

# Electrical Guide

HT-500 / LT-500



BIO-RESPONSE  
SOLUTIONS



AQUAMATION

*Modified: 01/14/20*

## Electrical Guide

HT-500 & LT-500

The HT-500 and LT-500 are made to order based on the building specifications provided to us.

### Standard System Configurations Available:

1. 208/220 v.a.c. single-phase, 50-60 hz
2. 240 v.a.c. single-phase
3. 208/220 v.a.c., 3-phase
4. 380 v.a.c., 3-phase, 50 hz
5. 460 v.a.c., 3-Phase
6. 600 v.a.c., 3-Phase
7. Any custom variations are possible. Please inquire.

### STEP 1: PRE-INSTALLATION SITE VISIT

#### 1. **REQUIRED:** MEASURE VOLTAGE

- a. Before we will begin building the panel, we require that the actual voltage be measured with a meter by the electrician or customer.
- b. We have had situations where the machine was ordered based on the panel's marking, but the actual voltage output was significantly different. This caused significant problems to the customers. Fuses can be blown, heaters blown, or heaters underperforming depending on which direction the voltage is off.

#### 2. **RECOMMENDED:** DETERMINE FACILITY'S ELECTRICAL NEEDS

- a. Our customer needs to inform us of any other equipment they will be operating (or plans for adding additional systems in the future) so we can give advice and make recommendations. Many customers also have a convection oven, a remains processor/ cremulator, refrigeration unit, and a water heater.
- b. We recommend a water heater provide our equipment with hot water; however, we recommend this be a propane or natural gas unit, if possible, to avoid heavy electricity usage during peak hours (which is billed at a higher rate for many cities). This topic is covered in the Plumbing Guide.
- c. All units come shipped with an Ethernet connection port on the left side of the control panel. It is highly recommended that the customer uses this connection to allow us to give them our full range of support capability should a troubleshooting need arise.

#### 3. **RECOMMENDED:** DISCUSS PLACEMENT OF SYSTEM

- a. By the time the electrician arrives to wire the panel, the customer and/or rigging team will have already set the unit into place and the fork truck will be gone. The customer needs to discuss their planned placement with you. Often times, the plumbing/drain location is the determining factor for placement.
- b. Please refer to attached drawings. These systems have a right-mounted control cabinet that requires 3' of space to the right of the unit for opening (by code). The touch screen HMI also faces the right.

- c. If the customer does not have adequate space to install the unit to code (with room to open the panel door), please let us know and we can build a special unit with a free standing front-opening control panel to sit on an adjacent wall.
- d. **REQUIRED:** RETURN [Electrical Verification Sheet.pdf](#)
- e. This form (attached) must be returned to us before we will start building the panel.
- f. If the customer does not provide us with this information upon order, the quoted delivery time for their unit will be delayed.
- g. For convenience, we will also accept this information other ways, if it is in writing (example: you can text or email us a photo of the signed form, provided the photo is legible. Text to 317-987-9099.)



## STEP 2: INSTALLATION

The unit will arrive on a wrapped skid. Peripheral equipment will arrive on a separate smaller skid. You will require 8' forks to lift the unit. The fork truck must have a 10,000 pound rating to lift the unit. A smaller fork truck may not be stable and you could drop the unit. The heavy end is the door end of the unit (right side of this photo); this is the end from which the unit is to be lifted by the fork truck. Use extreme care when cutting away the wrap that you don't cut any of the wires or hoses.



The skid below is shown with the Dry Cooler (HT unit only), the Thermtec BB1-T Processor (optional, you can purchase this directly from Thermtec or through Bio-Response Solutions; same price), and the lift table track and tray (on the other side of the skid). This skid is relatively light and can be lifted with any fork truck with 6' forks.

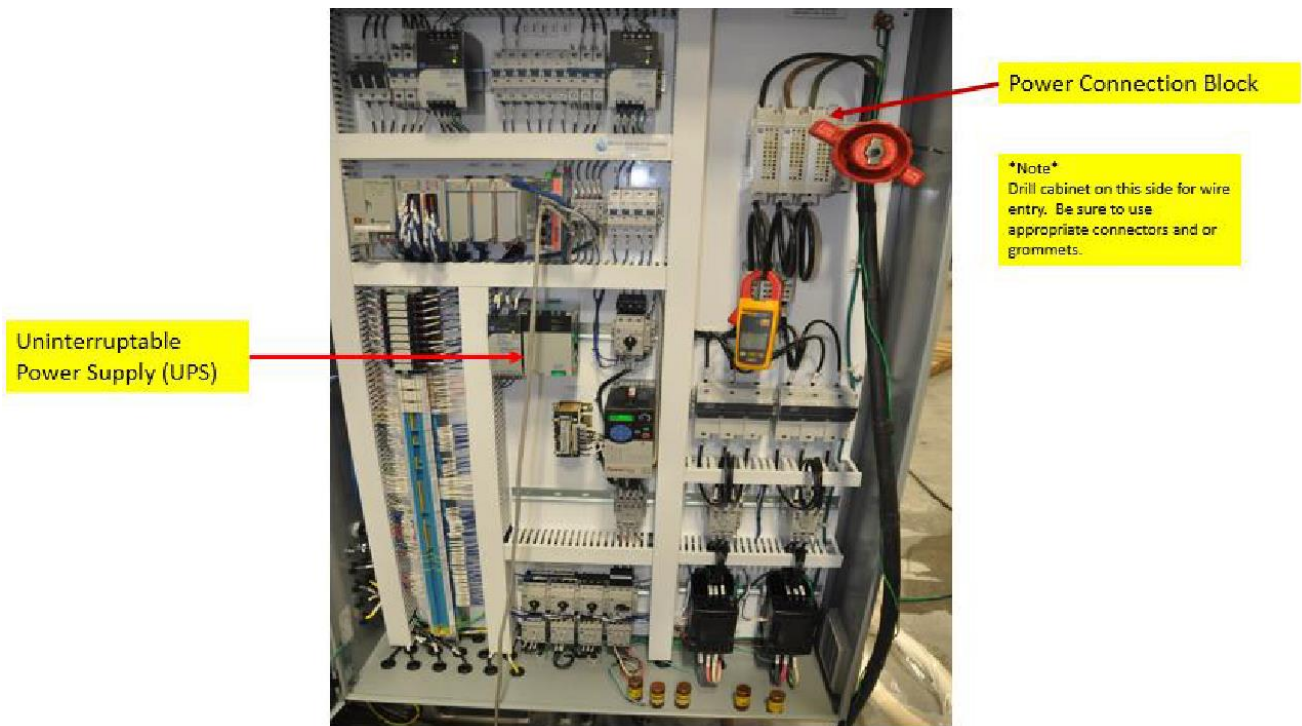


#### Power Connection

- a. Verify wire size is correct for amperage and breaker.
- b. It is imperative to use the proper connectors when connecting power to the panel.
- c. **WARNING:** On 3-Phase machines- This system has a mixer and the HT machine has pumps and the Dry Cooler Fan. Rotation must be checked to assure that the wires are phased correctly. The Dry cooler blows through the radiator (not sucking through it). If phase is reversed, the mixer and pumps will run backwards and this equipment will not function properly. Please contact us for assistance with checking correct phase.

#### Ethernet Connection

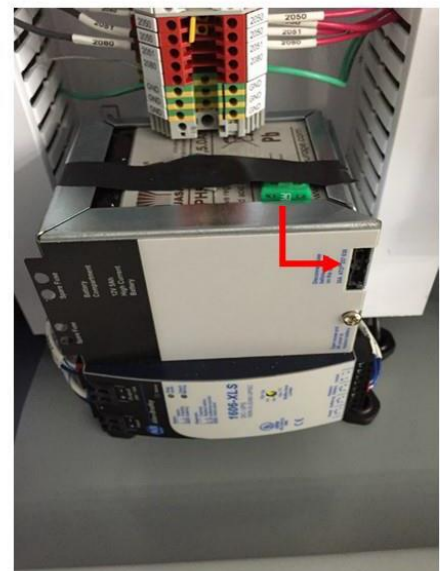
- a. All units come shipped with an Ethernet connection port on the left side of the control panel. It is highly recommended that the customer uses this connection to allow us to give you full range of support should the need arise.



Power Connection



UPS



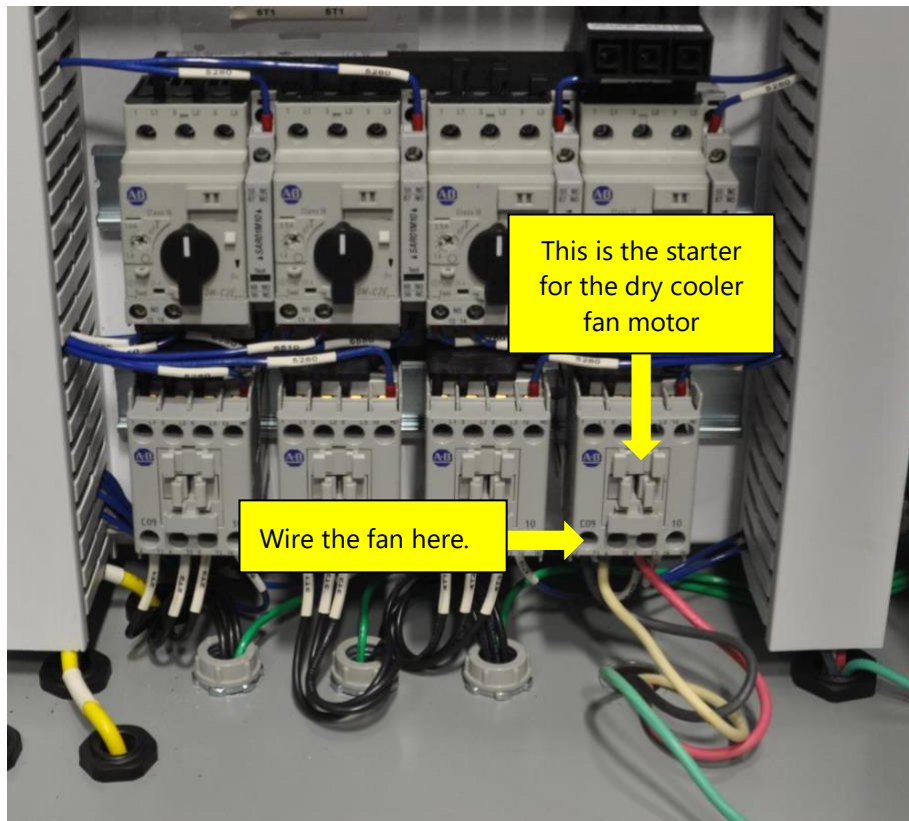
The unit is shipped with the fuse removed from the UPS (uninterruptable power supply). We do this to prevent battery drain. You will find the fuse taped to the top of the UPS (see above right photo); it needs to be inserted prior to power-up. In the unlikely event, the UPS battery does become drained prior to startup, it will take approximately 1-3 hours to recharge, before starting the unit. A steady "green status" light indicates it is ready to power on.

**Do not plug in the fuse until ready to power up, then leave the power on after powering up.**



## DRY COOLER:

The dry cooler is wired from the control panel out to the junction box on the cooler (J-box shown at right). The wires go from this J-box into the main control panel through an opening in the bottom (see photo below) and are wired to the motor starter on the right (there are 4 motor starters, one for the barrier fluid pump, one for the cooling circulation pump, one for the discharge pump (if it has one) and one for the dry cooler fan motor. The electrician is to wire this after the equipment is installed. Once the power is connected check rotation on the coolant pump motor (on the unit, clockwise from the back of the motor, you can see the fan, have someone bump the starter from the manual mode options. Once this rotation is confirmed then all of the motors on the machine are correct. The rotation on the cooling fan must be checked separately after the machine motor rotations are confirmed. The fan must blow through the radiator, not pull through it.



**Please call 317-386-3500 with any questions.**

**Office hours are 8:00am - 5:00pm EST. Thank you for your assistance!**



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