Technical Specifications

BACnet® Thermostat

Applications

**Stand alone operation.** No special programming, software applications, or setup tools are required to configure and commission a BACnet Thermostat. All options can be set by using only the five front panel buttons and the east-to-read menus in the full color display.

**New or retrofit applications.** The attractive two-piece design is ideal for new installations or upgrades of older, less efficient thermostats. The BACnet Thermostat installation requires only mounting the backplate to a wall or electrical box, connecting wires to screw terminals, and plugging the thermostat into the backplate.

**Bright, full-color display.** The full color display is easy to read across a room even in bright sunlight. Users can easily choose between Fahrenheit or Celsius values. The display features large numbers and simple color icons to indicate heating or cooling, occupied, unoccupied or local setback modes, and fan operation.

**Network ready.** All models are native BACnet, Application Specific Controllers ready to connect to a BACnet MS/TP network. Device instance, MAC address, and baud rate are set from the password protected front controls. All models feature a hardware clock and BACnet schedule that can be set up from the front panel or as standard BACnet objects and properties.

Description

The BACnet Thermostat combines the power of a space-mounted equipment controller with the convenience of a built-in temperature sensor. The controllers include factory supplied programs for the following applications:

- Two and four pipe fan coil units
- Roof top units
- Heat pump units
Hardware

Full color user interface
The user interface is a color display and has five push buttons. Back lighting automatically starts when any button is pushed and remains lit for 60 seconds after the last button is pushed. Through the menu driven display, an operator can do the following:
- Change setpoints and fan, heating, cooling modes
- Choose between Fahrenheit or Celsius values
- Set BACnet addressing
- Set up and commission the installation
- Add or change user passwords
- Configure any available options

Security
Separate passwords for users and control technicians and engineers.

Screen type
- 128 × 128 pixels
- Active color LCD with LED back lighting
- 1.00 × 1.04 inches (25 × 26 mm)

Inputs and outputs
All inputs and outputs for the BACnet Thermostat are set up at the factory and do not require set up in the field.

Inputs
Analog inputs for discharge air temperature, water supply temperature, outside air temperature, fan status, and remote temperature sensor.
- Sensors are automatically detected
- Inputs accept industry-standard 10K ohm Type II thermistor sensors
- Input overvoltage protection up to 24 volts AC, continuous
- 12-bit analog-to-digital conversion
- Relay outputs
- All relay outputs are normally open, SPST, Form “A” relays
- 1 Ampere maximum per relay at 24 volts AC or DC for each output. Maximum for all relay outputs is 3 amperes (72VA)

Analog outputs
- Short-circuit protected
- Loads up to 10 mA at 0-12 volts DC
- 8-bit PWM digital-to-analog conversion

Connections
Screw terminal blocks, wire size 14-22 AWG, for inputs, outputs, power, and network connections.

BACnet communication
- Integral peer-to-peer BACnet MS/TP network communications
- Network speed from 9600 to 76,800 baud
- Front panel selection for device instance, MAC address, and baud rate
- Meets or exceeds ANSI/ASHRAE BACnet Standard 135-2008 for Application Specific Controllers

Table 1: Accuracy-temperature only models

<table>
<thead>
<tr>
<th>Type</th>
<th>Thermistor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>±0.36°F (±0.2°C)</td>
</tr>
<tr>
<td>Resistance</td>
<td>10,000Ω at 77°F (25°C)</td>
</tr>
<tr>
<td>Operating Range</td>
<td>48 to 96°F (8.8 to 35.5°C)</td>
</tr>
</tbody>
</table>

Regulatory approval
- UL 916 Energy Management Equipment
- FCC Class A, Part 15, Subpart B and complies with Canadian ICES-003 Class B
- BACnet Testing Laboratory listed
- SASO PCP Registration KSA R-103260

Operating Sequences

Fan Coil Units
BACnet Thermostats for the control of fan coil units are available with inputs, outputs, and sequences of operation for the following functions.
- Two-pipe heating and cooling with on/off valves or modulating valves
- Four-pipe heating and cooling with on/off valves or modulating valves
- Three-speed fan control
- Remote space temperature sensor
Roof Top Units
BACnet Thermostats for the control of roof top or similar packaged or split unitary units are available with inputs, outputs, and sequences of operation for the following functions.

- One or two stage heating
- One or two stage cooling
- Optional economizer
- Automatic or manual fan control
- Modulating valves or on/off heating and cooling valves
- Remote space temperature sensor

Heat Pump Units
BACnet Thermostats for the control of heat pump units are available with inputs, outputs, and sequences of operation for the following functions.

- Two stages of heat and two stages of cooling plus auxiliary heat
- Optional economizer
- Automatic or manual fan control

Installation Information

Mounting
Backplate mounts to a standard 2×4 vertical handy-box or Euro style box. The controller is secured to the backplate with a concealed Allen screw.

Table 2: Mounting Information

<table>
<thead>
<tr>
<th>General</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>White flame-retardant plastic</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 6 oz. (170 grams)</td>
</tr>
<tr>
<td>Supply Voltage</td>
<td>24 volts AC (-15%, +20%), 50-60 Hz, 12 VA, Class 2 only, non-supervised (all circuits, including supply voltage, are power limited circuits)</td>
</tr>
<tr>
<td>Environmental Limits</td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>32 to 140°F (0 to 49°C)</td>
</tr>
<tr>
<td>Shipping</td>
<td>-40 to 160°F (-40 to 71°C)</td>
</tr>
<tr>
<td>Humidity</td>
<td>0 to 95% RH non-condensing</td>
</tr>
</tbody>
</table>

Table 3: Dimensions in Inches (mm)

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5</td>
<td>5.12</td>
<td>1.13</td>
</tr>
</tbody>
</table>

Table 4: Materials List

<table>
<thead>
<tr>
<th>Description</th>
<th>Product Number</th>
<th>Model Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fan Coil Unit</td>
<td>2508036</td>
<td>MIT-FA-005</td>
</tr>
<tr>
<td>2-pipe and 4-pipe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modulating or ON/OFF valves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modulating or Three-speed fan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roof Top Unit</td>
<td>2508034</td>
<td>MIT-RA-007</td>
</tr>
<tr>
<td>Modulating or ON/OFF valves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One or two-stages heat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One or two stages cooling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fan control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economizer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heat Pump Unit</td>
<td>2508036</td>
<td>MIT-HA-009</td>
</tr>
<tr>
<td>3 heat, 2 cool</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fan Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economizer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Daikin Applied Training and Development**

Now that you have made an investment in modern, efficient Daikin equipment, its care should be a high priority. For training information on all Daikin HVAC products, please visit us at www.DaikinApplied.com and click on Training, or call 540-248-9646 and ask for the Training Department.

**Warranty**

All Daikin equipment is sold pursuant to its standard terms and conditions of sale, including Limited Product Warranty. Consult your local Daikin Applied representative for warranty details. To find your local Daikin Applied representative, go to www.DaikinApplied.com.

**Aftermarket Services**

To find your local parts office, visit www.DaikinApplied.com or call 800-37PARTS (800-377-2787). To find your local service office, visit www.DaikinApplied.com or call 800-432-1342.

This document contains the most current product information as of this printing. For the most up-to-date product information, please go to www.DaikinApplied.com.

Products manufactured in an ISO Certified Facility.