



# X5-IP

- **Commercial Grade Ethernet Thermostat**
- **Standard (Gas/Electric) up to 2H/2C**
- **Heat Pump up to 3H/2C**
- **Humidity Sensing**
- **Advanced Remote Sensor Bus**
- **Full Color Touchscreen**
- **7 Day Programmable ~ 4 Events/Day**
- **80 Additional Event Schedules**
- **Onboard Data Logging**
- **BACnet/IP and Modbus TCP/IP Included**

## GENERAL DESCRIPTION:

## Complete Stand-Alone Solution

The X5-IP is an Ethernet color touchscreen thermostat with an advanced remote sensor bus, designed for new or replacement commercial or residential applications. Our integrated logic for both conventional and heat pump applications can be configured for up to three (3) stages of heating and two (2) stages of cooling. DirectConnect™ helps deliver a near-effortless setup of your daily schedules (4 events per day) and up to 80 Additional Events (40 Special and 40 Calendar Events). The unique scheduling structure also supports the powerful features of adjustable temporary override times and temperature ranges, occupied and unoccupied events, keypad lockout, and many more features. The X5-IP also includes full BACnet/IP support over Ethernet, directly on the thermostat.

The X5-IP is designed to operate with our CloudConnect™ Online Management software or, for maximum security, behind your firewall using DirectConnect™ or our PCConnect™ Software. Since all HVAC functions are stored in the thermostat, the X5-IP will continue to operate even during network outages, allowing you to maintain your energy savings. For ultimate control over energy usage, the X5 offers a digital lockout that can permit limited temperature overrides based on your requirements. Our on-board data collection allows for historical review, sub-metering, and run-time reporting.

## STANDARD FEATURES:

## CloudConnect™ & CloudManager™ Available

### Energy Savings

- Efficient Equipment Restart™ randomizes equipment starts to minimize multiple units turning on simultaneously when there are multiple NetX thermostats at the location
- Random Restart on power up staggers restart of HVAC system after a power outage to minimize peak in-rush current
- Adaptive Recovery for Schedules allows system to achieve desired setpoint at the beginning of the schedule

### Monitoring

- 11 Remote Sensors: up to 6 indoor, 1 humidity, 1 outdoor, and up to 3 auxiliary sensors for monitoring items such as supply air, return air, walk-in refrigerators and freezers, etc.
- 2 Digital Inputs for Fault Conditions, including Condensate and Equipment Faults
- Occupancy Sensor Input
- On-board Data Logging with Sub-Metering Support

### Connectivity

- CloudConnect™ Internet-Based Cloud Service
- PCConnect™ Software Local Network & Port Forwarded Access
- DirectConnect™ Integrated Web Server
- Integrated NetX™ API, Supports 3rd Party Apps
- BACnet/IP and Modbus TCP/IP Embedded
- Optional Modbus RTU Interface via NT-485 Module

### Facility Management

- 4 independent schedules per day
- 80 Additional Event Schedules (40 Special and 40 Calendar Events)
- Commercial Lockout with Programmable Temporary Override Time and Temp Adjustment
- Email & Text Message Alerting for 4 Locations
- Alerts include Hi/Lo Temps for Indoor, Outdoor, Supply, Return, and Aux Temps, Inefficient Equipment Runs, Change Filter Notifications, and Two Digital Inputs: 19 Alerts in All

### General

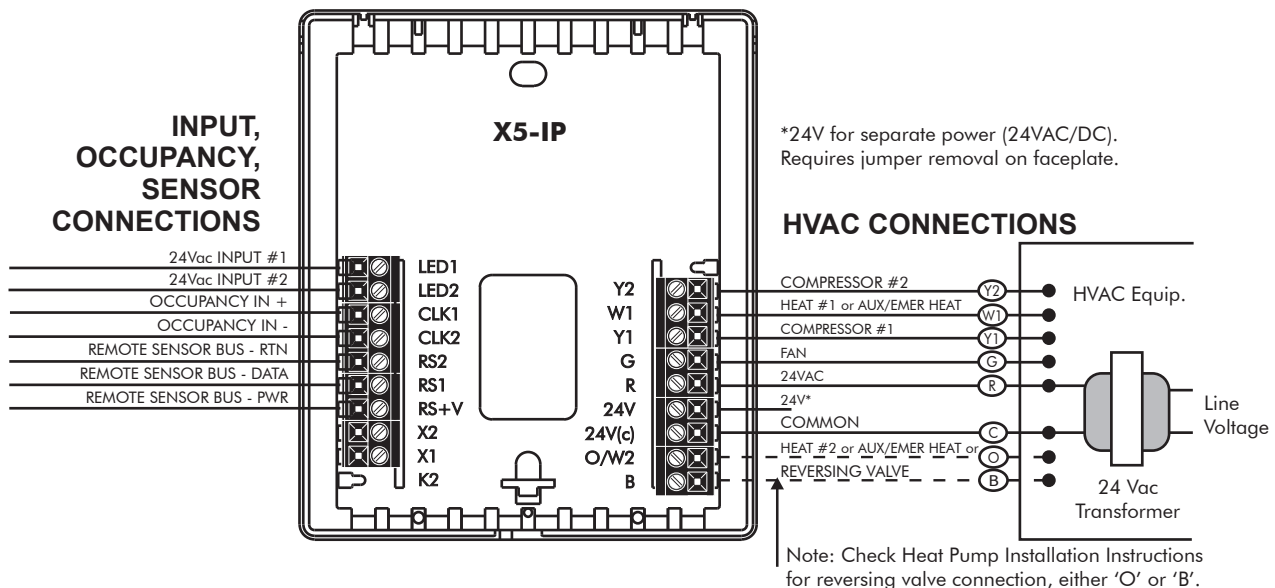
- Color Selectable Touchscreen Display, Black or White Case
- Modes: Heat, Cool, Automatic Changeover, and Off
- Integrated Humidity Sensor
- Fan Selector for Automatic or Continuous Fan Operation; Programmable Recirculation Fan
- Integrated Weather with Current Conditions and 7-Day Forecasts



## SPECIFICATIONS:

<b>Rated Voltage:</b>	20V to 30VAC, 24VAC nominal
<b>Rated A.C. / D.C. Current:</b>	0.05 to 0.75 AC / 0.0 to 0.75 DC Amp continuous, per output, surges to 3 Amps maximum
<b>Temperature Control Range:</b>	<b>Heating:</b> 38°F to 88°F (4°C to 31°C) in 1° steps <b>Cooling:</b> 60°F to 108°F (16°C to 42°C) in 1° steps
<b>Thermostat Sensing Range:</b>	32°F to 118°F (0°C to 48°C) <b>Control Accuracy:</b> ±1°F @ 68°F (±0.5°C @ 20°C)
<b>Minimum Deadband:</b>	2°F (1°C)
<b>Humidity Sensing:</b>	<b>Range:</b> 0% - 100% RH <b>Accuracy:</b> ±3% From 10% - 90%
<b>Dimensions:</b>	5.1"H x 4.7"W x 1.15"D (130mm x 119mm x 29mm)
<b>Equipment Terminations:</b>	R - 24V switching voltage, W1 - Heat1 or Aux/Emer Heat, G - Fan, Y1-Compressor1, Y2 - Compressor2, O/W2 - Heat2 or Rev. Valve in Cooling, B - Rev. Valve in Heating
<b>Power Terminations:</b>	24V(c) - Power Return, 24V - Separate Power (24VAC/DC) requires jumper removal
<b>Input Terminations:</b>	LED1 (Filter Icon Selectable), LED2 (Fault Icon Selectable), CLK1 ( + ), CLK2 ( - ) (Occupancy)
<b>Remote Sensor Terminations:</b>	RS+V - Power, RS2 - Return, RS1 - Data
<b>Ethernet:</b>	10/100Mbps, 802.3, Auto Negotiation, Auto-MDIX
<b>Protocols:</b>	http, native NetX API, BACnet/IP and Modbus TCP/IP over Ethernet

## WIRING DIAGRAMS:



## OUTPUT TERMINAL FUNCTIONS

<b>LED1</b> 24Vac Input #1 for Filter or other Alert	<b>Y2</b> Energizes compressor for second stage cooling, or for heat pumps, either second stage heating or cooling
<b>LED2</b> 24Vac Input #2 for Condensate, Fault or other Alert	<b>W1</b> Energizes heater for first stage heating, or for heat pumps, aux/emmer heat
<b>CLK1</b> For use with External Occupancy Sensor ( + )	<b>Y1</b> Energizes compressor for first stage cooling, or for heat pumps, either first stage heating or cooling
<b>CLK2</b> For use with External Occupancy Sensor ( - )	<b>G</b> Energizes fan circuit with a call for heating or cooling
<b>RS2</b> Remote Sensor Bus (Power Return)	<b>R</b> Independent Switching Voltage from HVAC equip
<b>RS1</b> Remote Sensor Bus (Data)	<b>24V</b> 24Vac
<b>RS+V</b> Remote Sensor Bus (Power)	<b>24V(c)</b> 24Vac Common
<b>X2</b> Communications bus ( - )	<b>O/W2</b> Energizes heater for second stage heating, or for heat pumps, energizes the reversing valve in cooling mode
<b>X1</b> Communications bus ( + )	<b>B</b> Energizes the reversing valve in heating mode