STC-3008 Dual Temperature Controller

*These notes are based on my own experience/experimentation with a unit produced by 'DIY More' and may not be completely representative of units made by other manufacturers. I am unaware if these are made by one manufacturer and 'private labeled' by different distributors.

-The 12V 'DC' unit is not just DC, it is AC or DC. Terminal polarization is not marked. The first component the PCBA that power flows through is a full wave bridge rectifier so AC or any DC polarization will work.

- The terminal markings on the label on top of the units I received IS INCORRETLY MARKED. The front (correctly) shows unit 1 on the left and unit 2 on the right. The label on top shows the unit numbers reversed (incorrect). The relay and sensor connectors correspond to the units as marked on the front.

OPERATION

-When powered, both units will display actual temperature.

-Both units are capable of operating as a cooling controller or a heating controller. To use as a heating controller, set the 'ON' temperature lower than the 'OFF' temperature. To use as a cooling controller, set the 'ON' temperature higher than the 'OFF' temperature.

-The LED over the respective display is illuminated when the relay is closed.

-Display brightness is not adjustable.

-To view current settings; Short press the desired unit 'up' button to show the 'ON' setting or the 'down' button to show the 'OFF' setting.

TO PROGRAM TEMPERATURES

- Once entering any other view/mode, a key must be pressed at least every 3 seconds to prevent returning to the current temperature.

-To change the set point; Select the proper button for the unit and on/off setting to be programmed. Short press the desired unit (1 or 2) and setting (up/on or down/off) button. As soon as the current setting is displayed, long press the same button till the setting begins flashing. Use the unit up and down keys to select the new set point. When at the correct setting, pause (for more than 3 seconds). The setting will be saved and the display returns to the current temperature.

- Since both on and off temperatures are set separately, the difference between the two ('dead band') can be whatever is needed. I advise not to set it less than 3C.

TO PROGRAM PARAMETERS (Parameter settings are virtually useless)

To enter parameters setting mode, press and hold BOTH 'UP' keys till the display changes. When in parameter setting mode, the unit 1 up/down arrow keys will scroll through the parameter number and the unit 2 arrow keys will change the parameter setting.

PO = Unit 1 Compressor delay time. When the trigger temperature is reached, this delay time begins. When the delay time is expired, the relay will close. Range: 0-60 seconds (default 0)

P1 = Unit 2 Compressor delay time 0-60 seconds (default 0)

P3 = High temperature alarm setting. At this temperature the display will flash with no audible of control change. Range: -55 to +120C (default 120C)

P4 = Low temperature alarm setting -55 to +120C (default -55C)

TROUBLESHOOTING

- When the controller exceeds the max or minimum temperature, the display stops displaying temperature and displays 'HHH' for over temperature or 'LLL' for under temperature AND the relay opens.

-The display will show 'LLL' (out of range = high resistance) when no sensor is connected.

-Sensors are 10k thermistors with a negative temperature coefficient (aka 'NTC'). This means as temperature goes up, resistance goes down. The sensor leads can be extended with minor effect on temperature accuracy. I don't feel the senors are particularly accurate (~+/- 3C).

SPECIFICATIONS (assumed):

Operating voltage: ~9-32VDC/AC

Relay contacts: 10A (isolated) SPST

10k Ohm NTC sensors only. Connectors are polarized (non-reversible) but sensors are not polarity sensitive.