This Chiller should only be Started and Operated by personnel trained to operate MCS controls.

Failure to do so may cause Irreparable Damage!

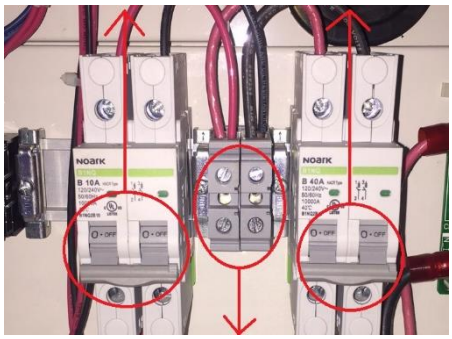
Do not attempt to install this machine without an Ethernet connection and a static IP address!

Do not operate without a minimum of 10% glycol solution this will void the warranty!

1. After the Chiller is installed and before power is turned on, all electrical connections need to be checked for tightness. Check all plugins on the MCS control boards to make sure they are all plugged in tightly. Check the condenser fan motor for obstruction. Make certain you have the pumps running and a minimum of 10% glycol solution circulating in the system and you have no less than 10 GPM or no more than 14.5 GPM through both heat exchangers. **Do not use the Chiller pumps to fill the system with glycol!** Use an external pump apparatus to fill the system. If you use the pumps it will cause micro-bubbles in the system that will cause the flow switches to not operate properly. **You must bleed all the air from the system before starting the chiller failure to do so will result in nuisance tripping**. If you have the chiller controlling the pumps they will start when the chiller is turned on so you must fill the system with Glycol solution before starting the chiller

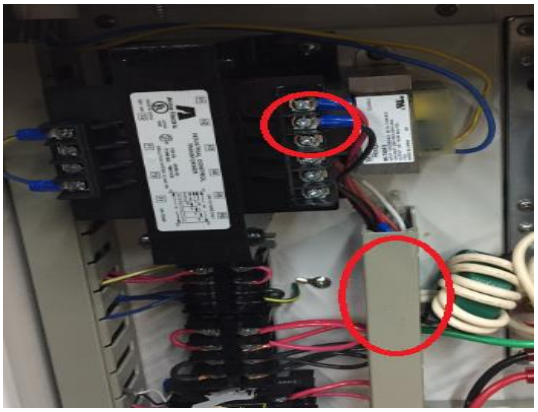
Percent of Propylene Glycol to Water Content				
Propylene Glycol %	Water Flow	Capacity	Min. Ambient Temperature	GPM Adjustment = 100 % Capacity
10%	x 1.020	x .99	26°F	x 1.01
20%	x 1.028	x .98	18°F	x 1.03
30%	x 1.036	x .98	8°F	x 1.07
40%	x 1.048	x .97	-7°F	x 1.11
50%	x 1.057	x .96	-29°F	x 1.16

2. Before starting make sure the breakers in the chiller are in the off position.



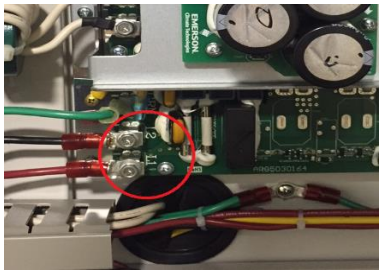
3. Then turn on the main power supply disconnect to the chiller. Check that there is the proper voltage to the main terminals in the chiller.

4. Chiller is wired for 208VAC from the factory. Turn on the 10 amp control breaker and check the power at the 24vac terminals. Voltage must not exceed 28vac. Transformers taps must be repositioned if the input voltage is above 230VAC to the 240VAC taps located here.

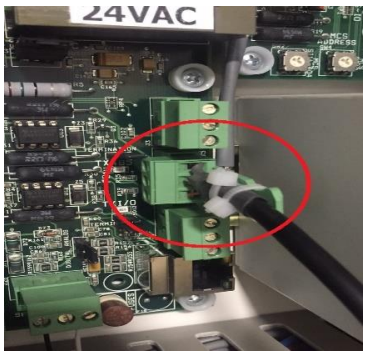


Refer to the transformer wiring diagram for color codes
Control Transformer – Com= H1, 208v= H2, 240v=H3
EXV Transformer – Com= Black, 208v= Red, 240v= Orange.

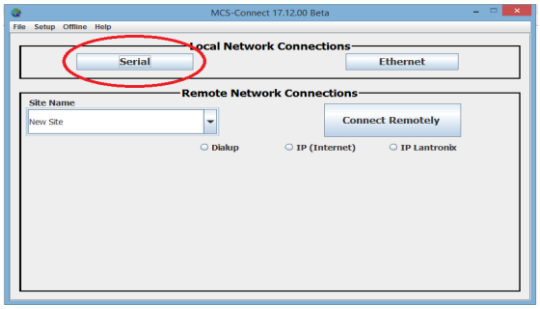
5. Turn on the 40amp breaker, check that there is power to the inverter at L1 & L2.



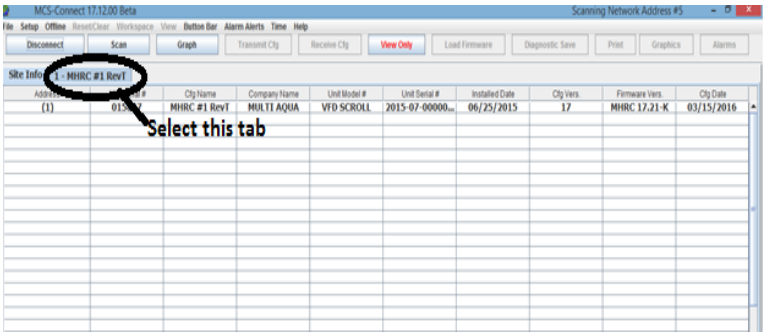
6. Connect the USB / RS485 converter cable to the control board. This cable is not included with the unit and must be field supplied



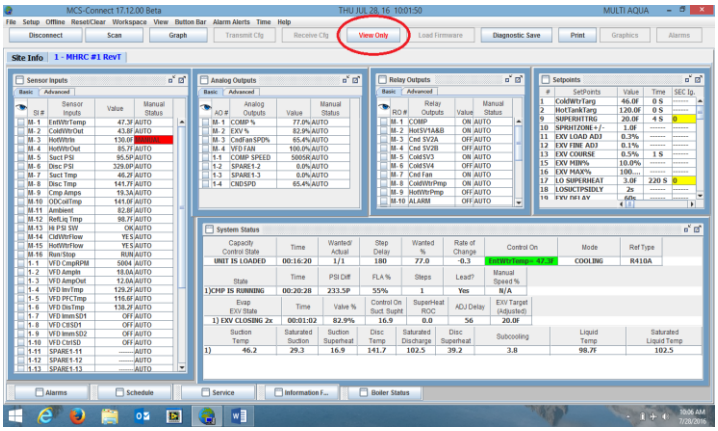
7. Download and install the MCS Connect software from WWW.mcscontrols.com. If you have Window 7 or newer it will support the cable driver if you have an older version of windows you may need to install the driver software for the cable, you can get it the drivers from the MCS website. After you install the software start the MCS Connect software, select the Serial button.



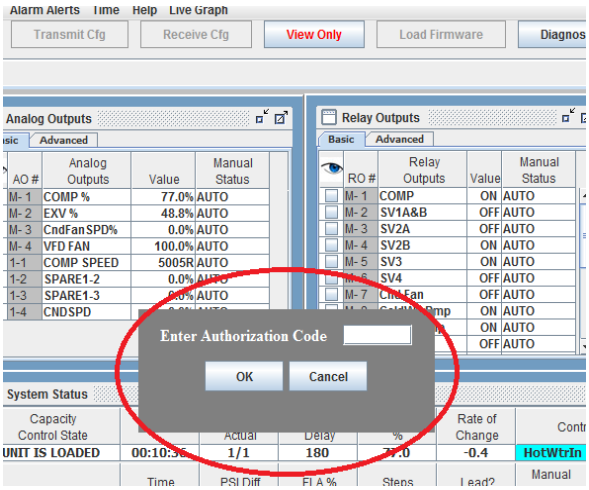
8. Then the software will load the below page. Select the tab that is circled



You will find the screen will not look like this screen below, you will need to arrange and resize your screen the way you would like to see the data. If necessary you can get help from the User Manual, it can be downloaded from this site, www.mcscontrols.com. At this point you will enter the Authorization Code that is specific to the unit and serial# that you have by selecting the View Only tab at the top of the page.

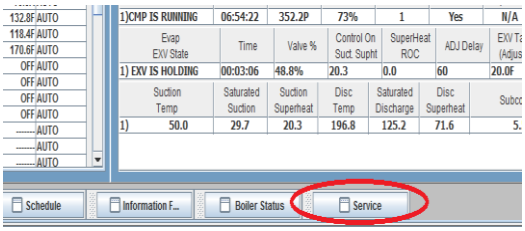


A popup window will open to enter code.

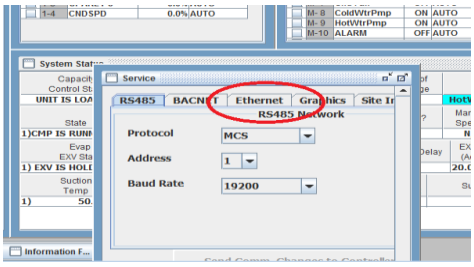


You can resize and re-arrange the data boxes to fit the way you would like to see them, then go to the Workspace Tab and save the workspace. You can open the tabs on the bottom bar and then minimize them.

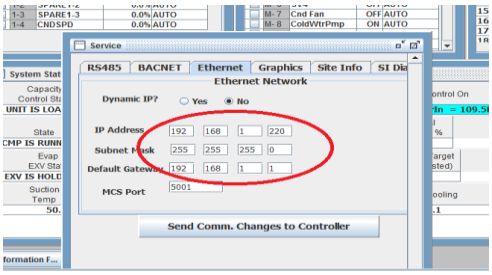
To setup the Ethernet connection, select the Service Tab at the bottom of the window.



Inside the service tab you will find an Ethernet tab.

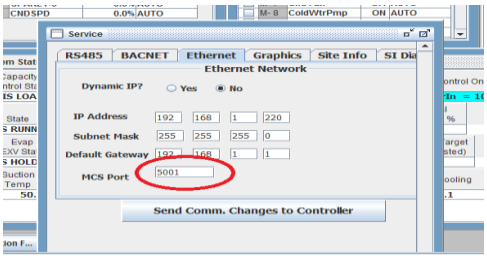


Select the Ethernet tab.

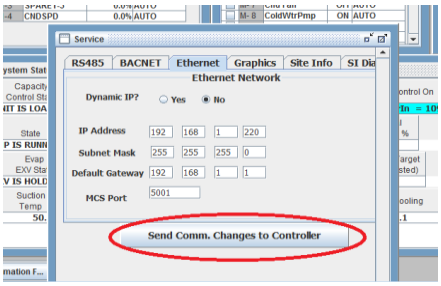


Enter the IP address, subnet mask and the default gateway that has been given to you by the customer or the I.P. professional.

Leave the MCS port at 5001. (unless you have multiple units)

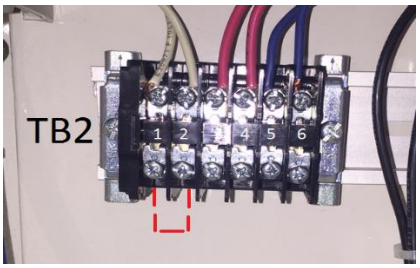


Select the send comm. changes to the controller.



9. You will have to reset the MCS board by pressing the reset button on the main board to save the setting changes. Allow the controls 3 minutes to reset.

10. Turn the chiller on by closing the field supplied Customer Contacts on TB2 terminal 1&2 (Time Clock, BAS or Enabling Switch)



The chiller will start loading and will load to 50% for 90 sec. then the chiller controller will take over the system and the machine will load up. The unit will not start until it establishes flow through both heat exchangers. It is normal to see bubbles in the sight glass until the chiller is close to the chill water setpoint and when the chiller is unloading or loading.