

## Heat Pump and Humidity Controller

This section presents start-up procedures for the Heat Pump and Humidity Controllers. Refer to Figure 1.

**NOTE:** Update each controller at the field panel immediately after you complete the controller start-up procedures, and have made all other changes to the controller's point database (including tuning, etc.).

*Verify power to controller*

Verify that the Heat Pump and Humidity Controller is powered up. Check that the BST LED on the controller is flashing. If the BST LED does not flash on/off once per second, then refer to the *System 600 Maintenance and Troubleshooting Manual* (125-1855) for troubleshooting information.

**NOTE:** The Controller Interface Software (CIS) used with the Heat Pump and Humidity Controller firmware revision HD10 or higher must be Rev. 2.0 or greater. Voyager's point database may also be used for start-up.

*Enable damper actuator*

Using the portable operator's terminal, follow these steps to set the damper actuator running time:

1. Verify that the point APPLICATION (number 2) is set to 2399 (slave mode).
2. Display the STARTUP report.
3. Set the point MTR TIMING (number 51) to the correct running time of the damper actuator. Refer to Table 1.

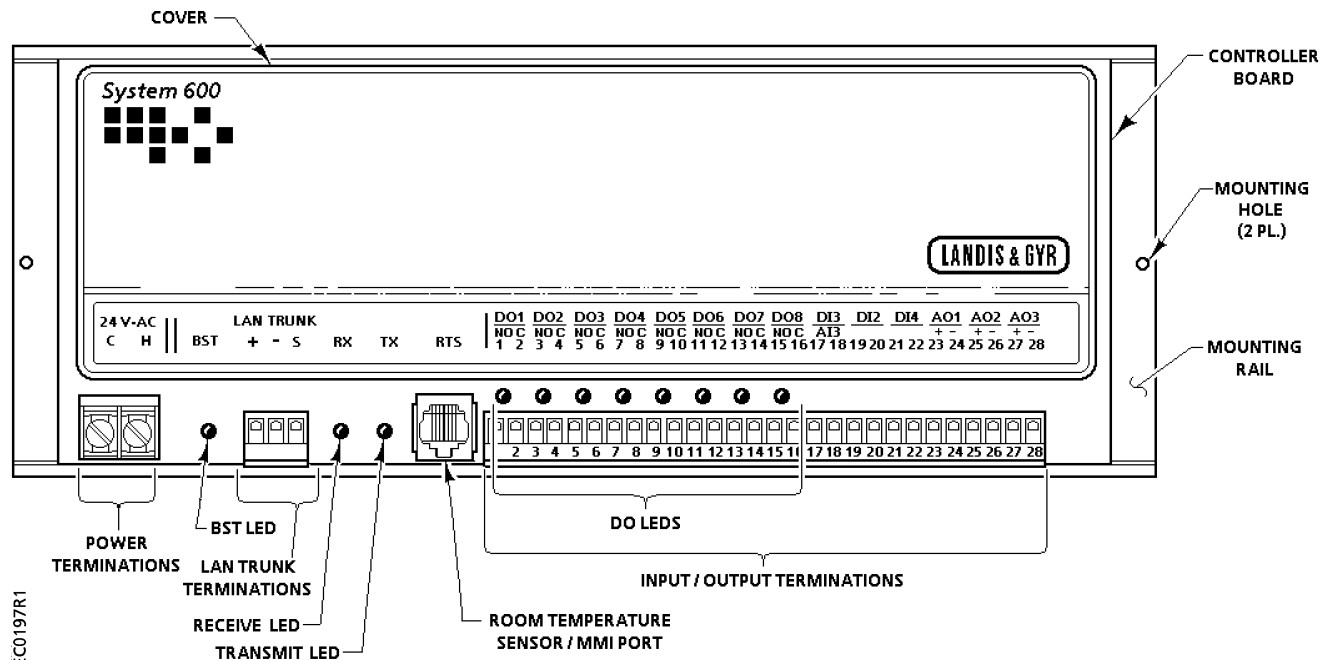


Figure 1. Heat Pump and Humidity Controller.

**Table 1. Damper Actuator Run Time.**

Damper Actuator	Setting (seconds)	
	50 Hz	60 Hz
349-0100	113	90
SQR 81.1	155	130

4. If the damper rotation angle is a value other than 90°, then set the point DMPR ROT ANG (number 56) to the appropriate value.
5. Enable the damper actuator by setting the point MTR SETUP (number 58) to **1**.
6. Verify that the damper closes when commanded by the point DMPR COMD (number 48). If it does not close, then reverse the action of the damper actuator by setting MTR SETUP to **3**.
7. If the damper still does not close, then the actuator has been installed or set up incorrectly. Refer to the damper actuator installation instructions, set up information, Table 2, or the *System 600 Maintenance and Troubleshooting Manual* (125-1855) for more information.

**Table 2. Motor Enable/Reverse Values for MTR SETUP (number 58).**

Motor 1 Not Used	Motor 1 Enabled	Motor 1 Enabled and Reversed
0	1	3

**NOTE:** If you are going to enter an LCTLR point at the field panel, then keep track of the controller address, application, and override time you enter at the portable operator's terminal. You will be required to enter these values again at the field panel.

*Set controller address and application*

Using the portable operator's terminal, set the controller address and application by following these steps:

1. Display the STARTUP report.
2. Set the point CTLR ADDRESS (number 1) to the appropriate address number.
3. Set the point APPLICATION (number 2) to the appropriate Heat Pump and Humidity Controller application. The application names and numbers are as follows:

**Table 3. Heat Pump and Humidity Controller Applications.**

Application	Revision HD10 or higher
Single Compressor Heat Pump with Reversing Valve Control and Dehumidification Sequence	2326
Slave Mode	2399

After you set the application, the controller will go through a shut-down/load sequence as it switches from slave mode to the application selected. After the application loads and the OVERVIEW report appears, continue with the following procedures.

*Set room  
temperature  
set points*

Follow these steps to set the room temperature set points:

1. Display the SETPOINTS report.
2. If the room temperature sensor has a set point dial, and if the point RM STPT DIAL (number 13) is to be used by the controller, then set the point STPT DIAL (number 14) to YES; otherwise, set STPT DIAL to NO.

**NOTE:** If STPT DIAL is set to YES, then the points DAY CLG STPT (number 6) and DAY HTG STPT (number 7) will not be used. The value of RM STPT DIAL will be used.

3. If the room temperature sensor has a set point dial and the set point dial is to be used, then set the points RM STPT MIN (number 11) and RM STPT MAX (number 12) for the minimum and the maximum allowable room temperature set point values, respectively. Valid values range from 55° to 95°F (13° to 35°C). Common values for these points are 65°F (18°C) for RM STPT MIN and 80°F (27°C) for RM STPT MAX.
4. If there is no set point dial on the room temperature sensor, then verify that STPT DIAL is set to NO.

Set the following points to the appropriate values:

- DAY CLG STPT (number 6)
- DAY HTG STPT (number 7)
- NGT CLG STPT (number 8)
- NGT HTG STPT (number 9)

*Set override time*

Follow these steps to set the override time:

1. Display the STARTUP report.
2. If using night override, then set the point OVRD TIME (number 20) to the number of whole hours that an override should last. If set at zero (the default), then night override is disabled.

<i>Set CYCLE FAN</i>	If the fan is to cycle during day mode with the compressor, then set the point CYCLE FAN (number 60) to YES. Otherwise, the fan will be on all the time in day mode.
<i>Set DO DIR.REV</i>	<p>If the normal (de-energized) state of the reversing valve is cooling, then leave the point DO DIR.REV (number 59) at its default value of 0.</p> <p>If the normal (de-energized) state of the reversing valve is heating, then set DO DIR.REV to <b>4</b>.</p> <p><b>NOTE:</b> When the point REV VALVE (number 44) is changed from normally cooling to normally heating by setting DO DIR.REV to 4, the following occurs:</p> <p>The HEAT/COOL text will change to reflect the appropriate state of the reversing valve.</p>
<i>Enable wall switch</i>	If a wall switch is used for day/night control, then enable it by setting the point WALL SWITCH (number 18) to YES.
<i>Set compressor minimum OFF and ON times</i>	<p>If the default values are not appropriate, then display the main application report and set the points for the compressor minimum OFF and ON times according to the specifications for the equipment being used:</p> <p style="padding-left: 40px;">CMP MIN OFF (number 87), default = 3 min. CMP MIN ON (number 88), default = 3 min.</p>
<i>Set dehumidification mode control</i>	<p>Set the point RH STPT (number 34) to the value that the room humidity must rise above for dehumidification to begin.</p> <p>When the room humidity drops lower than RH STPT minus the point RH DBAND (number 35), dehumidification stops. Set RH DBAND appropriately.</p>
<i>Set humidity sensor type</i>	The humidity sensor may be of current (4-20mA) or voltage (0-10V) type. Set the value of the point AI3 VOLT.CUR (number 54) to the appropriate value.
<i>Set number of stages of electric reheat</i>	<p>There can be up to three stages of electric reheat. Set the point EHTG STG CNT (number 76) to the number of stages that are to be controlled.</p> <p><b>NOTE:</b> Update each controller at the field panel immediately after you complete the controller start-up procedures, and have made all other changes to the controller's point database (including tuning, etc.).</p> <p>Heat Pump and Humidity Controller start-up is complete.</p>