

User's Manual



Variable Speed Ultra-High SEER Split System

These units have been designed and tested for capacity and efficiency in accordance with ARI standards. These outdoor air conditioning units are designed for use exclusively with select NORDYNE G6 gas furnaces and select NORDYNE B5 air handlers equipped with dedicated matched indoor coils.

IMPORTANT NOTE

This equipment is one part of a total system designed for maximum efficiency, adequate capacity and total comfort. The system must function as intended. Under no circumstances any part of the system may be substituted with other components.

USER'S INFORMATION

IMPORTANT

Read this owner information to become familiar with the features, capabilities and use of your system.

Keep this with literature of other appliances where you have easy access to it in the future.

If a problem occurs, check instructions and follow recommendations given. If these suggestions don't eliminate the problem, call your servicing contractor.

THE iQ Drive SYSTEM

The iQ Drive Air Conditioning System features fully variable speed compressor technology and variable speed indoor and outdoor motors. The system provides variable cooling capacity as needed modulating over a five degrees Fahrenheit temperature range. It operates near the nominal rated capacity at the thermostat set point and modulates as the temperature difference between the set point and the room temperature changes. The system can operate at approximately 20% higher capacity than the nominal capacity to provide rapid cooling. Then as the room temperature decreases, the system modulates down through the intermediate capacities until reaching the minimum capacity if the room temperature reaches 2 degree F below set point. If the room temperature decreases below the set point by 2 degree F, then the unit will turn off.

The system has a built-in humidity control that will maintain the humidity of the home in the desired range. If the humidity in the home is too low, then the system will activate the humidifier (if installed). If the humidity is too high, then the system will reduce the indoor blower speed to increase the water removal from the conditioned space and lower the humidity.

The iQ Drive System consists of an outdoor unit, indoor unit, thermostat controller and connecting lines.

1) The Outdoor Unit:

The outdoor section consists of a large heat exchanger surface, an inverter motor drive, a variable speed rotary compressor, a variable speed fan motor, and a specially-designed fan blade housed in sturdy attractive chassis.

2) The Indoor Unit:

The matched indoor coil may be a stand alone cased coil intended to be installed in NORDYNE G6 model gas furnaces or may be part of a dedicated NORDYNE B5 model air handler. The indoor coil is equipped with electronic expansion valve to precisely control refrigerant flow over the wide range of system capacity modulation.

For the stand alone dedicated cased coil in gas furnace, a furnace conversion kit is required to allow the addition of the required system components such as the variable speed indoor blower assembly, interface board, upgraded transformer and the electronic expansion valve controller. Consult Installation Instructions provided with the Indoor Coil and the Conversion Kit for details.

For the dedicated Air Handler, the matched coil and all required components are included. Consult Installation Instructions provided with the Air Handler Unit for details.

3) System Thermostat Controller:

The system controller is the master component that communicates with and controls the remaining system components. The inverter in the outdoor unit receives signals from compressor, heat exchanger, fan motor and outdoor ambient sensor which are communicated to the controller via connections to the indoor interface board. The controller responds back with appropriate messages for each device operation command.

The controller communicates with the indoor section via the indoor interface board which is powered by 24 VAC from the transformer in the furnace or air handler. Transformer in the gas furnace **MUST** be replaced with the one supplied in the gas furnace blower conversion kit.

GENERAL INFORMATION



CAUTION:

This unit is charged with R-410A refrigerant. DO NOT under any circumstances use any other refrigerant besides R-410A in this unit. Use of another refrigerant will damage this unit.

START UP AND CHECK OUT



WARNING:

Ensure electrical power to the unit is off prior to performing the following steps. Failure to do so may cause personal injury or death.

Outdoor Unit: Ensure the outdoor coil, the inverter heat sink, and the top of the unit are free from obstructions and debris. Furthermore, ensure that all access and control panel covers are in place.

Indoor Unit: Consult the installation instructions of the indoor unit (i.e.; air handler, indoor coil and furnace) for details regarding installation. Ensure wiring is secure and correct.

Air Filters: Ensure air filters are clean and in place prior to operating the equipment. Ensure that the unit has been properly and securely grounded and that power supply connections have been made at both the facility power interface and outdoor unit.

iQ Drive Controller Thermostat:

The main screen displays indoor and outdoor temperatures, set points in cooling and heating, relative humidity and mode of operation. The controller thermostat is designed to display information screens for use by the installer and homeowner. The “Installer Settings Menu Screen” should be accessed only by qualified personnel.

The controller screens display all pertinent system information in normal operation. When necessary, important messages may be sequenced along the top line to indicate conditions that need attention. The controller is also designed to function as an important service and troubleshooting tool.

iQ Drive Controller Thermostat Operation:

ADJUSTING TEMPERATURE:

- 1- Before you can adjust the temperature, a MODE must be selected. If you are already in Heating or Cooling mode, skip to step 5.
- 2- To select a MODE, use the keypad arrows to scroll to MODE, then press the center button on the keypad to enter the operating mode menu.
- 3- Select the desired mode by scrolling up and down arrows, then press center button.
- 4- The main menu appears and the view displays the mode selected, indoor temperature and outdoor temperature.
- 5- Use the up and down arrows to set desired temperature, then press center button to save.

SETTING DATE AND TIME:

- 1- From the main menu screen, scroll to menu and press the center button.
- 2- Select “SET DATE AND TIME”.
- 3- If your area observes daylight saving time, select “AUTO DAYLIGHT SAVING”, scroll to “ON”, then press center button to save. You will be returned to “SET DATE AND TIME” menu. Scroll to “SET DATE AND TIME” and press the center button.
- 4- Set Month, Day, Year, Hour and Minute by using the up and down arrows followed by center button to save.
- 5- Return to main menu by pressing the left arrow.

HOLD SETTING (Vacation & Permanent)

Vacation Hold:

- 1- From the Main Screen, scroll to MENU and press center button.
- 2- Select HOLD, VACATION
- 3- First, the controller prompts you for a temperature to hold. If you are in AUTO Mode, you will be prompted for both heating and cooling setting. Use up and down arrows to select desired temperatures and press center button.
- 4- Next, it will prompt you for a date and time when you wish to return to programmed operation. Specify date and time using up and down arrows. Returning to the main screen, you will see in the upper part of screen alternating HOLD TIL date and time you specified and actual day and time.
- 5- To cancel this hold, scroll to CANCEL HOLD from the main menu and press center button.

PERMANENT HOLD:

- 1- From the Main Screen, scroll to MENU and press center button.
- 2- Select HOLD, PERMANENT
- 3- The controller prompts you for a temperature to hold. If you are in AUTO Mode, you will be prompted for both heating and cooling setting. Use up and down arrows to select desired temperatures and press center button.
- 4- Returning to the main screen, you will see in the upper part of screen alternating PERMANENT HOLD and actual day and time. You can adjust to permanent hold temperature at will, and the temperature selected

will remain until the permanent hold is cancelled.

- 5- To cancel this hold, scroll to CANCEL HOLD from the main menu and press center button. This will revert to the programmed settings.

FAN OPERATION:

The controller can operate the fan in three ways:

AUTO: Fan is on only during heating and cooling modes.

ON: Fan is always on.

PROGRAMMED FAN: Fan follows the program set in the program screen.

- 1- From the Main Screen, scroll to MENU and press center button.
- 2- Select FAN.
- 3- Select the operation desired.

CHANGING MODE:

- 1- From the main screen, select MODE.
- 2- Select the operation mode required and press center button.

PROGRAMMING CONTROLLER:

Programming a day or series of days:

- 1- From the main screen, scroll to MENU and press center button.
- 2- Select PROGRAM.
- 3- You can program each day differently by going through each day or you can program everyday the same by scrolling to EVERYDAY. You can program weekdays and weekends by selecting the appropriate menu item.
- 4- To program everyday the same, select EVERYDAY and press center button.
- 5- Using the arrows, program all settings, scroll down to SAVE and press center button

MAIN SCREEN:

The iQ Drive controller Thermostat main screen displays system normal operating information. It displays Outdoor and Indoor temperatures, Set points in cooling and heating, humidity and mode of operation for system and indoor fan. In addition, it displays five options to select from:

RH Option: Screen displays humidity conditions.

If your system is equipped with a humidifier, you may select one of the available options:

Humidifier Only.

Dehumidifier Only.

Both.

None.

TEMP Option:

Select this option to temporarily override program setting until next program interval is activated.

MODE Option:

Select this option to choose operating mode (Cool, Heat, Auto or off).

FAN Option:

Select this option to set desired indoor blower operation mode (Auto, On or Programmed).

MENU Option:

Select "MENU" option to input the following: Set Date & Time, Hold Temp info, Program of Operation, Fan, Mode, Settings and Security Lockout).

Note: "Fan" and "Mode" may be selected from Main Screen directly.

Use SETTINGS screen to scroll through options such as:

SCREEN SETTINGS to set "Temp scale", "Clock setting", "Language", "Contrast" and "Backlight on Time".

OFFSET screen to Set temperature offsets, humidity offset, heat anticipator and heat differential.

AUTO CHANGEOVER: Select "Auto or Manual Change" and select the "Auto Changeover Time" to input desired time interval between cooling and heating changeover.

PROGRAM SETTINGS:

Select Smart Recovery feature to save energy by gradually adjusting temperature when time for a programmed temperature change is anticipated.

EVENTS PER DAY:

Select to set the number of scheduled setpoints intervals per day. You may select from 2- Business, 2- Residential or 4- Residential (default).

COOLING LOCKOUT:

Select to restrict cooling operation if outdoor temperature is below certain point. Ranges are None (default), 45F, 50F or 55F.

INTERMITTENT FAN:

Select to overcome variation of temperature and air stratification that may be especially pronounced during mild outdoor conditions. If the fan hasn't been ON for an hour, start cycling the fan based on selected intervals. Select from OFF, 5 to 20 minutes in 5 minute increments and press center button. Next, select the amount of time the fan is to be off. Range is from 0 minutes to 40 minutes in 5 minute increments. Press center button to save and return

to the setting menu screens. The fan will continue to cycle until a call for cooling or heating is energized.

SERVICE INFORMATION: This screen lists components status and faults if any. Scroll up and down to obtain "Fault Status" showing active fault and last 5 faults, "Compressor Status", "Outdoor fan Status", "Indoor fan Status", "Temperature Status" and option to "Clear Fault History".

SECURITY LOCKOUT: Select from "Temp Adjust Only" or "Total Keypad Lockout" options.

A PIN number will be required. Use the up, down and right arrows to select your pin number. Press the center button to save. Screen will display locked and return to main screen which will alternate between "Locked" and the "date and time". If "Temp Adjust Only" is selected, you will be able to adjust set points. For any other operations, the PIN will be required. Once unlocked, you need to set up a pin number again to lockout the controller.

OPERATING INSTRUCTIONS

To Operate System in Cooling:

From MODE Screen, select AUTO or COOL. From Main Screen use the down arrow to set cooling temperature below room temperature. Verify that the indoor fan calibration is performed and that system starts running. To set system operation, select MENU from the Main Screen and follow the instructions listed under previous section.

To Operate Furnace in Heating:

From MODE Screen, select AUTO or HEAT. From Main Screen use the up arrow to set heating temperature above room temperature. If system has been properly configured, heating will start to operate.

To Shut Off the System:

The system is designed to continuously operate within a wide range of speeds to provide ultimate comfort, adequate matched to load capacity and maximum efficiency. It will turn off automatically if required. However if there is a need to shut off the system, select OFF from Operating Mode Screen.

To Operate Indoor Blower Only:

Select FAN from MAIN menu screen, then select ON for continuous blower operation or Programmed Fan for intermittent option.

NOTE: The controller is programmed to start a fan calibration occurrence every week and every time the power is lost for more than 8 hours. This function starts the indoor blower and calibrates air volume to motor speed.

TO MAINTAIN SYSTEM:



CAUTION:

Be certain the electrical power to the outdoor unit and the indoor unit is disconnected before doing the following recommended maintenance.

- 1- Regularly, clean or replace the indoor air filter at the recommended intervals set by the installer and displayed on the controller screen when due for replacement.
- 2- Remove any leaves and grass clippings from the outdoor unit.
- 3- Check for any obstructions to the outdoor unit.

Before calling for service, be certain:

- 1- The unit controller is properly set and programmed.
- 2- The unit disconnect fuses are in good condition, and electrical power to the unit is turned on.

SYSTEM PROTECTION MEASURES

The inverter driver is designed to provide a full scale of protection measures against conditions that may cause compressor and/or other components failure. When the protective function is triggered, the inverter shuts down the unit and communicates the fault description to the thermostat controller which will display an error code or component fault status. To release the trip, the fault cause must be corrected by qualified service personnel.

Diagnostics and Troubleshooting:

The thermostat controller is designed to provide service personnel with detailed description of faults that may cause system malfunction, as well as, messages indicating maintenance required. Only qualified service personnel shall get into “Service Information Menu” screen to investigate the fault and make the appropriate correction.

The last five fault codes are stored in the thermostat controller memory. If the same fault code is triggered five times sequentially or the fault will damage the equipment, then the system will lockout and display the red “SERVICE NEEDED” screen on the thermostat. The “SERVICE NEEDED” screen will display the system information, generalized fault description, and/or contractor phone number.

**INSTALLER: PLEASE LEAVE
THESE INSTALLATION
INSTRUCTIONS WITH THE
HOMEOWNER.**



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