Models:
NTRCxxx-ICS: Temperature & Humidity Sensor w/ BACnet or Modbus

NTRC Series - Temperature & Humidity Sensor w/ BACnet or Modbus

Overview

The NTRC Series Network features embedded BACnet® and ModBus communication and is available in several configurations for the most efficient monitoring and control solution. The basic unit accurately measures room temperature. Optional features include RH measurement, up/down setpoint control, a local override function, a control relay output, a fan speed switch and a digital input.

The device connects to an RS-485 MS/TP or Modbus RTU network to offer a single-point solution for control of indoor air quality and comfort. Features include a back-lit LCD and user menu for easy installation, field-proven sensors and user input controls to add local setpoint, override functions and a digital input at the same network point.

Features

- Selectable Native BACnet or Modbus MS/TP protocol
- Various models with combinations of temperature, relative humidity, CO_2 Over-rides and Fan Speed Control
- 3 digit LCD display with auto-dimming
- Customise the display to only show what is relevant
- Reverse voltage and over-voltage protected
- Sensor coverage - 100m² (1000ft²)
- Backplate provides many mounting hole configurations

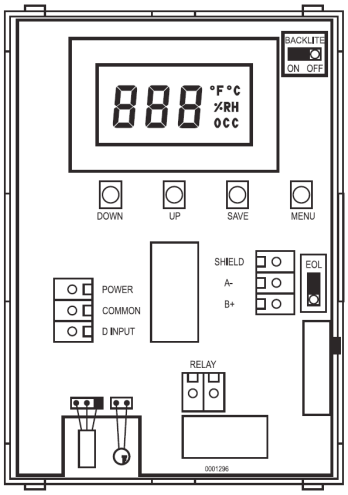
Installation

The NTRC series can be mounted directly to a single gang electrical box or directly to a wall. The backplate includes many mounting hole configurations to allow for mounting on a variety of electrical boxes.

The sensor should be installed in an environment that does not exceed the maximum operating parameters of the device. It should be mounted in a clean and dry environment free of vibration, and properly ventilated.

Wiring should be done in accordance with Innotech connection diagrams and local bylaws or refer to your local distributor.

For complete installation and wiring details, please refer to the product installation instructions at https://innotech.com/DownloadFiles/Documents/innotech_ntrc_installation.pdf.



Terminal	Function
Power	From +20-28 Vac/ dc of controller or power supply
Common	To GND or COMMON of controller
D Input	To dry contact output of device
B+	To + of comms bus
A-	To - of comms bus
Shield	To comms bus shield
Relay	To digital input of controller

Some models do not have all of these features

Product Selection Information

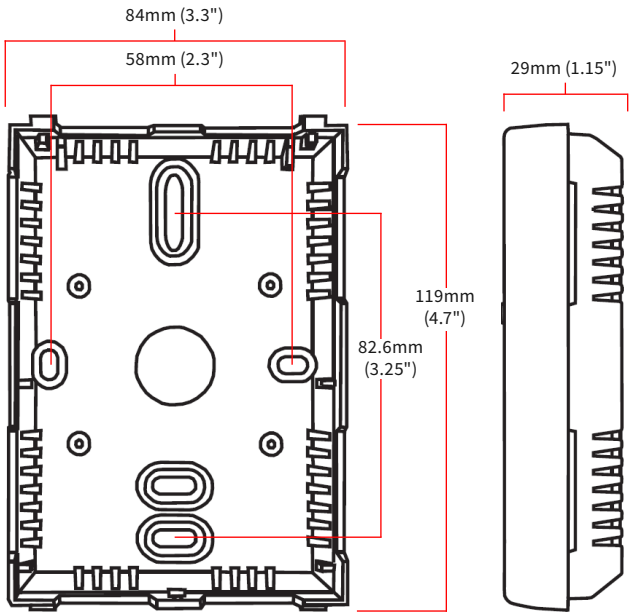
Model	Product Description
NTRC	Network Sensor w/ BACnet or Modbus Communications

Code	LCD Display
N	Concealed
L	Viewable

Code	Configurations
T	Temperature Only
RH	Temperature & Humidity

Code	Options (multiple selections can be made, leave blank if no options are required)
P	Setpoint Adjustment 2 button up/down
S	Momentary Override Switch - N.O.
F	Fanspeed Switch, 5 Position
R	Relay Output
D	Digital Input

NTRC x x x -ICS



Specifications

POWER SUPPLY REQUIREMENTS	
Power Supply	20-28VAC/DC (non-isolated half-wave rectified)
Power Consumption	35mA max @ 24VDC

ⓘ Reverse Voltage Protected.
Over-Voltage Protected.

The operating voltage must meet the requirements of Safety Extra Low Voltage (SELV) to EN60730. The transformer used must be a class 2 safety transformer in compliance with EN60742 and be designed for 100% duty. It must also be sized and fused in compliance with local safety regulations.

ENVIRONMENTAL	
Operating Temperature	0° to 50°C (32° to 122°F) 0 to 95% RH non-condensing
Storage Temperature	-20° to 70°C (-4° to 158°F)

ENCLOSURE	
Housed in a rectangular case suitable for electrical box mounting or directly on the wall. Housing moulded from ABS, IP30 (NEMA 1).	
Colour	White
Dimensions	W 84mm x H 119mm x D 29mm (3.3" x 4.7" x 1.15")
Wiring Connections	Screw Terminal Block (14 to 22 AWG)

COVERAGE	
Sensor Coverage Area	100m² (1000ft²) typical

APPROVALS AND LISTINGS
EN61326:2013 Class A for RCM Labelling
RoHS Compliant
ISO9001

COMMUNICATIONS INTERFACE	
Hardware	2-wire RS-485
Software	Selectable BACnet MS/TP or Modbus RTU Slave
Baud Rate (default 9600)	Locally set from 300 to 76800
MAC Address Range	Locally set 0 to 127 for BACnet or 1 to 255 for Modbus (factory default is 3, 63 devices max on one daisy chain)

LCD DISPLAY	
Resolution	0.5° or 1° C/F selectable, 1% RH
Size	W 38.1mm x H 16.5mm (1.5" x 0.65"), 3 digit
Backlight	Auto-dimming, enable/disable by jumper
ⓘ Viewed Values	Temperature Only, RH Only or alternating

TEMPERATURE SIGNAL	
Sensing Element	10K Thermistor, ±0.2°C (±0.4°F)
Range	0° to 50°C (32° to 122°F)

OPTIONAL RH SIGNAL	
Sensing Element	Thermoset polymer based capacitive
Accuracy	±2% RH
Range	0 to 100% RH, non-condensing
Resolution	1% RH
Hysteresis	±3% RH
Response Time	15 seconds typical
Stability	±1.2% RH typical @ 50% RH in 5 yrs

OPTIONAL SETPOINT CONTROL	
User Interface	Front panel Up/Down buttons
Setpoint Mode (default temp & °C)	Temp or RH
Adjustable Setpoint Range (default 18° to 24°C)	10° to 30°C / 50° to 86°F / 10 to 85% RH
Minimum Span	4° C/F or 10% RH
Temperature Setpoint Resolution	0.5° or 1° (default 1°)

OPTIONAL OVERRIDE SWITCH	
User Interface	Front panel button
Override Status	Via "OCC" segment light on LCD

OPTIONAL FANSPEED SWITCH	
User Interface	Side panel, 5 position
Indication	Off, Auto, Low, Mid, High switch position indicators

OPTIONAL RELAY OUTPUT	
Contact Ratings	Form A contact (N.O.), 2A @ 30VDC
Relay Activation	Via BACnet or Modbus

OPTIONAL DIGITAL OUTPUT	
Input Type	Dry contact only (relay contact), short to COMMON to activate

ⓘ RH requires optional RH Signal.

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