



Installation and Configuration

Trane Programmable Thermostat

1 Warnings, Cautions, and Notices

Read this manual thoroughly before operating or servicing this unit. Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

- WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
- CAUTION** Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe equipment or property-damage only accidents.
- NOTICE**

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs such as HCFCs and HFCs.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

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! SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

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! WARNING

Proper Field Wiring and Grounding Required!
Failure to follow code could result in death or serious injury. All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes.

! WARNING

Personal Protective Equipment Required!
Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards. Before installing/servicing this unit, technicians MUST put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. ALWAYS refer to appropriate SDS sheets and OSHA guidelines for proper PPE. When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations. If there is risk of arc or flash, technicians MUST put on all necessary Personal Protective Equipment (PPE) in accordance with NFPA70E for arc/flash protection. PRIOR to servicing the unit Failure to follow recommendations could result in death or serious injury.

! WARNING

Follow EHS Policies!
Failure to follow instructions below could result in death or serious injury.

- All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.
- Non-Trane personnel should always follow local regulations.

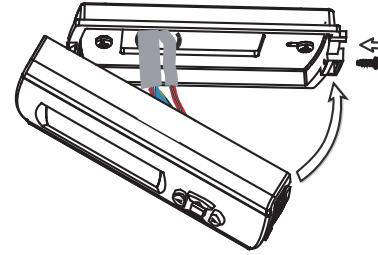
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Specifications

Input power:	24Vac, 50Hz or 60Hz (18Vac to 32Vac) Note: Power supply frequency selected using configuration option #190.
Wire size:	18 to 22 AWG
Output terminal Ratings:	1A @ 30Vac
Temperature display range:	Indoor: +15 to +122 °F (-9.5 to +50 °C) Outdoor: -31 to +122 °F (-35 to +50 °C)
Operating temperature:	+32 to +140 °F (0 to +60 °C)
Storage temperature:	-40 to +158 °F (-40 to +70 °C)

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3. Close enclosure. Install security screw.



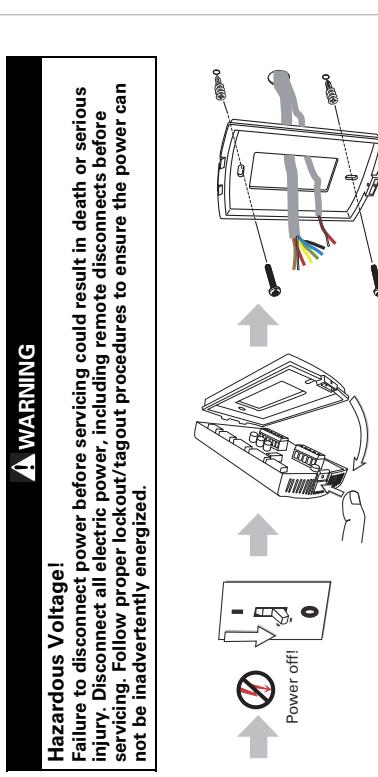
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4 Installation

! WARNING

Hazardous Voltage!
Failure to disconnect power before servicing could result in death or serious injury. Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized.

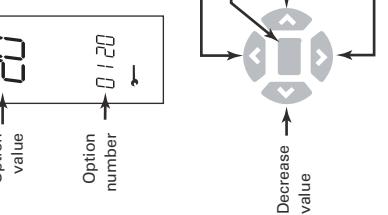


Configuration

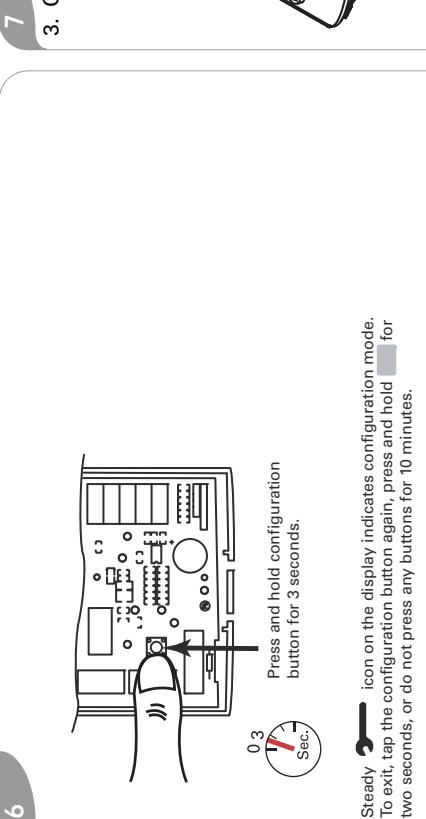
1. Enter configuration mode.

! WARNING
Live Electrical Components!
Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.
When it is necessary to work with live electrical components, have a qualified licensed electrician or other individuals who has been properly trained in handling live electrical components perform these tasks.

2. Scroll to option numbers and select values as needed (see Table 1). Any changes you make are saved when you exit configuration mode.

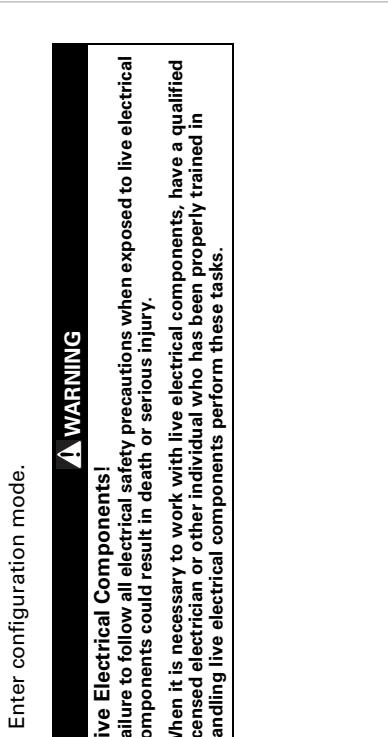


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2. Scroll to option numbers and select values as needed (see Table 1). Any changes you make are saved when you exit configuration mode.



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3. Close enclosure. Install security screw.



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4 Installation

! WARNING

Common
Fan Relay
Stage 1 Compressor Control
Heat Relay (Changeover Valve)^(a)
24Vac Cooling
Second Stage Heat (Aux Heat)^(a)
Stage 2 Compressor Control
Economizer
External Sensor
External Sensor

^(a) Text in (parentheses) applies to heat pump systems.
^(b) R_c and R are shipped with jumper. Remove jumper if heating and cooling 24Vac supplies are separate.

Table 1. Installation options**Table 1.** Installation options (continued)

No.	Name	Default	Values/Descriptions	Default	Values/Descriptions
0100	Temperature indication/resolution	0	0°F, 1 degree resolution 1°F, 0.5 degree resolution 2°C, 1 degree resolution	3°C with 0.5° degree resolution 4°C with 0.1° degree resolution	
0110	Clock format	12	12 hour clock	24 hour clock	Only available for heat pump systems with more heat than cool stages and remote outdoor sensor. A 5 °F (2.5 °C) dead band between options #0220 and #0221 will be enforced automatically.
0120	Year	09	09-99	2009-2099	
0121	Month	1	1 - 12		
0122	Day	1	1 - 31		
0125	Daylight savings	2	Disabled		
0126	Spring month	03	01-12	Spring and Fall daylight savings months and days. (These options are available if option #0125 is set to 4).	
0127	Spring day	08	01-31		
0128	Fall month	11	01-12		
0129	Fall day	08	01-31		
0130	System selection	8	1	1H/1C (conv) 1st Stage Heat (W), 1st Stage Comp (Y), Fan (G) 2 1H/1C (HP) 1st Stage Comp (Y), Changeover (O/B), Fan (S) 3 1H (Conv) 1st Stage Heat (W), without fan 4 1H (Conv) 1st Stage Heat (W), Fan (G) 5 1C (Conv) 1st Stage Comp (Y), Fan (G) 6 2H/1C (HP) 1st Stage Comp (Y), Changeover (O/B), Auxiliary Heat (W1), Fan (G) 7 2H/2C (Conv) 1st & 2nd Stage Heat (W,W2), 1st & 2nd Stage Comp (Y,Y2), Fan (G) 8 2H/1C (Conv) 1st & 2nd Stage Heat (W,W2), 1st Stage Comp (Y), Fan (G) 9 1H/2C (Conv) 1st Stage Heat (W), 1st & 2nd Stage Comp (Y,Y2), Fan (G) 10 2H/2C (HP) 1st & 2nd Stage Comp (Y,Y2), Changeover (O/B), Fan (G) 11 3H/2C (HP) 1st & 2nd Stage Comp (Y,Y2), Changeover (O/B), Auxiliary Heat (W1), Fan (G)	
0140	Schedule Options	1	0	Non-programmable Programmable	
0150	TOD/Economizer output (terminal A)	0	Unused	1 TOD energizes terminal A during occupied period, not during unoccupied period. 2 Economizer energizes terminal A during a call for cool.	
0151	Heat fan operation	0	0	System controls fan Thermostat control fan	
0153	Reversing value O/B	0	0	O/B terminal energized in cooling 1 O/B terminal energized in heating	1 day, Mo-Su all days share the same schedule. 1 5+1 days. Mo-Fr share a schedule. Sa and Su each have an independent schedule. 2 5+2 days. Mo-Fr share a schedule. Sa and Su share a schedule
0160	CPH 1st stage compressor	3	1-5	Cycles per hour for 1st stage compressor. Only for systems with cool or heat pump stage. Also changes 2nd stage cool default CPH.	3 7 days. Each day has an independent schedule.
0161	CPH 2nd stage compressor	3	1-5	Cycles per hour for 2nd stage compressor. Only for systems with 2 cool or heat pump stages.	3 7 days. Each day has an independent schedule.
0162	CPH 1st stage conventional heat	5	1-10	Cycles per hour for 1st stage conventional heat. Only for systems with heat stages. Changes 2nd stage heat default CPH.	4-32 4°C to 32°C (Only applies to systems with cool stages)
0163	CPH 2nd stage conventional heat	9	1-10	Cycles per hour for 2nd stage conventional heat. Only for systems with two conventional heat stages.	10-37 4°C to 32°C (Only applies to systems with cool stages)
0164	CPH for auxiliary heat	9	1-10	Cycles per hour for auxiliary heat. Only for heat pump systems with more heat than cool stages.	0-3 -3°F (-1.5°C) 1 1°F (0.5°C)
0165	CPH for emergency heat	9	1-10	Cycles per hour for emergency heat. Only for heat pump systems with more heat than cool stages.	-2 -2°F (-1.0°C) 2 2°F (1.0°C) -1 -1°F (-0.5°C) 3 3°F (1.5°C)
0170	Continuous backlight	0	0	Backlight turns off after 8 seconds.	0 None
0180	Changeover	1	1	Backlight does not turn off	Applies only to control temperature and display temperature for internal and indoor remote sensor. Does not apply to outdoor temperature for display.
0181	Deadband	3	2	Manual changeover Automatic changeover	0-90 40°F to 90°F (Only available when option #0151 is set to 1)
0182	Minimum comp off time (for systems with cool stage)	5	0	Off (no minimum) 1 minute 2 minute 3 minute	0 Off 90 seconds (Only available on systems with cool stages, see option #0130)
0190	Power supply frequency	0	0	60Hz	1 50Hz
0210	Temperature sensor selection	0	0	Internal for H/C; display can show only local temperature and setpoint.	Trane - by Trane Technologies (NYSE: TT), a global climate innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or tranetechnologies.com .
0220	Heat pump compressor lockout point	0	0	0 None 15°F (-9.5°C) 20°F (-6.5°C) 25°F (-4.0°C)	1 Internal for H/C, remote (connected to S1 & S2) for display; display can show local and remote temperature, and setpoint. 2 Internal for H/C, remote (connected to S1 & S2) for compressor and auxiliary lockout; display can show local and remote temperature, and setpoint. (Disabled for conventional systems) 3 Remote (connected to S1 & S2) for H/C, internal disabled; display can show remote indoor temperature and setpoint.
0221	Heat pump aux lockout point	0	0	0 None 50°F (10.0°C) 40°F (4.5°C) 45°F (7.0°C)	
0230	Temp occupied duration limit	3	0	0 hours 1 hour 2 hours	3 3 hours 4 4 hours
0231	For TOV override. When Setting 0 Hours, TOV Function Still Available.	Number of periods	2	2 Two scheduling periods per day	
0232	Period occupied/unoccupied definitions	4	4 Four scheduling periods per day	If option #0231 is set to 2 Day, Night UnOcc, UnOcc, UnOcc, UnOcc 1 UnOcc, Occ 2 UnOcc, UnOcc 3 UnOcc, Occ 4 Occ, UnOcc 5 Occ, Occ 6 Occ, UnOcc 7 Occ, Occ 8 UnOcc, UnOcc 9 UnOcc, Occ 10 UnOcc, UnOcc 11 UnOcc, Occ 12 Occ, UnOcc 13 Occ, Occ 14 Occ, UnOcc 15 Occ, Occ	If option #0231 is set to 4 Morn, Day, Evening, Night UnOcc, UnOcc, UnOcc, UnOcc 1 UnOcc, Occ 2 UnOcc, UnOcc 3 UnOcc, Occ 4 Occ, UnOcc 5 UnOcc, Occ, UnOcc, Occ 6 UnOcc, Occ, UnOcc 7 UnOcc, Occ, Occ 8 UnOcc, UnOcc, UnOcc 9 Occ, UnOcc, UnOcc 10 Occ, UnOcc, Occ, UnOcc 11 Occ, UnOcc, Occ, Occ 12 Occ, Occ, UnOcc, UnOcc 13 Occ, Occ 14 Occ, Occ, UnOcc 15 Occ, Occ, Occ
0240	Scheduling mode day options	0	0	1 day, Mo-Su all days share the same schedule. 1 5+1 days. Mo-Fr share a schedule. Sa and Su each have an independent schedule. 2 5+2 days. Mo-Fr share a schedule. Sa and Su share a schedule	
0241	Cool temperature range stops	50	50-99	40°F to 90°F (Only applies to systems with cool stages)	3 7 days. Each day has an independent schedule.
0240	Heat temperature range stops	90	40-90	40°F to 90°F (Only applies to systems with heat stages)	
0240	Temperature display offset	0	-3	-3°F (-1.5°C) 1 1°F (0.5°C)	
0240	Temperature display offset	0	-2	-2°F (-1.0°C) 2 2°F (1.0°C)	
0240	Temperature display offset	0	-1	-1°F (-0.5°C) 3 3°F (1.5°C)	
0270	Extended fan-on time heat	0	0	Off 90 seconds (Only available when option #0151 is set to 1)	
0271	Extended fan-on time cool	0	0	Off 40 seconds (Only available on systems with cool stages, see option #0130)	
0300	Restore factory defaults	0	0	No - do not restore 1 Yes - reset all installer options to default except calendar, and system selection. (Options 0120, 0121, 0122, 0130 do not reset.)	