



**Danfoss Inc.**  
**Food Retail Division**

7941 Corporate Drive  
Baltimore, MD 21236-4925

Phone: 410-931-8250  
Fax: 410-931-8256  
Direct Order Fax: 800-948-3123

[www.danfoss.us/foodretail](http://www.danfoss.us/foodretail)

# TECHNICAL INFORMATION

ISSUE DATE: December 9, 2008

SUBJECT: Advisory –Version 2.081 - for the AK-SC255 using Condenser Fans configured as “Saturated Condensing Temp Target”

With the Version 2.081 software release of the AK-SC255, there is an important advisory as follows when a ‘255 which had previous versions installed, but now being updated, and the condenser fans were configured using “Sat Cond Temp”.

In all versions prior to 2.081, the Sat Cond Temp option under Condenser control is available.

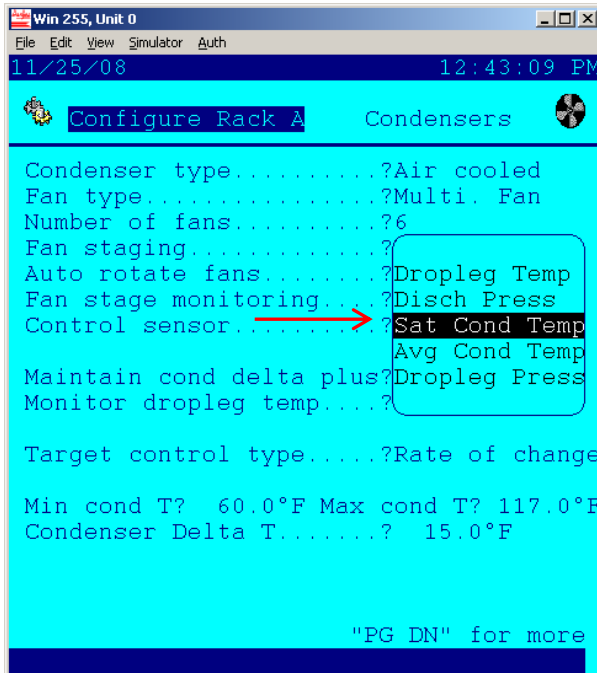


Fig # 1 – select “Sat Cond Temp” for Control Sensor

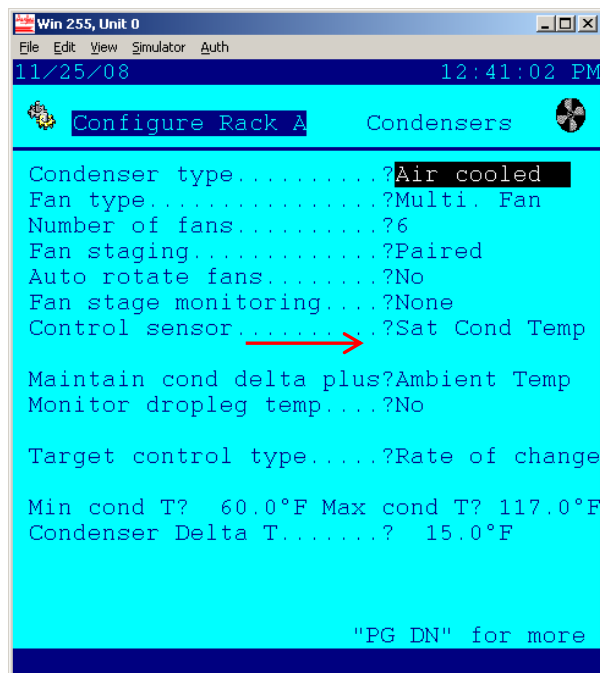


Fig # 2 – Selection made

In the Sensor “Board and Points” list, notice the Discharge Pressure sensor. (01-1.1) (Fig # 3)



Fig # 3 – Sensor configuration – board & points

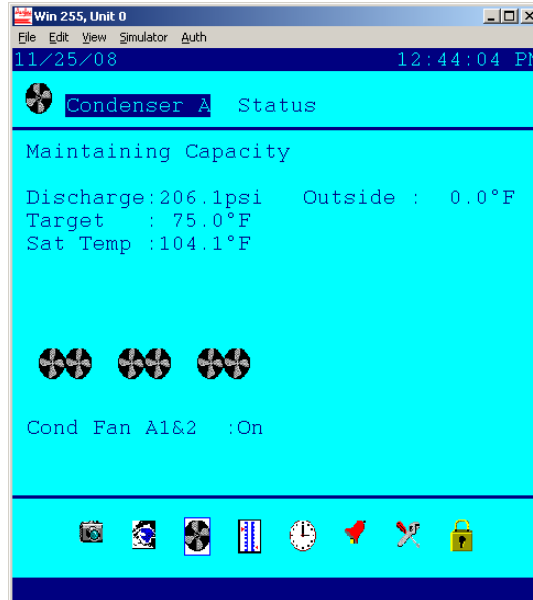


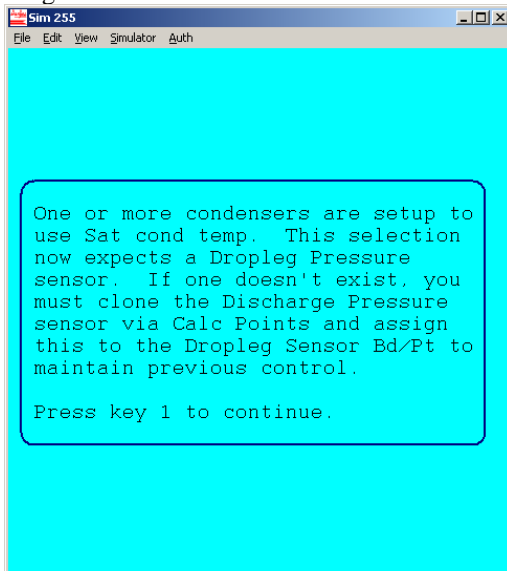
Fig # 4 – Condenser Fan Status

In Fig # 4, above right, notice the current status. The discharge pressure is shown. In these prior versions, the algorithm for “Sat Cond Temp” took the discharge pressure and converted it into the corresponding “Sat Temp” (saturated condensing temperature). Thus, the fan control is based on the selected ‘Target’ in reference to the current Sat Temp.

In version 2.081, some changes have been implemented, which require special care when updating all prior ‘255 versions which are configured for “Sat Cond Temp”. An enhancement was requested to allow choice of Discharge pressure or Dropleg pressure for Sat Cond temp target control.

Upon updating an existing ‘255 to 2.081, or running a previous version database in the AKA65 under 2.081, which has Sat Cond temp configured, notice the following pop-up message which will immediately appear and ask the user to acknowledge it by pressing the ‘1’ key.

Fig # 5



The condenser set-up will look exactly the same as before, as seen below in Fig # 6. However, notice in the sensor list in Fig # 7, an additional sensor called “Dropleg Pressure”.

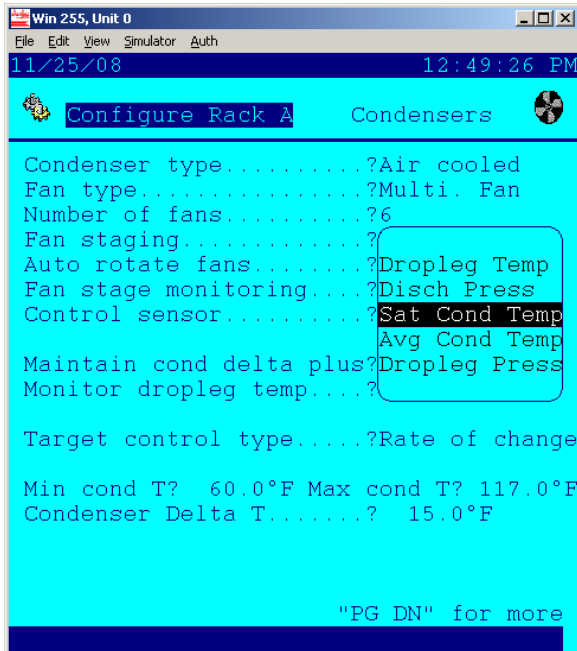


Fig # 6

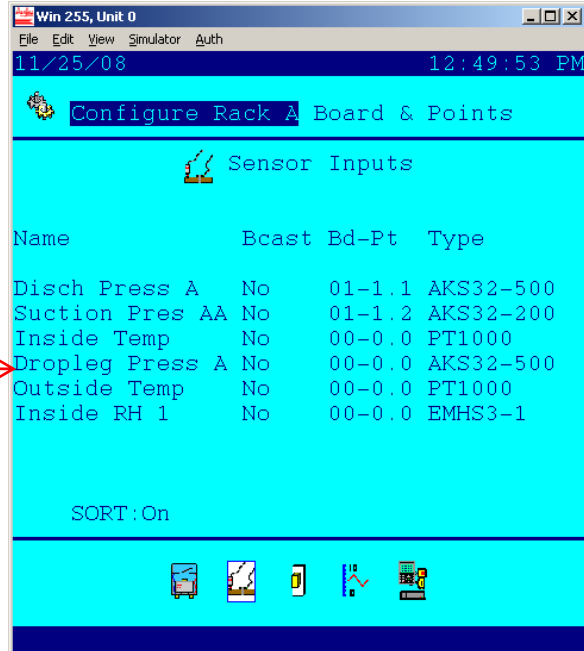


Fig # 7

The Dropleg sensor, although now listed, has no Bd-Pt assigned. **If the configuration is left this way following the software update, the condenser fans will fail to stage on**, with the exception of the high pressure override which is still based on the discharge pressure, but normally set very high, and just for safety precautions.

There are 2 choices of action available. The first of which would be to install a new Drop Leg pressure transducer and add in the Bd-Pt assignment. The 2<sup>nd</sup> option which may suffice in lieu of an additional sensor is to “Clone” the Discharge Pressure and use it for the Dropleg pressure input. What follows next are the steps to clone an already configured sensor. This is necessary because a sensor input can not be assigned twice.

Steps to clone a sensor. → From the Configuration menu, select Miscellaneous (fig # 8) and then “Calculations” from the Miscellaneous menu. (fig # 9)

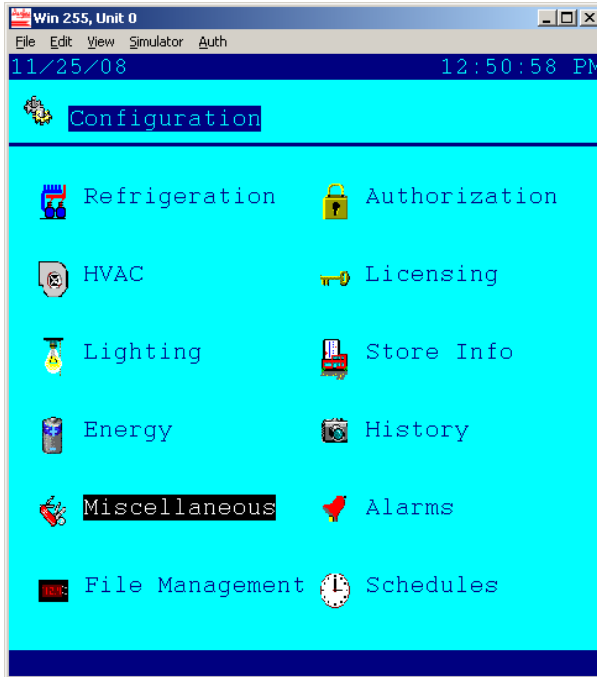


Fig # 8 –Configure Miscellaneous

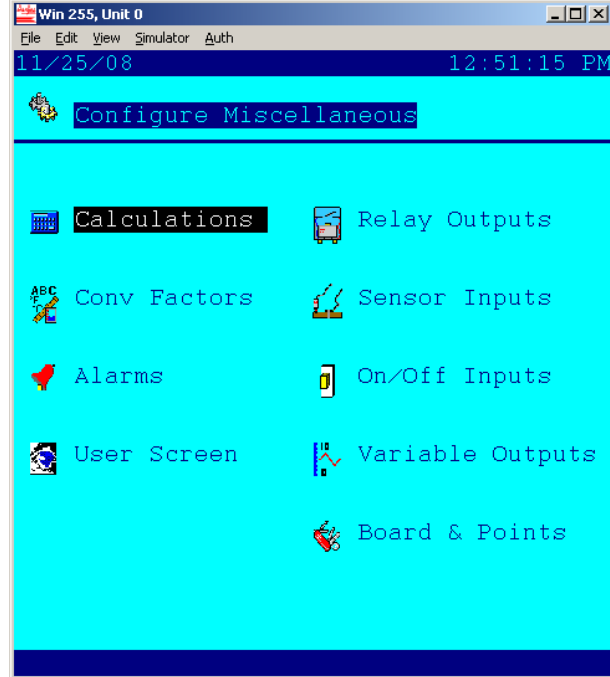


Fig # 9 – select Calculations from Miscellaneous Menu

In fig # 10 below, we are presented with configuration of Calculations. Notice in the example that at the bottom, “New Calc: Ca-01 is shown. This is because there are no calculations configured yet, or calculation # 1 has been skipped. Click on 'New Calc Ca-01', and the screen to the right is now shown.(Fig 11). Note that this calculation is empty, and waiting to be configured.

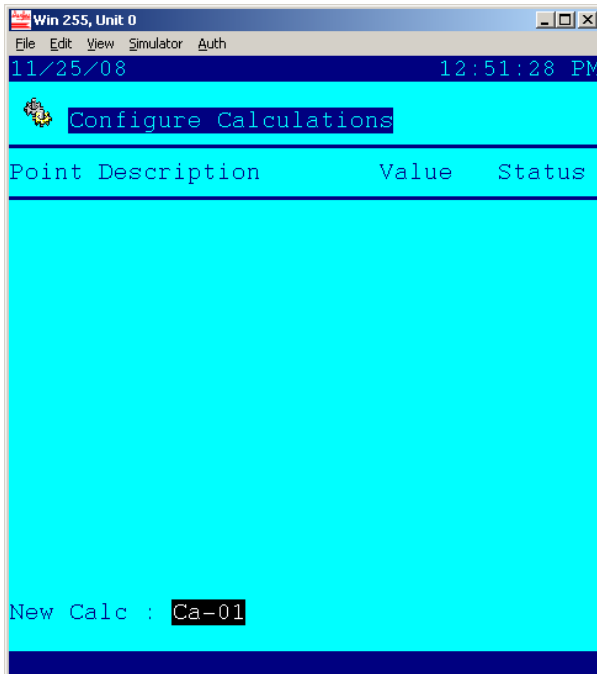


Fig # 10 – click Ca-01 to enter configuration

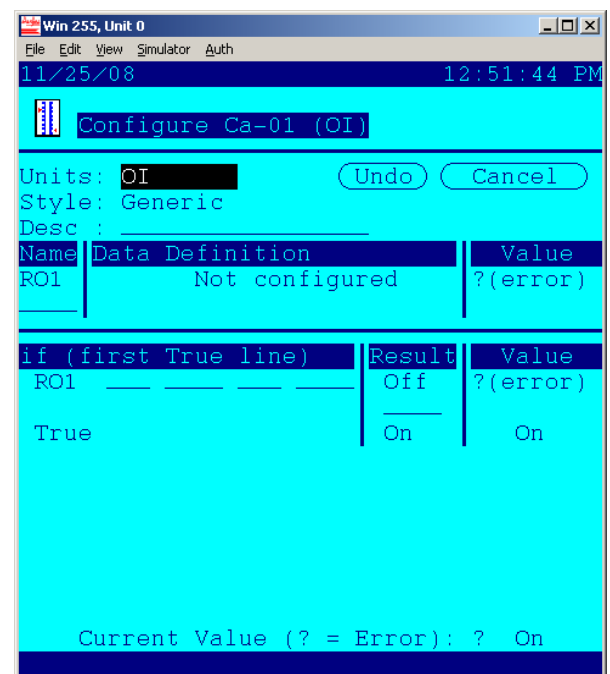


fig # 11 – Calculation # 1 prior to any configuration

Open the selection box to the very right after “Units”. Notice the available list to choose from. In this case, we need to set the Units for “SI psi “(Sensor Input Pressure) (Fig # 12). Then for Style, we need to select “Clone” from the available list. (Fig # 13)

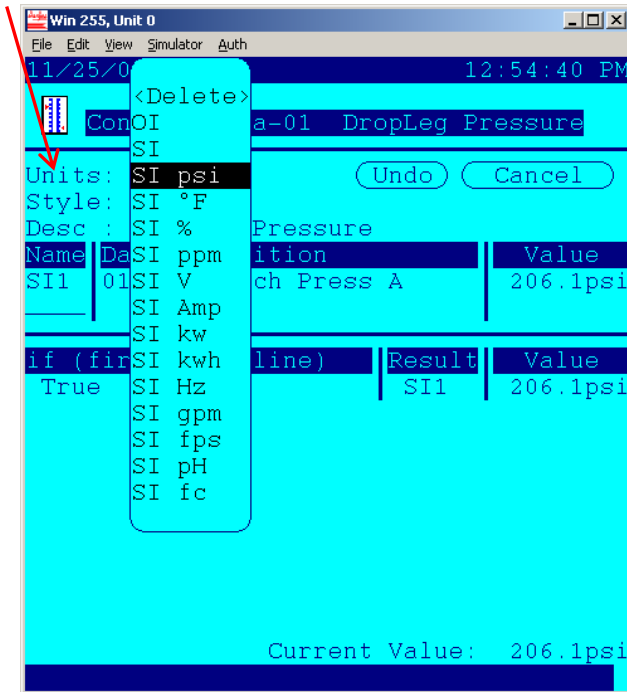


Fig # 12 – set up Units

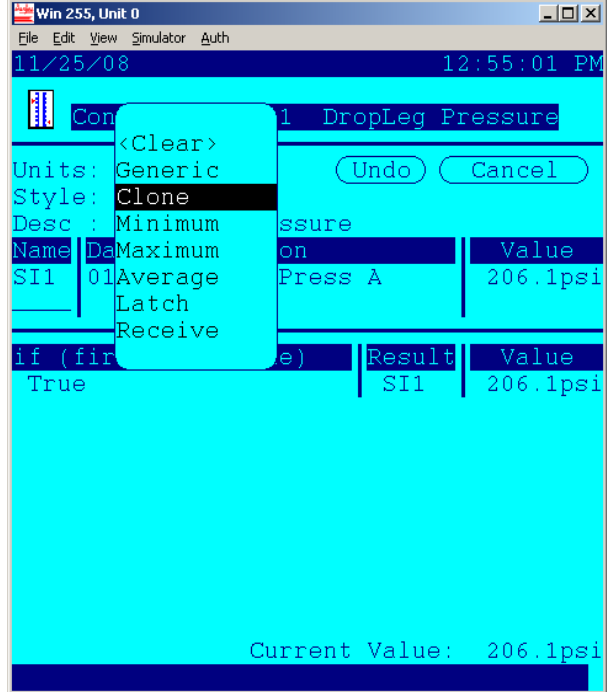


Fig # 13 – select “Style”

In fig # 14 below, notice the Units and Style now as we had selected them above. The “Desc” line allows any name which best explains what the calculation is intended to be used for. (17 characters for the description is available). Notice also under “Data Definition”, the sensor which we need to clone. In most cases you would open up that selection box and select the desired sensor, but in this illustration, this has already been done. Finally, under the section which says “If (first True Line), the qualifying statement for this calculation. (Note that detailed instructions for configuring calculations are available on the AK-SC255 web site)

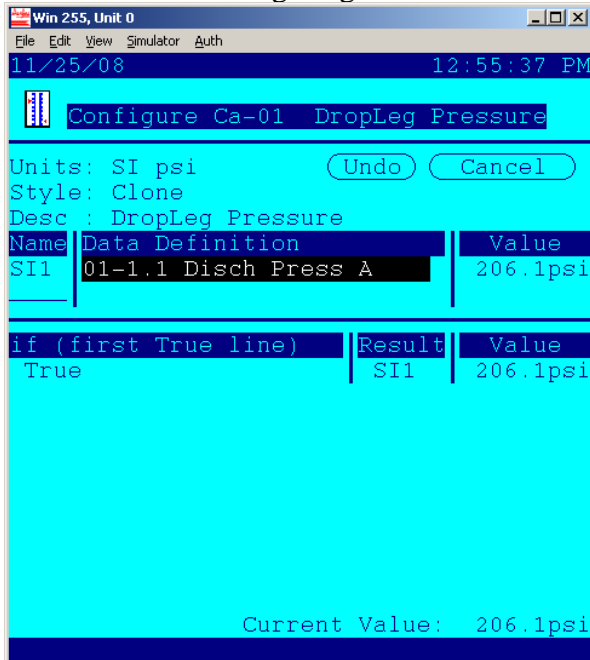


Fig # 14

Next, go back to the Rack Configuration and select Board & Points. ( Fig # 15 below- left). The screen shown next (Fig # 16) is the Relay Outputs Bd-Pts. We are not concerned with these, so at the bottom of screen, press the 2<sup>nd</sup> icon from the left, which is the Sensor Inputs.

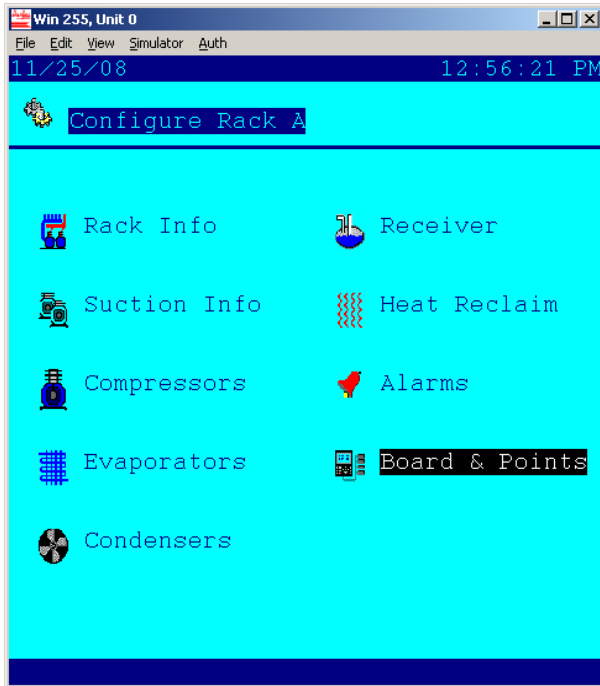


Fig # 15

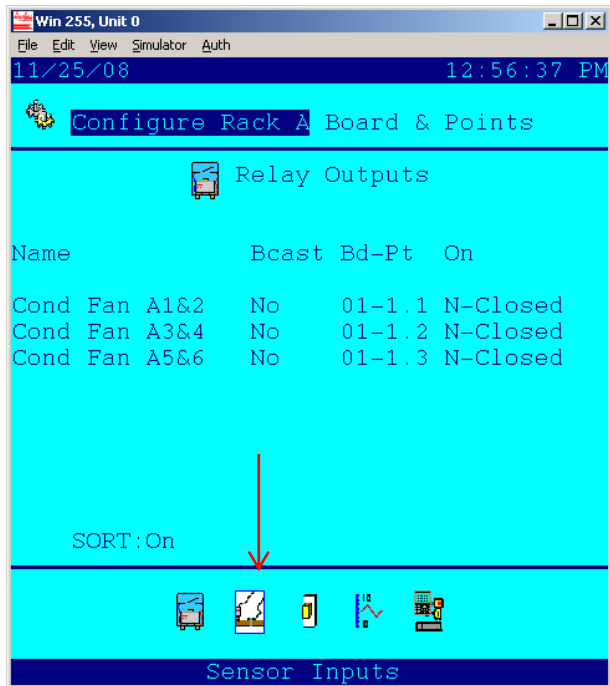


Fig # 16 – press 2<sup>nd</sup> icon from left for Sensor Inputs

Notice the Dropleg Pressure needs a Bd-Pt assigned. Right-click with mouse or hit ‘edit +- key and “Ca-01” is available to be chosen. The intent is that the calculation we created which cloned the Discharge Pressure sensor will “drive” the Dropleg Pressure sensor.



Fig # 17

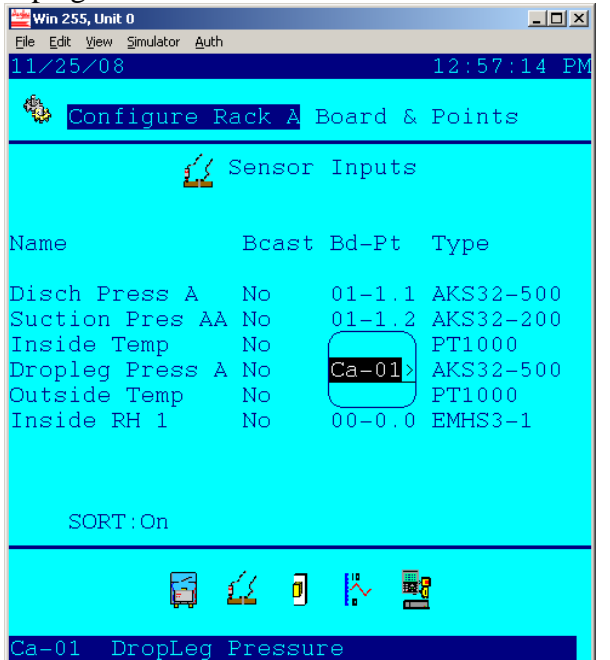


Fig # 18

Sensor List – Updated board and point list

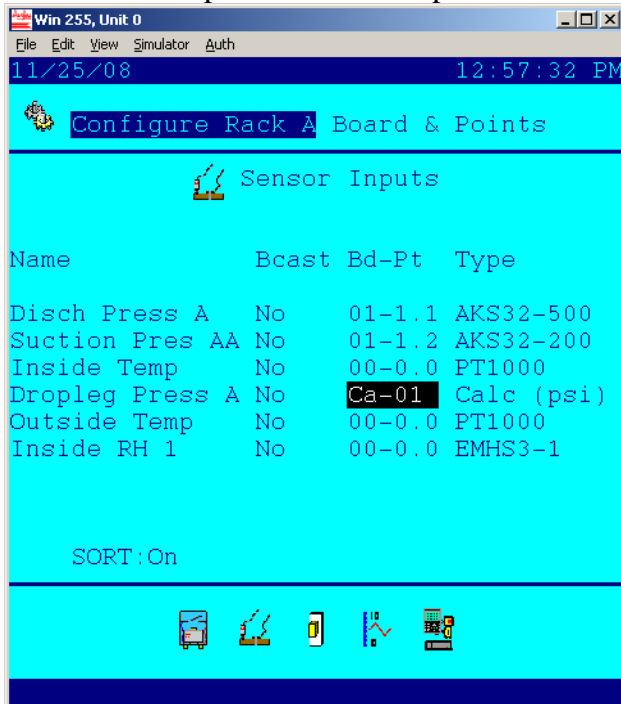


Fig # 19

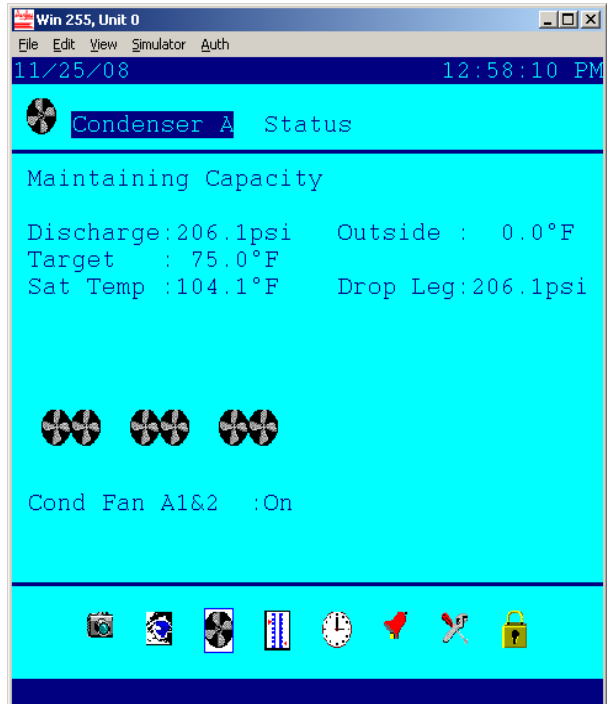


fig # 20 Condenser Status

Lastly, the condenser status screen after the modification is shown above in Fig # 20. Verify that the condenser fans are staging properly.

Technical Support:

Mon – Fri 8:30 am – 5:00 pm EST (410)931-8716

Emergencies after hours, weekends, holidays: (410) 931-8700