



## MES Series Self Contained Installation Instructions

WARNING: ELECTRICAL SHOCK HAZARD. Failure to follow these warnings could result in death or serious injury.

- Before carrying out any work on electrically operated components, make sure they are disconnected from the power supply.
- Before installing the MES Series, disconnect all connections to the battery.
- Make sure all power connections are tight and secure. Important! When connecting power terminals inside the compressor box unit you MUST torque the power post to 11 ft-lb (15.82 Nm).
- All electrical connections should be made by a trained technician.
- CAUTION: PERSONAL INJURY HAZARD. Incorrect installation of the MES Series may place the safety of the user at risk. Failure to obey this caution could result in minor or moderate injury.

NOTICE: The MES Series should be installed by a qualified technician.

NOTICE: The connection to the boats electrical system should be protected by a fuse recommended for your system. Please visit [www.blueseas.com](http://www.blueseas.com) and click on Circuit Wizard for guidance on properly sizing wires and breakers.

NOTICE: The battery must be capable of supplying the required current and voltage.

- When handling our products, always use protective gloves and protective footwear. The product is made from mostly stainless steel and can have sharp edges that can cut you. The units are also very heavy, so lift with 2 people- never alone, and make sure before lifting that ALL screws are tight when securing the cover. 2 of the screws in the middle on the long sides and 1 on the backside keep the cover from sliding off. It's very important that they are put in and secured before moving. When installing cover screws, make sure unit is level and make sure holes are aligned. Do not force screws. They are stainless steel and will seize.
- This unit is pre charged with R134a refrigerant and PVE oil.
- If oil leaves the unit during future recoveries, you may add the amount that left the system with more PVE oil. Call us for info on the viscosity. Never add PAG oil or leak dyes that are not compatible with PVE oil. Call us and we can recommend a suitable leak dye. PAG or PAG electric oil will ruin the compressor and void your warranty.
- **Do not reverse polarity.** Damage will result and void your warranty.

Not Included:

Main power cable and circuit breaker/fuse and various connectors . Please see Blue Sea's circuit wizard for assistance on proper sizing.

<http://circuitwizard.blueseas.com>

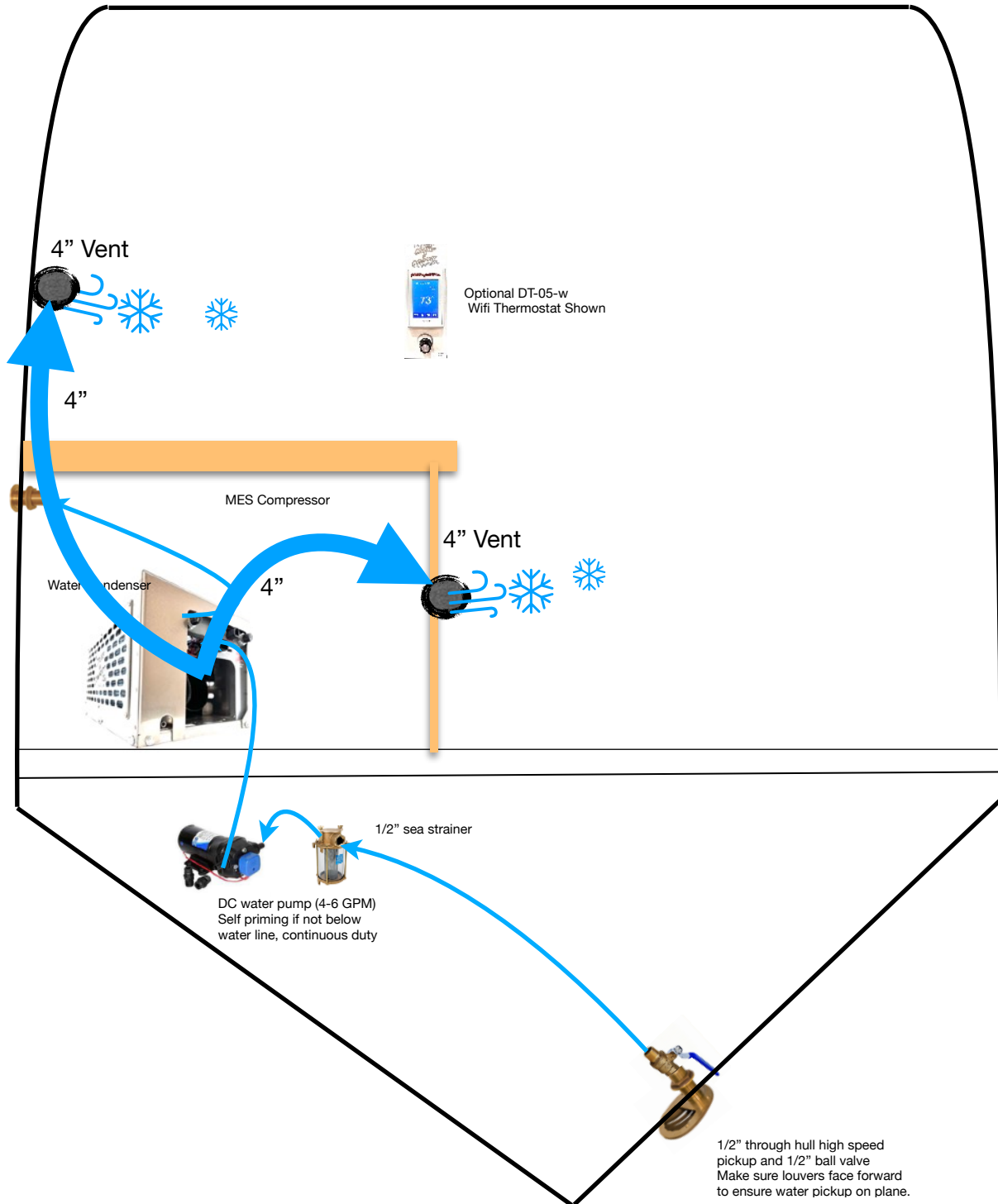
- Plumbing kit for connecting water condenser (available for purchase on our site) kit includes water pump hoses water pickup etc.
- Various mounting hardware to mount components
- Vent tubing

DO NOT LIFT UNIT BY COVER AND DO NOT OPERATE UNIT WITOUT ALL LINES AND COVER IN PLACE.

1. Locate the area where the unit will be mounted and double check that there are NO obstructions. Make sure that the location allows for the cold air to return to the units evaporator.
2. Install the manual control or thermostat in a convenient location. Plug Control Unit connector into front of air conditioner marked control .
3. Connect 3/8" id clear vinyl hose to the 2 condensation connectors on front and back of unit. Page #4
4. Connect ball valve and male threaded nipple to thru-hull pickup GROCO 34 STH500W 1/2". Use teflon tape on fittings to ensure a water tight seal. Page #3
5. Find a location under the hull in the transom area to mount the thru- hull pickup. Make sure the fitting has the grate area facing forward toward the bow and that the fitting will always be in the water when the boat is underway. Note: Before drilling be certain there are no obstructions. Install and seal with marine underwater sealant/glue. Page #3
6. Find a suitable location for the thru-hull water dump. Install and seal with marine underwater sealant/glue. Remember to install at least 1 foot above the water line. Thru-hull water dump. Page #3
7. Find a suitable location to install the water pump (under the water line is recommended). Attach strainer to water pump per manufacture instructions page #5 . Run the 14 gauge power wires from the unit to the water pump. The (RED) wire is the positive and the (yellow) is the negative power to the pump. \* MES 48 L units will be shipped with a 48 volt to 12 volt DC/DC down converter to power a 12 volt pump. These pump wires should be crimped with waterproof connectors to the pump connector. Connect the pump connector to A/C unit. The water pump is required to flow a minimum of 4-6 gallons per minute. The current draw of the pump should not exceed 7 amps.
8. Connect the 1/2" hose from the water pump to the "water in" on the A/C unit and double clamp each end. Page #3
9. Connect a 1/2 in. hose from the thru-hull water dump fitting to the "water out" fitting on the A/C unit and double clamp each end. Page #3
10. Run the primary power wires from the A/C unit to the battery. Remember to properly size wire and fuse for appropriate load . Page #5
11. Connect A/C Control unit. Page #5
12. Connect the power and ground connections to the (make sure the power switch is in the off position).
13. Connect the main power negative (-)wire (4 gauge) to the battery using ring terminal \*. Page #5
14. Connect the main power positive (+) wire (4 gauge) to the fuse that you connected to the battery. Page #5
15. 48 volt units see page #6
16. Connect 4" insulated vent hose to unit and run hose to area that is to be cooled. Remember for best results aim the vent toward the person to be cooled. Mount vent or ducting assembly and connect hose be sure to use non conductive hose with a non conductive fastener. For best results, make sure that air from the cooled area can be returned with ease to the A/C air inlet on the front of the unit. The best way of doing this is to mount the unit in the area that is being cooled . By recycling cool air, unit will provide coldest air possible. \*Do not mount this unit in engine area or where exhaust and gas fumes can be exposed to this unit serious injury or death will result!

# Typical Marine Installation

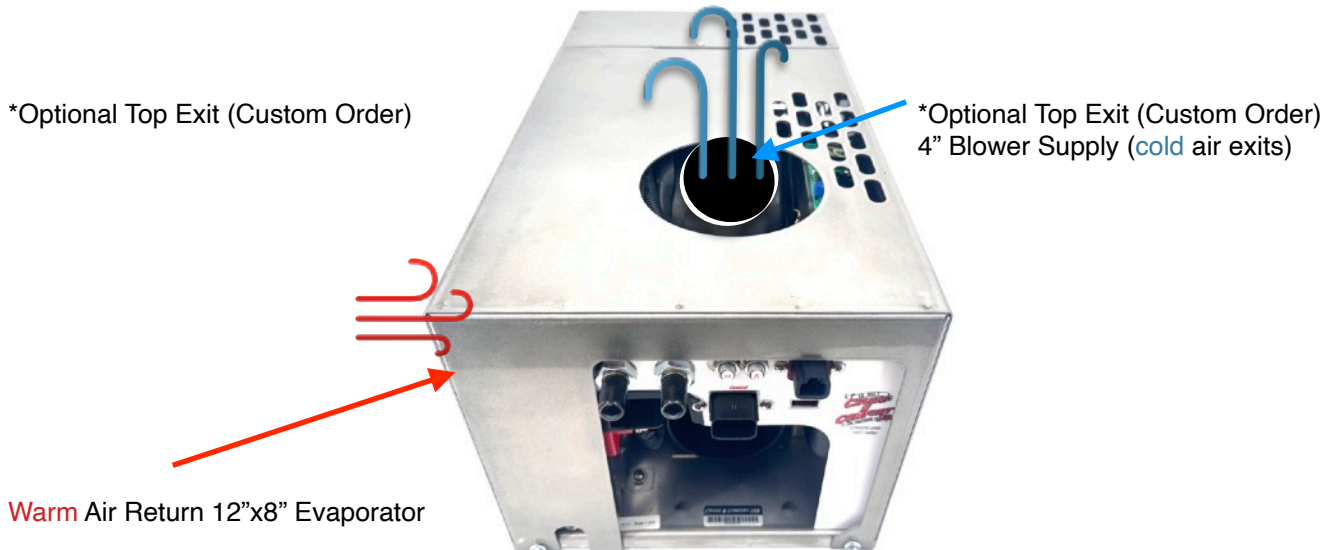
## Water condenser connections



### Vent / Ducting Tips:

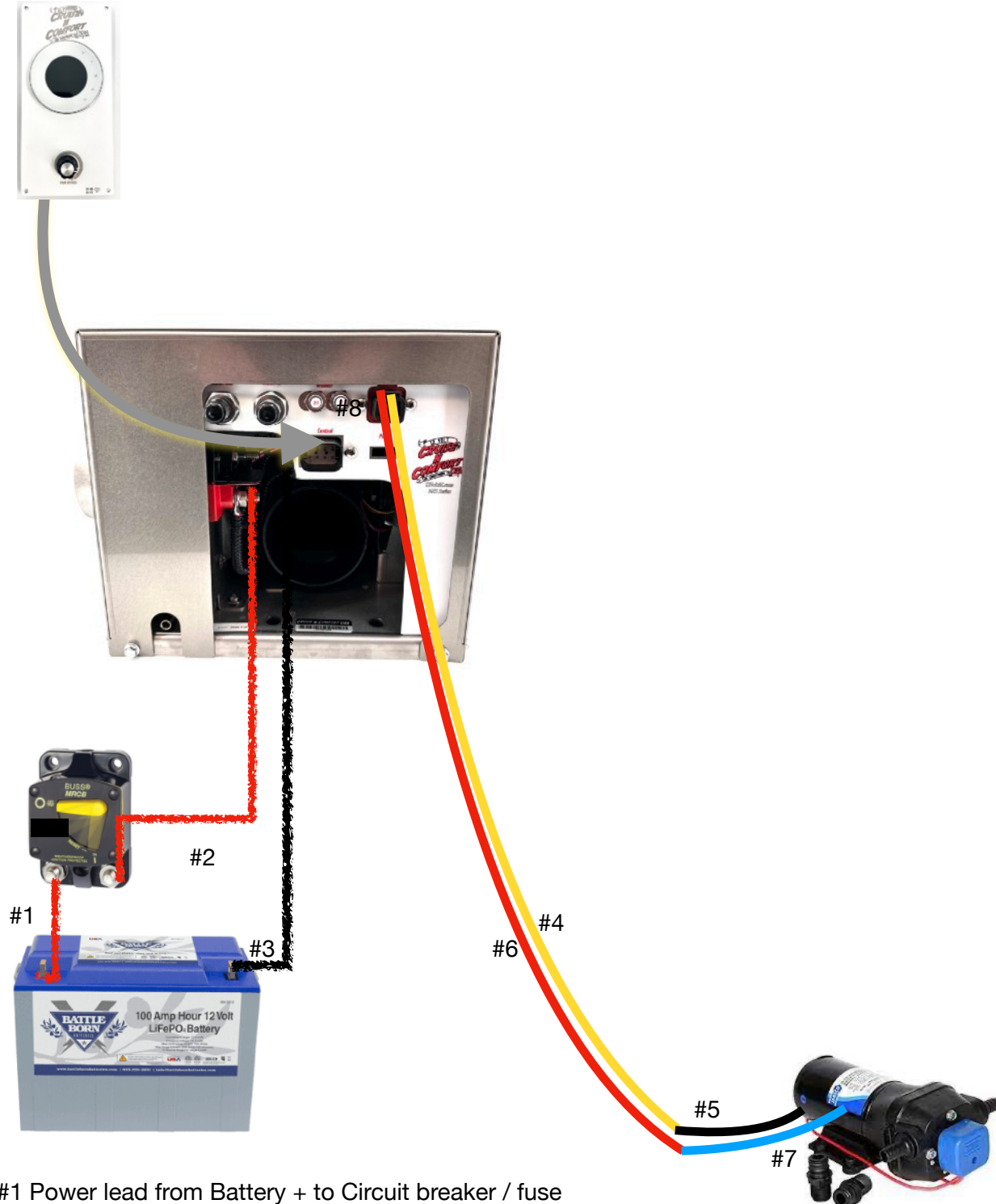
- Do not reduce vent sizes or ducting- or have long runs of ducting.
- It is a good idea to let the air do the traveling.
- Always use insulated ducting when exposed to air- otherwise tubing can sweat and condense water.
- Always allow air to return into the intake easy and let it flow out easy.
- If the unit is installed into a cabinet, then a corresponding hole needs to be cut to let return air into the unit. Short ducting runs of 5 feet each and QTY. 2 - 4" vents are key to success.
- We have Y splitters that attach to the blower output. See our online store for details
- Isolate compressor/evaporator unit from hot components like hot water tanks and electronic equipment.

### Front Exit (Standard Order)



# Electrical Connection Diagram 12/24 volt models

Thermostat or manual control

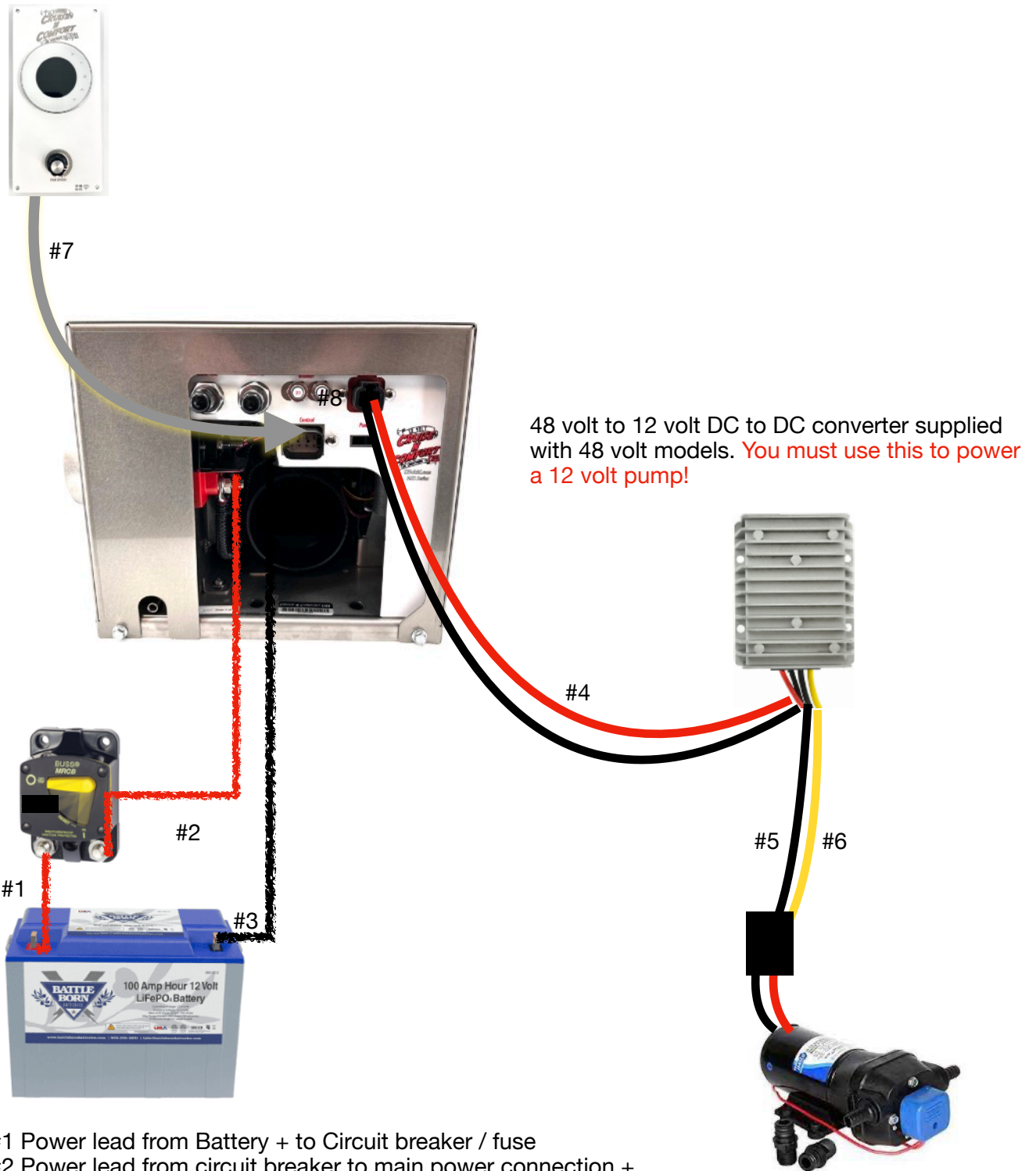


- #1 Power lead from Battery + to Circuit breaker / fuse
- #2 Power lead from circuit breaker to main power connection +
- #3 Power lead from battery- to main power terminal -
- #4 Power connection - from water pump out to black - on water pump #5
- #6 Power connection + from water pump out to blue + on water pump #7
- \* 48 volt systems will have a 48 volt to 12 volt DC to DC
- #8 Plug to thermostat / manual control

\*When connecting main power terminals inside the compressor box unit you MUST torque the power post to 11 ft lb (15.82 Nm).

# Electrical Connection Diagram 48 Volt Systems

Thermostat or manual control



#1 Power lead from Battery + to Circuit breaker / fuse

#2 Power lead from circuit breaker to main power connection +

#3 Power lead from battery- to main power terminal -

#4 Power connection from water pump out to DC to DC Red / Black input plug

#5 Power connection 12 volt - from DC to DC to water pump black -

#6 Power connection 12 volt + from DC to DC to water pump red +

#7 Plug to thermostat / manual control

\*When connecting main power terminals inside the compressor box unit you MUST torque the power post to 11 ft lb (15.82 Nm).

**\*Main power cable and circuit breaker/fuse not included. Please see Blue Sea's circuit wizard for assistance on proper sizing for your breaker and wiring. <http://circuitwizard.blueseas.com> . This calculator will help you determine the appropriate wire size and breaker/ fuse size for your application. The current consumption for the units are listed below. DOES NOT INCLUDE WATER PUMP**

- MES 12s 12 volts @ 35 amps**
- MES 24s 24 volts @ 25 amps**
- MES 12L 12 volts @ 45 amps**
- MES 24L 24 volts @ 28 amps**

MES Unit dimensions

