ComfortNet™
CONTROL SYSTEM

HiDef Communicating Control System

FEATURING SERIAL COMMUNICATIONS

INSTALLATION GUIDE

P/N CTK02AA

FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR OPERATING THIS CONTROL AND SYSTEM COULD CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.

INTRODUCTION TO THERMOSTAT AND COMMUNICATING SYSTEM

This is the dealer installation and start-up instruction guide for the ComfortNet HiDef Communicating Control System. It features a flexible programming sequence for residential applications. It is designed to control components of a 24 VAC residential ComfortNet communicating system featuring ComfortNet™ protocol consisting of gas or electric heat, heat pump, and central air conditioning applications. The high-resolution color display offers easy readability, intuitive programming with individual touch buttons to the right of the screen, on-screen prompting, pop-up message alerts to change filter, or regular servicing check-ups, and an exchangeable faceplate. The thermostat has a USB port for contractor setup.

The thermostat's major features include 40° to 99°F setpoint range, 1° resolution, 3.5-inch diagonal ¼ VGA LCD, auto configure, auto-changeover, selectable continuous fan speeds, humidity control, dehumidification control, dual fuel control, advanced diagnostics and fault code display, advanced installer menu, simultaneous heat and cool program storage, a four-step daily schedule sequence, energy management recovery, filter change-out indicator, replace UV lamp indicator, change humidifier pad and program loss start up temperature.

Note: If system power is lost for more than eight hours, the clock will have to be reset. Programming and configuration settings will be saved.

WARNING

Thermostat installation and all components of the control system shall conform to Class II circuits per the NEC code.

WARNING

To prevent electrical shock and/or equipment damage, disconnect electric power to system at main fuse or circuit breaker box until installation is complete.

ATTENTION: MERCURY NOTICE

This product does not contain mercury, but it may replace a product that contains mercury.

Mercury and products containing mercury must not be discarded in household trash. Do not touch any spilled mercury. Wearing non-absorbent gloves, clean up any spilled mercury and place it in a sealed container. For proper disposal of a product containing mercury or a sealed container of spilled mercury, place it in a suitable shipping container.

On the Internet, visit www.thermostat-recycle.org for a location where the product containing mercury can be sent.

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Installation

This booklet contains installation instruction and information on the thermostat only. Separate installation instructions for the furnace or air handler and outdoor AC condensing unit or heat pump are provided with the appropriate equipment. This thermostat is designed exclusively for the ComfortNet™ communicating system.

Control Kits Content

This communicating control kit contains the following components:

- (1) Communicating control with base and silver faceplate
- (1) White snap on faceplate
- (2) 4-position plug color-coded connectors
- (2) Screws #6 x 3/4" long type A self tapping screws
- (2) Wall Anchors
- (1) Instruction Manual
- (1) Homeowner User Guide
- (1) Quick Start Guide

Valid System Configurations

This control may only be used with certain system configurations. Valid system configurations for which this control can be used are:

- A communicating air handler matched with a communicating outdoor AC condensing unit.
- A communicating air handler matched with a communicating outdoor heat pump unit.
- A communicating furnace matched with a communicating outdoor AC condensing unit.
- A communicating furnace matched with a communicating outdoor heat pump unit.
- A communicating furnace matched with a non-communicating single-stage AC condensing unit.

System configurations other than those noted above will not function or may function properly at greatly reduced performance.

Control Installation Location

Locate the control on a vibration-free inside wall in an area having good air circulation. The control should be located approximately five feet high. The control should be located in an area such that it is not influenced by the following:

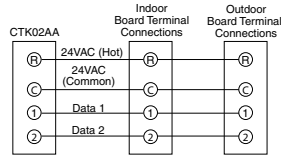
- Drafts
- Dead spots behind doors, in corners, or under cabinets
- Cold or hot air from registers
- Sunlight
- Light from fixtures or other appliance
- Radiant heat from a fireplace or other heat source
- Concealed water pipes (hot or cold)
- Unconditioned areas behind the control

Wiring Requirements

Each digitally communicating device in the system requires four wire connections:

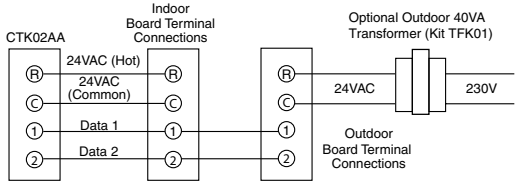
18 AWG solid wire is recommended.

24VAC Hot (R), 24VAC Common (C), Data 1 (1), and Data 2 (2). The R and C connections provide a 24VAC power supply that can be shared between the indoor and outdoor units and the thermostat. The data 1 and data 2 connections provide the communications bus between the indoor unit, outdoor unit and thermostat. Thus, the R, C, 1, and 2 terminals must be wired consistently. See the indoor unit and outdoor unit respective installation manuals for additional wiring details.

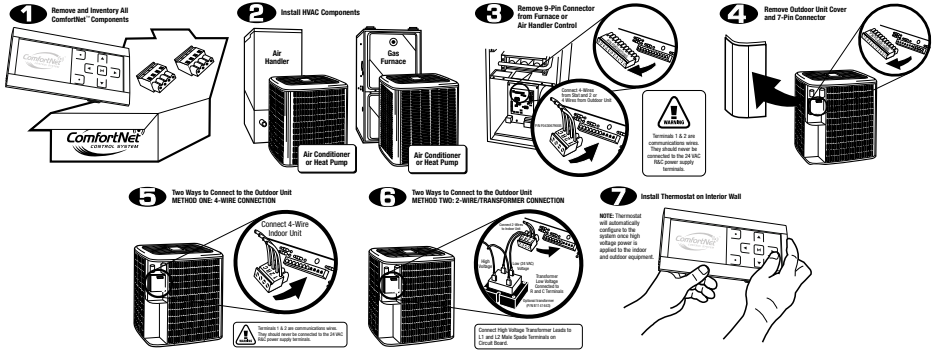


- Indoor unit to thermostat wiring: Connect a wire between terminal "R" on the thermostat sub base and terminal "R" on the 4-position plug connector for the indoor unit. Repeat for the C, 1, and 2 terminals.

- Indoor unit to outdoor unit wiring: Connect a wire between terminal "R" on the indoor unit's 4-position plug and the terminal "R" on the outdoor unit's 4-position plug connector. Repeat for the C, 1, and 2 terminals.
- Alternate indoor unit to outdoor unit wiring: In some installations, only two wires may be available for low voltage control wiring at the outdoor unit. If this is the case, use the existing low voltage control wires and connect the 1 and 2 terminals as shown in the figure below. Follow instructions below to wire the system.
  - Install the optional 40 VA transformer (Kit TFK01) in the outdoor unit using the screws provided. Align the holes in the transformer mounting bracket with the holes in the sheet metal mounting panel and secure with screws.
  - Connect one terminated end of the black 22" wire jumper to the 240VAC terminal on the transformer (or 208VAC terminal if 208VAC system). Connect the othe terminated end of the wire jumper to L1 on the outdoor unit's control.
  - Connect the red 22" wire jumper to the 240VAC COM terminal on the transformer. Connect the other end of the wire jumper to L2 on the outdoor unit's control.
  - Connect the terminated end of the red 14" wire jumper to the 24VAC terminal on the transformer. Connect the other end to the "R" terminal on the included plug connector.
  - Connect the terminated end of the blue 14" wire jumper to the 24VAC COM terminal on the transformer. Connect the other end to the "C" terminal on the included plug connector.
  - Dual Fuel Systems: It is highly recommended that the optional 40VA transformer be used in the outdoor unit. See alternate indoor unit to outdoor unit wiring for transformer wiring instructions.
  - To maintain the UL rating on all AC and heat pump models the installing contractor is required to use the low voltage wiring provided inside the control panel when converting to the communicating control system.



Installing Thermostat

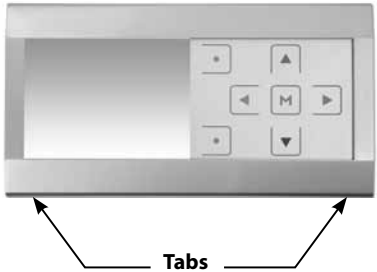


- Carefully separate the thermostat body from the thermostat base.
- Place base at installation location and mark mounting hole locations on wall using base as a template.
- Drill mounting holes.
- Attach base snugly to wall using two mounting screws. Levelling is for appearance only and will not affect thermostat operation.
- Connect wires to terminal block on base.
- 18 AWG solid wire is recommended.
- Push excess wire into wall and plug hole with a fire resistant material (such as fiberglass insulation) to prevent drafts from affecting thermostat operation.
- Carefully line up the thermostat with the base and snap into place.

Removable Faceplate

The silver faceplate on the thermostat can be removed and replaced with the white faceplate included. To change the faceplate:

- Remove faceplate by gently pulling on the tabs behind the lower edge of the faceplate. Lift faceplate off of thermostat.
- Position faceplate on top edge of thermostat.
- Press on bottom of faceplate to snap faceplate back into position.



Initial Power Up

Turn on AC power to the system. The thermostat will automatically identify the communicating equipment installed and configure for the equipment as required.

- Set the time (see thermostat setup section)
- Select advanced installer menu settings or use USB upload feature to install Thermostat Configuration information (see USB Upload section)
- Perform thermostat/system operation checkout.
- Program thermostat or accept factory programming.
- Touch ◁ to run schedule.

Check System Operation

Heating System (Heat Pump only/Furnace only/Dual Fuel)

1. Press SYSTEM button until **Heat** is displayed.
2. Press ▲ to adjust thermostat setting 1° above room temperature. The heating system should begin to operate.
3. If the heating system has additional stages, adjust the thermostat setting to 3° F (2°C) or more above the actual temperature. The next heat stage will energize.
4. Press ▼ to adjust thermostat setting below room temperature. The heating system should stop operating.

Cooling System

1. Press SYSTEM button until COOL is displayed.
2. Press ▼ to adjust thermostat setting below room temperature. The cooling system should begin to operate.
3. If the cooling system has additional stages, adjust the temperature to 3°F (2° C) or more below the actual. The second cool stage will energize within 10 seconds.
4. Press ▲ to adjust thermostat setting above room temperature. The cooling system should stop operating.

Fan Operation

1. Press FAN button until **Fan On** is displayed. The fan should begin to operate.
2. Press FAN button to change the display to **Fan Auto**. The fan should stop operating as long as there is no call for heat or cool.

Thermostat Overview

Navigating Through Your Thermostat Menus

Your thermostat features a simplified easy to understand menu structure.

- Press [M] to enter the Main Menu
- Highlight a menu item using the ▲ or ▼ buttons
- Enter the item by pressing [M]
- Use the ◁ or ▷ and the ▲ or ▼ to change menu items and settings
- Press the **Home** button to display the Home Screen.

- Press the **Enter** button to save any changes you have made and display the previous menu item.

- **If no button is pressed for two minutes, you will return to the home screen without saving changes.**

Note: See Homeowner's Guide for full details on thermostat menu options.
This manual only contains installation information.

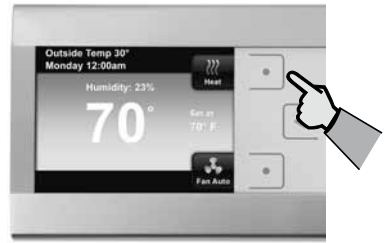
Thermostat Setup

Set the Current Time and Day

- On the Main Menu, select and enter **Clock and Display Settings**.
- Select and Enter **Time & Date**.
- The Hour is selected. Adjust the hour with ▲ or ▼.
- Press ▷ to select Minutes, AM/PM, Month, Day and Year and adjust.
- The thermostat will automatically assign the correct day of the week after the date is set.
- Press the **Enter** button.

Choose the System Setting

- From the Home screen, press the button as shown to choose the system setting: **Heat, EM, Cool, Auto,** or **Off**.



Energy Saving Factory Pre-Program

Your thermostat is programmed from the factory with the energy saving settings shown below for every day of the week. If this program meets your needs, simply select either **Heat**, **Cool**, or **Auto** with the System button.

Factory Pre-Programmed Heating and Cooling Schedule

	Wake Up (Morning)		Leave for Work (Day)		Return Home (Evening)		Go to Bed (Night)	
Heating Program	6:00 AM	70°F	8:00 AM	62°F	5:00 PM	70°F	10:00 PM	62°F
Cooling Program	6:00 AM	75°F	8:00 AM	83°F	5:00 PM	75°F	10:00 PM	78°F

If you want to change the heating and/or cooling programs in your thermostat, see the **"Programming Your Thermostat"** section in the Homeowner's Guide.

Advanced Installer Menu

This menu allows the installer to check installer-specific information or set advanced settings. It is accessible from the **Home** screen when the ◁ and ▷ buttons are pressed at the same time for three seconds.

Select the items using the ▲ or ▼ buttons and press the M button to enter the item to view information or change settings. Press **Enter** button to save any changes and display the previous menu or press **Home** to display the Home Screen. If 2 minutes pass without any buttons pressed, the Home Screen will return and changes will not be saved.

Items on the Advanced Installer Menu are:

- Communicating Devices
- Fault Status
- USB Upload
- Heat Pump Disable*
- Air Handler Lockout*
- Dual Fuel Setpoint: 5°*
- Heat Cycle Rate: Medium
- Cool Cycle Rate: Medium

*Items marked with * may or may not appear in the list depending on the configuration of the system.

Communicating Devices: This menu item will list each piece of system equipment connected to the ComfortNet™ network. The equipment can be selected and entered to view identifying information, operating information and setup status as described in Equipment User Menus.

Fault Status: This menu item lists current equipment fault conditions. The system equipment experiencing the fault will be listed with details of the fault. If no faults are detected, this screen will show nothing.

USB Upload: The USB load menu displays a list of thermostat parameters that can be loaded to the thermostat from a USB memory device. If the USB port detects a USB memory device, this menu will automatically display.

Contractors can download the template at www.comfortnet1.com.

In the **USB Upload** menu, select the item to upload and press M to mark the item with a red box. After all items to upload are selected, press the **Upload** button.

The USB media must have properly formatted information to be recognized by the thermostat. If the thermostat does not find information, when the Upload button is pressed, the display will indicate, **"Invalid Data Found. Installation Failed!"**

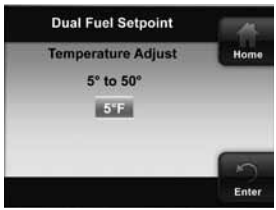
Once the **Upload** button is pressed and the upload is accomplished, the display will indicate **"Successfully Installed"** for 3 seconds then the display will display the menu or mode prior to entering the USB upload menu.

Air Handler Lockout Temperature: Available only for an air handler with heat pump systems. This feature disables the electric heat above the selected outdoor temperature. The temperature range is from the Heat Pump Disable setting to 95°F. The default disable setpoint is **10° F.**

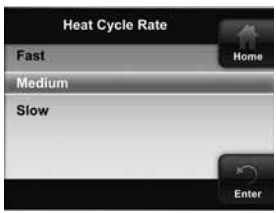
Dual Fuel Setpoint: If the heating system is a heat pump with gas heat and the outdoor sensor is installed, the thermostat can monitor outside temperature to determine when to begin using the gas heat system and stop the compressor. This temperature is the Dual Fuel temperature setpoint. The Dual Fuel feature eliminates the need for a fossil fuel kit.

The display will indicate **30°** (default). The temperature can be adjusted to a value between **5°** to **50°**. The temperature will appear as °F unless °C is selected for temperature display.

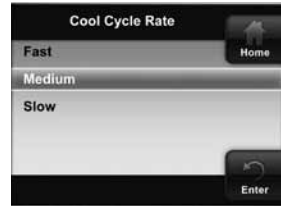
As long as the outside temperature is above the Dual Fuel Setpoint, the compressor will operate. When the temperature drops below the setting the thermostat will start the gas heat and shut off the compressor.



Heat Cycle Rate: Anticipation for heat cycle can be adjusted. Default setting is **Medium**. If you wish to have longer heat cycles, change to **Slow**. For shorter heat cycles change to **Fast**.



Cool Cycle Rate: Anticipation for cool cycle can be adjusted. Default setting is **Medium**. If you wish to have longer cool cycles, change to **Slow**. For shorter cool cycles change to **Fast**.



Multi-Stage Time Delay Operation

Your thermostat is designed to determine the optimum time to efficiently activate second stage operation. There is a time delay algorithm from 0 - 30 minutes depending on the performance of the first stage and simply raising the temperature in heating or lowering it in cooling will not always force a second stage demand.

EXAMPLE: For the last 2 hours the thermostat is set on 70° and the room temperature is 70° with the equipment using only the first stage of heat. Since the equipment is keeping the temperature within 1° of set point, the thermostat will delay second stage for a longer time if you manually raise the temperature or if the room temperature quickly changes. Once the second stage is activated, the control will cycle second stage sooner the next time there is a difference between the set point and the room temperature. The net effect of the staging program is that when the first stage is capable of making temperature the second stage will delay longer. When the thermostat calculates first stage operation cannot achieve temperature in a reasonable time, the second stage will be activated sooner. This built in function automatically optimizes the use of additional heating or cooling stages.

Dual Fuel Operation

This feature is for heat pump systems installed in conjunction with a gas furnace.
This control eliminates the need for an additional fossil fuel kit.

The dual fuel set point is adjustable in the Advanced Installer Menu (selectable from 5°F - 50°F – default 30°F) and is based on feedback from the remote temperature sensor located in the outdoor unit. Above this setting and with a first stage heating demand the heat pump will be engaged in heating mode. Below this setting or upon a second stage heating demand the gas furnace will be engaged. Both first and second stage dual fuel operation staging will be conducted as is outlined in the Multi-Stage Time Delay Operation section above.

Equipment User Menus

Additional equipment operating information and options will be found on the **Advanced Installer Menu** in **Communicating Devices**. Equipment fault status and details will be found in **Fault Status**. Push and hold the right ▷ and left ◁ button to enter this menu.

In the **Communicating Devices** menu, select the equipment listed that you wish to see information for. The display will indicate **"Accessing the Device"**. The list of parameters for the equipment will appear. Select the parameter you wish to view.

Each Equipment User Menu has submenus to divide the information into categories. Each piece of equipment has a different set of submenus, with different parameters depending on the equipment. The submenus show similar information for each piece of equipment.

The equipment found in the system will be displayed.

Touch ▲ or ▼ to step through the list of equipment connected, including thermostat.

To view the Equipment Menus information for the equipment displayed select the desired menu to enter that equipment submenu. The message area will show **"ACCESSING THE DEVICE"** to indicate that the thermostat is retrieving data. Then the first equipment submenu name will appear.

Touch ▲ or ▼ to step through the list of equipment submenus. Each piece of equipment may have different submenus.

When the equipment submenu you want is showing, touch the M button. The display will show **"ACCESSING THE DEVICE"** and then change to the first parameter on the equipment submenu. Settings for the parameter will also appear on the display.

Touch ▲ or ▼ to step through the items of the equipment submenu and view settings.

If a setting can be adjusted, the options will appear. Change the setting as required. Touch ▲ or ▼ to step to the next item. **"UPDATING THE SUBSYSTEM"** will appear and then the display will show "**DONE"** to indicate the change is accepted.

Touch **HOME** to step out of the equipment submenu and back to the main menu. Touch **Enter** to step back one menu level.

Each Equipment User Menu has submenus to divide the information into categories. Each piece of equipment has a different set of submenus, with different parameters depending on the equipment. The submenus are showing the similar information for each piece of equipment. The submenus and the information they provide are:

- **Configuration:** This submenu item provides access to information regarding the configuration of the particular piece of equipment. An example of configuration data is the number of cooling stages for an AC condensing unit.
- **Diagnostics:** This submenu item provides access to the fault history for the particular piece of equipment. It also provides a means to clear the fault history.
- **Identification:** This submenu item provides access to the model number and serial number for the particular piece of equipment.
- **Sensors:** This submenu item provides access to available sensor data for the particular piece of equipment. In some instances, it may also provide a means to enable or disable a particular sensor.
- **Setup:** This submenu item provides access to modifiable operational parameters for the particular piece of equipment.
- **Status:** This submenu item provides access to the current status of a particular piece of equipment.

The following sections provide detailed listings of the available submenus for the various types of equipment that may be used with this digitally communicating thermostat. The submenu listing is further broken down into the various submenu items. **Note: Some menus may not be displayed depending on the configuration.**

Furnace User Menus

Configuration (CONFIG)	
Sub-menu Item	**Indication (for Display Only; not User Modifiable)**
Number of Heat Stages (HT STG)	Displays the number of furnace heating stages
Input Rate (BTU/HR)	Displays the furnace input rate in kBtu/hr
Motor HP (1/2, 3/4 or 1 MTR HP)	Displays the furnace indoor blower motor horse power

Diagnostics (DIAG)		
Sub-menu Item	**Indication/User Modifiable Options**	**Comments**
Fault 1 (FAULT #1)	Most recent furnace fault	For display only
Fault 2 (FAULT #2)	Next most recent furnace fault	For display only
Fault 3 (FAULT #3)	Next most recent furnace fault	For display only
Fault 4 (FAULT #4)	Next most recent furnace fault	For display only
Fault 5 (FAULT #5)	Next most recent furnace fault	For display only
Fault 6 (FAULT #6)	Least recent furnace fault	For display only
Clear Fault History (CLEAR)	NO or YES	Selecting “YES” clears the fault history

NOTE: *Consecutively repeated faults are shown a maximum of 3 times.*

Identification (IDENT)	
Sub-menu Item	**Indication (for Display Only; not User Modifiable)**
Model Number (MOD NUM)	Displays the furnace model number
Serial Number (SER NUM)	Displays the furnace serial number (Optional)
Software (SOFTWARE)	Displays application software revision

Setup (SETUP)		
Sub-menu Item	**User Modifiable Options**	**Comments**
Heat Airflow Trim (HT TRM)	-10% to +10% in 2% Increments (Default 0%)	Trims the heating airflow by the selected amount.
Heat ON Delay (HT ON)	5, 10, 15, 20, 25, or 30 seconds (Default 20)	Selects the indoor blower heat on delay
Heat OFF Delay (HT OFF)	30, 60, 90, 120, 150, or 180 seconds (Default 120)	Selects the indoor blower heat off delay
Heating Air Flow (HT ADJ)	1, 2, 3, 4 (Default 2)	Selects the nominal heating airflow

Status (STATUS)	
Sub-menu Item	**Indication (for Display Only; not User Modifiable)**
Mode (MODE)	Displays the current furnace operating mode
CFM (CFM)	Displays the airflow for the current operating mode

Non-Comm (Non-COMM pplies only to a communicating furnace matched with a non-communicating AC)		
Sub-menu Item	**User Modifiable Options**	**Comments**
Cool Airflow (CL CFM)	18, 24, 30, 36, 42, 48, or 60 (Default 18)	Selects the airflow for the non-communicating 1-stage AC unit
Cool Airflow Trim (CL TRM)	-10% to +10% in 2% Increments (Default 0%)	Selects the airflow trim amount for the non-communicating 1-stage AC unit
Cool Airflow Profile (CL PRFL)	A, B, C, or D (Default A)	Selects the airflow profile for the non-communicating 1-stage AC unit
Cool ON Delay (CL ON)	5, 10, 20, or 30 seconds (Default 5)	Selects the indoor blower on delay for the non-communicating 1-stage AC unit
Cool OFF Delay (CL OFF)	30, 60, 90, or 120 seconds (Default 30)	Selects the indoor blower off delay for the non-communicating 1-stage AC unit

Air Handler User Menus

Configuration (CONFIG)	
Sub-menu Item	**Indication (for Display Only; not User Modifiable)**
Electric Heat Size (HTR KW)	Displays the size, in kW, of the selected electric heaters
Motor HP (1/2, 3/4 or 1 MTR HP)	Displays the furnace indoor blower motor horse power
Heat ON Delay (HT ON)	Displays the electric heat indoor blower on delay
Heat OFF Delay (HT OFF)	Displays the electric heat indoor blower off delay

Diagnostics (DIAG)		
Sub-menu Item	**Indication/User Modifiable Options**	**Comments**
Fault 1 (FAULT #1)	Most recent air handler furnace fault	For display only
Fault 2 (FAULT #2)	Next most recent air handler fault	For display only
Fault 3 (FAULT #3)	Next most recent air handler fault	For display only
Fault 4 (FAULT #4)	Next most recent air handler fault	For display only
Fault 5 (FAULT #5)	Next most recent air handler fault	For display only
Fault 6 (FAULT #6)	Least recent air handler fault	For display only
Clear Fault History (CLEAR)	NO or YES	Selecting “YES” clears the fault history

NOTE: *Consecutively repeated faults are shown a maximum of 3 times.*

Identification (IDENT)	
Sub-menu Item	**Indication (for Display Only; not User Modifiable)**
Model Number (MOD NUM)	Displays the air handler model number
Serial Number (SER NUM)	Displays the air handler serial number (Optional)
Software (SOFTWARE)	Displays application software revision

Setup (SETUP)		
Sub-menu Item	**User Modifiable Options**	**Comments**
Heat Airflow Trim (HT TRM)	-10% to +10% in 2% Increments (Default 0%)	Trims the electric heating airflow by the selected amount.

Status (STATUS)	
Sub-menu Item	**Indication (for Display Only; not User Modifiable)**
Mode (MODE)	Displays the current air handler operating mode
CFM (CFM)	Displays the airflow for the current operating mode

Configuration (CONFIG)	
Sub-menu Item	**Indication (for Display Only; not User Modifiable)**
AC Tonnage (TONS)	Displays the air conditioning tonnage; applies to AC and HP.
Number of AC Stages (CL STG)	Displays the number of air conditioning stages; applies to AC and HP.
Number of HP Stages (HT STG)	Displays the number of heat pump stages; applies to HP only.

Diagnostics (DIAG)		
Sub-menu Item	**Indication/User Modifiable Options**	**Comments**
Fault 1 (FAULT #1)	Most recent AC/HP fault	For display only
Fault 2 (FAULT #2)	Next most recent AC/HP fault	For display only
Fault 3 (FAULT #3)	Next most recent AC/HP fault	For display only
Fault 4 (FAULT #4)	Next most recent AC/HP fault	For display only
Fault 5 (FAULT #5)	Next most recent AC/HP fault	For display only
Fault 6 (FAULT #6)	Least recent AC/HP fault	For display only
Clear Fault History (CLEAR)	NO or YES	Selecting “YES” clears the fault history

NOTE: *Consecutively repeated faults are shown a maximum of 3 times.*

Identification (IDENT)	
Sub-menu Item	**Indication (for Display Only; not User Modifiable)**
Model Number (MOD NUM)	Displays the air conditioner or heat pump model number
Serial Number (SER NUM)	Displays the air conditioner or heat pump serial number (Optional)
Software (SOFTWARE)	Displays application software revision

Sensors (SENSORS)		
Sub-menu Item	**Indication/User Modifiable Options**	**Comments**
Outdoor Air Temperature (AIR TMP)	Displays the outdoor air temperature	Sensor may or may not be available on an air conditioner. Check air conditioner instructions for details.
Outdoor Coil Temperature (COIL TMP)	Displays the outdoor coil temperature	Applies for heat pump operation.

Status (STATUS)	
Sub-menu Item	**Indication (for Display Only; not User Modifiable)**
Mode (MODE)	Displays the current air handler operating mode
CFM (CFM)	Displays the airflow for the current operating mode

Cool Set-up (SETUP)		
Sub-menu Item	**User Modifiable Options**	**Comments**
Cool Airflow Trim (CL TRM)	-10% to +10% in 2% Increments (Default 0%)	Selects the airflow trim amount; applies to air conditioner only.
Cool Airflow Profile (CL PRFL)	A, B, C, or D (Default D)	Selects the airflow profile; applies to air conditioner only.
Cool ON Delay (CL ON)	5, 10, 20, or 30 seconds (Default 5)	Selects the indoor blower on delay; applies to air conditioner only.
Cool OFF Delay (CL OFF)	30, 60, 90, or 120 seconds (Default 30)	Selects the indoor blower off delay; applies to air conditioner only.
Dehumidification Select (DEHUM)	ON or OFF (Default is OFF)	Selecting “OFF” disables dehumidification; selecting “ON” enables dehumidification; applies to air conditioner only.

Heat Set-Up (HT SETUP) Applies to Heat Pump Systems Only		
Sub-menu Item	**User Modifiable Options**	**Comments**
Heat Airflow Trim (HT TRM)	-10% to +10% in 2% Increments (Default 0%)	Selects the airflow trim amount; applies to heat pump only.
Heat ON Delay (HT ON)	5, 10, or 15 seconds (Default 5-sec.)	Selects the indoor blower on delay; applies to heat pump only.
Heat OFF Delay (HT OFF)	30, 50, 70, or 90 seconds (Default 30-sec.)	Selects the indoor blower off delay; applies to heat pump only.
Defrost Interval (DEFROST)	30, 60, 90, or 120 minutes (Default 30-min.)	Selects the time interval between defrost; applies to heat pump only.
Compressor Delay (CMP DLY)	0, 5, 15, or 30 seconds (Default 30-sec.)	Selects the compressor off time after a reversing valve shift; applies to heat pump only.

LIMITED WARRANTY

Model CTK02AA

This thermostat ("control") is warranted by Goodman Manufacturing Company, L.P. ("Goodman") to be free from defects in materials and workmanship under normal use and maintenance, as described below:

To the original equipment registered owner and his or her spouse ("owner") this control is warranted for a period of TEN YEARS, except as provided below. This warranty applies only if:

1) The control is installed in an owner-occupied, single family residence; and

2) The control is installed in conjunction with a new furnace or air handler containing a communicating system that is compatible with the control (a "Compatible Unit"); and

3) If the Compatible Unit is a Goodman® or Amana® brand furnace or air handler, the owner has properly registered the furnace or air handler with Goodman [at www.goodmanmfg.com] or Amana [at amana-hac.com]; but failure by California and Quebec residents to register a Goodman® or Amana® brand Compatible Unit does not diminish their warranty rights. If the above warranty does not apply, then the control is warranted for a period of 5 YEARS. No warranty continues after the control is removed from the location where it was originally installed. No warranty applies to, and no warranty is offered by Goodman on, any control ordered over the Internet, by telephone or other electronic means unless the dealer selling the unit over the Internet, by telephone or other electronic means is also the installing contractor for the unit. The warranty period begins on the date of the original installation. Where the product is installed in a newly constructed home; the date of the installation is the date the homeowner purchased the home from the builder. If that date cannot be verified, the warranty period begins three months from the month of manufacture (as indicated by the four digit date code (yyww) where "yy" indicates the year and "ww" indicates the week of manufacture located on the base plate). As its only responsibility, and your only remedy, Goodman will, without charge, replace any control found to be defective due to workmanship or materials under normal use and maintenance. For warranty credit, the defective control must be returned to a Goodman heating and air conditioning products distributor by a state certified or licensed contractor. This warranty does not apply to labor, freight, or any other cost associated with the service, repair or operation of the unit. This warranty is in lieu of all other express warranties. ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS WARRANTY. Some states and provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. GOODMAN SHALL IN NO EVENT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO EXTRA UTILITY EXPENSES OR DAMAGES TO PROPERTY. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.

Goodman is not responsible for:

1. Damage or repairs required as a consequence of faulty installation or application.
2. Damage as a result of floods, fires, winds, lightning, accidents, corrosive atmosphere or other conditions beyond the control of Goodman.
3. Use of components or accessories not compatible with this control.
4. Products installed outside the United States or its territories, or Canada.
5. Normal maintenance as described in the installation and operating manual.
6. Replacement parts not supplied or designated by Goodman.
7. Damage or repairs required as a result of any improper use, maintenance, operation or servicing.
8. Failure to start due to interruption and/or inadequate electrical service.
9. Any damage caused by frozen or broken water pipes in the event of equipment failure.
10. Changes in the appearance of the unit that do not affect its performance.

This warranty gives you specific legal rights, and you may also have other rights that may vary from state to state or province to province.

Installer Name _____ Installation Date _____

INDOOR EQUIPMENT

Model # _____ Serial # _____

OUTDOOR EQUIPMENT

Model # _____ Serial # _____

Part No. 37-7233C
I/O-CHTSTAT