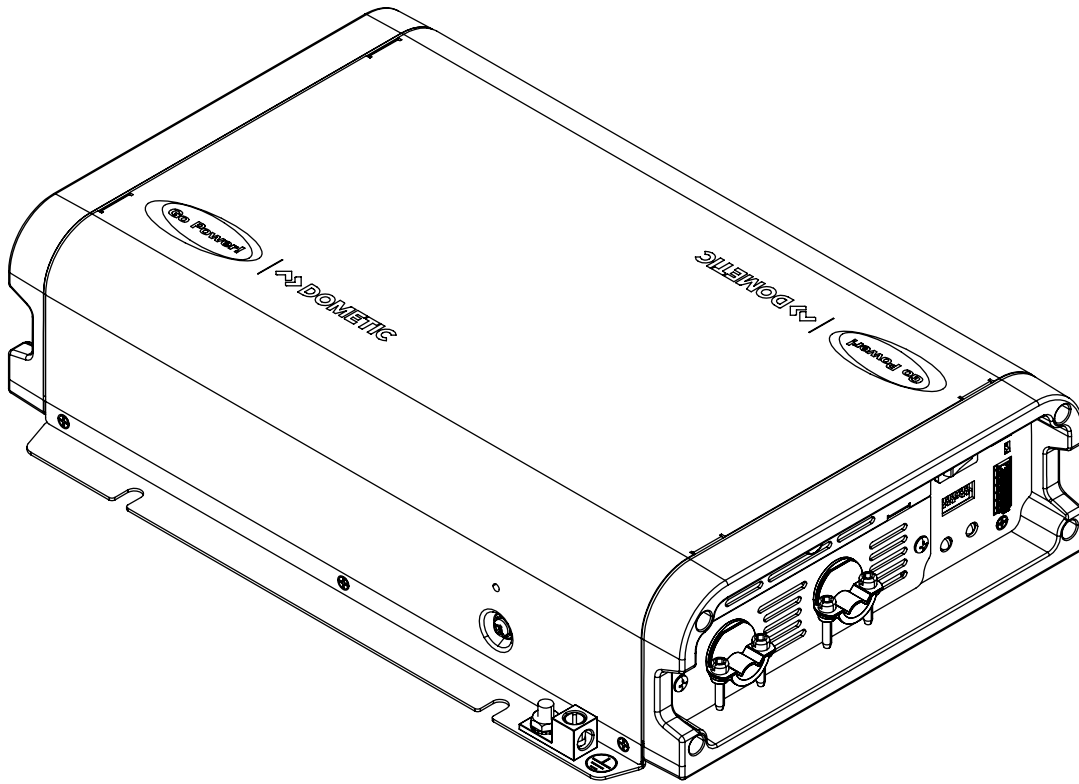


ADVANCED SINE WAVE INVERTERS

User Manual

ASW-1200-12-TS
ASW-1800-12-TS
ASW-2000-12-TS (For future release)
ASW-3000-12-TS



Congratulations on purchasing your Go Power! | Dometic Advanced Sine Wave Inverter. This manual will assist you with the installation process. Please read and understand the manual before beginning installation, and retain it for future reference.

Record the unit model and serial number below. It is much easier and quicker to record this information now at the pre-installation stage.

Model number:

Serial number:

Date of install:

Battery bank information: (size, install date, battery type)

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1.1 CAUTIONS/WARNINGS

This document contains important safety instructions for the Go Power! | Dometic Advanced Sine Wave Inverter. Read all instructions and cautionary markings on the product and on any accessories or additional equipment included in the installation. Failure to follow these instructions could result in severe shock or possible electrocution. Use extreme caution at all times to prevent accidents.





All electrical work must be performed in accordance with local and national electrical codes. These instructions are for use by qualified personnel who meet all local and governmental code requirements for licensing and training for the installation of electrical power systems with AC and DC voltage up to 600 volts.

Installation, maintenance, and connection of inverters must be performed by qualified personnel, in compliance with local electrical standards, wiring rules, and the requirements of local power authorities and/or companies.

Safety regulations relevant to the location shall be followed during installation, operation, and maintenance. Improper operation may have a risk of electric shock or damage to equipment and property.

	WARNING! Hazard to Human Life	This type of notation indicates that the hazard could be harmful to human life.
	WARNING! Shock Hazard	Danger of shock or electrocution.
	WARNING! Burn/Fire Hazard	Danger of hot surface and/or fire.
	CAUTION! Hazard to Equipment	This type of notation indicates that the hazard may cause damage to the equipment.
	IMPORTANT	This type of notation indicates that the information provided is important to the installation, operation, and/or maintenance of the equipment. Failure to follow the recommendations in such a notation could result in annulment of the equipment warranty.

General Safety

	WARNING! Limitations on Use	This equipment is NOT intended for use with life support equipment or other medical equipment or devices.
	CAUTION! Equipment Damage	This product is designed for indoor/compartment installation. It must not be exposed to any liquids or moisture of any type.
	IMPORTANT	Only use components or accessories recommended or sold by Go Power! Dometic or its authorized agents.
	IMPORTANT	Do not attempt to install this equipment if it appears to be damaged in any way. See the warranty section for instructions on returning the equipment.

Personal Safety



WARNING!
Personal Injury

Use safe lifting techniques when lifting this equipment as recommended by the Occupational Safety and Health Association (OSHA) or other local codes.

Use standard safety equipment when working on this equipment, such as safety glasses, ear protection, steel-toed safety boots, safety hard hats, etc.

Use standard safety practices when working with electrical equipment (remove all jewelry, use insulated tools, wear cotton clothing, etc.).

Never work alone when installing or servicing this equipment. Have someone nearby that can assist if necessary.

Do not touch the inverter during operation. The temperature of some parts of the device may exceed 60° during operation. Let it cool for at least 5 minutes after shutdown before touching it.

Ensure that children, pets, and other animals are kept away from the inverter, solar arrays, battery bank, and utility grid components.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Equipment Safety



WARNING!
Lethal Voltage

Review the system configuration to identify all possible sources of energy. Ensure ALL sources of power are disconnected before performing any installation or maintenance on this equipment. Confirm that the terminals are de-energized using a voltmeter rated to at least CT II 600V.

Do not perform any servicing other than that specified in the installation instructions unless qualified to do so, or have been instructed to do so by Go Power! | Dometic technical support personnel.

To avoid electric shock, disconnect the DC input and AC input of the inverter at least 5 minutes before performing any installation or maintenance.

Do not tighten the AC and DC terminals or pull on the AC and DC wiring when the inverter is running.



WARNING!
Fire Hazard

Do not keep combustible or flammable materials in the same room with the equipment. Some products contain relays with moving parts and are not intrinsically safe.

Ensure AC, DC, and ground cable sizes conform to local codes. See product manuals for minimum size requirements.

Ensure all conductors are in good condition.

Do not operate the unit with damaged or substandard cabling.



CAUTION!
Equipment Damage

When connecting cables from the inverter to the battery terminals, ensure proper polarity is observed. Incorrect connections may damage or destroy the equipment and void the warranty.

Thoroughly inspect the equipment prior to energizing. Verify that no tools or equipment have been inadvertently left behind.

Ensure clearance requirements are strictly enforced.

Keep all vents clear of obstructions that can prevent proper air flow around, or through, the unit.



CAUTION!
Equipment Damage

Static electricity may damage electronic components. Take appropriate steps to prevent such damage to the inverter; otherwise, the warranty may be void.

Battery Safety



WARNING!
Explosion, Electrocution, or
Fire Hazard

Ensure the cables (conductors) are properly sized.

Ensure clearance requirements around the batteries are strictly enforced.

Ensure the area around the batteries is well ventilated and clean of debris.

Never smoke, or allow a spark or flame, near the batteries.

Always use insulated tools. Avoid dropping tools onto batteries or other electrical parts.

Ensure battery is within specified operating temperature limits before charging.

Never use old or untested batteries. Check the label on each battery for age, type, and date code to ensure all batteries are identical.

If a battery must be removed, always remove the grounded terminal from the battery first. Make sure all devices are de-energized or disconnected to avoid causing a spark.

Use the battery types recommended by Go Power! | Dometic. Follow the battery manufacturer's recommendations for installation and maintenance.

Insulate batteries as required to ensure operating temperature specification is maintained. Discharged batteries are more susceptible to damage and degradation than charged batteries.

If a remote or automatic generator control system is used, disable the starting circuit and/or disconnect the generator from its starting battery while performing maintenance to prevent accidental starting.

Wear complete eye and clothing protection when working with batteries. Avoid touching bare skin or eyes while working near batteries.

Keep plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.

If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters the eye, immediately flood it with cold running water for at least 20 minutes and get medical attention as soon as possible.



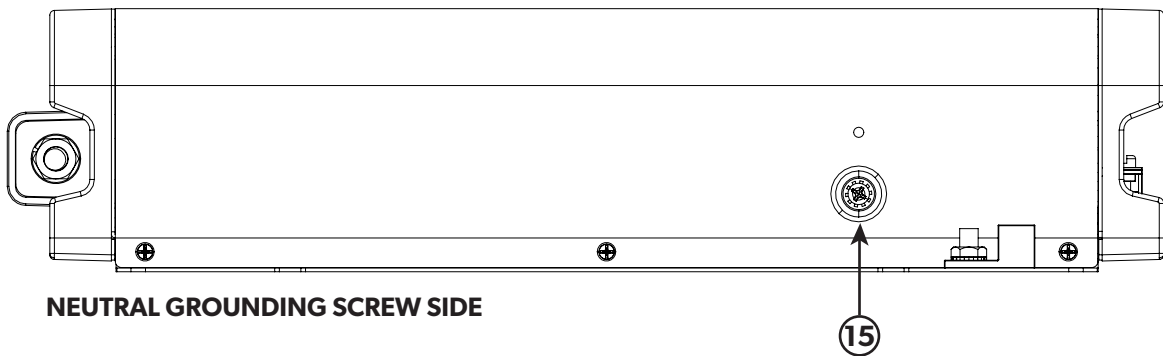
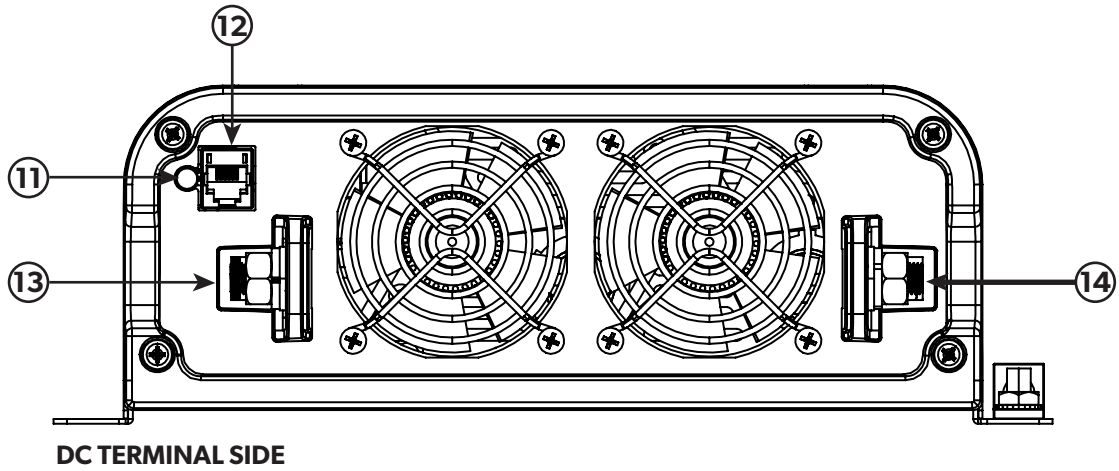
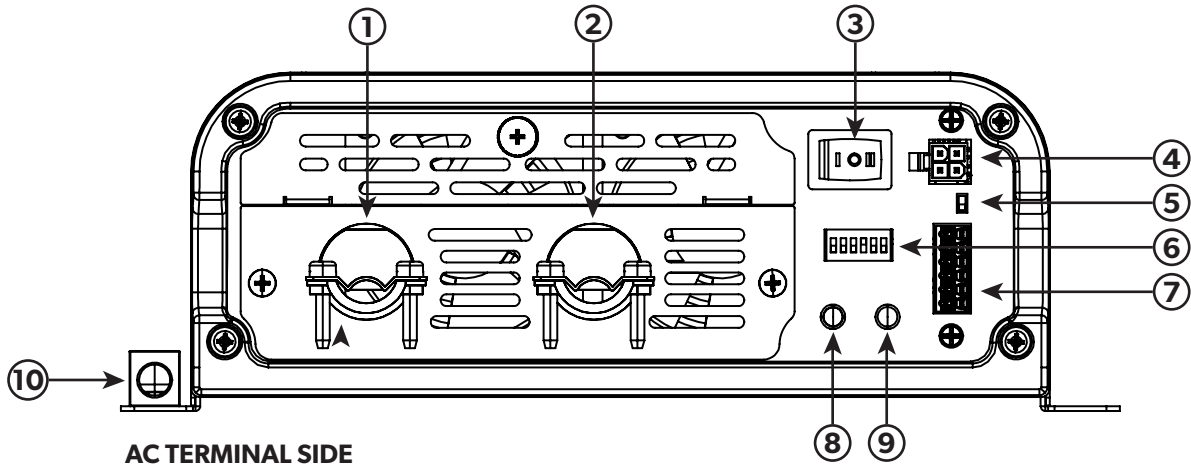
IMPORTANT

1.2 DISCLAIMERS

IMPORTANT: Please follow the installation and wiring instructions exactly as outlined to ensure safety. We recommend installation by a certified RV technician or licensed electrician to ensure compliance with applicable electrical codes. While we have made every reasonable effort to ensure the accuracy of the instructions in this manual, Go Power! | Dometic does not guarantee the information is free of errors, nor do we make any representation, warranty, or guarantee that the content is accurate, complete, reliable, or up to date. The specifications provided are for reference only and are subject to change without notice.

DISCLAIMER: Go Power! | Dometic disclaims liability for any direct, indirect, or incidental damages caused by, or in case of, installation not performed following the instructions and cautions in this manual. Go Power! | Dometic will refuse requests for exchanges or returns, resulting from the purchase and installation of items which do not comply with local codes. To avoid such concerns Go Power! | Dometic recommends installation by a professional electrician or RV technician. Examples that are shown within this manual are for illustrative purposes only.

1.3 FEATURES



NO.	FEATURE	DESCRIPTION
1	AC Input Terminal Access	Strain relief clamp provided to secure AC input wires.
2	AC Output Terminal Access	Strain relief clamp provided to secure AC output wires.
3	On/Off/Remote Switch	This switch can be used to switch the unit on/off, or set to remote when a remote switch is connected. Refer to section 3.1 for more details.
4	RV-C Port	Use this port to connect the inverter to the RV-C system. Refer to section 2.7 for pinout details.
5	RV-C Terminal Switch	This switch can be used to activate the built-in terminating resistor for RV-C networks. Refer to section 2.7.1 for more details.
6	DIP Switches	Use the DIP switches to control load sense mode settings. Refer to section 3.3.2 for more details.
7	Enable/Dry Contact Terminals	Use the enable terminals to connect an external switch and/or the dry contact terminals for fault indication. Refer to section 3.4 for more details.
8	AC Pass-through LED	This LED indicates when AC pass-through is detected. Refer to section 3.2 for more details.
9	Status LED	This LED indicates the status of the inverter. Refer to section 3.2 for more details.
10	DC Ground Terminal	Use this connection to ground the inverter chassis to the DC grounding system.
11	Battery Power in Reverse Status LED	This LED indicates reverse polarity on the battery terminals. Refer to section 3.2 for more details.
12	Remote Switch Port	Use this port to connect the optional remote on/off switch to the inverter.
13	Negative (-) DC Terminal	Connect the battery bank negative (-) cable to this terminal.
14	Positive (+) DC Terminal	Connect the battery bank positive (+) cable to this terminal.
15	Neutral Grounding Screw	The position of this screw determines the ground connection between the neutral conductor on the inverter AC output and the inverter chassis ground. Refer to section 2.6.3 for more details.



CAUTION! This device does not include any output circuit breakers. Appropriately sized branch-rated circuit breakers must be installed in the output wiring (breaker panel).



CAUTION! The Advanced Sine Wave Inverters internal transfer contacts are rated for 30 A. The pass-through current for relay contact must be no greater than this rating, or damage may occur.

1.4 ACCESSORIES

The Advanced Sine Wave Inverter has the following accessories available.

POWERTRAK™ DISPLAY

The PowerTrak™ Display (sold separately) is the remote for controlling the settings and viewing system details on the Advanced Sine Wave Inverter. Refer to section 3.5 for more details on connecting and using the PowerTrak™ Display.

REMOTE SWITCH

The remote switch (ASW-R, sold separately) is an on/off switch that can be mounted in an easily accessible location, at a distance from the inverter. This allows the user to turn the inverter on/off without accessing the unit. Refer to section 3.1 for more details on connecting and using the remote switch.

2. INSTALLATION

2.1 REQUIRED TOOLS AND MATERIALS

- 13 mm (1/2 in) Socket
- Torque Wrench (or Ratchet with Torque Adapter)
- Phillips Screwdriver (#2)
- Wire Cutters
- Wire Strippers
- Wire Crimpers
- Heat Shrink Tubing
- Heat Gun

2.2 LOCATION AND ENVIRONMENTAL REQUIREMENTS

The Advanced Sine Wave Inverter must be installed in a location that meets the following requirements.

2.2.1 TEMPERATURE

Make sure the inverter is installed in a location where the normal air temperature is between -20 °C and 60 °C (-68 °F and 140 °F). Lower temperatures within this range are preferred for optimal performance. The inverter will start to derate in temperatures above 40 °C (104 °F).

2.2.2 MOISTURE

Do not allow water or other fluids to come into contact with the inverter. Do not expose to rain, snow, or water.



CAUTION! Installing the inverter in high moisture environments will accelerate corrosion. The service life of certain components will become compromised and not covered by warranty.

2.2.3 VENTILATION

For optimum performance the inverter must be installed so the vents on both ends are not blocked or obstructed in any way. Do not install the inverter in an area with limited air flow. Allow as much space around the inverter as possible, leaving at least 100 mm (4 in) of airspace clearance around all ventilation areas.



CAUTION! Do not mount the inverter in a zero clearance compartment. Do not cover the ventilation openings. Overheating and mechanical failure may occur.

2.2.4 FIRE

Install the inverter away from any flammable or combustible material (paper, flammable liquids, gasoline, cloths) that may be ignited by heat, sparks, or flames. Exercise caution when placing the inverter directly above the battery bank. Some battery types may vent gases that can corrode and damage the inverter. Make sure the battery space is ventilated when using the inverter and lead-acid batteries in the same compartment. Never allow battery acid to drip onto the unit.

2.2.5 ACCESSIBILITY/ORIENTATION

Do not block access to the connection ports, status LEDs or the on/off switch. Allow enough room to access the DC terminals, as the connections will need to be checked periodically. The inverter must be installed in one of the approved mounting orientations detailed on page 12.

2.2.6 CLEAN

The inverter should be installed in a location which is clean and limits the introduction of dust, fumes, insects, or rodents that could enter and block the inverter's ventilation openings.

2.2.7 PROXIMITY TO BATTERY BANK

The inverter should be located as close to the batteries as possible. The length and size of the DC cables will affect performance. Long DC wires will reduce efficiency and diminish overall performance of the inverter. Use the DC cables recommended in section 2.5.1.

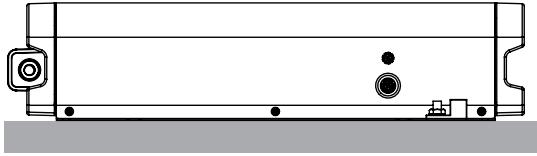
2.3 MOUNTING THE INVERTER

Prior to connecting any wires to the inverter, the unit must be mounted securely in a location which meets the requirements detailed in section 2.2. It is recommended to use two people whilst mounting the unit. All mounting surfaces and hardware must be capable of supporting at least twice the weight of the inverter. Inverter weights are listed in the table below.

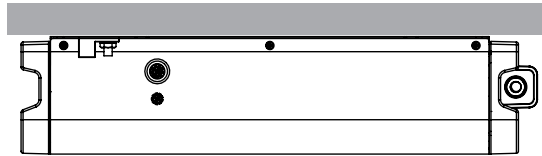
MODEL	WEIGHT
ASW-1200-12-TS	3.4 kg (7.5 lb)
ASW-1800-12-TS	4.4 kg (9.7 lb)
ASW-2000-12-TS	4.4 kg (9.7 lb)
ASW-3000-12-TS	6.5 kg (14.3 lb)

The inverter must be mounted on a noncombustible surface, in one of the orientations highlighted on page 12 to meet regulatory requirements.

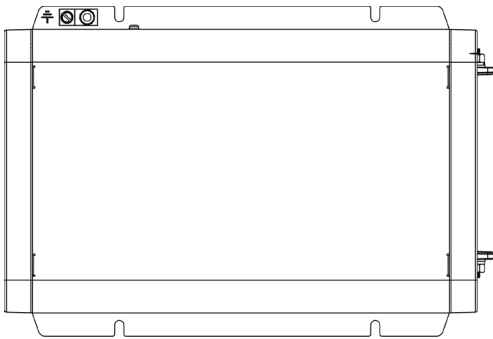
After determining the mounting position, use the base of the inverter to mark the mounting screw locations. Mount the unit with appropriate hardware for the mounting surface. Ensure the unit is fastened securely.



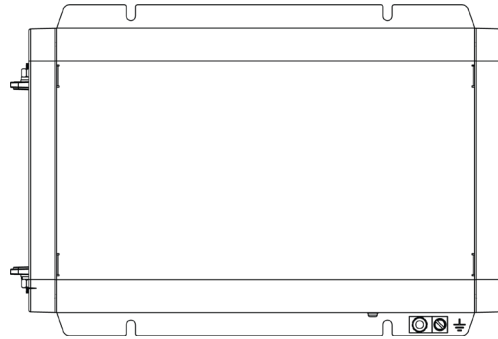
HORIZONTAL MOUNT, BASE DOWN



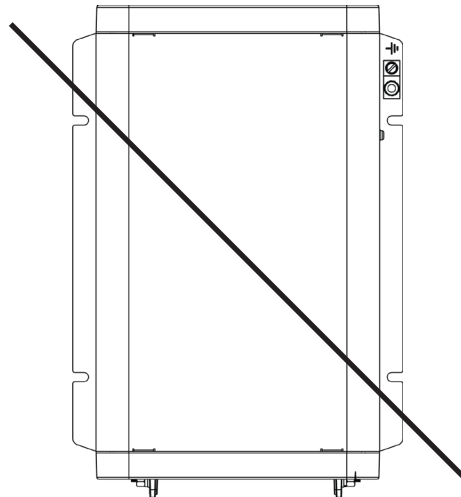
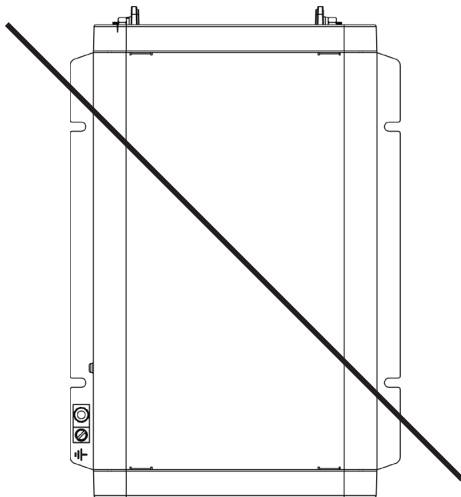
HORIZONTAL MOUNT, BASE UP



**WALL MOUNT, HORIZONTAL
DC TERMINALS RIGHT**



**WALL MOUNT, HORIZONTAL
DC TERMINALS LEFT**



**VERTICAL MOUNT, DO NOT MOUNT
THE ASW IN THIS CONFIGURATION**

2.4 GENERAL WIRING SPECIFICATIONS

The following sections detail how the Advanced Sine Wave Inverter should be wired. Read and understand these instructions before starting any wiring. Wiring should meet all local codes and standards and be performed by qualified personnel such as a licensed electrician. The NEC (National Electrical Code) and CEC (Canadian Electrical Code) provide the standards for safely wiring, wire sizes, over-current protection, installation methods, and requirements.

The inverter grounding is the responsibility of the installer in accordance with NEC/CEC or the local electrical codes.

2.4.1 CABLE PROTECTION

All the DC and AC cables leading to/from the inverter must be protected as required by code. This can be accomplished using jacketed (armored) cable or by feeding the wire through conduit when wiring between compartments.

2.4.2 CABLE STRAIN RELIEF & TORQUE REQUIREMENTS

The AC input and output terminals can handle cables up to 15 mm (0.59 in) in diameter for the ASW-1200-12-TS / ASW-1800-12-TS / ASW-2000-12-TS, and up to 20 mm (0.79 in) for the ASW-3000-12-TS.

Torque DC wiring connections to 6.9 Nm (60 in lbf) and ensure they are secure. Re-check all connections periodically (at least every 6 months; more frequently for heavy RV use) to make sure they remain secure.

2.4.3 CABLE REQUIREMENTS

- Protect all conductors that may be at risk of physical damage by using conduit, tape, or place them in a raceway.
- AC and DC over-current protection must be provided.
- The inverter requires a reliable negative and ground return path to the battery using appropriately sized cables.
- Use only copper wires with the minimum temperature ratings specified in sections 2.5 (DC wiring) and 2.6 (AC wiring).

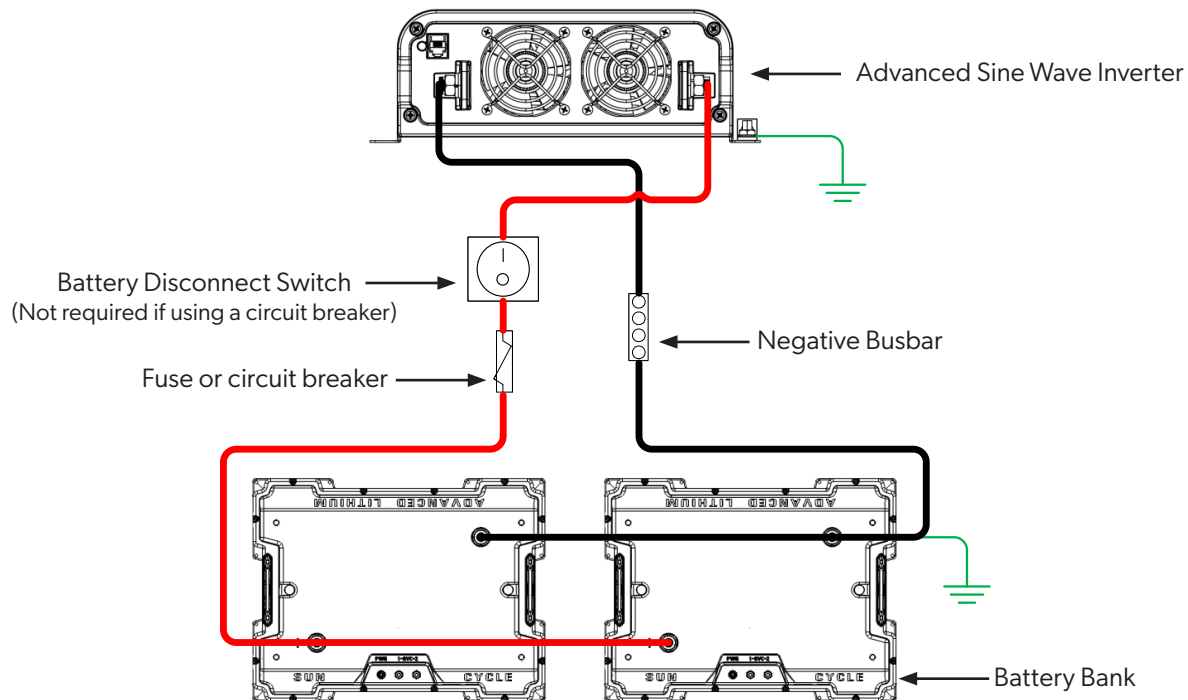
2.4.4 CABLE LAYOUT PLANNING

Prior to connecting any cables, determine all cable routes to/from the inverter.

- DC cables from the inverter to the battery bank.
- AC input cables from the AC input source to the inverter.
- AC output cables from the inverter to the AC output panel.
- PowerTrak™ RV-C harnessing (if applicable).
- Ground wiring to/from the inverter.

2.5 DC WIRING

The DC cables connect the inverter to the battery bank. These cables handle the direct current power used to power the main appliances. It is important to select the correct wire size and to provide adequate over-current protection between the inverter and the battery bank. Refer to the table in section 2.5.1 for recommended wire size and overcurrent protection.



The following points must be observed for the DC wiring.

- The DC positive and negative cables connected to the inverter from the battery bank should be secured using cable clamps and ties, with a 12 mm (0.5 in) air gap maintained between the cables where possible. Maintaining an air gap between the cables ensures they are unbundled in free air.
- To ensure optimum inverter performance, the number of connections between the battery bank and the inverter unit should be minimized except from the over-current and battery disconnect devices. All additional connection points will cause extra voltage drops.
- The battery bank voltage must match the DC voltage required by the inverter, which is 12 V nominal. Do not connect a 24 V, 36 V or 48 V battery bank to the inverter.
- All DC cable terminations should use crimped and sealed copper ring terminal lugs. Lugs with an 8 mm (5/16 in) hole should be used to connect the DC cables to the inverter's DC terminals.
- Make sure all cables have a smooth bend radius and no kinks are present.
- Colour code all DC cables coming to/from the battery bank. Use colored electrical tape or heat shrink tubing. Red for positive (+), black for negative (-), and green for DC ground.

2.5.1 DC WIRE SIZE AND OVERCURRENT PROTECTION

The distance between the battery bank and the inverter should be as short as possible to maximize efficiency. The cables should be as short as possible and the overall length of each cable should be less than 3 m (10 ft) to comply with code requirements. Keeping your wire runs as short as possible helps to prevent low voltage shutdowns and nuisance tripping of the DC breaker from increased current draw. The table below shows the recommended DC cable sizes and fuses/circuit breakers for the Advanced Sine Wave Inverters. These values are correct for unbundled cables in free air, with minimum temperature rating of 105 °C.

MODEL	DC CABLE SIZE	INLINE FUSE/CIRCUIT BREAKER	RECOMMENDED MAXIMUM LENGTH OF EACH CABLE	RECOMMENDED GP-DC-KIT
ASW-1200-12-TS	#2	200 A Class T	3 m (10 ft)	GP-DC-KIT3
ASW-1800-12-TS	#2	200 A Class T		GP-DC-KIT3
ASW-2000-12-TS	2/0 AWG	300 A Class T		GP-DC-KIT4
ASW-3000-12-TS	4/0 AWG	400 A Class T		GP-DC-KIT5

Batteries are capable of providing very large currents in case of a short circuit. If this occurs with no DC overcurrent protection, it will result in overheating and melting of the cables and possibly serious injury and/or fire.

DC overcurrent protection is not included with the Advanced Sine Wave Inverter. It must be installed between the inverter and the battery bank for safety reasons and to comply with code regulations.

Use a very fast acting DC fuse or circuit breaker in the positive cable. The fuse should be installed as close as possible to the battery positive terminal. Ideally the fuse/circuit breaker should be installed within 45 cm (18 in) of the battery.

A battery disconnect switch is required in all installations. If a circuit breaker is installed for overcurrent protection, this will suffice as a disconnect switch. If a fuse is installed for overcurrent protection, a separate appropriately rated disconnect switch is required.

2.5.2 PREPARING THE DC CABLES

Ring terminals with an 8 mm (5/16 in) hole should be used to connect the DC cables to the Advanced Sine Wave Inverter DC terminals. Source the correct ring terminals for the batteries you are using.

- Cut the negative and positive cables to the required length.
- Strip off enough insulation to install the ring lugs.
- Use the correct wire crimper to install the ring lugs on both ends of both cables. Make sure no stray wire strands protrude from the connectors. Cover the crimped connections with heat shrink tubing.

2.5.3 DC CABLE CONNECTIONS

When installing the battery cable ring lugs onto the inverter DC terminals and the battery terminals, do not put anything between the ring lug and the metal surface. Incorrectly installed hardware causes a high resistance connection which could lead to poor inverter performance and may melt the cable and terminal connections. Periodically check the connections to make sure they remain tight and secure.

2.5.4 WIRING THE INVERTER TO THE BATTERY BANK



WARNING! High currents will be present if the positive and negative cables attached to the battery bank touch each other. During the installation and wiring process, ensure the cable ends are insulated or covered to prevent shorting the cables.



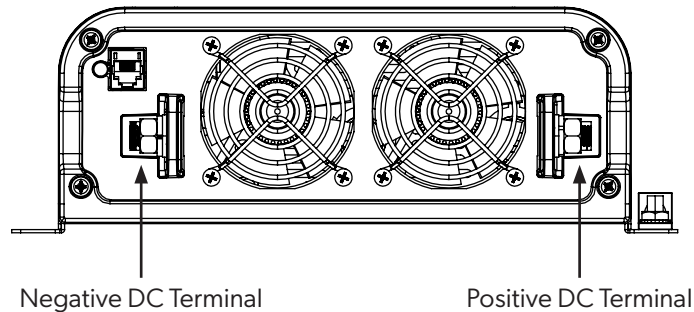
WARNING! DO NOT connect the DC wires from the battery bank to the inverter until all the DC and AC wiring is complete and the AC and DC overcurrent protection and disconnect switch (if using a fuse) has been installed.

The Advanced Sine Wave Inverters are designed to be used with a 12 V battery bank. The battery bank may be wired in series, parallel, or series-parallel to provide the correct voltage. The interconnecting wires between the individual batteries must be the same wire gauge or greater than those used between the battery bank and inverter.

Note

To ensure the best performance from your inverter system, batteries should be the same size, type, rating, and age. Do not use old or untested batteries.

2.5.5 DC POSITIVE AND NEGATIVE WIRES

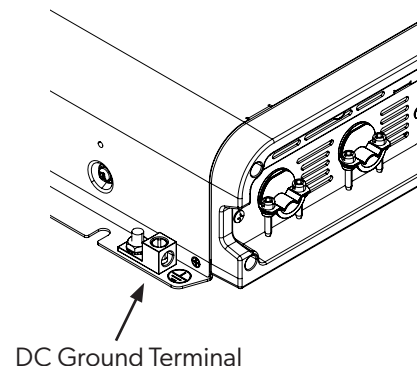


1. Route the negative cable from the negative terminal on the battery bank to the negative DC terminal on the inverter, and install it to the negative terminal stud. Tighten the terminal nut to 6.9 Nm (60 in lbf).
2. Mount the DC circuit breaker or fuse and leave it open (no power to the inverter). Connect the positive cable from the battery bank positive terminal to the circuit protection terminal.
3. Route the positive cable from the circuit protection terminal to the positive DC terminal on the inverter, and install it to the positive terminal stud. Tighten the terminal nut to 6.9 Nm (60 in lbf).
4. Secure cables using cable clamps and ties. Ensure a 12 mm (0.5 in) air gap is maintained between cables.

2.5.6 DC GROUNDING

To protect against electrical shock hazards, the metal inverter chassis must be connected to the DC grounding system. The DC grounding system is sometimes referred to as the earth ground or another designated ground. For example, on an RV, the metal frame of the RV is designated as the negative DC ground/RV ground.

The ground terminal on the inverter is used to connect the exposed chassis of the inverter to the DC grounding system. Use copper wire that is either bare or provided with green insulation. The ground terminal block accepts 8-14 AWG bare wire. Prior to connecting the wire, ensure the M6 nut securing the terminal block to the chassis is tightened to 4.9 Nm (43 in-lbs). Strip off approximately 12 mm (0.5 in) of the wire insulation and insert the wire into the terminal. Tighten the set screw to 4.0 Nm (35 in-lbs).



The size of the conductor should be coordinated with the size of the over-current devices used. Please refer to local electrical safety requirements when selecting the conductor size for the ground wire.

A common earth ground should be used to bond the inverter, negative bus bar, and the negative battery terminal. All connections must be tight against bare metal. Use star washers to penetrate paint and corrosion.

2.6 AC WIRING

The AC wires connect the inverter to the AC loads. These cables handle the incoming alternating current (AC) utility or generator power which can be passed through the inverter to directly power the main appliances. It is important to select the correct wire size and to provide adequate over-current protection between the inverter and the AC output panel.

The following points must be observed for the AC wiring:

- Review the safety information at the start of this manual before completing any AC wire installation steps.
- Always use properly rated circuit breakers/fuses.
- Color code and label all AC cables coming to/from the inverter. Use colored electrical tape or heat shrink tubing.
- Make sure all cables have a smooth bend radius and no kinks are present.
- Secure all wiring using cable clamps and ties.

2.6.1 AC WIRE SIZE AND OVERCURRENT PROTECTION

The wires used for the AC input and output must be sized to meet local electrical safety requirements. The AC wiring must be protected from short circuits and overloads by an overcurrent protection device. These requirements are usually met using a main panel and/or sub panel with suitable circuit breakers/fuses installed.

The table below shows the recommended AC cable sizes and circuit breaker sizes for the Advanced Sine Wave Inverters. These values are correct for unbundled cables in free air, with minimum temperature rating of 90 °C.

MODEL	AC WIRE SIZE	CIRCUIT BREAKER SIZE
ASW-1200-12-TS	10 AWG	30 A
ASW-1800-12-TS		
ASW-2000-12-TS		
ASW-3000-12-TS		

2.6.2 AC CONDUCTOR WIRING



WARNING! Make sure the Advanced Sine Wave Inverter is fully disconnected from the battery bank (circuit breaker or DC disconnect is open) before starting the AC wiring.

Note

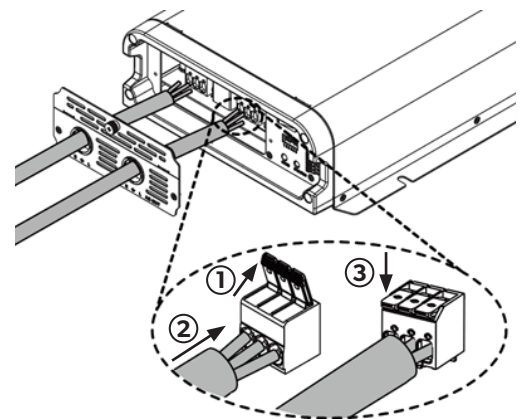
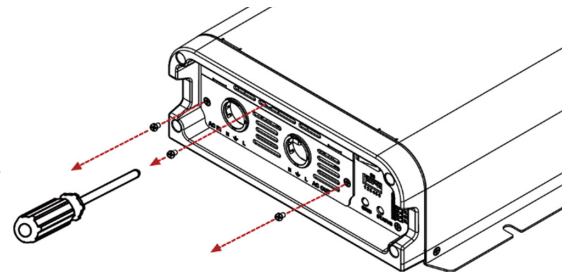
The wire insulation should be stripped back 11-13 mm (0.43-0.51 in) before inserting the wires into the AC terminal blocks on the inverter.

Note

The AC terminal blocks feature push-in cage clamps. To insert the wires, lift the orange lever until it is perpendicular with the terminals and insert the wire into the terminal. Push in the wire as far as the terminal will allow. Press down on the orange lever to lock the wire in place. Always ensure the wire is securely inserted by firmly pulling back on it.

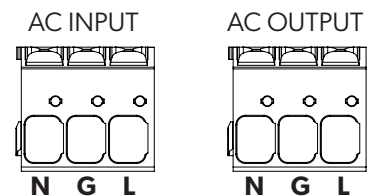
AC INPUT WIRING

1. Remove the AC wiring covers from the inverter.
2. Route the wires (hot/live, neutral, and ground) from the AC input source to the inverter, and feed them through the AC input strain relief clamp on the AC wiring cover.
3. Connect the hot/live wire to the AC input "L" terminal.
4. Connect the neutral wire to the AC input "N" terminal.
5. Connect the ground wire to the AC input "G" terminal.
6. Ensure all three wires are securely inserted by firmly pulling back on them.
7. Leave the strain relief clamp and AC wiring cover loose for now, they will be tightened and re-installed after the AC output wiring is completed.



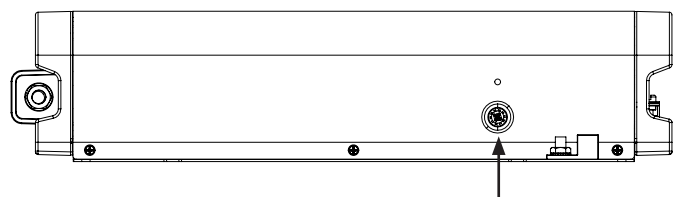
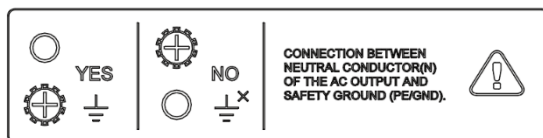
AC OUTPUT WIRING

1. Route the wires (hot/live, neutral, and ground) from the main AC panel to the inverter, and feed them through the AC output strain relief clamp on the AC wiring cover.
2. Connect the hot/live wire to the AC output "L" terminal.
3. Connect the neutral wire to the AC output "N" terminal.
4. Connect the ground wire to the AC output "G" terminal.
5. Ensure all three wires are securely inserted by firmly pulling back on them.
6. Ensure there is extra slack in the wiring before tightening the AC input and output strain relief clamps securely on the wires, and re-installing the AC output covers.



2.6.3 NEUTRAL GROUNDING SCREW

The Advanced Sine Wave Inverters have a neutral grounding screw that connects the inverter's AC neutral conductor to the safety ground. When the screw is installed in the yes position, it bonds AC output neutral to ground inside the inverter, creating a grounded neutral system. Configure the screw position to match local electrical codes and the requirements of the overall installation. The position of the neutral grounding screw should only be adjusted by qualified personnel.



Neutral Grounding Screw

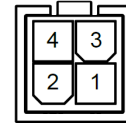
2.7 RV-C COMMUNICATION

The RV-C connector is a standard RV-C Molex connector with the pinout shown below. Use this to connect the Advanced Sine Wave Inverter to the RV-C network and other RV-C devices, like the PowerTrak™ Display.



IMPORTANT The Advanced Sine Wave Inverter requires power on the RV-C network in order to communicate. Go Power! | Dometic recommends using the battery as the power source for the RV-C network.

1	2	3	4
CAN H	CAN L	GND	+12 V External Power



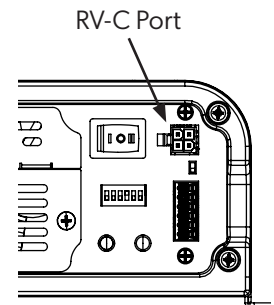
2.7.1 RV-C TERMINAL SWITCH

The Advanced Sine Wave Inverter has a built in terminating resistor switch. This switch is in the off position by default. When the switch is in the on position, a 120 Ohm resistor is activated across RV-C pins 1 (CAN H) and 2 (CAN L). This RV-C terminal switch should only be in the on position when the inverter is located at the end of the RV-C network. Refer to section 2.7.2 for more information on where terminating resistors should be located in the RV-C network.

2.7.2 DEVICE CONNECTION

The PowerTrak™ devices are connected via RV-C harnessing (sold separately). The RV-C harnesses are connected to the RV-C port on the inverter. The following points must be observed for the RV-C harnessing.

- The system must have two terminating resistors, one at each end of the network. The adapter harness (83438) included with the PowerTrak™ Display has a terminating resistor built in. The second terminating resistor must be added to the opposing end of the network, using the terminating resistor harness (83543). This harness can be easily identified by the orange "TERMINATING RESISTOR" label. Alternatively, if the Advanced Sine Wave Inverter is located at the opposing end of the network, the RV-C terminal switch on the device can be switched to the on position.
- Go Power! | Dometic recommends using the battery as the power source for the RV-C network, and disabling the power connection from all other power sources. The power disconnect harness (84283) must be connected to any component that supplies power to the RV-C network, excluding the battery. This harness can be easily identified by the green "POWER DISCONNECT" label.



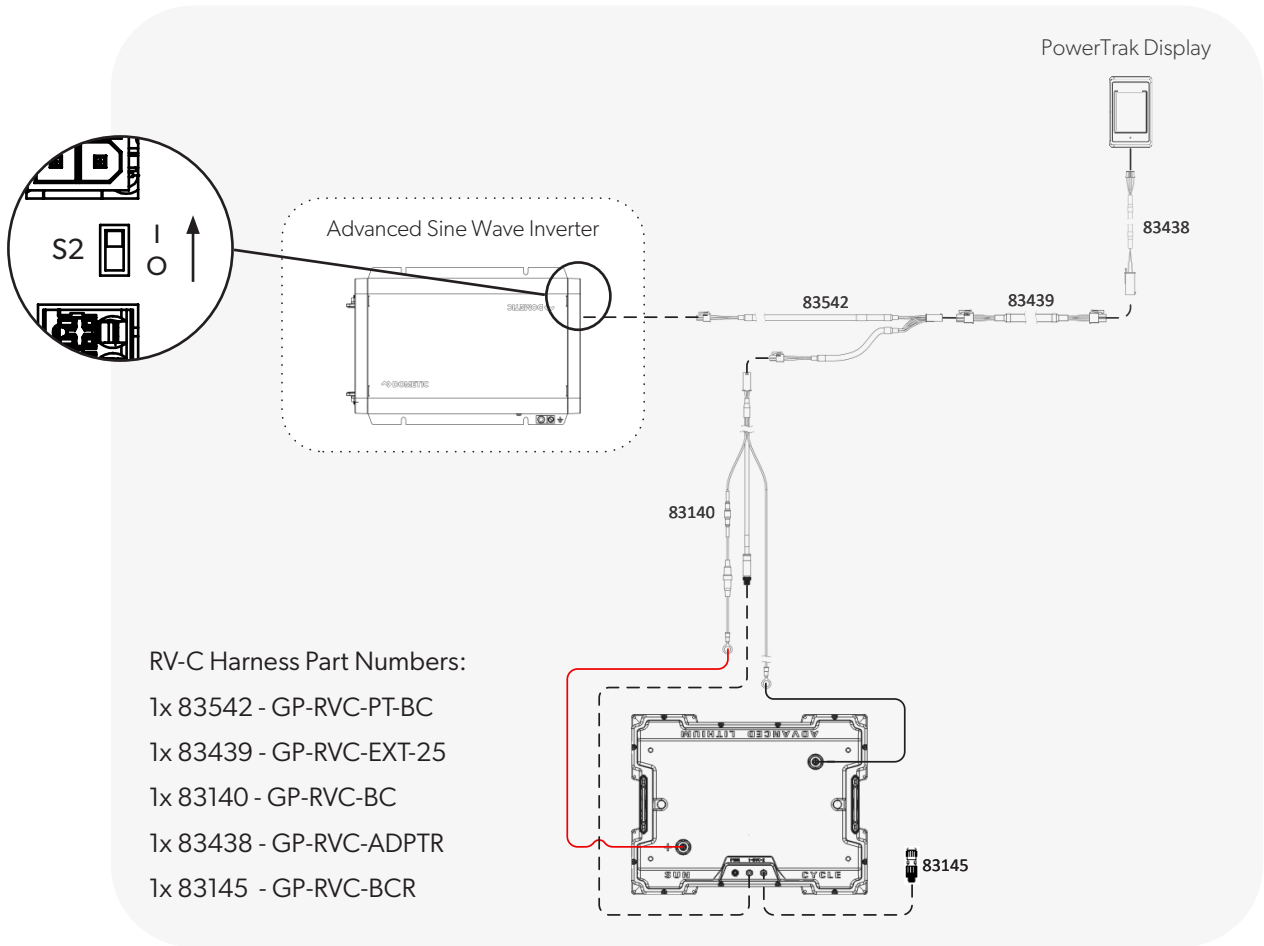
Note

The adapter harness (83438) is included with the PowerTrak™ Display. All other RV-C harnesses must be purchased separately from Go Power! | Dometic.

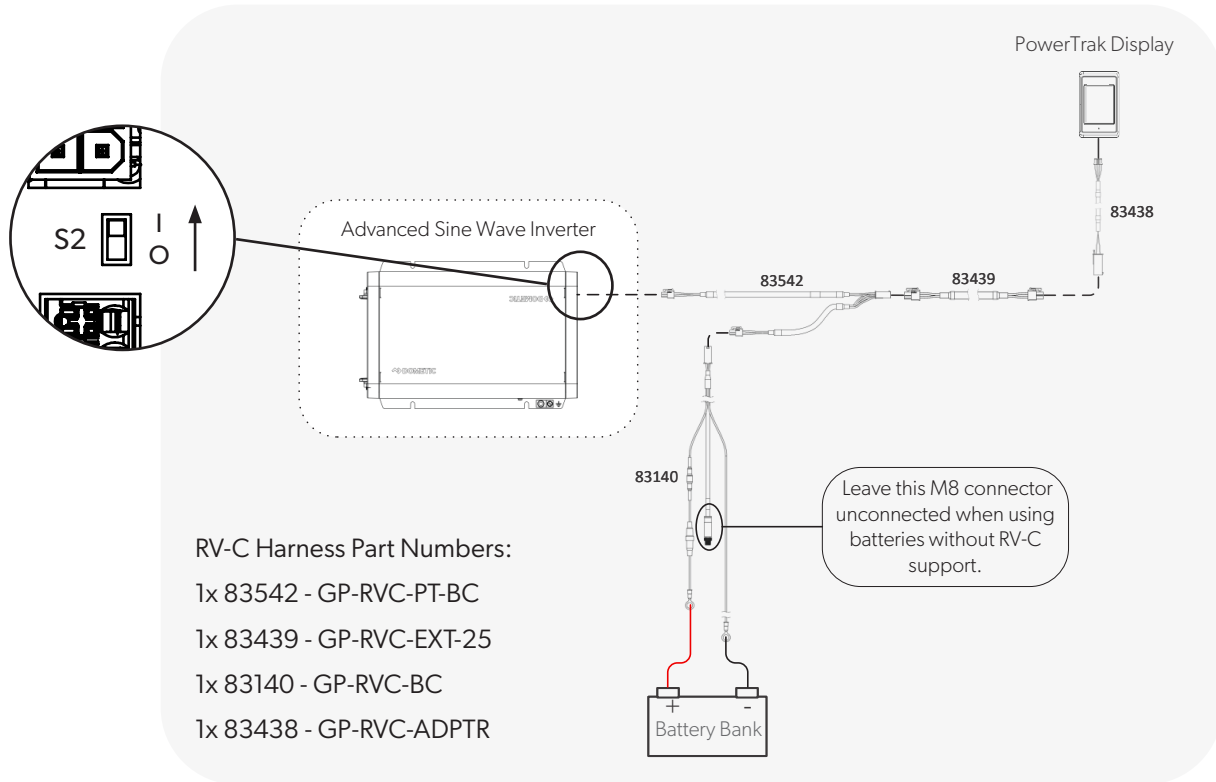
Note

5ft extension harnesses (83636) are available for purchase if required between components.

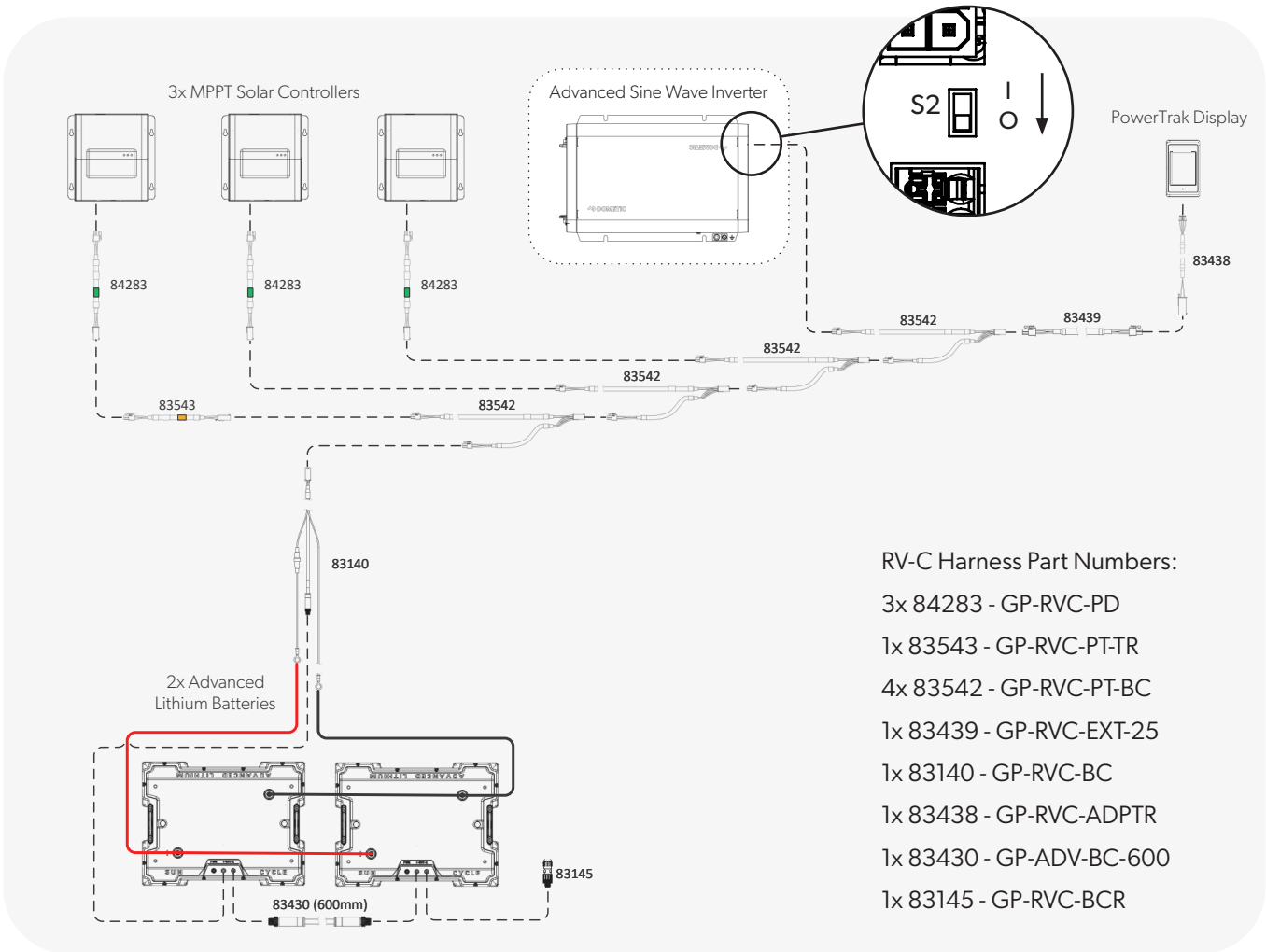
The following wiring diagram shows the recommended RV-C harness connections for systems with an Advanced Sine Wave Inverter paired with a PowerTrak™ Display and an Advanced Lithium Battery. In this example, the PowerTrak™ Display is at one end of the network, and the Advanced Sine Wave Inverter is at the other. The battery connection is considered a branch off of the main bus. This means a terminating resistor is required at the PowerTrak™ Display and the Advanced Sine Wave Inverter. On the PowerTrak™ Display end, the adapter harness (83438) contains the terminating resistor. On the inverter end, the built in terminating resistor can be activated by switching the RV-C terminal switch to the on position.



The following wiring diagram shows the recommended RV-C harness connections for systems with an Advanced Sine Wave Inverter paired with a PowerTrak™ Display and a battery without RV-C support. In this system, the M8 connector on the battery connection harness (83140) can remain unconnected. The terminating resistors in this system are the same as the previous example.



Other examples of PowerTrak™ compatible devices include the Go Power! | Dometic MPPT 30 A and 40 A Solar Controllers. A wiring diagram for an example system including these devices is shown below. In this example, the PowerTrak™ Display is at one end of the network, and the MPPT Solar Controller is at the other. The remaining solar controllers, battery and inverter are considered branches off of the main bus. This means a terminating resistor is required at the PowerTrak™ Display and the MPPT Solar Controller. On the PowerTrak™ Display end, the adapter harness (83438) contains the terminating resistor. On the solar controller end, the terminating resistor harness (83543) is added. The RV-C terminal switch on the inverter should be in the off position.



If your power system contains other RV-C compatible devices, you may require a different combination of RV-C harnesses. Please refer to our PowerTrak™ part configurator through the QR code below to determine which cables are required for your system. Contact technical support if you are unsure about the RV-C requirements for your system.



Scan the QR code to access the Go Power! PowerTrak™ Part Configurator.

2.8 FINAL INSPECTION

1. Verify all cables/conduit runs are secured with zip ties or other non-conductive cable clamps to prevent damage from vibration.
2. Ensure all cables that pass-through walls, bulkheads, or any other openings are protected against abrasion by using strain reliefs and/or grommets.
3. Confirm all AC, DC and ground connections are secure.
4. Confirm the RV-C cables are securely installed (if applicable).
5. Check the AC terminal connection cover plate has been securely re-attached.
7. If required by code, have the installation inspected by an electrical inspector.

2.9 TESTING THE INSTALLATION

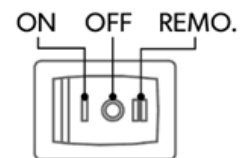
1. Disconnect AC input from the inverter by switching off the input breakers or disconnecting the AC input source (utility or generator).
2. Disconnect AC output from the inverter by switching off the output breakers in the AC panel.
3. Apply battery power to the inverter by switching on the DC breaker or the DC battery disconnect switch. The device will remain off.
4. Turn on the inverter by switching the main switch or remote switch to the on position. Verify the device turns on and its status LED indicator is not red.
5. Measure the voltage at the AC output terminals with a multimeter. Verify 120 VAC is measured.
6. Apply AC input to the inverter by switching on the input breakers or connecting the AC input source (utility or generator).
7. Turn on the AC loads by switching on the output breakers in the AC panel.
8. Verify the AC loads are powered.
9. Disconnect the AC input. The AC loads and the inverter should remain on. The AC loads are now being powered by the inverter (battery bank).
10. Now that the functionality is confirmed, the system can be reassembled, and all the breakers can be switched on.

3. OPERATION

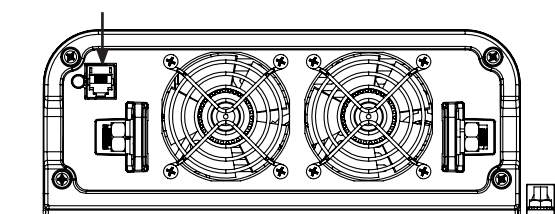
3.1 POWER ON/OFF

When the inverter is connected to the battery bank, the on/off/remote switch must be switched to the on position to turn the device on. Alternatively, the remote switch (sold separately) can be used.

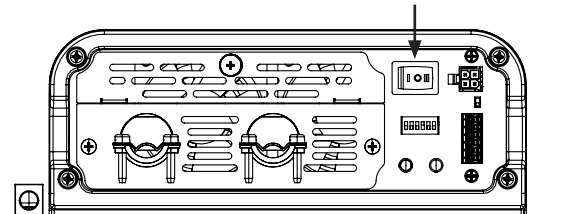
The remote switch (sold separately) can be mounted in an easily accessible area, at a distance from the inverter. This allows the user to turn the inverter on/off without accessing the unit. If the remote switch or dry contact is being used, the main switch must be switched to the remote position.



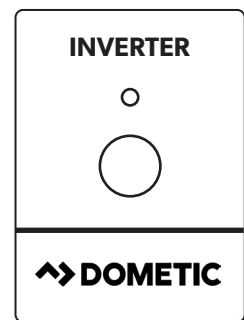
Remote Switch Port



On/Off/Remote Switch



ON/OFF/REMOTE SWITCH	REMOTE SWITCH	DEVICE STATE/DESCRIPTION
On	On	On
Off	On	Off
Remote	On	On
On	Off/Not installed	On
Off	Off/Not installed	Off
Remote	Off/Not installed	Off



Remote Switch (ASW-R)

3.2 STATUS LED INDICATORS

UNIT STATUS LED	LED SIGNAL	STATUS
Solid Green		Inverter Mode
Slow Blink Green		Bypass Mode
Slow Blink Orange		Bat. Over Voltage Alarm
Fast Blink Orange		Bat. Under Voltage Alarm
Intermittent Blink Red		Over Temperature Protection
Intermittent Blink Red		Bat. OVP Shut down
Intermittent Blink Red		Bat. UVP Shut down
Fast Blink Red		Over Load Protection & Short Circuit Protection
Solid Red		Hardware Fault
AC PASS-THROUGH LED	LED SIGNAL	STATUS
Solid Blue		AC Pass-through Detected
REVERSE BATTERY POLARITY LED	LED SIGNAL	STATUS
Solid Red		Reverse Battery Polarity Detected

3.3 LOAD SENSE

The Advanced Sine Wave Inverter has a load sensing function that can be enabled/disabled through the DIP switches, or the PowerTrak™ Display (sold separately). This feature is used to conserve battery power when no AC power is required (no appliances being used). In load sense mode the inverter continually scans the AC output looking for an AC load. When an AC appliance is turned on, an AC load is registered at the AC output and the inverter switches on and supplies power from the battery bank to the appliance. Load sense mode is disabled by default. Refer to section 3.3.1 for more information on using the PowerTrak™ Display to enable/disable load sense. Refer to section 3.3.2 for instructions on how to enable/disable load sense using the DIP switches.

3.3.1 ENABLING LOAD SENSE ON THE POWERTRAK™ DISPLAY

The PowerTrak™ Display (sold separately) can be used to enable load sense and adjust the power threshold. The load sense power threshold can be adjusted in increments of 5 W, between 5 W and 45 W. Refer to section 3.5 for more details on using the PowerTrak™ Display.

3.3.2 ENABLING LOAD SENSE WITH THE FUNCTION SWITCH

The function switch on the inverter can be used to enable load sense, adjust the power threshold and the load sense interval. The table below outlines the function of each switch.

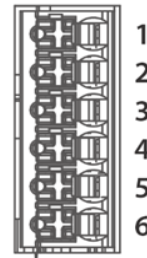
SWITCH	FUNCTION	DETAILS
1 - 3	Not used	N/A
4	Load Sense Mode	On = Load Sense Enabled Off = Load Sense Disabled
5	Load Sense Power Threshold	On = 45 W Power Threshold Off = 5 W Power Threshold
6	Load Sense Interval	On = 10 minute Interval Off = Disable Timeout



3.4 ENABLE/DRY CONTACT TERMINALS

The Advanced Sine Wave Inverter has dry contact terminals. The pinout for the dry contact terminals is shown below.

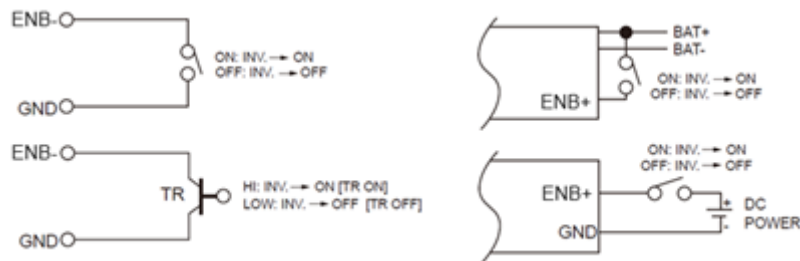
ITEM	FUNCTION
1	Ground (GND)
2	Enable - (ENB -)
3	Enable + (ENB +)
4	Dry contact (Normal Open)
5	Common
6	Dry contact (Normal Closed)



The terminals feature push-in cage clamps that accept 20-24 AWG wires. The wire insulation should be stripped back 8-9 mm (0.30-0.35 in). To connect the wires, press down the white button on the left side of the terminal. While pressing the button, insert the wire into the terminal opening on the right. Release the button to clamp the wire in place. Always ensure the wire is securely inserted by firmly pulling back on it.

3.4.1 ENABLE TERMINAL DEFINITION

The enable terminals can be used to connect an external switch to the inverter. Ensure the on/off/remote switch is in the off position prior to connecting the external switch. Once the external switch is connected, change the on/off/remote switch to the remote position.



3.4.2 DRY CONTACT TERMINAL DEFINITION

The dry contact terminals can be connected to a single pole-double throw relay for fault indication. When a fault occurs, the relay is activated to sound an audible alarm, or turn on an LED indicator light.

MAXIMUM VOLTAGE	LOAD	CONTACT RATING		NUMBER OF OPERATIONS	OPERATING/STORAGE TEMPERATURE
		N.O	N.C		
125 VAC	Resistive	0.5 A	-	100,000	-4 °F ~ 185 °F / -40 °C ~ 85 °C
125 VAC	Resistive	-	0.5 A	-	
30 VDC	Resistive	2 A	-	100,000	
30 VDC	Resistive	-	2A	-	

3.5 POWERTRAK™ DISPLAY

The PowerTrak™ Display is the remote for controlling the settings on the Advanced Sine Wave Inverter and viewing system details. The Advanced Sine Wave Inverter and the PowerTrak™ Display (sold separately) are compatible with the Go Power! | Dometic PowerTrak™ system. The PowerTrak™ system technology ensures compatible devices work together to optimize power flow and efficiency. This section will outline connection and basic operation of the PowerTrak™ Display. For more details, please use the QR code below to access the user manual for the PowerTrak™ Display.



Scan the QR code to access the PowerTrak™ Display user manual.

3.5.1 DISPLAY POWER-UP

The PowerTrak™ Display is powered from the RV-C network, and automatically turns on when connected to the system. A message is displayed that a search for connected devices is in progress.



Confirm the inverter is loaded on the screen, along with any other components that are in your system.

- Press the **LOAD** button.

3.5.2 OPENING THE DISPLAY SETTINGS

- Press the  button to open the settings.

3.5.3 SWITCHING THROUGH THE SETTINGS

- Press the arrow buttons to switch through the settings pages.
- Press the  button in the top left corner of the display to switch to the previously displayed screen.
- Press the  button to display the home screen.

3.5.4 INVERTER SETTINGS

- Press the “Inverter Settings” button on the settings screen.
- Refer to section 3.7 for more details on the available settings.

3.6 STATUS PARAMETERS

The following parameters are reported over the RV-C network, and can be monitored using the PowerTrak™ Display (sold separately).

PARAMETER	DESCRIPTION
Inverter Status	Real-time inverter state (disabled, inverting, load sense).
DC Voltage	DC voltage measured from the inverter DC terminals.
AC Output Volt	AC voltage measured from the inverter AC output.
AC Output Amps	AC current measured from the inverter AC output.
AC Output Power	AC power measured from the inverter AC output.
AC Output Freq	AC frequency measured from the inverter AC output.
FET Temp	Temperature of the inverters FET.
Firmware	Firmware version of the inverter.
Fault Code	Fault/warning condition reported from the inverter.

3.7 CONFIGURABLE SETTINGS

The following settings can be configured using the PowerTrak™ Display (sold separately).

PARAMETER	DESCRIPTION	VALUE RANGE	DEFAULT VALUE
Inverter	Turns the inverter on or off.	On/Off	Enabled
Load Sense	Allows the inverter to detect and respond to load presence.	Enable/Disable	Disabled
Load Sense Power Threshold	Minimum power level required to activate the inverter in load sense mode.	5 - 45 W (5 W increments)	5 W
DC Min Shutdown Volt	Minimum DC voltage at which the inverter shuts down. The Input Under-Voltage Recovery is 2.5 VDC above the DC Min Shutdown Volt. Updating the shutdown voltage automatically updates the recovery voltage.	10.0 - 11.5 VDC	10.0 VDC
Inverter Reset to Default	Restores inverter settings to factory defaults.	-	-

3.8 MAINTENANCE

The Advanced Sine Wave Inverter is designed to be service-free. Even though there are no user serviceable parts, it is recommended that every 6 months you perform the following maintenance steps to ensure optimum performance and extend the life of your batteries:

- Visually inspect the batteries for cracks, leaks, or swelling—replace if necessary.
- Use baking soda to clean and remove any electrolyte spills or buildup.
- Check and tighten all battery terminal connections.
- Check and fill battery water levels in flooded lead acid batteries.
- Check individual battery voltages (load test those that have a voltage difference of more than 0.3 VDC from each other) and replace if necessary.
- Check the inverter's ventilation vents—clean if necessary.
- Visually inspect all cables in both the DC and AC systems. Check for wear/abrasion. Replace if necessary and ensure strain reliefs and cable protection is installed to prevent future damage.
- Check and tighten all AC and DC connections on the inverter.
- Check the ground connections are secure on the inverter, battery bank, main/sub panels and the earth ground on the RV, or boat.

4. SPECIFICATIONS



ELECTRICAL SPECIFICATION		ASW-1200-12-TS	ASW-1800-12-TS	ASW-2000-12-TS	ASW-3000-12-TS
Inverter	Rated Power	1200 W	1800 W	2000 W	3000 W
	Nominal Voltage	12.5 VDC			
	Input Voltage Range	10.0 ~ 16.5 VDC ± 0.3 VDC			
	Input Over-Voltage Protection	> 16.5 ± 0.3 VDC			
	Input Over-Voltage Warning	> 15.5 ± 0.3 VDC			
	Input Under-Voltage Protection (DC Min Shutdown Volt)	< 10.0 ± 0.3 VDC (programmable)			
	Input Under-Voltage Warning	< 11.0 ± 0.3 VDC			
	Input Over-Voltage Recovery	< 13.5 ± 0.3 VDC			
	Input Under-Voltage Recovery	> 12.5 ± 0.3 VDC (2.5 VDC above UVP)			
	Surge Current (Max)	133 A	197 A	220 A	330 A
	No-load Current @ 12.5 VDC	≤ 1.8 A	≤ 2.0 A	≤ 2.0 A	≤ 2.8 A
	Load Sense Mode @ 12.5 VDC	< 0.1 A			
	Surge Power (1 minute)	1201 ~ 1440W	1801 ~ 2160W	2001 ~ 2400W	3001 ~ 3600W
	Surge Power (3 seconds)	1441 ~ 2400W	2161 ~ 3600W	2401 ~ 4000W	3601 ~ 6000W
	Surge Power (2 seconds)	> 2400W	> 3600W	> 4000W	> 6000W
	Output Frequency	60 Hz ± 0.3 Hz			
	Output Voltage	120 VAC ± 3 %			
	Max. Efficiency	91 %			
	Output Waveform	Pure Sine Wave			
Total Harmonic Distortion (THD)	< 3 % (Bat. 12.5 VDC @ 120 VAC, resistive load)				
AC Pass-through Mode	Nominal AC Input Voltage	120 VAC			
	AC Input Voltage Range	70 - 150 VAC			
	Nominal AC Input Frequency	60 Hz			
	AC Input Frequency Range	57 - 63 Hz			
	AC Input Current	24 A			
	Transfer Time	≤ 20 ms			
Protection	DC Input Protection	Reverse Polarity, OCP, OVP, UVP			
	AC Output Protection	Short Circuit, Overload			
	AC Input Protection	30A Breaker (Automatically Reset)			
	Temperature Protection	Heatsink Temperature Reaches > 95 °C (203 °F)			
MECHANICAL SPECIFICATION					
Dimensions (L x W x H)	346 x 227 x 86 mm (13.6 x 8.9 x 3.4 in)	376 x 253 x 86 mm (14.8 x 10.0 x 3.4 in)	419 x 290 x 102 mm (16.5 x 11.4 x 4.0 in)		
Net Weight	3.40 kg (7.5 lb)	4.40 kg (9.7 lb)	4.40 kg (9.7 lb)	10.88 kg (23.9 lb)	



ENVIRONMENTAL SPECIFICATION	
Operating Temperature (without derating)	-20 °C to 40 °C (-68 °F to 104 °F)
Operating Temperature (with derating)	40 °C to 60 °C (104 °F to 140 °F)
Storage Temperature	-40 °C to 70 °C (104 °F to 158 °F)
Relative Humidity	< 95 % non-condensing
Certifications & Compliance	Certified UL458, Certified FCC Class B
WARRANTY	
Warranty	2 years

The Go Power! | Dometic warranty is valid against defects in materials and workmanship for the specific product warranty period. It is not valid against defects resulting from, but not limited to:

- Misuse and/or abuse, neglect, or accident.
- Exceeding the unit's design limits.
- Improper installation, including, but not limited to, improper environmental protection and improper hook-up.
- Acts of God, including lightning, floods, earthquakes, fire, and high winds.
- Damage in handling, including damage encountered during shipment.

A warranty shall be considered void if the warranted product is in any way opened or altered. The warranty will be void if any fasteners used to seal the unit are removed or altered, or if the unit's serial number is in any way removed, altered, replaced, defaced, or rendered illegible.

Warranty Return Procedure

Before contacting the customer service department, please read the "frequently asked questions" section of our website to troubleshoot the problem. If trouble persists:

Call the Technical Support team (1-866-247-6527) or return defective product to place of purchase.

Unless approved by Go Power! | Dometic Management, all product shipped collect to Go Power! | Dometic will be refused. Test items or items that are not under warranty, or units that are not defective, will be charged a minimum bench charge of \$50.00 US plus taxes and shipping. A 15% restocking charge will be applied on goods returned and accepted as "new" stock.

An RMA (return materials authorization) number from Go Power! | Dometic Customer Service is required prior to returning any Go Power! | Dometic products. Go Power! | Dometic reserves the right to refuse any items sent to Go Power! | Dometic without an associated RMA number. To obtain an RMA number, please contact customersupport.gopower@dometic.com or Telephone 1-866-247-6527.

Out of Warranty

Go Power! | Dometic electronic products are non-repairable. Go Power! | Dometic does not perform repairs on its products nor does it contract out those repairs to a third party. Go Power! | Dometic does not supply schematics or replacement parts for any of its electronic products.

Product E.O.L (end of life) Information

This product required the extraction and use of natural resources. It may contain substances that could be harmful to the environment or human health if improperly handled at the product's end of life. In order to avoid release of such substances into the environment and to reduce the use of natural resources, we encourage you to recycle the inverter in an appropriate way that will ensure most of the materials are reused or recycled appropriately.

6. END OF LIFE - RECYCLING INFORMATION



DO NOT DISPOSE OF THIS PRODUCT WITH NORMAL GARBAGE.

The easiest way to recycle an inverter is to take the unit to a local certified e-waste (electronics waste) recycling center. Knowing for sure if your appliances are being recycled properly is tricky. If you're in doubt just ask. Recyclers that are certified should gladly show you their certification. If the recycler is certified, chances are very high that they are recycling responsibly.

To find your local e-waste center please contact your local municipality. The following website also has information on local recycling centers: www.earth911.com/recycling-center-search-guides

