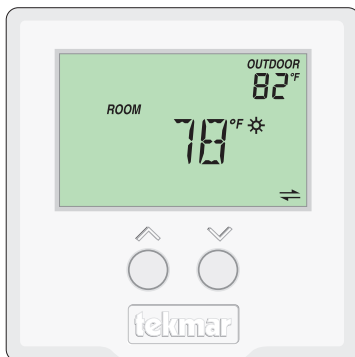


Installation & Operation Manual

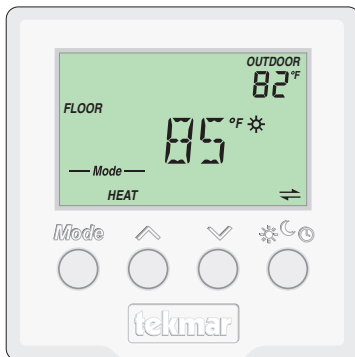
Introduction

This Installation and Operation Manual includes detailed wiring instructions, settings and operational features of the tekmarNet[®]2 Thermostats 527, 528 and 530. These 2-wire thermostats are part of a complete tekmarNet[®] system.



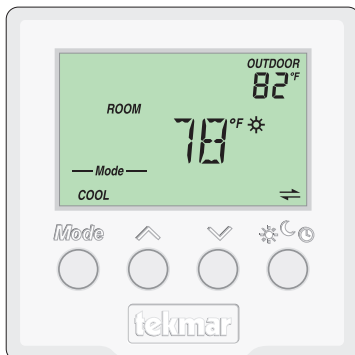
Thermostat 527

- One Stage Heat
- Cooling Group Member
- Dual Temperature Display
- Simple Temperature Adjustment



Thermostat 528

- One Stage Heat
- Cooling Group Member
- Auxiliary Sensor Input
- Floor Minimum & Maximum
- Dual Temperature Display
- Local Override Button



Thermostat 530

- One-Stage Heat
- One Stage Cool
- Fan Operation
- Cooling Group Master
- Dual Temperature Display
- Local Override Button

Features

- tekmarNet[®] communications compatibility
- Simple 2-wire connectivity
- Schedule member
- Optimum start
- Scenes
- Outdoor temperature display
- Freeze protection
- Cooling groups
- Exercising
- Zone synchronization
- Large LCD with backlight
- CSA C US approved for use in USA and Canada

Benefits

- Energy savings
- Reduced temperature swings
- Suitable for 2-wire retrofits
- Compatible with tekmarNet Timers, User Switches and Gateway for additional control options
- Interlock to prevent simultaneous heating & cooling

Note

- tN2 Zone Manager, Expansion Module Wiring Center or House Control required for operation

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Caution

Improper installation and operation of this control could result in damage to the equipment and possibly even personal injury or death. It is your responsibility to ensure that this control is safely installed according to all applicable codes and standards. This electronic control is not intended for uses as a primary limit control. Other controls that are intended and certified as safety limits

must be placed into the control circuit. Do not attempt to service the control. Refer to qualified personnel for servicing. Apart from any field replaceable fuse(s) there are no user serviceable parts. Attempting to do so voids warranty and could result in damage to the equipment and possibly even personal injury or death.

Definitions

The following defined terms and symbols are used throughout this manual to bring attention to the presence of hazards of various risk levels, or to important information concerning the life of the product.



– Caution: Refer to accompanying documents



– Caution: Refer to accompanying documents

**INSTALLATION
CATEGORY II**

– Local level appliances

Electrical Drawings

The electrical drawing examples contained in this brochure show tN2 thermostats in common applications. Choose the drawing that most accurately depicts the components in your system and use that drawing as a guide to aid in wiring your system.

These are only concept drawings, not engineered drawings. They are not intended to describe a complete system nor any particular system. It is up to the system designer to determine the necessary components for and configuration of the particular system being designed including additional equipment isolation relays (for loads greater than the controls specified output ratings) and any safety devices which in the judgement of the designer are appropriate in order to properly size, configure and design that system and to ensure compliance with building and safety code requirements.

Powering the Zone Manager

An approved circuit breaker or power disconnect that de-energizes the high voltage wiring should be located near the Zone Manager, and marked as the 115 V (ac) power disconnect for this device.

Rough-In Wiring

Choose the placement of the thermostats early in the construction process to enable proper wiring during rough-in.

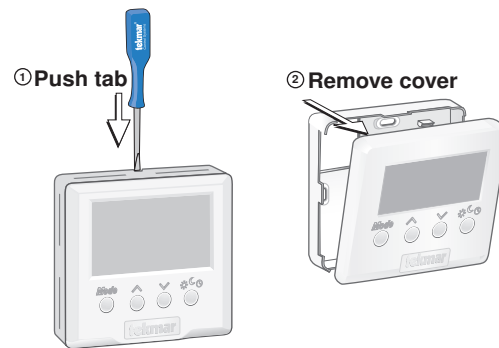
Consider the following:

- Interior Wall.
 - Keep dry. Avoid potential leakage onto the control.
 - Relative Humidity max 80% up to 88°F (31°C) decreasing linearly to 50% RH at 104°F (40°C). Non-condensing environment.
 - No exposure to extreme temperatures beyond 36-122°F (2-50°C).
- No draft, direct sun, or other cause for inaccurate temperature readings.
 - Away from equipment, appliances, or other sources of electrical interference.
 - Easy access for wiring, viewing, and adjusting the display screen.
 - Approximately 5 ft. (1.5 m) off the finished floor.
 - The maximum length of wire is 1000 feet (300 m).
 - Strip wire to 3/8" (10mm) for all terminal connections.
 - Use standard 18 AWG wire for the tN2 connections.

Removing the Wiring Cover

To remove the wiring cover:

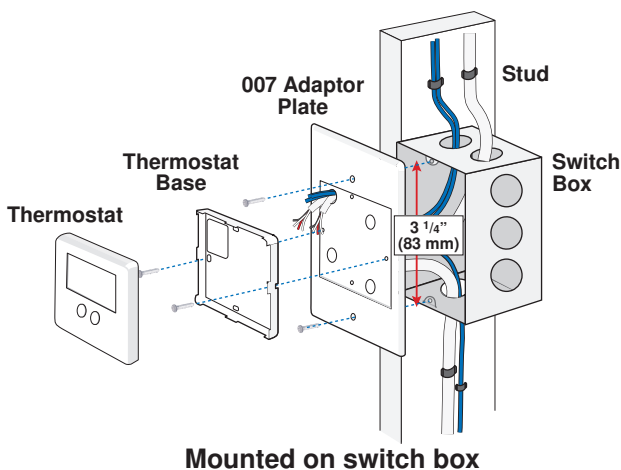
- Place a small slot screwdriver or similar tool into the slot located on the top of the thermostat.
- While pushing down against the plastic tab, pull the top of the front cover so that it pivots around the bottom edge of the thermostat's base.



Mounting the Thermostat

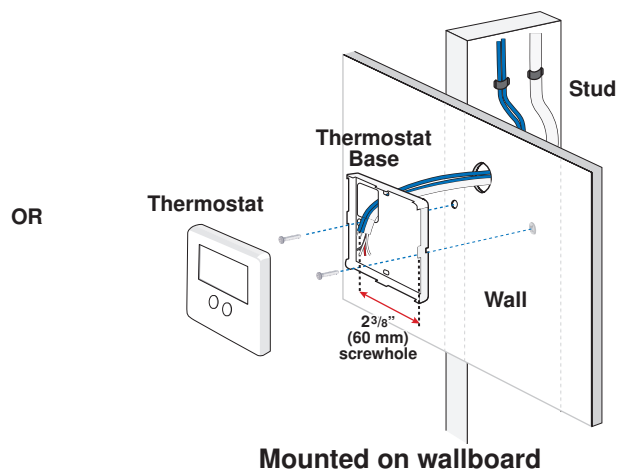
If a single gang switch box is used, an Adaptor Plate 007 is required to mount the thermostat to the box.

- Fasten the base of the thermostat to the adaptor plate.
- Feed the wiring through the openings in the back of the adaptor plate and thermostat.
- Use the upper and lower screw holes to fasten the adaptor plate to the box.



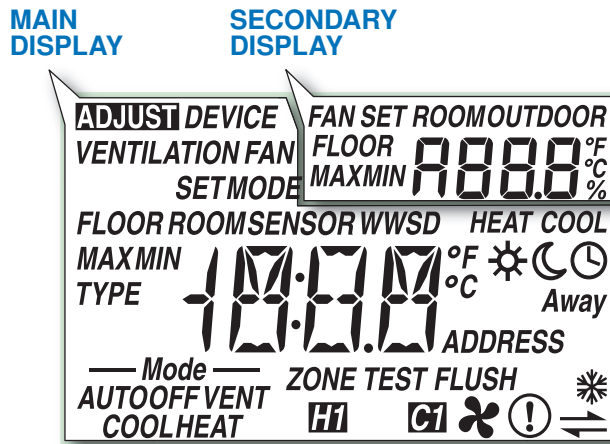
If a switch box was not used, mount the thermostat directly to the wall.

- Feed the wiring through the openings in the back of the thermostat.
- Use screws in the screw holes to fasten the thermostat to the wall. At least one of the screws should enter a wall stud or similar rigid material.



Thermostat Displays

This display shows all potential symbols that may show up on your thermostat. They will be referred to throughout this manual, so it is a good idea to become familiar with those that are applicable to your thermostat model (527, 528 or 530).



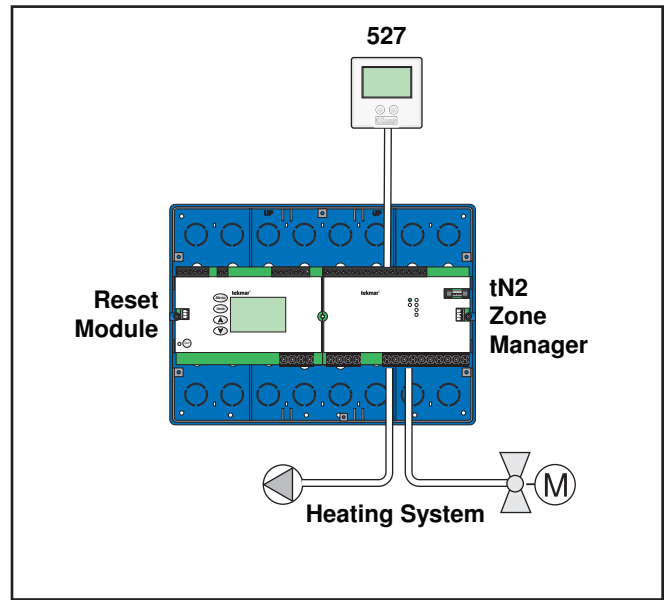
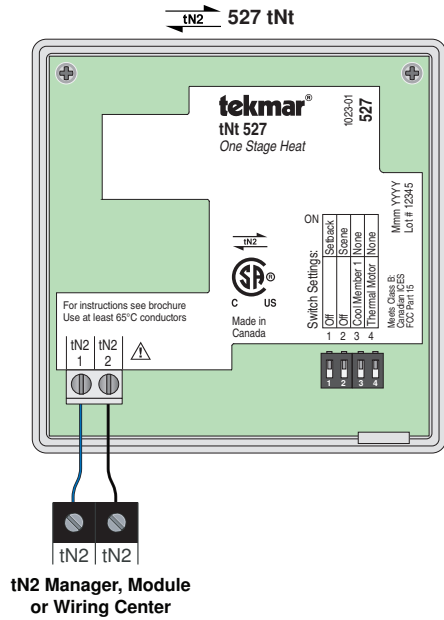
Symbols Description

	HEAT Heat is turned on.		WARM WEATHER SHUT DOWN The heating system has been shut off for the summer.
	COOL Cooling is turned on. (Only on 530.)		COOL GROUP MASTER Thermostat operates the cooling for a group of thermostats. (Only on 530.)
	FAN Fan is turned on. (Only on 530.)		COOL GROUP The cooling group is cooling. Heating can only start once cooling is finished. (Only on 527 and 528.)
	SUN Operating at the occupied (day) temperature.		tekmarNet® COMMUNICATION Communication is present.
	MOON Operating at the unoccupied (night) temperature.		WARNING SYMBOL Indicates an error is present. Refer to Troubleshooting Guide at the back of this manual.
	CLOCK Operating on a programmable schedule.		
Away	AWAY Operating at the <i>Away</i> scene temperature.		

527 Thermostat

Wiring

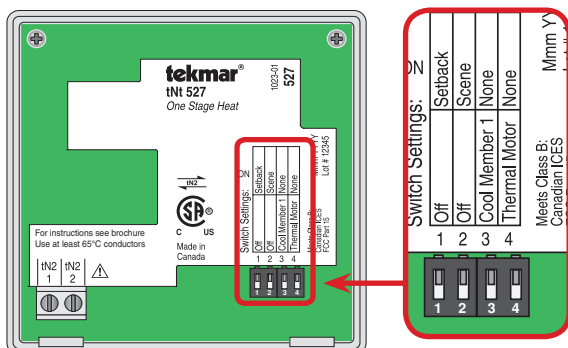
The Thermostat 527 operates a single hydronic heating system zone.



DIP Switch Settings

These DIP switches are located on the inside of the thermostat cover. They are shipped “On” from the factory, and will not have to be adjusted for most applications.

Switch	Position	Action	Switch	Position	Action
1	ON	Setback Thermostat will follow a schedule device if one is present on the system. (Schedule #1 only).	3	ON	None Thermostat is not part of a cooling group.
	OFF	OFF Thermostat does not follow a schedule.		OFF	Cool Member 1 Thermostat joins as a member of cooling group number 1.
2	ON	Scene The thermostat responds to Scene changes (see “Scenes”, Page 20).	4	ON	None Thermostat operates a motorized zone valve or zone pump.
	OFF	OFF Thermostat will not respond to Scenes.		OFF	Thermal Motor Thermostat operates a thermal motor (wax actuator) zone valve.



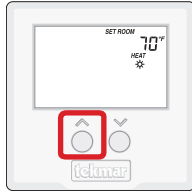
Thermostat 527 DIP Switches

527 Thermostat

Button Operation

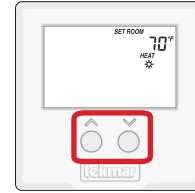
^ Button

The ^ button raises the Set Room temperature.



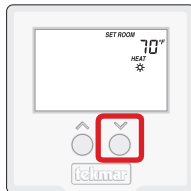
^ and v Buttons

Press the ^ and v buttons at the same time to view additional settings.



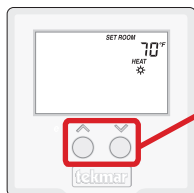
v Button

The v button lowers the Set Room temperature.



Setting the Temperature

Room Temperature



Use the ^ or v button to adjust temperature.

Press the ^ or the v button to select the desired temperature for the current operating temperature.

The temperature range is from 40°F (4.5°C) to 85°F (29.5°C).

Programmable Schedule

When operating on a programmable schedule, a ☉ symbol is shown, as well as a ⌘ or a ☾. The ⌘ or ☾ indicates the current operating temperature.

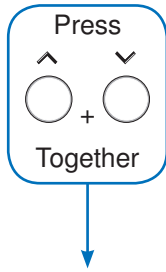
If a ☉ symbol does not appear, there is no schedule available. Schedules are provided by tekmarNet® Timers or Thermostats that are connected to the Zone Manager, Expansion Module or Wiring Center.

The Away temperature cannot be changed

527 Thermostat

User Settings (1 of 1)

To change settings other than the current temperature, use the following steps:



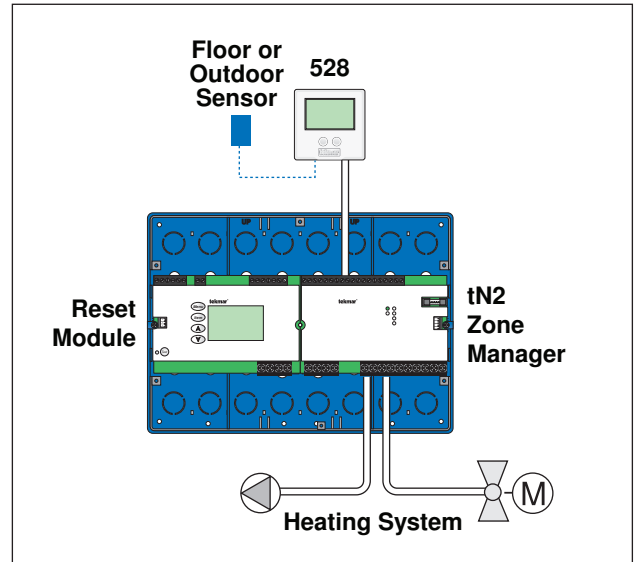
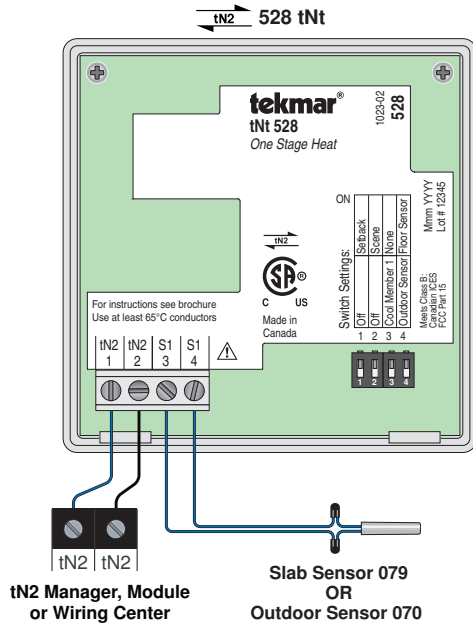
- Press and hold down both the \wedge and \vee buttons to change from one step to the next. While holding both buttons down, a new setting will display every 5 seconds.
- Release both buttons once the step has been reached.
- Press the \wedge or the \vee button to change the setting, if available.
- Press and hold down both the \wedge and \vee buttons for 5 seconds to go to the next step, OR
- After 10 seconds of no button activity, the display goes back to normal operation.

Display		Description						
	STEP 1 Change the Non-current Temperature	After pressing the \wedge and \vee buttons simultaneously, the non-current temperature setting will show on the display. Press the \wedge or \vee button to change the non-current temperature. <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="background-color: #0056b3; color: white;">Current Temperature</th> <th style="background-color: #0056b3; color: white;">Non-current Temperature</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table> The Away temperature is fixed at 62°F and is not adjustable. Note: If switch setting 1 (setback) and switch setting 2 (scenes) are both off, then the non-current temperature adjustment is not available.	Current Temperature	Non-current Temperature				
Current Temperature	Non-current Temperature							
	STEP 2 °F or °C	Press the \wedge or the \vee button to change from °F to °C and vice versa.						
	STEP 3 Backlight Off, 30 sec, On	Press the \wedge or the \vee button to select the backlight to permanent Off, 30 second temporary on, or permanent On.						
	STEP 4 Auto cycle or Synchronization	Press the \wedge or the \vee button to select between Auto cycles or Synchronization. Available when: <ul style="list-style-type: none"> • There is no tekmarNet® System Control on the system. 						
	STEP 5 View Type and Software Version	The large number shows the type number as 527. The software version is shown in the upper right hand corner.						
	STEP 6 View tekmarNet® Address	The thermostat's tekmarNet® address is shown. The address toggles between a number and "Au" when using automatic addressing.						
	STEP 7 Manually Change tekmarNet® Address	Press the \wedge or the \vee button to manually select an address. The address can be returned to automatic "Au" between addresses 24 and 1. Ensure to document the address number when manually addressing thermostats.						

528 Thermostat

Description

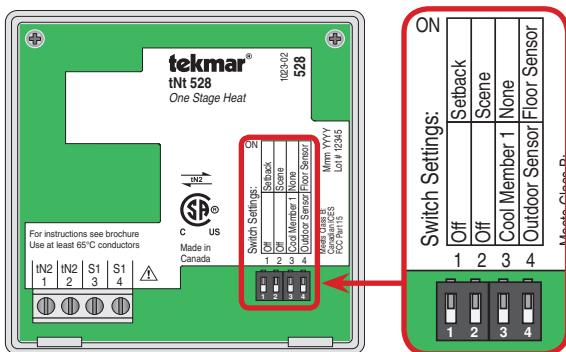
The thermostat 528 operates a single hydronic heating zone. It can be equipped with an optional outdoor sensor or floor sensor using the sensor input.



DIP Switch Settings

These DIP switches are located on the inside of the thermostat cover. They are shipped “On” from the factory, and will not have to be adjusted for most applications.

Switch	Position	Action	Switch	Position	Action
1	ON	Setback Thermostat will follow a schedule device if one is present on the system. (Can follow Schedules 1 through 4.)	3	ON	None Thermostat is not part of a cooling group.
	OFF	OFF Thermostat does not follow a schedule.		OFF	Cool Member 1 Thermostat joins as a member of cooling group number 1.
2	ON	Scene The thermostat responds to Scene changes (see “Scenes”, Page 20).	4	ON	Floor Sensor Auxiliary sensor input configured for floor sensing.
	OFF	OFF Thermostat will not respond to Scenes.		OFF	Outdoor Sensor Auxiliary sensor input configured for outdoor air sensing.



Thermostat 528 DIP Switches

528 Thermostat

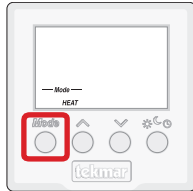
Button Operation

Mode Button

The Mode button selects between Heat and Off.

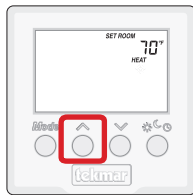
When in Heat Mode the heating system operates to maintain the Set Room or Floor temperature.

When in Off Mode the heating is shut off except for freeze protection.



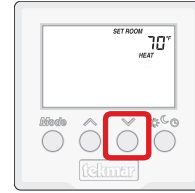
^ Button

The ^ button raises the Set Room or Floor temperature.



∨ Button

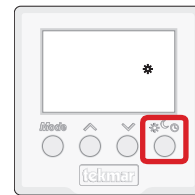
The ∨ button lowers the Set Room or Floor temperature.



☀☾🕒 Button - Local Override

The Local Override (☀☾🕒) button changes between the local override temperatures.

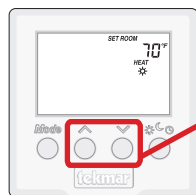
The option is Occupied (☀), Unoccupied (☾), or follow the programmable schedule 🕒.



Setting the Temperature

Room Temperature

Press the ^ or the ∨ button to select the room temperature. The display indicates whether the "HEAT" or the "COOL" temperature is being changed.



Use the ^ or ∨ button to adjust temperature.

If in Auto mode, press the Mode button to toggle between Heat or Cool temperature adjustment.

Programmable Schedule

When operating on a programmable schedule, a 🕒 symbol is shown, as well as a ☀ or a ☾. The ☀ or ☾ indicates the current operating temperature.

Press the Local Override (☀☾🕒) button to select the 🕒 to operate on a programmable schedule.

If a 🕒 symbol does not appear, there is no schedule available. Schedules are provided by tekmarNet® Timers or Thermostats that are connected to the Zone Manager, Expansion Module or Wiring Center.

Scenes (System Override)

When using scenes, there are three temperature settings: ☀, ☾, Away. The scene takes precedence over any local overrides or any programmable schedules.

While in the Away scene, the room temperature cannot be changed using the ^ or ∨ buttons. Change the scene from Away to ☀ or ☾ to change the temperature.

While in the ☾ or Away scene and the ☀☾🕒 button is pressed, the ☾ or Away icon will flash. Scene 1 (☀ or ☀🕒 or ☾🕒) must be activated before the thermostat responds to the ☀☾🕒 button.

Scene	Display
1	☀ or ☀🕒 or ☾ or ☾🕒
2	Away
3	☾





528 Thermostat

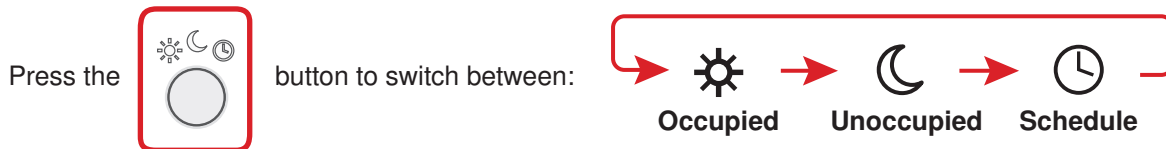
Setting the Temperature (continued)

Local Override

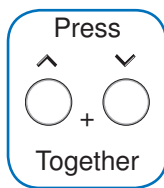
The Local Override (*☾🕒) button can be used to override any schedule. Press and release the *☾🕒 button to toggle between *, ☾, and 🕒 (if available).







The thermostat remains at the selected * or ☾ override temperature until manually changed back to the schedule.

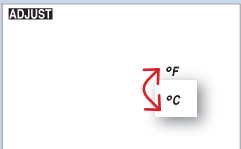










Display	Action
	Manual override at occupied temperature.
	Manual override at unoccupied temperature.
	Programmable schedule at occupied temperature.
	Programmable schedule at unoccupied temperature.



User Settings (1 of 1)

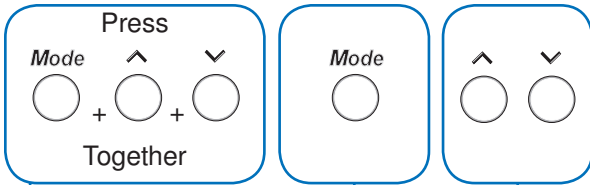


- Press and hold down both the  and  buttons to change from one step to the next. While holding both buttons down, a new setting will display every 5 seconds.
- Release both buttons once the step has been reached.
- Press the  or the  button to change the setting, if available.
- Press and hold down both the  and  buttons for 5 seconds to go to the next step, OR
- After 10 seconds of no button activity, the display goes back to normal operation.

Display		Description
	STEP 1 °F or °C	Press the  or the  button to change from °F to °C and vice versa.
	STEP 2 Backlight Off, 30 sec, On	Press the  or the  button to select the backlight to permanent Off, 30 second temporary on, or permanent On.
	STEP 3 View Type and Software Version	The large number shows the type number as 530. The software version is shown in the upper right hand corner.
	STEP 4 View tekmarNet® Address	The thermostat's tekmarNet® address is shown. The address toggles between a number and "Au" when using automatic addressing.
	STEP 5 Manually Change tekmarNet® Address	Press the  or the  button to manually select an address. The address can be returned to automatic "Au" between addresses 24 and 1. Ensure to document the address number when manually addressing thermostats.

528 Thermostat

Adjust Menu (1 of 2) *for installer use only



These settings are intended for use by the installer only and are not required for use by average users of the thermostat.

- Press and release the **Mode**, **^**, and **v** buttons together.
- Press and release the Mode button to go to the next setting.
- Once all settings are complete, wait 20 seconds for the thermostat to return to normal operation.

ADJUST MENU

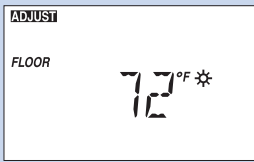
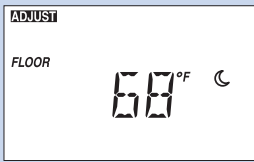
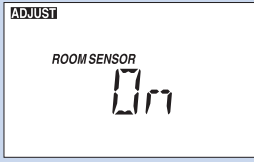


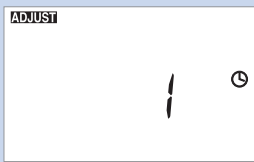
Display	Range	Description
	40 to 85°F (4.5 to 29.5°C) Default = 70°F (21.0°C)	SET ROOM HEAT * Set the room heating temperature while in the * event.
	40 to 85°F (4.5 to 29.5°C) Default = 65°F (18.5°C)	SET ROOM HEAT ☾ Set the room heating temperature while in the ☾ event.
	40 to 85°F (4.5 to 29.5°C) Default = 62°F (16.5°C)	SET ROOM HEAT AWAY Set the room heating temperature while in the Away scene.
	OFF, 40 to 85°F (OFF, 4.5 to 29.5°C) Default = 72°F (22.0°C)	SET FLOOR MINIMUM * Set the floor minimum temperature while in the * event. The floor minimum heats the floor even when the room temperature is satisfied. The measured floor temperature is shown in the upper right hand corner of the display. Available when: <ul style="list-style-type: none"> • Room Sensor setting in the Adjust menu is set to On AND • A slab sensor is installed on the auxiliary sensor input AND • Switch setting 4 is set to Floor (On position).
	OFF, 40 to 85°F (OFF, 4.5 to 29.5°C) Default = 68°F (20.0°C)	SET FLOOR MINIMUM ☾ Set the floor minimum temperature while in the ☾ event. The floor minimum heats the floor even when the room temperature is satisfied. The measured floor temperature is shown in the upper right hand corner of the display. Available when: <ul style="list-style-type: none"> • Room Sensor setting in the Adjust menu is set to On AND • A slab sensor is installed on the auxiliary sensor input AND • Switch setting 4 is set to Floor (On position).
	40 to 90°F, OFF (4.5 to 32.0°C, OFF) Default = 85°F (29.5°C)	FLOOR MAXIMUM Set the floor maximum temperature in order to protect the floor covering. Available when: <ul style="list-style-type: none"> • Room Sensor setting in the Adjust menu is set to On AND • A slab sensor is installed on the auxiliary sensor input AND • Switch setting 4 is set to Floor (On position).

Continued on next page.

528 Thermostat

Adjust Menu (2 of 2) *for installer use only

ADJUST MENU

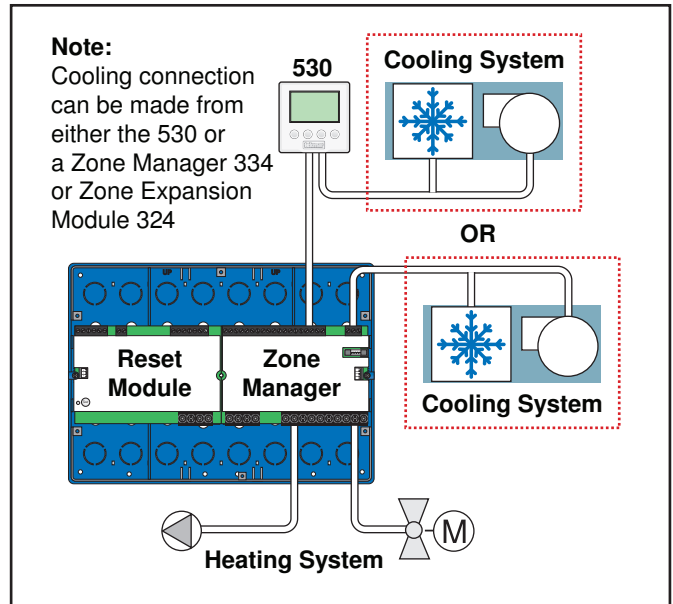
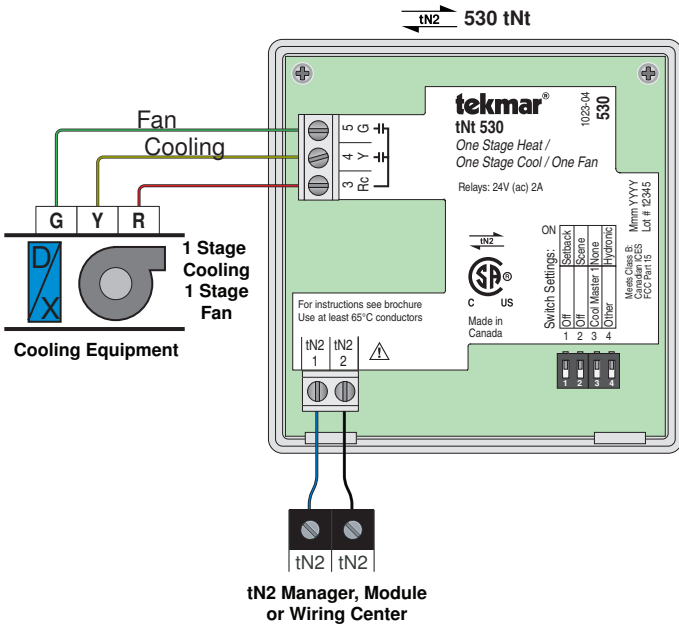
Display	Range	Description
	OFF, 40 to 85°F (OFF, 4.5 to 29.5°C) Default = 72°F (22.0°C)	SET FLOOR * Set the floor temperature while in the * event. Available when: <ul style="list-style-type: none"> Room Sensor setting in the Adjust menu is set to Off AND A slab sensor is installed on the auxiliary sensor input AND Switch setting 4 is set to Floor (On position).
	OFF, 40 to 85°F (OFF, 4.5 to 29.5°C) Default = 68°F (20.0°C)	SET FLOOR ☾ Set the floor temperature while in the ☾ event. Available when: <ul style="list-style-type: none"> Room Sensor setting in the Adjust menu is set to Off AND A slab sensor is installed on the auxiliary sensor input AND Switch setting 4 is set to Floor (On position).
	On, OFF Default = On	ROOM SENSOR Select whether the built-in air temperature sensor is on or off. When set to off, a floor sensor is required. Available when: <ul style="list-style-type: none"> Switch setting 4 is set to Floor (On position).
	Auto, SYN Default = Auto	HEAT CYCLES PER HOUR Select either Auto cycle or Synchronize with other thermostats on the tekmarNet® system. Available when: <ul style="list-style-type: none"> There is no tekmarNet® System Control in the system.
	OFF, On Default = OFF	THERMAL MOTOR DELAY Select whether or not a thermal motor (wax actuator) zone valve is operated. Available when: <ul style="list-style-type: none"> There is a tekmarNet® System Control in the system.
	1, 2, 3, 4 Default = 1	SCHEDULE Thermostat can follow schedule 1, 2, 3, or 4. Available when: <ul style="list-style-type: none"> Switch setting 1 is set to Setback (On Position).

After the last item, the control returns to the first item in the Adjust menu.

530 Thermostat

Description

The Thermostat 530 operates a single hydronic heating system zone together with a cooling system and fan.

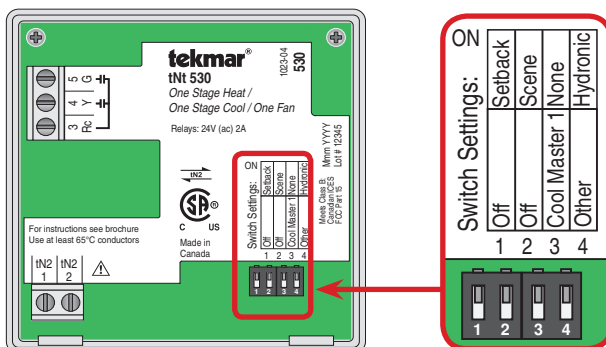


Note:
Cooling connection can be made from either the 530 or a Zone Manager 334 or Zone Expansion Module 324

DIP Switch Settings

These DIP switches are located on the inside of the thermostat cover. They are shipped “On” from the factory, and will not have to be adjusted for most applications.

Switch	Position	Action	Switch	Position	Action
1	ON	Setback Thermostat will follow a schedule device if one is present on the system. (Can follow Schedules 1 through 4.)	3	ON	None Thermostat is not part of a cooling group.
	OFF	OFF Thermostat does not follow a schedule.		OFF	Cool Master Thermostat joins as a master of Cool Group number 1.
2	ON	Scene The thermostat responds to Scene changes (see “Scenes”, Page 20).	4	ON	Hydronic Heat source is hydronic.
	OFF	OFF Thermostat will not respond to Scenes.		OFF	Other Other heat source (Furnace, Electric).



Thermostat 530 DIP Switches

530 Thermostat

Button Operation

Mode Button

The Mode button selects between Auto, Cool, Heat, Vent and Off.

Heat Mode: The heating system operates to maintain the Set Room temperature. The fan may turn on with heating if the Fan Mode 2 is selected.

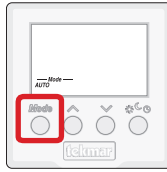
Cool Mode: The cooling system operates to maintain the Set Room temperature. The fan operates whenever the cooling is on.

Auto Mode: The heating system operates to maintain the Set Room Heat temperature. Likewise the cooling system operates to maintain the Set Room Cool temperature. The thermostat will prevent the Set Room Heat and the Set Room Cool settings from getting closer than 3°F (1.5°C).

To switch from heating to cooling, the heat must be off for at least a 30 minute interlock period and the actual Room temperature must be at least 3°F (1.5°C) above the Set Room Heat temperature.

To switch from cooling to heating, the cooling must be off for at least a 30 minute interlock period and the Room temperature must be at least 3°F (1.5°C) below the Set Room Cool temperature. Cooling has priority over heating.

The fan operates whenever the cooling is on. The fan will turn on with the heating if Fan Mode 2 is selected.

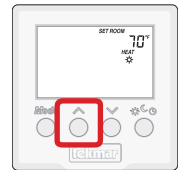


Vent Mode: Only the fan operates to circulate air. Heating and cooling are not operated except for freeze protection.

Off Mode: The heating, cooling, and fan are shut off except heating for freeze protection.

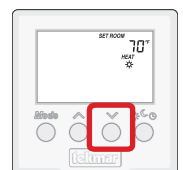
^ Button

The ^ button raises the Set Room temperature. When in Vent mode, the ^ button increases the Set Fan percentage.



∨ Button

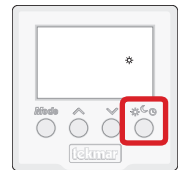
The ∨ button lowers the Set Room temperature. When in Vent mode, the ∨ button lowers the Set Fan percentage.



Local Override ☼☾🕒 Button

The Local Override (☼☾🕒) button changes between the local override temperatures.

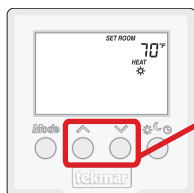
The option is Occupied (☼), Unoccupied (☾), or follow the programmable schedule 🕒.



Setting the Temperature

Room Temperature

Press the ^ or the ∨ button to select the room temperature. The display indicates whether the "HEAT" or the "COOL" temperature is being changed.



Use the ^ or ∨ button to adjust temperature.

If in Auto mode, press the Mode button to toggle between Heat or Cool temperature adjustment.

Programmable Schedule

When operating on a programmable schedule, a 🕒 symbol is shown, as well as a ☼ or a ☾. The ☼ or ☾ indicates the current operating temperature.

Press the Local Override (☼☾🕒) button to select the 🕒 to operate on a programmable schedule.

If a 🕒 symbol does not appear, there is no schedule available. Schedules are provided by tekmarNet® Timers or Thermostats that are connected to the Zone Manager, Expansion Module or Wiring Center.

Scenes (System Override)

When using scenes, there are three temperature settings: ☼, ☾, Away. The scene takes precedence over any local overrides or any programmable schedules.

While in the Away scene, the room temperature cannot be changed using the ^ or ∨ buttons. Change the scene from Away to ☼ or ☾ to change the temperature.

While in the ☾ or Away scene and the ☼☾🕒 button is pressed, the ☾ or Away icon will flash. Scene 1 (☼ or ☼🕒 or ☾🕒) must be activated before the thermostat responds to the ☼☾🕒 button.

Scene	Display
1	☼ or ☼🕒 or ☾ or ☾🕒
2	Away
3	☾

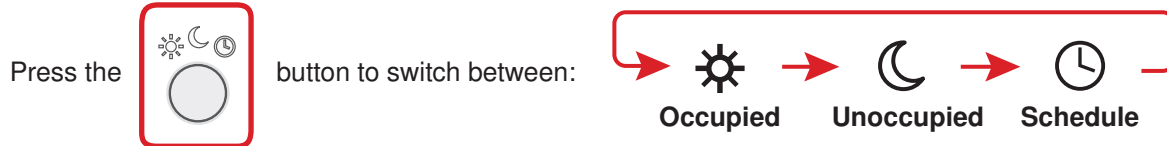
530 Thermostat

Local Override

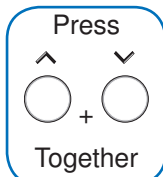
The Local Override (*☾) button can be used to override any schedule. Press and release the *☾ button to toggle between *, ☾, and ☰ (if available).







The thermostat remains at the selected * or ☾ override temperature until manually changed back to the schedule.

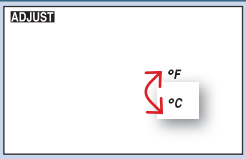


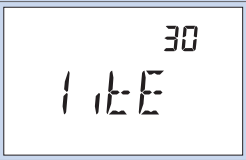


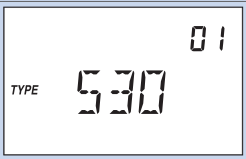

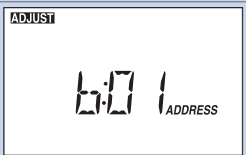


Display	Action
	Manual override at occupied temperature.
	Manual override at unoccupied temperature.
	Programmable schedule at occupied temperature.
	Programmable schedule at unoccupied temperature.



User Settings (1 of 1)

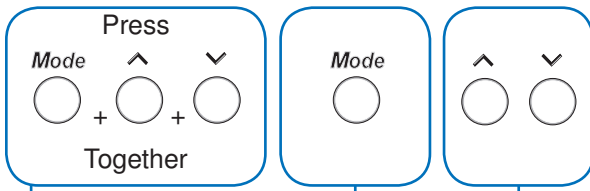


- Press and hold down both the  and  buttons to change from one step to the next. While holding both buttons down, a new setting will display every 5 seconds.
- Release both buttons once the step has been reached.
- Press the  or the  button to change the setting, if available.
- Press and hold down both the  and  buttons for 5 seconds to go to the next step, OR
- After 10 seconds of no button activity, the display goes back to normal operation.

Display		Description
	STEP 1 °F or °C	Press the  or the  button to change from °F to °C and vice versa.
	STEP 2 Backlight Off, 30 sec, On	Press the  or the  button to select the backlight to permanent Off, 30 second temporary on, or permanent On.
	STEP 3 View Type and Software Version	The large number shows the type number as 530. The software version is shown in the upper right hand corner.
	STEP 4 View tekmarNet® Address	The thermostat's tekmarNet® address is shown. The address toggles between a number and "Au" when using automatic addressing.
	STEP 5 Manually Change tekmarNet® Address	Press the  or the  button to manually select an address. The address can be returned to automatic "Au" between addresses 24 and 1. Ensure to document the address number when manually addressing thermostats.

530 Thermostat

Adjust Menu (1 of 2) *for installer use only



These settings are intended for use by the installer only and are not required for use by average users of the thermostat.

- Press and release the **Mode**, **^**, and **∨** buttons together.
- Press and release the **Mode** button to go to the next setting.
- Once all settings are complete, wait 20 seconds for the thermostat to return to normal operation.


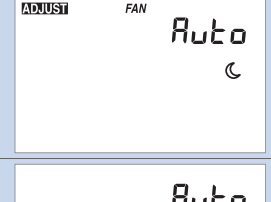



ADJUST MENU

Display	Range	Description
	40 to 85°F (4.5 to 29.5°C) Default = 70°F (21.0°C)	SET ROOM HEAT * Set the room heating temperature while in the * event.
	40 to 85°F (4.5 to 29.5°C) Default = 65°F (18.5°C)	SET ROOM HEAT ☾ Set the room heating temperature while in the ☾ event.
	40 to 85°F (4.5 to 29.5°C) Default = 62°F (16.5°C)	SET ROOM HEAT AWAY Set the room heating temperature while in the Away scene.
	40 to 85°F (4.5 to 29.5°C) Default = 78°F (25.5°C)	SET ROOM COOL * Set the room cooling temperature while in the * event.
	40 to 85°F (4.5 to 29.5°C) Default = 85°F (29.5°C)	SET ROOM COOL ☾ Set the room cooling temperature while in the ☾ event.
	40 to 85°F (4.5 to 29.5°C) Default = 85°F (29.5°C)	SET ROOM COOL AWAY Set the room cooling temperature while in the Away scene.
	1 or 2 Default = 1	FAN MODE Select if the fan should operate with cooling (Fan Mode 1), or with the heating and cooling (Fan Mode 2).
	OFF, On Default = OFF	VENTILATION Select whether or not ventilation is required. When turned On, fan operation can be customized with the next two Fan settings.

Continued on next page.

530 Thermostat

Adjust Menu (2 of 2) *for installer use only

Display	Range	Description
	Auto, 10 to 90%, On Default = Auto	FAN * Set the minimum percentage the fan should operate while in the * event. This provides ventilation for the building. Note: <ul style="list-style-type: none"> If Ventilation is set to Off, selection for 10 to 90% not available.
	Auto, 10 to 90%, On Default = Auto	FAN ☾ Set the minimum percentage the fan should operate while in the ☾ event. This provides ventilation for the building. Note: <ul style="list-style-type: none"> If Ventilation is set to Off, selection for 10 to 90% not available.
	Auto, SYn Default = Auto	HEAT CYCLES PER HOUR Select either Auto cycle or Synchronize with other thermostats on the tekmarNet® system. Available when: <ul style="list-style-type: none"> There is no tekmarNet® System Control on the system.
	OFF, On Default = OFF	THERMAL MOTOR DELAY Select whether or not a thermal motor (wax actuator) zone valve is operated. Available when: <ul style="list-style-type: none"> A tekmarNet® System Control is on the system.
	1, 2, 3, 4 Default = 1	SCHEDULE Thermostat can follow schedule 1, 2, 3, or 4. Available when: <ul style="list-style-type: none"> Switch setting 1 is set to Setback (On Position).

ADJUST MENU

After the last item, the control returns to the first item in the Adjust menu.

Sequence of Operation for All tN2 Thermostats

tekmarNet® System Control

The thermostat can be connected to a tekmarNet® System Control. A tekmarNet® System Control operates the boiler or mixing devices in a hydronic heating system and usually includes outdoor reset. A Zone Manager or Wiring Center by itself is not a tekmarNet® System Control.

The thermostat may also operate without a tekmarNet® System Control. However, important efficiency and performance improving features such as Indoor Temperature Feedback, Warm Weather Shut Down, Exercising, Flushing, Zone Test, and Max Heat are unavailable.

Heating Operation

The thermostat operates the heating system to maintain the Set Room Heat temperature. The thermostat uses Indoor Temperature Feedback and also synchronizes the start of a heating cycle with other tekmarNet thermostats. These features, unique to tekmarNet® systems, are described in detail on Page 21.

When using a Thermostat 530, heat source can be either 'hydronic' or 'other'. This is selected by DIP switch setting 4. When switch setting 4 is set to hydronic (On position), the thermostat behaves as previously described. When switch setting 4 is set to 'other' (Off position), the thermostat does not use Indoor Temperature Feedback. This allows the thermostat to operate non-hydronic heating systems (i.e. furnace, electric baseboard, or electric fan coil), while remaining connected to the tekmarNet® communication system.

Cooling Operation (530 Only)

The thermostat operates the cooling system to maintain the Set Room Cool temperature. The fan turns on whenever the cooling system is on.

The cooling system has a fixed minimum on time of 2 minutes and a minimum off time of 5 minutes in order to prevent cooling equipment short cycling.

Fan Operation (530 Only)

The Fan Mode setting determines how the fan operates with the heating and cooling systems.

Locate the Fan Mode setting in the Adjust menu.

Fan Mode	The fan operates with...
1	Cooling Only
2	Heating and Cooling

The fan relay includes a post purge feature. After the heating is shut off, the fan continues to operate for 30 seconds. After the cooling is shut off, the fan continues to operate for 10 seconds.

The fan can also operate for additional time beyond what is required for the heating and cooling systems in order to provide ventilation to the building. Ventilation is provided when Mode is set to Heat, Cool, Auto, or Vent. There is no ventilation when Mode is set to OFF.

Locate the Ventilation setting in the Adjust menu and set to On.

Once this is done, the Fan minimum run time percentage during the ☼ and ☾ events can be adjusted.

Locate the Fan ☼ and Fan ☾ settings in the Adjust menu and set the desired percent run time per hour using the ^ or v button.

If Ventilation is set to Off, the Fan can be set to operate "On" or "Auto" during the ☼ and ☾ events.

Vent Mode

If the Mode button is used to select Vent, the thermostat will not provide heating or cooling. The ^ or v buttons can now be used to select the desired fan operation. A percent run time can be selected if Ventilation is set On in the Adjust Menu. "Auto" is equivalent to Off when in Vent Mode.

Schedules (Requires schedule device)

This thermostat can follow a programmable schedule in order to automatically lower the room temperature setting.

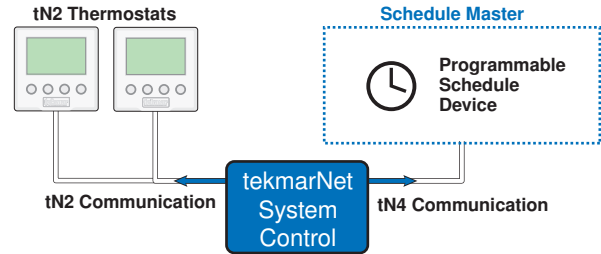
Lowering the room temperature setting reduces the amount of fuel required to heat the building resulting in energy savings.

For this thermostat to follow a schedule, a device called a schedule master is required. A schedule master can be a programmable tekmarNet® Thermostat (such as models 542, 543, 544, 545, 546), a programmable tekmarNet® Timer 033, or other tekmarNet® devices that indicate they are a schedule master.

The schedule master may support multiple system schedules. Thermostats 528 and 530 can follow system schedule 1, 2, 3, or 4. Thermostat 527 can only follow system schedule 1.

To follow a schedule:

- Select DIP switch setting 1 to Setback (On position).
- Locate the schedule item in the Adjust menu. Select system schedule 1, 2, 3, or 4.



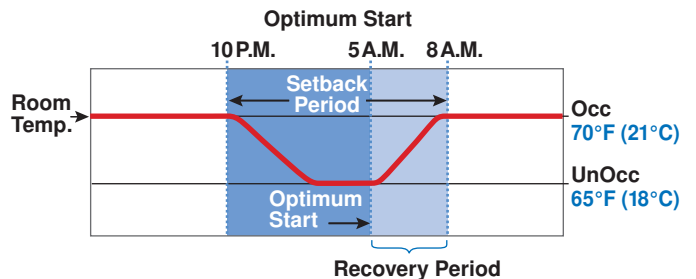
Optimum Start

When a programmable schedule is selected, there is a time delay for the temperature to change from the C temperature to the S temperature.

The thermostat uses an Optimum Start feature to predict the heat up rate of the room. The optimum start feature allows the room to reach the set room S temperature by the time set in the programmable schedule.

During the C time period, the user may notice the heat being on even though the room temperature is above the set room temperature. This is due to the Optimum Start feature heating the room in order to reach the S temperature on time.

The Optimum Start applies for both the heating and the cooling systems.



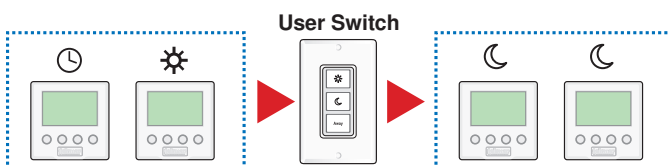
Scenes

Scenes are only available when a User Switch is installed on the network.

Scenes are system wide manual overrides. By changing the Scene, all participating thermostats change their operating temperature at the same time. The Scene overrides any time-scheduled changes in temperature.

The purpose of scenes is to provide a quick and convenient method to lower the heating temperature (or raise the cooling temperature) on multiple thermostats throughout a building. This reduces the amount of fuel required to heat the building, resulting in energy savings.

Scenes are often used when leaving on vacation, holidays, or special events.



In order to use the Scene feature, a device called a User Switch (sold separately) can be used to change the Scene number.

This thermostat supports Scenes 1, 2, and 3. Scenes 4 through 8 are not supported. Should a permanent Scene 4 or 5 be activated, the thermostat operates in Scene 1. Should a temporary Scene 6, 7, or 8 be activated, the thermostat does not change and remains in the last supported Scene.

tekmarNet® Thermostats can participate with Scenes when switch setting 2 is set to Scene (On position).

Scene	Room Temperature Setting
1	Follows programmable schedule if available. If there is no schedule, operates at the occupied S temperature.
2	Away temperature.
3	Unoccupied C temperature.

Cycles Per Hour / Synchronization

When the thermostat is connected to a bus with a tekmarNet® System Control, the thermostat operates the heating system on the cycles per hour determined by the control. The thermostat automatically determines the cycles per hour when operating the cooling system.

When the thermostat is not in communication with a tekmarNet® System Control, the Heating Cycles Per Hour setting in the Adjust menu allows the installer to select Auto or Sync.

When set to Auto, the thermostat automatically determines the cycles per hour.

When set to Sync, the thermostat synchronizes its cycle with other thermostats on the tekmarNet® bus. This causes thermostats to start heating at the same time, increasing the load on the boiler and reducing boiler short cycling.

Indoor Temperature Feedback

The 527, 528 and 530 Thermostats can provide indoor temperature feedback to a tekmarNet® System Control. When using the 530 thermostat, DIP switch 4 must be set to Hydronic (On position).

Indoor Temperature Feedback:

- Optimizes system water temperature
- Reduces temperature swings in the building
- Increases efficiency by reducing boiler short cycling
- Improves occupant comfort

Indoor Temperature Feedback also allows the room temperature to quickly recover after night setback (☾ to ☼) by temporarily increasing the water temperature to allow more heat into the system.

The benefits of Indoor Feedback are only available when using this thermostat with a tekmarNet® System Control.

Outdoor Temperature Display

When the thermostat is connected to a tekmarNet® system that includes an outdoor sensor, the outdoor temperature is displayed in the upper right hand corner of the display.

The 528 thermostat can also display the outdoor air temperature if an outdoor air temperature sensor is connected to the auxiliary sensor input and switch setting is set to Outdoor (Off position). In this configuration, the outdoor air temperature reading is communicated to all other thermostats in the tekmarNet® system.

Warm Weather Shut Down

The thermostat indicates warm weather shut down using the WWSD icon. The WWSD feature prevents the heating system from operating if the outdoor temperature is above

the WWSD temperature. The WWSD feature is activated by the tekmarNet® System Control. In order to disable the WWSD, the System Control's WWSD setting must be adjusted.

Freeze Protection

In any event that the room temperature should fall below 40 °F (4.5 °C), the heating is turned on regardless of thermostat mode.

Exercising

When connected to a tekmarNet® System Control, the thermostat exercises the heat relay for 10 seconds every 3 days. Exercising helps prevent zone valves or zone pumps

from failing due to precipitate buildup. During exercising, the thermostat shows "TEST" on the display.

On a Thermostat 530, DIP switch 4 must be set to 'hydronic' in order for the thermostat to perform exercising.

Flushing

If the thermostat is connected to a tekmarNet® System Control with the Flushing feature turned on, the thermostat

display will display the "FLUSH" icon for the duration of the flushing operation.

Thermal Motor Zone Valves

If the thermostat is operating a thermal motor (wax actuator) zone valve, set the Thermal Motor Delay setting to On. This provides a three minute delay to allow the zone valve to open before the system pump is turned on. If the thermostat

operates a motorized zone valve or a zone pump, then set the Thermal Motor Delay setting to Off. The Thermal Motor Delay setting is located in the Adjust Menu of 528 or 530 thermostats. It is located on DIP switch 4 of a 527.

Backlight

The backlight can be adjusted using the “lite” setting. Select Off for the backlight to remain off. Select 30 to turn on the

backlight for 30 seconds after a button is pressed. Select On for the backlight to remain on continuously.

Zone Test

Some tekmarNet® System Controls include a feature called Zone Test. This allows one zone at a time to be manually activated. The zone test eliminates the need for the installer to walk to the thermostat and turn up the heat in order for the zone to turn on and activate the corresponding zone pump or zone valve. This is useful for verifying that the electrical wiring is correct.

If the thermostat address is selected on the tekmarNet® System Control, the thermostat display will show “ZONE TEST On”. If not selected, the thermostat display will show “ZONE TEST OFF”. The Zone Test is only available on the Thermostat 530 when DIP switch 4 is set to hydronic.

Max Heat

The installer can use the tekmarNet® System Control to turn on all heating zones and at the same time operate the heating equipment at 100% output within temperature limits. The thermostat operates at the \star temperature setting + 5° F (3° C). This is called Max Heat. Max Heat can be manually stopped or it can last for 24 hours and automatically resume

normal operation. Max Heat is useful in order to quickly heat up the building in order to cure concrete, dry sheet rock, or dry paint quickly.

The thermostat display will show “MAX HEAT” while in the max heat operation. Max Heat is only available on Thermostat 530 when switch setting 4 is set to hydronic.

tekmarNet® Address

All tekmarNet® thermostats are automatically assigned an address when connected in a system.

The address includes the bus number and a device number. The bus number is only shown when connected to a tekmarNet® System Control. The bus numbers available are b (Boiler), 1, 2, 3, etc. The device number can range from 01 to 24.

When the thermostat has an automatically set address, the address number and “Au” will toggle back and forth.

Note: Keep track of manually set tekmarNet® addresses. When a tekmarNet® address is manually set, thermostats using the auto address setting will automatically be assigned new addresses.

If two thermostats are manually set to the same address, an error message will appear. The error remains until one of the addresses is manually changed to a vacant address.

Cool Group Master (530 Only)

In order to prevent heating and cooling at the same time, this thermostat can operate together with other thermostats on a tekmarNet® system to form a cool group.

The Thermostat 530 can be set as the Cool Group 1 master. The cool group master operates the cooling equipment for the group. Other thermostats can be set to be members of the cool group.

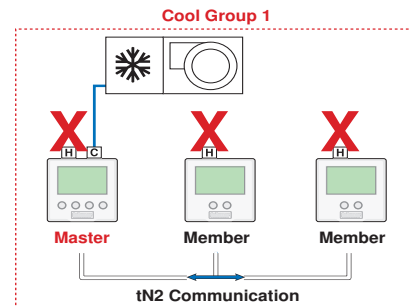
When operating as a cool group, the air temperature readings of all the cool group member thermostats are displayed on the master as an average.

The Thermostat 530 shows this cool group average temperature as the “Room” temperature while the mode is set to Cool, or the mode is set to Auto and the thermostat is allowing cooling operation. In all other modes, the cool group master thermostat measures and displays the built-in “local” temperature sensor measurement.

Fluctuations in the displayed “Room” temperature may occur during automatic mode switch over when the display changes from using the local temperature for heating to using the cool group average temperature for cooling.

When this thermostat is set to Cool mode or is cooling in Auto mode, the cooling system is operated to maintain the Set Room Cool setpoint and all thermostats in the cool group do not operate for space heating. However, cool group member thermostats that have a floor minimum temperature set are able to continue heating.

This thermostat is the master of Cool Group 1 when switch setting 3 is set to “Cool Master 1” (down).



Cool Group Member (527 and 528 Only)

In order to prevent heating and cooling at the same time, the 527 and 528 can operate together with other thermostats in the tekmarNet® system to form a cool group.

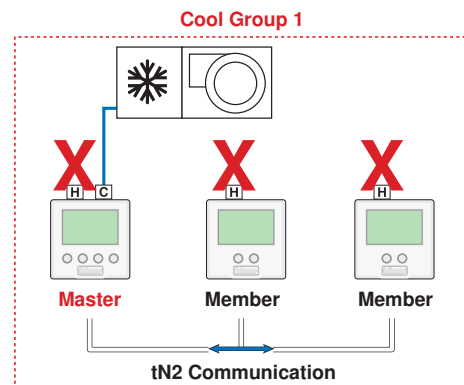
In a cool group, one thermostat is assigned as the cool group master. The cool group master operates the cooling equipment for the group. Thermostats 527 and 528 can be members of ‘Cool Group 1’, allowing them to be included within the same cooling zone as the master thermostat.

When operating as a cool group, the air temperature readings of all the member thermostats are communicated to the cool group master and a temperature average is determined.

When the cool group master is in cooling operation, the member thermostats do not operate for space heating; however, if a floor minimum temperature is set, then floor warming can continue while the cooling is on.


If the Set Room Heat temperature is adjusted while the cool group is cooling, the snowflake icon is flashed to alert the user that the cooling is presently on. Once the cooling shuts off, the heating can start operation after a 30 minute interlock has expired.



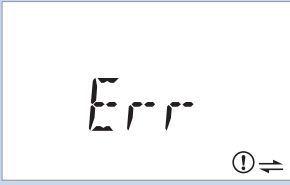
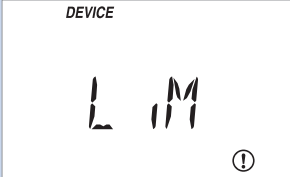
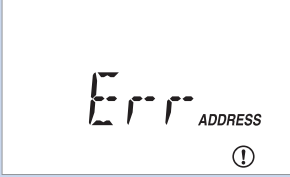


To join “Cool Group 1”, set switch 3 to “Cool Member 1” (down).



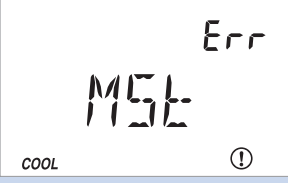
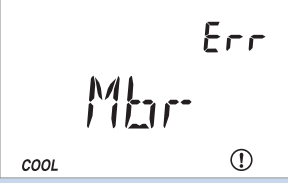
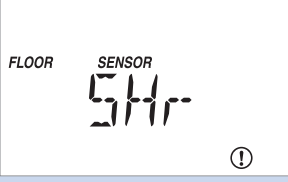
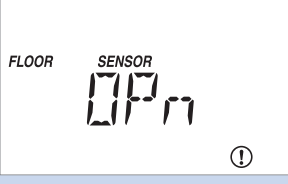
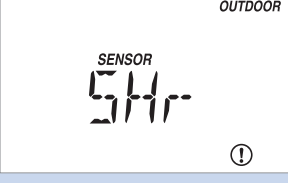
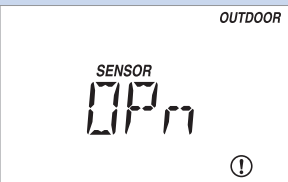
Troubleshooting Guide

We expect your tekmarNet system to operate trouble-free. If an error should occur, simply follow these steps:

1. **Find:** If a thermostat flashes  on the bottom of the screen, it is indicating a problem on the system.
2. **Identify:** Match what is showing on the thermostat screen with one of the Error Messages below.
3. **Solve:** Each Error Message has a Description. Use it to locate possible sources of the problem and reach a solution.

Error Message	Description
	<p>CONTROL ERROR</p> <p>The thermostat was unable to correctly read settings from memory and has reloaded the factory defaults settings. The thermostat does not operate the heating, cooling, or the fan while this error message is present.</p> <p>To enter the installer Adjust Menu, press Mode, ^, and v buttons at the same time. Press the Mode button to advance to the next setting. Error clears once all adjust menu settings have been checked.</p>
	<p>PORT ERROR</p> <p>Thermostat has been connected to a tN2 Zone already in use by a 2-stage device. A 2-stage device requires two tN2 ports to operate. This device may be connected to one such port. Move the thermostat's tN2 wires to an unused tN2 port on the control.</p>
	<p>BUS ERROR</p> <p>The tN4 communication bus has either an open or a short circuit. Check for loose wires. Check for short circuits between the tN4 and C wires at the system control.</p> <p>Error clears automatically once wiring fault has been corrected.</p> <p>If the thermostat is intentionally removed from the system, press the ^ and v buttons together to clear the error message.</p>
	<p>DEVICE LIMIT</p> <p>The number of devices on the tekmarNet® bus has exceeded 24. Devices include tekmarNet® Thermostats, User Switches, Timers and Setpoint Controls. The device count must be lowered to 24 or less. If possible, move devices to other tekmarNet® busses.</p> <p>Error clears automatically once the number of devices on the tekmarNet® bus is at 24 or lower.</p>
	<p>ADDRESS ERROR</p> <p>This thermostat and another device have been manually given the same tekmarNet® address. Error clears automatically once this thermostat is given a new manually set address or if the thermostat is set to automatic addressing.</p>
	<p>ROOM SENSOR SHORT CIRCUIT</p> <p>The built-in air temperature sensor has a short circuit fault.</p> <p>If a floor sensor is present (Thermostat 528 only), heating will operate to satisfy floor min. This error cannot be field repaired. Contact your wholesaler or tekmar sales representative for details on the repair procedures.</p>
	<p>ROOM SENSOR OPEN CIRCUIT</p> <p>The built-in air temperature sensor has an open circuit fault.</p> <p>If a floor sensor is present (Thermostat 528 only), heating will operate to satisfy floor min. This error cannot be field repaired. Contact your wholesaler or tekmar sales representative for details on the repair procedures.</p>

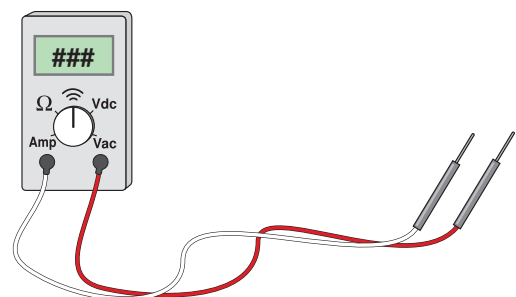
Error Messages (continued)

Error Message	Description
	<p>COOL MASTER ERROR</p> <p>Switch setting number 3 (Cool Group 1 Master) has been selected and another cool group master has been detected with the same group number. To have a second cool group, a tekmarNet cooling thermostat other than a 530 is required so the Cool Group Master number can be set above number 1.</p> <p>The cooling system will not operate while this error message is present.</p> <p>Error clears once either the other cool group master changes its group number or switch setting number 3 is set to none (On position).</p>
	<p>COOL MEMBER ERROR</p> <p>Switch setting number 3 has been selected to join a cooling group as a member, yet there is no cooling group master thermostat.</p> <p>Error clears once the thermostat detects a cool group master or switch setting number 3 is set to none (On position).</p>
	<p>FLOOR SENSOR SHORT CIRCUIT</p> <p>The floor sensor has a short circuit. Check for damaged wires. Locate and repair the problem as described in the Data Brochure D079.</p> <p>Error clears once the floor sensor fault is corrected.</p>
	<p>FLOOR SENSOR OPEN CIRCUIT</p> <p>The floor sensor has an open circuit. Check for loose or damaged wires. Locate and repair the problem as described in the Data Brochure D079.</p> <p>Error clears once the floor sensor fault is corrected.</p> <p>If the floor sensor is intentionally removed, locate the Room Sensor setting in the Adjust menu and set to On. Power the thermostat down and up to clear the error.</p>
	<p>OUTDOOR SENSOR SHORT CIRCUIT</p> <p>The outdoor sensor has a short circuit. Check for damaged wires. Locate and repair the problem as described in the Data Brochure D070.</p> <p>Error clears after the outdoor sensor fault is corrected.</p>
	<p>OUTDOOR SENSOR OPEN CIRCUIT</p> <p>The outdoor sensor has an open circuit. Check for loose or damaged wires. Locate and repair the problem as described in the Data Brochure D070.</p> <p>Error clears once the outdoor sensor fault is corrected.</p> <p>If the outdoor sensor is intentionally removed, power the thermostat down and up to clear the error.</p>

Testing the Wiring

The following tests are to be performed using standard testing practices and procedures and should only be carried out by properly trained and experienced persons.

A good quality electrical test meter, capable of reading from at least 0-300 V (ac), 0-2,000,000 Ohms, and testing for continuity is essential to properly test the wiring and sensors.



Testing the Wiring (continued)

Note: It may take 10 seconds for the thermostat display to turn on once the wires are connected.

If the thermostat display turns on this indicates the thermostat is operating correctly and there are no electrical issues.

In the event that the display does not turn on:

1. Remove the front cover from the thermostat.
2. Use an electrical test meter to measure AC voltage between the tN2 terminals. The AC voltage should measure 0 V (ac). This thermostat is not compatible with 24 V (ac) equipment.
3. Use an electrical test meter to measure DC voltage between the tN2 terminals for **20 seconds**.

4. If the DC voltage remains at 0 V (dc):
 - A) There may be an open or short circuit on the thermostat wires.or
 - B) The thermostat is not connected to tN2 Zone Manager or tN2 Wire Center.
5. If the DC voltage is 0 V (dc) for 10 seconds and then is 23 to 24 V (dc) for 5 seconds, this indicates the thermostat wires and the tN2 Zone Manager or tN2 Wiring Center are operating correctly. The thermostat may have a fault. Contact your local tekmar representative for assistance.

Testing for Short Circuits

1. Remove the front cover.
2. Disconnect the tN2 wires on one end.
3. Install wire nuts on each wire end to ensure the wire ends are not touching.
4. Disconnect the tN2 wires on the other end.
5. Measure for continuity using an electrical meter.
6. If continuity is present, there is a short circuit along the wires. It is recommended to replace the tN2 wires.

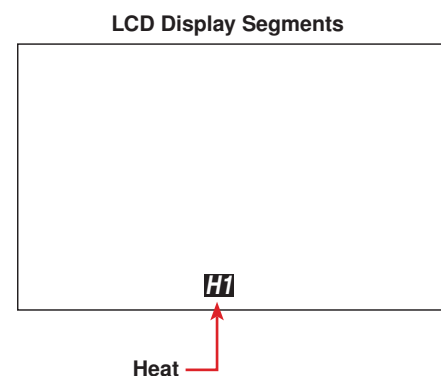
Testing for Open Circuits

1. Remove the front cover.
2. Disconnect the tN2 wires on one end and connect them together using a wire nut.
3. Disconnect the tN2 wires on the other end.
4. Measure for continuity using an electrical meter.
5. If there is no continuity, there is an open circuit along the wires. It is recommended to replace the tN2 wires.

Testing the Thermostat

This thermostat does not have a relay to turn on the heating. Using tN2 communication, the thermostat activates a relay on a tN2 Zone Manager or tN2 Wiring Centre.

1. Lower the Set Room temperature. The “H1” symbol should not be on the display.
2. Locate the thermostat’s zone on the tN2 Zone Manager or tN2 Wiring Center. The zone LED should be off.
3. Increase the Set Room temperature. The “H1” symbol should appear.
4. Locate the thermostat’s zone on the tN2 Zone Manager or tN2 Wiring Center. The zone LED should be on.



Cleaning the Thermostat

The thermostat's exterior can be cleaned using a damp cloth. Moisten the cloth with water and wring out prior to wiping the control. Do not use solvents or cleaning solutions.

Technical Data

tekmarNet[®]2 Thermostat 527: *One Stage Heat*

Control	Microprocessor PID control; This is not a safety (limit) control
Packaged weight	0.8 lb. (380 g)
Enclosure	Enclosure J, white PVC plastic
Dimensions	2-7/8" H x 2-7/8" W x 13/16" D (73 x 73 x 21 mm)
Approvals	CSA C US, CSA/UL 61010-1, meets Class B: ICES and FCC Part 15
Ambient conditions	Indoor use only, 36 to 122°F (2 to 50°C).
	RH max 80% up to 88°F (31°C) decreasing linearly to 50% RH at 104°F (40°C)
	Altitude 0 - 6560 feet (2000 m), Installation Category II, Pollution Category 2
Power supply	Provided by tN2 Zone Manager or tN2 Wiring Center

tekmarNet[®]2 Thermostat 528: *One Stage Heat*

Control	Microprocessor PID control; This is not a safety (limit) control
Packaged weight	0.8 lb. (380 g)
Enclosure	Enclosure J, white PVC plastic
Dimensions	2-7/8" H x 2-7/8" W x 13/16" D (73 x 73 x 21 mm)
Approvals	CSA C US, CSA/UL 61010-1, meets Class B: ICES and FCC Part 15
Ambient conditions	Indoor use only, 36 to 122°F (2 to 50°C).
	RH max 80% up to 88°F (31°C) decreasing linearly to 50% RH at 104°F (40°C)
	Altitude 0 - 6560 feet (2000 m), Installation Category II, Pollution Category 2
Power supply	Provided by tN2 Zone Manager or tN2 Wiring Center
Sensors:	NTC thermistor, 10 kΩ @ 77°F (25°C ± 0.2°C) β = 3892
– Included	None
– Optional	tekmar type # 071, 070, 072, 073, 076, 077, 078, 079, 082, 083, 084

tekmarNet[®]2 Thermostat 530: *One Stage Heat, One Stage Cool, One Fan*

Control	Microprocessor PID control; This is not a safety (limit) control
Packaged weight	0.8 lb. (380 g)
Enclosure	Enclosure J, white PVC plastic
Dimensions	2-7/8" H x 2-7/8" W x 13/16" D (73 x 73 x 21 mm)
Approvals	CSA C US, CSA/UL 61010-1, meets Class B: ICES and FCC Part 15
Ambient conditions	Indoor use only, 36 to 122°F (2 to 50°C).
	RH max 80% up to 88°F (31°C) decreasing linearly to 50% RH at 104°F (40°C)
	Altitude 0 - 6560 feet (2000 m), Installation Category II, Pollution Category 2
Power supply	Provided by tN2 Zone Manager or tN2 Wiring Center
Y Relay	24 V (ac) 2 A
G Relay	24 V (ac) 2 A

Limited Warranty and Product Return Procedure

Limited Warranty *The liability of tekmar under this warranty is limited. The Purchaser, by taking receipt of any tekmar product ("Product"), acknowledges the terms of the Limited Warranty in effect at the time of such Product sale and acknowledges that it has read and understands same.*

The tekmar Limited Warranty to the Purchaser on the Products sold hereunder is a manufacturer's pass-through warranty which the Purchaser is authorized to pass through to its customers. Under the Limited Warranty, each tekmar Product is warranted against defects in workmanship and materials if the Product is installed and used in compliance with tekmar's instructions, ordinary wear and tear excepted. The pass-through warranty period is for a period of twenty-four (24) months from the production date if the Product is not installed during that period, or twelve (12) months from the documented date of installation if installed within twenty-four (24) months from the production date.

The liability of tekmar under the Limited Warranty shall be limited to, at tekmar's sole discretion: the cost of parts and labor provided by tekmar to repair defects in materials and / or workmanship of the defective product; or to the exchange of the defective product for a warranty replacement product; or to the granting of credit limited to the original cost of the defective product, and such repair, exchange or credit shall be the sole remedy available from tekmar, and, without limiting the foregoing in any way, tekmar is not responsible, in contract, tort or strict product liability, for any other losses, costs, expenses, inconveniences, or damages, whether direct, indirect, special, secondary, incidental or consequential, arising from ownership or use of the product, or from defects in workmanship or materials, including any liability for fundamental breach of contract.

The pass-through Limited Warranty applies only to those defective Products returned to tekmar during the warranty period. This Limited Warranty does not cover the cost of the parts or labor to remove or transport the defective Product, or to reinstall the repaired or replacement Product, all such costs and expenses being subject to Purchaser's agreement and warranty with its customers.

Any representations or warranties about the Products made by Purchaser to its customers which are different from or in excess of the tekmar Limited Warranty are the Purchaser's sole responsibility and obligation. Purchaser shall indemnify and hold tekmar harmless from and against any and all claims, liabilities and damages of any kind or nature which arise out of or are related to any such representations or warranties by Purchaser to its customers.

The pass-through Limited Warranty does not apply if the returned Product has been damaged by negligence by persons other than tekmar, accident, fire, Act of God, abuse or misuse; or has been damaged by modifications, alterations or attachments made subsequent to purchase which have not been authorized by tekmar; or if the Product was not installed in compliance with tekmar's instructions and / or the local codes and ordinances; or if due to defective installation of the Product; or if the Product was not used in compliance with tekmar's instructions.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHICH THE GOVERNING LAW ALLOWS PARTIES TO CONTRACTUALLY EXCLUDE, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, DURABILITY OR DESCRIPTION OF THE PRODUCT, ITS NON-INFRINGEMENT OF ANY RELEVANT PATENTS OR TRADEMARKS, AND ITS COMPLIANCE WITH OR NON-VIOLATION OF ANY APPLICABLE ENVIRONMENTAL, HEALTH OR SAFETY LEGISLATION; THE TERM OF ANY OTHER WARRANTY NOT HEREBY CONTRACTUALLY EXCLUDED IS LIMITED SUCH THAT IT SHALL NOT EXTEND BEYOND TWENTY-FOUR (24) MONTHS FROM THE PRODUCTION DATE, TO THE EXTENT THAT SUCH LIMITATION IS ALLOWED BY THE GOVERNING LAW.

Product Warranty Return Procedure All Products that are believed to have defects in workmanship or materials must be returned, together with a written description of the defect, to the tekmar Representative assigned to the territory in which such Product is located. If tekmar receives an inquiry from someone other than a tekmar Representative, including an inquiry from Purchaser (if not a tekmar Representative) or Purchaser's customers, regarding a potential warranty claim, tekmar's sole obligation shall be to provide the address and other contact information regarding the appropriate Representative.