![NT network thermostat logo]

UP32H-IP

Ethernet (10/100Mbps) Thermostat with Humidity Control & Advanced Remote Sensor Bus

Standard (Gas/Electric) up to 2H/2C Heat Pump up to 3H/2C

7 Day Programmable ~ 4 Events/Day

Integrated Web Server Secure Direct Connection via any LAN Network and the Internet

DirectConnect™ & CloudConnect™ Included

GENERAL DESCRIPTION:

The UP32H-IP is an Ethernet networkable thermostat with an advanced remote sensor bus, designed for new or replacement commercial or residential applications. With integrated logic for both conventional and heat pump applications, the thermostat controls up to three (3) stages of heating and two (2) stages of cooling as well as humidification and dehumidification control. Using your favorite browser, Net/X™ makes it simple with near effortless setup of your daily schedules and vacations. The powerful integrated web server allows scheduling of up to 4 events per day, and 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. Each stand-alone thermostat includes integrated weather, email and text message alerting for both customer and service personnel, two digital inputs for condensate switch and other fault conditions, occupancy sensor inputs, and the most advanced remote sensor bus on the market, including up to 6 indoor remote sensors, humidity sensor, outdoor sensor, and up to 3 auxiliary sensors for needs such as supply air, return air, water temperature, walk-in freezers and refrigerators, and any other temperature monitoring desired.

STANDARD FEATURES:

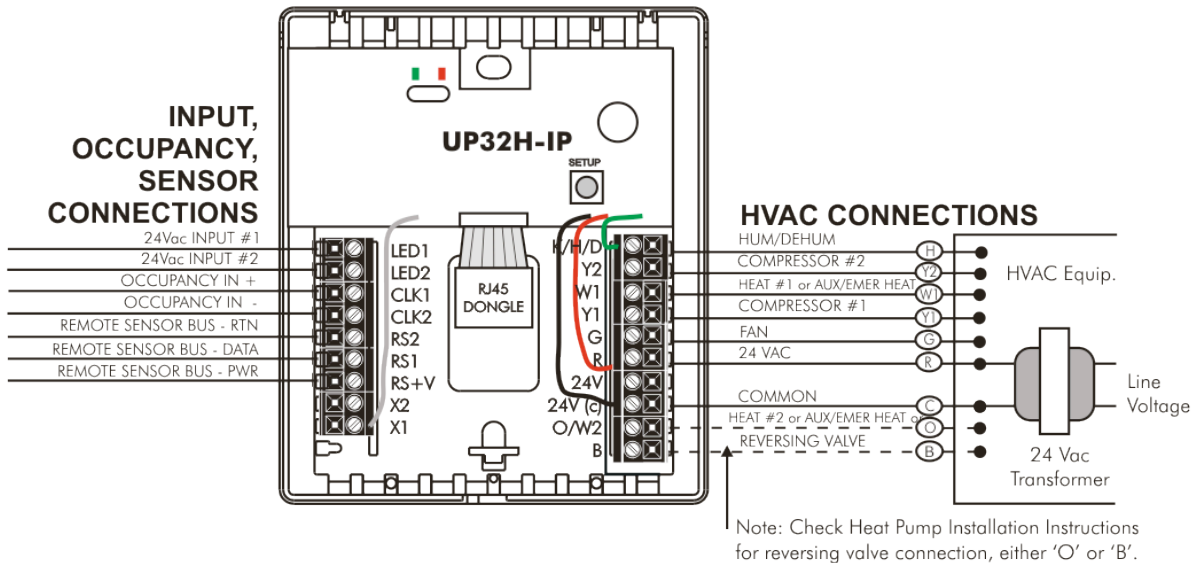*Free PC Software for Controlling Multiple Thermostats from a Single Screen*

- Integrated Web Server for Connectivity from Any Modern Web Browser
- Integrated Humidity Sensor & Relay for Humidification and Dehumidification Control
- Alternately Use Humidity Relay for Fresh-Air Damper Control or an Auxiliary Controlled General Purpose Relay
- Automatic Recognition of Browser Resolution and Formatting for Specific Screen Sizes
- Email & Text Message Alerting for up to 4 Recipients; Alerts include Hi/Lo Temps for Indoor, Outdoor, Supply, Return, and Aux Temps, Inefficient Equipment Runs, Change Filter Notifications, Two Digital Inputs (think Condensate & Fault)
- Integrated Net/X™ API, Allowing for Development of 3rd Party Apps
- Selectable Fahrenheit or Celsius Display
- Automatic Changeover from Heat-to-Cool and Cool-to-Heat
- Fan Selector for Automatic or Continuous Fan Operation; Programmable Recirculation Fan
- Vacation Button for Extended Override with Selectable Length, Start and Return Time
- Commercial Lockout with Programmable Temporary Override Time and Temp Adjustment
- 3 LED lights; 1 for E-Heat indication and 2 for status indication
- Up to 4 independent schedules per day, programmable via communications
- Adaptive Recovery for Schedules allows system to achieve desired setpoint at the beginning of the schedule
- Efficient Equipment Restart™ randomizes equipment starts to minimize multiple units turning on simultaneously when there are multiple UP32 and/or RP32 thermostats at the location
- Random Restart on power up randomly staggers restart of HVAC system after a power outage to minimize peak in-rush current for a facility
- Integrated Weather Current Conditions and 7-Day Forecasts
- Occupancy Sensor Input
- 2 Digital Inputs for Fault Conditions, including Condensate and Equipment Faults
- Up to 14 Remote Sensors: up to 6 indoor, 1 humidity, 1 outdoor, and up to 6 auxiliary sensors for monitoring items such as supply air, return air, walk-in refrigerators and freezers, etc. All on a 3-wire bus.

Made in USA

Rated Voltage:	20V to 30VAC, 24VAC nominal
Rated A.C. / D.C. Current:	0.05 to 0.75 AC / 0.0 to 0.75 DC Amp continuous, per output, surges to 3 Amps max.
Control Range:	**Heating:** 38 to 88°F (6 to 30°C) in 1° steps **Cooling:** 60 to 108°F (16 to 40°C) in 1° steps
Thermostat Sensing Range:	20 to 124°F (0 to 48°C) **Control Accuracy:** +/-1°F @ 68°F (0.5°C @ 20°C)
Minimum Deadband:	(between Heat and Cool) 2°F (1°C)
Humidity Control Range:	**Humidify:** 10% to 60%RH in 5%RH steps **Dehumidify:** 35% to 75%RH in 5%RH steps
Dimensions:	4.5"H x 4"W x 1"D (114mm x 102mm x 26mm)
Thermostat LEDs:	Red – Emergency Heat, Yellow – Inefficient Equipment Run, Green – Change Filter
Equipment Terminations:	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 R/H/D – Humidification, Dehumidification, Aux Relay
Power Terminations:	24V - remote power (not used), 24V(c) - power common (from HVAC equipment)
Input Terminations:	LED1 (Green LED / Filter Icon), LED2 (Yellow LED / Fault Icon)
Occupancy Terminations:	CLK1 (+), CLK2 (-)
Remote Sensor Terminations:	RS+V - Power, RS2 - Return, RS1 - Data

WIRING DIAGRAMS:

INPUT, OCCUPANCY, SENSOR CONNECTIONS

24Vac INPUT #1
24Vac INPUT #2
OCCUPANCY IN +
OCCUPANCY IN -
REMOTE SENSOR BUS - RTN
REMOTE SENSOR BUS - DATA
REMOTE SENSOR BUS - PWR

UP32H-IP SETUP

LED1
LED2
CLK1
CLK2
RS2
RS1
RS+V
X2
X1

RJ45 DONGLE

K/H/D
Y2
W1
Y1
G
R
24V
24V (c)
O/W2
B

HVAC CONNECTIONS

HUM/DEHUM — H
COMPRESSOR #2 — Y2
HEAT #1 or AUX/EMER HEAT — W1
COMPRESSOR #1 — Y1
FAN — G
24 VAC — R
COMMON — C
HEAT #2 or AUX/EMER HEAT o — O
REVERSING VALVE — B

HVAC Equip.

Line Voltage

24 Vac Transformer

Note: Check Heat Pump Installation Instructions for reversing valve connection, either 'O' or 'B'.

OUTPUT TERMINAL FUNCTIONS

LED1 24Vac Input #1 for Filter or other Alert
(Internally tied to Green LED and Filter Icon)
LED2 24Vac Input #2 for Condensate, Fault or other Alert
(Internally tied to Yellow LED and Wrench Icon)
CLK1 For use with External Occupancy Sensor (+)
CLK2 For use with External Occupancy Sensor (-)
RS2 Remote Sensor Bus (Power Return)
RS1 Remote Sensor Bus (Data)
RS+V Remote Sensor Bus (Power)

K/H/D Humidification or Dehumidification or Aux. Relay
Y2 Energizes compressor for second stage cooling, or for heat pumps, either second stage heating or cooling
W1 Energizes heater for first stage heating, or for heat pumps, aux/emer heat
Y1 Energizes compressor for first stage cooling, or for heat pumps, either first stage heating or cooling
G Energizes fan circuit with a call for heating or cooling
R Independent Switching Voltage from HVAC equip
24V 24Vac
24V(c) 24Vac Common
O/W2 Energizes heater for second stage heating, or for heat pumps, energizes the reversing valve in cooling mode
B Energizes the reversing valve in heating mode

THERMOSTAT DIP SWITCH SELECTIONS

(FACTORY DEFAULT) OFF		ON
GAS / ELECTRIC	1	HEAT PUMP
ADAPTIVE RECOVERY ON	2	ADAPTIVE RECOVERY OFF
4 MINUTES (ON/OFF)	3	2 MINUTES (ON/OFF)
UNLOCKED	4	LOCKED
DIP1=OFF : ELECTRIC DIP1=ON : HP NORM	5	DIP1=OFF : GAS HEAT DIP1=ON : HP DUAL FUEL
1-STAGE CONTROL	6	2-STAGE CONTROL
+/- 3F OVERRIDE RANGE	7	+/- 5F OVERRIDE RANGE
REMOTE SENSORS ONLY	8	TSTAT & REMOTE SENSORS

NT™ network thermostat