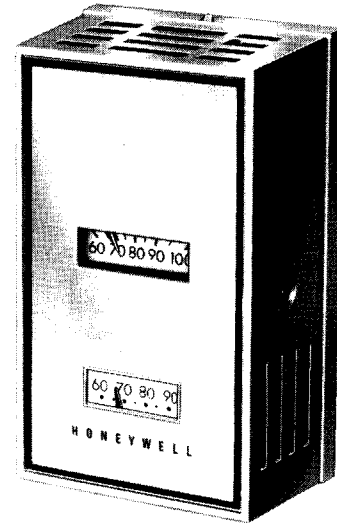


## T42B,G,H,J,K,M,N,P Multistage Thermostats

*T42 Thermostats control line or low voltage heating, cooling, and heating-cooling systems.*



- Multistage models control 2 or 3 circuits in sequence.
- Removable setting knob locks setting lever at desired temperature setpoint.
- Protective thermostat case.
- Bellows element operates silent, dust-free mercury switches.
- Thermometer and temperature setting scales located on thermostat cover.

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# Specifications

## MODELS:

Model Number	Switch Action	Differential		Scale Ranges		
		Per Stage (Non Adj.)	Between Stages	40° to 80° F [5° to 26° C]	60° to 100° F [15° to 38° C]	15° to 35° C [60° to 95° F]
T42B	Closes circuit on temperature rise.	2° to 5° F [1° to 2.5° C]	—	X	X <sup>a</sup>	—
T42G	Closes three circuits in sequence on temperature rise.	3° F [1.5° C]	2° F [1° C] non adj.	X	X	X
T42H	Closes two circuits in sequence on temperature rise.	1° F [.5° C]	1° to 5° F [.5° to 2.5° C]	X	X	X
T42J	Closes two circuits in sequence on temperature rise.	3° F [1.5° C]	1° to 5° F [.5° to 2.5° C]	X	X	X
T42K	Opens one circuit and closes other circuit on temperature rise.	1° F [.5° C] heating 3° F [1.5° C] cooling.	1° to 5° F [.5° to 2.5° C]	X	X	X
T42M	Closes three circuits in sequence on temperature fall.	2° F [1° C]	2° F [1° C] non adj.	X	X	X
T42N	Closes two circuits in sequence on temperature fall and one circuit on temperature rise.	2° F [1° C]	2° F [1° C] non adj.	—	X	X
T42P	Closes one circuit on temperature fall and two circuits in sequence on temperature rise.	2° F [1° C]	5.5° F [2.5° C] between cooling stages. 5.5° F [2.6° C] between heating stage and low cooling stage.	—	X	X

<sup>a</sup> Midscale 2° to 3° F [1° C].

## Ordering Information

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

1. Order number, TRADELINE, if desired.
2. Scale range.

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 Home and Building Control Sales Office (check white pages of phone directory).
2. Home and Building Control Customer Satisfaction  
Honeywell Inc., 1885 Douglas Drive North  
Minneapolis, Minnesota 55422-4386 (612) 951-1000

In Canada—Honeywell Limited/Honeywell Limitée, 740 Ellesmere Road, Scarborough, Ontario M1P 2V9. 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.

## ELECTRICAL RATINGS (Amperes):

Model Number	Full Load		Resistance Load	
	120 Vac 115 Vdc	240 Vac 230 Vdc	120 Vac 120 Vdc	240 Vac 240 Vdc
T42B	2.0	1.0	—	—
T42G, H,J,K, M,N,P	1.0	0.5	2.0	1.0

FINISH: Silver bronze, plastic cover.

## ACCESSORIES:

## Thermostat Guards:

- 133722A Clear Plastic Cover.
- 133723A Beige Plastic Cover.
- 23394B Guard with 138541A Mounting Plate (metal).
- 127246A Back Assembly (two adapter plates and screws) for mounting T42 on a horizontal outlet box.

## REPLACEMENT PARTS:

- 130224 Locking Knob for Cover.
- 112705 Thermometer: 40/120° F [5° to 60° C] scale range; T42B,G,P.



## Recycling Notice

This control contains mercury in a sealed tube. Do *not* place control in the trash at the end of its useful life.

If this control is replacing a control that contains mercury in a sealed tube, do *not* place your old control in the trash.

Contact your local waste management authority for instructions regarding recycling and the proper disposal of this control, or of an old control containing mercury in a sealed tube.

If you have questions, call Honeywell at 1-800-468-1502.

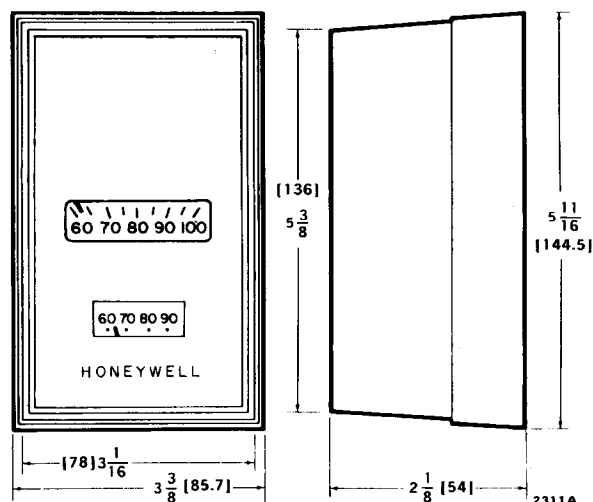
## Installation



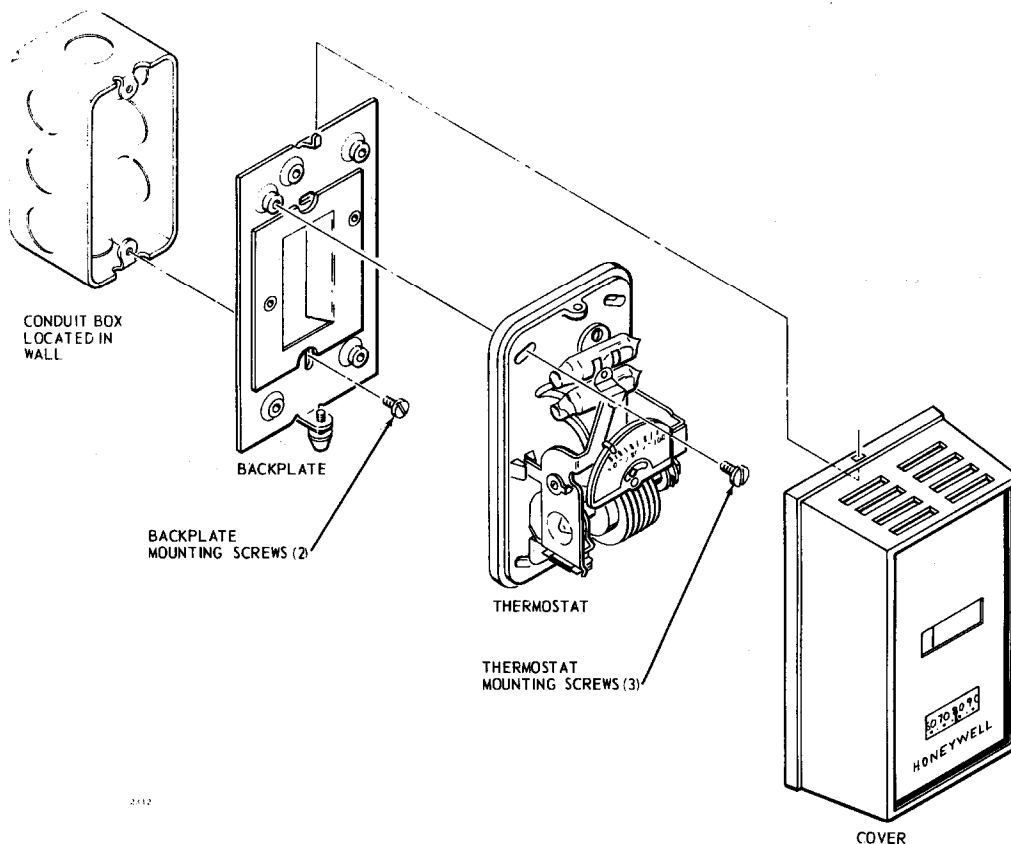
### CAUTION

1. Installer must be a trained, experienced serviceman.
2. Disconnect power supply before installation to prevent electrical shock and equipment damage.
3. All wiring must comply with applicable codes and ordinances.
4. Do *not* exceed the ratings given in the Specifications section.
5. Always conduct a thorough checkout when installation is complete.

Fig. 1—Approximate dimensions in in. [mm in brackets].



**Fig. 2—Mounting the T42 on vertical outlet box. Follow instruction sheet packed with bag assembly when mounting the T42 on a horizontal outlet box.**



## LOCATION

Locate the thermostat about 5 feet [1.5 m] above the flow in an area with good air circulation at average temperature.

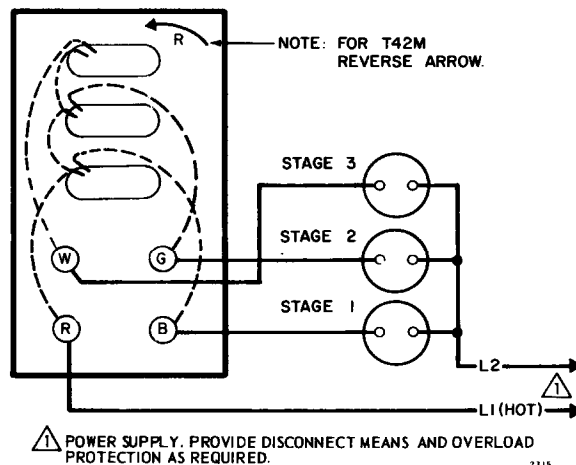
- Do not mount the thermostat where it can be affected by:
  - drafts, or dead spots behind doors and in corners.
  - hot or cold air from ducts.
  - radiant heat from the sun or appliances.
  - concealed pipes and chimneys.
  - unheated (uncooled) areas behind the thermostat.

## MOUNTING AND WIRING

All wiring must agree with local codes and ordinances.

1. Run approved wire to a standard outlet box mounted at the location selected for the thermostat. See Fig. 1 for thermostat dimensions.
2. Fasten the backplate on the outlet box as shown in Fig. 2.
3. Attach the wires to the proper terminal screws on the back of the thermostat. See wiring diagrams in Figs. 3-8.
4. Use the removable temperature setting knob to loosen the cover screw at the bottom of the thermostat. Pull cover screw at the bottom of the thermostat. Pull cover outward at the bottom and lift off.
5. Fasten the thermostat to the backplate, using mounting screws, but do not tighten.

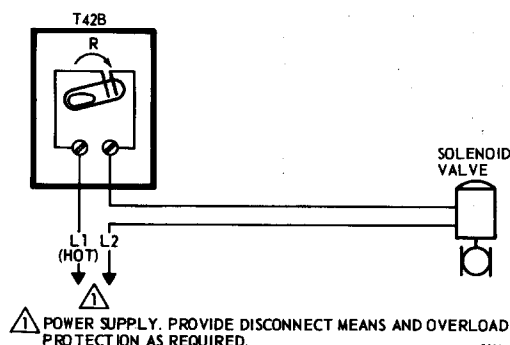
**Fig. 3—Wiring the R42G: 3-stage cooling. Makes three circuits in sequence on a temperature rise. Wiring the T42M: 2-stage heating. Makes three circuits in sequence on a temperature fall.**



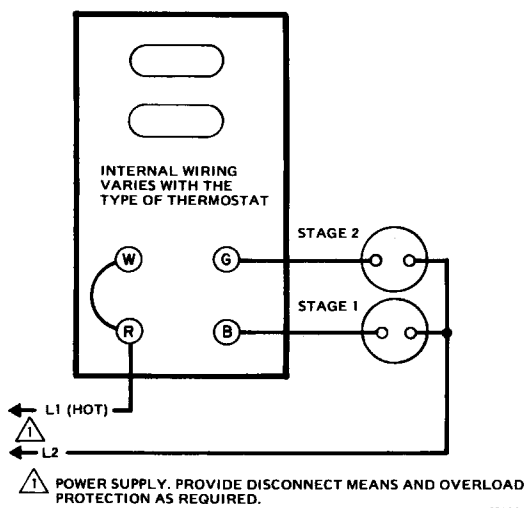
6. Level the thermostat. This is necessary to maintain calibration for proper operation.
7. Tighten the three mounting screws to hold the thermostat securely.

**IMPORTANT:** When the T42 is calibrated at the factory, a backplate mounted at true level is used. Inaccurate leveling can cause thermostat control deviation.

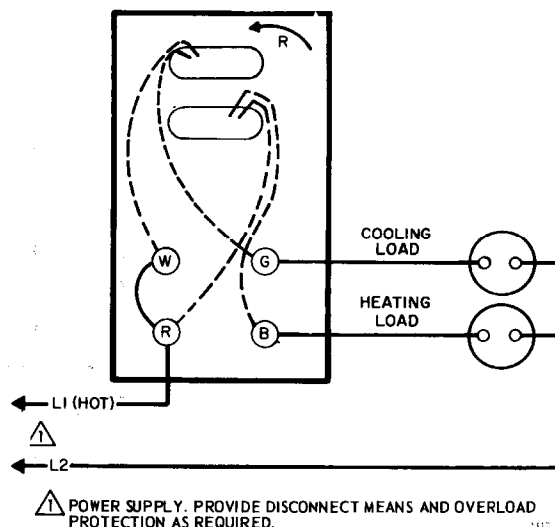
**Fig. 4—Wiring the T42B.**



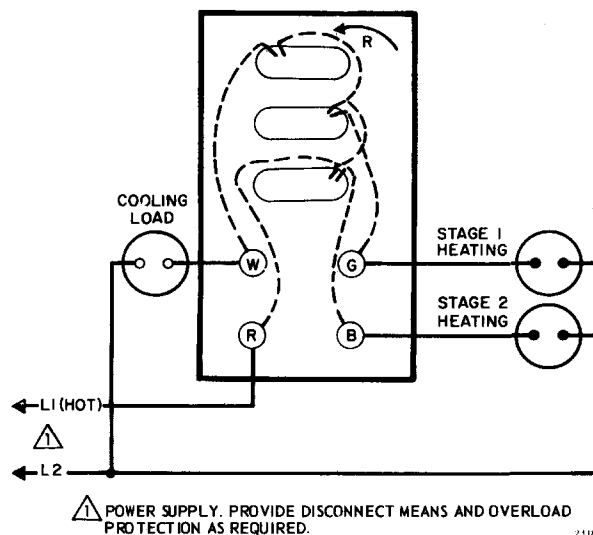
**Fig. 5—Wiring the T42H: 2-stage heating. Makes two circuits in sequence on a temperature fall. Wiring the T42J: 2-stage cooling. Makes two circuits in sequence on a temperature rise.**



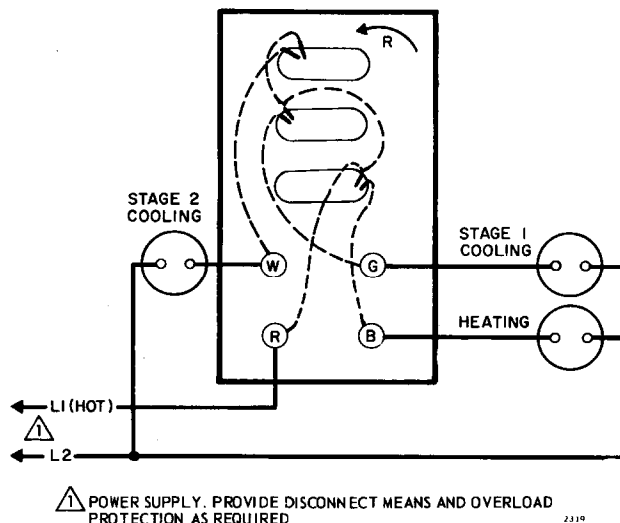
**Fig. 6—Wiring the T42K: 1-stage heating; 1-stage cooling. Makes one circuit and breaks another on a temperature rise.**



**Fig. 7—Wiring the T42N: 2-stage heating; 1-stage cooling. Breaks two circuits and makes one circuit in sequence on a temperature rise.**



**Fig. 8—Wiring the T42P: 2-stage cooling; 1-stage heating. Breaks one circuit and makes two circuits in sequence on a temperature rise.**



## Operation


With cover removed, observe the making and breaking action of the mercury switches while manually moving the temperature pointer along the setting scale.


The Tables 1-3 list the operating characteristics of T42 multistage models. The temperature values shown are based on the inherent differentials of the thermostats, assuming room temperature changes do not exceed 5° or 6° F [3° C] per hour. With faster temperature changes, the actual operating differentials (both between stages and within each stage) will be larger than the manual differentials indicated.

A temperature setpoint of 72° F [22° C] was chosen for each example in the tables. A small <sup>a</sup> indicates the assumed scale setting, and the column in which the small <sup>a</sup> appears indicates the switch that is calibrated to set at the assumed setting.

For each model having an adjustable differential, two sets of numbers are given: the first for the minimum between-stage differential setting of 1° F [.5° C], and the second for the maximum setting of 5° F [3° C].

The differential settings for T42H,J and K are adjustable from 1° to 5° F [.5° to 3° C]. If the factory setting of 1° F [.5° C] is not satisfactory, the differential may be increased by using the eccentric adjustment screw. See Fig. 9.

T42H: increase differential between stages by turning the screw clockwise  slightly.

T42J,K: increase differential between stages by turning the screw counterclockwise  slightly.

### TO CHECK THE ADJUSTMENT

1. Move the temperature pointer slowly up and down the scale by turning the temperature setting knob.

2. On the scale, note the number of degrees between the make or break of one switch and the make or break of the other.

**NOTE:** These directions apply only to the differential between stages. In all T42 Thermostats, the differential per stage is nonadjustable. Between-stage differentials for the T42G,M,N, and P are factory-set and are nonadjustable.

**Fig. 9—Internal view of T42H.**

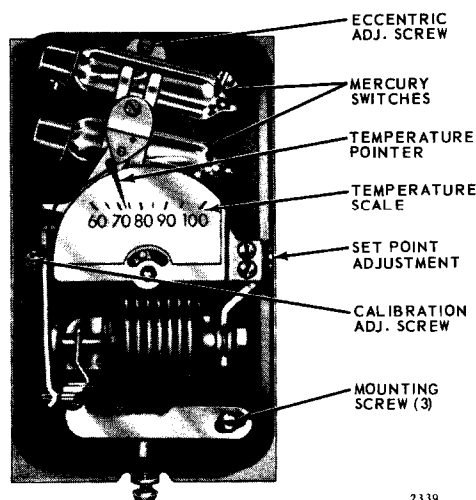


TABLE 1—MULTISTAGE COOLING.

Model Number	Differential Setting		Temp. Change	Lower Switch		Middle Switch		Upper Switch	
	Per Stage (Non adj.)	Between Stages		Make	Break	Make	Break	Make	Break
T42G Three-stage cooling	2° F [1.5° C]	2° F [1° C] non adj.	Rise	72° F <sup>a</sup> [22° C]	—	74° F [26° C]	—	76° F [25° C]	—
			Fall	—	69° F [21° C]	—	71° F [21° C]	—	73° F [23° C]
T42J Two-stage cooling	3° F [1.5° C]	1° F [.5° C] min. set.	Rise	72° F <sup>a</sup> [22° C]	—	—	—	73° F [23° C]	—
			Fall	—	69° F [21° C]	—	—	—	70° F [21° C]
		5° F [3° C] max. set.	Rise	72° F <sup>a</sup> [22° C]	—	—	—	77° F [25° C]	—
			Fall	—	69° F [21° C]	—	—	—	74° F [23° C]

<sup>a</sup>Assumed scale setting.

TABLE 2—MULTISTAGE HEATING.

Model Number	Differential Setting		Temp. Change	Lower Switch		Middle Switch		Upper Switch	
	Per Stage (Non adj.)	Between Stages		Make	Break	Make	Break	Make	Break
T42H Two-stage heating	1° F [.5° C]	1° F [.5° C] min. set.	Rise	—	73° F [23° C]	—	—	—	72° F [22° C]
			Fall	72° F <sup>a</sup> [22° C]	—	—	—	71° F [22° C]	—
		5° F [2.5° C] max. set.	Rise	—	73° F [23° C]	—	—	—	68° F [20° C]
			Fall	72° F <sup>a</sup> [22° C]	—	—	—	67° F [20° C]	—
T42H (heavy duty) Two-stage heating	3° F [1.5° C]	3° F [1.5° C] non adj.	Rise	—	72° F [22° C]	—	—	—	75° F [24° C]
			Fall	69° F [21° C]	—	—	—	72° F <sup>a</sup> [22° C]	—
T42M Three-stage heating	2° F [1° C]	2° F [1° C] non adj.	Rise	—	74° F [23° C]	—	72° F [22° C]	—	70° F [21° C]
			Fall	72° F <sup>a</sup> [22° C]	—	70° F [21° C]	—	68° F [20° C]	—

<sup>a</sup>Assumed scale setting.

To check which heating or cooling stage is controlled by any given switch, refer to the wiring diagrams.

TABLE 3—MULTISTAGE COOLING AND HEATING.

Model Number	Differential Setting		Temp. Change	Lower Switch		Middle Switch		Upper Switch	
	Per Stage (Non adj.)	Between Stages		Make	Break	Make	Break	Make	Break
T42K One-stage heating One-stage cooling	1° F [.5° C] (heating) 3° F [1.5° C] (cooling)	1° F [.5° C] min. set.	Rise	—	72° F <sup>a</sup> [22° C]	—	—	73° F [23° C]	—
			Fall	71° F [21° C]	—	—	—	—	70° F [21° C]
	5° F [2.5° C] max. set.	5° F [2.5° C] max. set.	Rise	—	72° F <sup>a</sup> [22° C]	—	—	77° F [25° C]	—
			Fall	71° F [21° C]	—	—	—	—	74° F [23° C]
T42N Two-stage heating One-stage cooling	2° F [1° C]	2° F [1° C] non adj.	Rise	—	72° F [22° C]	—	74° F [23° C]	76° F [25° C]	—
			Fall	70° F [21° C]	—	72° F <sup>a</sup> [22° C]	—	—	74° F [23° C]
T42P One-stage heating Two-stage cooling (Red pointer indicates heating setting; green pointer indicates low cooling stage setting.)	2° F [1° C]	5.5° F [2.5° C] between cooling stage 5.5° F [2.5° C] between heating stage and low cooling stage	Rise	—	74° F [23° C]	78° F [25° C]	—	80° F [27° C]	—
			Fall	72° F <sup>a</sup> [22° C]	—	—	76° F [25° C]	—	78° F [26° C]

<sup>a</sup>Assumed scale setting.

## Checkout

### CALIBRATION

If thermostat fails to maintain room temperature at or near the temperature setting, the thermostat may need to be recalibrated. However, faulty control may also be caused by drafts, poor location, an inaccurate leveling. The thermostat may not control accurately until it has been operating for an hour or more. If thermostat inaccuracy cannot be traced to any of these causes, recalibrate as follows:

1. Determine the difference between temperature setting and the actual room temperature indicated by the thermometer on thermostat cover.
2. Remove the thermostat cover.

3. Turn the calibration adjustment screw (see Fig. 9) one quarter turn for each degree of control error: clockwise ↻ if the thermostat is maintaining too low a temperature; counterclockwise ↻ if too high a temperature is maintained.

4. Check each adjustment by allowing the thermostat to operate automatically for at least one hour.

### CHECKOUT

After all adjustments have been made, operate the system to make sure that thermostat controls equipment as intended. Remove setting knob from thermostat case to lock temperature setpoint.

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