CTC®
A Division of SUPCO®

Installer Manual

Wireless Thermostat Kit
PROCOMM SERIES

powered by
BlueLink))
smart connect ™

95057WK
Up to 3 Heat / 2 Cool Heat Pump
Up to 2 Heat / 2 Cool Conventional
*with wireless Humidity Control**

* Wireless Humidity Control requires accessory model 9330.

1 Specifications   **2** Installation and Wireless Setup   **3** Quick Reference
4 Installer Settings   **5** Wireless Remote Sensors   **6** System Testing

⚠️ **Warning**   *For installation by experienced service technicians only.*

⚠️ **Caution** • *Possible electric shock or damage to equipment can occur.*
            • *Disconnect power before beginning installation.*

This thermostat requires 2 properly installed "AA" Alkaline batteries for proper operation. When connecting optional 24 Volt AC power the batteries may be installed as a backup.

For use only as described in this manual. Any other use will void warranty.

1 Specifications

KIT INCLUDES: Wireless thermostat, control module and return air plenum sensor.

This thermostat is compatible with:
• Single stage heat / cool conventional and heat pump systems
• Conventional systems up to 2 stages of heating and 2 stages of cooling
• Heat pump systems up to 3 stages of heating and 2 stages of cooling
• 2 or 3 wire hydronic zone systems

Electrical and control specifications:
• Electrical Rating: 24 Volt AC
• 1 amp maximum load per terminal
• AC Power: 18 to 30 Volts AC
• DC Power: 3.0 Volt DC (2 "AA" Alkaline Batteries Included)
• Control Range: 45° F to 90° F (7° C to 32° C)
• Temperature Accuracy: +/- 1° F (+/- .5° C)
• Outdoor Temperature Display Range: -40° F to 120° F (-40° C to 49° C)

Terminations
Thermostat: R, C (optional 24 VAC power terminals)
Control Module: Rh, Rc, G, W1/E, W2/AUX, Y1, Y2, O/B/V3, L, C, P1, P2, S1, S2

2 Installation and Wireless Setup

1 Install and Wire the Control Module

⚠ **Warning** *Disconnect power before beginning installation.*
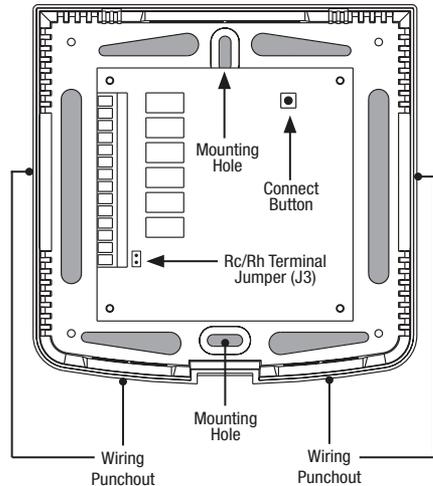
Control Module Location

Install the control module on a wall near HVAC equipment or on the HVAC equipment.

• Remove the cover of the control module.

• Mount the control module using the two mounting holes and the appropriate type of screws for the application.

Install Return Air Sensor (required)

The Return Air Sensor maintains default temperature control if wireless communication is lost.

• Install the Return Air Sensor at least 12 inches upstream of any humidification or ventilation equipment.

• Connect the Return Air Sensor to the P1 and P2 terminals on the control module.

• For hydronic applications, mount sensor in an area that maintains living space temperature. Do not mount on the supply pipes.

Mounting Hole
Connect Button
Rc/Rh Terminal Jumper (J3)
Mounting Hole
Wiring Punchout
Wiring Punchout

Wiring Terminations for Control Module

Terminal	Conventional Systems	Heat Pump Systems
Rh	24 Volt AC Heating Transformer	24 Volt AC Transformer
Rc	24 Volt AC Cooling Transformer	Not Used
G	System Fan Relay	System Fan Relay
W1/E	(W1) 1st Stage Heat Relay	**(E)** Emergency Heat Relay
W2/AUX	(W2) 2nd Stage Heat Relay	**(AUX)** Auxiliary Heat Relay
O/B/V3	(V3) Zone Valve Power Close (Hydronic Systems Only)	**(O)** Cool Active Reversing Valve **(B)** Heat Active Reversing Valve
Y1	1st Stage Cooling Relay	1st Stage Compressor Relay
Y2	2nd Stage Cooling Relay	2nd Stage Compressor Relay
L	Not Used	System Fault Indicator
C	24 Volt AC Transformer Common	24 Volt AC Transformer Common
S1 S2	Optional Wired Remote Sensor (Indoor or Outdoor)	Optional Wired Remote Sensor (Indoor or Outdoor)
P1 P2	Required __Return__ Air Plenum Sensor (must be installed)	Required __Return__ Air Plenum Sensor (must be installed)

Conventional Systems

Typical Wiring Configurations

NOTE: The "System Type" option will be configured in Thermostat Installer Settings (section 4).

Heat Only
*Set System Type to **11CONV***

Rh	24 Volt AC Power (heating transformer) **[note 1]**
W1	Heat Relay
G	Fan Relay **[note 3]**
C	24 Volt AC Transformer Common

1 HEAT / 1 COOL Single or Dual Transformer
*Set System Type to **11CONV***

Rh	24 Volt AC Power (heating transformer) **[note 1]**
Rc	24 Volt AC Power (cooling transformer) **[note 1]**
W1	Heat Relay
Y1	Compressor Relay
G	Fan Relay
C	24 Volt AC Transformer Common **[note 2]**

2 HEAT / 2 COOL Single or Dual transformer
*Set System Type to **22CONV***

Rh	24 Volt AC Power (heating transformer) **[note 1]**
Rc	24 Volt AC Power (cooling transformer) **[note 1]**
W1	Heat Relay Stage 1
W2	Heat Relay Stage 2
Y1	Compressor Relay Stage 1
Y2	Compressor Relay Stage 2 **[note 3]**
G	Fan Relay
C	24 Volt AC Transformer Common **[note 2]**

Hydronic Heat Only
*Set System Type to **1HD***

Rh	24 Volt AC Power (heating transformer) **[note 1]**
W1	Zone Valve Power Open
V3	Zone Valve Power Close
G	Fan Relay **[note 3]**
C	24 Volt AC Transformer Common

Hydronic Heat / 1 Cool
*Set System Type to **11HD***

Rh	24 Volt AC Power (heating transformer) **[note 1]**
Rc	24 Volt AC Power (cooling transformer) **[note 1]**
W1	Zone Valve Power Open
V3	Zone Valve Power Close
Y1	Compressor Relay
G	Fan Relay
C	24 Volt AC Transformer Common **[note 2]**

NOTES - Conventional Systems
[1] Open (J3) jumper for dual transformer installations.
[2] In dual transformer systems, transformer common must come from cooling transformer.
[3] If needed for system.

Provide disconnect and overload protection as required.

Additional Wiring Options

S1	Indoor or Outdoor Remote Sensor **[note 1]**
S2	

NOTES - Additional Wiring Options
[1] These terminals can be used to connect a CTC® wired indoor or outdoor remote sensor. Indoor remote sensor must be configured in Thermostat Installer Settings (section 4).

Heat Pump Systems

Typical Wiring Configurations

NOTE: *The "System Type" option will be configured in Thermostat Installer Settings (section 4).*

1 HEAT / 1 COOL - No Auxiliary Heat
Set System Type to 11HP

Rh	24 Volt AC Power
O/B	Changeover Valve **[note 1]**
Y1	Compressor Relay
G	Fan Relay
C	24 Volt AC Transformer Common

2 HEAT / 2 COOL - No Auxiliary Heat
Set System Type to 32HP

Rh	24 Volt AC Power
O/B	Changeover Valve **[note 1]**
Y1	Compressor 1 Relay (1st stage heating/cooling)
Y2	Compressor 2 Relay (2nd stage heating/cooling)
G	Fan Relay
C	24 Volt AC Transformer Common
L	Optional System Fault Monitor **[note 3]**

2 HEAT / 1 COOL - Including Auxiliary Heat
Set System Type to 22HP

Rh	24 Volt AC Power
O/B	Changeover Valve **[note 1]**
Y1	Compressor Relay (1st stage heating/cooling)
AUX	Auxiliary Heat Relay (2nd stage heating) **[note 2]**
E	Emergency Heat Relay **[note 2]**
G	Fan Relay
C	24 Volt AC Transformer Common
L	Optional System Fault Monitor **[note 3]**

3 HEAT / 2 COOL – Including Auxiliary Heat
Set System Type to 32HP

Rh	24 Volt AC Power
O/B	Changeover Valve **[note 1]**
Y1	Compressor 1 Relay (1st stage heating/cooling)
Y2	Compressor 2 Relay (2nd stage heating/cooling)
AUX	Auxiliary Heat Relay (3rd stage heating) **[note 2]**
E	Emergency Heat **[note 2]**
G	Fan Relay
C	24 Volt AC Transformer Common
L	Optional System Fault Monitor **[note 3]**

NOTES - Heat Pump Systems
[1] **O** (cool active) or **B** (heat active) is selected in the Thermostat Installer Settings menu (section 4).
[2] Install a field supplied jumper between the **AUX** and **E** terminals if there is no separate emergency heat relay installed.
[3] If the **L** terminal is used, the 24 Volt AC common must be connected (**C** terminal).

Provide disconnect and overload protection as required.

Additional Wiring Options

S1	Indoor or Outdoor Remote Sensor **[note 1]**
S2	

NOTES - Additional Wiring Options
[1] These terminals can be used to connect a CTC® wired indoor or outdoor remote sensor. Indoor remote sensor must be configured in Thermostat Installer Settings (section 4).
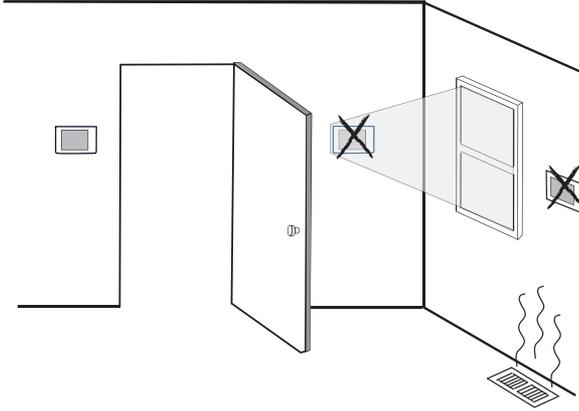
2 Install the Thermostat

NOTE: *Test location by pairing your thermostat before mounting (see page 7).*
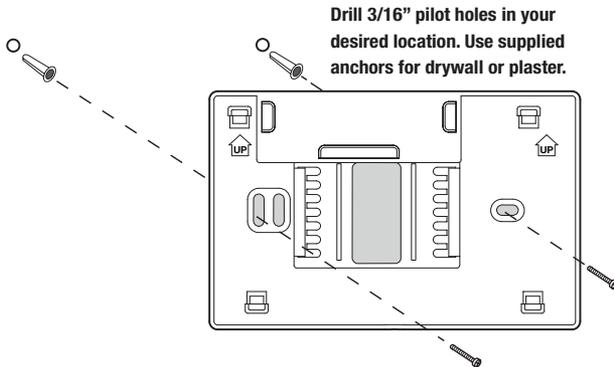
Thermostat Location

Install the thermostat approximately 5 feet (1.5m) above the floor in an area that has a good amount of air circulation and maintains an average room temperature.

Avoid installation in locations where the thermostat can be affected by drafts, dead air spots, hot or cold air ducts, sunlight, appliances, concealed pipes, chimneys and outside walls.
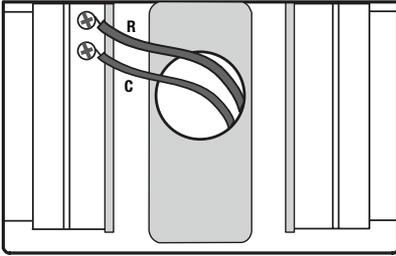

3 Install the Sub-Base:

• Remove the sub-base from the body of the thermostat.
• Mount the sub-base as shown below:

Drill 3/16" pilot holes in your desired location. Use supplied anchors for drywall or plaster.

4 **Provide Power to Thermostat**

24VAC Power (optional)
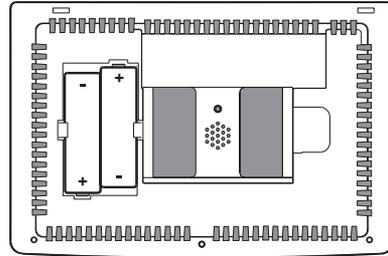
Battery Power

- For optional 24 Volt AC power, you must connect **R** and **C** terminal to the thermostat sub-base.
- For battery power, insert the 2 supplied "AA" type alkaline batteries into the battery compartment located in the rear housing of the thermostat. Make sure to position the Positive (+) and Negative (-) sides of the batteries correctly with the +/- symbols in the battery compartment.

5 **Attach Thermostat to Sub-Base**
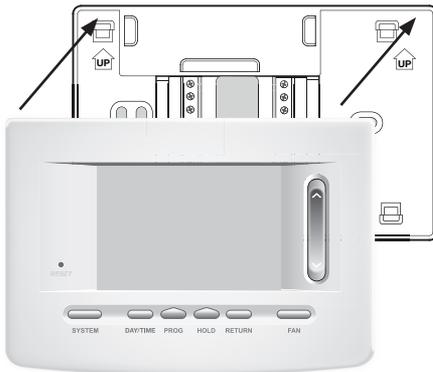
1) Line up the thermostat body with the sub-base.
2) Carefully push the thermostat body against the sub-base until it snaps in place.

3) Insert Quick Reference Card into slot on top of thermostat.

NOTE: This thermostat ships configured as a 1H/1C conventional thermostat. Confirm installer settings. See page 11.

6   ## Pairing the Thermostat with Control Module

Pairing the Thermostat and Control Module

1. On the thermostat, press and hold down the **HOLD** and **RETURN** buttons for 3 seconds.
2. The word **CMOD** (control module) will appear in the display and the ᵒ))) symbol will flash (see Figure 1).
3. On the powered control module, press and hold the **CONNECT** button for 3 seconds (see Figure 2).
4. The control module will enter pairing mode for 60 seconds. During this time the blue **COMM** indicator on the control module will flash once every 2 seconds.
5. Once successfully paired, the ᵒ))) symbol will stop flashing and the blue **COMM** indicator on the control module will turn on.
6. Press **RETURN** on the thermostat at any time to exit.

NOTE: In step 2, if the control module has already been paired, the ᵒ))) symbol will not be flashing.

Figure 1

Replacing a Thermostat

If you are replacing a thermostat that is paired with an existing control module, you will need to clear the control module and pair it again with the newly installed thermostat.

1. Install the new thermostat.
2. On the control module, press and hold the **CONNECT** button for 10 seconds until the red **COMM** indicator turns on.
3. Release the **CONNECT** button and the blue and red LED will each flash once to indicate the control module was successfully cleared.
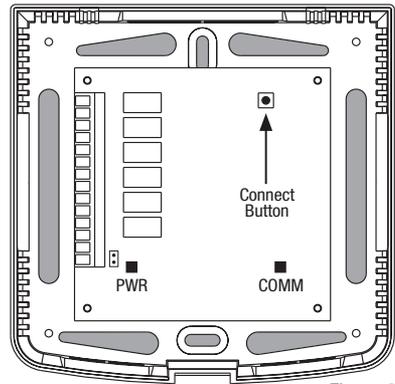4. Pair the new thermostat with the control module.

Connect Button

PWR   COMM

Figure 2

Replacing a Control Module

If you are replacing a control module that is paired with an existing thermostat, you will need to clear the thermostat's control module settings before pairing the new wireless control module.

1. Install the new control module.
2. Thermostat control module settings are cleared by adjusting Installer Setting #29 to **CLR2**. This setting clears the connection between the thermostat and control module *(see section 4)*.

NOTE: Be careful not to select CLR3 unless you want to clear all the thermostat settings.

3. Pair your new control module with the thermostat. See "Pairing the Thermostat with Control Module".

Communication Loss

If communication between the thermostat and control module is lost, the red **COMM** indicator on the control module will begin to flash once every 10 seconds. The control module will attempt to reconnect to the thermostat several times automatically.

NOTE: To attempt to reconnect manually, press and hold the CONNECT button for 3 seconds.

The thermostat display will also indicate that communication has been lost by flashing **COMM LOSS CMOD**. During communication loss the return air sensor is used to maintain the factory default heating and cooling temperatures.

Control Module LED Indicators

1 **PWR:**   **24 VAC Power Indicator**
2 **HEAT:**   **HEAT ON Indicator**
3 **COOL:**   **COOL ON Indicator**
4 **FAN:**   **FAN ON Indicator**
5 **COMM:** **Communication Indicator**

Communication Indicator (COMM)

- Solid blue: Normal Operation
- Rapid blue flash: Sending Data to Thermostat
- 1 blue flash every 2 seconds: Control Module in Pairing Mode
- Flashing, then solid blue: Successfully Paired
- 1 red flash every 10 seconds: Lost Communication

3 Quick Reference
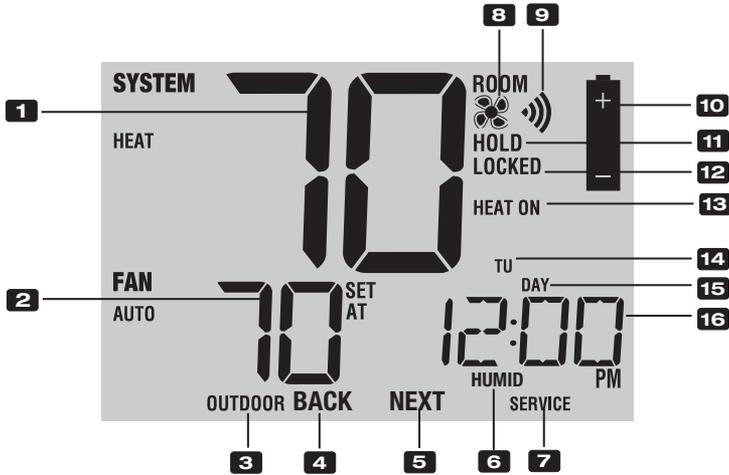
Thermostat Display

1 **Room Temperature** .... Displays the current room temperature

2 **Set Temperature** .... Displays the current set point temperature

3 **Outdoor Temperature Indicator** ... Displays along with the outdoor temperature reading**

4 **BACK Indicator*** .... BACK button is active

5 **NEXT Indicator*** .... NEXT button is active

6 **Humidity Indicator** .... Indicates when there is a call for humidification or dehumidification

7 **Service Indicators** .... Displays various service/maintenance information

8 **Fan Indicator** .... Indicates when the system fan is running

9 **Wireless Indicator** .... Indicates a wireless connection (flashes when connection has been lost)

10 **Low Battery Indicator** .... Indicates when the batteries need to be replaced

11 **Hold Mode Indicator** .... Indicates if the thermostat is in HOLD mode

12 **Lock Mode Indicator** .... Indicates if the thermostat is locked

13 **System Status Indicator** .... Displays information about the status of the system

14 **Day of the Week** .... Displays the current day of the week

15 **Program Event Indicator** .... Displays the program event

16 **Time of Day** .... Displays the current time of day

* **BACK** and **NEXT** are secondary functions of the **PROG** and **HOLD** buttons. When in programming or configuration modes, **BACK** and **NEXT** appear in the display screen indicating that the **PROG** and **HOLD** buttons now function as **BACK** and **NEXT**.

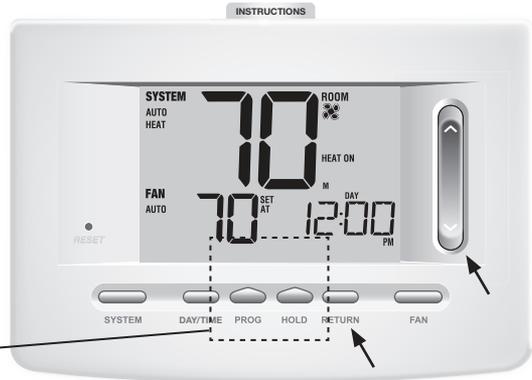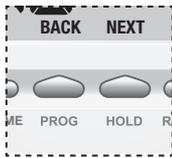** Also see #24 on page 10.
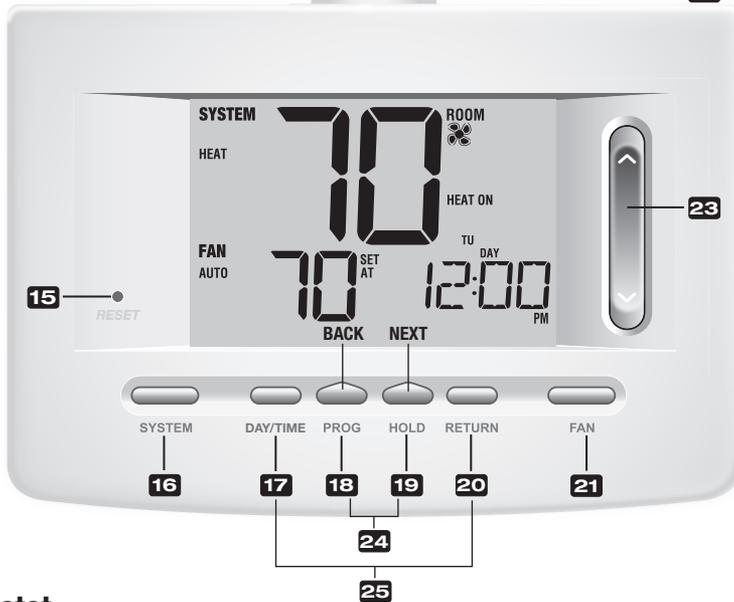
Thermostat

15 **Reset Button** .... Resets current time, program and user settings

16 **SYSTEM Button** .... Selects the system you want to control

17 **DAY/TIME Button** .... Sets the current time and day of the week

18 **PROG Button** .... Selects programming mode or press for 3 seconds to select SpeedSet®
BACK Button* .... Secondary function of the PROG button - moves back a setting

19 **HOLD Button** .... Enters/Exits the HOLD mode (program bypass)
NEXT Button* .... Secondary function of the HOLD button - moves to next setting

20 **RETURN Button** .... Returns to normal mode from program or setting modes

21 **FAN Button** .... Selects the system fan mode

22 **Quick Reference Instructions** ...... Stored in slot located at top of thermostat

23 **SpeedBar®** .... Increases or decreases settings (time, temperature, etc.)

24 **Outdoor Temperature** .... If a CTC® outdoor sensor was connected you can view the outdoor
temperature by pressing the **PROG** and **HOLD** buttons at the same time.

25 **Humidity Setpoint** .... If a CTC wireless humidity sensor is connected you can view the
current humidity or make adjustments to the humidity setpoint by
pressing the **DAY/TIME** and **RETURN** buttons at the same time.

Battery Compartment .... Located in the back of thermostat

* **BACK** and **NEXT** are secondary functions of the **PROG** and **HOLD** buttons. When in programming or
configuration modes, **BACK** and **NEXT** appear in the display, indicating that the **PROG** and **HOLD** buttons
now function as **BACK** and **NEXT**.

The Installer Settings must be properly configured in order for this thermostat to operate correctly. The Installer Settings are menu driven. The portion of these settings that do not apply to your setup will be skipped. These settings are indicated below with comments. More detail on each setting follows this table.

1. Press and hold down the **RETURN** and ∨ buttons for 3 seconds.
2. Release both buttons and the first installer setting will be displayed.
3. Change settings as required using the ∧ or ∨ portion of the SpeedBar®.
4. Press **NEXT** (HOLD) or **BACK** (PROG) to move to the next or previous setting, press **RETURN** to exit.

No.	Installer Setting (Notes follow this table)	Factory Default	Setting Options	Comments (More information follows this table)
1	Residential or or Commercial Profile	RES	RES COMM	Select for Residential profile Select for Commercial profile
2	Programming Mode [note 1]	7 PROG	7 PROG 52 PROG NO PROG	Select for 7 day programming mode Select for 5-2 day programming mode Select for non-programmable mode
3	Clock Format	12 HR	12 HR 24 HR	Select for 12 hour clock Select for 24 hour clock
4	Temperature Scale	F DEG	F DEG C DEG	Select for Fahrenheit display Select for Celsius display
5	Auto Changeover	oF AUTO	oF AUTO ON AUTO	Disables Auto Changeover mode Enables Auto Changeover mode
6	System Type	11CONV	11CONV 22CONV 11HP 22HP 32HP 1HD 11HD	Select for 1H/1C Conventional system Select for 2H/2C Conventional system Select for 1H/1C Heat Pump system Select for 2H/2C Heat Pump system Select for 3H/2C Heat Pump system Select for Heat Only Hydronic system Select for Hydronic Heat/1C system
7	1st Stage Differential	0.5 DIF1	0.5, 1.0 or 2.0 DIF1	Select a 1st stage temperature differential of .5°, 1° or 2° F (.25°, .5° or 2° C)
8	2nd Stage Differential [note 2]	2.0 DIF2	1.0, 2.0, 3.0, 4.0, 5.0 or 6.0 DIF2	Select a 2nd stage temperature differential of 1°, 2°, 3°, 4°, 5° or 6° F (.5°, 1°, 1.5°, 2°, 2.5° or 3° C)
9	3rd Stage Differential [note 2]	2.0 DIF3	1.0, 2.0, 3.0, 4.0, 5.0 or 6.0 DIF3	Select a 3rd stage temperature differential of 1°, 2°, 3°, 4°, 5° or 6° F (.5°, 1°, 1.5°, 2°, 2.5° or 3°C)

No.	Installer Setting (Notes follow this table)	Factory Default	Setting Options	Comments (More information follows this table)
10	1st Stage Fan Control [note 3]	HG FAN 1	HG FAN 1 HE FAN 1	Select for 1st stage Gas heating Select for 1st stage Electric heating
11	Emergency Heat] Fan Control [note 4]	HE EMER	HE EMER HG EMER	Select for Electric Emergency Heat Select for Gas Emergency Heat
12	Reversing Valve (O/B Terminal) [note 5]	REVO	REVO REVB	Select for cool active Reversing Valve (O terminal) Select for heat active Reversing Valve (B terminal)
13	Fossil Fuel Backup Heat [note 4]	AE AUX	AE AUX AG AUX	Select for Electric Auxiliary heat (with compressor) Select for Gas Auxiliary heat (without compressor)
14	Compressor Power Outage Protection [notes 4, 6]	oF CPOP	oF CPOP on CPOP	Disables Power Outage Lockout Delay Enables Power Outage Lockout Delay
15	AC Power Interrupt Warning [note 6]	AC oF MONR	AC oF MONR AC on MONR	Disables AC Power Interrupt Warning Enables AC Power Interrupt Warning
16	Compressor Short Cycle Protection [note 7]	5 CSCP	5, 4, 3, 2 or 0 CSCP	Select a compressor short cycle protection delay of 5, 4, 3, 2 or 0 minutes
17	Residual Cooling Fan Delay [note 7]	60 FAN	90, 60, 30 or 0 FAN	Select a Residual Cooling Fan Delay of 90, 60, 30 or 0 seconds.
18	Adaptive Recovery Mode (ARM™) [note 8]	oF REC	oF REC on REC	Disables Adaptive (early) Recovery mode Enables Adaptive (early) Recovery mode
19	Indoor Remote Sensor Control* [note 9]	I SENS	I SENS E SENS A SENS	Temperature is sensed from thermostat only. Temperature is sensed from remote sensor only. Temperature is combined with the thermostat and the remote sensor.
20	Lockout Security Level	2 LOCK	2 LOCK	If locked – Complete lockout is enabled
			1 LOCK	If locked – Partial lockout is enabled (SpeedBar® is still functional)
21	Auto Changeover Dead Band [note 10]	3 BAND	2, 3, 4 or 5 BAND	Select a Dead Band of 2°, 3°, 4° or 5˚ F (1°, 2° or 3° C) for Auto Changeover mode.
22	Compressor Balance Point [notes 4, 11]	NO BALC	NO BALC	Disables Balance Points
			0-50 BALC	Select a Compressor Balance Point of 0°F to 50°F
23	Auxiliary Heat Balance Point [notes 4, 11]	NO BALA	NO BALA	Disables Balance Points
			70-40 BALA	Select a Auxiliary Heat Balance Point of 70° F to 40° F
24	Heat Set Point Upper Limit	90LIM	90-60 LIM	Select a Heat Set Point Upper Limit of 90°F to 45° F
25	Cool Set Point Lower Limit [note 7]	45LIM	45-80 LIM	Select a Cool Set Point Lower Limit of 45°F to 90° F
26	Humidification [note 12]	OFF	OFF DEP IND	Disables Humidification Enables Dependant Humidification Enables Independent Humidification
27	Auto Humidity Set Point Limit [notes 11, 12]	AUTO	AUTO MAN	Enables automatic humidity control based on outdoor temperature. Enables manual humidity control from thermostat.
28	Dehumidification [note 12]	OFF	OFF NI NA	Disables Dehumidification Normally inactive (open) relay Normally active (closed) relay
29	Installer Clear	CLR0	CLR0 CLR1 CLR2 CLR3	Clear Off - No changes made to settings Clears connection with wireless remote sensors Clears connection with control module Clears all thermostat settings (factory defaults)

Options (shaded) 26 - 28 only appear if optional wireless humidity sensor is installed. *When a CTC® outdoor sensor is connected, the thermostat automatically recognizes it. Press **PROG** and **HOLD** at the same time to display outdoor temperature.

NOTE: *Additional options such as Service Monitors, setting the lock code, etc. are located in the User Settings – See User Manual for information on setting these options.*

NOTES - Installer Settings

1 Only available if Residential profile was selected in option 1.
2 Only available if a 2 or 3 stage system type was selected in option 6.
3 Only available if a Conventional system was selected in option 6.
4 Only available if a 2 or 3 stage Heat Pump system was selected in option 6.
5 Only available if a Heat Pump system was selected in option 6.
6 Only available if thermostat is 24 VAC powered (R and C terminals).
7 Not available if a heat only hydronic system is selected in option 6.
8 Only available if a programmable profile was selected in option 2.
9 Only available if a CTC® indoor remote sensor was connected.
10 Only available if auto changeover was enabled in option 5.
11 Only available if a CTC outdoor sensor was connected.
12 Only available if a CTC wireless humidity sensor was connected.

Detailed Explanation of Installer Settings (also see NOTES above):

1 **Profile** – Selects a residential (RES) or commercial (COMM) profile. If residential is selected, 4 programming events per day are available. If commercial is selected, 2 event, 7 day programming is available.

2 **Programming Mode [note 1]** – Selects the programming mode, either full 7 day or 5-2 day (weekday/weekend) programming or non-programmable.

3 **Clock Type** – Selects either a 12 hour or 24 hour clock.

4 **Temperature Scale** – Selects a temperature scale of either °F or °C.

5 **Auto Changeover** – Selects auto changeover on or off. When auto changeover mode is enabled and selected, the system automatically switches between heating and cooling modes. There is a 5 minute delay when switching from heating to cooling or cooling to heating in auto changeover mode.
NOTE: Also see "Auto Changeover Dead Band" in option 21.

6 **System Type** – Selects the system type for your installation. *NOTE: Changes made to this option will reset options 7 through 15 back to their default values dependant on the system type.*

7 **1st Stage Differential** – Selects a 1st stage temperature differential.

8 **2nd Stage Differential [note 2]** – Selects a 2nd stage temperature differential.

9 **3rd Stage Differential [note 2]** – Selects a 3rd stage temperature differential.

10 **1st Stage Fan Control [note 3]** – Selects a 1st stage fan control of either gas or electric heat.

11 **Emergency Heat Fan Control [note 4]** – Selects emergency heat fan control of either gas or electric heat.

12 **Reversing Valve [note 5]** – Selects the output state of the O/B terminal. Select O for this terminal to be active in the cool mode or select B for this terminal to be active in the heat mode.

13 **Auxiliary Fossil Fuel Heat Pump Control [note 4]** – When set to electric (AE AUX), both the compressor (1st stage) and auxiliary stage(s) will run when a call for auxiliary heat is made. When set to gas (AG AUX), the compressor stage(s) will be locked out one minute after a call for auxiliary heat. *NOTE: This option can be overridden if setting an auxiliary heat balance point in Option 23.*

14 **Compressor Power Outage Protection [notes 4, 6]** – Selects power outage protection on or off. When enabled, this thermostat will provide cold weather compressor protection by locking out the compressor stage(s) of heating for a period of time after a power outage greater than 60 minutes.

15 AC Power Interrupt Warning [note 6] – When enabled, the thermostat will display an outage warning when AC power to the thermostat is lost.

16 Short Cycle Protection [note 7] – Selects the number of minutes the cooling compressor will be locked out after turning off. This short cycle protection is also active in the heat mode if a heat pump system was selected in Option 6.

17 Residual Cooling Fan Delay [note 7] – Selects a delay for the system fan after the cooling compressor has turned off. This delay will help remove the remaining cool air out of the ductwork providing additional efficiency.

18 Adaptive Recovery Mode (early recovery) [note 8] – Enables or disables the ARM™ (adaptive recovery mode) feature. During ARM, room temperature is recovered by turning on the heating or cooling before the end of the set back period. The set point temperature is changed to that of the upcoming program temperature.

19 Indoor Remote Sensor Control [note 9] – If a CTC® indoor remote sensor is connected (wired) or paired (wireless) during installation, the thermostat will automatically detect the sensor. When an indoor sensor is detected, you may select between thermostat only (I SENS), remote sensor only (E SENS) or combining the thermostat and the remote sensor(s) (A SENS).
NOTE: This option does not apply to the CTC outdoor sensor. When an outdoor sensor is connected (wired) or paired (wireless), the thermostat automatically recognizes it and no further configuration is necessary.

20 Lockout Security Level – Selects the level of keypad lockout when the thermostat is locked. Level 2 locks the entire thermostat (including the front reset button). Level 1 locks everything except the SpeedBar® allowing for up and down temperature adjustment. *NOTE: The lock code is set in the User Settings mode (see User Manual).*

21 Auto Changeover Dead Band [note 10] – When auto changeover mode is enabled in option 5 and selected, the system automatically switches between heating and cooling when the room temperature meets the normal criteria for either a heating or cooling call. There is a forced separation (dead band) between the heating and cooling set points so that the systems do not work against each other. This option selects the amount of this dead band in degrees with the default being 3° F.

22 Compressor Balance Point [notes 4, 11] – Locks out the use of the compressor heat stage when the outside air temperature is less than the selected setting of 0° F to 50° F.

23 Auxiliary Heat Balance Point [notes 4, 11] – Locks out the use of the auxiliary heat stage when the outside air temperature exceeds the selected setting of 70° F to 40° F. *NOTE: This balance point over rides the fossil fuel compressor lockout in option 13. If this option is set to gas and the outdoor temperature is over the auxiliary balance point, the compressor will remain on during a call for auxiliary heat.*

24 Heat Set Point Upper Limit – Selects the heating set point upper adjustment limit.

25 Cool Set Point Lower Limit [note 7] – Selects the cooling set point lower adjustment limit.

26   Humidification Mode [note 12] – For use with an external humidifier. Selects between disabling humidification (OFF), dependent control (DEP) or independent control (IND). The DEP setting controls humidification only during a call for heating. The IND setting allows humidification output in the heat mode, but does not require a call for heating. ***NOTE:*** *It is recommended that the IND setting only be used with systems designed for low air temperature humidification such as steam humidification. Always ensure the heat exchanger or other system parts are not exposed to excess water from condensation or other sources. When there is any doubt, use the OFF or DEP setting.*

27   Auto Humidity Set Point Limit [notes 11, 12] – Select between turning the automatic humidity set point limit to auto (AUTO) or manual (MAN). When AUTO is selected, humidity control is provided automatically based on the outdoor temperature. Selecting MAN allows you to manually control the level of humidity.

28   Dehumidification [note 12] – For use with an external dehumidifier. Select between dehumidification disabled (OFF), a normally inactive (NI) or normally active (NA) relay, depending on the requirements of your external dehumidification equipment.

29   Installer Clear – Clears settings based on your selection. CLRO makes no changes, CLR1 clears all wireless remote sensor connections, CLR2 clears the connection to the control module and CLR3 clears **ALL** thermostat settings.
WARNING: If you press **NEXT** or **RETURN** after selecting CLR1, CLR2 or CLR3 the clear will take place and the appropriate settings will be returned to factory defaults. If you do not wish to make any changes, use the SpeedBar® to select CLRO.

5   Wireless Remote Sensors

NOTE: *See the wireless remote sensor manual for complete installation and use instructions.*

Compatible Wireless Remote Sensors

Wireless Remote Indoor Sensor(s) – 4 sensors maximum
Wireless Remote Outdoor Sensor – 1 sensor maximum
Wireless Remote Humidity Sensor – 1 sensor maximum

NOTE: *No more than 4 wireless remote sensors can be connected.*

Pairing Wireless Remote Sensors

1   Press and hold the **HOLD** and **RETURN** buttons for 3 seconds.

2   Press **NEXT** until the word SENS appears in the display and the ·)) symbol flashes.

3   After the remote sensor is powered, press and hold the **CONNECT** button on the sensor for 3 seconds and release.

4   The remote sensor will enter pairing mode for 60 seconds. During this time the blue indicator on the wireless remote sensor will flash once every 2 seconds.

5   When paired, the thermostat display will change and indicate which remote sensor has been paired (see Table 1). The ·)) symbol will stop flashing and the blue indicator on the remote sensor will turn on for 60 seconds.

6   To pair another wireless remote sensor, press **NEXT** and repeat steps 3 - 5.

7   Press **RETURN** at any time to exit.

NOTE: *Sensors that have already been paired will appear in the thermostat display first, with a solid ·)) symbol.*

IDS1, IDS2, IDS3 or **IDS4**	Remote Indoor Sensor 1-4
HMS	Remote Humidity Sensor
ODS	Remote Outdoor Sensor

Table 1

Using Wired Remote Sensors

• One wired indoor or wired outdoor remote sensor can also be connected to the thermostats S1 and S2 terminals on the control module using 2-wire thermostat cable.

• You cannot mix wired and wireless remote sensors of the same type (i.e. mixing an indoor wireless remote sensor and an indoor wired remote sensor).

Replacing a Thermostat

If you are replacing a thermostat that is paired with an existing wireless sensor, you will need to clear the remote sensor and pair it again with the newly installed thermostat.

1   Install the new thermostat.

2   On the wireless remote sensor you want to clear, press and hold the **CONNECT** button for 10 seconds until the red indicator turns on.

3   Release the **CONNECT** button and the blue and red indicator will each flash once to indicate the sensor was successfully cleared.

4   Pair the remote sensor again.

Replacing a Sensor

If you are replacing a wireless remote sensor that is paired with an existing thermostat, you will need to clear the thermostat's remote sensor connection before pairing the new wireless remote sensor.

1   Install the new wireless remote sensor.

2   Thermostat remote sensor settings are cleared by adjusting Installer Setting 29 to **CLR1** (see section 4). This setting clears all the remote sensors paired with the thermostat.
NOTE: *Be careful not to select CLR3 unless you want to clear all the thermostat settings.*

3   Once the remote sensor settings are cleared you will need to pair your new wireless remote sensor. You will also need to pair any other existing wireless remote sensors that were previously connected.

Wireless Remote Sensor Communication Loss

If communication between the remote sensor and thermostat is lost, the red indicator on the remote sensor will begin to flash once every 10 seconds. The sensor will attempt to reconnect to the thermostat several times automatically.

NOTE: *To attempt to reconnect manually, press and hold the* **CONNECT** *button for 3 seconds.*

The thermostat display will also indicate which wireless remote sensor has lost communication by flashing COMM LOSS along with the remote sensor that has lost communication (see Table 2).

Wireless Remote Sensor Low Battery

If the batteries in a wireless remote sensor are low, the red indicator will flash 3 times every 30 seconds. The thermostat display will also indicate which wireless remote sensor has a low battery by flashing LOW BATT along with the remote sensor that has the low battery condition (see Table 2). Replace the remote sensor batteries immediately.

NOTE: *After replacing batteries, allow up to 15 minutes for the wireless connection to re-establish.*

IDS1, IDS2, IDS3 or **IDS4**	Remote Indoor Sensor 1-4
HMS	Remote Humidity Sensor
ODS	Remote Outdoor Sensor

Table 2

6 System Testing

⚠ Warning *Read Before Testing*

• Do not short (or jumper) across terminals on the gas valve or at the heating or cooling system control board to test the thermostat installation. This could damage the thermostat and void the warranty.

• Do not select the COOL mode of operation if the outside temperature is below 50º F (10º C). This could possibly damage the controlled cooling system and may cause personal injury.

• This thermostat includes an automatic compressor protection feature to avoid potential damage to the compressor from short cycling. When testing the system, make sure to take this delay into account.

NOTE: The compressor delay can be bypassed by pressing the reset button on the front of the thermostat. All user settings will be returned to factory default, however all Installer settings will remain as originally programmed in section 4.

1 Press **SYSTEM** until the thermostat is in HEAT mode.
2 Using the SpeedBar® raise the set temperature a minimum of 3 degrees above the current room temperature. The system should start within a few seconds. With a gas heating system, the fan may not start right away.
3 Press **SYSTEM** until the thermostat is in the OFF mode. Allow the heating system to fully shut down.
4 Press **SYSTEM** until the thermostat is in the COOL mode.
5 Using the SpeedBar lower the set temperature a minimum of 3 degrees below the current room temperature. The system should start within a few seconds (unless compressor short cycle protection is active – See note above).
6 Press **SYSTEM** until the thermostat is in the OFF mode. Allow the cooling system to fully shut down.
7 Press **FAN** until the thermostat is in FAN ON mode. The system fan should start within a few seconds.
8 Press **FAN** until the thermostat is in FAN AUTO mode. Allow the system fan to turn off.
9 If the thermostat is controlling auxiliary equipment such as a humidifier, adjust the thermostat settings to test these devices.

CTC Thermostats Limited Warranty

CTC warrants your CTC thermostat to be free from defects in material or workmanship for a period of three years from the date of sale to the original user or consumer purchaser. If your CTC thermostat malfunctions or fails within the warranty period because of a defect in material or workmanship, we will replace it.

THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES. THE DURATION OF ANY IMPLIED WARRANTY, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, INRESPECT TO YOUR CTC THERMOSTAT IS LIMITED TO THE PERIOD OF THE EXPRESS WARRANTY SET FORTH ABOVE.

This warranty is voided if your CTC thermostat is not purchased and used in the USA. This warranty excludes and does not cover defects, malfunctions or failures of your CTC thermostat which were caused by repairs by persons not authorized by us, mishandling, improper installation, modifications or damage to the CTC thermostat while in your possession, or unreasonable use, including failure to provide reasonable and necessary maintenance.

Store this manual for future reference.

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