the other designated ground (For example, in a mobile RV, the metal frame of the RV is normally designated as the Negative DC Ground). A chassis Grounding Lug (19, Fig 6.1c) has been provided for grounding the metal chassis of the inverter to the appropriate ground. When using the inverter in a building, connect a 10 mm2 or AWG #8 insulated stranded copper wire from the above equipment grounding lug to the Earth Ground connection (a connection that connects to the Ground Rod or to buried metallic water pipe or to another connection that is solidly bonded to the Earth Ground). The connections must be tight against bare metal. Use star washers to penetrate paint and corrosion. When using the inverter in a mobile RV, connect a 10 mm2 or AWG #8 insulated stranded copper wire from the above Chassis Grounding Lug to the Main Grounding Bus Bar of the RV (bonded to the vehicle chassis). The connections must be tight against bare metal. Use star washers to penetrate paint and corrosion.

CAUTION. To Prevent fire, do not cover or obstruct ventilation openings. Do not mount in zero- clearance compartment, Overheating may result.

OPERATING INSTRUCTIONS

CAUTION: Make sure the combined load requirement of your equipment does not exceed your inverter’s maximum continuous power.

Operation of the 120 Volt AC Outlets

This unit features 115 volt AC GFCI (ground fault circuit interrupter) protected outlets, that function in the same way as GFCI outlets you would typically use in your home. GFCI outlets are intended to protect equipment by interrupting the circuit if current leakage exceeds 30 mA of current within 25 milliseconds.

1. Connect the inverter to a functioning 12 volt DC power source as described in this Instruction Manual. Make sure there is adequate space for proper ventilation of the inverter.
2. Press the Power Push button to turn the unit ON.

3. The Power/Fault LED display will light green, indicating a proper connection. If the Power/Fault LED Indicator lights red, indicating a fault condition exists, refer to the “Troubleshooting” section of this Instruction Manual.
4. Plug the (110/120 volt AC) appliance into one of the Inverter’s three-prong AC outlets and operate normally.

Note:

Remember to disconnect the inverter from any power source when not in use.

Operation of the USB Charging Port

1. Connect the inverter to a functioning 12 volt DC power source as described in this Instruction Manual. Make sure there is adequate space for proper ventilation of the inverter.
2. Press the Power Push button to turn the unit ON.
3. The display will light up , indicating a proper connection. If the display, displays a fault code, indicating a fault condition exists, refer to the “Troubleshooting” section of this Instruction Manual.
4. Plug the USB powered device into the inverter’s USB Charging Port and operate normally.

Note: This unit’s USB Charging Port does not support data communication. It only provides 3.1 Amps 5 Volts DC power to an external USB powered device.

Remember to disconnect the inverter from any power source when not in use.

Notes on Using the Remote Control (sold separately)

The manufacturer offers (as a separate item) a Remote Control specifically designed for this line of inverters. The inverter On/Off Switch must be in the off position when connecting the Remote Control to the unit, or the Remote Control will not operate. Once the unit has been turned on using the Remote Control, inverter operation will continue to be controlled through the Remote Control. Turn the inverter off before disconnecting the Remote Control. For more information about attaching and using the Remote Control, please refer to the Remote Control Instruction Manual.

TROUBLESHOOTING GUIDE

Common Audio/Visual Problems

PROBLEM	SOLUTION
“Buzzing” sound in audio systems	Inexpensive stereo systems and “boom boxes” may emit a buzzing sound from their speakers when operated from your inverter. This occurs because the power supply in the electronic device does not adequately filter the pure sine wave produced by the inverter. The only solution to this problem is to use a higher quality sound system.
Television Interference	Your inverter is shielded to minimize interference with TV signals. However, in some instances, some interference may still occur, particularly where TV signals are weak. Try the following corrective measures:
	• Place the inverter as far as possible from the television. Use an extension cable, if necessary.
	• Readjust the orientation of the inverter, the antenna cables and the TV power cord to minimize interference.
	• Make sure the antenna feeding the television provides an adequate (“snow free”) signal and that high quality, shielded antenna cable is used.
	• Do not use the inverter to operate high-power appliances or tools at the same time you are using it to operate the TV.
	• Make sure the inverter’s case is properly grounded (refer to the “Permanent Installation Procedure” section of this Instruction Manual).

Error Protection Codes

Display Indications, Common Problems, Possible Solutions / Indicacion, Causa Posible, Solucion Posible	
E 01	**LOW DC INPUT VOLTAGE (Below 10Vdc)** • Battery Voltage too low, Check or Recharge (battery) Power Source • Inadequate power being delivered to the inverter or excessive voltage drop. Use heavier gauge wire • See "Installation Specifications" in users manual **APAGADO DE BAJA ENTRADA DE VOLTAJE** • Voltaje de la fuente (batería) demasiado baja Recargue o substituya la (batería) Fuente de alimentación • Potencia inadecuada entregado al inversor o excesiva caída de Voltage . • Consulte "Especificaciones de instalación" en el manual del usuario
E 02	**HIGH DC INPUT VOLTAGE (Above 16Vdc)** • Battery Voltage is too high, Check for fault with battery charging system **APAGADO DE ALTA ENTRADA DE VOLTAJE** • Voltaje de la batería es demasiado alto, Compruebe si hay fallas en el sistema de carga de la batería
E 03	**OVERLOAD SHUTDOWN** • Excessive start-up load. Power tool (or appliance) draws too much voltage; and cannot be used with your inverter • Inadequate power being delivered to the inverter or excessive voltage drop . Use heavier Gauge wire. • See "Installation Specifications" in users manual. **APAGADO DE SOBRECARGA** • Excesivo Carga de arranque. • Potencia inadecuada entregado al inversor o excesiva caída de Voltage . • Consulte "Especificaciones de instalación" en el manual del usuario.
E 04	**OVER TEMPERATURE** • Inverter is too hot (thermal shutdown mode) Allow Inverter to cool. Check for adequate ventilation. • Reduce the load on the inverter to rated continuous output. **APAGADO DE ALTA TEMPERATURA** • Inversor está demasiado caliente. • Permita inversor que se enfríe . Compruebe si hay una ventilación adecuada para el inversor . • Reduzca la carga en el inversor .
E 05	**GROUND FAULT PROTECTION / SHORT CIRCUIT PROTECTION** • Inverter senses a leakage current on the ground terminal or short circuit current on the AC sockets. Unplug the AC appliance or power tool. Turn off the inverter, disconnect unit from any 12 VDC power source. Check the appliance or power tool and cord. **PROTECCION DE FUGA** • Inversor detecta una corriente de fuga. • Inversor detecta corriente de cortocircuito. • Desenchufe el aparato de CA o herramienta eléctrica
	No FUNCTION - (If inverter digital display does not illuminate.) • Check and make sure the inverter is properly connected to (battery) Power Source . • See "Installation Specifications" in users manual.

Resetting the Inverter

After over-voltage or thermal automatic shutdown, your inverter will reset automatically.

Storage

1. Ideal storage temperature range is 50-68°F (10-20°C).
2. Store and use the inverter in a cool, dry place with adequate ventilation.
3. Avoid locations that are exposed to heating units, radiators, direct sunlight or excessive humidity or dampness

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Fuse Replacement

Your inverter is equipped with multiple internal fuses. Normally, these fuses will not "blow" unless there is a serious problem inside the unit. ***Internal fuses are replaceable; however, only trained personnel should attempt fuse replacement.*** Refer to the "Service Information" section of this Instruction Manual.

Preventive Maintenance

Inverters require minimal maintenance. For optimum performance, the manufacturer recommends periodically performing the following preventive maintenance.

1. Turn the inverter off using the front panel On/Off Switch.
2. Check and tighten all electrical connections, including the ground.
3. Using a non-metallic vacuum cleaner hose, vacuum the air slots and fan area.
4. Clean the outside of the unit using a damp (not wet) cloth.
5. Wipe unit surfaces thoroughly with a dry cloth.
6. Resume operation.

ACCESSORIES

If you need assistance regarding accessories, please call: **1-866-955-THOR** or visit www.thorpowerproducts.com.
WARNING: The use of any accessory not recommended for use with this tool could be hazardous and will void manufacturer's warranty.

SERVICE INFORMATION

To locate your nearest service location or for details on replacement parts, contact the manufacturer at **1-866-955-THOR.**

LIMITED ONE-YEAR HOME USE WARRANTY

The limited warranty program is the only one that applies to this unit, and it sets forth all the responsibilities of THOR. There is no other warranty, other than those described herein. Any implied warranty of merchantability of fitness for a particular purpose on this unit is limited in duration to the duration of this warranty.

This unit is warranted, to the original purchaser only, to be free of defects in materials and workmanship for two years from the date of purchase without additional charge. The warranty does not extend to subsequent purchasers or users.

Manufacturer will not be responsible for any amount of damage in excess of the retail purchase price of the unit under any circumstances. Incidental and consequential damages are specifically excluded from coverage under this warranty.

This unit is not intended for commercial use. This warranty does not apply to damage to units from misuse or incorrect installation/connection. Misuse includes wiring or connecting to improper polarity power sources.

RETURN / REPAIR POLICY

Defective products, other than accessories, may be returned postage prepaid to THOR POWER PRODUCTS. Any defective product, other than accessories, that is returned to THOR POWER PRODUCTS within 30 days of the date of purchase will be replaced free of charge. If such a product is returned more than 30 days but less than two year from the purchase date, THOR POWER PRODUCTS will repair the unit or, at its option, replace it free of charge. If the unit is repaired, new or reconditioned replacement parts may be used, at THOR POWER RPODUCTS option. A unit may be replaced with a new or reconditioned unit of the same or comparable design. The repaired or replaced unit will then be warranted under the terms of the remainder of the warranty period. The customer is responsible for the shipping charges on all returned. During the warranty period, THOR POWER PRODUCTS. will be responsible for the return shipping charges.

WARRANTY ACTIVATION:

Please complete the Warranty Activation Card and mail to THOR Manufacturing. Enter the model number and product type and serial number. All THOR Manufacturing products must be registered within 30 days of purchase to activate this warranty. Mail the completed registration form, along with a copy of the original sales receipt to: THOR Manufacturing, 7050 W. Palmetto Park Rd., Suite 15, Boca Raton, FL 33433.

This warranty does not apply to accessories. This warranty gives you specific legal rights and you may have other rights which vary from state to state or province to province. Should you have any questions, contact the THOR Manufacturing at **1-866-955-THOR**. This product is not intended for commercial use.

WARRANTY CARD

Please cut out and complete this mail in warranty card and mail it to:

WARRANTY REGISTRATION
THOR MANUFACTURING
7050 W. Palmetto Park Rd., Suite 15
Boca Raton, FL 33433

THOR MANUFACTURING ONE YEAR LIMITED HOME USE WARRANTY PROGRAM. PLEASE ACTIVATE YOUR WARRANTY. PROGRAMA DE GARANTÍA LIMITADA DE UN AÑO PARA USO EN EL HOGAR PROGRAMME DE GARANTIE LIMITÉE DE DEUX ANS POUR UNE UTILISATION DOMESTIQUE. POR FAVOR ACTIVA TU GARANTÍA.

This limited warranty program is the only one that applies to this product, and it sets forth all the responsibilities of Thor Manufacturing regarding this product. There is no other warranty, other than that which is contained in the "One-Year LIMITED Home Use Warranty" section of the accompanying Instruction Manual. All Thor Manufacturing products must be registered within 30 days of purchase to activate this warranty. Mail the completed registration form, along with a copy of the original sales receipt to: Warranty Registration, Thor Manufacturing, 7050 W. Palmetto Park Rd., Suite 15, Boca Raton, FL 33433. Este programa de la garantía limitada es el único que se aplica a este producto, y dispuso todas las responsabilidades del Thor Manufacturing en relación con este producto. No hay otra garantía, con excepción de el que se contenga en la sección titulada "garantía casera de dos años completa del uso" del documento informativo de acompañamiento manual de la instrucción. Todos los productos del Thor Manufacturing debe ser colocado en el plazo de 30 días de compra para activar esta garantía. Envíe el boletín de inscripción terminado, junto con una copia de las ventas originales ponen el recibo: Warranty Registration, Thor Manufacturing, 7050 W. Palmetto Park Rd., Suite 15, Boca Raton, FL 33433. Ce programme de garantie limitée est le seul qui s'applique à ce produit, et il a déterminé toutes les responsabilités de Thor Manufacturing concernant ce produit. Il n'y a aucune autre garantie, autre que cela qui est contenu dans la section intitulée « pleine garantie à la maison de deux ans d'utilisation » du manuel de accompagnement d'instruction. Tous les produits de Thor Manufacturing doit être enregistré moins de 30 jours d'achat pour activer cette garantie. Expédiez la fiche réalisée, avec une copie des ventes originales acquittent : Warranty Registration, Thor Manufacturing, 7050 W. Palmetto Park Rd., Suite 15, Boca Raton, FL 33433.

WARRANTY IS NON-TRANSFERABLE AND MUST BE ACTIVATED WITHIN 30 DAYS OF PRODUCT PURCHASE DATE. LA GARANTÍA NO SE PUEDE TRANSFERIR Y SE DEBE ACTIVAR EN EL PLAZO DE 30 DÍAS DE FECHA DE LA COMPRA DEL PRODUCTO. LA GARANTIE NE PEUT PAS ÊTRE TRANSFÉRÉE ET DOIT ÊTRE ACTIVÉE MOINS DE 30 JOURS DE DATE D'ACHAT DE PRODUIT.

Catalog No./N.º de catálogo/Numéro de catalogue:_____Name/Nombre/Nom:_____
Street Address/Dirección de calle/Adresse de rue:_____ City/Ciudad/Ville:_____
State/Estado/État:_____Postal Code/Código postal/Code postal:_____Phone/Teléfono/Téléphone:_____

SPECIFICATIONS

	MODEL	THPW600-ETL	THPW1000-ETL	THPW1500-ETL	THPW2000-ETL	THPW3000-ETL
INPUT	Nominal DC Input Voltage	12 VDC				
	DC Input Voltage range	10.7 - 16.5 VDC				
	DC Input Current AT LOAD	59	99	149	198	297
	DC Input Connections	Bolt Down Lugs	Bolt Down Lugs	Nut & Bolt M9	Nut & Bolt M9	Nut & Bolt M9
OUTPUT	Output Voltage	120 VAC				
	Maximum Output Current	6 Amps	10 Amps	15 Amps	20 Amps	30 Amps
	Output Frequency	60 Hz ± 1 %				
	Type Of Wave Form	Pure Sine Wave				
	Total Harmonic Distortion	THD <3%				
	Maximum Output power (10 Min)	660 Watts	1100 Watts	1650 Watts	2200 Watts	3300 Watts
	Continuous Output Power	600 Watts	1000 Watts	1500 Watts	2000 Watts	3000 Watts
	Surge Output Power	1200 Watts	2000 Watts	3000 Watts	4000 Watts	6000 Watts
	Peak Efficiency	85 - 90%				
	USB Charging Port	(1) 5V - 3.1A				
	AC Output Connection	NEMA5-15P GFCI Duplex Outlets				
	Terminal Block for Hard wiring	Yes				
DISPLAY	Display	Digital Display With Error Codes				
	Low Input Voltage	E01				
	High Input Voltage	E02				
	Overload Shut Down	E03				
	Over Temperature	E04				
	Ground Fault Protection	E05				
PROTECTION	Low Input Voltage Alarm	10.7V ±0.1V				
	Low DC Input Voltage Shutdown	10V ± 0.1V Auto-reset: 11.5V ± 0.3V				
	High DC Input Voltage Shutdown	>16.5 VDC				
	Short Circuit Shutdown	When Output Voltage Drops Below 80VAC or Lower for 1 to 1.5 sec				
	Overload Shut Down	Overload of 110% to 115% for 2 to 2.5 sec				
	Ground Fault Shutdown	Integrated GFCI Circuit (4- 6 mA Leakage)				
	Over Temperature Protection	90ºC ± 5ºC (Sensed At output) Auto reset at 65C ± 5º C				
	Reverse Polarity Protection	Internal DC Fuses will open				
	Cooling	Temperature Controlled Fan / Load Controlled Fans 45 Watts				

REMOTES SOLD SEPARATELY	TH-IBS	Inverter Bypass Switch				
	TH002	Basic On/ Off Remote With Bi-Color Illuminating Ring				
	TH-IRC	Remote with Digital Display, 1 AC outlet, 1 USB Charging Port				
	TH-IR	Remote with Digital Display				
	Dimensions	7.5L X 8.5W X 3.34H”	11.45L X 8.5W X 3.34H”	12.99L X 8.5W X 3.34H”	16.92L x 8.5W x 3.34H”	18.50L x 8.5W x 6.53H”
	Weight	4.7Lbs	8.3Lbs	10.1Lbs	14.75Lbs	17.25Lbs
	UPC CODE	852090008059	853003006490	853003006544	853003006506	853003006513
	Warranty	1 Year	1 Year	1 Year	1 Year	1 Year