

CompleteStat-Series Environmental Controllers

THOA Models (Temperature, Humidity and Occupancy)

THOCA Models (Temperature, Humidity, Occupancy and CO2)



(Only Some Display Screens Are Shown)

Model CS9B-THOA and CS9BE-THOA Shown

4 Models:	CS9B-THOA	Temperature, Humidity, Occupancy
	CS9B-THOCA	Temperature, Humidity, Occupancy, and CO2
	CS9BE-THOA	Temperature, Humidity, Occupancy w/Ethernet Connection
	CS9BE-THOCA	Temperature, Humidity, Occupancy, and CO2 w/Ethernet Connection

Features---All Models except as Noted:

- All-in-One Multi-Function Controllers: THOA models: Temperature, Humidity (dehumidification only), Occupancy
THOCA models: Temperature, Humidity (dehumidification only), Occupancy and CO2 (On/Off control)
- Adaptive Occupancy Scheduling:
 1. Automatically learns the start of the 1st persistent occupancy for each day of the week using on-board motion sensor to create a 7-day start of occupancy schedule
 2. Continuously adapts the schedule with any changes to the usage pattern
 3. Provides adaptive optimized space warm-up or cool-down with respect to the learned start of occupancy for each day
- User-friendly, high contrast, backlit LCD display with Continuous "On" option
- Simple 5-Button user interface for menu-driven configuration and operation
- No need for connected PC or programming
- All models are BACnet capable for MS/TP, EIA-485 using shielded twisted pair for networking
- BACnet is an ANSI and ISO global standard open communications protocol developed by ASHRAE
- The "E" Ethernet versions offer alternate method of networking using CAT 5 port on the sub-base
- 9-relay output for complete and reliable HVAC system control
- F or C temperature option
- Conventional modes: 1H/1C, 2H/2C, 1H/2C, 2H/1C, 2H/3C if configured for economizer
- Heat Pump modes: 1-Stage (2H/1C), 2-Stage (3H/2C, 3H/3C if configured for economizer)
- Wide Range Occupancy Sensor: senses up to 33 feet distance, 120-degree horizontal and 100-degree vertical sensing from controller location. Remote occupancy sensor(s) can be added for extreme applications
- Built-in alarms and trend logs
- Configurable password protection with 3 levels of password-protected access
- Programmable (7-day, 5+1+1, 5+2, individual days, up to 12 holidays) or non-programmable
- No batteries, capacitor retains date/time settings for 72-hours during power loss
- All settings except time maintained permanently in non-volatile memory until changed by user
- Auto or manual changeover option
- Fan Operation: Auto/On/Programmed (Programmed is On during Occupied, Auto during Un-Occupied)

- Temperature Range: Cool 66-90F (19-32C), Heat 60-80F (16-27C)
- Temporary Temperature Override feature: 45-minute default setting, adjustable in 5-minute increments
- Humidity control: Dehumidification only, Range 50-75%, Span is 5-10%. Requires special HVAC system with dehumidification circuit
- Pre-purge capability: Span 0-7200 seconds, default is 0
- CO2 control: Range 500-2000 ppm, Span 50-500 ppm
- Can optionally display space humidity, CO2, and outdoor temperature
- Dedicated ventilation output
- Outdoor sensor option, Bard PN 8403-061, can be used to:
 - Limit minimum outdoor temperature for cooling operation
 - Limit minimum outdoor temperature for heat pump operation (compressor lockout)
 - Inhibit electric heat operation for heat pumps above selected outdoor temperature
- Remote indoor sensor option, Bard PN 8403-062, can be used to with following options:
 - Use remote indoor sensor only
 - Average remote indoor sensor and on-board sensor
 - Highest of connected sensors
 - Lowest of connected sensors
- Vertical mount, mounts to standard 2x4 handy-box installed vertically or horizontally
- Off-white

Models	Dimensions in Inches (mm)		
	A	B	C
C S 9B(E)- THOA	1.125 (29)	5.551 (141)	4.192 (106)
C S 9B(E)- THOCA	1.437 (36.5)		5.192 (132)



Controller Connections: Terminal legend

Terminal	Function	Type	Form
D	Dehumidification	Output	24VAC SPST RELAY
SC	24VAC to Relay Outputs D, A, W2	Power	
A	Ventilation Call	Output	24VAC SPST RELAY
W2	2 nd Stage Heating	Output	24VAC SPST RELAY
W1/E	1 st Stage Heating/Emer. Heat	Output	24VAC SPST RELAY
SC	24VAC to Relay Outputs W1/E, Y2, Y1	Power	
Y2	2 nd Stage Compressor	Output	24VAC SPST RELAY
Y1	1 st Stage Compressor	Output	24VAC SPST RELAY
Y0	Economizer	Output	24VAC SPST RELAY
SC	24VAC to Relay Outputs YO, O/B, G	Power	
O/B	Reversing Valve	Output	24VAC SPST RELAY
G	Indoor Blower	Output	24VAC SPST RELAY
IN9	Not Used		
ROS	Remote Occupancy Sensor	Input	Dry Contact (Input to GND)
GND			
REM	Remote Temperature Sensor	Input	10K Type II Thermistor
+B	Communications		
-A	Communications		
OAT	Outdoor Air Temperature Sensor	Input	10K Type II Thermistor
LAS	Leaving Air Temperature Sensor	Input	10K Type II Thermistor
GND	Control Ground		
L	Lockout Alarm	Input	Dry Contact (Input to GND)
Com	24VAC Common	Power	
24V	24VAC Hot	Power	