

# Zone Panel Professional Installation Guide



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### **SPECIFICATIONS**

#### **Input Ratings:**

Voltage: 18-30 VAC 50/60 Hz transformer of 40 VA or more.

# Current Draw:

Zone Panel: 8.5 VA max. THM4000 Wireless Adapter: 2 VA max. All VA specifications at 24 VAC.

#### Wiring

18- or 20-gauge solid (not stranded) wire.

#### **Humidity Ratings:**

5% to 90% RH non-condensing.

#### **Temperature Ratings:**

Shipping: -20° to 150°F (-29° to 66°C) Operating: -40° to 165°F (-40° to 74°C)

#### **Dimensions:**

See Fig. 1.

#### **Emissions:**

Complies with FCC Class B, part 15 requirements.

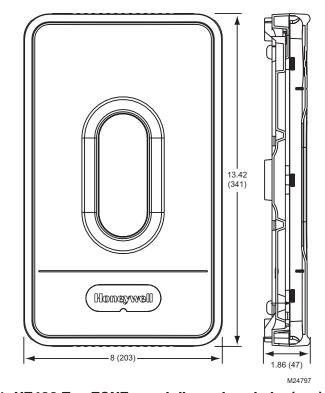


Fig. 1. HZ432 TrueZONE panel dimensions in in. (mm).

## **Need Help?**

For assistance with this product please visit <a href="http://customer.honeywell.com">http://yourhome.honeywell.com</a> and <a href="http://yourhome.honeywell.com">http://yourhome.honeywell.com</a> or call Honeywell Zoning Hotline toll-free at 1-800-828-8367

## Read and save these instructions.

## **APPLICATION**

The HZ432 TrueZONE® panel controls:

- Single-stage, multi-stage, conventional, or heat pump heat/cool HVAC equipment up to 3 stages of heat and 2 stages of cool;
- Dual-fuel systems with up to 2 heat pump stages and 2 fossil fuel stages;
- 2, 3, or 4 zones and is expandable to 32 zones using wired thermostats with the TotalZone® Add-A-Zone™
  panel;
- 2, 3, or 4 zones with wireless thermostats when used with the wireless adaptor.

Please refer to TrueZONE Panel Frequently Asked Questions form 50-9694 for operating details, or see http://customer.honeywell.com

## **ACCESSORIES**

**Table 1. Recommended Thermostats.** 

System	Non- Programmable	Programmable
Single- Stage	TH5110D, TH3110D, T87N	TH8110U, TH6110D, TH4110D
Multi- Stage	TH5220D	TH8320U, TH8321U, TH6220D, YTH9421C
Heat- Pump	TH5220D (2H/1C only) TH3210D (2H/1C only) TH5320U* (Up to 3H/2C)	TH8320U (Up to 3H/2C) TH8321U (Up to 3H/2C) TH6320U* (Up to 3H/2C) TH6220D (2H/1C only) TH4210D (2H/1C only) YTH9421C
Wire- less <sup>†</sup>	TH5320R	TH6320R

**Note:** All versions of the model numbers listed above will work with the applications they're listed for.

**Table 2. Recommended Dampers.** 

Туре	Actuation	Round	Rectangular		
	Residential				
Zone	Spring-open/ power-closed	ARD (6 VA)	ZD (6 VA)		
Zone	Power-open/ power-closed	RRD (2 VA)			
Bypass	Barometric	SPRD	SPRD		
	Commercial				
Zone	Power-open/ power-closed	MARD (2 VA)	D2 or D3 with ML6161A2009 (2 VA)		
Bypass	Power-open/ power-closed	MARD (2 VA) with SPC	D2 with ML6161B2024* (2 VA) and SPC		

<sup>\*</sup> Or equivalent damper and actuator.

Table 3. Maximum Dampers.\*

Ambient Temp.	Maximum Damper VA per Zone	
100°F (38°C)	28.8	
160°F (71°C)	16.8	

\* Use an SDCR (Slave Damper Control Relay) for additional dampers to surpass the maximum damper VA per zone.

Maximum dampers per panel is limited by transformer size.

Ensure transformer is large enough to power the panel, thermostats, wireless adapter module, and dampers.

Table 4. Accessories.

Accessory	Description
40 VA transformer*	AT140A1042
75 VA transformer	AT175A1008
Discharge Air Temperature Sensor (DATS)*	C7735A1000
TAZ-4	TotalZone® Add-A-Zone™ Control Panel
SDCR**	Slave Damper Control Relay
Portable Comfort Control***	REM5000R1001
Wireless Adapter***	THM4000R1000
Wired Outdoor Air Temperature Sensor <sup>‡</sup>	C7089U1006 (hard wired)
Wireless Outdoor Air Temperature Sensor*** ‡	C7089R1013 (wireless)
RedLINK Internet Gateway***	THM6000R1002**

<sup>\*</sup> Included in HZ432K kit.

<sup>\*</sup> This thermostat cannot control two stages of fossil fuel when in emergency heat mode.

<sup>&</sup>lt;sup>†</sup> For RedLINK™ wireless devices, a THM4000 is required. For more than 4 zones, see page 11.

<sup>\*\*</sup> Use an SDCR (Slave Damper Control Relay) to add additional dampers to a zone to surpass the maximum Damper VA rating per Zone.

<sup>\*\*\*</sup>For RedLINK™ wireless devices, a THM4000 is required.

<sup>&</sup>lt;sup>‡</sup> A wired or wireless outdoor sensor is required for Dual Fuel applications.

#### **MOUNTING**



Mount the HZ432 TrueZONE panel near the HVAC equipment; locate it on a wall, stud, roof truss, or coldair return.

**NOTE:** The HZ432 TrueZONE panel can be mounted in any orientation; level it for appearance only.

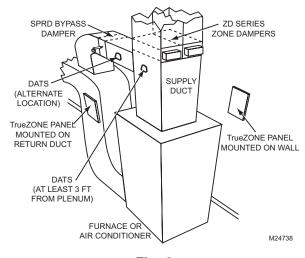


Fig. 2

2

Separate the zone panel cover from the base, and use the base as a template to drill mounting holes. Attach the base to the wall, stud, roof truss, or duct with appropriate screws (not included).

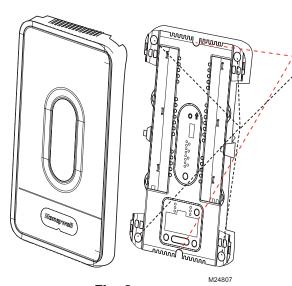


Fig. 3

Use two screws for attaching to a stud or roof truss, or four screws for duct or drywall/plaster installations.

#### **WIRING**



#### **CAUTION: Voltage Hazard.**

Can cause electrical shock or equipment damage. Disconnect power before beginning installation. Wire entire panel before applying transformer power.

Follow these steps for wiring all systems. However, wiring will vary depending on equipment. For conventional systems, see page 5. For heat pump systems, see pages 6 and 7. For dual fuel systems, see pages 8 and 9.

Wiring must comply with applicable codes, ordinances, and regulations. Use the following wiring diagrams to wire the zone panel to the thermostats and dampers.



Install thermostats using instructions provided with thermostats. If using wired thermostats, connect thermostat to zone panel. To connect wire to the panel, strip approximately 1/4 in. of insulation and push wire into terminal. To release wire, press the button on top of the terminal.

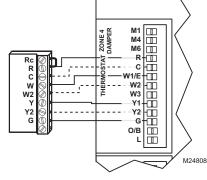
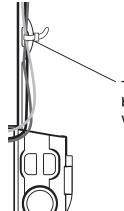


Fig. 4



The HZ432 offers many innovations for wire management and organization: wires can be run behind the panel, through wire channels on its sides, and must be attached to a wiring anchor with a cable tie.

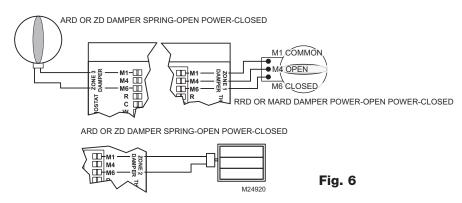
Fig. 5

M24743



Install dampers using instructions provided with dampers. Connect dampers to zone panel.

NOTE: Multiple dampers can be wired in parallel.



3

#### **WIRING**

5

Connect DATS as shown.

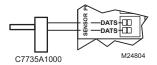


Fig. 7

Connect outdoor air temperature sensor as shown.
Required for dual fuel systems; optional for other
multistage systems. If using the C7089R1013 wireless
outdoor sensor and THM4000R wireless adapter on
2- to 4-zone systems, see page 11.

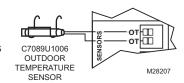


Fig. 8

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Connect equipment as shown here or on pages 5–9.

HVAC

24 VOLT TRANS.

C
R
R
RH
RH
RC
W2
W2
FAN RELAY
Y2
DS/BK

M24809

COMPRESSOR

Fig. 9

For oil heat with a separate transformer for cooling, remove this jumper.

For other systems, leave jumper in place and wire to HVAC R terminal with 18 gauge solid copper wire.

The DS/BK terminal is used with a variable-speed fan. If the HVAC equipment has DS, BK, ODD, or DHUM terminals, wire that terminal to the DS/BK terminal. When greater than 25% of zones are calling for cooling, this terminal will be energized and the fan will operate at normal speed. When 1 zone or fewer than 25% of zones are calling for cooling, the terminal will be de-energized and the fan will run at a reduced rate, which will reduce the amount of air that needs to be bypassed. This reduces blower speed on most variable speed blowers. Refer to HVAC equipment manufacturer instructions.

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When a wireless thermostat, Portable Comfort Control, wireless outdoor air temperature sensor, or other RedLINK™ wireless device is used on systems up to four zones, wire the THM4000 Wireless Adapter Module to the ABCD terminals on the zone panel. For systems with more than 4 zones, see page 11.

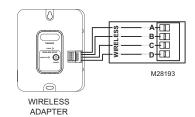


Fig. 10

**CAUTION:** Do not wire the A-B-C-D terminals of the THM5320R Wireless Equipment Interface Module to the A-B-C-D terminals on the HZ322 zone control panel. Doing so will damage the components.

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Connect a dedicated transformer as shown.

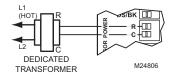


Fig. 11

#### CONVENTIONAL

The following diagram is an overall view of wiring for a conventional system as depicted in steps 3-9.

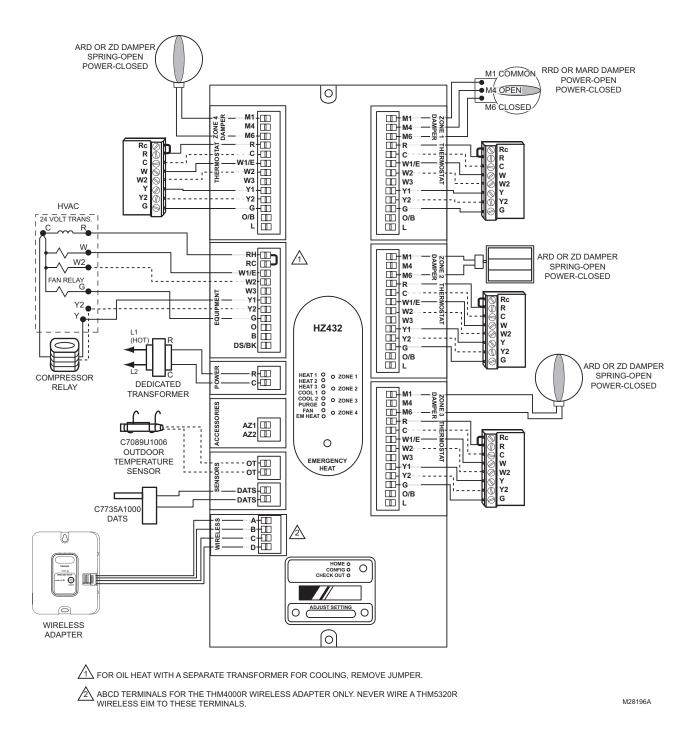


Fig. 12. Zone panel wiring—conventional.

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#### **HEAT PUMP**

Use the following diagram for wiring a 2-heat/1-cool heat pump with electric auxiliary heat.

**NOTE:** You can use a conventional thermostat for a heat pump system; however, em heat can only be controlled by heat pump thermostats or by pressing the Emergency Heat button on the zone panel. The diagram below shows a heat pump thermostat used with a heat pump system.

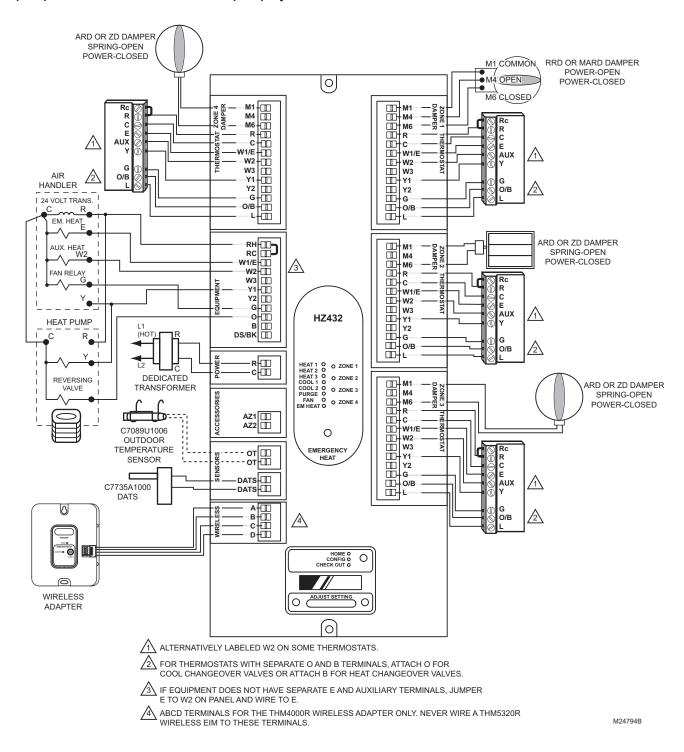


Fig. 13. Zone panel wiring-heat pump, 2-heat/1-cool with electric auxiliary heat.

#### **HEAT PUMP**

Use the following diagram for wiring a 3-heat/2-cool heat pump with electric stage 3 heat.

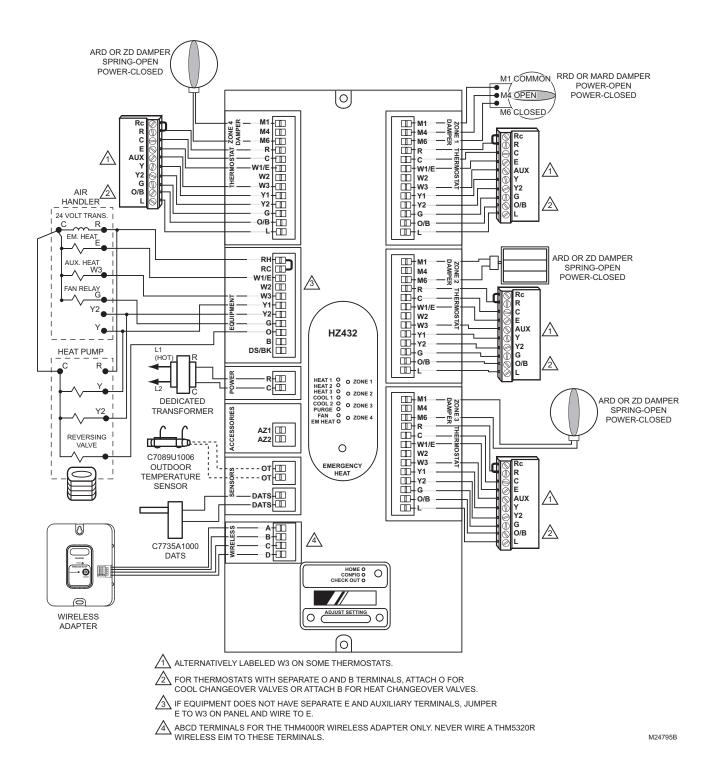


Fig. 14. Zone panel wiring-heat pump, 3-heat/2-cool with electric stage 3 heat.

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## **DUAL FUEL**

Use the following diagram for wiring a dual-fuel system with single-stage furnace and single-stage heat pump.

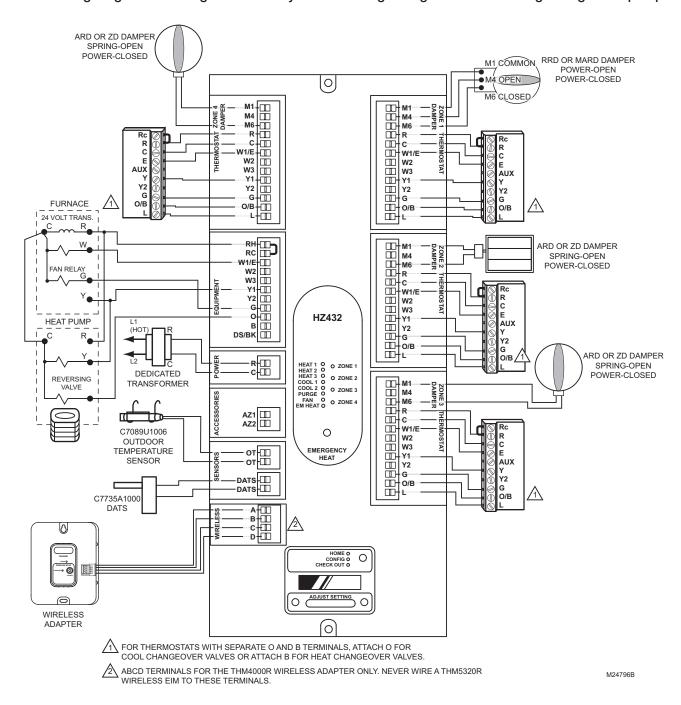


Fig. 15. Zone panel wiring—dual fuel: single-stage furnace and single-stage heat pump.

#### **DUAL FUEL**

Use the following diagram for wiring a dual-fuel system with two-stage furnace and two-stage heat pump.

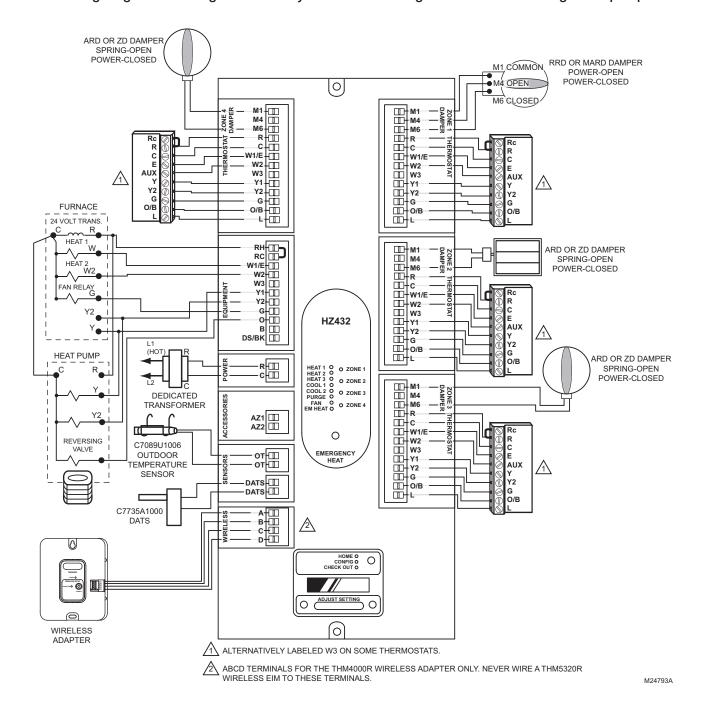


Fig. 16. Zone panel wiring—dual fuel: two-stage furnace and two-stage heat pump.

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#### CONFIGURATION

#### To enter Configuration:

Press the Mode button (the Config LED will light up).

Use the Back and Next buttons to navigate through the configuration settings. Scroll through the selection choices by using the "Adjust Setting" Left and Right arrow buttons. Pressing Next enters the selected option for that menu item and advances to the next menu.

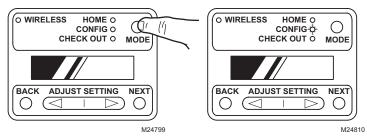
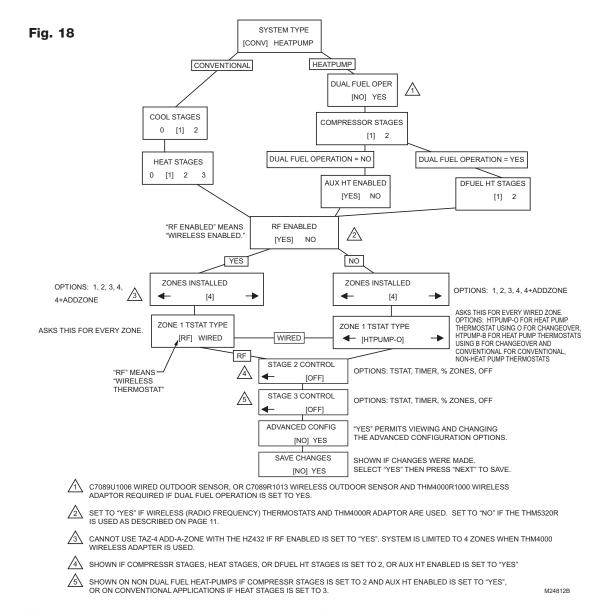


Fig. 17

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The flow chart below illustrates basic zone panel configuration. For additional configuration, see Advanced Configuration on page 12. The label on the inside cover of the HZ432 Zone Panel also contains configuration information.



### **CONNECT WIRELESS DEVICES**



If connecting wireless devices, press the Mode button until the Wireless LED lights up. The TrueZONE must be configured for wireless devices to select Wireless mode.

Press Next to add devices.

While the display alternates the Press Connect and Exit screens, push the Connect button(s) on the wireless device(s).

-OR-

Follow the instructions that came with the wireless device(s).

Press Next to exit.

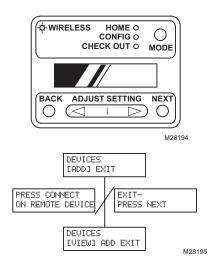


Fig. 19



If using more than 4 zones, use the TAZ-4 Add-A-Zone™ Control Panel. Follow instructions with the TAZ-4 for installation (form 69-1366).

**Note:** If using wireless thermostats, a maximum of 4 zones may be configured when using the THM4000 wireless adpater.

For applications requiring more than 4 zones using wireless thermostats, wire a THM5320R Wireless Equipment Interface Module to the thermostat terminals of each zone on the zone panel, and configure the panel for wired thermostats. Note that no THM4000R Wireless Adapter is used in this more than 4 zone setup.



#### CAUTION

Do not wire the A-B-C-D terminals of the THM5320R to the A-B-C-D terminals of the HZ432 zone control panel. Doing so will damage the components.

11 69-2198—03

## **ADVANCED CONFIGURATION**

Use the Adjust Setting, Next, and Back buttons to configure the zone panel. See the Configuration section on page 10 for instructions on using these buttons. Options/information displayed will vary by system type, control type, number of zones, and other settings.

**Table 5. Advanced Configuration.** 

Menu Name	Menu Title (LCD	Menu Options (LCD bottom	Menu option description	Notes:	
	top line)	line; defaults in bold)			
Heat Fan	HEAT FAN	[HVAC] PANEL	Fan control by HVAC	In heat mode, fan controlled by HVAC or turned	
	CONTROL	HVAC [PANEL]	Fan control by Panel	on by panel in call for heat.	
Stage 2 Timer	STAGE 2 TIMER	[5 MIN] > - < [60 MIN] [5 MIN] >	5 minutes-60 minutes	Number of minutes to delay before engaging second stage.	
Stage 3 Timer	STAGE 3 TIMER	[5 MIN] > - < [60 MIN] [5 MIN] >	5 minutes-60 minutes	Number of minutes to delay before engaging third stage.	
Purge Timer	PURGE TIME	[2] 3.5 5 MIN	2.0 minutes	Number of minutes panel will purge following	
		2 [3.5] 5 MIN	3.5 minutes	call for heat or cool.	
		2 3.5 [5] MIN	5.0 minutes		
Purge Fan	FAN IN PURGE	[HVAC] PANEL	Fan control by HVAC	Fan controlled by HVAC or panel during purge.	
		HVAC [PANEL]	Fan control by Panel		
Purge Dampers	PURGE DAMPERS	[UNCHANGD] OPEN	Dampers Unchanged	Damper position unchanged or all dampers	
		UNCHANGD [OPEN]	Dampers All Open	open during purge.	
Auto Changeover Delay	CHANGEOVER	[15] 20 30 MIN	15 minutes auto changeover timer	Number of minutes to delay auto changeover	
1	DELAY	15 [20] 30 MIN	20 minutes auto changeover timer	when one zone is calling for heat and another	
		15 20 [30] MIN	30 minutes auto changeover timer	is calling for cooling.	
DATS Enabled	DISCHARGE	[NO] YES	Disabled	Enables or disables DATS. If Disabled, the	
	SENSOR	NO [YES]	Enabled	Multistage DATS Inhibit setting is Disabled.	
DATS High Limit	DAT HIGH LIMIT	[110 F] > - < [180 F] <b>&lt; [160 F] &gt;</b>	110 deg F-180 deg F	High temperature limit.	
DATS Low Limit	DAT LOW LIMIT	[30 F] > - < [60 F] <b>&lt; [40 F] &gt;</b>	30 deg F-60 deg F	Low temperature limit.	
Multistage DATS Inhibit	DAT MSTG INHIBIT	NO [YES]	Enabled	Allow panel to downstage multistage equip-	
		[NO] YES	Disabled	ment when near DATS high or low limit.	
Dual Fuel Changeover	DUALFUEL	[OT] MULTISTG	Dual Fuel Changeover by OT Temp	Allow panel to changeover from heat pump to	
	CHGOVR	OT [MULTISTG]	Dual Fuel Changeover by OT Temp + multistage call	fossil fuel based on outdoor temperature, or allow second stage call to changeover panel to fossil fuel for a minimum of one hour when outdoor temperature is above OT balance tem- perature setting. Multistage changeover is only available on dual fuel applications configured	
				for 2 heat pump stages.	
Dual Fuel Mstage	CHANGEOVER	[15 MIN] > - < [180 MIN]	Sets fossil fuel changeover delay	Sets number of minutes to delay fossil fuel	
Changeover Time	DELAY	[30 MIN] >	time.	when calling for second stage heat.	
OT Temp Enabled	OT SENSOR	NO [YES]	Disabled Enabled	Enables or disables outdoor temperature sensor. If Disabled, the Multistage OT Temp	
A4 11: 1 OT T	MOTO OT		B: 11 1	Lockout setting is Disabled.	
Multistage OT Temp Lockout	MSTG OT LOCKOUT	INO YES NO [YES]	Disabled Enabled	When outdoor temperature is above OT Lockout temperature, locks out second and third stage (only for conventional and heat pump configurations), not dual fuel configurations.	
OT Balance Temperature (Dual Fuel)	OT BALANCE TEMP	[0 F] > - < [50 F] <b>&lt; [30 F] &gt;</b>	0 deg F-50 deg F	Selects the temperature at which a dual fuel configuration will change from heat pump to fossil fuel.	
OT Trip point for multi- stage lockout	OT LOCKOUT TEMP	[0 F] > - < [50 F] <b>&lt; [50 F] &gt;</b>	0 deg F-50 deg F	The temp that locks out second or third stage (only for conventional and heat pump configurations, not dual fuel systems).	
LCD Contrast Adjust	LCD CONTRAST	[1] >-< [10] <b>&lt; [5] &gt;</b>	Contrast value 1–10	Sets LCD display contrast for ease of viewing. Lowest contrast is 1, highest contrast is 10.	
Save Changes	SAVE CHANGES?	[NO] YES	Disabled	Saves or rejects the configuration settings.	
		NO [YES]	Enabled		

The HZ432 TrueZONE panel contains an LED display that communicates system and zone status. The LEDs indicate the following information.

Much of this information, as well as configuration information, is listed on the label on the inside of the HZ432 cover. For users who prefer French or Spanish labels, they are provided in form 69-2198FS. Cut them out and attach them to the inside of the HZ432 cover.

**Table 6. LED Operation.** 

LED	Description
HEAT 1	Solid when in heat stage 1. Blinking when DATS high limit mode has been reached.
HEAT 2, 3	Solid when in heat stage 2, 3. Blinking when stage 2, 3 locked out due to DATS or OT.
COOL 1	Solid when in cool stage 1. Blinking when DATS low limit mode has been reached.
COOL 2	Solid when in cool stage 2. Blinking when stage 2 locked out due to DATS.
PURGE	Solid when in purge (at power-up and after a call for heat or cool).  Blinking when the DATS sensor has failed, or the wires are shorted or open. Will blink for 3 minutes at power-up if DATS is not present.
FAN	Solid with a call for fan.
EM HEAT	Solid when in emergency heat mode. This light does not indicate a call for heat. Emergency heat will only run when both HEAT and EM HEAT are lit.
ZONE 1, 2, 3, 4	Solid green when open or opening. Solid red when closed or closing. Blinking amber when the VA draw of the dampers exceeds the specified VA, or if there is a short circuit on the damper or thermostat wiring, causing that zone's breaker to trip.

#### **OPERATION**

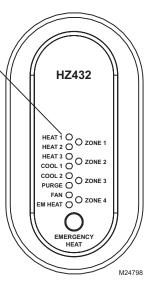


Fig. 20

#### **CHECKOUT**

To enter Checkout, with the zone panel cover off, press the Mode button until the Check out LED lights up. Use the Adjust Setting and Next buttons to work through the checkout menu as listed below. See the Configuration section on page 10 for instructions on using these buttons.

Steps 3–10 cycle through heating and cooling stages and open and close dampers to verify proper operation of the equipment and dampers. These steps energize the equipment and damper terminals.

Steps 11–14 verify thermostat operation and correct wiring. This is done by making the thermostats call for heat or cool and viewing the active wires as displayed on the LCD screen. This is a useful way to troubleshoot which thermostat terminals are actually energized on each zone.

Table 7. Checkout.

Che	eckout Step	Line 1 display	Line 2 Display	Notes:
1.	Display shows OT	OT SENSOR VAL	current OT temp (dynamic)	All zone dampers open, all other relays OFF.
2.	Display shows DATS	DAT SENSOR VAL	current DATS (dynamic)	
3.	Heat stages test	TEST HEAT	[OFF] 1 2 3	Heat turns on (fan also turns on if configured for fan on in heat).
4.	EM Heat stages test	TEST EMERG HEAT	[OFF] 1 2	Emergency heat turns on (fan also turns on).
5.	Cool stages test	TEST COOL	[OFF] 1 2	Cooling turns on (fan also turns on).
6.	Fan Test	TEST FAN	[OFF] ON	Fan cycles on and off.
7.	Damper 1 test	TEST Z1 DAMPER	[OPEN] CLOSED	Cycles damper position with fan on.
8.	Damper 2 test	TEST Z2 DAMPER	[OPEN] CLOSED	Cycles damper position with fan on.
9.	Damper 3 test	TEST Z3 DAMPER	[OPEN] CLOSED	Cycles damper position with fan on.
10.	Damper 4 test	TEST Z4 DAMPER	[OPEN] CLOSED	Cycles damper position with fan on.
11.	View Tstat1 inputs	ZONE1 STAT INPTS	Displays active Tstat1 terminals or displays wire- less thermostat operation	Tests thermostat connection with HVAC off.
12.	View Tstat2 inputs	ZONE2 STAT INPTS	Displays active Tstat2 terminals or displays wire- less thermostat operation	Tests thermostat connection with HVAC off.
13.	View Tstat3 inputs	ZONE3 STAT INPTS	Displays active Tstat3 terminals or displays wire- less thermostat operation	Tests thermostat connection with HVAC off.
14.	View Tstat4 inputs	ZONE4 STAT INPTS	Displays active Tstat4 terminals or displays wire- less thermostat operation	Tests thermostat connection with HVAC off.
15.	Exit checkout mode?	EXIT CHECKOUT?	(NEXT = EXIT)	

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#### WARRANTY

Honeywell warrants the products in this catalog (except those parts designated on Honeywell's price lists as not covered by this warranty) to be free from defects due to workmanship or materials, under normal use and service, for the following warranty periods. Honeywell VisionPRO®, Commercial VisionPRO™, FocusPRO®, PRO 4000, PRO 3000, LineVolt™ PRO, Digital Round™, and Modern Round™ (T87K, N) Series Thermostats with a date code of 0501 or later: sixty (60) months from date of installation. CommercialPRO, PRO 2000 and PRO 1000 thermostats: twenty-four (24) months from date of installation. All other Honeywell thermostats and thermostats with a date code of 0452 or earlier: twelve (12) months from date of installation, unless specified otherwise. Honeywell Air Cleaners, Humidifiers, Ventilators, Ultraviolet Treatment and Zoning Products with a date code of 0501 or later, excluding replacement maintenance parts: sixty (60) months from date of installation. All other Honeywell indoor air quality and zoning products with a date code of 0452 or earlier: twenty-four (24) months from date of installation, unless specified otherwise. Variable frequency drive devices (VFD) and accessories: new products for thirty-six (36) months and factory refurbished drives for twelve (12) months from date of installation when start-up and commissioning is performed by Honeywell VFD Authorized and trained personnel. All VFD warranty return products must have prior authorization (Form No. 87-0284) and be returned only to the VFD Service Center in Chattanooga, TN. MS, MN and Fact Acting 2-position Direct Coupled Actuators: sixty (60) months from date of installation. The warranty period for all other products is twelve (12) months from date of installation.

If a product is defective due to workmanship or materials, is removed within the applicable warranty period, and is returned to Honeywell in accordance with the procedure described below, Honeywell will, at its option, either repair, replace or credit the customer for the purchase price of the product, in accordance with the procedure described below. This warranty extends only to persons or organizations who purchase products in this catalog for resale.

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