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# ADVANCED PROGRAMMING & FEATURES

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## CompleteStat™ Controller

Models:

CS9B-THOA      CS9BE-THOA  
CS9B-THOCA    CS9BE-THOCA



Bard Manufacturing Company, Inc.  
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[www.bardhvac.com](http://www.bardhvac.com)

Manual: 2100-685  
Supersedes: **NEW**  
Date: 3-20-18

# TABLE OF CONTENTS

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<b>INSTALLATION</b> .....	<b>3</b>
Display Options .....	3
<b>BASIC OPERATION</b> .....	<b>5</b>
Operational Overviews .....	5
Setting Date/Time .....	5
Scheduling .....	6
Adjusting Standby Conditions .....	7
Temporary Temperature Override .....	7
Adjusting Temporary Temperature Override Time Length .....	7
Staging Delay .....	8
Remote Sensors .....	8
Remote Indoor Air Temperature Sensor .....	8
Outdoor Air Temperature Sensor .....	8
Remote Occupancy Sensor .....	9
Leaving Air Temperature Sensor .....	9
Dehumidification Setup .....	9
Temperature Limits .....	10
Heating/Cooling Loop Configuration .....	10
Indoor Blower Settings .....	11
Alarms Feature .....	12
Security Settings .....	13
Trend Logs .....	14
Restart .....	15
Restore Factory Settings .....	16
BACnet Communications .....	16
Advanced Time Settings for BACnet Applications .....	17
Temperature Sensor Calibration .....	18

<b>FIGURES</b>	
Figure 1 CompleteStat Home Screen Features ....	3
Figure 2 User Interface (Display) Option.....	3
Figure 3 Motion/Occupancy Sensor Detection Range .....	4
Figure 4 Setting Date/Time .....	6
Figure 5 Scheduling Options .....	6
Figure 6 Setting Time Periods .....	6
Figure 7 Adjusting Standby Conditions.....	7
Figure 8 Cancelling Temporary Override .....	7
Figure 9 Adjusting Temporary Override Time Length .....	8
Figure 10 Adjusting Remote Temperature Sensor ..	8
Figure 11 Adjusting Dehumidification Settings ...	10
Figure 12 Adjusting Temperature Limits.....	10
Figure 13 Minimum Setpoint Differential & Heating/Cooling Proportional Bands ....	11
Figure 14 Adjusting Heating/Cooling Proportional Bands and Integers.....	11
Figure 15 Adjusting Blower Settings .....	11
Figure 16 Setting Up Space Temp Alarms .....	12
Figure 17 Setting Up Humidity Alarms.....	12
Figure 18 Viewing Internal Alarms .....	12
Figure 19 Alarm Details.....	13
Figure 20 Temporarily Deactivating Locking User Interface .....	13
Figure 21 Cancelling Locking User Interface.....	13
Figure 22 Accessing/Programming Areas of Security .....	14
Figure 23 Accessing/Changing Passwords.....	14
Figure 24 Accessing/Adjusting Inactivity Setting ...	14
Figure 25 Accessing Trend Logs .....	15
Figure 26 Programming New Trend Logs .....	15
Figure 27 Programming New Trend Logs .....	15
Figure 28 Initiating Restart.....	16
Figure 29 Setting Protocol and Parameters for BACnet .....	16
Figure 30 Accessing Device Instance, Name and Location .....	17

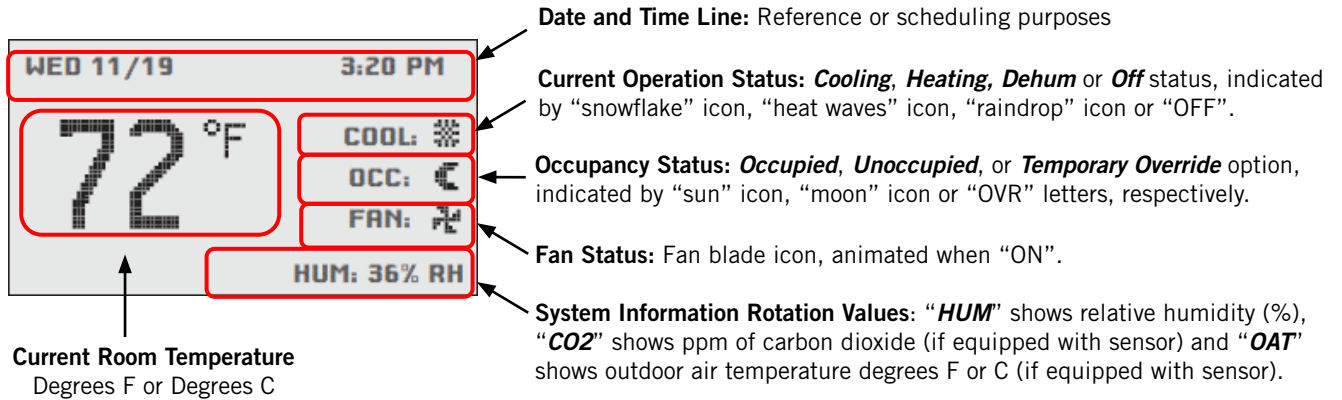
<b>TABLES</b>	
Table 1 UTC Offset Minutes Sample Time Zones.....	18

**NOTE**

*Screenshots shown in this manual reflect default settings (when applicable).*

**NOTE:** Follow the instructions provided in the latest version of *CompleteStat Controller Installation, Operation & Quick Start Guide 2100-684* before using this manual.

**FIGURE 1**  
CompleteStat Home Screen Features



**NOTE:** Rotation Values will change approximately every 5 seconds. These values can be customized if desired.

**NOTE:** By default, controller will read temperature in Fahrenheit. To temporarily toggle reading to Celcius, press the ENTER button for more than 2 seconds. The new scale will stay in place until repeated, or until the controller is restarted. For permanent change, see page 5 of the latest version of *CompleteStat Controller Installation, Operation & Quick Start Guide 2100-684*.

Navigate the menus and change settings by pressing a combination of the four arrow buttons and the ENTER button.

- **ENTER** button to select and/or exit value editing
- **UP** or **DOWN** button to move among entries
- **RIGHT** or **LEFT** button to move among value fields
- **LEFT** button to return to the home screen

**NOTE:** If the screen includes up and down arrows in the upper corners (as shown in Figure 2), additional choices can be found by continuing to press the UP or DOWN buttons.

**NOTE:** Access to the Main Menu, setpoint adjust and system/occupancy/fan override may require a password.

### Display Options

To adjust backlight, change rotation values and/or activate temperature tenths:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.

3. Controller will ask for password. Press UP and RIGHT buttons to enter ‘BARD’. Press ENTER button.
4. Press DOWN button to scroll to ADVANCED. Press ENTER button.
5. Press DOWN button to scroll to USER INTERFACE. Press ENTER button.
6. Press DOWN button to highlight entry of choice (see Figure 2).

**FIGURE 2**  
User Interface (Display) Options



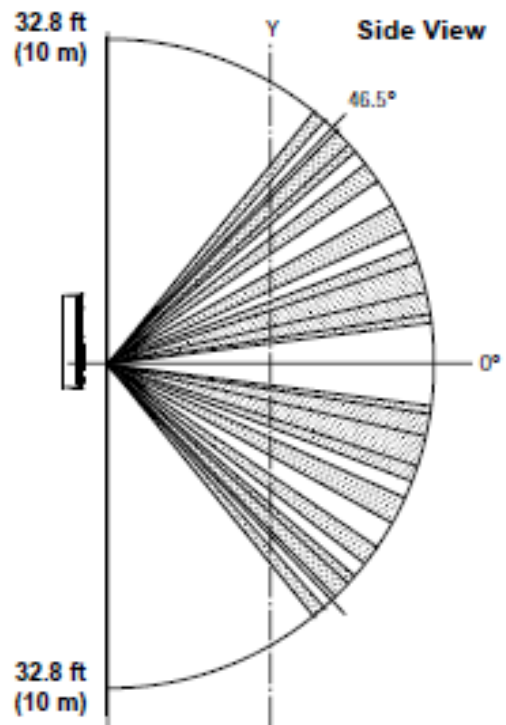
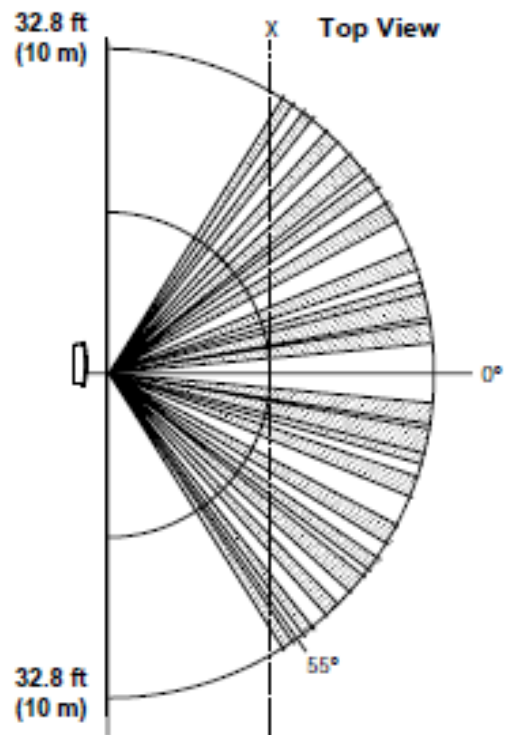
7. Press ENTER button to select entry of choice.
8. Press UP or DOWN buttons to toggle between adjustments (asterisks indicate default values):
  - **BACKLIGHT** – Choose between AUTO\* (turns off after inactivity period), or ON
  - **CONTRAST** – 30-63 (40\*)
  - **DISPLAY BLANKING** – YES/NO\*
  - **INACTIVITY (SECS)** – 5-600 (60\*)

- ROTATION VALUES – Choose to HIDE or SHOW:  
HUM (SHOW\*)  
OAT (HIDE\*)  
U13 (SHOW\*) – Non-CO<sub>2</sub> sensing models  
CO2 (SHOW\*) – CO<sub>2</sub> sensing models  
UI4 (HIDE\*)
- SHOW TEMP TENTHS – Choose YES (allows decimal temperature measurement) or NO\*
- SHOW TIME & DATE – YES\*/NO
- MODE – Choose between user interfaces:
  - o STANDARD\* – User has all access, but may need security code for certain areas.
  - o HOSPITALITY – User has simpler display, limited menu. Mostly used in hotel rooms.
  - o LOCKED UI – User cannot access or change ANY item within controller.

**NOTE:** Do not activate HOSPITALITY or LOCKING UI until controller is completely programmed. Deactivation is intentionally difficult (see **Security Settings** on page 13).

9. Press ENTER button to save changes.
10. Press LEFT button to return to the Home screen.

**FIGURE 3**  
Motion/Occupancy Sensor Detection Range



## Operational Overviews

The factory-default settings will provide an intelligent, “learning” temperature control.

**CS9B(E)-THOA** (non-CO<sub>2</sub> sensing capability) models come standard with scheduling features; however, from the factory, all the controllers are configured to have no “occupied” periods. In this default configuration, the CompleteStat is typically in an **Unoccupied** (moon icon) mode enabling “setback” temperatures and disabling ventilation unless the controller senses motion. After sensing motion, the controller will enter a **Temporary Override (OVR)** mode and will maintain “occupied” temperatures and enable ventilation based on indoor fan operation<sup>1</sup> until motion ceases for a specified length of time (see **Adjusting Temporary Override Time Length** on page 7). If the scheduling function is provided with an “occupied” period, the scheduled **Occupied** (sun icon) mode will also maintain “occupied” temperatures and enable ventilation based on indoor fan operation<sup>1</sup> until the end of the programmed scheduled period.

- **Adaptive Start** intelligent temperature control has been enabled as a factory default. Controller will “learn” the typical occupancy schedules without having to manually program them into the scheduling feature and will automatically bring the space to “occupied” setpoints before the occupants arrive. If, however, no one arrives during a learned occupancy period, the CompleteStat will revert to the setback temperatures within a specified period of time (see **Adjusting Temporary Override Time Length** on page 7).
- **Optimum Start** intelligent temperature control has also been enabled as a factory default. If scheduled occupied periods are desired, the CompleteStat will automatically begin to track the amount of time necessary to bring the space from “setback” temperatures to “occupied” temperatures. Based on recent run-times, the controller will adjust to ensure “occupied” setpoints are reached before the occupants arrive.

<sup>1</sup> *CS9B(E)-THOA (non-CO<sub>2</sub> sensing capability) models will only activate ventilation (“A” terminal) when the indoor fan is running and in an “occupied” condition. To activate constant ventilation during occupied periods, the indoor fan will have to be placed into constant run mode during “occupied” conditions (see **Indoor Blower Settings** on page 11).*

**CS9B(E)-THOCA** (CO<sub>2</sub> sensing capability) models come standard with scheduling features; however, from the factory, all the controllers are configured to have no “occupied” periods. In this default configuration, the CompleteStat is typically in an **Unoccupied** (moon icon)

mode enabling “setback” temperatures and disabling ventilation unless the controller senses motion. After sensing motion, the controller will enter a **Temporary Override (OVR)** mode and will maintain “occupied” temperatures and enable ventilation based upon CO<sub>2</sub> content<sup>2</sup> until motion ceases for a specified length of time (see **Adjusting Temporary Override Time Length** on page 7). If the programmability feature is enabled, the scheduled **Occupied** (sun icon) mode will also maintain “occupied” temperatures and enable constant ventilation based on CO<sub>2</sub> content<sup>2</sup> until the end of the programmed scheduled period.

- **Adaptive Start** intelligent temperature control has been enabled as a factory default. Controller will “learn” the typical occupancy schedules without having to manually program them into the scheduling feature and will automatically bring the space to “occupied” setpoints before the occupants arrive. If, however, no one arrives during a learned occupancy period, the CompleteStat will revert to the setback temperatures within a specified period of time (see **Adjusting Temporary Override Time Length** on page 7).
- **Optimum Start** intelligent temperature control has also been enabled as a factory default. If scheduled occupied periods are desired, the CompleteStat will automatically begin to track the amount of time necessary to bring the space from “setback” temperatures to “occupied” temperatures. Based on recent run-times, the controller will adjust to ensure “occupied” setpoints are reached before the occupants arrive.

<sup>2</sup> *CS9B(E)-THOCA (CO<sub>2</sub> sensing capability) models will only activate ventilation (“A” terminal) when the CO<sub>2</sub> levels have exceeded the CO<sub>2</sub> setpoints and in an “occupied” condition. To adjust CO<sub>2</sub> level setpoint, see Setpoints in latest version of **CompleteStat Controller Installation, Operation & Quick Start Guide 2100-684**.*

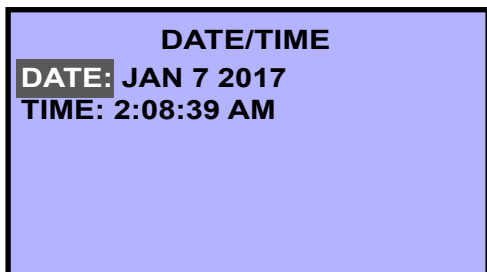
## Setting Date/Time

To enter the current date and time from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to DATE/TIME. Press ENTER button.
3. Press ENTER button to select DATE (see Figure 4 on page 6).
4. Press RIGHT, UP or DOWN buttons to adjust existing month, day and/or year.
5. Press ENTER button to save selection(s).

6. Press DOWN button to scroll to TIME. Press ENTER button.
7. Press RIGHT, UP or DOWN buttons to adjust existing hour, minute, second and/or AM/PM.
8. Press ENTER button to save selection(s).
9. Press LEFT button to return to the Home screen.

**FIGURE 4**  
Setting Date/Time



### Scheduling

If desired, the CompleteStat can be manually programmed to offer specific occupied/unoccupied time periods. During these scheduled time spans, the controller will keep the space within the occupied and unoccupied setpoints<sup>1</sup>.

To access scheduling from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press ENTER button to select SYSTEM.
3. Press DOWN button to scroll to SCHEDULE. Press ENTER button.
4. Press UP or DOWN buttons to scroll through schedule options (see Figure 5):

ENTIRE WEEK for a "7-Day" style of scheduling

- Up to six (6) separate occupied/unoccupied periods/day

WEEKDAYS

- Up to six (6) separate occupied/unoccupied periods/day

WEEKEND

- Up to six (6) separate occupied/unoccupied periods/day

INDIVIDUAL DAYS for specific day-customization scheduling

- Up to six (6) separate occupied/unoccupied periods/day

HOLIDAYS for up to twelve (12) holiday exceptions to the main scheduling

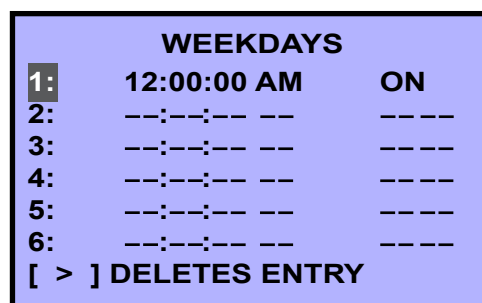
- Holidays will override to setback temperatures for that specific date

**FIGURE 5**  
Scheduling Options



5. Press ENTER button to select specific schedule option.
6. Press ENTER to select specific time period of occupied/unoccupied (see Figure 6).
7. Press RIGHT button to access hours/minutes/seconds/AM-PM.
8. Press UP or DOWN buttons to adjust as necessary.
9. Press RIGHT button to access period status.  
Choice of ON (occupied), OFF (unoccupied) or NULL (do not program this value). "NULL" is used in certain commercial control platforms.
10. Press UP or DOWN buttons to adjust as necessary.
11. Press ENTER button to save scheduling programming.
12. Repeat steps 6-13 as necessary to complete scheduling time periods.
13. Press LEFT button to return to the Home screen.

**FIGURE 6**  
Setting Time Periods



<sup>1</sup> During scheduled **OCC** periods, if the controller does not sense motion for a specific length of time, the controller will allow the space to enter "standby" conditions, where temperature may offset by up to 3°F for the duration of the **OCC** period. To adjust this offset in degrees, or waiting period, see **Adjusting Standby Conditions**.

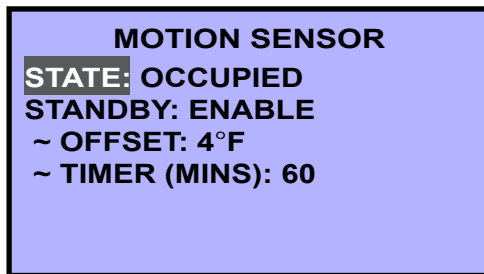
## Adjusting Standby Conditions

Users may opt to adjust temperature offset, change time length of waiting period or even disable standby feature.

To change standby conditions parameters from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press ENTER button again to select APPLICATION.
5. Press DOWN button to scroll to ADDITIONAL SETUP. Press ENTER button.
6. Press DOWN button to scroll to MOTION SENSOR. Press ENTER button.
7. Press DOWN button to highlight the following choices (see Figure 7):
  - STATE (OCCUPIED/UNOCCUPIED)
  - STANDBY (ENABLE/DISABLE)
  - OFFSET (specify °F offset span)
  - TIMER (specify time length of waiting period)
8. Press ENTER button to select appropriate selection.
9. Press UP or DOWN buttons to enter specific parameters.
10. Press ENTER button to save changes.
11. Press LEFT button to return to the Home screen.

**FIGURE 7**  
Adjusting Standby Conditions



## Temporary Temperature Override

Any changes to temperature from the Home screen will result in a temporary "override" which will last for a programmable length of time (factory default is 10 minutes).

To change temperatures temporarily from the Home screen:

1. Press UP or DOWN buttons to access the current temperature setpoint. "SET" will appear under temperature reading.
2. Press UP or DOWN button again to adjust current temperature setpoint to desired temperature.
3. Press ENTER or LEFT or RIGHT buttons to select temporary setpoint change. OVR will appear in the Occupancy Status line.

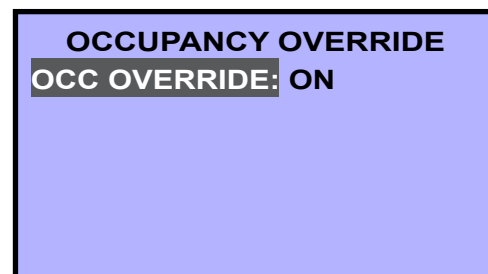
**NOTE:** If no "schedule" has been previously entered, OVR will already be displayed in the "Occupancy Status" line.

To cancel temporary override from Home screen:

1. Press LEFT button to highlight Current Operation Status line.
2. Press DOWN button to highlight Occupancy Status line. Press ENTER button.
3. Press ENTER button again to select OCC OVERRIDE and highlight ON (see Figure 8).
4. Press UP or DOWN button to change from ON to OFF.
5. Press ENTER button to select override cancellation.
6. Press LEFT button to return to the Home screen.

**NOTE:** If no "schedule" has been entered, temperature override will cancel, but OVR will remain in Occupancy Status line.

**FIGURE 8**  
Cancelling Temporary Override



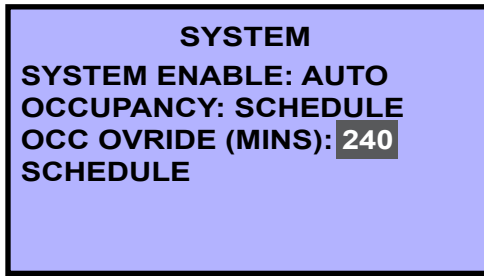
## Adjusting Temporary Temperature Override Time Length

To adjust temporary override time length from Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press ENTER button to select SYSTEM.
3. Press DOWN button to scroll to OCC OVRIDE (see Figure 9 on page 8). Press ENTER button.
4. Press UP or DOWN buttons to adjust time (5 minute increments, maximum 2000 minutes).
5. Press ENTER button to select new override time limit.

6. Press LEFT button to return to the Home screen.

**FIGURE 9**  
**Adjusting Temporary Override Time Length**



**Staging Delay (Only applicable to two stage configuration)**

While the typical delay between stages consists of 1°F, a length of time in minutes can be customized.

To access/change staging time delay from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press ENTER button again to select APPLICATION.
5. Press DOWN button to scroll to ADDITIONAL SETUP. Press ENTER button.
6. Press DOWN button to scroll to STAGING. Press ENTER button.
7. Press ENTER button again to select STG DELAY (MINS).
8. Press UP or DOWN buttons to adjust time.
9. Press ENTER button to save new STG DELAY entry.
10. Press LEFT button to return to the Home screen.

**Remote Sensors**

External sensors can be added to perform as a remote indoor air temperature sensor, outdoor air temperature sensor, remote occupancy sensor or leaving air temperature sensor.

**Remote Indoor Air Temperature Sensor**

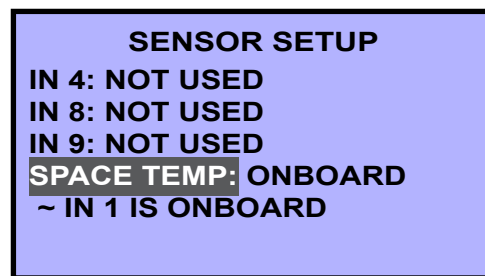
Bard 8403-062 Remote Indoor Air Temperature Sensor can have multiple functions. The controller can be configured to look at the remote as the primary temperature sensor or as an averaged reading between the remote and the onboard sensor, or to choose between the highest of the two readings or the lowest of the two sensors. Attach the 10k ohm thermister to the two terminals marked "REM" and "GND" on

the baseplate of the controller and configure the CompleteStat as noted below.

To add a remote temperature sensor or change the parameters of a remote sensor from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press ENTER button again to select APPLICATION.
5. Press DOWN button to scroll to ADDITIONAL SETUP. Press ENTER button.
6. Press DOWN button to scroll to SENSORS. Press ENTER button.
7. Press DOWN button to scroll to SPACE TEMP (see Figure 10). Press ENTER button.
8. Press UP or DOWN buttons to toggle between SPACE TEMP entries:
  - ONBOARD – Integral temp sensor reading only
  - LOWEST – Controller will read lowest of two readings
  - HIGHEST – Controller will read highest of two readings
  - AVERAGE – Averaged reading between remote thermistor and onboard sensor
  - REMOTE – Thermistor reading only
9. Press ENTER button to save new SPACE TEMP entry.
10. Press LEFT button to return to the Home screen.

**FIGURE 10**  
**Adding Remote Temperature Sensor**



**Outdoor Air Temperature Sensor**

Bard 8403-061 Outdoor Air Temperature Sensor can be used to simply show outdoor temperatures, or to configure auxiliary heat control strategy (see **Heat Pump Applications** in the latest version of **CompleteStat Controller Installation, Operation & Quick Start Guide 2100-684**). Attach the 10k ohm thermister to the two



terminals marked “OAT” and “GND” on the baseplate of the controller and configure the CompleteStat as noted below.

To add an outdoor temperature sensor or change the parameters of an outdoor sensor from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter ‘BARD’. Press ENTER button.
4. Press ENTER button again to select APPLICATION.
5. Press DOWN button to scroll to ADDITIONAL SETUP. Press ENTER button.
6. Press DOWN button to scroll to SENSORS. Press ENTER button.
7. Press ENTER button again to access IN 4 entry.
8. Press UP or DOWN buttons to toggle between IN 4 entries:
  - NOT USED – Default
  - OUTSIDE AIR TEMP – Remote sensor
9. Press ENTER button to save new IN 4 entry.
10. Press LEFT button to return to the Home screen.

#### **Remote Occupancy Sensor**

Remote occupancy sensor can be used to remote or enhance occupancy coverage. While Bard does not currently offer a branded sensor as a part number, the Sensorswitch™ WV-16-R or CM-9-R Series sensor—or any equivalent close-on-occupancy switch—would work. The sensor works in conjunction with the onboard sensor to provide additional coverage; any motion sensed by either sensor will activate occupancy. Attach the close-on-occupancy switch leads to terminals marked “ROS” and “GND” on the baseplate of the controller and configure as noted below.

To add a remote occupancy sensor or change the parameters of an occupancy sensor from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter ‘BARD’. Press ENTER button.
4. Press ENTER button again to select APPLICATION.
5. Press DOWN button to scroll to ADDITIONAL SETUP. Press ENTER button.
6. Press DOWN button to scroll to SENSORS. Press ENTER button.

7. Press DOWN button to scroll to IN 8. Press ENTER button.
8. Press UP or DOWN buttons to toggle between IN 8 entries:
  - NOT USED – Default
  - OCCUPANCY – Remote sensor
9. Press ENTER button to save new IN 8 entry.
10. Press LEFT button to return to the Home screen.

#### **Leaving Air Temperature Sensor**

Bard 8301-014 Leaving Air Temperature Sensor can be added, however, access to the temperature readings will only be available through a BACnet platform. No configuration of the controller is necessary. Attach the sensor leads to terminals marked “LAT” and “GND” on the baseplate of the controller.

#### **Dehumidification Setup**

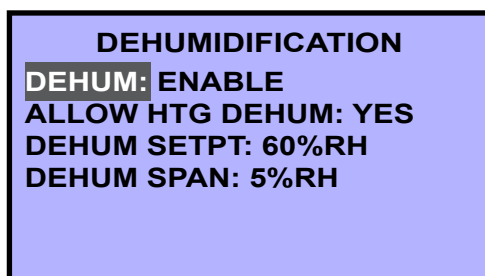
The CompleteStat can be configured to dehumidify, but only through a specific HVAC system that has built-in dehumidification capabilities (i.e., hot gas reheat coil). Upon humidity rise past preset setpoint, the “D” terminal will become energized.

To access the dehumidification option from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter ‘BARD’. Press ENTER button.
4. Press ENTER button again to select APPLICATION.
5. Press DOWN button to scroll to ADDITIONAL SETUP. Press ENTER button.
6. Press DOWN button to scroll to HUMIDITY. Press ENTER button.
7. Press ENTER button again to choose DEHUMIDIFICATION.
8. Press ENTER button again to highlight current DEHUM choice (default DISABLE).
9. Press UP or DOWN button to toggle ENABLE (see Figure 11 on page 10).
10. Press ENTER button to save choice.
11. Press DOWN button to scroll through DEHUMIDIFICATION entries:
  - ALLOW HTG DEHUM – Allows dehumidification in heating
  - DEHUM SETPT – The relative humidity (RH) % setpoint

- DEHUM SPAN – The amount of RH% removal allowed past setpoint (5%RH default minimum)
12. Press ENTER button on selected DEHUMIDIFICATION entry.
  13. Press UP or DOWN button to toggle through available entries or levels.
  14. Press ENTER button to save specific entry changes.
  15. Repeat steps 11 through 14 for remainder of DEHUMIDIFICATION entries.
  16. Press LEFT button to return to the Home screen.

**FIGURE 11**  
Adjusting Dehumidification Settings



### Temperature Limits

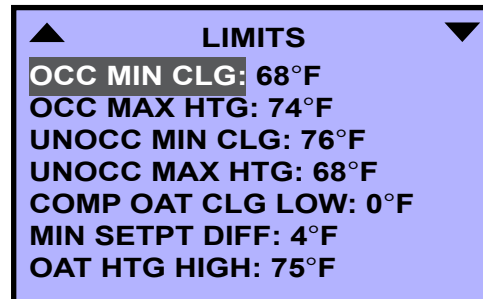
Absolute limits can be set to ensure no user can raise/lower occupied or unoccupied temperatures past specific setpoints, or that setpoints cross specific minimum differential margins.

To access/change temperature limits from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press DOWN button to scroll to LIMITS. Press ENTER button.
5. Press UP or DOWN buttons to highlight appropriate choice (see Figure 12):
  - OCC MIN CLG
  - OCC MAX HTG
  - UNOCC MIN CLG
  - UNOCC MAX HTG
  - COMP OAT CLG LOW
  - MIN SETPT DIFF
  - OAT HTG HIGH
6. Press ENTER button to select appropriate choice.
7. Press UP or DOWN buttons to adjust limit temperatures.

8. Press ENTER button to save new limit choice.
9. Repeat steps 5 through 8 for remainder of change to LIMITS.
10. Press LEFT button to return to the Home screen.

**FIGURE 12**  
Adjusting Temperature Limits



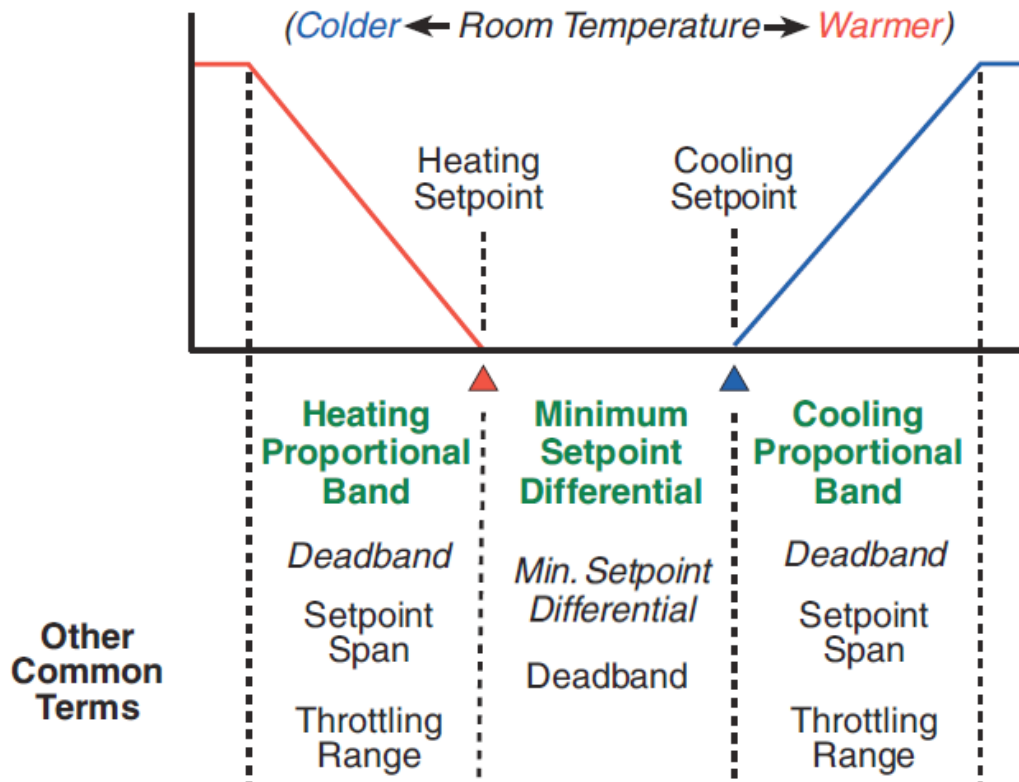
### Heating/Cooling Loop Configuration

Heating/cooling proportional bands can be adjusted (see Figure 13).

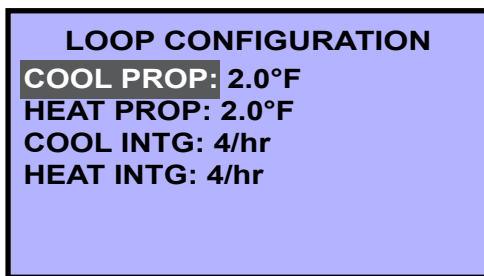
To access/change the PI Loop configurations from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press DOWN button to scroll to ADVANCED. Press ENTER button.
5. Press DOWN button to scroll to LOOPS. Press ENTER button.
6. Press DOWN button to highlight appropriate choice (see Figure 14):
  - COOL PROP – Cooling proportional band (Default 2°F)
  - HEAT PROP – Heating proportional band (Default 2°F)
  - COOLING INTG – Do not change from factory default
  - HEATING INTG – Do not change from factory default
7. Press ENTER button to select appropriate choice.
8. Press UP or DOWN buttons to adjust setting.
9. Press ENTER button to save new setting.
10. Press LEFT button to return to the Home screen.

**FIGURE 13**  
Minimum Setpoint Differential & Heating/Cooling Proportional Bands



**FIGURE 14**  
Adjusting Heating/Cooling Proportional Bands and Integers



**Indoor Blower Settings**

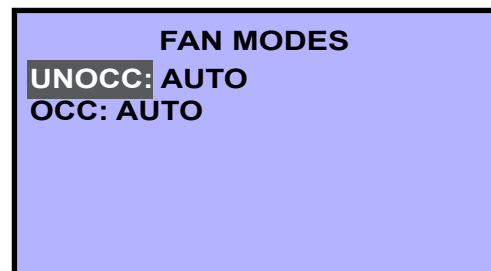
The indoor blower can be set for Auto or On in either occupied or unoccupied conditions.

To access/change blower settings from the Home screen:

1. Press LEFT button to highlight Current Operation Status line.
2. Press DOWN button to highlight Fan Status line. Press ENTER button to enter FAN MODES screen.
3. Press UP or DOWN buttons again to scroll through selections, adjust as necessary (see Figure 15):

- UNOCC  
ON: System fan will run continuously during all operational modes  
AUTO: System fan will operate during call for cooling or heating, but will cycle off when no compressor or no heating is needed (Default).
- OCC  
ON: System fan will run continuously during all operational modes  
AUTO: System fan will operate during call for cooling or heating, but will cycle off when no compressor or no heating is needed (Default).

**FIGURE 15**  
Adjusting Blower Settings



4. Press ENTER button to save changes to FAN MODES selections.
5. Repeat steps 3 through 4 for additional changes to FAN MODES selections.
6. Press LEFT button to return to the Home screen.

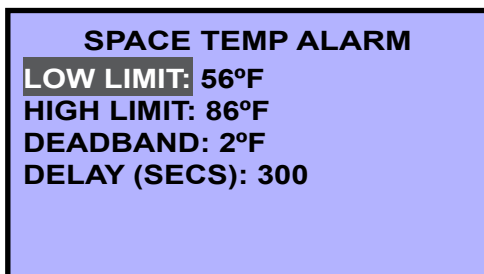
### Alarms Feature

High temperature, low temperature, high CO<sub>2</sub> levels and other specific anomalies will be recorded within an internal page. Alarms may be set up and viewed and deleted as necessary for serviceability<sup>1</sup>.

To set up alarms:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press DOWN button to scroll to ALARMS. Press ENTER button.
5. Press ENTER button again to select ALARM SETUP.
6. Press ENTER button to select SPACE TEMP.
7. Press UP or DOWN buttons to scroll through SPACE TEMP ALARM entries (factory defaults shown in Figure 16):
  - LOW LIMIT
  - HIGH LIMIT
  - DEADBAND
  - DELAY (SECS)

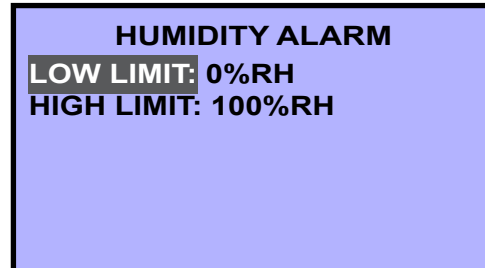
**FIGURE 16**  
**Setting Up Space Temp Alarms**



8. Press ENTER button to select appropriate choice.
9. Press UP or DOWN buttons to adjust setting.
10. Press ENTER button to save new setting.
11. Press LEFT button to return to ALARM SETUP.
12. Press DOWN button to scroll to HUMIDITY. Press ENTER button.

13. Press UP or DOWN buttons to toggle between HUMIDITY ALARM entries (factory defaults shown in Figure 17):
  - LOW LIMIT
  - HIGH LIMIT

**FIGURE 17**  
**Setting Up Humidity Alarms**

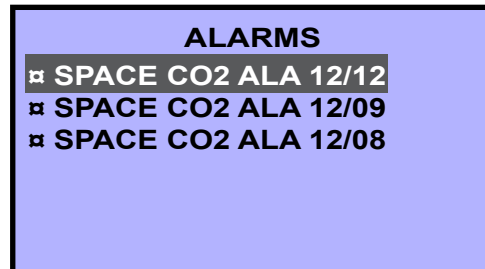


14. Press ENTER button to select appropriate choice.
15. Press UP or DOWN buttons to adjust setting.
16. Press ENTER button to save new setting.
17. Press LEFT button to return to Home screen.

To view/delete internal alarms:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press DOWN button to scroll to ALARMS. Press ENTER button.
5. Press DOWN button to scroll to ALARM VIEWER. Press ENTER button. Logged alarms will show with brief description/date (see Figure 18).

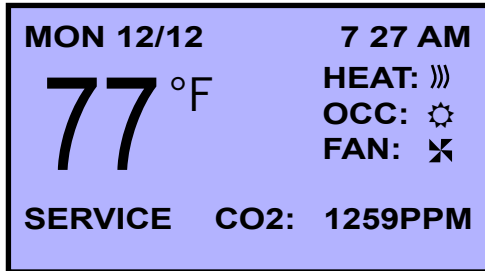
**FIGURE 18**  
**Viewing Internal Alarms**



6. Press ENTER button to show more detailed description of alarm (see Figure 19).
7. Press ENTER button to be given DELETE choice.
8. Press ENTER button to delete alarm.
9. Press LEFT button to return to the Home screen.

- When an internal alarm has been registered, a “Service” indicator will begin flashing on the Home screen. This does not interfere with normal operation and will disappear once all alarms have been deleted.

**FIGURE 19**  
**Alarm Details**



### Security Settings

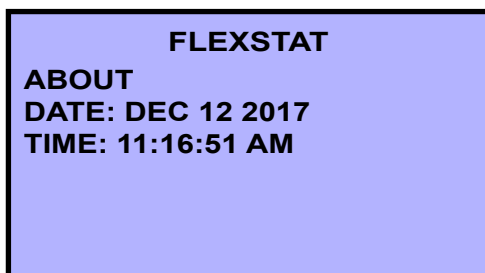
There are two locking styles of user interfaces (see **Display Options** on page 3), five separate areas that can be controlled by passwords and four individual levels of security.

To deactivate locking user interface (HOSPITALITY or LOCKED UI):

- Press RIGHT button and ENTER button simultaneously and hold for 5 seconds.
- Press LEFT button (while still holding RIGHT and ENTER buttons) and hold for 5 seconds.
- Release RIGHT button (while continuing to hold the LEFT and ENTER buttons) for 5 additional seconds.
- Once FLEXSTAT screen appears (as shown in Figure 20), press DOWN button two spaces past the TIME line (press DOWN button four times).
- Press ENTER button to deactivate locking user interface and return to Main Menu screen.

**NOTE:** This will only temporarily deactivate the locking user interface.

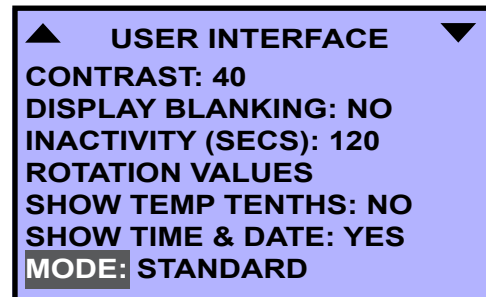
**FIGURE 20**  
**Temporarily Deactivating Locking User Interface**



To cancel locking user interface from Main Menu screen:

- Press RIGHT button to access Main Menu screen.
- Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
- Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
- Press DOWN button to scroll to ADVANCED. Press ENTER button.
- Press UP or DOWN buttons to scroll to USER INTERFACE. Press ENTER button.
- Press UP or DOWN buttons to scroll to MODE (see Figure 21). **NOTE:** MODE does not show up on first screen. Continuing to press the UP or DOWN button will display MODE.
- Press ENTER button to select Mode.
- Press UP or DOWN button to toggle to STANDARD.
- Press ENTER button to save STANDARD mode.
- Press LEFT button to return to the Home screen.

**FIGURE 21**  
**Cancelling Locking User Interface**

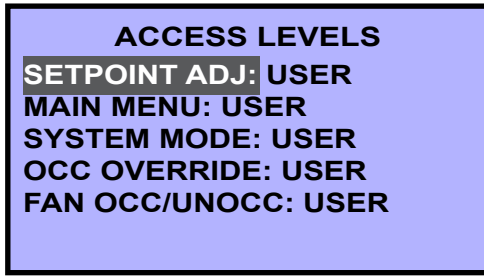


To access/program areas of security from Home screen:

- Press RIGHT button to access Main Menu screen.
- Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
- Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
- Press DOWN button to scroll to SECURITY. Press ENTER button.
- Press ENTER button again to select ACCESS LEVELS.
- Press UP or DOWN buttons to scroll through five access levels (see Figure 22 on page 14): SETPOINT ADJ, MAIN MENU, SYSTEM MODE, OCC OVERRIDE and FAN OCC/UNOCC.
- Press ENTER button to enter a chosen access level.

8. Press UP or DOWN buttons to select among the four levels of security for each access level: USER, NONE, ADMIN or OPER.
9. Press ENTER button to save choice.
10. Repeat steps 6 through 9 for each of the five access levels.
11. Press LEFT button to return to the Home screen.

**FIGURE 22**  
**Accessing/Programming Areas of Security**



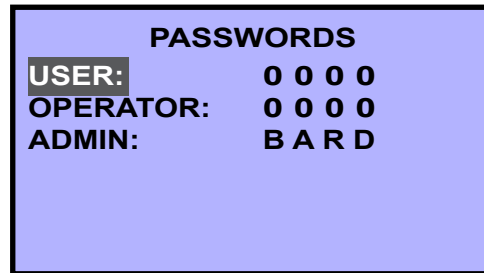
To access/change passwords from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press UP or DOWN buttons to scroll to SECURITY. Press ENTER button.
5. Press UP or DOWN button to scroll to PASSWORDS. Press ENTER button.
6. Press UP or DOWN buttons to scroll through the three levels of security passwords (see Figure 23): USER, OPERATOR and ADMIN. ADMIN password defaults to BARD.
7. Press ENTER button to select specific password.
8. Press UP, DOWN and RIGHT buttons to enter digits to specific passwords.
9. Press ENTER button to save password.
10. Repeat steps 6 through 9 for each of the three levels of security passwords.
11. Press LEFT button to return to the Home screen.

**NOTE:** After any password is given, the only delay to enabling security programming will be the Inactivity (Secs) setting of controller (60 seconds is default). Once 60 seconds of button inactivity is realized, security settings will go into effect.

**NOTE:** If Admin password is changed to "0000," it will inactivate all security passwords, and allow unlimited access at all levels.

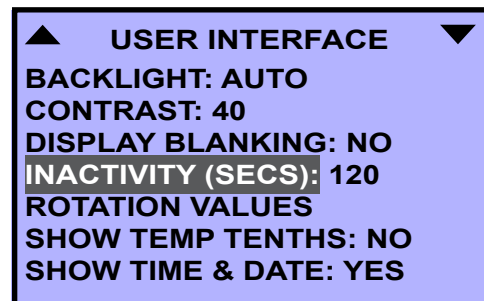
**FIGURE 23**  
**Accessing/Changing Passwords**



To access/change Inactivity (Secs) setting of controller from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press UP or DOWN buttons to scroll to ADVANCED. Press ENTER button.
5. Press UP or DOWN buttons to scroll to USER INTERFACE. Press ENTER button.
6. Press UP or DOWN buttons to scroll to INACTIVITY (see Figure 24). Press ENTER button.
7. Press UP or DOWN buttons to adjust amount of seconds of inactivity.
8. Press ENTER button to save new time limit.
9. Press LEFT button to return to the Home screen.

**FIGURE 24**  
**Accessing/Adjusting Inactivity Setting**



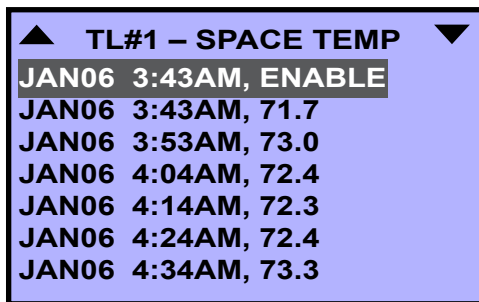
### Trend Logs

The controller can be enabled to show a history log of recorded information, specific to input sensors installed on the unit. Space temperature and CO<sub>2</sub> levels have been set up as a factory default logs, with 10-minute samples taken continuously. Adjustments may be made to duration and frequency of sampling, and logs may be customized to show additional information.

To access trend logs from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press UP or DOWN buttons to scroll to TREND VIEWER. (**NOTE:** TREND VIEWER does not show up on first screen. Continuing to press the UP or DOWN button will display TREND VIEWER.) Press ENTER button.
5. Press DOWN button to scroll to chosen log (see Figure 25).

**FIGURE 25**  
Accessing Trend Logs



6. Press ENTER button to select log and view recorded results.
7. Press LEFT button to return to the Home screen.

To program new trend logs from the Home screen:

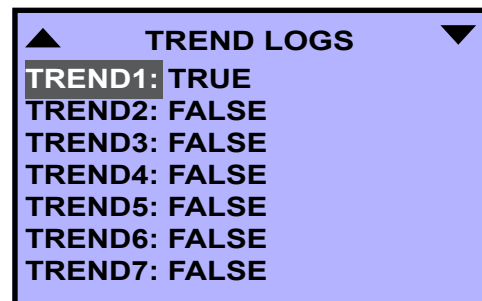
1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press DOWN button to scroll to ADVANCED. Press ENTER button.
5. Press UP or DOWN buttons to scroll to TREND LOGS. Press ENTER button.
6. Press DOWN button to highlight chosen trend logs (see Figure 26):

- Trend1 is factory default set up to trend space temp
- Trend2 – Trend8 are programmable

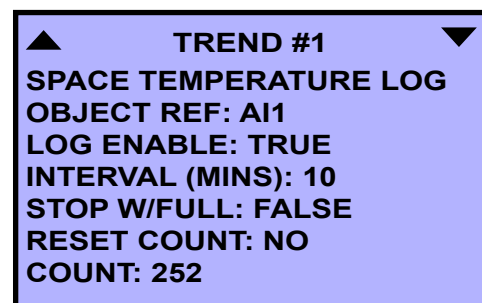
7. Press ENTER button to select chosen log and enter setup screen.
8. Press DOWN button to highlight OBJECT REF (see Figure 27). Press ENTER button.

- AV1 –
  - AO1 –
  - AI1 –
  - BV1 –
  - BO1 –
  - BI1 –
9. Press ENTER button to save selection.
  10. Press DOWN button to highlight LOG ENABLE. Press ENTER button.
  11. Press UP or DOWN button to toggle FALSE to TRUE.
  12. Press ENTER button to save TRUE setting.
  13. Press DOWN button to highlight INTERVAL (MINS). Press ENTER button.
  14. Press UP or DOWN buttons to adjust minutes of interval between readings.

**FIGURE 26**  
Programming New Trend Logs



**FIGURE 27**  
Programming New Trend Logs



15. Press ENTER button to save new setting.
16. Press LEFT button to return to the Home screen.

**Restart**

Should the controller exhibit erratic/haphazard performance during programming or operation,

a“soft-restart” function has been enabled into the programming.

To initiate a restart from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press DOWN button to scroll to RESTART/RESTORE. Press ENTER button.
5. Press ENTER button again to select RESTART (see Figure 28).

**FIGURE 28**  
**Initiating Restart**



6. Press UP or DOWN buttons to choose from the following options:
  - NO (no restart made)
  - WARM START (least intrusive, quickest response)
  - COLD START (comprehensive restart)
7. Press ENTER button to initiate (**NOTE:** Controller will restart to Home screen).

#### Restore Factory Settings

If the controller becomes unmanageable due to improper settings, the device can be reset to “factory” settings by initiating a Restore Factory command.

To initiate a factory reset from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press DOWN button to scroll to RESTART/RESTORE. Press ENTER button.
5. Press UP or DOWN button to scroll to RESTORE FACTORY (see Figure 28). Press ENTER button.
6. Press UP or DOWN button to toggle NO to YES.

7. Press ENTER button to initiate (**NOTE:** Controller will restart to Home screen).

#### BACnet Communications

The Bard CompleteStat is a native BACnet Advanced Application Controller (B-AAC) and can simplify networked zone control for many kinds of common packaged HVAC equipment. The following section addresses the needs of BACnet applications only.

Typical wiring for BACnet applications:

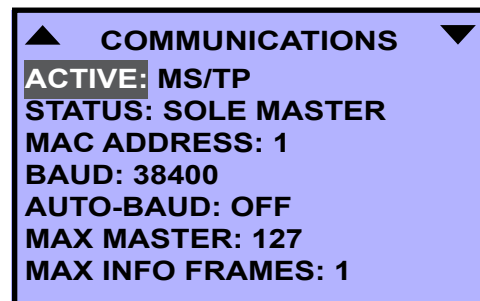
For **MS/TP** communications, connect the EIA-485 wiring to the –A and +B terminals on the base plate of the controller.

For **Ethernet, IP,** and **Foreign Device** communications (on “E” Models), plug an Ethernet cable directly into the RJ-45 modular jack on the back of the controller.

To set protocol and parameters for BACnet communications from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press DOWN button to scroll to COMMUNICATION. Press ENTER button.
5. Press ENTER button to select ACTIVE (see Figure 29).

**FIGURE 29**  
**Setting Protocol and Parameters for BACnet**



6. Press UP or DOWN buttons to select appropriate method from the following choices:
  - MS/TP – Factory default
  - IP<sup>1</sup> – Requires restart of controller (see **Restart** on page 15)
  - Ethernet<sup>2</sup> – Requires restart of controller (see **Restart** on page 15)
  - Foreign Device<sup>1</sup> – Requires restart of controller (see **Restart** on page 15)
  - Configure – Do not choose at this point



7. Press ENTER button to save new method of communication (will require restart if different than default).
8. Once restarted, follow steps 1 through 4 to return to COMMUNICATION.
9. With new/default selection in place, view the parameters associated with that specific choice. MAC ADDRESS, BAUD, AUTO-BAUD, MAX MASTER, etc. are all READ-ONLY at this point.
10. To edit read-only parameters, press UP or DOWN buttons to highlight ACTIVE. Press ENTER button.
11. Press UP or DOWN button to toggle to CONFIGURE. Press ENTER button.
12. Press UP or DOWN buttons to choose communication settings to edit (ETHERNET, IP, FOREIGN DEVICE, MS-TP).
13. Press ENTER button to select communication settings (now will allow editing).
14. Press UP or DOWN buttons to select specific parameter. Press ENTER button to enter parameter.
15. Press UP or DOWN buttons to make changes to the parameter. Press ENTER button to save changes.
16. Repeat steps 14 and 15 for each parameter that needs adjustment.
17. Press LEFT button to return to COMMUNICATIONS screen.
18. Press UP or DOWN buttons to scroll to ACTIVE. Press ENTER button.
19. Press UP or DOWN buttons to change CONFIGURE setting to original/desired mode of communication.
20. Press ENTER button to save mode of communication. (**NOTE: Controller will restart to Home screen.**)

<sup>1</sup> Please consult with local system administrator for the appropriate settings for the IP Address, Subnet Mask, Gateway and UDP Port.

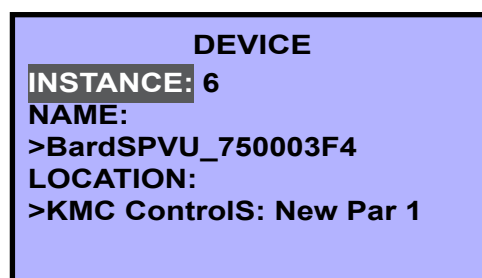
<sup>2</sup> Ethernet communications are essentially plug-and-play, and the MAC address is not changeable.

To access the device instance, name and location from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press DOWN button to scroll to ADVANCED. Press ENTER button.

5. Press UP or DOWN buttons to scroll to DEVICE. Press ENTER button.
6. Press UP or DOWN buttons to scroll through the following entries: INSTANCE, NAME and LOCATION (see Figure 30).
7. Press ENTER button to select highlighted choice.
8. Press UP or DOWN button to change default entry of selected choice. Press ENTER button to save choice.
9. Repeat steps 6 through 8 to change other entries.
10. Press LEFT button to return to the Home screen.

**FIGURE 30**  
**Accessing Device Instance, Name and Location**



#### **Advanced Time Settings for BACnet Applications**

If a CompleteStat is used in a BACnet network with UTC (Coordinated Universal Time) synchronization (via broadcasting or addressing a single thermostat), the UTC offset value must be set. The UTC offset value is in minutes and corresponds to the distance of the local time zone to the zero degree meridian (see Table 1 on page 18). In stand-alone operation or networks that do not have UTC broadcasts, setting this value is not necessary.

To set the UTC offset value from the home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press DOWN button to scroll to ADVANCED. Press ENTER button.
5. Press UP or DOWN buttons to scroll to DATE/TIME. Press ENTER button.
6. Press DOWN button to scroll to UTC OFFSET. Press ENTER button.
7. Press UP or DOWN buttons to enter the appropriate minutes of offset from chart below.
8. Press ENTER button to save UTC OFFSET minutes.
9. Press LEFT button to return to the Home screen.

**TABLE 1**  
**UTC Offset Minutes Sample Time Zones**

Alaska	540 Minutes
USA/Canada Pacific Standard Time	480 Minutes
USA/Canada Mountain Standard Time	420 Minutes
USA/Canada Central Standard Time	360 Minutes
USA/Canada Eastern Standard Time	300 Minutes
Bolivia, Chile	240 Minutes
Argentina, Uruguay	180 Minutes
United Kingdom, Portugal	0 Minutes
Europe (Most Countries)	- 60 Minutes
Egypt, Israel, Turkey	- 120 Minutes
Kuwait, Saudi Arabia	- 180 Minutes
United Arab Emirates	- 240 Minutes
India, Sri Lanka	- 330 Minutes
China, Mongolia	- 480 Minutes
Korea, Japan	- 540 Minutes
New Zealand	- 720 Minutes

**WARNING:** All other levels of programming within this control are specific to performance parameters of this unit and changes or alterations may result in damage to the unit and/or component failure. Before making any changes to specific programming details not present in this manual, please consult with the Technical Service Department of Bard Manufacturing Co.

### Temperature Sensor Calibration

Using an accurate thermometer, measure the temperature of the space immediately surrounding the CompleteStat. If an undesirable difference exists between the thermometer reading and the on-board temperature sensor reading, an offset may be added to more accurately present the temperature.

To set a temperature offset value from the Home screen:

1. Press RIGHT button to access Main Menu screen.
2. Press DOWN button to scroll to TECHNICIAN. Press ENTER button.
3. Controller will ask for password. Press UP and RIGHT buttons to enter 'BARD'. Press ENTER button.
4. Press DOWN button to scroll to ADVANCED. Press ENTER button.
5. Press UP or DOWN buttons to scroll to INPUTS. Press ENTER button.
6. Press ENTER button again to select SPACE TEMP.
7. Press DOWN button to scroll to CAL. OFFSET. Press ENTER button.
8. Press UP or DOWN buttons to enter amount of degrees offset desired.
9. Press ENTER button to save desired degrees of calibration offset.
10. Press LEFT button to return to the Home screen.