

## T6570, T8570 Series Digital Fan-Coil Thermostats

PRODUCT DATA



### APPLICATION

T6570 Series Digital Fan-Coil thermostats provide line voltage on/off control for fans, valves, compressors or auxiliary electric heaters in fan-coil and small air-conditioner applications.

T8570 Series provides low voltage control of these functions. Models are available for control of single stage air-conditioner and various fan-coil units

- 2-pipe.
- 2-pipe with manual heat/cool changeover.
- 4-pipe with manual heat/cool changeover.
- 4-pipe with automatic heat/cool changeover.

All models are suitable for multiple applications. Changes in output wiring and external links between wiring terminals can configure the thermostat for the appropriate application.

The fan can also be controlled from the thermostat. In some cases it is wired to run continuously and can be switched off with the On/Off switch. Other models can be installed with fan running continuously or cycling with the thermostat.

Compressors and auxiliary electric heaters can be controlled using a relay or contactor controlled by the thermostat.

### FEATURES

- Simple user interface.
- Attractive modern styling ideal for offices or hotels.
- Digital display of ambient temperature, with user activated temperature display.
- Digital display shows mode icons when cooling or heating relays operate, or when energy savings mode is active.
- Push button setpoint adjustment.
- Switches allow manual control of system operation and fan speed.
- Energy savings mode - external energy savings input from time switch, occupancy sensors or hotel cardkey overrides comfort setpoint with setback heating or cooling setpoint.
- Energy savings input configurable, normally open or normally closed.
- Proportional plus integral (P+I) control algorithm for precision temperature regulation.
- Mounts directly onto wall or standard junction box or vertical junction box with optional adapter plate.
- Installer setup mode allows changes of operating parameters.
- Selectable °C or °F display.
- Adjustable deadband (some models) for heat and cool control.
- Selectable energy savings setup cooling and setback heating setpoints.
- Adjustable maximum heating and minimum cooling setpoint limits.
- Adjustable minimum relay off-times (heating or cooling) for compressor short-cycle protection.
- EEPROM permanently retains user settings during power loss (no batteries required).
- Capability to display temperature sensor failure for easier troubleshooting.
- Optional remote sensor (T8575D only).

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95C-10897-6

# SPECIFICATIONS

Table 1.

Models	Applications			Features					Switches			Control
	Voltage	2-Pipe Fan Coil	4-Pipe Fan Coil	Number of Relays	Energy Savings Input	Fan On/ Auto	Auto Changeover Deadband Adjust	Remote Sensor	On/Off (SPST)	3-Speed Fan (SP3T)	Heat/ Cool	Wiring Diagram
T6574B	120V,	• <sup>2</sup>		1	•	•			•	•		Fig. 6
		• <sup>1</sup>		1	•	•			•	•		Fig. 7
	208~277V,	• <sup>3</sup>		1		•			•	•		Fig. 8
T6575B	50 - 60 Hz	•		2	•				•	•	•	Fig. 9
			•	2	•				•	•	•	Fig. 10, 13
T6575C	50 - 60 Hz		•	2	•		•		•	•		Fig. 11, 13
T6575D			•	2	•	•	•		•	•		Fig. 12, 13
T8574B	24V,	• <sup>2</sup>		1	•	•			•	•		Fig. 15
		• <sup>1</sup>		1	•	•			•	•		Fig. 16
T8575B	50 - 60 Hz	•		2	•				•	•	•	Fig. 17
			•	2	•				•	•	•	Fig. 18
T8575C	50 - 60 Hz		•	2	•		•		•	•		Fig. 19
T8575D			•	2	•	•	•	• <sup>4</sup>	•	•		Fig. 20

<sup>1</sup> Heating application

<sup>2</sup> Cooling application

<sup>3</sup> 2-pipe system with external aquastat.

<sup>4</sup> optional accessory.

**Setpoint Range:** 10°C to 30°C (50°F to 90°F).

**Enclosure:** (cover, base, and wallplate) Plastic.

**Supply Voltages:** 24 (NEMA - rated transformer), 120, 230, 277 Vac (±10%), 50/60 Hz. (depending on model selected) 0.5 A.

**Control Performance:** On/Off control with P+I algorithm gives typical control to 0.75°C (1.5°F) at 22°C (72°F) and 50% duty cycle.

**Ambient Ratings:**

Temperature:

Operating Range: 5°C to 45°C (41°F to 113°F).

Shipping and Storage Range: -20°C to 55°C (-4°F to 131°F).

Humidity Range: 5 to 95% RH, non-condensing at 26°C (79°F).

**Junction Box Mounting:** Direct mounting on single gang NEMA 2" x 4" surface mount electrical box, or on 4" x 4" box with optional 272878 adapter plate.

**Wiring:** 11 terminals; screw-in terminals capable of accepting up to 2 x 18 AWG, 1 x 14 AWG, or 1.5 mm<sup>2</sup> wires. Some terminals pre-fitted with color-coded flyleads.

**Thermostat Output:** 1spdt or 2 spst relay outputs (depending on model).

# ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Honeywell Automation and Control Products Sales Office (check white pages of your phone directory).
2. Honeywell Customer Care  
1885 Douglas Drive North  
Minneapolis, Minnesota 55422-4386

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Scarborough, Ontario M1V 4Z9.

International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

**Table 2. Electrical Rating**

50-60 Hz	24V	120V	208V	230V	277V
Amps (Resistive)	3.8	3.8	3.8	3.8	3.8
Full Load Inductive	3.0	3.0 <sup>1</sup>	3.0	3.0	3.0
Pilot Duty	100 VA				

<sup>1</sup> Equivalent to NEMA 1/8 horsepower rating; allowable load must be determined by adding nameplate full load and locked rotor rating of all loads.

**Minimum Operational Life (at maximum load):** Thermostat contacts (at 120 Vac): 100,000 cycles

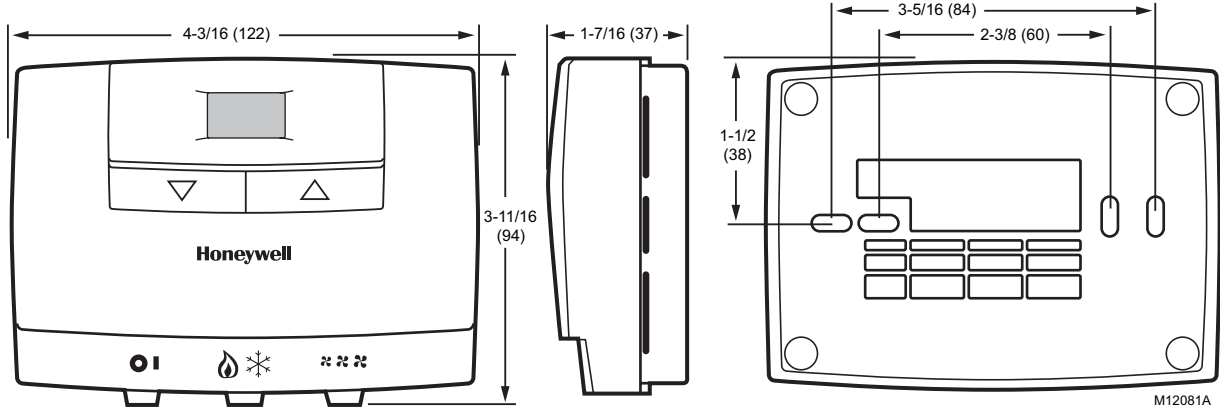
**Manual Switches:** 10,000 operations.

**Energy Savings Input:** 24 Vdc dry contact, maximum resistance of 1000 ohms. Note 'Caution', page 3.

**Protection Class:** IP30.

**Approvals:** CSA Certified C/US LR158158 for Canada and the U.S.A. Meets CE requirements.

**Accessories:** Adapter plate for mounting on single- or double-gang NEMA-standard vertical switch box:  
 272878 - line voltage models, 24V 2000 series  
 272881 - 24 V models, 1000 series  
 T8109 - remote temperature sensor for  
 T8575D W6380 - fan switching center for T8574/T8575 products



**Fig. 1. Nominal dimensions in inches (mm)**

## INSTALLATION

### When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.



## CAUTION

**Electrical Shock or Equipment Damage Hazard.**  
 Can shock individuals or short equipment circuitry.  
 Disconnect power supply before installation.

### IMPORTANT

**T6570 Series are line voltage powered devices.**  
 All wiring must comply with national and local electrical codes, ordinances and regulations.

**Provide disconnect means and overload protection as required.**

**T8570 Series thermostats must be powered by an Approved 24 Vac, Class 2 transformer (such as a W6380 Relay Control Center).**

### Location

The T6570, T8570 series thermostats are the temperature control element in a fan-coil or air-conditioning system. They must be located about 1.5m (5 ft.) above the floor in a position with good air circulation to sense room temperature.

The optional T8109 sensor can be used to sense temperature in return air ductwork, instead of at the thermostat

### IMPORTANT

*Do not mount device where it can be affected by:*

1. Drafts or dead spots behind doors or in corners.
2. Hot or cold air from ducts.
3. Radiant heat from the sun or appliances.
4. Unheated (uncooled) areas such as an outside wall behind the thermostat.
5. Concealed pipes or chimneys.

## Mounting

Any T6570, T8570 series thermostat can be mounted directly on the wall on a 65x65mm junction box, or a 2"x4" horizontal junction box. An optional adapter plate is available for mounting on a 4"x4" or vertical junction box. (See Fig. 2) Mounting screws are supplied for alternatives.

1. Feed leadwires through wiring access hole of wallplate and adaptor plate (if used).
2. Attach supply wires using wire nuts (not provided), or screw terminals, as appropriate.
3. Locate wallplate in the horizontal mounting position. See Fig. 2 if using the vertical junction box adapter plate.
4. Push leadwires into electrical junction box and attach wallplate to box using machine screws provided in the appropriate mounting holes.
5. Attach thermostat to wallplate:
  - a. Locate the two center side holes on the back of the thermostat.
  - b. Align the holes with the two wallplate side tabs.
  - c. Press down firmly to snap thermostat into place.

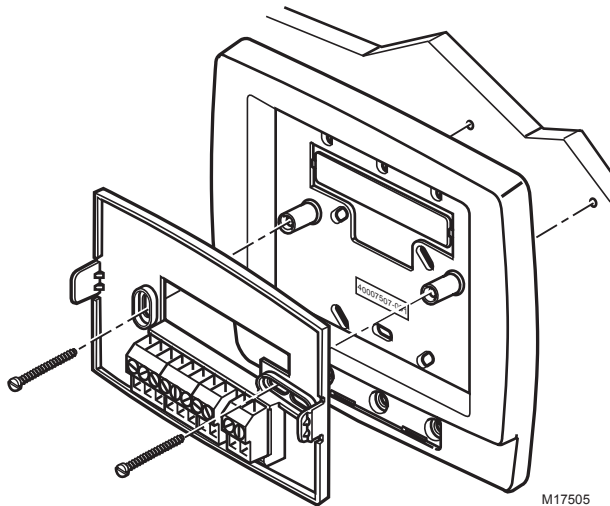


Fig. 2. Mounting the vertical junction box adapter plate  
M17505 Optional adapter plate.

## Removing the thermostat

### CAUTION

#### Equipment Damage Hazard.

Improper removal can damage the thermostat.  
Carefully follow the thermostat removal directions.

If it is necessary to remove the thermostat from the wallplate (see Fig. 3):

1. Use a screwdriver to pry thermostat left side away from the base.
2. Use the screwdriver to pry thermostat's right side away from the wallplate.

3. Use both hands to pull the thermostat straight away from the wallplate.

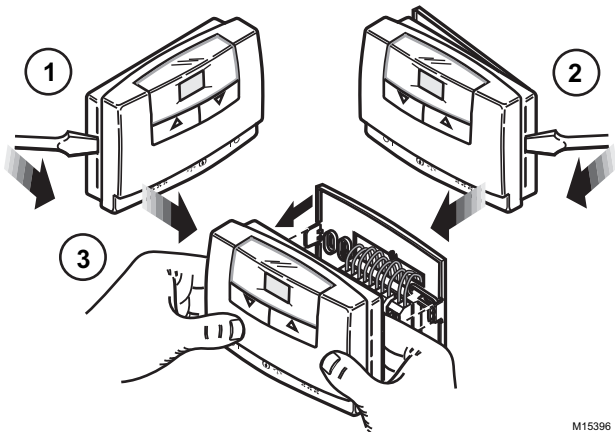


Fig. 3. Removing the thermostat

Thoroughly check wiring to the wallplate before finally mounting the thermostat on the wall.

## OPERATION

### Control

#### PROPORTIONAL + INTEGRAL (P+I) CONTROL

Like a mechanical thermostat, the T6570, T8570 Series have On/Off control output. However, this output is regulated by a P+I algorithm, enabling the thermostat to control closer to setpoint than conventional thermostats. This results in performance where the space temperature is maintained within 0.75°C (1.5°F) of the setpoint regardless of fan speed.

P+I action minimizes the difference between the temperature setpoint and the effective control point by adjusting the output on-time until the control point matches the setpoint. The on-time is based on a fixed cycle rate of 4 cycles/hour for cooling (8 cycles/hour for heating), and the proportional band is 1.6°C (2.9°F).

NOTE: Integral action corrects the temperature control errors of proportional-only control, but it is slower to react to large temperature or setpoint changes. These thermostats also feature optional built-in time delays for equipment protection which can inhibit rapid response to large setpoint changes if active.

#### SINGLE-STAGE COOLING OR HEATING CONTROL (SEE FIG. 4)

In cooling mode the user setpoint will be positioned at the bottom of the Proportional Band, so the setpoint will effectively be the temperature where the cooling switches off. In heating mode the user setpoint will be positioned at the top of the Proportional Band, and this will be the temperature where the heating switches off.

NOTE: This also applies to models with manual heat/cool changeover.

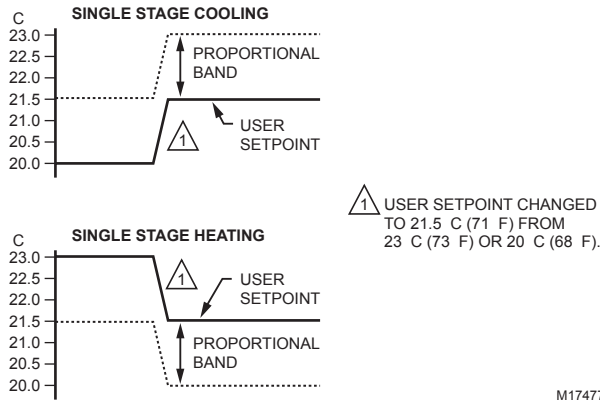


Fig. 4. Single stage control.

**AUTOMATIC CHANGEOVER WITH ZERO ENERGY DEADBAND (SEE FIG. 5)**

This type of control is available on auto-changeover models only. The user setpoint centers on the Zero Energy Deadband. The cooling switch-off-point is positioned at the bottom end of the cooling proportional band. Likewise, the heating switch-off point is positioned at the top end of the heating proportional band.

Zero Energy Deadband width is selectable in the Installer Setup mode.

EXAMPLE: Using a deadband of 2°C (4°F) and a user setpoint of 22°C (72°F), the effective heating setpoint is 21°C (70°F) and the effective cooling setpoint is 23°C (74°F). A change to the user setpoint causes both heating and cooling setpoints to change in parallel. This change is restricted to the minimum cooling setpoint or maximum heating setpoint limits set within the Installer Setup mode.

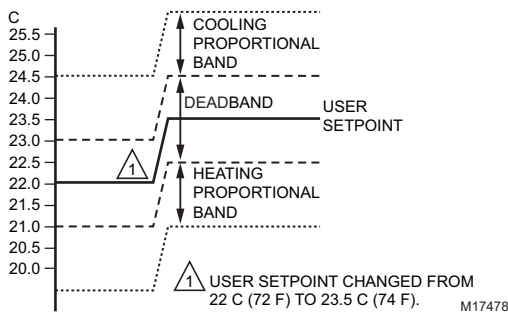


Fig. 5. Sequence control with deadband.

**OPERATING MODES**

The thermostat has two main operating modes: Comfort and Energy Savings. It also has an OFF mode selected by the On/Off switch.

**OFF MODE**

When the system switch is set to Off, power is removed from the thermostat electronics and output terminals, and the display will go blank. The thermostat will reboot when power is restored with the On/Off switch.

NOTE: This On/Off switch is a functional switch and should not be used as an isolating switch.

**STARTUP**

On first powering up, or after the On/Off switch has been set to On, the thermostat undergoes a startup and self-checking sequence: First, all LCD display segments are illuminated to check the display. Next a number appears to indicate the software version. The final check is a check of the sensor. On completion of the startup sequence, after approximately 2 seconds, the thermostat will resume normal control in either Comfort or Economy mode. On initial power on, the temperature setpoint defaults are as shown in the following table. The current setpoint is stored in EEPROM, and if the thermostat is switched off, then on again, it will resume control at the last known setpoint.

Table 3. Power Up Default Setpoints

Power Up Default Setpoints				
	1 relay or heat cool changeover models		2 relay + cool sequence models	
	°C Scale	°F Scale	°C Scale	°F Scale
Setpoint Default	22	73	22	73
Cooling OFF point	—	—	23	75
Heating OFF point	—	—	21	71

**COMFORT MODE**

This is the normal operating mode where the thermostat controls to the setpoint selected by the user. On initial power up, the user setpoint will return to the last known or default value. Control action will be determined by either the default settings or the installer-set parameters. (See page 6)

**ENERGY SAVINGS MODE**

Energy Savings mode is activated by a dry contact closure on the special Energy Management System (EMS) input from an occupancy detector, window contact, etc. If the signal via input terminals 10 and 11 is calling for Energy Savings mode, then the thermostat will control to user/installer defined setback setpoints for increased energy savings. The display will show a \$ symbol to indicate the Energy Savings mode is active.

For example, if the user setpoint is 21°C (70°F) and the Energy Savings mode setpoint for cooling (unoccupied cooling setpoint) has been set to 28°C (82°F), then the thermostat controls to 28°C (82°F) when the input signal activates the economy mode. There is no user override as long as the EMS signal is present. The default Energy Savings mode setpoints are shown in table 4.

The Energy Savings mode input can be configured within the installer setup mode to be activated by either a short-circuit (default) or open-circuit signal.

Table 4. Energy Saving Mode Default Settings

Energy Savings Mode — Setpoints				
	Heating Setpoint		Cooling Setpoint	
Description	Default	Range	Default	Range
°C Scale	18°C	10-18°C	25°C	25-30°C
°F Scale	65°F	50-65°F	77°F	77-90°F

## Additional Switches

### FAN SPEED SWITCH (SP3T LINE VOLTAGE)

Where supplied, the fan switch allows the selection of three different settings: low, medium, or high.

NOTE: The installer should select Constant Fan mode if the fan motor is a type that does not start reliably at low speed.

### SYSTEM HEAT/COOL SWITCH (SPST LOW VOLTAGE)

Where supplied, this switch signals the microprocessor to operate the relays in either heating or cooling mode: In heating mode, the cooling relay is disabled. In cooling mode, the heating relay is disabled.

## User Programming Modes

### TEMPERATURE (COMFORT) SETPOINT

The temperature setpoint can be adjusted between 10°C and 30°C in steps of 0.5°C by using the [UP] and [DOWN] keys. If °F is set within the installer setup mode (see later), the range will be 50°F to 90°F, adjustable in 1°F steps.

### DISPLAY

The measured room temperature is normally displayed (unless **rt = 0** in the installer setup mode), and the first press of the [UP] or [DOWN] keys will switch to display the user setpoint. If no key is pressed for 5 seconds, the display will return to showing the room temperature.

When the cooling relay is closed, this will be indicated by a (snowflake) symbol, whereas closure of the heating relay will be indicated by a (flame) symbol.

If there is a wiring problem or the room temperature is less than 5°C (40°F) or over 38°C (100°F) the display will return a SF (Sensor Failure) warning. If this warning is not due to a wiring problem it will disappear once the remote sensor or thermostat comes within the 4.5 to 37.8°C (40 to 100°F) range. If the SF warning is due to a faulty remote sensor connection the thermostat will not transfer measurement to the internal sensor. To resolve the faulty connection the thermostat must be powered down, the remote sensor connection must be removed or fixed and then the thermostat must be re-powered.

## Installer Setup Mode

The thermostat allows many of its operating parameters to be adjusted via an Installer Setup Mode. Each operating parameter has a two-letter identifier code, which is shown on the display during the Installer Setup Mode programming sequence. A description of these is shown in Table 5.

### PROGRAMMING PARAMETERS

The installer setup mode is accessed by reducing the setpoint to 10°C (50°F), waiting 3 seconds or until the room temperature is displayed, and then pressing the [UP] and [DOWN] keys simultaneously for 3 seconds.

*If the installer setup has previously been entered and the Minimum Cooling Setpoint increased above 10°C (50°F), the installer setup mode is accessed by reducing the setpoint to the new value before pressing the two buttons.*

The first parameter identifier will be displayed at this point and the parameter value can be changed by pressing the [UP] key. The first press displays the default value and any subsequent press alters the value. The values will wrap around.

To select the parameter value and move to the next parameter, press [DOWN]. After the final parameter is selected, a further press of the [DOWN] key will exit from the programming mode.

### PARAMETER VALUES

Each parameter has a default value that is used when the thermostat is first powered up. This value can be changed from within the Installer Setup Mode, and once changed, it will be stored in the EEPROM so it is not lost in the event of power interruption.

If the user wishes to restore the parameters to the default values, this can be done by changing the temperature scale **tS** from °C to °F (or °F to °C) and back again.

### PROGRAMMING EXAMPLE

To enter the installer setup mode:

1. Press to change the temperature setpoint to 10°C (50°F).
2. Wait 3 seconds, or until the room temperature is displayed.
3. Press and hold together until **tS** is displayed.
4. Press once to show the default Temperature Scale value. Continue to show all possible values of this parameter in sequence.
5. When the desired value is displayed, it is selected by pressing once. This will also move to the next parameter, whose identifier will now be displayed.
6. Continue to use to move from one parameter to the next, and to alter the parameter value.
7. When the last parameter **[rt]** has been selected, a final press of will return the display to its normal operating mode.

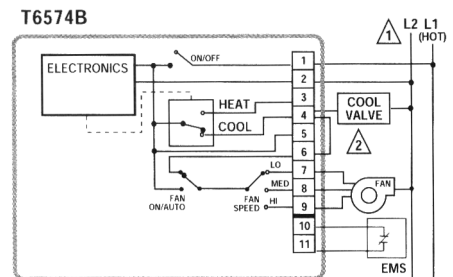
Table 5. Thermostat Parameter Options

Parameter	ID	Description	°C Scale		°F Scale	
			Default	Values	Default	Values
Temperature Scale	<i>tS</i>	Allows selection of either °C or °F scale	Yes	—	No	—
Dead Band	<i>db</i>	Setting deadband (Zero Energy Band)	2	2, 3, 4	4	3, 4, 5
Heat or Cool Operating Mode	<i>OP</i>	Setting operating mode on single relay, non-changeover models, to either Heat or Cool	0	0: cool 1: heat	0	0: cool 1: heat
Unoccupied Cooling Setpoint	<i>uC</i>	Program unoccupied cooling setpoint for energy savings.	25	25 to 30	77	77 to 90
Unoccupied Heating Setpoint	<i>uH</i>	Program unoccupied heating setpoint for energy savings	18	10 to 18	65	50 to 65
Minimum Cooling Off Time	<i>CO</i>	Setting cooling off-time for short cycle prevention.	0	0, 3, 4, 5	0	0, 3, 4, 5
Minimum Heating Off Time	<i>HO</i>	Setting heating off-time for short cycle prevention.	0	0, 3, 4, 5	0	0, 3, 4, 5
Minimum Cooling Setpoint (Low Limit)	<i>CL</i>	Sets the minimum allowable cooling setpoint.	10	10 to 30	50	50 to 90
Maximum Heating Setpoint (High Limit)	<i>HL</i>	Sets the maximum allowable heating setpoint.	30	10 to 30	90	50 to 90
Energy Savings Configuration	<i>ES</i>	Activate energy savings mode by a choice of either contact closure or contact opening.	1	1: normally open 0: normally closed	1	1: normally open 0: normally closed
Display of Room Temperature	<i>rt</i>	Allows installer to restrict temperature display to set point only. With this parameter, the unit will only display the set point temperature. Useful where setpoint limits (HL and CL) will affect control performance and Room Temperature display will disagree with user setpoint.	1	1: room temp. 0: setpoint only	1	1: room temp. 0: setpoint only

## WIRING

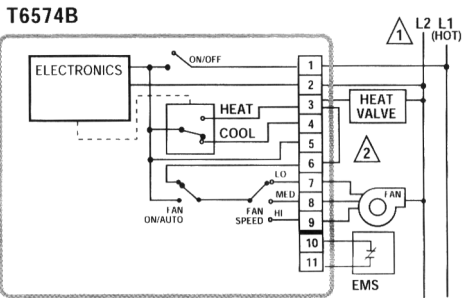
Table 6. Leadwire Color Code (if fitted)

Terminal	Color	Use
1	Black (BK)	L1 (Hot)
2	White (WH)	L2 (N)
3	Orange (OR)	Heat
4	Yellow (YL)	Cool
5	Gray (GY)	Damper
6	Violet (VI)	Fan Common
7	Red (RD)	Fan Low
8	Blue (BU)	Fan Medium
9	Brown (BN)	Fan High
10	—	Energy Mgt. System
11	—	



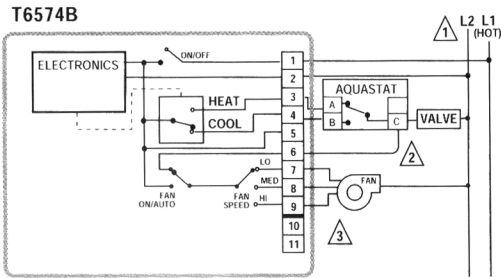
- ⚠ For power supply, provide disconnect means and overload protection required. Special service CO/ALR solderless connectors must be used when connecting with aluminum conductors. Otherwise a fire hazard may result.
- ⚠ Jumper terminals 4 - 6 for Auto/On fan operation. If ventilation damper actuator not used, cut off/insulate leadwire from Terminal 5.

Fig. 6. Wiring 2-pipe cool-only thermostat with fan On/Auto switch.



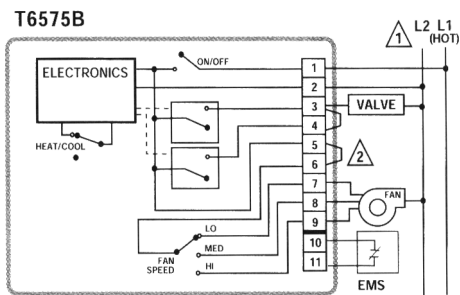
- 1 For power supply, provide disconnect means and overload protection required. Special service CO/ALR solderless connectors must be used when connecting with aluminum conductors. Otherwise a fire hazard may result.
- 2 Jumper terminals 3 - 6 for Auto/On fan operation. If ventilation damper actuator not used, cut off or insulate leadwire from Terminal 5.

Fig. 7. Wiring 2-pipe heat-only thermostat with fan On/Auto switch.



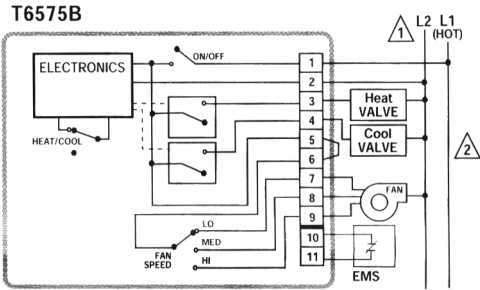
- 1 For power supply, provide disconnect means and overload protection required. Special service CO/ALR solderless connectors must be used when connecting with aluminum conductors. Otherwise a fire hazard may result.
- 2 Jumper terminals C - 6 for Auto/On fan operation. If ventilation damper actuator not used, cut off or insulate leadwire from Terminal 5.
- 3 EMS function disabled in this configuration.

Fig. 8. Wiring 2-pipe seasonal heat/cool changeover with external aquastat, fan On/Auto switch.



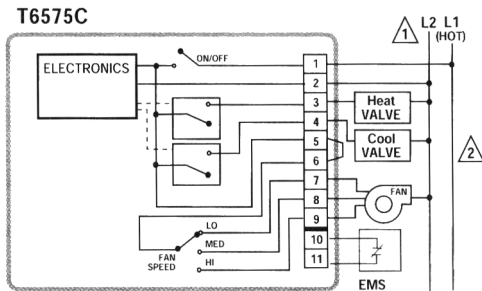
- 1 For power supply, provide disconnect means and overload protection required. Special service CO/ALR solderless connectors must be used when connecting with aluminum conductors. Otherwise a fire hazard may result.
- 2 Jumper terminals 5 - 6 for continuous fan operation, 4 - 6 for cycled fan operation.

Fig. 9. Wiring 2-pipe heat/cool with manual heat/cool changeover switch, continuous fan or cycled fan.



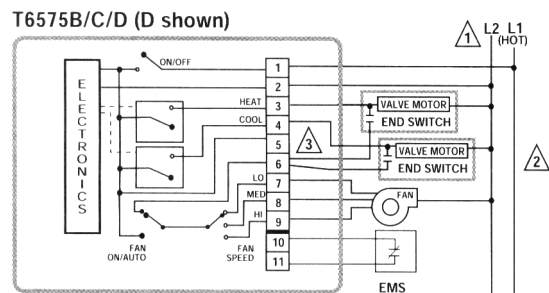
- 1 For power supply, provide disconnect means and overload protection required. Special service CO/ALR solderless connectors must be used when connecting with aluminum conductors. Otherwise a fire hazard may result.
- 2 Jumper terminals 5 - 6 for continuous fan operation. Refer to Fig. 12 or 13 for cycled fan operation.

Fig. 10. Wiring 4-pipe, heat/cool with manual heat/cool changeover switch, continuous fan.



- 1 For power supply, provide disconnect means and overload protection required. Special service CO/ALR solderless connectors must be used when connecting with aluminum conductors. Otherwise a fire hazard may result.
- 2 Jumper terminals 5 - 6 for continuous fan operation. Refer to Fig. 12 or 13 for cycled fan operation.

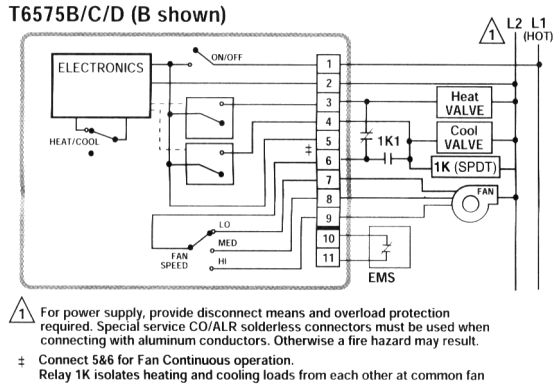
Fig. 11. Wiring 4-pipe, auto heat/cool changeover.



- 1 For power supply, provide disconnect means and overload protection required. Special service CO/ALR solderless connectors must be used when connecting with aluminum conductors. Otherwise a fire hazard may result.
- 2 Valve end switches must be rated for fan load.
- 3 If ventilation damper actuator not used, cut off or insulate leadwire from Terminal 5.

Fig. 12. Wiring 4-pipe, auto heat/cool changeover, with fan On/Auto switch.

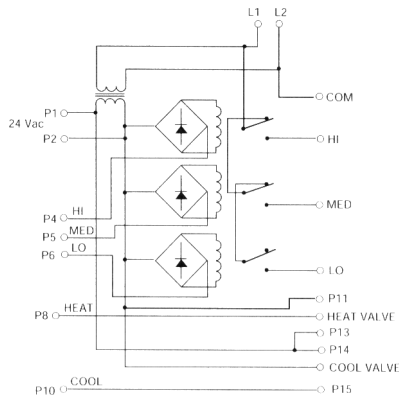




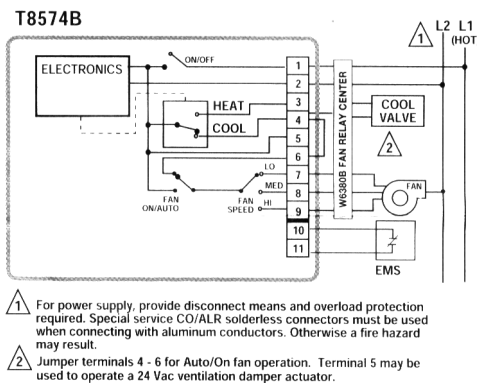
**Fig. 13. Wiring 4-pipe, heat/cool with manual heat/cool changeover switch, cycled fan, using external relay.**

**Fan-Relay Control Center**

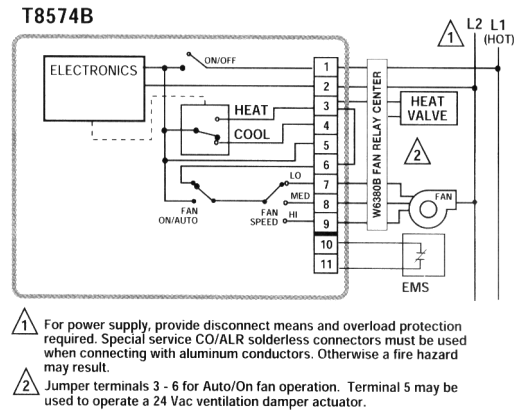
T8570 thermostats are typically used with load relays to switch line voltage loads. Honeywell offers a convenient fan-relay center, the W6380, that provides 24 Vac power, three interlocked fan relays, and wiring center terminations for valve, relay and contactor loads. The W6380 schematic can be found in Fig. 14.



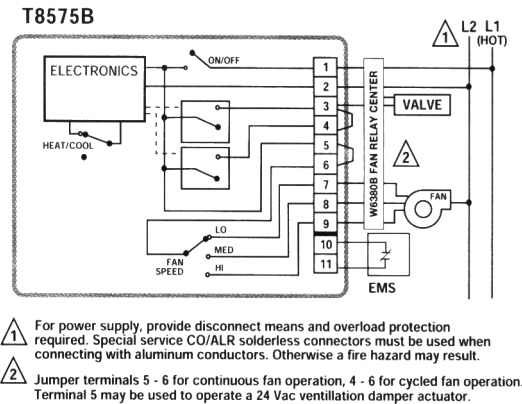
**Fig. 14. W6380 wiring diagram.**



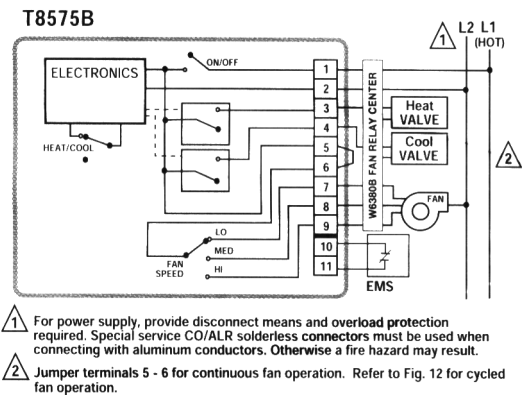
**Fig. 15. Wiring 2-pipe, 24V cool-only thermostat with fan On/Auto switch.**



**Fig. 16. Wiring 2-pipe 24V heat thermostat with fan On/ Auto switch.**



**Fig. 17. Wiring 2-pipe heat/cool with manual heat/cool changeover switch, continuous or cycled fan.**



**Fig. 18. Wiring 4-pipe 24V heat/cool with manual heat/cool changeover switch, continuous fan.**

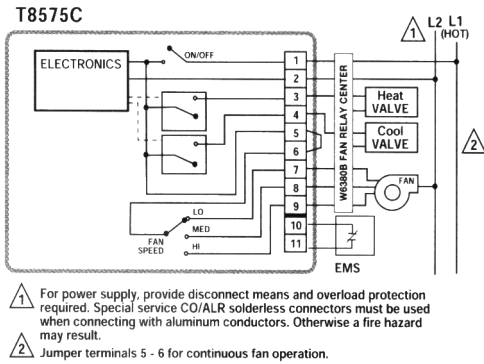


Fig. 19. Wiring 4-pipe 24V auto heat/cool changeover with continuous fan.

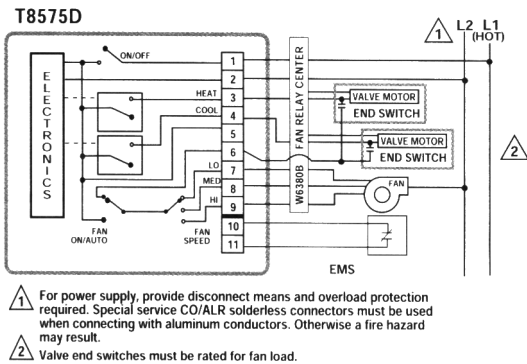


Fig. 20. Wiring 4-pipe 24V auto heat/cool changeover thermostat with fan On/Auto switch.

**Wiring Remote Sensor**

The T8109 is an optional remote sensor that can be used as an alternative to the internal sensor of the T8575D. The T8109 remote sensor plugs into the J2 header in the back of the thermostat. On power-up the T8575D will look for a T8109 and if there is one connected it will use this control. If it does not find a T8109 connected it will use the internal sensor. To change the sensor source, turn off the thermostat power and disconnect the current sensor source. Then connect the new sensor source and re-power the thermostat. On powerup the

T8575D will find the new sensor source and use this for control. To extend the sensor cable, up to a maximum of 70 feet (20m), use only shielded cable. For example, Beldfoil® 18 AWG cable is a suitable cable. The sensor connections are polarity sensitive, so be sure to connect the shielded wire to the sensor blue wire, as shown in Fig. 21 below.

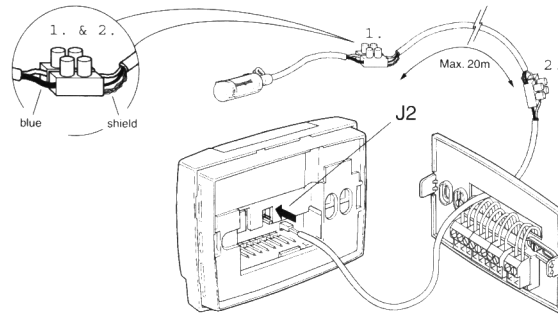


Fig. 21. Wiring optional remote sensor for the T8575D model.

**CAUTION**

**Equipment Damage Hazard.**

Operation at low temperatures can cause fan coil damage.

This thermostat is not a safety device. Do not use it where the space temperature is outside of the device operating range.

A display of SF indicates a space temperature outside of the thermostat operating range (5°C to 45°C).

With SF displayed, the thermostat ceases to operate.

**CAUTION**

**Equipment Damage Hazard.**

Improper operation can cause compressor damage.

Do not operate cooling if outdoor temperature is below 50°F (10°C). Refer to manufacturer recommendations.

To avoid compressor damage, allow the compressor to remain off for five minutes before restarting.



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