Honeywell

T6572A, T6573A,B, T6992A,B, T6993B Digital Fan-Coil Thermostats

XE88/XE100 SERIES

PRODUCT DATA

APPLICATION

The T6572 and T6573 Thermostats are designed for on/off control of the valve, or the valve and fan in 2-pipe fan-coil applications and also one-stage compressors in DX-type equipment.

The T6992 and T6993 Thermostats are designed for series 60 floating control of the valve and fan in 2-pipe fan-coil applications, and also variable air volume (VAV) equipment (ML6161, ML6184).

The thermostat operates an on/off or Series 60 valve to provide control at the desired setpoint temperature.

Heat/cool models are available with constant or cycled fan operation. The fan is wired to run continuously on cool only models. Models are available with either a three-speed fan selector switch with low, medium and high settings, or one-speed only. On models with a system on/off switch, the fan can be powered off.

FEATURES

- **Attractive modern styling with digital display makes the thermostat ideal for offices or hotels.**
- **Hotel card key input overrides the temperature setting to installer-defined heating and cooling temperatures.**
- **All models have proportional plus integral control that controls temperature to within 0.75ºC in both heating and cooling.**
- **Thermostat mounts directly onto a wall, a 2 in. x 4 in. horizontal junction box, or a 65 mm x 65 mm standard European junction box.**
- **Switches allow manual control of system operation and fan speed.**
- **Digital display of room ambient temperature in ºC.**
- **Digital display of user selected temperature setting on demand.**
- **Capability to display temperature sensor failure for easier troubleshooting.**
- **Capability to select minimum relay off-times for compressor short cycle protection (*only* T6572 and T6573).**
- **EEPROM permanently retains user settings in the event of power loss.**
- **Direct line voltage, 220 to 240 Vac, 50/60 Hz power input (*only* T6572 and T6573).**
- **Controls Honeywell V4043 and VC6000 Series Valves, ML6161 and ML6184 damper actuators, and compressor starters/relays up to 2A full load rating (only T6992 and T6993).**

Contents

68-0179-1

SPECIFICATIONS

IMPORTANT

The specifications given in this publication do not include normal manufacturing tolerances. Therefore, this unit may not exactly match the listed specifications. This product is tested and calibrated under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.

Models:
See Table 1.

Setpoint Range:
10ºC to 30ºC.

Input Voltage:
T6572, T6573: 220 to 240 Vac, ±10%, 50/60 Hz.
T6992, T6993:
18 to 30 Vac (Heat/Cool Thermostat).
220 to 240 Vac (Fan).

Operational Life:
Thermostat Contacts (at 220 to 240V): Greater than 100,000 cycles (all loads).
Manually-Operated Switches: Greater than 10,000 operations.

Mounting:
Direct:
Wall-mount.
2 in. x 4 in. junction box.
65 mm x 65 mm standard European junction box.

Table 1. Model Specifications.

Series	OS Number	Application[a]	Fan Operation	Card Key	Switches		
					System On/Off	Fan Speed	Heat/Cool
XE88	T6572A1008	Cool	constant	No	Yes	1-speed	No
	T6572A1016	Cool	constant	No	No	1-speed	No
	T6572A1024	Cool	constant	Yes	Yes	1-speed	No
	T6573A1007	Cool	constant	No	Yes	3-speed	No
	T6573A1015	Cool	constant	Yes	Yes	3-speed	No
	T6573A1023	Cool	constant	No	No	3-speed	No
	T6573B1005	Heat/Cool	cycled	Yes	Yes	3-speed	Yes
	T6573B1013	Heat/Cool	cycled	No	Yes	3-speed	Yes
	T6573B1021	Heat/Cool	cycled	No	No	3-speed	Yes
	T6573B1039	Heat/Cool	constant	Yes	Yes	3-speed	Yes
	T6573B1047	Heat/Cool	constant	No	Yes	3-speed	Yes
	T6573B1054	Heat/Cool	constant	No	No	3-speed	Yes
XE100	T6992A1000	Cool[b]	constant	Yes	Yes	1-speed	No
	T6992B1008	Heat/Cool[b]	constant	Yes	Yes	1-speed	Yes
	T6993B1007	Heat/Cool[b]	constant	Yes	Yes	3-speed	Yes

[a]Controls V4043 and VC6000 Series Valves or On/Off relays.
[b]Series 60 modulating output.

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

In Canada—Honeywell Limited/Honeywell Limitée, 155 Gordon Baker Road, North York, Ontario M2H 3N7.
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.

Enclosure:
Two-piece plastic housing.

Wiring:
Up to ten screw-in terminals per unit.
Accepts two 1.5 mm wires per terminal.

Temperature Ratings:
Ambient: 5ºC to 45ºC.
Shipping and Storage: -20ºC to 55ºC.

Humidity Range:
5% to 95% RH, non-condensing.

Performance:
Control Temperature: ±0.75ºC at 22ºC with 50% load.

Hotel Card Key Input:
Temperature Setpoint Range: 18ºC to 30ºC.
Dry Contact Rating: 24 Vdc, maximum contact resistance of 1000 ohms.

System Switches and Fan Speeds:
See Table 1.

Output Ratings:
T6572, T6573: 220 to 240 Vac, 2A run, 12A inrush.
T6992, T6993: 24 Vac, 1A run, 2A inrush (Heat/Cool Thermostat). 120 to 240 Vac, 2A run, 12A inrush (Fan).

Dimensions:
See Fig. 1.

System Components:
V4043, VC4013, VC6013 Fan-Coil Valves (on/off models).
VC6931 Fan-Coil Valves (Series 60 models).
ML6161, ML6184 24 Vac Damper Actuators (Series 60 models).

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 Hazard.
Can cause electrical shock or equipment damage.
Disconnect power supply before beginning wiring.

Location

The XE88/XE100 Thermostats are temperature control elements in fan-coil or air conditioning systems and should be installed about one and one-half meters above the floor in an area with good air circulation at room temperature.

NOTE: Level only for appearance. The thermostat functions normally even when not level.

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 such as an outside wall behind the thermostat.

IMPORTANT

This thermostat is a precision instrument and was adjusted at the factory. Handle it carefully.

Mounting Thermostat

The XE88/XE100 Thermostats can be mounted directly on the wall, or horizontally on either a 2 in. x 4 in. junction box, or a 65 mm x 65 mm standard European junction box. Mounting screws and draw nuts are provided.

Flush Mount

To mount the thermostat to the wall surface or to a junction box that is flush with the wall:
1. Insert the screws through the mounting holes as shown in Fig. 2.
2. Tighten the screws.

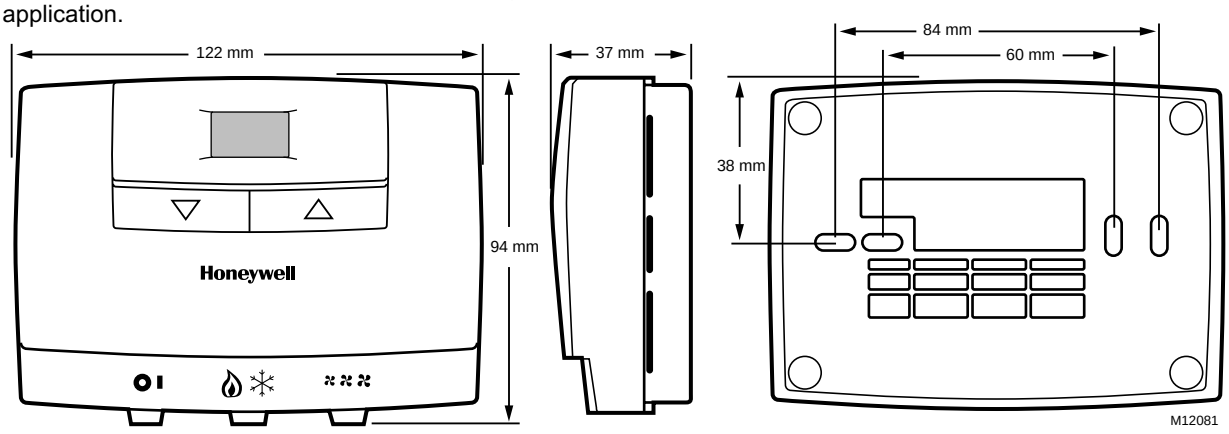


Fig. 1. T6572, T6573, T6992, and T6993 dimensions (in mm).

Recessed Mount

To mount the thermostat to a recessed junction box:

1. Insert the screws through the mounting holes as shown in Fig. 2.
2. Position the draw nut between the junction box and the subbase and tighten it.

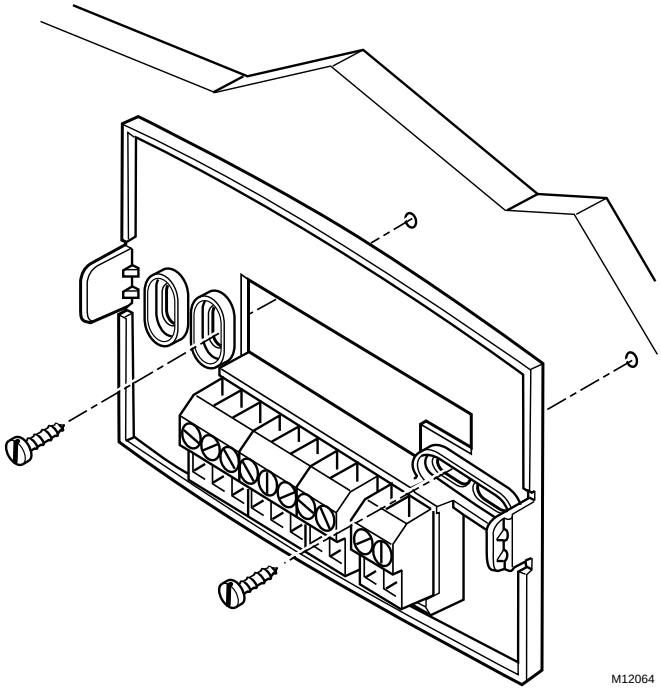


Fig. 2. Mounting thermostat.

Removing the Thermostat

If it becomes necessary to remove the thermostat from the base:

1. Pry the left side of the thermostat away from the base (see Fig. 2a).
2. Pry the right side of the thermostat away from the base (see Fig. 2a).
3. Use both hands to pull the thermostat straight away from the base (see Fig. 2a).

IMPORTANT

Improper removal of the thermostat from the subbase may damage the device.

Wiring Thermostat

IMPORTANT

Use a 1.5 mm gauge maximum wire for wiring the T6572, T6573, T6992, and T6993 Thermostats.

⚠ CAUTION

Electrical Shock Hazard.
Can cause electrical shock or equipment damage.
Disconnect power supply before beginning wiring.

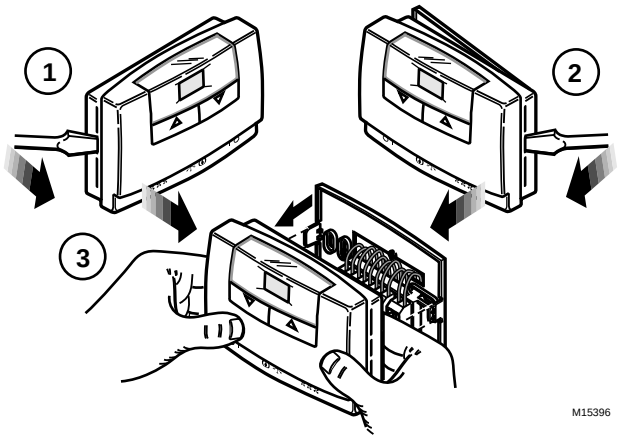


Fig. 2A. Removing thermostat from subbase.

Wire the thermostat as follows:

1. Wire the subbase through the center entrance hole.

   NOTE: Wiring terminals are straight-in screw type and are designed to accept two 1.5 mm wires per terminal.

2. When wiring is complete, attach the thermostat to the subbase:
   - **a.** Locate the two center side holes on the back of the thermostat.
   - **b.** Align the holes with the two side tabs on the subbase.
   - **c.** Press down firmly and snap the thermostat into place.

Refer to Fig. 3 through 11 for typical wiring diagrams.

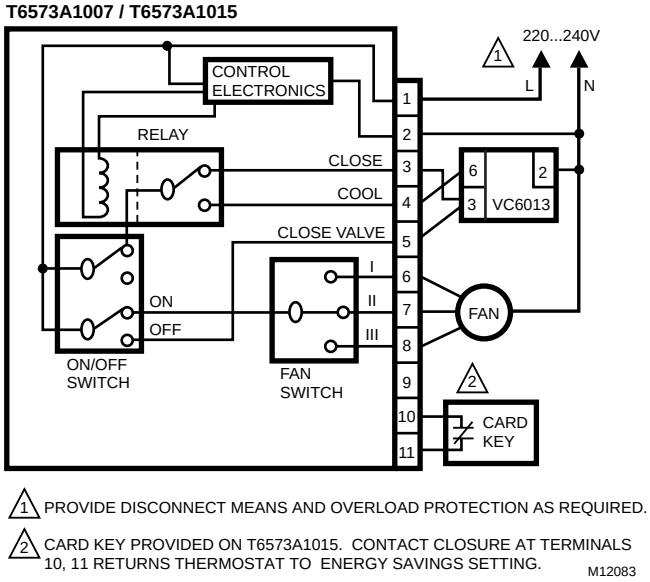
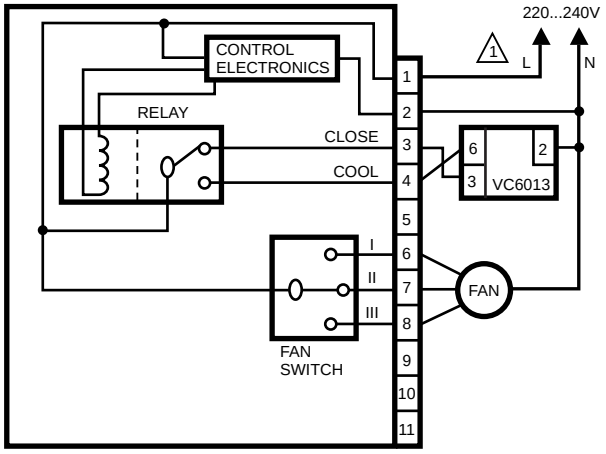


Fig. 3. T6573A1007 and T6573A1015 cool-off wiring diagram with 3-speed fan.

T6573A1023

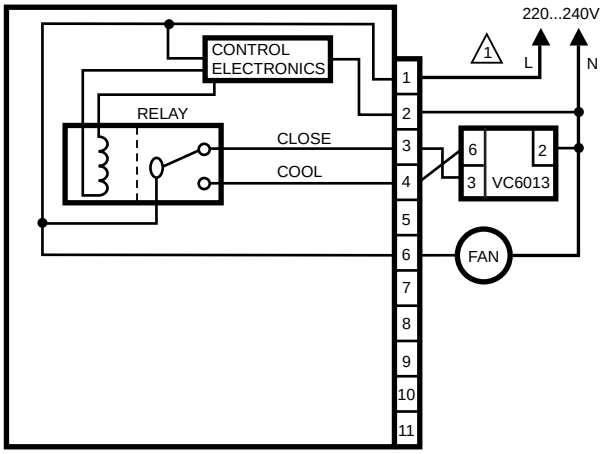


1 PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

M12084

Fig. 4. T6573A1023 cool-continuous on wiring diagram with 3-speed fan.

T6572A1016



1 PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

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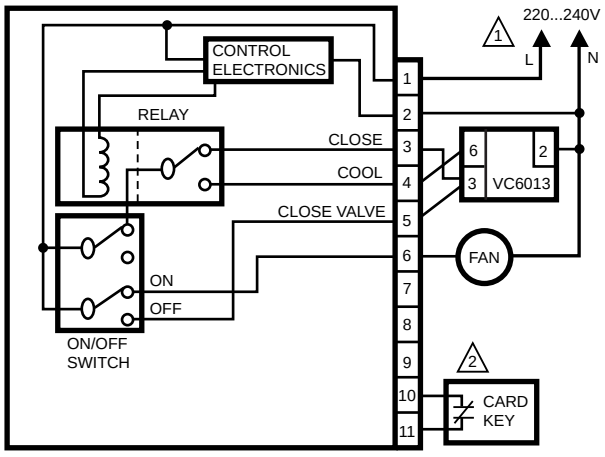
Fig. 5. T6572A1016 cool-continuous on wiring diagram with 1-speed fan.

T6572A1008 / T6572A1024



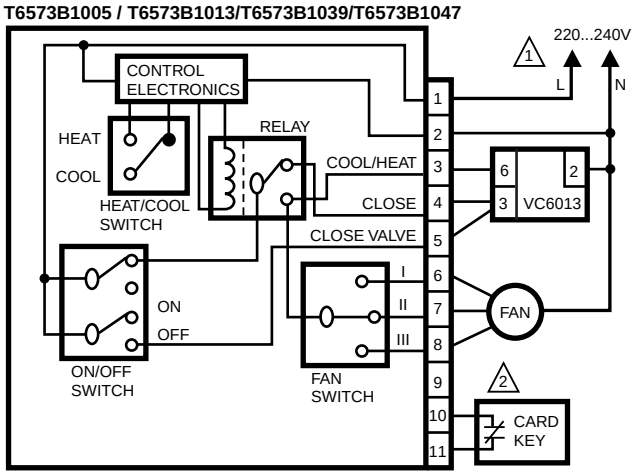
1 PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 CARD KEY PROVIDED ON T6572A1024. CONTACT CLOSURE AT TERMINALS 10, 11 RETURNS THERMOSTAT TO ENERGY SAVINGS SETTING.

M12086

Fig. 6. T6572A1008 and T657A1024 cool-off wiring diagram with 1-speed fan.

T6573B1005 / T6573B1013/T6573B1039/T6573B1047



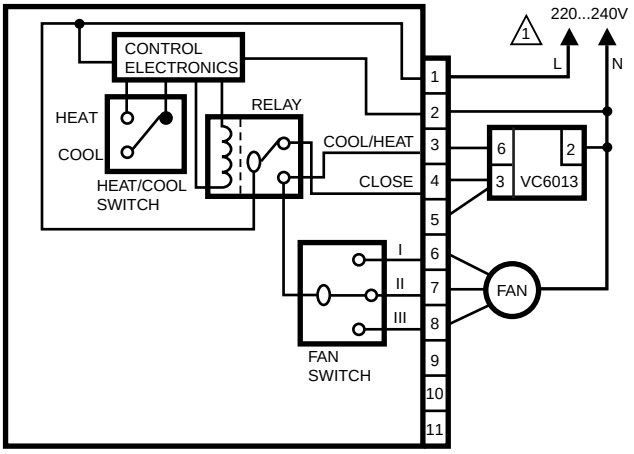
1 PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 CARD KEY PROVIDED ON T6573B1005 AND T6573B1039. CONTACT CLOSURE AT TERMINALS 10, 11 RETURNS THERMOSTAT TO ENERGY SAVINGS SETTING.

M12087

Fig. 7. T6573B1005 and T6573B1013 cool-heat-off wiring diagram with 3-speed cycled fan.

T6573B1021/T6573B1054

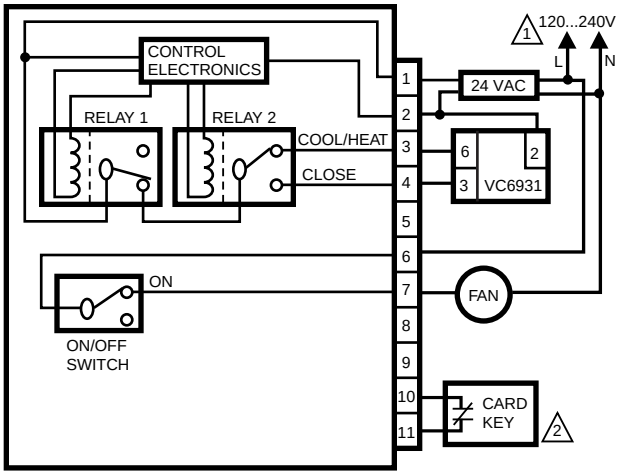


1 PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

M12088

Fig. 8. T6573B1021 cool-heat wiring diagram with 3-speed cycled fan.

T6992A



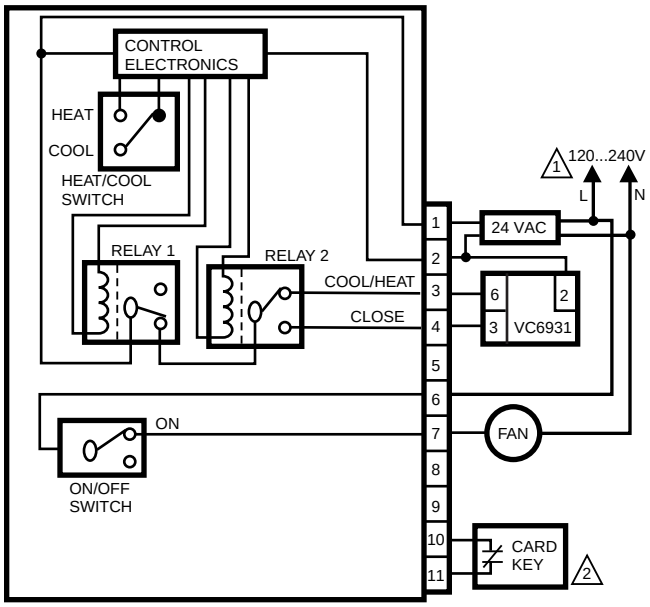
1 ALL WIRING MUST COMPLY WITH LOCAL WIRING AND ORDINANCES.

2 CARD KEY PROVIDED ON SOME MODELS. CONTACT CLOSURE AT TERMINALS 10, 11 RETURNS THERMOSTAT TO ENERGY SAVINGS SETTING.

M11378A

Fig. 9. T6992A1000 cool-off wiring diagram with 1-speed fan.

T6992B



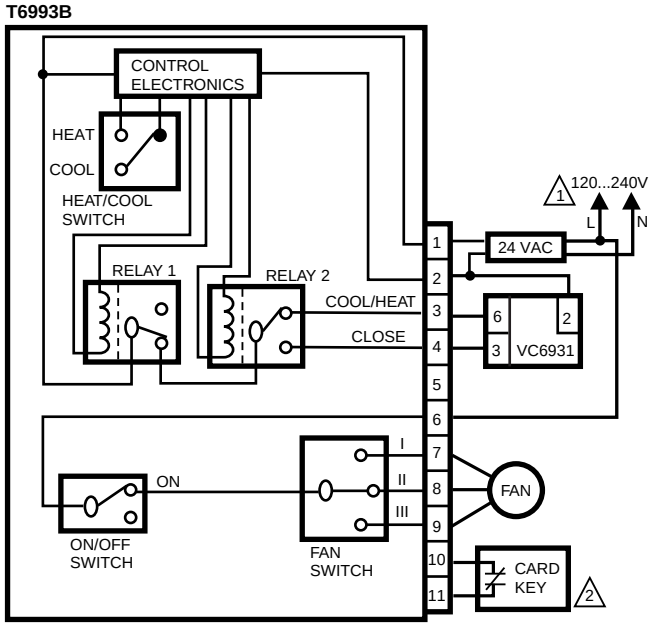
1 ALL WIRING MUST COMPLY WITH LOCAL WIRING AND ORDINANCES.

2 CARD KEY PROVIDED ON SOME MODELS. CONTACT CLOSURE AT TERMINALS 10, 11 RETURNS THERMOSTAT TO ENERGY SAVINGS SETTING.

M11380A

Fig. 10. T6992B1008 cool-heat-off wiring diagram with 1-speed fan.

T6993B



1 ALL WIRING MUST COMPLY WITH LOCAL WIRING AND ORDINANCES.

2 CARD KEY PROVIDED ON SOME MODELS. CONTACT CLOSURE AT TERMINALS 10, 11 RETURNS THERMOSTAT TO ENERGY SAVINGS SETTING.

M11379A

Fig. 11. T6993B1007 cool-heat-off wiring diagram with 3-speed fan.

OPERATION

Proportional Plus Integral Control

The XE88/XE100 Digital Fan-Coil Thermostats actually control closer to the setpoint than a conventional control, because the heat anticipator is replaced by proportional plus integral control.

Proportional plus integral action eliminates the difference between the temperature setting and effective control point by adjusting the on-time of the cooling output until the control point matches the setpoint. The XE88/XE100 Thermostats maintain the space temperature within 0.75ºC of the setpoint. This control performance accuracy provides improved occupant comfort and energy savings.

On/Off Models

These models are intended for use in 2-pipe fan-coil and 2-pipe compressor applications with line voltage actuators. These models provide on/off control. They have a fixed cycle rate of 4 cycles per hour (cph) at 50 percent load.

Series 60 Models

These models are intended for use in fan-coil applications with 24 Vac series 60 actuators. These models provide modulating control of valves or dampers. The 24 Vac series 60 actuator can have timings between 72 and 176 seconds. They have a fixed cycle rate of 4 cph at 50 percent load.

NOTE: The control algorithm is optimized for 176 seconds.

Switches

Fan Switch

(Low/Medium/High): Fan speed switch on three-speed models allows selection of three different settings. One-speed fan models with a system on/off switch can be switched off.

System Switch

O / I (Off/On): Fan-Coil equipment is powered off or on. When in the O position, terminal five is powered to close the VC6000 Valve (on/off models *only*).

Heat/Cool Switch

(Heat/Cool): Thermostat switches between heat setpoint and cool setpoint. Fan-coil equipment provides heating or cooling.

Settings

Temperature (Comfort) Setpoint

The temperature setpoint for desired room comfort can be adjusted between 10ºC and 30ºC by using the ▼ or ▲ keys. The temperature setpoint can be changed by pressing the ▲ key to increase the setpoint, or pressing the ▼ key to decrease the setpoint. The temperature setpoint indicated on the display is based on the [flame]/❄ (heat /cool) switch position.

Hotel Card Key Setting and Operation

The XE88/XE100 Thermostats accept an external card key input that overrides the temperature setting to a user/installer defined heating and cooling temperature for increased energy savings. The thermostat default operation is with the comfort setting. If a card key input is connected to terminals 10 and 11, the XE88/XE100 Thermostats control to the comfort (occupied) or energy saving (unoccupied) setting based on a contact closure.

Contact closure at terminals 10 and 11 results in control to the energy saving (unoccupied) setting as shown in Fig. 12.

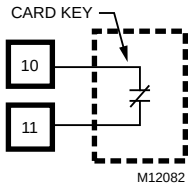


Fig. 12. Hotel card key input.

The default settings for both comfort and energy savings are shown in Table 2.

Table 2. Thermostat Default Settings.

System Operation	Comfort Setpoint	Energy Savings Setpoint
Heating	20ºC	18ºC
Cooling	23ºC	25ºC

The installer can adjust the energy saving settings between 18º and 30ºC. Settings are described in the Installer Setup Mode section.

Minimum Off-Time (T6572 and T6573 *only*)

The T6572 and T6573 provide minimum relay off-times for compressor short cycle protection. This prevents the relay from energizing the load for the installer selected time.

No minimum off-time is provided as the default setting (default time is zero minutes). The minimum off-time duration can be adjusted by the installer for 0, 3, 4, or 5 minutes. Adjustment is described in the Installer Setup Mode section.

Installer Setup Mode

Use the installer setup mode to make adjustments to the hotel card key input heating and cooling setpoints and the minimum off-time settings.

NOTE: When a parameter setting is changed and no additional entries are made for five seconds, the parameter (*c1*, *c2*, *c3*) is displayed again. If no activity is detected for another five seconds, the user is exited from the installer setup mode.

To enter the installer setup mode:

1. Press ▼ to change the temperature setpoint to 11ºC.
2. Wait until the room temperature is displayed.
3. Press ▼ ▲ simultaneously and hold approximately three seconds until *c–* is displayed.
4. Press ▼ to display *c1* to override the high setpoint for cooling.
5. Press ▼ ▲ simultaneously.
6. Press ▼ or ▲ to change the high setpoint.
7. Wait five seconds until *c1* is displayed.
8. Press ▲ to display *c2* to override the low setpoint for heating.
9. Press ▼ ▲ simultaneously.
10. Press ▼ or ▲ to change the low setpoint.
11. Wait five seconds until *c2* is displayed.
12. Press ▲ to display *c3* to change the minimum off-time.
13. Press ▼ ▲ simultaneously.
14. Press ▼ or ▲ to change the minimum off-time.

CHECKOUT

Cooling

⚠ CAUTION

Equipment Damage Hazard.
Improper operation can cause compressor damage.
Do not operate cooling if outdoor temperature is below 50ºF (10ºC). Refer to manufacturer recommendations.
To avoid compressor damage, allow the compressor to remain off for five minutes before restarting.

On models with cool-only, or heat ( ) and cool ( ):

1. If the device has a system switch, slide it to I on).
2. If the device has a heat/cool switch, slide it to ❄ (cool).
3. Press the ▼ key to lower the temperature setting several degrees below the room temperature. After approximately ten seconds, the cooling equipment should start.
4. Press the ▲ key to raise the temperature setting above the room temperature. The cooling system should shut down.

Heating

On models with heat ( ) and cool ( ):

1. If the device has a system switch, slide it to I on).
2. Slide the heat/cool switch to (heat).
3. Press and hold the ▲ key to raise the temperature setting several degrees above the room temperature. After approximately ten seconds, the heating equipment should start.
4. Press the ▼ key to lower the temperature setting below the room temperature. Heating equipment should stop.

Make certain all equipment responds to the thermostat.

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