

# Network Sensors

## BACstat II: DNS-x24

### Description

The DNS-24 is a smart room sensor that can optimize user comfort while reducing energy consumption. It is a simple to install, and cost effective package for advanced, automated, control. With an LCD display and intuitive pushbutton interface, the DNS-24 communicates over an RS-485 LAN using BACnet® MS/TP or Delta's LINKnet protocol.

The DNS-24 has multiple sensor options including temperature, humidity, motion, and a self-calibrating CO<sub>2</sub> sensor.



### Application

The DNS-24 is suitable for a wide range of space sensing applications, from basic temperature sensing to indoor air quality and occupancy sensing.

The DNS-24 provides mechanical equipment controllers the information needed to drive advanced control algorithms, such as demand control ventilation, for optimum user comfort with minimum energy consumption.

### Features

- ▶ Native BACnet firmware allows easy integration into any BACnet system
- ▶ BACnet MS/TP or LINKnet communications
- ▶ Multiple built-in sensor options: Temperature, Humidity, CO<sub>2</sub>, and occupancy
- ▶ Self calibrating CO<sub>2</sub> sensor
- ▶ Programmable (via GCL+ over network), LCD display
- ▶ 4 Programmable buttons (via GCL+ over network)
- ▶ Derived Network Addressing (DNA) for simple integration into a standard network architecture
- ▶ Optional terminal block<sup>2</sup> for wiring a remote thermistor to the temperature input
- ▶ Service port
- ▶ Firmware upgrade<sup>3</sup> and database load/save over the network

### Specifications

#### BACnet Device Profile

BACnet Application Specific Controller (B-ASC)

#### LCD

3-value and various icons (96 total segments) with optional backlighting<sup>2</sup>

#### Push Buttons

4 stylized momentary push buttons

#### Temperature Sensor

Thermistor input - 10kΩ at 77°F (25°C)

Accuracy: ± 0.36°F from 32-158°F (± 0.2°C from 0-70°C)

Display resolution of 0.1°

Stability 0.24°F over 5 years (0.13°C)

#### Humidity Sensor (Optional)

Accuracy: ± 3% RH from 20% -80% RH (linearized accuracy of ± 3% to ± 5% from 0-20% and 80-100% RH)

Display Resolution of 0.1%

Stability of < 0.5% RH/yr (typical)

#### CO<sub>2</sub> Sensor (Optional)

Dual Beam, Self Calibrating NDIR Detection

Range: 0-2000 ppm

Accuracy @77°F (25°C): ± 50ppm + 2% of value

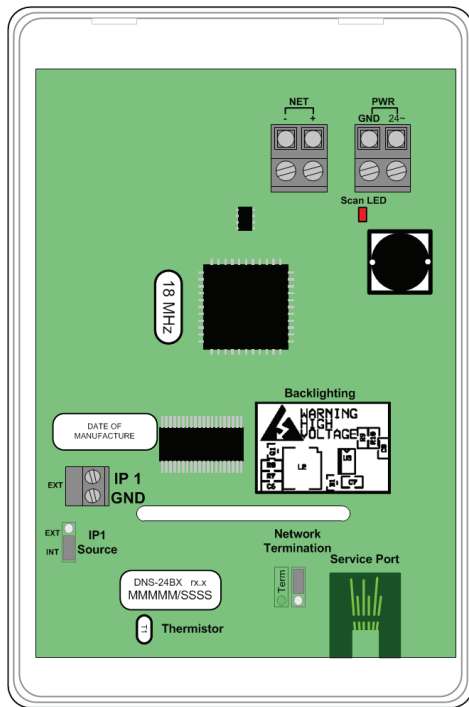
Temperature Dependence: 1 ppm/ °F (2ppm/°C) typical

Pressure Dependence: 0.13% of reading per mm Hg

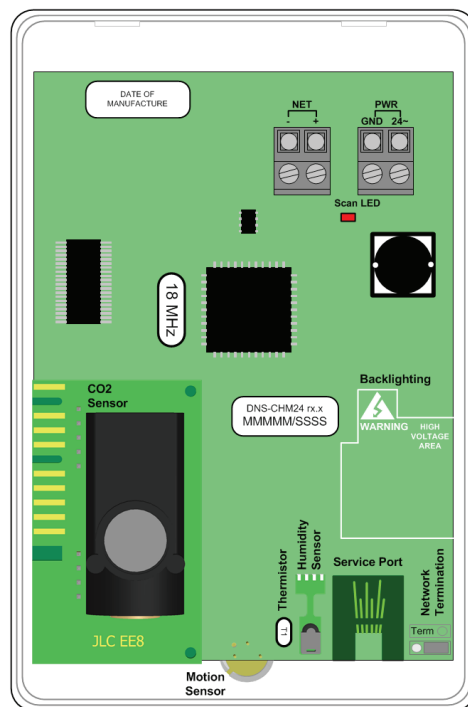
Stability: 20 ppm/year (typical)

# Network Sensors

## DNS-x24 Board Layout Diagram



DNS-24BX / DNS-24-UL864 Layout



DNS-CHM24B Layout

### Ordering

Order the DNS-x24 according to the following product numbers:

|                     |  |
|---------------------|--|
| <b>DNS-24BX</b>     | Network space sensor with LCD/push button interface, temperature sensor, remote thermistor terminator, and LCD backlight.              |
| <b>DNS-M24B</b>     | Network space sensor with LCD/push button interface, temperature and motion sensors, and LCD backlight.                                |
| <b>DNS-C24</b>      | Network space sensor with LCD/push button interface, temperature and CO <sub>2</sub> sensors.  |
| <b>DNS-CH24</b>     | Network space sensor with LCD/push button interface, temperature, humidity and CO <sub>2</sub> sensors.                                |
| <b>DNS-CHM24B</b>   | Network space sensor with LCD/push button interface, temperature, humidity, CO <sub>2</sub> and motion sensors, and LCD backlight.     |
| <b>DNS-24-UL864</b> | Network space sensor with LCD/push button interface, temperature sensor remote thermistor terminator, LCD backlight and UL-864 listing |

### Note:

1. Board layout varies slightly depending on option model selected
2. Backlighting and Remote thermistor options are not available on all models
3. DNS-24BX and DNS-24-UL864 models firmware is not field upgradable

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### Specifications (Continued)

#### Occupancy Sensor (Optional)

Passive infrared motion (PIR) sensor

Range: 5m (16.4 ft.)

Coverage: 100° Horizontal, 80° Vertical

#### Technology

32-bit processor with internal A/D, Flash and RAM

#### Communications Ports

RS-485 Port (up to 76800 bps). BACnet MS/TP and Delta LINKnet protocols supported.

#### Connectors

Screw-type terminal connectors

#### Wiring Class

Class 2 / SELV

#### Power

24V AC

3 VA

#### Ambient

32° to 131°F (0° to 55°C)

10 - 90% RH (non-condensing)

#### Dimensions (L x W x H)

4.91" x 3.26" x 1.37" (12.5 x 8.3 x 3.5cm)

\*H dimension is maximum for all models. Models without the motion sensor option have a slightly reduced height.

#### Listings

UL916

UL864 (DNS-24-UL864 only)

#### Compliance

CE

FCC Class B

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Subject to change without notice.