

THERMOSTATS & CONTROLLERS



VISIONPRO™ PROGRAMMABLE THERMOSTAT, WI-FI ACCESSIBLE TH8000 SERIES, TB8220 SERIES

Honeywell

DESCRIPTION

The Honeywell Vision Pro™ T_8000 is a 7-day programmable thermostat designed for universal system compatibility and is easy to program for precise comfort control. Programming is done using the large clear backlit display by just touching the screen and following the menu. The thermostat is configurable for system type (Conventional/Heat pump), system stages (1H/1C through 3H/2C) and fan control (electric/gas), with some models offering humidity control features. The T_8000 is powered by 24VAC and/or 3 AAA batteries for time and program retention, and has a Wi-Fi accessible version for remote viewing and setup.



TH8110U1003



APPLICATION

Designed specifically for low-voltage control requiring time scheduled occupied-unoccupied control. Ideal for roof top units (small business or retail), homes, condos, cottages, and any packaged AHU operation.

FEATURES

- **Five-year warranty**
- **Scheduling or non-scheduling**
- **Large backlit touch screen display**
- **Menu touch screen interaction**
- **Fan switching (touch screen)**
- **System switching (touch screen)**
- **Setpoint and configuration (touch screen)**
- **1H/1C or 2H/2C or 3H/2C HP**
- **Heat pump O = on or B = on**
- **Emergency heat (electric/gas)**
- **De-humidification control models**
- **Fahrenheit or Celsius operation**
- **24 VAC and/or 3-AAA batteries**
- **Wi-Fi accessible versions (WF)**
- **10-year built-in memory retention**
- **Base included**
- **Remote sensor option (room or OSA)**
- **Seven-day schedule or manual**
- **12- or 24-hour clock**
- **2 or 4 occupied/unoccupied periods per day**
- **Adaptive intelligent recovery**
- **Proportional + Integral control**
- **Integral adjustment (Fast, Norm, Slow)**
- **Minimum compressor off timer**
- **Cycles/hour for cooling and heating**
- **OSA heat pump compressor lockout**
- **Screen lockout (partial/total)**
- **Auto daylight savings time**
- **Service reminders (TH) (filter, UV lamp, humidity pad)**
- **30-day low battery indication**
- **Clean screen timer**
- **Change over (manual or auto)**
- **SP hold permanent or time out (TH)**
- **Holiday and override (TB)**
- **Individual setpoint range stops H/C**
- **Extended fan run time**
- **Temperature display offset ±3°F**
- **Installer test function**
- **Adjustable H/C deadband**
- **Economizer/scheduled contact (TB)**

SPECIFICATIONS	
Supply Voltage	20-30 VAC, 50/60 Hz
Battery	Optional, 3-AAA
Accuracy	±1°F (0.5°C), system dependent
Supply Current	H/C - 1.0A, fan - 0.6A
Memory	10 years, then 3-AAA batteries required
Sensor Type	Built-in 10K thermistor
Remote Sensor	Room or OSA (accessory required)
Contact Type	SPST relays
Control	Proportional plus Integral (PI)
Dead-band	Adjustable, 2°/9°F, (1.5°/5°C)
Setpoint/Setback	Adjustable with programmable limits
Heating	40 to 90°F (10 to 32°C)
Cooling	50 to 99°F (10 to 37°C)
RH	40 to 80%, (TH8321)
Keypad Lockout	Unlocked, locked completely, or locked except setpoint
Display	3.5" x 2.5" backlit touch screen, temperature, humidity (TH8321), system, fan, time, day, setpoint, service reminders (TH), OSA temp if wired
Display Offset	±3°F (1.5°C), in 1°F (0.5°C) increments
Touch Screen Controls	
Setpoints	Up/Down
System	Heat/Off/Cool/Auto
Fan Control	On/Auto/Circ (TH), On/Auto (TB)
Schedule	7 day, 2 or 4 periods
Hold (TH)	Permanent or time out
Holiday (TB)	Time out by days
Clock	12-hour or 24-hour, ±1 min./month
Screen	°F/°C, backlight
Override	Occupied time out
Menu	Service set up, over 40 parameters
Wi-Fi Access (WF)	Requires a Total Connect Account
Color	Premier white
Wiring	Terminals for 18 AWG wire
Operating Temperature	0° to 120°F (-18° to 49°C)
Operating Humidity	0 to 90% RH (non-condensing)
Mounting	Horizontal with base included
Enclosure Rating	NEMA 1, White plastic, indoors only
Dimensions	4.56"H x 6.0"W x 1.37"D (11.6 x 15.24 x 3.5 cm)
Weight	1.1 lb (0.5 Kg)
Approvals	California Title 24 (TB), ADA compliant
Warranty	5 years

THERMOSTATS & CONTROLLERS

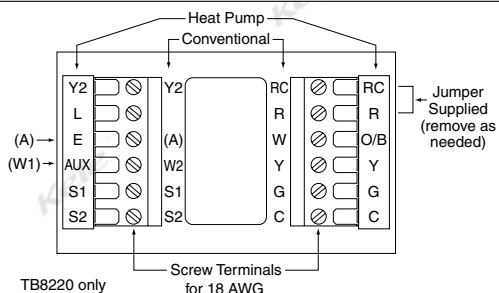
21

THERMOSTATS & CONTROLLERS

70°

VISIONPRO™ PROGRAMMABLE THERMOSTAT, WI-FI ACCESSIBLE TH8000 SERIES, TB8220 SERIES

WIRING



TERMINAL DESIGNATIONS

Designator	Typical connection
AUX	Auxiliary heat relay (heat pump TH)
C	Common connection
E, (A)	Emergency heat, (time-of-day or economizer)
G	Fan relay
L	24 VAC LED light output (externally switched)
O/B	Changeover valve (heat pump)
S1, S2	Indoor or outside air sensor termination
R	24 VAC system or heat transformer
RC	24 VAC cooling transformer
W	First stage heating
W1	Second stage heating (heat pump TB)
W2	Second stage heating
Y	First stage cooling
Y2	Second stage cooling

Note: Not all terminals shown are used on all models. Be sure to use the conventional OR heat pump terminals, NOT both.

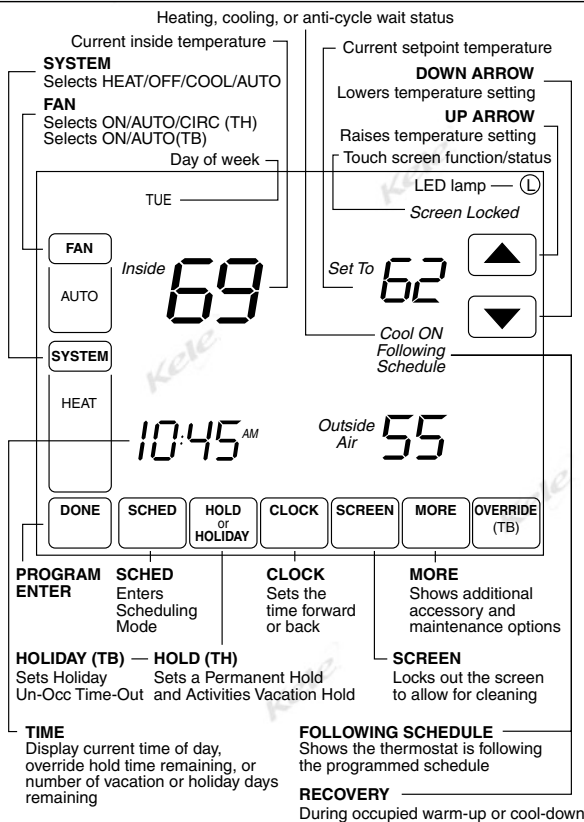
INSTALLATION / MOUNTING

The base plate is mounted directly to the wall or 2" x 4" horizontal or vertical back box. Use 18 AWG wire and terminals shown above. Position thermostat over the base plate and push onto pins. No leveling required.

GENERAL CONTROL SEQUENCE

The occupied status is time programmed to change the occupied and unoccupied setpoints. The thermostat control uses the setpoint as displayed using a PI control of single or multiple stages of heating and cooling equipment. The fan is controlled by demand in the AUTO mode for H/C, with delay fan off as programmed by the installer. In the ON mode the fan is continuous and in the CIRC mode (TH only) the fan runs by demand plus an additional random circulation amount up to 35% of the scheduled occupied time. System control is selectable for Heat/Off/Cool/Auto. Automatic engages the H/C automatically with an adjustable deadband between the H/C setpoints with control status displayed on the LCD as Heating On or Cooling On, and a wait indicator during anti-cycle control.

THERMOSTAT KEYS AND DISPLAY



ORDERING INFORMATION

MODEL	DESCRIPTION
TB8220U1003	24V commercial, seven-day programmable 2H/2C or 3H/2C HP w/ system and fan switch
TH8110U1003	24V residential, 1H/1C or HP seven-day programmable thermostat w/ system and fan switch
TH8320U1008	24V residential, 2H/2C or 3H/2C HP seven-day programmable thermostat with system and fan switch
TH8321U1006	24V residential, 2H/2C or 3H/2C HP seven-day programmable thermostat with system and fan switch and humidity
TH8321WF1001	Wi-Fi accessible, 24V residential, 2H/2C or 3H/2C HP seven-day programmable thermostat with system and fan switch

MODEL	RELATED PRODUCTS
209651A	Wall adaptor plate 7.37" x 5.75"
C7089U1006	Outdoor sensor with mounting clip (Custom Curve)
C7189U1005	Remote indoor thermistor sensor: 10K Ω NTC (Custom Curve)