



CompleteStat-Series Environmental Controllers

THO Models (Temperature, Humidity and Occupancy)
THOC Models (Temperature, Humidity, Occupancy and CO2)



Model CS9B-THO and CS9BE-THO Shown

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

Features---All Models except as Noted:

- All-in-One Multi-Function Controllers: THO models: Temperature, Humidity (dehumidification only), Occupancy
THOC models: Temperature, Humidity (dehumidification only), Occupancy and CO2 (On/Off control)
- Adaptive Occupancy Scheduling:
 - 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
 - Continuously adapts the schedule with any changes to the usage pattern
 - 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+2, individual days, up to 12 holidays) or non-programmable
- No batteries, 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
CS9B(E)-THO	1.125 (29)	5.551	4.192 (106)
CS9B(E)-THOC	1.437 (36.5)	(141)	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		



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Due to our continuous product improvement policy, all specifications subject to change without notice.

Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

Form No. F1943 May, 2012
Supersedes: F1943-212