RPARTS
REFRIGERATION PARTS SOLUTION

Nano Flat Plate Air-Cooled Refrigeration System
011-0405
Installation and Setup Manual
Revision 1.0
December 12, 2012

Revision	Date	Description	Author
1.0	12/12/2012	Initial Release	P. Day

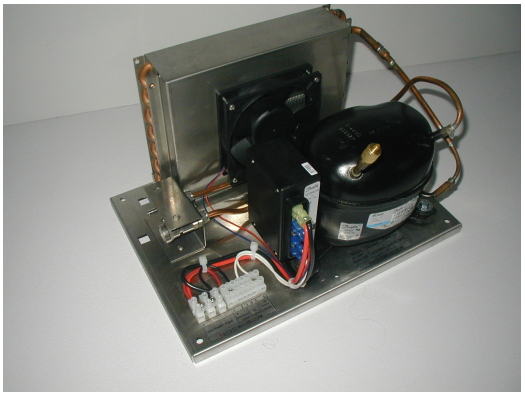
Purpose of this Manual

This manual is intended to cover the interconnection of the components of the system. The setup for the digital thermostat is covered as well.

The mounting of the components in their final location, such as in an insulated refrigeration box, is not covered by this manual.

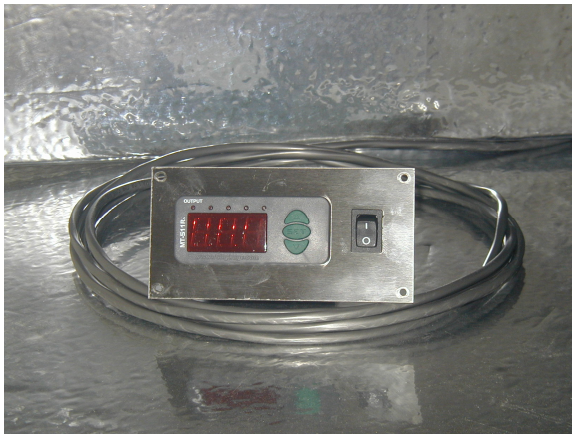
A. Connecting the components

1. Unpack the contents of the two boxes that the Nano Flat Plate System (NanoFPS) ships in and check the contents. Verify you have all 3 items:
   a. condensing unit

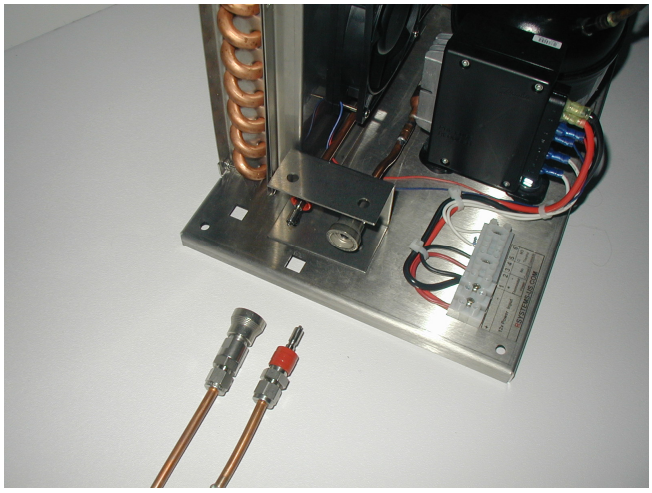


   b. evaporator box with mounting stand-offs

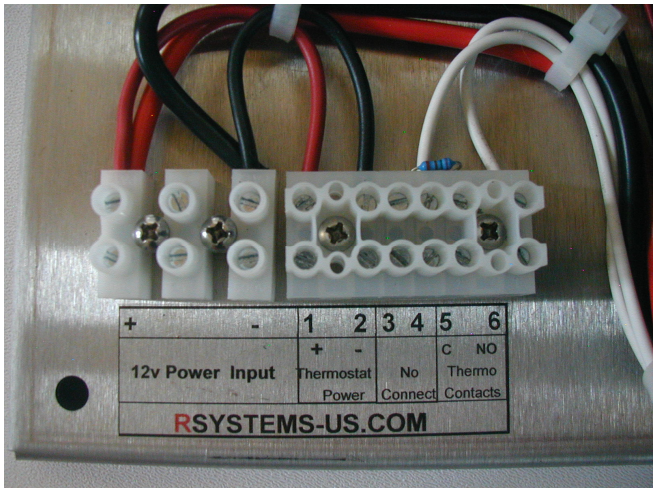
   c. digital thermostat with mounting plate and cable



2. The NanoFPS uses quick connect fittings for the refrigerant lines which snap together without tools. The quick connect fittings can be used repeatedly with negligible refrigerant loss. It is essential to confirm a solid connection by making sure a distinct click occurs at the end of the insertion of each quick connect. The two lines use opposite connections to make certain the connection is complete.



3. Connect the digital thermostat connections to terminal 1, 2, 5, and 6 as marked on each of the wires from the thermostat cable. Connect 12v using the polarity shown. The 12v power should be connected through an external breaker (not included with the system). The breaker can serve as the system shutdown switch.

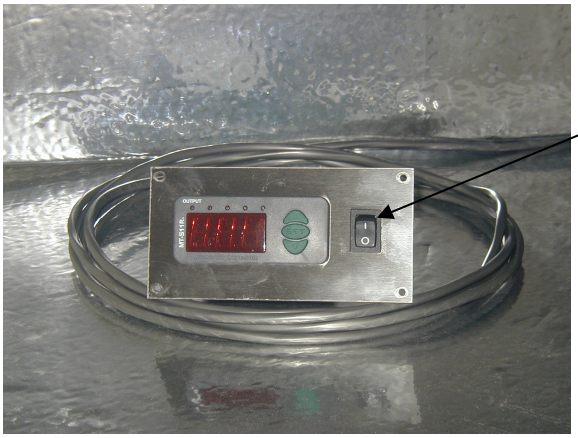


4. Position the temperature probe on or near the evaporator box. The position of the probe is dependent on your application.

This completes the system connections and the system is ready for start-up.

B. System start-up

The panel mount plate for the digital thermostat includes an on/off switch located adjacent to the thermostat. This switch provides a method to quickly enable/disable the digital thermostat preventing the compressor from running while still allowing the thermostat to display the current temperature of the probe. The switch also allows the thermostat to be configured while disabled preventing the compressor from cycling while the thermostat is being configured.



1. Start with the thermostat switch in the off position. Turn on the 12v breaker, as well as, the 12v disconnect if there is one. With the system powered up, the thermostat will display the current temperature of the probe. If you would like to configure the thermostat go to that section and then return here once the configuration is complete.

2. Turn the thermostat switch on to enable the thermostat to control the compressor. If the temperature is above the setpoint plus differential settings, the condenser fan and compressor will start. Frost will begin to form on the surface of the evaporator box within a few minutes.

3. As the evaporator cools the thermostat will display the current temperature of the probe. Once the temperature probe reaches the setpoint, the thermostat will stop requesting cooling and the fan and compressor will stop.

4. As the evaporator and the interior of the cooled area begin to warm up, the temperature displayed will track and once the temperature reaches the setpoint plus differential the thermostat will once again request cooling and the compressor and fan will start. The cycle will continue to repeat as

long as the system is powered and the thermostat switch is in the on position.

5. If you would like to stop the system but continue to monitor the temperature then change the thermostat switch to the off position. If you want to stop the system but don't need to monitor the temperature then shut off the 12v breaker or disconnect.

This completes the system start-up.

C. Configuring the digital thermostat

There are four items that must be configured in the thermostat. The items are setpoint (the temperature to shutoff the compressor), differential (the temperature rise from setpoint to restart the compressor), function (cooling or heating), and units (C or F). The system must be powered on and the thermostat switch should be in the off position during the configuration process.

1. Configure the setpoint (the temperature to shutoff the compressor). Press the **Set** button for 1 second until SEt is displayed. Release **Set** and the setpoint temperature will be displayed. Use the arrow buttons to select the setpoint temperature. Then press the **Set** button to confirm and record the setpoint.

2. Configure the differential and select the function as cooling or heating (only cooling is valid and this is the factory setting). Press the **Up** and **Down** arrow buttons at the same time and hold for 5 seconds until **dif** is displayed on the thermostat. Release both buttons and then use the arrow buttons to select the differential temperature. Then press the Set button to confirm and continue to select the function which should now be displayed as Col or Hot. Use the arrow buttons to select Col. Then press the **Set** button to confirm.

3. Configure the units as C or F (factory setting is F). Press the **Up** and **Down** arrow buttons at the same time and hold for 30 seconds until Uni is displayed on the thermostat. Release both buttons and then use the arrow buttons to select C or F. Then press the **Set** button to confirm.

This completes the configuration of the thermostat.