# Technical Support Bulletin for Air Conditioning Contractors performing work at Riverside Condominiums

**CONFIDENTIAL, for use by installer only. Use of this information by an end user or inexperienced installer can cause damage to the compressor as well as defeat the purpose of temperature limiting settings.** For Single stage heat pump systems without heat strips as installed at RCCA-II. Dead or dying batteries with operator pushing multiple buttons at random may necessitate redoing the following installer setup procedure. This bulletin is never to be left with the tenant or unit owner.

**Bulletin - Part I**
Installer setup configuration settings for the Honeywell FocusPRO model TH5110D which is the only approved thermostat for use at Riverside Condominiums because it provides upper & lower temperature limitations.

To enter setup mode: (may be set up prior to wiring into a system)
Press and hold the fan and temp up buttons simultaneously until the display changes.

Each function selection will be displayed on the left with its setting to the right.

Press the "heat/cool" button to select each successive setting, use the up & down buttons to enter the data for that setting. Press the "fan" button when finished to exit the setup mode.

The correct settings are as follows:
- 1.  System Type = 1 (heat pump without auxiliary electric heat)
- 2.  Changeover (heat / cool) valve type = 0
(note if system is cooling in heat mode and heating in cool mode try setting the valve type =1)
- 3.  Fan control = 1 (thermostat controls fan in heating)
…
- 5, 6, 7, 8  all not applicable
- 9. Compressor cycle rate = 3
- 10.  n/a
…
- 12.  Manual / Auto changeover = 0 (manual selection of heat/cool/off)
…
- 14.  Temperature display = 0 (this will display temp in Fahrenheit)
- 15.  Compressor protection = 3   A minimum of 3 minutes off cycle time is recommended as a running compressor needs time for the pressure to subside before the compressor attempts a restart. This is a characteristic of most referigation compressors that are electrically powered including refrigerator and window units. Ignoring this requirement for a restart delay can cause compressor lock up resulting is severe current surges, compressor strain and sometimes blow the protection fuses. Normally the thermostat will never introduce this programmed delay. This delay is introduced when someone changes the thermostat from heat to cool or vice versa while the compressor is running. The delay will also occur if setting the thermostat temperature to turn the unit on, then off then back on in a period of less than 3 minutes.
…
- 26.  n/a
- 27.  Maximum heat setting = 78
- 28.  Minimum cool setting = 70
PS: Installers love batteries - it generates easy repeat business!  Use lithium batteries for long life.

RCCA heat pump wiring notes: Use Conventional thermostat terminals w/jumper from Rc to R
     Red (Rc&R) = 24vac,   Blue (C)= 24v transformer common & ground
     Yellow (Y) = Compressor control contactor      Green (G) = Fan control
     White (W) = reversing valve (reverses refrigerant flow to heat or cool)

## WARNING - CIRCUIT  LOADING  ON  ALUMINUM  WIRING

Per parish code, aluminum branch circuits are not to be loaded beyond 80%.  20A 208V a/c circuits at Riverside must be loaded to less than 16 amps.  This means no strip heaters are to be used - straight heat pumps only.  Engineering only approved individual heat pump installations based upon surge load protection.  Thermostat delays do not suffice as they do not introduce unit to unit staggered delays upon momentary power interruption.  Please see original bid specs.

Mandatory add on programmable delay modules (to prevent restart surges) have been found not to perform well as installed.   Delay on make modules (apx. $10) such as the ICM102, SupcoTD-69 & Mars32001 are necessary to introduce a staggered startup delay of multiple AC units in the event of a momentary or prolonged power outage thereby reducing the restart load to that acceptable to the aluminum wiring and breaker panels used at RCCA and the service entrance transformers provided by Entergy.  No delay is necessary or desired unless there is a power interruption.

The following fix is offered for improved performance:

* Do not change the delay setting, they are set for each unit to provide staggered restart timing for all of the units in the complex.   After the "fix" there will never be a delay in operation unless there is a power failure and then only once.   The problem of no cooling or heat while the fan is running for anywhere between 3 to 10 minutes each time the unit comes on will be cured.  (all changes to be made will be in the wiring tray of the air handler)

1.  Remove the existing connections to the delay module and connect those wires together.
2.  Cut the jumper protruding from the delay module to enable it for 120-240v operation.
2.  Now wire the module in series with the single lead supplying power to the 208v side of the 24vac control transformer.

Note:  It has been found that all of the installers incorrectly left the control transformer in the 240v position.  RCCA uses 208vac power; move the lug on the transformer to the 208vac tap.   Operation on the wrong voltage could shorten the life of the compressor's control contactor and / or reversing valve.

Disclaimer:  Use this information at your own risk.  Info provided only as a reference for competent refrigeration technicians experienced with wiring system controls, fully understands the information and applies that information in concert with his experience.   If there are any conflicts or concerns use your best judgment.

Rev. 3-2012