Honeywell Home

Prestige® IAQ Programmable Commercial Thermostat
FOR MULTISTAGE CONVENTIONAL AND HEAT PUMP SYSTEMS

OVERVIEW

Prestige IAQ is a 7 day programmable thermostat with auto changeover that is designed for single stage and multistage control of conventional and heat pump equipment such as rooftop units and split systems. Prestige IAQ consists of a thermostat and equipment interface module. The thermostat and equipment interface module communicate using Resideo's proprietary RedLINK wireless technology. The thermostat controls up to 3 heat / 4 cool conventional systems and up to 4 heat / 2 cool heat pump systems. The thermostat controls humidification, dehumidification, ventilation, an economizer and a lighting panel. Universal sensor inputs are used with remote indoor air temperature sensor(s), an outdoor air temperature sensor, a discharge air temperature sensor, a return air temperature sensor, an occupancy sensor for remote setback and dry contact devices for displaying alerts.

> The thermostat is equipped with a 16:9 touchscreen TFT color display (WQVGA – 480 X 272 pixels).
>
> Provides a USB port to upload Dealer Information, Custom Reminders, Custom Event Schedules, Holiday Schedule and Software Updates and to download Data Logs.
>
> Provides remote access to the thermostat when used with the RedLINK internet gateway.
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> Provides control using optional remote temperature and humidity sensors.
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> Thermostat integrates with the Niagara-AX framework.

QUALITY ASSURANCE

The thermostat shall be manufactured within a certified ISO-9001 facility and is FCC Compliant with part 15 of the FCC rules.

SEQUENCE OF OPERATION

The heating and cooling setpoints shall be individually adjustable in the program schedule. The thermostat shall have a minimum deadband of 2 F (no mechanical heating or cooling shall operate within this deadband). Space temperature deviation above the cooling setpoint or below the heating setpoint shall generate a demand signal to control the system as follows:

Heating

The thermostat shall control the heating output based on the demand signal communicated from the thermostat program, taking into account both space temperature deviation (proportional gain) and the duration of that temperature deviation (integral gain).

The thermostat shall energize heating equipment when space temperature falls below the heating setpoint.

The thermostat shall have a compressor outdoor lockout and backup heat outdoor lockout to turn off the heat pump or backup heat based on outdoor temperature. When the backup heat differential is set to Comfort, the control algorithm will use backup heat as needed to maintain the setpoint within +/- 1 F. When the backup heat differential is set to 2 F or higher and the backup heat upstage timer is turned on, the indoor temperature must drop to the backup heat differential setting or the backup heat upstage timer must expire before turning on the backup heat.

Cooling

The thermostat shall control the cooling output based on the demand signal communicated from the thermostat program, taking into account both space temperature deviation (proportional gain) and the duration of that temperature deviation (integral gain).

The thermostat shall energize cooling equipment when space temperature exceeds the cooling setpoint.

(Optional Remote Equipment) A solid state enthalpy changeover control shall determine the capability of the outdoor air to provide free cooling (optional). The system shall operate as follows:

Free cooling available from Outdoor Air: On a call for cooling, the system shall enable the economizer to provide free cooling. If this does not meet the space demand, the system shall call for mechanical cooling to satisfy the programmed setpoint.

Free Cooling Not Available from Outdoor Air: On a call for cooling, the system shall hold the economizer to minimum position and cooling shall be energized to satisfy the programmed setpoint.

Dehumidification

The thermostat shall control to the desired dehumidification level using one of the methods below:

Control dehumidification using a dehumidifier.

Control dehumidification by over cooling and lowering the fan speed.

Control dehumidification using reheat.

Economizer Interface

The auxiliary output of the equipment interface module (A-L/A terminal) shall be connected to the economizer's power circuit or the Occupied/Unoccupied signal terminal.

Occupied Period: The auxiliary output will provide 24 VAC, allowing the economizer to operate normally and be available for free cooling if outdoor conditions permit.

Unoccupied Periods: The auxiliary output will cease, defeating either economizer operation or the minimum position.

Heating and Cooling Schedule

Initiation of heating setback or cooling setup for each of 7 days shall be provided by a programmed time schedule manually entered into the thermostat. The thermostat shall provide two occupied and two unoccupied periods per day. When all or a portion of a manually programmed schedule is unavailable, the thermostat shall control to the default program schedule.

The thermostat shall provide adjustable recovery ramps for heating and cooling. The thermostat will begin heating or cooling recovery early to ensure that the temperature is reached at the scheduled time.

The thermostat requires the current time to be set to follow the user's desired program schedule. The thermostat will automatically update the current time for Day Light Saving time if this option is turned on.

Fan Operation

Fan Operation shall be selectable as follows:

On: Fan is always on.

Auto: Fan runs only when the heating or cooling system is on.

Follow Schedule: Fan controlled by the program schedule. The thermostat will turn on the fan 1–3 hours before the Occupied period when the Pre-Occupancy Purge setting is turned on.

Power Interruption

On loss of power, the thermostat shall maintain programmed times and temperatures for 10 years.

Current time and date shall be maintained for a minimum of 4 years assuming 2 weeks of power outages each year.

Overrides

Temporary Override: After touching the OVERRIDE button from the Home Screen or adjusting the temperature setpoint, the thermostat shall use a pre-set occupied temperature. The new temperature will be maintained for 1 hour and can be adjusted up to the maximum override duration set by the installer.

Holiday Override: Selecting HOLIDAY MODE from the Menu shall allow the user to set setback temperatures from the current day to a specified date.

Holiday Schedule: Selecting HOLIDAY / EVENT SCHEDULER from the Menu shall allow the user to set US or Canadian Holidays and Custom Events:

US or Canadian Holidays: The thermostat shall allow the user to customize temperature settings to be maintained on specified national holidays. The thermostat resumes normal scheduling between selected holidays.

Custom Events: The thermostat shall allow the user to customize temperature settings to be maintained during a specific event. Up to 25 Custom Events can be setup for a specific date or a day in a month. The thermostat resumes normal scheduling after the event.

Initiate Occupancy: The thermostat shall keep the temperature at an energy saving level until the user touches "Press to start occupancy" on the home screen. The thermostat returns to an energy saving level after the hold until time expires or the Occupied period ends.

Remote Setback using an Occupancy Sensor: During an Occupied Period, the thermostat shall override the program schedule and follow the desired standby settings when the occupancy sensor detects the room is unoccupied. The thermostat shall resume the program schedule when the occupancy sensor detects the room is occupied.

The thermostat provides three levels of keypad lockout to prevent changes to the thermostat: Unlocked, Partial Lockout and Full Lockout.

The thermostat provides heating and cooling temperature range stops to limit temperature setpoint adjustments.

Reminders and Alarms

The thermostat shall provide an alert on the display when the HVAC filter requires replacement or cleaning.

The thermostat shall provide an alert on the display when maintenance is required on the humidification, dehumidification and ventilation equipment.

The thermostat shall provide an alert on the display when the HVAC system requires service based on Delta T.

The thermostat shall provide an alert on the display when a problem is detected by a dry contact device connected to the universal sensor inputs.

The thermostat shall provide an alert on the display when service is required based on the Custom Reminders entered by the installer. Custom Reminders are displayed based on date or when the outdoor temperature exceeds a level selected by the installer.

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