



EVAPCO Controller Quick Start Guide

eco-Air™ Air Cooled and Adiabatic Fluid Coolers & Condensers



**EVAPCO...SPECIALISTS IN HEAT TRANSFER PRODUCTS
AND INNOVATIVE TREATMENT SOLUTIONS**



Product Preparation

After rigging, piping and wiring the unit the next step is to perform the initial start-up and verify basic functionality.

All products supplied with capacity control equipment (Variable Frequency Drive, EC motor controllers, adiabatic air pre-cooling systems) are 'turn-key' products and have been factory tested and temperature/pressure set points have been pre-programmed with submitted design criteria.

1. Install Temperature/Pressure Sensors

Temperature Sensor for Dry Coolers

The dry cooler temperature sensor and thermowell are supplied loose (*located in the control panel*) and should be installed by the customer into the common return pipework running back to the process. The thermowell has 1/4" G threads.

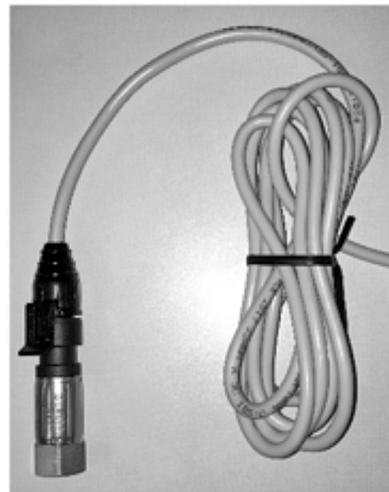
Note: The thermowell should be orientated vertically and a small amount of thermal paste added to the thermowell before the sensor is inserted. *The thermal paste ensures a more accurate fluid temperature measurement.* A small junction box is located on the coil connection end and will be factory wired from the main control panel. **Wire the temperature sensor to this junction box.** (*refer to wiring diagram provided with submittal*)

Pressure Transducer for Air Cooled Condensers

The air cooled condenser pressure transducer is supplied loose (*located in the control panel*) and should be located in the common compressor hot gas discharge pipework. The pressure transducer has 7/16"-20 UNF threads. A small junction box is located on the coil connection end and will be factory wired from the main control panel. **Wire the pressure transducer to this junction box.** (*refer to wiring diagram provided with submittal*)



Temperature Sensor w/ Thermowell (Fluid Cooler)

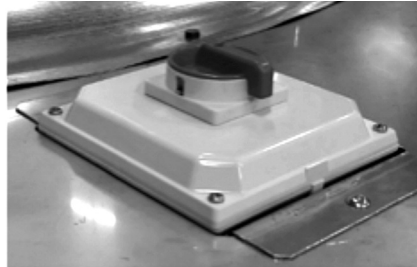


Pressure Transducer (Condenser)



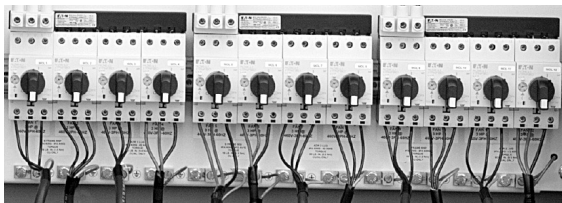
2. Turn Power On

Ensure all disconnect switches (optional) at each fan motor are in the 'ON' position.



Fan Motor Disconnect (optional)

Ensure that all Motor Starter Protectors (MSP) are in the 'ON' position. There is one MSP per fan motor and these are located inside the control panel.



MSP in Control Panel

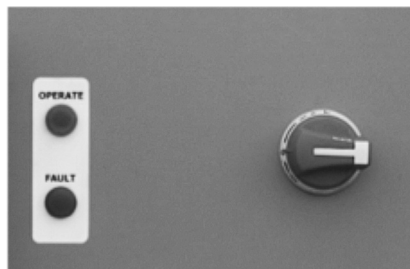


Off/Tripped



On/Reset

Close and secure all latches on the control panel door and turn 'ON' the main disconnect switch on the outside of the panel.



Main Disconnect in OFF Position

Once power is turned on, the EVAPCO Controller will initialize by going through a sequence of start-up procedures. Wait until EVAPCO logo is displayed on Human Machine Interface (HMI) indicating successful start-up. (approx. 30 seconds)

The red fault lamp illuminates until the controller is fully started up (approx. 30 seconds). If the fault lamp remains lit after controller is started, refer to troubleshooting area of EVAPCO Controller O&M Manual (Bulletin 1130).

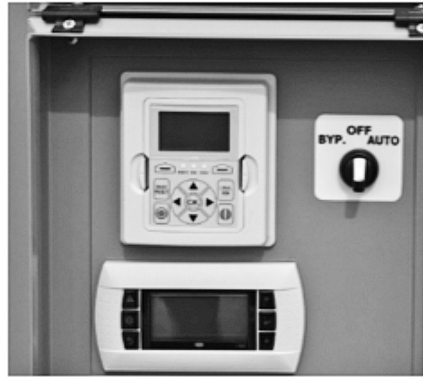




3. Verify Fan Rotation

Note: EC motors do not have a Bypass/Off/Auto switch and do not require this step.

Verify correct fan rotation (**NEMA motors only**). Bump test fan motors by turning Bypass/Off/Auto switch to Bypass for 5-10 seconds. Verify fan rotation matches direction of indicator arrows on fan cowl. If fans rotate in the opposite direction, switch phasing of main power connection. When complete, turn switch to AUTO position.



HMI, VFD and Bypass/ Off/Auto Switch for NEMA Motors

4. Turn Fan Motors On

On the HMI you will see the standby screen below.

Note: The controller's set point is factory set to the design temperature/pressure.

Note: The bell icon  , indicates that an alarm is active. Press the  Alarm button to go directly to the alarm menu.






The fan motors are turned off in the controller as default. This is to prevent unexpected fan start up during commissioning.

Navigate to the Main Menu by pressing the **Prg** Program button.



Press  ENTER button to select “A. On/Off Unit”



Press  ENTER button to select “Change to:” and use up arrow  to change selection to “SWITCH ON”. Confirm selection by pressing  ENTER button.



5. Verify Operation/Change Set Point

The controller standby screen will display the measured temperature/pressure; however, if the measured condition is below this set point, then the fan(s) will not operate. To test whether the controller is functioning correctly the set point must be lowered.

From the Main Menu, navigate to “Service” menu. A login screen will display.





The default service user password (PW1) is 1234.



While still in the Service menu, go to the Setpoints submenu:

- a. (Main menu → Service menu → Setpoints)



- b. Choose the desired setpoint temperatures on screen SP7 by selecting "Sp temp. (day)" and adjusting temperature by pressing the up and down arrows.



At a new set point below current condition the fan(s) will begin to ramp up in speed.

Be sure to change the set point back to desired value after test is complete.



6. Verify Adiabatic Operation

(Adiabatic models only) Products incorporating adiabatic air pre-cooling systems are fitted with a solenoid valve to control adiabatic operation. The adiabatic system is not triggered until the fans are running at 100% speed and the set point is not satisfied.

During the testing phase, confirm that the isolation valve is open and lower the set point sufficiently to cause the controller to activate the adiabatic pre cooling system.



Indicates controller is calling for open solenoid valve (water on)



Indicates controller is calling for closed solenoid valve (water off)

Note: If controller is calling for open valve but no water is flowing over pads, refer to troubleshooting section of EVAPCO Controller O&M Manual (Bulletin 1130).

Note: The default ambient temperature cut off for adiabatic system operation is below **40°F**.

Be sure to change the set point back to desired value after test is complete.

7. General Comments

Typically the only parameter requiring adjustment is the set point which is the temperature or pressure that the controller is attempting to maintain via varying the air volume by adjusting the fan speed, or adiabatic system solenoid (if equipped).

Each controller has its own set of programmable parameters and should there be a need to adjust or fine tune the behavior, consult the EVAPCO Controller O&M Manual (Bulletin 1130).

If connecting to a Centralized Control System or Building Management System, consult the EVAPCO Controller O&M manual (Bulletin 1130).



EVAPCO PRODUCTS ARE MANUFACTURED WORLDWIDE.



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