NT network thermostat

X7C-WIFI

- **Commercial Grade Wi-Fi Thermostat**
- **Gas/Electric to 2H/2C, Heat Pump to 3H/2C**
- **Humidity Sensing and Control**
- **CO_2 Sensing and Control**
- **Advanced Remote Sensor Bus**
- **Two Configurable Relays**
- **Full Color Touchscreen**
- **7 Day Programmable ~ 4 Events/Day**
- **80 Additional Event Schedules**
- **Onboard Data Logging**
- **BACnet/IP and Modbus TCP/IP Included**

Display shows: CO2: 855 ppm, 12:34 pm, auto, 72°

GENERAL DESCRIPTION:

Complete Stand-Alone Solution

The X7C-WIFI is a commercial-grade Wi-Fi-connected color touchscreen thermostat with an advanced remote sensor bus, designed for new or replacement commercial and residential applications. Use the X7C for conventional or heat pump applications (Gas/Elect 2H/2C, HP 3H/2C), humidification, fresh air damper, IAQ controls, and more. The X7C also includes a revolutionary CO_2 sensor that requires no field calibration for five (5) years. The X7C delivers 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 X7C-WIFI includes full Modbus TCP/IP and BACnet/IP support over Wi-Fi, directly on the thermostat.

The X7C-WIFI 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 X7C will continue to operate even during network outages, allowing you to maintain your energy savings. For ultimate control over energy usage, the X7C offers a digital lockout that can permit limited temperature overrides based on your requirements. Our onboard 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 inrush current
- Adaptive Recovery for Schedules allows system to achieve desired setpoint at the beginning of the schedule

Monitoring
- 12 Remote Sensors: up to 6 indoor, 1 humidity, 1 outdoor, 1 water leak detection, and up to 3 auxiliary sensors for monitoring items such as supply air, return air, walk-in refrigerators and freezers, etc.
- CO_2 current and max level display and recording. Meets CA Energy Commission requirements.
- 2 Digital Inputs for Fault Condition Alerting
- 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

Facility Management
- 4 independent schedules per day
- 80 Additional Schedules (40 Special and 40 Calendar Events)
- Commercial Lockout with Programmable Temporary Override Time and Temp Adjustment
- Email & Text Message Alerting
- Alerts include Hi/Lo Temps for Indoor, Outdoor, Supply, Return, and Aux Temps, Inefficient Equipment Runs, Change Filter Notifications, and Two Digital Inputs: 21 Alerts in All

General
- Color Selectable Touchscreen Display, Black or White Case
- Modes: Heat, Cool, Automatic Changeover
- Integrated Humidity Sensor & Humidification and Dehumidification Control
- Fan Selector for Automatic and Manual Operation; Programmable Recirculation Fan
- Relay 1 & Relay 2 Flexible Control
  - Humidification and Dehumidification Control
  - Fresh-Air Damper Control
  - IAQ Equipment Control Control
  - Auxiliary General Purpose Relays with Scheduling
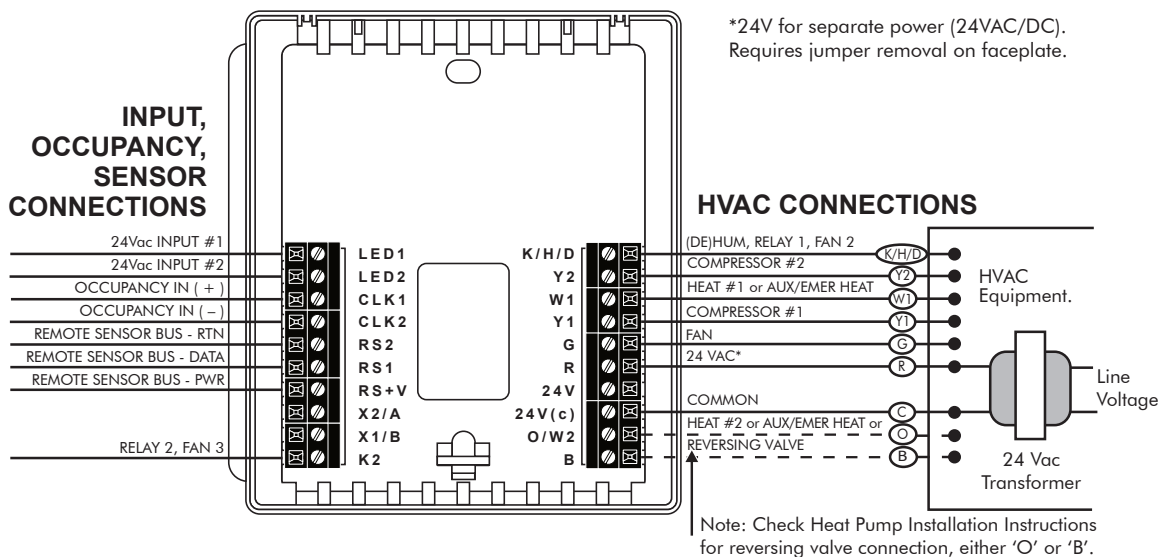- Integrated Weather with Current Conditions and 7-Day Forecasts

Made in USA

972-580-8001

240324-05

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 maximum
Temperature 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)
CO_2 Sensing:	**Range:** 400-2,000ppm **Accuracy:** 40ppm **Adjustable High CO_2 Indication:** 500-2000ppm
Minimum Deadband:	2°F (1°C)
Humidity Sensing:	**Range:** 0% - 100% RH **Accuracy:** ±3% From 10% - 90%
Humidity Control Range:	**Humidify:** 10% to 60%RH in 5%RH steps **Dehumidify:** 35% to 75%RH in 5%RH steps
Dimensions:	5.1"H x 4.7"W x 1.15"D (128mm x 119mm x 29mm)
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,
Aux Relay Terminations:	K/H/D – Humidify / Dehumidify / Relay 1 Schedule / Damper / IAQ , K2 – Relay 2 Schedule / Damper / IAQ
Power Terminations:	24V(c) - Power Return, 24V - Separate Power (24VAC/DC) requires jumper removal
Input Terminations:	LED1 (Filter Icon Selectable), LED2 (Fault Icon Selectable), CLK1 (+), CLK2 (-) (Occupancy)
Remote Sensor Terminations:	RS+V - Power, RS2 - Return, RS1 - Data
Wireless Radio:	2.4GHz 802.11b/g/n, Security: Open, WEP, WPA-PSK, WPA2-PSK
Accessory Port:	SIM port for NetX CO_2
Protocols:	http, native NetX API, BACnet/IP and Modbus TCP/IP over Wi-Fi

WIRING DIAGRAMS:

*24V for separate power (24VAC/DC).
Requires jumper removal on faceplate.

INPUT, OCCUPANCY, SENSOR CONNECTIONS

24Vac INPUT #1	LED1
24Vac INPUT #2	LED2
OCCUPANCY IN (+)	CLK1
OCCUPANCY IN (–)	CLK2
REMOTE SENSOR BUS - RTN	RS2
REMOTE SENSOR BUS - DATA	RS1
REMOTE SENSOR BUS - PWR	RS+V
	X2/A
	X1/B
RELAY 2, FAN 3	K2

HVAC CONNECTIONS

K/H/D	(DE)HUM, RELAY 1, FAN 2	K/H/D
Y2	COMPRESSOR #2	Y2
W1	HEAT #1 or AUX/EMER HEAT	W1
Y1	COMPRESSOR #1	Y1
G	FAN	G
R	24 VAC*	R
24V		
24V(c)	COMMON	C
O/W2	HEAT #2 or AUX/EMER HEAT or REVERSING VALVE	O
B		B

HVAC Equipment.

Line Voltage

24 Vac Transformer

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

TERMINAL FUNCTIONS

LED1 24Vac Input #1 for Filter or other Alert

LED2 24Vac Input #2 for Condensate, Fault or other Alert

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)

X2/A N/A

X1/B N/A

K2 Programmable Auxiliary Relay 2, FAN 3

K/H/D Humidification or Dehumidification, Aux. Relay 1, or FAN 2

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

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