

TB7300 Series Communicating Fan Coil Thermostats

24 VAC FOR COMMERCIAL AND LODGING HVAC APPLICATIONS

SPECIFICATION DATA



TB7300 Series Commercial Thermostat



TB7300 Series Hotel Thermostat with Occupancy Sensor

APPLICATION

The TB7300 PI thermostat family is specifically designed for fan coil control. The TB7300 Series are communicating thermostats with models available in BACnet® MS/TP and ZigBee® wireless mesh protocols and can be easily integrated into a WEBS-AX building automation system based on the Niagara AX® platform.

Thermostats equipped with an occupancy sensor cover provide advanced active occupancy logic, which will automatically switch occupancy levels from Occupied to Stand-By and Unoccupied as required by local activity being present or not. This advanced occupancy functionality provides advantageous energy savings during occupied hours without sacrificing occupant comfort. All thermostats are PIR ready and can be ordered with or without Honeywell occupancy sensor. The occupancy sensor cover is available to order separately if a PIR is needed at a later time.

FEATURES

- Available in BACnet MS/TP and ZigBee wireless protocols
- Backlit LCD display with dedicated function menu keys for simple operation
- Internal humidity sensing for increased occupant comfort through dehumidification on some models
- Fully integrated advanced occupancy functionality with a PIR cover provides energy savings opportunity on select models; all other models are PIR ready and can have an optional occupancy sensor cover added
- Configurable sequences of operation
- Configurable fan button allows thermostat to meet more applications with a single model
- Password protection to minimize parameter tampering
- Six levels of keypad lockout to limit access to change user parameters such as setpoints, system mode, etc.
- Auto Fan speed mode increases occupant comfort in cooling mode by reducing humidity and reduces fan noise
- Available for 24 Vac on/off, floating or analog control meets advanced applications requirements
- Three inputs for monitoring and other advanced functions
- SPST auxiliary output that can be used for lighting or auxiliary reheat
- All wiring connections are made to removable terminal blocks simplifying installation

More Information

To learn about additional products in this family visit <http://customer.honeywell.com>.

- TB7600 Series Communicating RTU/Heat Pump Thermostats (Form No. 63-2706)
- TB7600 Series Communicating RTU Thermostats with Humidity Control Specification Data (Form No. 63-2707)
- TB7200 Series Communicating Zone Thermostats Specification Data (Form No. 63-2708)
- Sensors Product Overview Brochure (Form No. 63-9285) for a complete listing of compatible sensors



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63-2709-03

TB7300 Series Models

Product Number	Description	Outputs	Occupancy Sensor ¹
BACnet Models			
TB7300A5014B	Commercial Fan Coil Unit	2 digital + 1 Aux	Ready
TB7300A5514B	Commercial Fan Coil Unit	2 digital + 1 Aux	Yes
TB7300C5014B	Commercial Fan Coil Unit	2 floating + 1 Aux	Ready
TB7300C5514B	Commercial Fan Coil Unit	2 floating + 1 Aux	Yes
TB7300F5014B	Commercial Fan Coil Unit	2 analog + 1 Aux	Ready
TB7300F5514B	Commercial Fan Coil Unit	2 analog + 1 Aux	Yes
TB7305C5014B	Commercial Fan Coil Unit	2 floating + 1 Aux + RH	Ready
TB7305C5514B	Commercial Fan Coil Unit	2 floating + 1 Aux + RH	Yes
TB7305F5014B	Commercial Fan Coil Unit	2 analog + 1 Aux + RH	Ready
TB7305F5514B	Commercial Fan Coil Unit	2 analog + 1 Aux + RH	Yes
TB7305A5014B	Hotel Fan Coil Unit	2 digital + 1 Aux	Ready
TB7305A5514B	Hotel Fan Coil Unit	2 digital + 1 Aux	Yes
TB7305C5014B	Hotel Fan Coil Unit	2 floating + 1 Aux	Ready
TB7305C5514B	Hotel Fan Coil Unit	2 floating + 1 Aux	Yes
TB7305F5014B	Hotel Fan Coil Unit	2 analog + 1 Aux	Ready
TB7305F5514B	Hotel Fan Coil Unit	2 analog + 1 Aux	Yes
TB7355C5014B	Hotel Fan Coil Unit	2 floating + 1 Aux + RH	Ready
TB7355C5514B	Hotel Fan Coil Unit	2 floating + 1 Aux + RH	Yes
TB7355F5014B	Hotel Fan Coil Unit	2 analog + 1 Aux + RH	Ready
TB7355F5514B	Hotel Fan Coil Unit	2 analog + 1 Aux + RH	Yes
Wireless Models			
TB7300A5014W	Commercial Fan Coil Unit	2 digital + 1 Aux	Ready
TB7300A5514W	Commercial Fan Coil Unit	2 digital + 1 Aux	Yes
TB7300C5014W	Commercial Fan Coil Unit	2 floating + 1 Aux	Ready
TB7300C5514W	Commercial Fan Coil Unit	2 floating + 1 Aux	Yes
TB7300F5014W	Commercial Fan Coil Unit	2 analog + 1 Aux	Ready
TB7300F5514W	Commercial Fan Coil Unit	2 analog + 1 Aux	Yes
TB7305A5014W	Commercial Fan Coil Unit	2 floating + 1 Aux + RH	Ready
TB7305A5514W	Commercial Fan Coil Unit	2 floating + 1 Aux + RH	Yes
TB7305F5014W	Commercial Fan Coil Unit	2 analog + 1 Aux + RH	Ready
TB7305F5514W	Commercial Fan Coil Unit	2 analog + 1 Aux + RH	Yes
TB7305A5014W	Hotel Fan Coil Unit	2 digital + 1 Aux	Ready
TB7305A5514W	Hotel Fan Coil Unit	2 digital + 1 Aux	Yes
TB7305C5014W	Hotel Fan Coil Unit	2 floating + 1 Aux	Ready
TB7305C5514W	Hotel Fan Coil Unit	2 floating + 1 Aux	Yes
TB7305F5014W	Hotel Fan Coil Unit	2 analog + 1 Aux	Ready
TB7305F5514W	Hotel Fan Coil Unit	2 analog + 1 Aux	Yes
TB7355C5014W	Hotel Fan Coil Unit	2 floating + 1 Aux + RH	Ready
TB7355C5514W	Hotel Fan Coil Unit	2 floating + 1 Aux + RH	Yes
TB7355F5014W	Hotel Fan Coil Unit	2 analog + 1 Aux + RH	Ready
TB7355F5514W	Hotel Fan Coil Unit	2 analog + 1 Aux + RH	Yes

Product Number	Description	Outputs	Occupancy Sensor ¹
Accessories			
TB-PIR-FCU	FCU Occupancy Sensor Cover		
TB-RA-1014	Wireless Remote Antenna Base		
TB-RP5000W	Wireless Repeater for TB7XXX Series Wireless Thermostats		
TBST-5014W	ZigBee Wireless Survey Toolkit		
TB-VWG-APP-1014	TB7XXX Series Wireless Communication Card		
TB-WALL-1014	Room Sensor 10K NTC Type 2		
TB-WALLOVR-1014	Room Sensor with Override 10K NTC Type 2		

1 Thermostats ordered without an occupancy sensor cover can be retrofitted with an occupancy sensor cover later if needed.

Theory of Operation

The TB7300 uses a proprietary adaptive logic algorithm to control the space temperature. This algorithm controls the heating / air conditioning system to minimize overshoot while still providing comfort. It provides exceptional accuracy due to its unique PI time proportioning control algorithm, which virtually eliminates temperature offset associated with traditional, differential-based on/off thermostats.

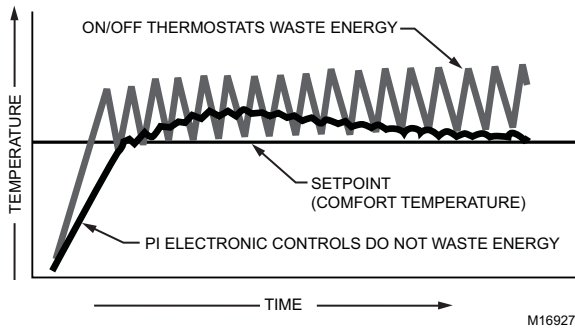


Fig. 1. On/Off mechanical control vs. PI electronic control.

SPECIFICATIONS

Network Protocol: Models available in BACnet MS/TP or ZigBee wireless mesh

WEBS-AX Controllers: Compatible with WEB-2xx, WEB-6xx, and WEB-7xx

Platform:

WEB-2xx and WEB-6xx - WEBStation-AX 3.0 or later
 WEB-7xx - WEBStation-AX 3.5 or later

Thermostats Per Controller

BACnet: 126 thermostats (BACnet allows 128 but 1 node is used by the controller, and when more than 64 devices are on the network a repeater is required so 1 node used by the repeater).

Wireless: WEB-2xx: 30
 WEB-6xx & WEB-7xx: 50

Thermostat power requirements: 19-30 Vac 50 or 60 Hz; 2 VA Class 2

Operating conditions:

32 F to 122 F (0 C to 50 C)
 0% to 95% R.H. non-condensing

Storage conditions:

-22 F to 122 F (-30 C to 50 C)
 0% to 95% R.H. non-condensing

Temperature sensor: 10 K NTC thermistor on board

Temperature sensor resolution: ± 0.2 F (± 0.1 C)

Temperature control accuracy: ± 0.9 F (± 0.5 C) @ 70 F (21 C) typical calibrated

Humidity sensor and calibration: Single point calibrated bulk polymer type sensor

Humidity sensor precision:

Reading range from 10-90% R.H. non-condensing
 10 to 20% precision is 10%
 20% to 80% precision is 5%
 80% to 90% precision is 10%

Humidity sensor stability: Less than 1.0% yearly (typical drift)

Dehumidification setpoint range: 30% to 95% R.H.

Occ. Stand-By and Unocc cooling setpoint range: 54 to 100 F (12.0 to 37.5 C)

Occ. Stand-By and Unocc heating setpoint range: 40 F to 90 F (4.5 C to 32 C)

Room and outdoor air temperature display range: -40 F to 122 F (-40 C to 50 C)

Proportional band for room temperature control: Cooling and Heating: 3.2 F (1.8 C)

Binary inputs: Dry contact across terminal BI1, BI2 and UI3 to Scom

Contact output rating:

Fan relay output: 30 Vac, 1 Amp. Maximum, 3 Amp. in-rush
 Valve triac output: 30 Vac, 1 Amp. Maximum, 3 Amp. in-rush
 Valve analog: 0 to 10 Vdc into 2KW resistance min.

Wire gauge 18 gauge maximum, 22 gauge recommended

Dimensions: see Fig. 2.

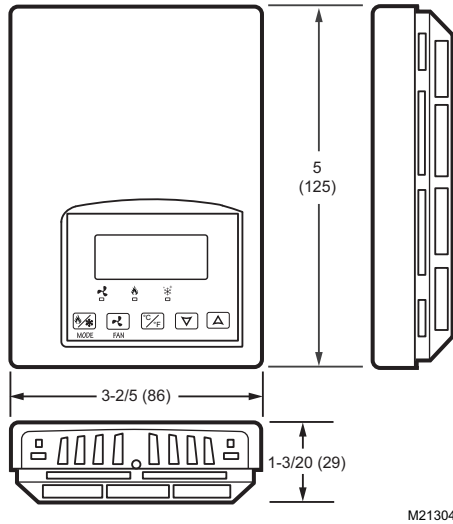


Fig. 2. Thermostat dimensions in inches (mm).

Approximate shipping weight: 0.75 lb (0.34 kg)

Agency Approvals all models:

UL: UL 873 (US) and CSA C22.2 No. 24 (Canada), File E27734 with CCN XAPX (US) and XAPX7 (Canada)

Industry Canada: ICES-003 (Canada)

FCC: Compliant to CFR 47, Part 15, Subpart B, Class A (US)

CE: EMC Directive 89/336/EEC (Europe Union)

C-Tick: EN55022:2006, IEC 61326-1:2005

Agency Approvals wireless models

FCC: Compliant to: Part 15, Subpart C

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Agency Approvals on BACnet models

BTL

IMPORTANT

All TB7300 series controls are for use as operating controls only and are not safety devices. These instruments have undergone rigorous tests and verifications prior to shipment to ensure proper and reliable operation in the field. Whenever a control failure could lead to personal injury and/or loss of property, it becomes the responsibility of the user/installer/electrical system designer to incorporate safety devices (such as relays, flow switch, thermal protections, etc.) and/or alarm system to protect the entire system against such catastrophic failures. Tampering of the devices or miss application of the device will void warranty.

Automation and Control Solutions

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