

# KINGFISHER

## MA37X12B

Self-Contained, Direct Current  
Marine Air Conditioner



ARCHER POWER SOLUTIONS

## Installation and Operations Manual

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10739 Tucker Street, Suite 243, Beltsville, MD 20705

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**RECORD OF REVISIONS**

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<b>REVISION</b>	<b>DATE</b>	<b>DESCRIPTION OF CHANGES</b>
Original	02/16/2024	Original manual.

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## 1.0 INTRODUCTION

Thank you for choosing the Kingfisher MA37X12B Marine Air Conditioner (A/C). Kingfisher units are self-contained, direct-expansion, seawater-cooled A/C units, designed specifically for marine applications. Kingfisher A/C units feature:

- technical parameters, dimensions, and other requirements verified by an independent lab according to American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) standards,
- electronics and electrical wiring that adhere to Underwriters Laboratories (UL) and American Boat and Yacht Council (ABYC) standards,
- an electronic expansion valve,
- a high-efficiency, variable-speed, brushless DC electric motor (BLDC) compressor,
- a marine-grade condenser coil,
- a raised lance aluminum-fin evaporator,
- a corrosion-free polymer drain pan,
- pre-charged and pre-wired systems for easy connection,
- an integrated electrical box that can be separately mounted near the unit for easy access and service, and
- a blower that can be repositioned at any angle from horizontal to vertical discharge.

This manual provides proper installation instructions and operations information on the self-contained A/C unit. Not adhering to these installation procedures can result in unsatisfactory performance and/or premature failure of the unit and shall void the Warranty.

Before proceeding, please read this manual completely and contact us with any questions.

Address: Archer Power Solutions                      Phone: 240-845-7102  
10739 Tucker Street, Suite 243                      Email: [office@archerpowersolutions.com](mailto:office@archerpowersolutions.com)  
Beltsville, MD 20705                                      Website: [www.archerpowersolutions.com](http://www.archerpowersolutions.com)

The specifications and design are subject to change without prior notice.

The Kingfisher MA37X12B comes with a Limited Warranty (see **Appendix A**).

## 2.0 SAFETY

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### 2.1 KEY TO NOTES, CAUTIONS, AND DANGERS

**NOTE** An operating practice, condition, statement, etc., that is essential to highlight.

**CAUTION** An operating procedure, practice, condition, or statement that could result in injury to user or equipment damage, if not followed.

**DANGER** Indicates an imminently hazardous situation that, if not avoided, could result in serious injury or death.

### 2.2 IMPORTANT SAFETY CONSIDERATIONS

Ensure the selected location for the A/C unit is sealed from direct access to the bilge and/or engine-room vapors.

**DO NOT** terminate the condensate drain line within three (3) feet of any outlet of engine or generator exhaust systems, nor in a compartment housing an engine or generator, nor in a bilge (unless the drain is connected properly to a sealed condensate or shower sump pump).

### 2.3 SAFETY WARNINGS

**DANGER**

Failure to follow these precautions could result in serious injury or DEATH.

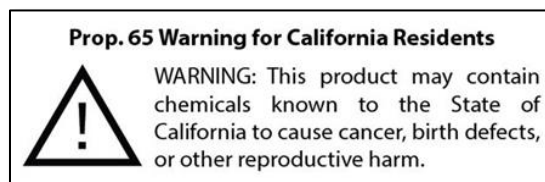
The A/C unit should never be placed in such a way that it can circulate carbon monoxide, fuel vapors, or other noxious fumes into the boat's living spaces.

**DO NOT** install or operate a self-contained unit in the engine room, or near an internal-combustion engine.

**Ignition-Protection Warning:** Self-contained units **DO NOT** meet United States (US) Federal requirements for Ignition Protection. Follow all US Coast Guard Safety Codes. **DO NOT** install in spaces containing gasoline engines, tanks, LPG/CNG cylinders, regulators, valves or fuel-line fittings. Failure to comply may result in injury or DEATH.

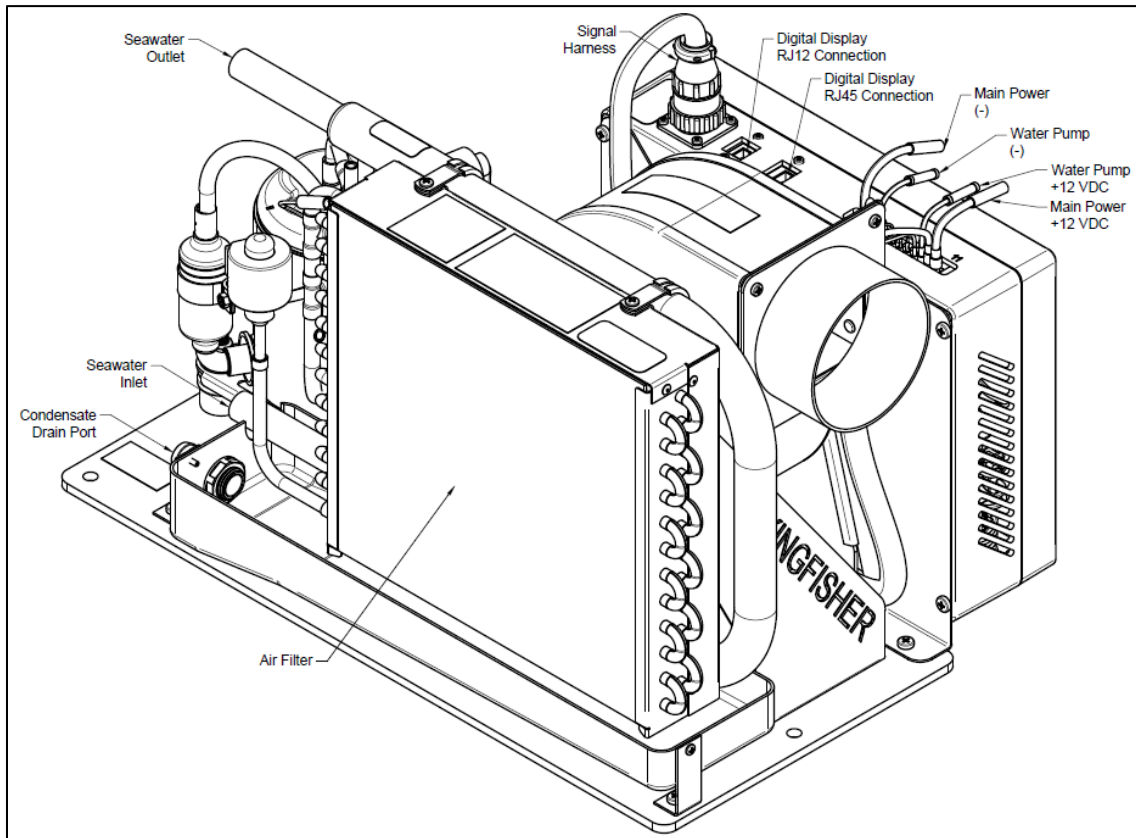
Installation and servicing of this system can be hazardous due to system pressure and electrical components. When working on this equipment, always observe precautions described in the literature, tags, and labels attached to the unit.

This A/C unit has been shipped to you pre-charged and pressurized. Note that any work involving refrigerant requires proper personal protective equipment (PPE), including safety glasses and work gloves. Such work should be left to professionals.



### 3.0 TECHNICAL PARAMETERS

A diagram of the MA37X12B is shown in **Figure 3-1** and technical parameters listed in **Table 3-1**.



**FIGURE 3-1: OUTLINE DIAGRAM**

**TABLE 3-1: TECHNICAL PARAMETERS**

DESCRIPTION		SPECIFICATION
Model No.:		MA37X12B
Cooling capacity:		Up to 5,000 British thermal unit per hour (BTUh)
Power source:		12 volts direct current (VDC)
Input power:	Rated cooling:	0.146 kilowatts (kW)
Amp draw:	Rated current:	12.1 amperes per hour (Ah); Max 25 Ah
Air flow:	Max:	275 cubic feet per minute (CFM)
Refrigerant:		R134a
Refrigerant amount:		250 grams (g)
Dimensions (with control box attached):	Height:	12.8"
	Width:	13.4"
	Length:	20.5"
Air duct size:		4"
Return-air grille size:		11" x 10"
Recommended supply air grille size:		6" x 6"
Seawater hose inner diameter:		3/4"
Net weight (incl controller box):		36 pounds (lbs)

## 4.0 INSTALLATION

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### 4.1 PRIOR TO INSTALLATION

Read these instructions completely, then plan all connections that must be made to the A/C unit to assure easy access for routing and future servicing including ducting, condensate drain line, seawater inlet and outlet hoses, electrical power connection, location of control panel, and seawater-pump (not included) placement.

### 4.2 BOX CONTENTS

- Mechanical and controller units (pre-wired)
- User display screen
- RJ12 and RJ45 cables for user display connection
- Vibration isolation pads
- Display screen mounting template (see **Appendix C**)
- Electrical control box surface mounting kit (4 x plastic mounts and screws)
- This Installation and Operations manual

### 4.3 TOOLS REQUIRED

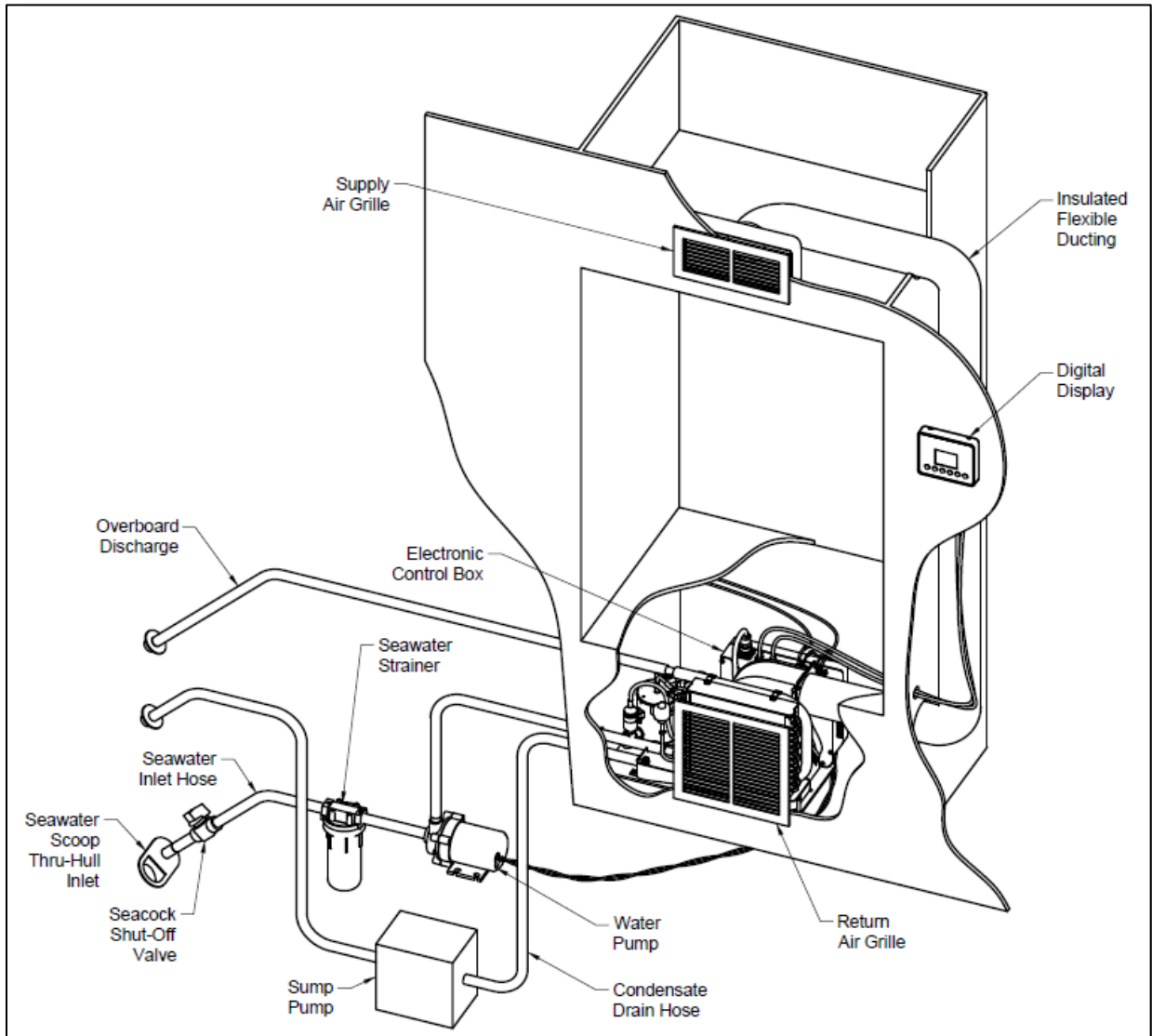
The following tools may be required, depending on the task being accomplished. Additional tools may be needed unique to your installation.

- #2 Phillips-head screwdriver
- 4 x #8  $\frac{3}{4}$ " screws for mounting
- Power drill
- Drill bits
- $1\frac{5}{8}$ " hole saw
- 1 x RJ12 (6P6C) and 1 x RJ45 wire, if different length between screen and control box is needed for installation (recommend less than 15 feet)
- Level
- Wire cutter
- Wire crimper
- $\frac{3}{4}$ " hoses (length dependent upon installation)
- Stainless-steel hose clamps
- Flat-head screwdriver



#### 4.4 INSTALLATION OVERVIEW

See **Figure 4-1** for an overview of a typical installation of the Kingfisher MA37X12B.



**FIGURE 4-1: INSTALLATION OVERVIEW**

#### 4.4.1 PLACEMENT OF A/C UNIT

The A/C unit must be mounted to a low, flat, level surface (e.g., the bottom of a locker, underneath a bunk or dinette seat, etc.). Read all safety considerations and see **Figure 4-2** before mounting.

**CAUTION**

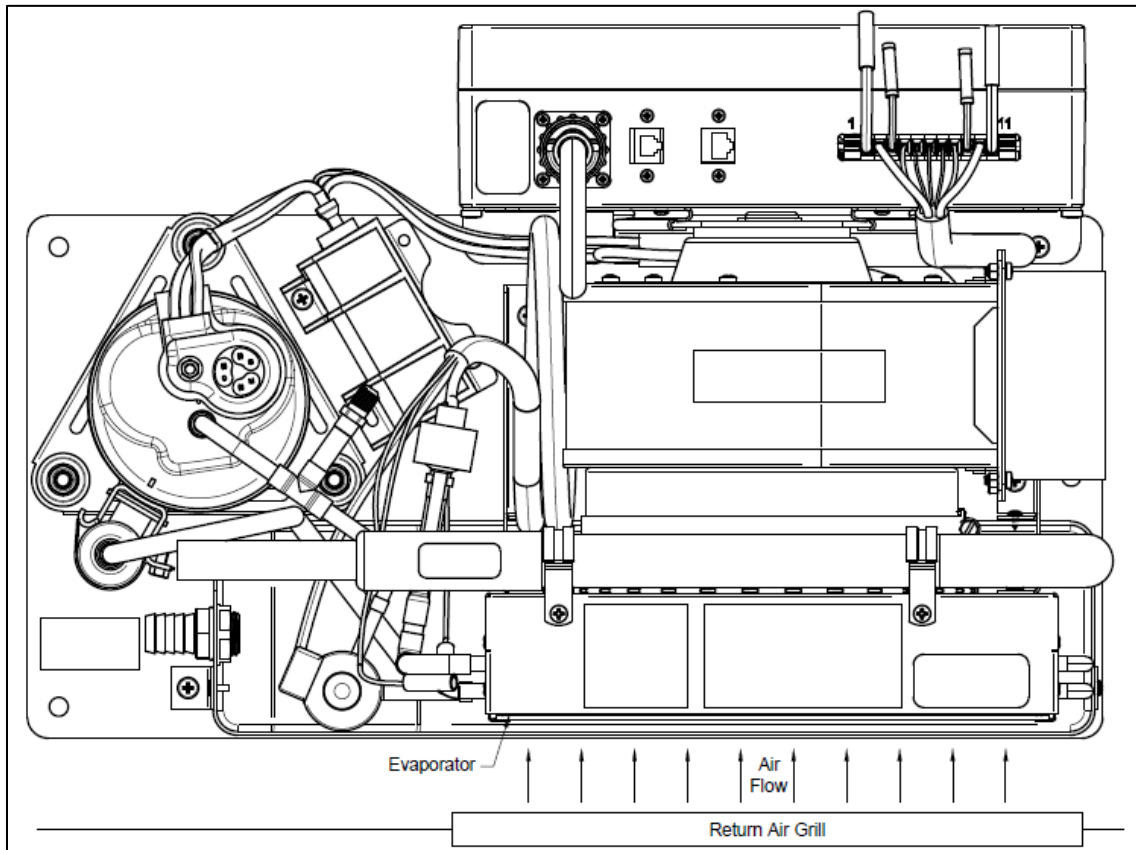
The base plate is to be installed with the included vibration-isolator pads installed under it. This isolator is designed to dampen the vibration caused by the operating A/C unit from transferring into the mounted surface. Care must be taken when moving the A/C unit across mounting surfaces, as these pads can be damaged.

The pads will not normally pull off the base, but can tear if dragged. The unit must be picked up when moving, or vibration isolation will be ineffective.

**NOTE**

The compressor should be mounted away from the return-air grill, if possible, to minimize sound level in the cabin.

Mount the unit so that the evaporator coil is directly behind the return-air grille (see **Figure 4-2**). Provide at least three (3) inches (76 millimeters) of air circulation clearance if adjacent to a bulkhead or other obstructions.

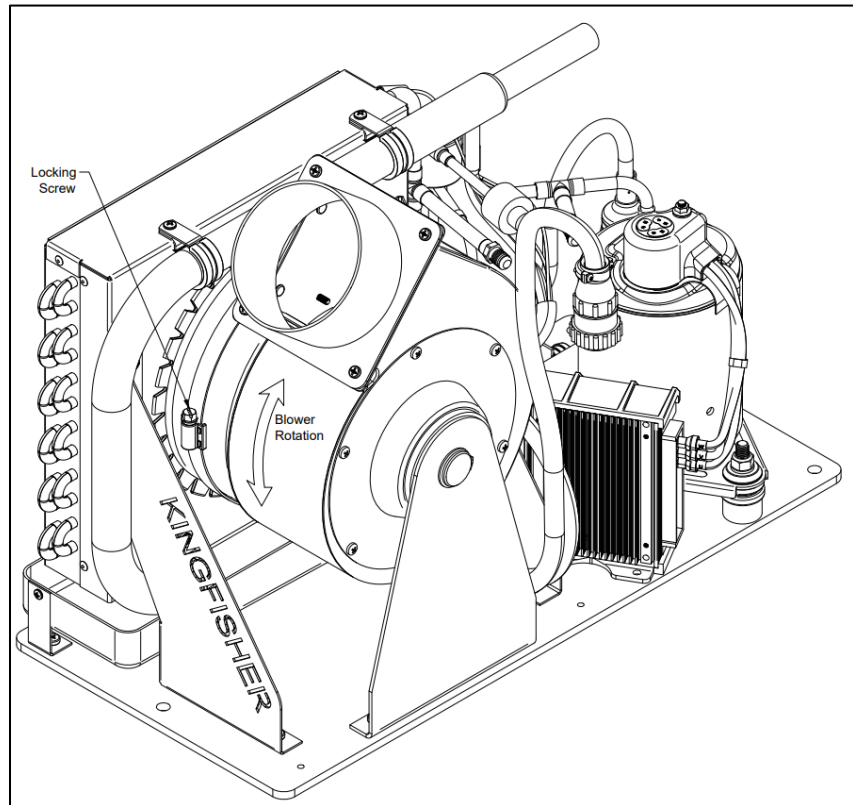


**FIGURE 4-2: MOUNTING THE UNIT – EVAPORATOR POSITION**

#### 4.4.2 FAN ROTATION

Complete the following steps to rotate the fan to the direction that allows the most direct airflow discharge through the ducting and minimizes duct bends.

1. Using a flat-head screwdriver, loosen the band clamp locking screw.
2. Rotate the fan housing by hand to the desired angle.
3. Tighten the band clamp locking screw.
4. After the fan rotation procedure is complete, proceed with the installation of the ducting (see **Figure 4-3**).



**FIGURE 4-3: FAN MOTOR ROTATION OVERVIEW**

#### 4.4.3 VIBRATION-ISOLATOR PAD APPLICATION

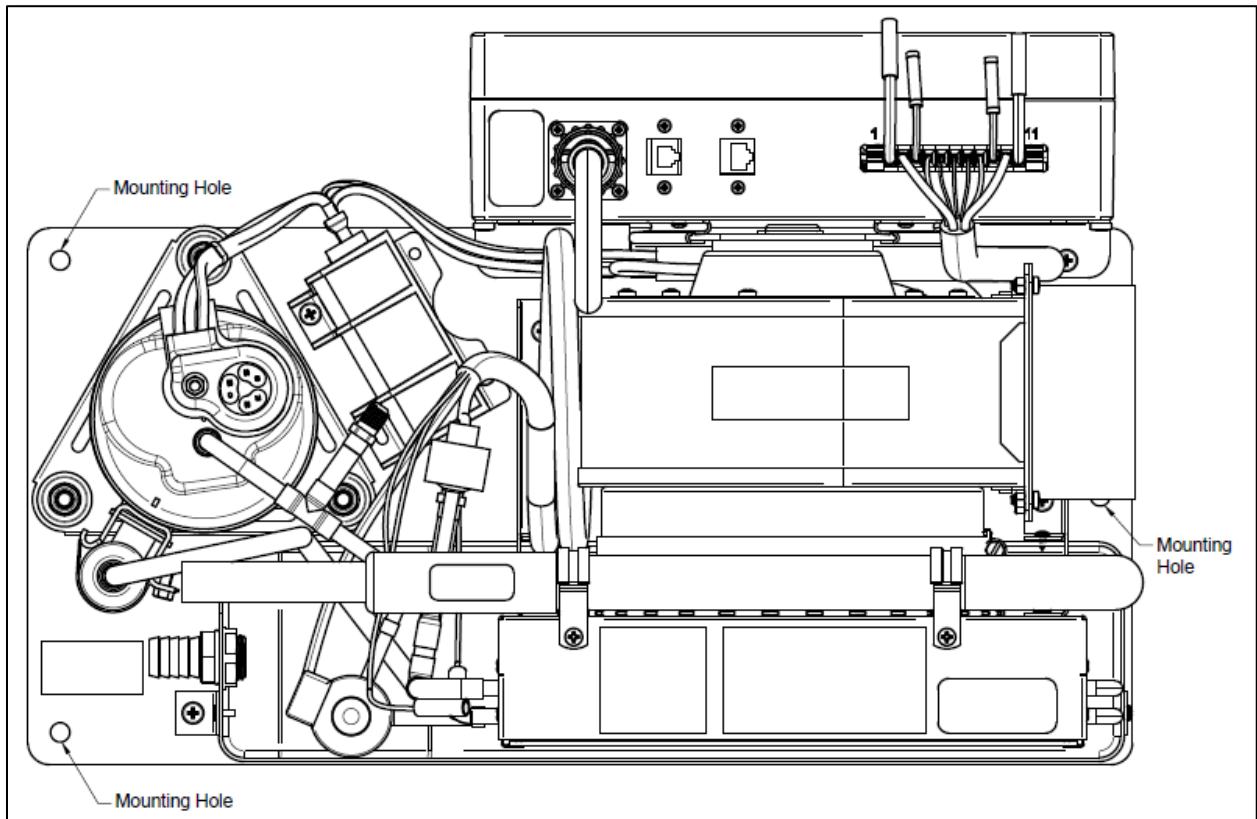
Included with your kit is a set of pads made from specialty plastics. Securely apply the adhesive-backed pads under the three (3) mounting points of the A/C base plate – adhesive side should adhere the bottom of the base plate. These pads will serve as a vibration dampener and limit noise travel.

#### 4.4.4 MOUNTING HOLES

**NOTE**

User shall supply screws or bolts, depending on installation and surface thickness.

Secure the A/C unit to a flat, level mounting surface using the three (3) indicated mounting holes (see **Figure 4-4**) with a matching set of screws or bolts (depending on the mounting surface).



**FIGURE 4-4: MOUNTING INSTALLATION OVERVIEW**

#### **4.4.5 DUCTING**

Your A/C unit is a closed-loop system. It pulls hot, moist air from your cabin through the return-air grill into the A/C, where the temperature and humidity are reduced before the air is blown back into the cabin through the duct system. Good airflow is critical for the performance of the entire system and is highly dependent on the quality of the ducting installation. The ducting should be a straight run, as smooth and taut as possible, minimizing the number of 90-degree bends (i.e., two 90-degree bends in the ducting can reduce airflow by 25 percent). If a transition box is used, the total area of supply air ducts going out of the box should be at least equal to the area of the supply duct going into the box. All ducting should:

- be appropriately sized for each application,
- run as smoothly and taut as possible,
- have as few bends or loops as possible,
- be securely fastened to prevent sagging during boat operation,
- have all excess ducting lengths trimmed off,
- not be flattened or kinked,
- be insulated when located in high-heat load areas (e.g., hull side, mechanical compartments, etc.), and
- be properly protected against potential damage when routed through open areas.

**DANGER**

**DO NOT** route ducting through the engine room, or any area where it may be exposed to dangerous vapors or exhaust fumes. Serious injury or DEATH could result.

#### 4.4.6 SEAWATER SYSTEM

Your A/C requires seawater to be circulated through it via a 12 VDC water pump. The pump is not supplied and should be chosen based on your unique installation requirements. We recommend you pick a pump that is sufficiently powerful to lift the water from the sea-level up to the unit and overboard (refer to the Pump Head charts specific to the pump under consideration). ABYC guidelines should be followed during the installation of the seawater system. If the water circulation pump is centrifugal and not self-priming, it must be mounted so that it is always below the water line, regardless of which tack the vessel is on. The pump may be mounted horizontally or vertically. The seawater system installation summary follows. Refer to **Figure 3-1** and **Figure 4-1**, if necessary, to see equipment components.

1. Install the seawater scoop thru-hull inlet as close to the keel, and as far below the water line, as possible facing the bow.
2. Bed the scoop with a marine sealant designed for underwater use.
3. Install a full-flow seacock on the seawater scoop thru-hull inlet.
4. Install a seawater strainer below the level of the pump with access to the filter.
5. Mount the pump above the strainer and below the waterline. Connect the pump circuit wires to the marked wires at the control panel. Pump must not exceed a 5A draw, as it is powered by the control box.

**CAUTION**

Install a 5A fuse to pump circuit.

6. Connect the seacock and strainer with an uphill run of reinforced marine-grade hose.
7. Connect the discharge from the pump uphill to the bottom inlet of the A/C unit's condenser coil with  $\frac{3}{4}$ " marine-grade hose.
8. Connect the discharge (top) from the condenser coil to the overboard discharge thru-hull fitting with  $\frac{3}{4}$ " marine-grade hose.

**NOTE**

Each 90-degree elbow is equivalent to 2.5 feet of hose, and a 90-degree elbow on the pump outlet is equivalent to 20 feet of hose.

9. Avoid loops, high spots, or the use of 90-degree elbows with seawater hose.
10. Double-clamp all hose connections with two stainless-steel clamps, reversing the clamps.
11. Use threaded seal tape on all threaded connections.
12. Connect all metallic parts in contact with the seawater to the vessel's bonding system, including the speed-scoop inlet, strainer, and/or pump.
13. Route condensation drain with  $\frac{3}{4}$ " marine-grade hose to a sump pump to be discharged overboard.

#### 4.4.7 CONTROL PANEL INSTALLATION

The control panel is the electrical box that controls your A/C unit. The unit comes with this box attached to the mechanical assembly. If desired, the box can be removed from the mechanical assembly (see **Figure 4-5**) and installed within an approximately four-foot radius of the A/C unit using the supplied surface mount tabs and screws (see Error! Reference source not found. and Error! Reference source not found.). The panel can be installed vertically or horizontally. Allow for a minimum two (2) inch gap around all control panel cooling vents. The control panel comes pre-wired to the A/C from the factory. If the desired installation requires the two cable bundles to be removed and routed separately from the control box refer to **Section 7.0** for instructions.

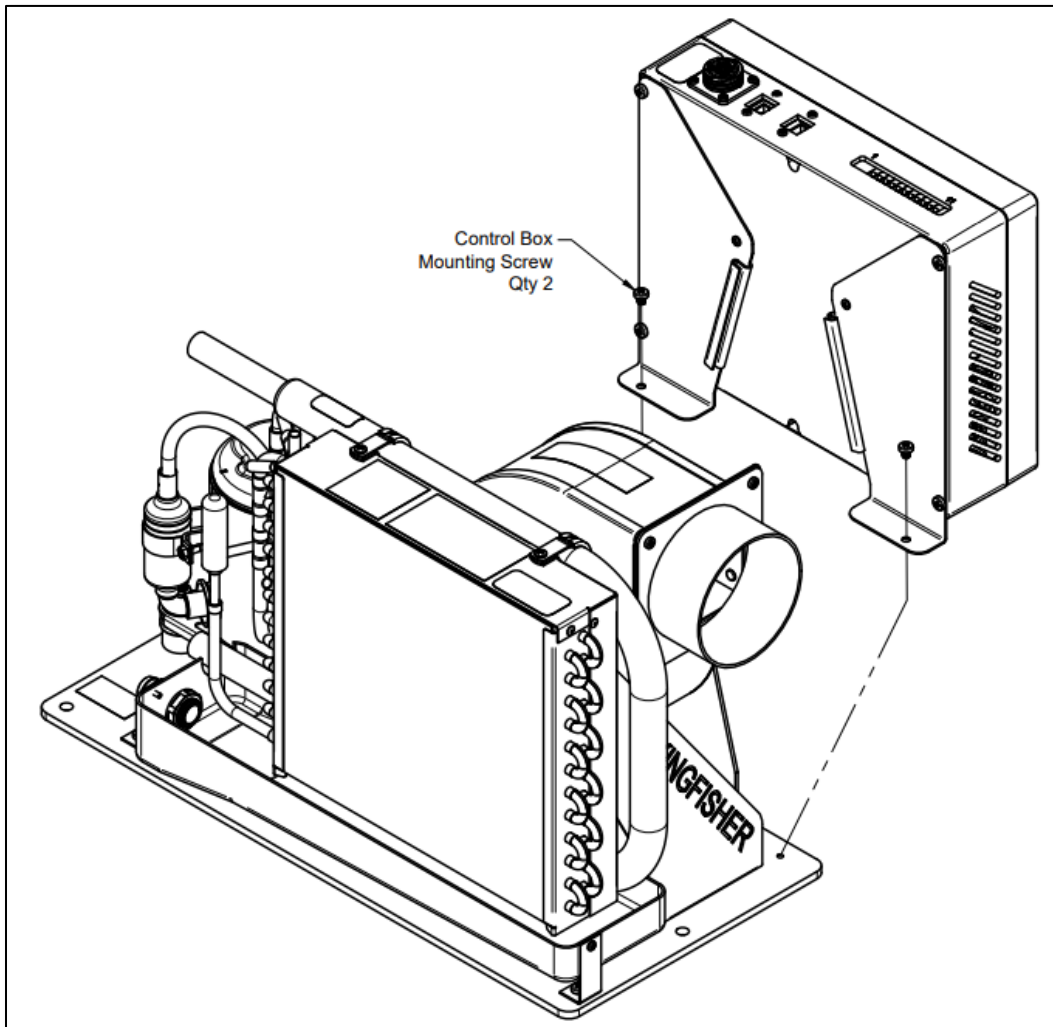
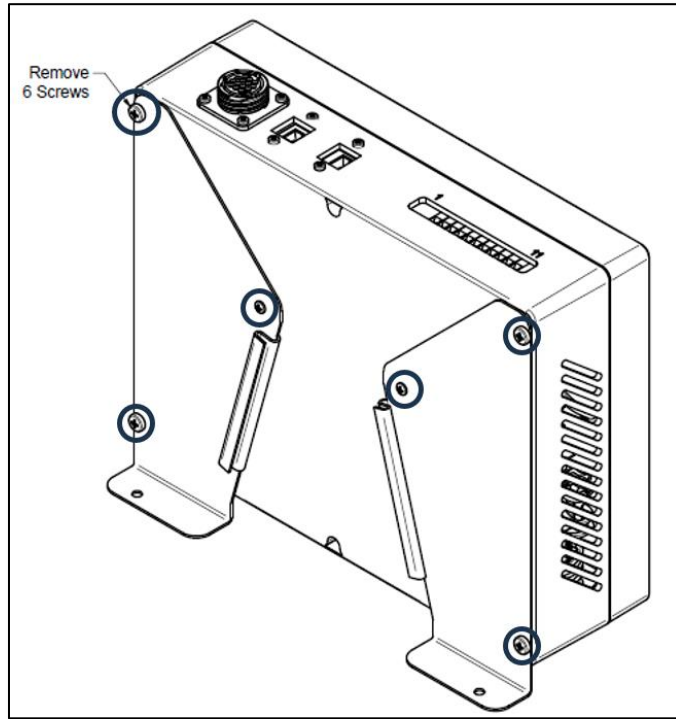
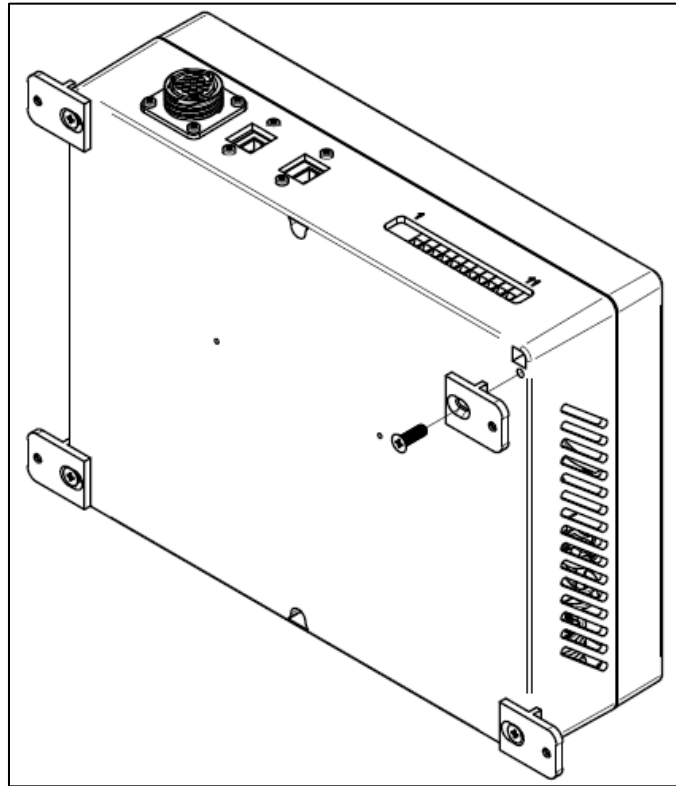


FIGURE 4-5: CONTROL PANEL REMOVAL



**FIGURE 4-6: CONTROL PANEL MOUNT REMOVAL**



**FIGURE 4-7: TAB INSTALLATION**



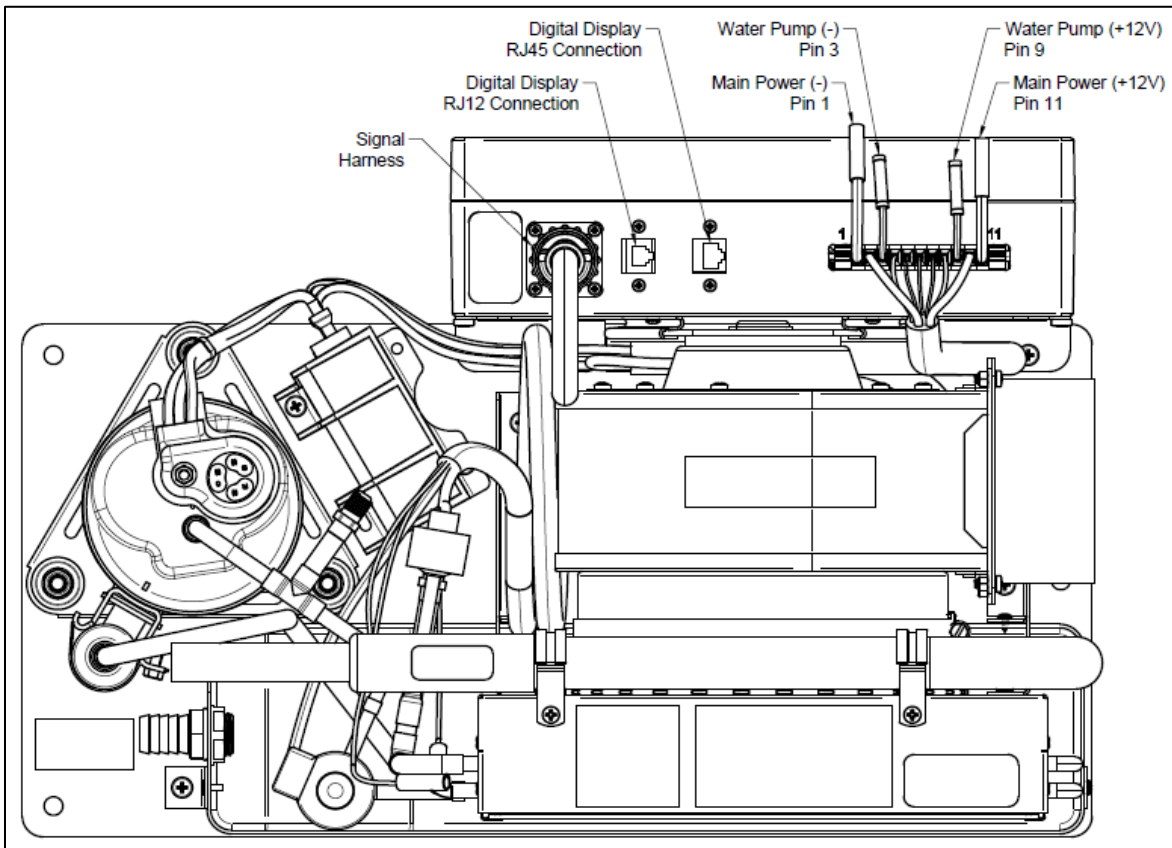
When the control panel is mounted, the electrical connections must be completed. If the two factory cable bundles were disconnected during control panel installation, reconnect them by following the instructions in **Section 7.0**. There are two sets of red and black wire leads coming out of the panel (see **Figure 4-8**).

- Crimp your main battery (12V) power wires to the leads marked #1 (negative) and #11 (positive).
- Crimp the 12V water pump power wires to the leads marked #3 (negative) and #9 (positive).

Be sure to use appropriately sized wire for your installation application (see **Table 4-1**). Connect the supplied RJ12 and RJ45 cables to the appropriate ports on the control panel and route the free end of the wires to the location chosen for display panel installation (see **Section 4.4.8**).

**CAUTION**

Install a 30A circuit breaker to serve as a master power switch on the 12V Main Power circuit to the control panel.



**FIGURE 4-8: CONTROL PANEL WIRING**



**NOTE**

Comply with the ABYC wire-size voltage drop table below.

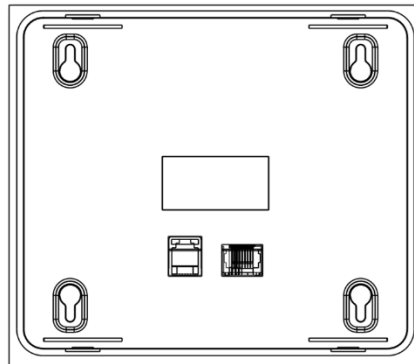
**TABLE 4-1: ABYC REFERENCE WIRING TABLE**

Length of conductor from source of current to device and back to source.							
Circuit	10 ft	15 ft	20 ft	25 ft	30 ft	40 ft	50 ft
Main Power (30 A)	10 AWG	10 AWG	10 AWG	10 AWG	10 AWG	8 AWG	8 AWG
Water Pump (5 A)	18 AWG	18 AWG	18 AWG	16 AWG	16 AWG	14 AWG	14 AWG

**4.4.8 DISPLAY PANEL INSTALLATION**

Your A/C includes a user display that controls its operation. The display panel houses sensitive temperature and humidity sensors, and will need to be installed in the same cabin/area where the cooling is desired. Identify a location that keeps it away from extreme heat sources (e.g., direct sunlight, engine-room bulkheads, etc.). Selection of this area is important, as you will also need to open a hole for the wires to pass through the bulkhead behind the unit. Typical installations can be made on the side of paneling, cabinets, risers, etc.

The display panel will function by connecting the included RJ12 and RJ45 cables between the control panel (**Figure 4-8**) and the back of the display (**Figure 4-9**).



**FIGURE 4-9: DISPLAY PANEL (REAR VIEW)**

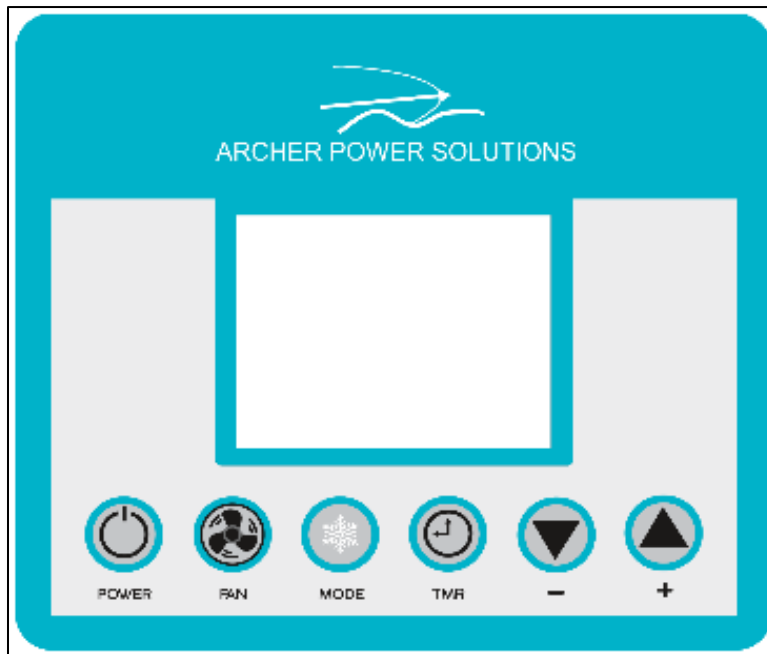
If choosing to simplify your installation and leave cables exposed, disregard the next steps. For a clean installation, once you identify the location, follow these steps:

1. Using the template for the display mount provided as the last page of this manual, place the template on the installation area and secure it with a tape.
2. Using the template, mark the installation locations for the two (2) mounting screws and the cable pass-thru hole.
3. Install the mounting screws.
4. Using a 1<sup>5</sup>/<sub>8</sub>" hole saw and a drill, cut through the bulkhead/wall to form the cable pass-thru.
5. Feed the RJ12 (left port) and RJ45 (right port) wires through the hole and clip to the back of the display case.
6. Hang the unit from the mounting screws.

## 5.0 OPERATION







### 5.1 DISPLAY PANEL

The buttons on the display panel can switch the unit on and off, increase/decrease the temperature, set the mode and timer, control the fan speed, etc.). The display panel is shown in **Figure 5-1**. **Table 5-1** describes the functionality of the display panel buttons.



**FIGURE 5-1: DISPLAY PANEL (FRONT VIEW)**

**TABLE 5-1: DISPLAY PANEL BUTTONS**

BUTTON	LABEL	FUNCTION
	POWER	Press and release to toggle between <b>ON</b> and <b>OFF</b> modes.
	FAN	Press to set a higher fan speed. If you continue to press, it will revert back to lowest setting.
	MODE	Press to cycle through the modes of operation. Mode sequence selections are <b>COOL</b> and <b>FAN</b> .
	TMR	Press to activate delay timer. At 15-minute increments, you can program runtime for the A/C unit up to eight (8) hours. After set time, the unit will shut itself off completely.
	+	Press and hold the <b>Up</b> -arrow button to increase the set point. Set point increases one degree (1°) each time the button is pressed.
	-	Press and hold the <b>Down</b> -arrow button to decrease the set point. Set point decreases one degree (1°) each time the button is pressed.

## 6.0 FINAL INSPECTION

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### 6.1 MARINE A/C CHECKS

Check the marine A/C unit with the following procedure:

1. Visually check for any damage that may have occurred during installation (e.g., appearance, inside pipes).
2. Check to see if the fan is in the proper angle for the ductwork.

### 6.2 PIPING SYSTEM CHECKS

Check the piping system with the following procedure:

1. Visually check to verify the system water circulation piping and valves are installed correctly.
2. Verify the air duct is not loose.
3. Ensure insulation and drains have been set up properly.
4. Ensure water hoses are clean to avoid A/C unit damage.
5. Verify all the opening valves of the system are open.
6. Verify all the 'off' valves are shut off.

### 6.3 ELECTRICAL WIRING CHECKS

Check electrical wiring with the following procedure:

1. Ensure the power source is 12 VDC as noted on the rating label and Kingfisher MA37X12B Installation and Operations Manual instruction, **Table 3-1**.
2. Ensure electricity is supplied to the control box through a 30A circuit breaker and:
  - a. 12V battery supply wires are connected correctly,
  - b. 12V water pump power wires are connected correctly,
  - c. all terminals are secure.

### 6.4 MAINTENANCE

1. Before each use, regularly check the incoming seawater filter for any blockage.
2. Every season, clean/vacuum the intake air filter (
3. **Figure 3-1**). Filter can be washed with soap if needed.
4. At the end of the season, we recommend you completely drain the system. This can be achieved by closing the seacock for the A/C unit and removing the raw water intake hose at the water filter. Once the hose is completely drained, secure the hose back on.

## 7.0 ADVANCED INSTALLATION & WIRING DIAGRAM

### 7.1 DISCONNECTING THE CONTROL PANEL

Your control panel comes prewired to the A/C unit from the factory. To electrically disconnect the control panel from the unit, remove the sensor harness by rotating the connector nut counterclockwise until the connector body is free. Remove both RJ12 and RJ45 cables, if previously connected (see **Figure 4-8**). Using a Phillips-head screwdriver, loosen the six (6) screws to remove the control panel cover (see **Figure 7-1**).

#### CAUTION

The electronics inside the control panel are sensitive to electrostatic discharge and can be damaged. Properly ground yourself before removing the cover.

#### CAUTION

The electronics inside the control panel are sensitive to foreign object debris. Take the necessary precautions to prevent debris from getting inside the control panel when the cover is off.

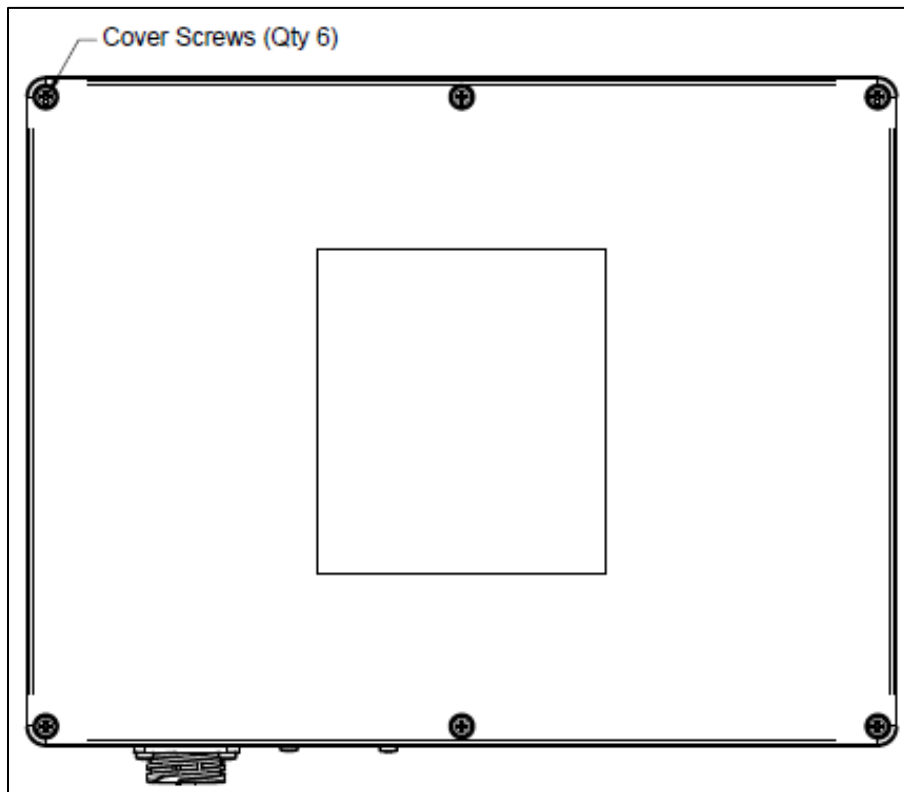
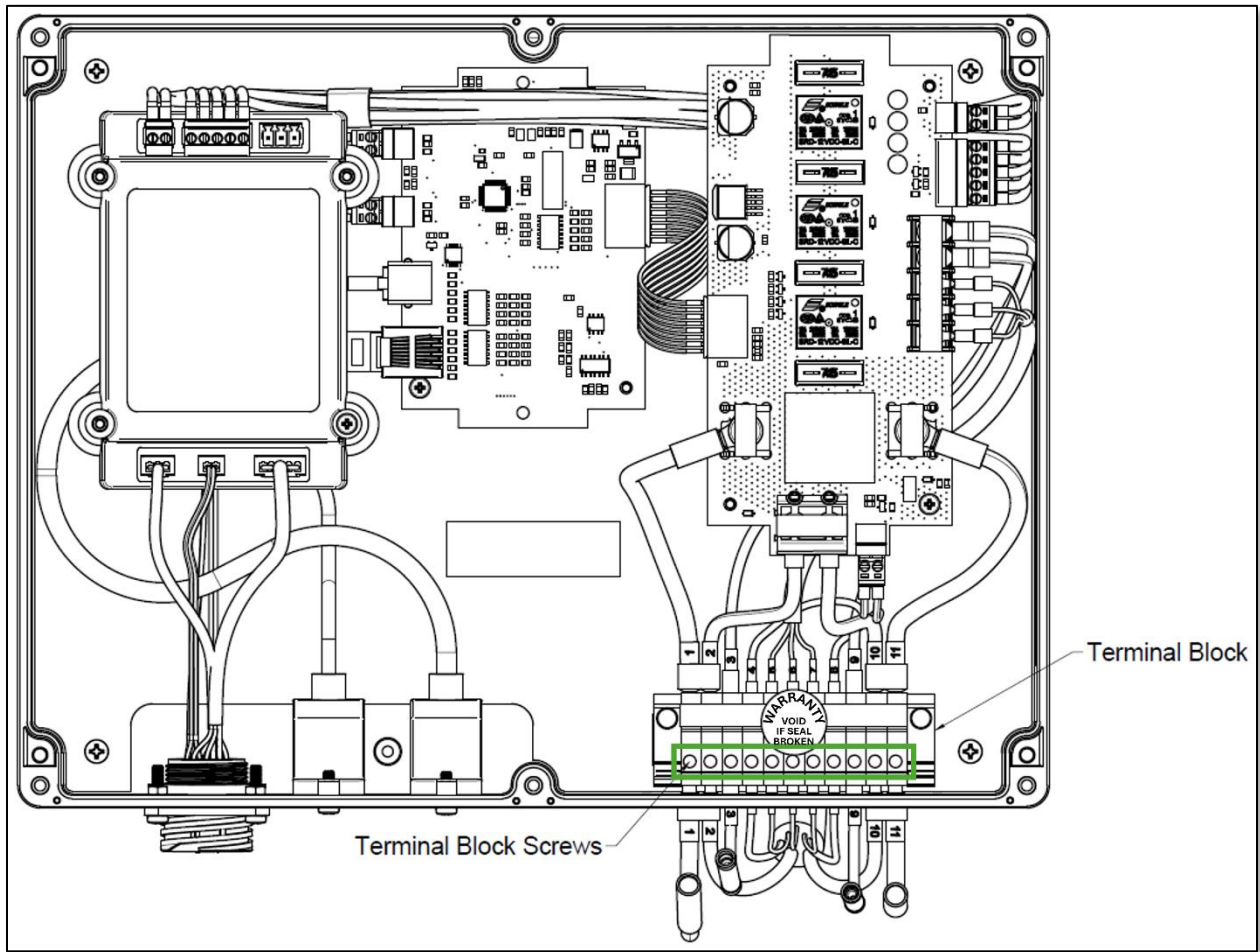


FIGURE 7-1: CONTROL PANEL COVER SCREWS

Inside the control panel, a gray terminal block serves as the connection point for the main power, water pump power, and compressor/blower wiring harness (see **Figure 7-2**). Using a small, flat-blade screwdriver, loosen the terminal block screws closest to the side of the control panel to disconnect these wires. The control panel is now free to relocate within an approximate four-foot radius of the A/C unit.

**CAUTION**

Removing or tampering with the wire connections other than those indicated will void the warranty!



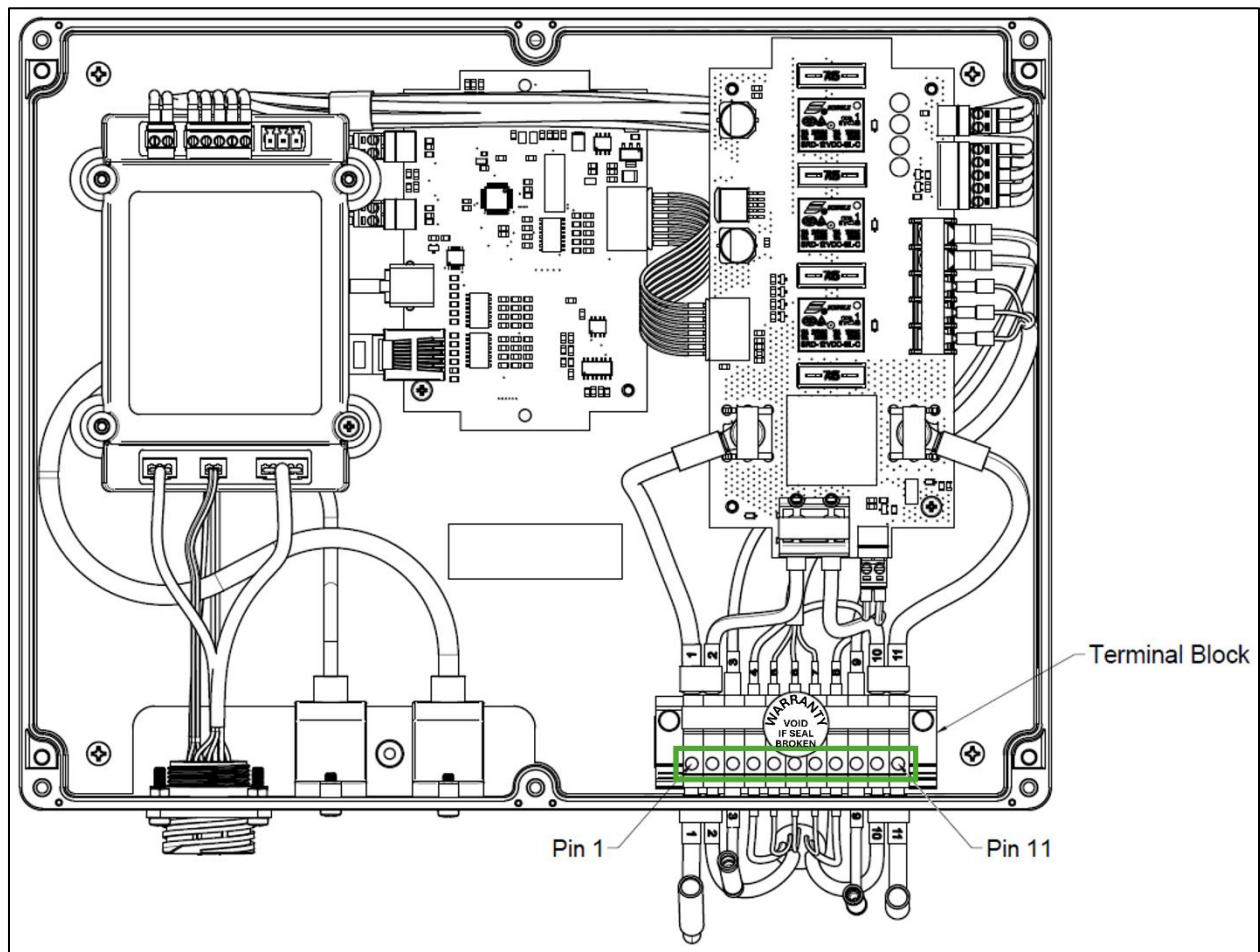
**FIGURE 7-2: CONTROL PANEL TERMINAL BLOCK LOCATION**

## 7.2 RECONNECTING THE CONTROL PANEL

To reconnect the control panel to the A/C unit, insert the sensor harness connector and rotate the locking nut clockwise until a detent is felt. Connect the RJ12 and RJ45 cables, ensuring the retention latches snap into place. Connect the power and compressor/blower wiring harness to the control panel terminal block using a small, flat-blade screwdriver. Be sure to match the numeric labels on the wires to their corresponding pin-out/location (see **Figure 7-3**). Reinstall the control panel cover using the six (6) screws.

**CAUTION**

Failure to properly install the wires to their proper locations will result in equipment damage and will void the warranty!




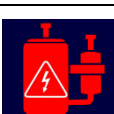








**FIGURE 7-3: CONTROL PANEL TERMINAL BLOCK PIN-OUT**

## 8.0 TROUBLESHOOTING

The printed circuit board (PCB) controller will analyze any error(s) that may occur during system operation and will take action according to the error type. For critical errors, a warning alarm will sound and an error code will flash on the display. Error icons are shown in **Table 8-1**.

**TABLE 8-1: ERROR ICONS**

ERROR ICONS	FAULT	RESOLUTION
	Compressor controller overheating	Turn off system. Check system voltage at main circuit breaker. Check wire connections between relay board and compressor controller.
	Compressor and controller connectivity loss	Turn off system. Check 3-wire connection (Yellow, Blue, White) between compressor and compressor controller. Check D and T terminal connections between compressor and controller.
	Compressor overloaded	Check D & T port terminals for wire connections between relay board and compressor driver. Check water flow through the intake/outtake. Check air flow through the evaporator fins.
	Compressor voltage error: compressor receiving over or under voltage	Turn off system. Check voltage at the batteries. Operating voltage is between 9.6V to 15V. Check voltage at relay board terminals.
	Compressor short circuit	Turn off system. Check D port connection between relay board and compressor driver. Check V, U, W wire connections between compressor driver and compressor.
	De-ice function is on (to prevent icing on the evaporator)	Sensor on the evaporator has kicked the system into safe mode to compensate for possible ice buildup on the evaporator. Once it is cleared, the system will return to normal function.
	Relay board overheating	Turn off system. Check relay board wiring at the terminals: make sure there are no loose wires or disconnects.
	Main controller overheating	Turn off system. Check wire connections between main controller and relay board.
	Possible refrigerant leak	Check amperage for the unit. If amp readings are over the maximum rating, there is a possible refrigerant leak. Contact Archer Power Solutions for next steps (see page A-4).
	Water pump error	Check water flow/discharge through the hull. Make sure power is supplied at the pump (+ and – terminals). If the pump is not working, replace the pump.



## **Appendix A: LIMITED PRODUCT WARRANTY**

Archer Power Solutions, Inc. (“APS”) expressly warrants to the original purchaser that, for a period of one (1) year from the date of sale the Kingfisher MA37X12B (the “Product”) will be reasonably free of defects in materials and workmanship and that when properly handled, will conform, within accepted tolerance, to applicable manufacturing specifications. This Limited Product Warranty (Limited Warranty) only applies to APS’s Products which are used, stored, handled, and installed in the manner recommended by APS.

APS will, at its option, repair or replace Product without charge, or refund the cost of the Product, if the Product fails or does not perform as warranted solely due to a manufacturing defect within the warranty period, subject to the exclusions set forth in this Limited Warranty. Repair or replacement during this one (1) year warranty shall include reasonable labor charges necessary to repair or replace the defective product, but shall not include the costs associated with removal, repair or replacement of fixtures, hardware or decorative treatments, including, but not limited to floor, wall, or ceiling treatments. During the entire one (1) year warranty, APS’s obligation as to repair or replacement shall further be limited to repair or replacement with the models of the Product that are available at the time of the repair or replacement, and shall be limited to the repair or replacement of only the specific Product that fails due to a manufacturing defect. Any repaired or replaced product shall also remain subject to the original one (1) year warranty from the date of the original purchase from APS, and any repair or replacement shall not extend the original warranty period in any manner or start a new warranty period.

### **Disclaimer of Warranties**

APS’s Products must be stored, handled, installed, used and maintained in accordance with instructions provided by APS, and this Limited Warranty is conditioned upon compliance with all such instructions. Copies of the APS’s Installation and Operations Manual are available from APS at the address listed below. You may also obtain this/these materials by contacting APS at 240-845-7102 or on APS’s website at <https://www.archerpowersolutions.com/>.

This Limited Warranty does not cover defects caused by:

1. non-compliance with APS’s Installation and Operations Manual;
2. improper storage, installation, handling, use and/or fabrication of the Product;
3. damage not resulting from manufacturing defects that occur while the Product is in the customer’s possession;
4. unreasonable or unintended use of Product; and/or
5. minor conditions such as stains or scratches.





This Limited Warranty shall further not apply to:

1. failures resulting from abuse, misuse, accident, fire, or submergence.
2. any part manufactured by APS, which shall have been altered so as to impair its original characteristics.
3. any parts that fail as a result of misuse, improper application, or improper installation.
4. items not manufactured by APS (i.e., items that are purchased from another manufacturer and supplied as received by APS, without alteration or modification, except as any part of an APS-manufactured unit or component).
5. components or parts used by, or applied by the purchaser, as an integral part of products not manufactured by APS.
6. labor resulting from difficult access to an APS product. The original installer or Original Equipment Manufacturer (OEM) is responsible for accessibility of unit.
7. freight damage.
8. pumps that have been run dry, are water damaged.
9. pumps with cracked heads.
10. pump seals that are not covered.
11. liquid line filter dryers are not covered.
12. blowers with water damage.
13. logic boards with water damage.
14. display heads with water damage.
15. dirty condensers and/or evaporators.
16. failures due to improper winterization.
17. unit damage as a result of improper return packaging.
18. replacement of refrigerant with substitute.
19. environmental and/or recovery fees.
20. welding and nitrogen fees.
21. travel costs (included in the hourly labor allowances and should not be billed as a separate item without preapproval from the factory).

Installation and application of APS components is not warranted by APS because APS has no control or authority over the selection, location, application, or installation of these components.

Any information or suggestion by APS with respect to the Products concerning applications, specifications or compliance with codes and standards is provided solely for your convenient reference and are made without any representation as to accuracy or suitability. You must verify and test the suitability of any information with respect to the Products for your specific application.



THE WARRANTIES SET FORTH HEREIN ARE THE ONLY WARRANTIES MADE BY APS IN CONNECTION WITH THESE PRODUCTS. APS CANNOT AND DOES NOT MAKE ANY IMPLIED OR EXPRESS WARRANTIES WITH RESPECT TO THE PRODUCT AND DISCLAIMS ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. PRODUCTS SOLD BY APS ARE SOLD ONLY TO THE SPECIFICATIONS SPECIFICALLY SET FORTH BY APS IN WRITING. OTHER THAN THE LIMITED WARRANTY SET FORTH HEREIN, APS MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. APS'S SOLE OBLIGATION UNDER THIS WARRANTY SHALL BE REPAIR OR REPLACEMENT OF NON-CONFORMING PRODUCTS, OR AT THE OPTION OF APS, RETURN OF THE PRODUCT AND A REFUND OF THE PURCHASE PRICE. BUYER ASSUMES ALL RISK WHATSOEVER AS TO THE RESULT OF THE USE OF THE PRODUCTS PURCHASED, WHETHER USED SINGULARLY OR IN COMBINATION WITH ANY OTHER PRODUCTS OR SUBSTANCES.

### **Limitation of Liability**

NO CLAIM BY THE BUYER/OWNER OF ANY KIND, INCLUDING CLAIMS FOR INDEMNIFICATION, SHALL BE GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCTS IN RESPECT TO WHICH DAMAGES ARE CLAIMED. IN NO EVENT SHALL APS BE LIABLE TO BUYER/OWNER IN TORT, CONTRACT OR OTHERWISE, FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, RELIANCE, STATUTORY, SPECIAL, PUNITIVE OR EXEMPLARY DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, LOSS OF USE, LOSS OF TIME, LOSS OF REVENUES, INCONVENIENCE, LOSS BUSINESS OPPORTUNITIES, DAMAGE TO GOOD WILL OR REPUTATION, OR LOSS OF DATA, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR SUCH DAMAGES COULD HAVE BEEN REASONABLY FORESEEN, IN CONNECTION WITH, ARISING OUT OF, OR AS A RESULT OF, THE SALE, DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS SOLD HEREUNDER, OR FOR ANY LIABILITY OF BUYER TO ANY THIRD PARTY WITH RESPECT THERETO.

### **Warranty Service**

You may obtain coverage under this Limited Warranty by providing APS with proof of original purchase. For service under this Limited Warranty, you must notify the APS in writing, providing your name, address, a description of the product involved, and the nature of the defect. A return authorization number (RAN) must be obtained from APS at the contact information below before you return any Product for repair.

Only after you obtain a RAN, may you send the Product back to APS to have the repair work done. If the failure or defect of the Product is covered under this Limited Warranty, APS will pay shipping both ways and APS will make every effort to return the equipment to the customer within three weeks after receiving the Product.



### **Contact Information**

Any question concerning this warranty should be addressed to:

Archer Power Solutions, Inc.  
10739 Tucker Street, Suite 243  
Beltsville, MD 20705

Phone: 240-845-7102

Email: [office@archerpowersolutions.com](mailto:office@archerpowersolutions.com)

Website: [www.archerpowersolutions.com](http://www.archerpowersolutions.com)

## Appendix B: ABBREVIATIONS

ABBREVIATION	DEFINITION
A	amperes
A/C	air conditioner
ABYC	American Boat and Yacht Council
Ah	amperes per hour
APS	Archer Power Solutions, Inc.
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
AWG	American Wire Gauge
BLDC	brushless direct current electric motor
BTUh	British thermal units per hour
CFM	cubic feet per minute
CNG	compressed natural gas
dB	decibels
DC	direct current
g	grams
IAW	in accordance with
kW	kilowatts
LED	light-emitting diode
LPG	liquified petroleum gas
m	meters
m <sup>3</sup> /h	cubic meters per hour
mm	millimeters
OEM	Original Equipment Manufacturer
PCB	printed circuit board
PPE	personal protective equipment
RAN	Return Authorization Number
UL	Underwriters Laboratories
US	United States
V	version
VDC	volts direct current

**Appendix C: SCREEN MOUNTING TEMPLATE**

