

# THERMOSTATS & CONTROLLERS



## FLOATING AND PROPORTIONAL ZONE THERMOSTAT TB6980 AND TB7980 SERIES

**Honeywell**



**TB6980B1006**

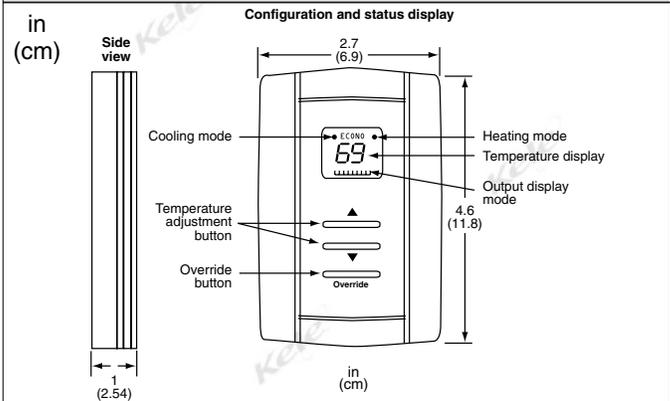
### DESCRIPTION

The **Honeywell Model T6980** is a floating-control zone thermostat. **Model T7980** is a proportional-control zone thermostat. Both have PI control algorithms and models with dual outputs are available. The digital display can be °F or °C, and will also display bar graphs and pushbuttons for setpoint and override functions. The microprocessor-based thermostat is dipswitch configurable for application, including night setback value and minimum / maximum setpoint limits.

### FEATURES

- Floating control output(s) (T6980)
- Proportional control output(s) (T7980)
- Digital display (°F or °C and output bar graph)
- PI control algorithms
- Single or dual-output models
- Vertical mounting
- Night setback override (2-hour)
- Remote sensor capable
- Room or discharge air control
- Minimum and maximum setpoint limits
- Minimum damper open %
- 12-second backlighting
- Two-year warranty

### DIMENSIONS



### SPECIFICATIONS

<b>Supply Voltage</b>	24 VAC @ 0.6 VA	<b>Output 2</b>	Heating, floating control, on/off, or proportional
<b>Control</b>	Proportional + integral (PI)	<b>Output 3</b>	Minimum on time (1 second, 10 minutes, 15 minutes) or signal percent of output 1
<b>Display</b>	1" x 1" LCD with 0.5" high temperature digits	<b>Setback Value</b>	2° to 18°F (1° to 9°C), in 2°F (1°C) increments
<b>Readout Backlighting</b>	32° to 140°F (0° to 60°C) with 1°F (0.5°C) resolution 12-second dwell, button-activated	<b>Setpoint Limits</b>	Minimum 50° to 94°F (10° to 34°C) Maximum 51° to 95°F (11° to 35°C)
<b>Outputs</b>	Triac, 24 VAC, 0-10 VDC, or 2-10 VDC	<b>Internal Switch Settings (Switches 1, 2, and 6 only)</b>	
<b>TB6980A #1</b>	Floating control, heating (reverse acting) or cooling (direct acting)	<b>SW1</b>	°F or °C
<b>TB6980B #1</b>	Floating control, heating (reverse acting) or cooling (direct acting)	<b>SW2</b>	Normal or configuration mode
<b>#2</b>	0 or 2-10 VDC or on/off, heating (reverse acting)	<b>SW6</b>	Output 2 (proportional or triac control)
<b>#3</b>	On/off, following output 1	<b>Memory Protection</b>	Configuration and setpoint
<b>TB7980A #1</b>	0 or 2-10 VDC heating (reverse acting) or cooling (direct acting)	<b>Setpoint Buttons</b>	Range 50° to 90°F (10 to 35°C)
<b>TB7980B #1</b>	0 or 2-10 VDC heating (reverse acting) or cooling (direct acting)	<b>Override Button</b>	2-hour night setback override (Pushing twice cancels override)
<b>#2</b>	0 or 2-10 VDC or on/off, heating (reverse acting)	<b>Operating Temperature</b>	32° to 140°F (0° to 60°C)
<b>#3</b>	On/off, following output 1	<b>Operating Humidity</b>	0-95% RH, non-condensing
<b>Inputs</b>	Night setback, open = occupied	<b>Sensor Changeover</b>	Deadband = 9°F (5°C), or contact
	Changeover, digital input or sensor	<b>Wiring</b>	22 to 18 AWG
	Remote sensor, 500141xx-xxx	<b>Mounting</b>	Direct or to 2" x 4" box Cover secured with set screw
<b>Configuration Parameters</b>		<b>Dimensions</b>	4.6"H x 2.7"W x 1.0"D (11.8 x 6.9 x 2.7 cm)
<b>Application</b>	Room, supply air, changeover	<b>Weight</b>	0.3 lb (0.14 Kg)
<b>Output 1</b>	Cooling or heating	<b>Warranty</b>	2 years
<b>Damper Minimum</b>	0-50%		
<b>Actuator Timing</b>	80-160 seconds (Tx6980 only)		

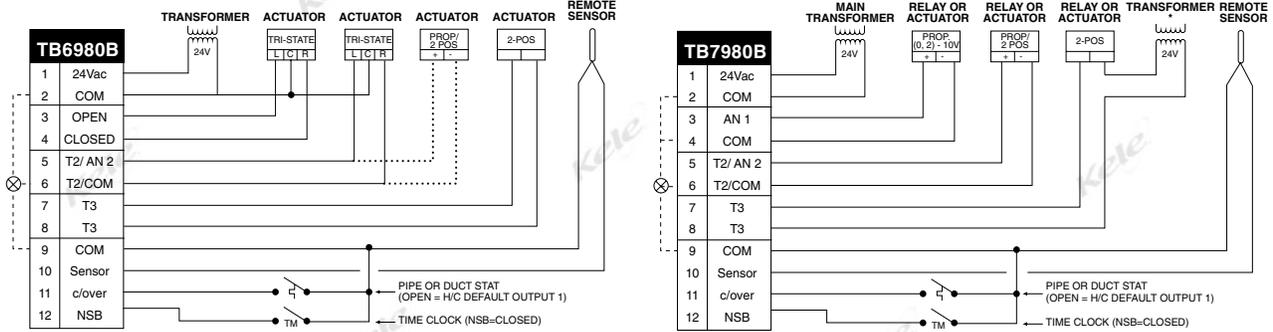
THERMOSTATS & CONTROLLERS

21

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## FLOATING AND PROPORTIONAL ZONE THERMOSTAT TB6980 AND TB7980 SERIES

### WIRING



--- Internally connected. \*T2/COM is internally connected if SW6=analog.

..... Alternative 2 POS/Proportional hookup.

Only terminals 1, 2, 3, 4, 9, 10, 11, 12 are used on **TB6980A** thermostats.

--- Internally connected. \*T2/COM is internally connected if SW6=analog.

\*Can be a different power source or the same as main transformer.

Only terminals 1, 2, 3, 4, 9, 10, 11, 12 are used on **TB7980A** thermostats.

### CONFIGURATION

TB7980B									
Application	Output 1 type	Output 2 type <sup>a</sup> (Htg only)	Output 3 type (follows Output 1)	Output 3 activation	NSB value	Output 1 min. opening	SP HI	SP LO	
0 Internal sensor	0 Cool / 0-10V	0 Not used	0 Not used	0 100%	1 1°C (2°F)	0 0%			
1 Room	1 Heat / 0-10V	1 SSR 24 VAC	1 SSR 24 VAC	1 10%	2 2°C (4°F)	1 10%			
2 Return	2 Cool / 2-10V	2 N.C.Valve	2 N.C.Valve	2 20%	3 3°C (6°F)	2 20%			
3 Supply	3 Heat / 2-10V	3 N.O.Valve	3 N.O.Valve	3 30%	4 4°C (8°F)	3 30%			
4 Auto changeover		4 Mech. relay	4 Mech. relay	4 40%	5 5°C (10°F)	4 40%			
5 Limited cooling		5 SSR 3-32 V	5 Contact	5 50%	6 6°C (12°F)	5 50%			
		6 SCR 0-10 V		6 60%	7 7°C (14°F)				
		7 Act. 0-10 V		7 70%	8 8°C (16°F)				
		8 Act. / 2-10 V		8 80%	9 9°C (18°F)				
				9 90%					
							Can be set between 35°C (95°F) and *minimum setpoint + 1*	Can be set between 10°C (50°F) and *maximum setpoint - 1*	
							Default value is 35°C (95°F)	Default value is 10°C (50°F)	

Shading = Factory Setting

a. If Output 2 type is set to 0-4, set the SW6 switch to Triac. If the output type is set to 5-8, set the switch to Analog.

TB6980B									
Application	Output 1 type	Output 2 type <sup>a</sup> (Htg only)	Output 3 type (follows Output 1)	Output 3 activation	NSB value	Output 1 min. opening	Output 1 opening time	SP HI	SP LO
0 Internal sensor	0 Cool	0 Not used	0 Not used	0 100%	1 1°C (2°F)	0 0%	0 80		
1 Room	1 Heat	1 SSR 24 VAC	1 SSR 24 VAC	1 10%	2 2°C (4°F)	1 10%	1 90		
2 Return		2 N.C.Valve	2 N.C.Valve	2 20%	3 3°C (6°F)	2 20%	2 100		
3 Supply		3 N.O.Valve	3 N.O.Valve	3 30%	4 4°C (8°F)	3 30%	3 110		
4 Auto changeover		4 Mech. relay	4 Mech. relay	4 40%	5 5°C (10°F)	4 40%	4 120		
5 Limited cooling		5 SSR 3-32 V	5 Contact	5 50%	6 6°C (12°F)	5 50%	5 130		
		6 SCR 0-10 V		6 60%	7 7°C (14°F)		6 140		
		7 Act. 0-10 V		7 70%	8 8°C (16°F)		7 150		
		8 Act. / 2-10 V		8 80%	9 9°C (18°F)		8 160		
				9 90%					
								Can be set between 35°C (95°F) and *minimum setpoint + 1*	Can be set between 10°C (50°F) and *maximum setpoint - 1*
								Default value is 35°C (95°F)	Default value is 10°C (50°F)

a. If Output 2 type is set to 0-4, set the SW6 switch to Triac. If the output type is set to 5-8, set the switch to Analog.

### ORDERING INFORMATION

Model	Description	Output 1	Output 2	Output 3
TB6980A1007	Floating (tri-state)	Floating, heating and cooling	None	None
TB6980B1006	Floating (tri-state)	Floating, heating and cooling	Proportional or two-position, heating	Two-position, heating or cooling, as determined by output 1
TB7980A1006	Proportional (0 or 2-10 VDC)	Proportional, heating and cooling	None	None
TB7980B1005	Proportional (0 or 2-10 VDC)	Proportional, heating and cooling	Proportional or two-position, heating	Two-position, heating and cooling, as determined by output 1

### RELATED PRODUCTS

50014156-002  
50014157-001

Remote room temperature sensor  
Remote duct temperature sensor