August, 2009

Honeywell TH5220D1003 thermostat wiring for gas unit heaters HD/HDB, HDS/HDC, PTS/BTS, PTC, PDP/BDP, and duct furnaces “D”, “H”, “I”, & “O” series

⚠ WARNING

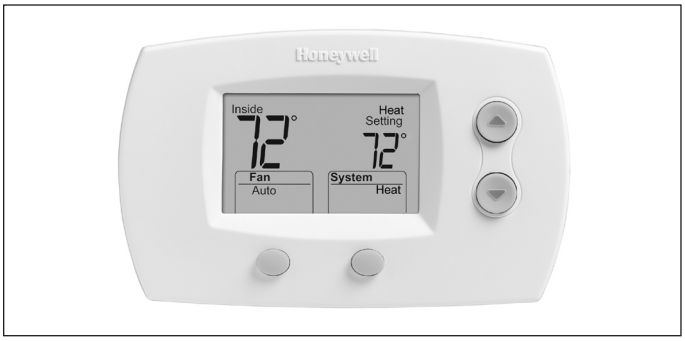
1. Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.
2. All units must be wired strictly in accordance with wiring diagram furnished with the unit. Any wiring different from the wiring diagram could result in a hazard to persons and property.
3. All wiring must be done with a wiring material having a temperature rating of at least 105°C.

IMPORTANT

1. The use of this manual is specifically intended for a qualified installation and service agency. All installation and service of these kits must be performed by a qualified installation and service agency.
2. These instructions must also be used in conjunction with the Installation and Service Manual that originally shipped with the appliance, in addition to any other accompanying component supplier literature.

Installation and Wiring

Installation of wiring must conform with local building codes, or in the absence of local codes of the National Electric Code ANSI/NFPA 70 - Latest Edition. Unit must be electrically grounded in conformance to this code. In Canada, wiring must comply with CSA C22.1, Part 1, Electrical Code.



Wiring Diagram Selection

- For gas fired unit heaters and duct furnaces (non-factory supplied blower) with model numbers shown above, refer to Figure 1.1 and Table 1.1 for correct unit to thermostat wiring.
- For all other system units (factory supplied blower), refer to the job specific unit wiring diagram provided with the unit.
- For deviations to these wiring diagrams or the job specific wiring diagrams, consult the factory.

Figure 1.1 - Terminals on Thermostat

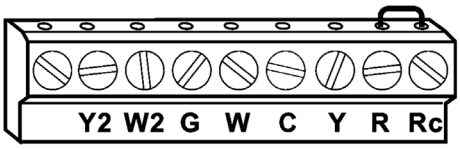


Table 1.1 - Thermostat to Unit Wiring

Model	↓ Wiring Terminals on Thermostat ↓ ①					Location of Unit Terminals	
	W2 (2-stage ONLY)	G	W	C	R ②		
HD/HDB, HDS/HDC, PTS/BTS	W2	G	W1	C	R	Ignition control in unit control compartment	← Wiring Terminals on Unit ← ⊖
PTC	n/a	G ③	T2	F	T1	Terminal board on external junction box	
PDP/BDP	Gas valve high stage (HI, 3, or A)	F ④	T2	G	T1	Terminal board on external junction box	
DFG, IFG, DFP, IFP	Gas valve high stage (HI, 3, or A)	Fan relay by others or to factory relay wire removed from T or H	T	G	H	Terminal board on external junction box (Digit 13=4 Only)	
DFG, IFG, DFP, IFP, DFS, IFS, HFG, OFG, HFP, OFP	3	Factory time delay relay wire removed from 4	4	2	1	Terminal strip in control compartment (Digit 13=0, 1, 2, or 3)	

① Not all terminal connections are used. Table only shows terminals that are used for required heating operation.
② The factory installed R to Rc terminal wire jumper is to remain in place.
③ Verify that the buss bar on the G terminal is removed.
④ Verify that the buss bar between the T2 and F terminal is removed.

(See page 2 for Thermostat Function Programming Instructions)

Thermostat Function Program Selection

- To enter thermostat setup mode, press and hold the ▲ and **FAN** buttons until the display changes to setup mode. Use the ▲ and ▼ buttons to change settings, the **NEXT** button to advance to the next setting, and the **DONE** button to save the settings and exit from the setup mode.
- For gas fired unit heaters and duct furnaces (non-factory supplied blower) with model numbers shown on the opposite side, refer to Table 2.1 typical thermostat function settings.
- For all other system units (factory supplied blower), refer to the job specific unit wiring diagram provided with the unit.
- For deviations to these wiring diagrams or the job specific wiring diagrams, consult the factory.
- For additional information, refer to the vendor literature supplied with the thermostat.

Figure 2.1 - Buttons to Press to Enter Function Programming Mode

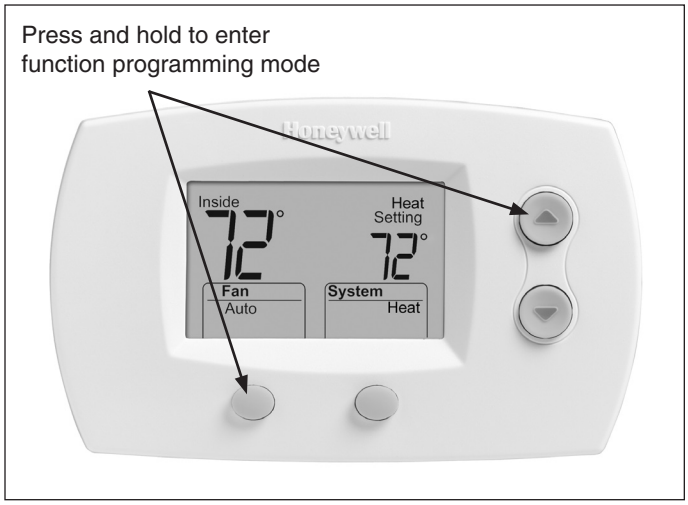


Table 2.1 - Typical Thermostat Function Program Settings ①

Function Number	Feature	Typical Setting	Description
1	System type	3	Single stage heat only with fan
		6	2 heat/2 cool conventional (cooling by others)
		7	2 heat/1 cool conventional (cooling by others)
3	Fan control	0	Gas or oil furnace — equipment controls fan in heating
5	Heat cycle rate (CPH)	5	For gas or oil furnaces of less than 90% efficiency
		3	For furnaces of over 90% efficiency
6	Second stage heat cycle rate (CPH)	5	For gas or oil furnaces of less than 90% efficiency
		3	For furnaces of over 90% efficiency
9-12	Cooling functions	①	①
14	Temperature display	0	Fahrenheit
		1	Celcius
15-26	Cooling and emergency heat functions	①	①
27	Heat temperature range stops	90	Default value, can be set 40-90 in increments of 1°F
		80	For PTC models, this setting must be changed to 80
28	Cool temperature range stops	50	①

① See Honeywell instructions that shipped with stat for more information and additional setting options.

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