⑦ TRADE PRO®

User Manual

Programmable Thermostats

TP-P-511 Single Stage Heat / Cool
Conventional and Heat Pump

TP-P-521 Up to 2 Heat / 1 Cool
Conventional and Heat Pump

*Model number is located on
back of thermostat*

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⚠ **Warning** *Turn off power to the heating or cooling equipment before installation.*

⚠ **Attention** *For installation by experienced service technicians only.*

Read all instructions before proceeding.

This thermostat requires 24 Volt AC Power or two (2) properly installed "AA" Alkaline batteries for proper operation. When connecting 24 Volt AC Power the batteries may be installed as a backup. Thermostat installation and all components of the system shall conform to Class II Circuits per NEC code.

For use only as described in this manual. Any other use will void warranty.

1 Specifications

This thermostat is compatible with:
• Single stage heat / cool conventional and heat pump systems
• Conventional systems up to 2 heat / 1 cool (TP-P-521)
• Single compressor heat pump systems with an auxiliary heat stage (TP-P-521)
• 250 – 750 millivolt heat only systems

Electrical and control specifications:
• Electrical Rating: 24 Volt AC
• 1 amp maximum load per terminal
• AC Power: 18 – 30 Volts AC
• DC Power: 3.0 Volt DC (2 "AA" Alkaline Batteries Included)
• Control Range: 45° – 90° F (7° – 32° C)
• Temperature Accuracy: +/- 1° F (+/- .5° C)

Terminations
• TP-P-511 – Rc, Rh, O, B, Y1, W1, G, C
• TP-P-521 – Rc, Rh, O, B, Y1, E/W1, G, W2, C

**TPP-100-01**

2 Installation

⚠️ **Warning**   *Disconnect power before beginning installation.*

Thermostat Location

Install the thermostat approximately 5 feet (1.5m) above the floor in an area that has a good amount of air circulation and maintains an average room temperature.

Avoid installation in locations where the thermostat can be affected by drafts, dead air spots, hot or cold air ducts, sunlight, appliances, concealed pipes, chimneys and outside walls.
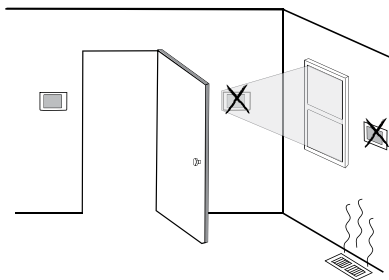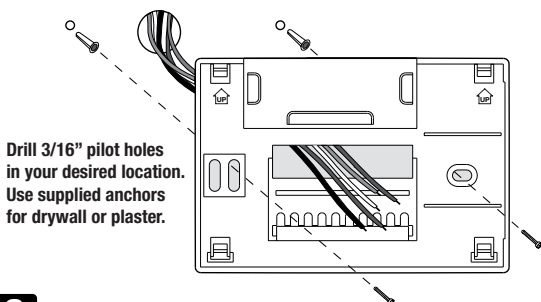

Install your new TRADEPRO® thermostat in 5 basic steps:

1 Install the Sub-Base
2 Provide Power
3 Connect Your Wires
4 Set Installer Switches
5 Attach Thermostat to Sub-Base

1 Install the Sub-Base:

- Remove the sub-base from the body of the thermostat.
- Mount the sub-base as shown below:

Drill 3/16" pilot holes in your desired location. Use supplied anchors for drywall or plaster.

2 Provide Power

- **For 24 Volt AC power**, you must connect the common side of the transformer to the C terminal on the thermostat sub-base.
- **For primary or back-up power**, insert the 2 supplied "AA" type alkaline batteries into the battery compartment located in the rear housing of the thermostat. Make sure to position the Positive (+) and Negative (-) sides of the batteries correctly with the +/- symbols in the battery compartment.

1

3 Connect Your Wires

Conventional Systems

Typical Wiring Configurations
NOTE: The "Installer Switch" option will be configured in the next step.

Heat Only or Millivolt
Set Installer Switch to CONV

Rh	Power Connection
W	Heat Relay (appears as **W1/E** on TP-P-521)
G	Fan Relay **[note 4]**
C	24 Volt AC Transformer Common **[note 1]**

1 HEAT / 1 COOL Single or Dual Transformer
Set Installer Switch to CONV

Rh	24 Volt AC Power (heating transformer) **[note 2]**
Rc	24 Volt AC Power (cooling transformer) **[note 2]**
W1	Heat Relay (appears as **W1/E** on TP-P-521)
Y1	Compressor Relay
G	Fan Relay
C	24 Volt AC Transformer Common **[note 1, 3]**

2 HEAT / 1 COOL Single or Dual Transformer (TP-P-521)
Set System Type to CONV

Rh	24 Volt AC Power (heating transformer) **[note 2]**
Rc	24 Volt AC Power (cooling transformer) **[note 2]**
W1	Heat Relay Stage 1
W2	Heat Relay Stage 2
Y1	Compressor Relay Stage 1
G	Fan Relay
C	24 Volt AC Transformer Common **[note 1, 3]**

NOTES - Conventional Systems
[1] If batteries are installed the 24 Volt AC common connection is optional
[2] Remove factory installed jumper for dual transformer systems
[3] In dual transformer systems, transformer common must come from cooling transformer
[4] If needed for system

Provide disconnect and overload protection as required.

Typical Wiring Configurations

NOTE: *The "Installer Switch" option will be configured in the next step.*

1 HEAT / 1 COOL - No Auxiliary Heat
*Set Installer Switch to **HP***

Rh	24 Volt AC Power
Rc	Connected to Rh with supplied Jumper Wire
O or B	Changeover Valve **[note 2]**
Y1	Compressor Relay
G	Fan Relay
C	24 Volt AC Transformer Common **[note 1]**

2 HEAT / 1 COOL - Including Auxiliary Heat (TP-P-521)
*Set Installer Switch to **HP***

Rh	24 Volt AC Power
Rc	Connected to Rh with supplied Jumper Wire
O or B	Changeover Valve **[note 2]**
Y1	Compressor Relay (1st stage heating/cooling)
W2	Auxiliary Heat Relay (2nd stage heating) **[note 3]**
E	Emergency Heat Relay **[note 3]**
G	Fan Relay
C	24 Volt AC Transformer Common **[note 1]**

NOTES - Heat Pump Systems
[1] If batteries are installed the 24 Volt AC common connection is optional.
[2] Select **O** for cool active or **B** for heat active.
[3] Install a field supplied jumper between the **W2** and **E** terminals if there is no separate emergency heat relay installed.

Provide disconnect and overload protection as required.

4 Set Installer Switches

The Installer switches are located on the back of the thermostat and must be properly configured for this thermostat to operate properly. The reset button must be pressed after making any changes to these switches.

Switch	Factory Default	Setting Options	Comments
CONV / HP	CONV	CONV	Select for conventional systems
		HP	Select for heat pump systems
F / C	F	F	Select for fahrenheit temperature scale
		C	Select for celsius temperature scale
HE / HG	HG	HG	Select for gas heat
		HE	Select for electric heat

5 Attach Thermostat to Sub-Base

1. Line up the thermostat body with the sub-base.
2. Carefully push the thermostat body against the sub-base until it snaps into place.
3. Insert quick reference card into slot on top of thermostat.

3 Setting User Options

Advanced User Options

User options allow you to customize some of your thermostat's features. Most users will not need to make any changes to the settings in this section.

To enter the User Options menu, hold down the RETURN button for approximately 3 seconds until the screen changes and displays the first User Option.

Press the ∧ or ∨ button to change the setting for the displayed User Option. After you have made your desired setting, press RETURN to advance to the next User Option.

The thermostat will return to normal mode after your last user option is made or after no keys have been pressed for 15 seconds.

Table of User Options

No.	User Options	Factory Default	Setting Options	Comments
1	1st stage differential	0.5	0.5, 1.0 or 2.0	Select a 1st stage temperature differential of .5˚, 1˚ or 2˚F (.2˚, .5˚ or 1˚C)
2	2nd stage differential (TP-P-521)	2.0	1.0, 2.0, 3.0, 4.0, 5.0 or 6.0	Select a 2nd stage temperature differential of 1˚, 2˚, 3˚, 4˚, 5˚ or 6˚F (.5˚, 1˚, 1.5˚, 2˚, 2.5˚ or 3˚C)
3	Extended Hold Period	LNG	LNG	Selects long (permanent) hold mode
			24HRS	Selects 24 hr. (temporary) hold mode
4	Filter Service Monitor	OFF	OFF	Disables filter service monitor feature
			30, 60, 90, 120, 180, 365	Selects a number of days before the thermostat will flash a Service Filter reminder in the display.
5	Adaptive Recovery Mode (ARM™)	OF REC	OF REC	Disables adaptive (early) recovery mode
			ON REC	Enables adaptive (early) recovery mode

4 Setting Your Program Schedule

Setting the Time and Day

1. In normal operating mode, press the **DAY/TIME** button. The display will switch to the day/time setting mode and the hour will be flashing.

2. Press ∧ or ∨ to adjust the hour. Press **DAY/TIME**.

3. Press ∧ or ∨ to adjust the minute. Press **DAY/TIME**.

4. Press ∧ or ∨ to adjust the day of the week. Press **RETURN** to exit.
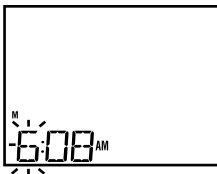
Tips Before Setting Your Program Schedule

• Make sure your current time and day of the week are set correctly.
• When programming, make sure the AM and PM indicators are correct.

This thermostat comes pre-programmed with a default energy saving program. The following table outlines the pre-programmed times and temperatures for heating and cooling in each of your 4 daily weekday and weekend events. If you wish to use these settings then no further programming is necessary:

Residential 5-2 Day Programming– Weekday/Weekend *Factory Settings*		
4 Event	**Weekday**	**Weekend**
MORN	Time: 6:00 am Heat: 70˚ F (21˚ C) Cool: 78˚ F (26˚ C)	Time: 6:00 am Heat: 70˚ F (21˚ C) Cool: 78˚ F (26˚ C)
DAY	Time: 8:00 am Heat: 62˚ F (17˚ C) Cool: 85˚ F (29˚ C)	Time: 8:00 am Heat: 62˚ F (17˚ C) Cool: 85˚ F (29˚ C)
EVE	Time: 6:00 pm Heat: 70˚ F (21˚ C) Cool: 78˚ F (26˚ C)	Time: 6:00 pm Heat: 70˚ F (21˚ C) Cool: 78˚ F (26˚ C)
NIGHT	Time: 10:00 pm Heat: 62˚ F (17˚ C) Cool: 82˚ F (28˚ C)	Time: 10:00 pm Heat: 62˚ F (17˚ C) Cool: 82˚ F (28˚ C)

Programming a 5-2 Day Residential Schedule

The 5-2 day residential programming mode allows you to program Monday - Friday with one 4 event schedule and then allows you to change Saturday and Sunday with a different 4 event schedule.

1. Press the **PROG** button. The display will switch to programming mode. The days M, TU, W, TH, and F will be displayed and the hour will be flashing.

2. Move the **SYSTEM** switch to either the HEAT or COOL position.

3. Press the ∧ or ∨ to adjust the hour for the MORN (morning) event. Press **PROG**.

4. Press ∧ or ∨ to adjust the minute for the MORN event. Press **PROG**.

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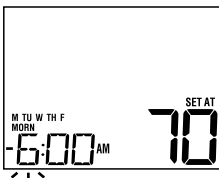
5. Press ∧ or ∨ to adjust the temperature for the MORN event. Press **PROG**.

6. Repeat steps 3-5 for the DAY, EVE and NIGHT events.

7. Repeat steps 3-6 for the weekend (S, SU) program.

8. If needed, repeat steps 2-7 to program the opposite mode (HEAT or COOL).

9. Press **RETURN** to exit.

5 Operating Your Thermostat

Setting the System Control Mode

The System Control has several modes of operation that can be selected by moving the SYSTEM switch to the appropriate position.

COOL Only your cooling system will operate

OFF Heating and cooling systems are off

HEAT Only your heating system will operate

Additional Switch Position (Model TP-P-521 Only):

EMER Operates a backup heat source
(Emergency Heat) for heat pump systems only.

NOTE: If your model TP-P-521 was configured for a conventional system (CONV) then you will not have the EMER (emergency heat) option and "NO EMER SET" will flash in the display if EMER is selected with the system switch.

Setting the Fan Control Mode

The Fan Control has 2 modes of operation – AUTO and ON. The mode can be selected by moving the FAN switch to the appropriate position.

AUTO The system fan will run only when your heating or cooling system is running

ON The system fan stays on

Temperature Adjustment

Temporary Adjustment – Press the ∧ or ∨ button to adjust the current set point temperature.

Extended Adjustment – Press the **HOLD** button so that HOLD appears in the display screen. Press ∧ or ∨ to adjust the current set temperature.

Status Indicators

Status indicators appear in the display to let you know if your system is heating, cooling or off.

HEAT ON Indicates that your heating system is running.

COOL ON Indicates that your cooling system is running.

SERVICE Indicates that a user selectable service reminder was selected.

Additional status indicators (Model TP-P-521 Only):

AUX Indicates that the auxiliary stage of heating is running (multi-stage systems only).

EMER Indicates that the emergency heating system is running (heat pump systems only).

6

Program Event Indicators

Program Event Indicators appear in the display to let you know what part of your current program is active. The 4 different program event indicators are MORN, DAY, EVE and NIGHT. When the program event indicator is flashing, your program has been temporarily bypassed and will resume at the next scheduled event. ***NOTE:*** *You will not see a program event indicator while in HOLD Mode.*

Resetting the Thermostat

This thermostat provides you with a reset button that will erase all of your user settings and 5-2 day programming. To reset the thermostat, use a small object such as a tooth pick or paperclip and gently press the button located inside the small hole on the front of the thermostat housing labeled "reset".

6 Additional Operation Features

Compressor Protection

This thermostat includes an automatic compressor protection delay to avoid potential damage to your system from short cycling. This feature activates a short delay after turning off the system compressor.

7 Thermostat Maintenance

Changing the Batteries

Depending on your particular installation, this thermostat may be equipped with two (2) "AA" type alkaline batteries. **If batteries are installed and they become low, a low battery indicator will appear in the display.** You should change your batteries immediately when you see the low battery signal by following these instructions.

1. Remove thermostat body by gently pulling it from base.
2. Remove old batteries and replace with new batteries.
3. Make sure to correctly position the (+) and (-) symbols.
4. Gently push thermostat body back onto base.

NOTE: *We recommend replacing the thermostat batteries annually or if the thermostat will be unattended for an extended period of time.*

Thermostat Cleaning

Never spray any liquid directly on the thermostat. Using a soft damp cloth wipe the outer body of the thermostat. Never use any abrasive cleansers to clean your thermostat.

Store this manual for future reference.

3 Year Limited Warranty