

# 1. Installation

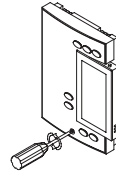
TURN OFF POWER TO THE SYSTEM AT THE MAIN POWER PANEL TO AVOID ELECTRICAL SHOCK.

Installation should be carried out by an electrician or a qualified technician.

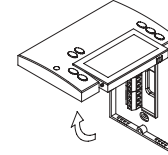
### 1.1 Find a Location for the Thermostat

- For a new installation, choose a location about 5 ft. (1.5 m) above the floor and on an inside wall.
- Avoid locations where there are air drafts (top of staircase, air outlet), dead air spots (behind a door), direct sunlight, concealed chimneys or pipes, or air diffusers.

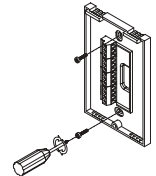
### 1.2 Prepare and Connect the Thermostat



Remove the captive screw holding the base to the module.



Gently lift the lower part of the module to remove it from the base.

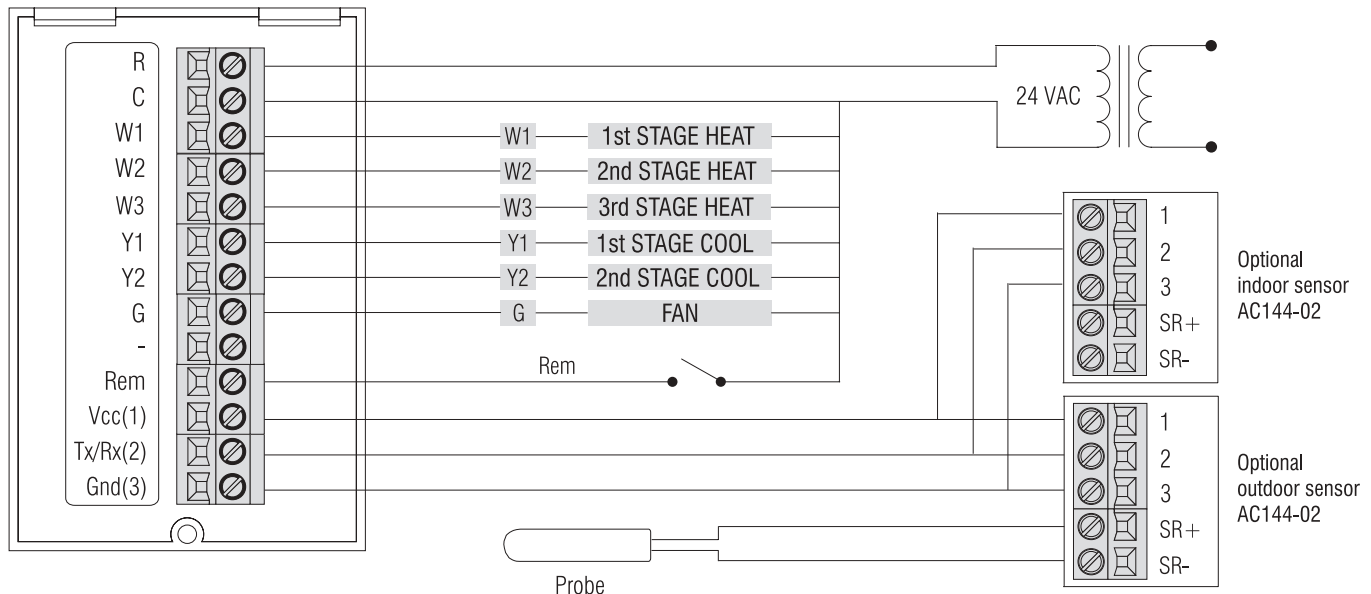


Secure the base using the wall anchors & screws. Wire the thermostat.

TABLE 1: Wiring Terminals

Terminals	OUTPUT CONFIGURATION (MODEL)								Connect to...
	1C	1H	2C	2H	1H1C	2H1C	2H2C	3H2C	
R	✓	✓	✓	✓	✓	✓	✓	✓	Supply 24 VAC
C	✓	✓	✓	✓	✓	✓	✓	✓	Common
W		✓			✓				Heat relay
W1				✓		✓	✓	✓	1st stage heat
W2				✓		✓	✓	✓	2nd stage heat
W3								✓	3rd stage heat
Y	✓				✓	✓			Compressor relay
Y1			✓				✓	✓	1st stage cool
Y2			✓				✓	✓	2nd stage cool
G	✓	✓	✓	✓	✓	✓	✓	✓	Fan
REM	Unoccupied input (optional) - see 1.3								CT240/CT241/timer
Vcc (1)	AC144-02 Remote Temperature Interface - see 1.4								AC144-02
Tx/Rx (2)									
Gnd (3)									

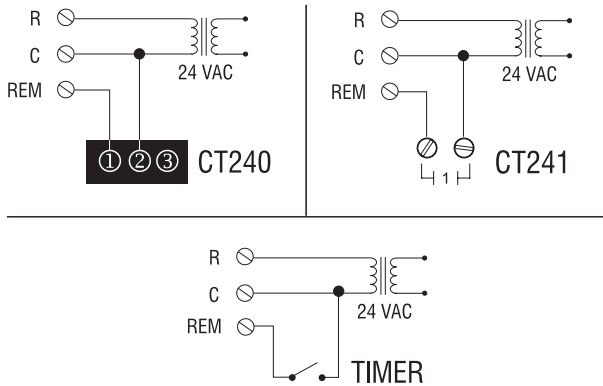
FIGURE 1: Typical Wiring Diagram (model shown TH144-3H2C)



### 1.3 Connecting the REM input (optional)

To remotely activate the Unoccupied mode, the REM input allows connection to an optional CT240/CT241 telephone controller, a central timer or an alarm system.

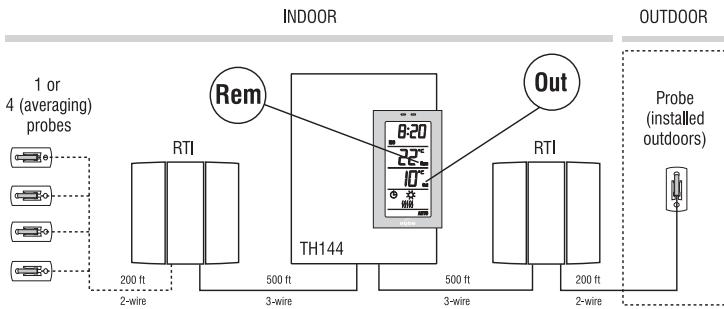
A closed contact remotely activates the Unoccupied mode (see 4.1).



### 1.4 Connecting the AC144-02 Remote Temperature Interface (optional)

The AC144-02 Remote Temperature Interface (RTI) connects to a TH144 thermostat for remote indoor or outdoor temperature readings.

**NOTE:** Refer to the AC144-02 installation instructions for details on how to connect the RTI to the thermostat.



#### Remote Indoor Sensing

The REM icon indicates that the temperature is controlled from a remote location using the RTI's housing sensor or the connected probe(s).

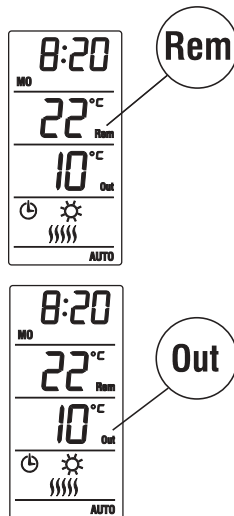
Temperature averaging can be obtained using up to 4 probes.

To return to local control, disconnect the RTI wires at the thermostat terminals and turn off for at least 5 seconds.

#### Remote Outdoor Sensing

The OUT icon indicates the outdoor temperature read from the outdoor probe connected to the RTI.

Outdoor temperature readings are for information purposes only. This does NOT affect the temperature control.



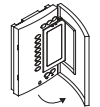
### 1.5 First Power On

When you first power on the thermostat, the unit runs a sequence of tests and a complete reset to zero, which lasts approximately 10 seconds. The default setpoint is 20°C.

The ambient temperature could be higher if you held the TH144 in your hands. It will return to normal a short while after installation.

LO/HI: temperature is below/above the display limits.

- 1 Set the time (Hour and Minute).
- 2 Set the day (Day).

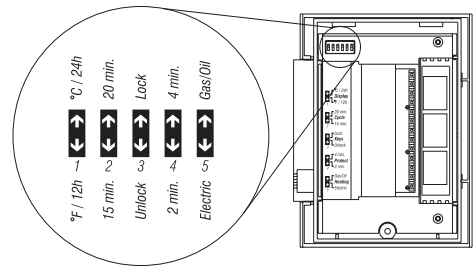


**NOTE:** Before you configure the TH144, make sure the thermostat sits on the base for at least 5 minutes.

**NOTE:** There is a minimum run-time (default is 2 minutes) before the thermostat ends a cycle (see switch #4 in following section).

### 1.6 Configure the TH144

The TH144 offers many configuration options using the DIP switches located on the back of the thermostat.

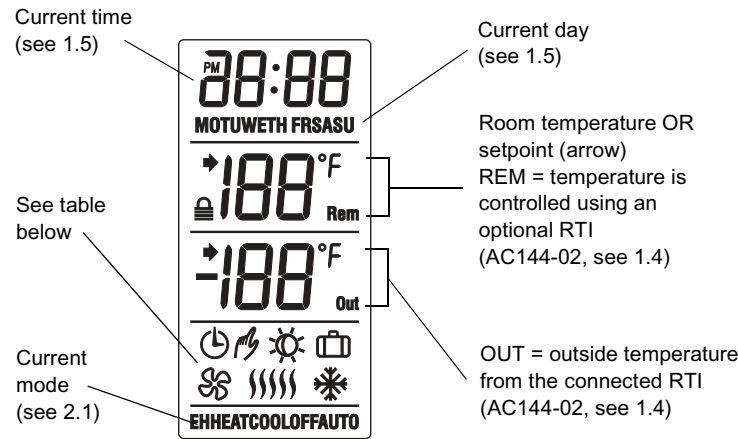
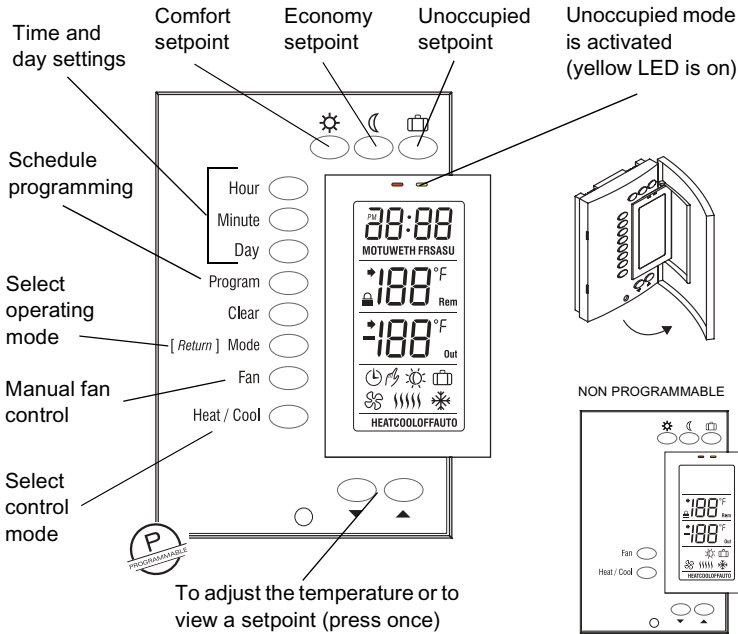


#	DESCRIPTION	UP	DOWN
1	Display * Use this switch to select the display format.	°C/24h	°F/12h
2	Cycles 20 minutes = heavy commercial applications. 15 minutes = residential & light commercial applications.	20 min.	15 min.
3	Keys (keypad lock)† To avoid undesirable changes. The  icon is displayed when any button is pressed to indicate that the setpoint or operating mode cannot be modified.	Lock	Unlock
4	Protect (short cycle protection) This feature protects the equipment against short cycling by setting a minimum ON/OFF operating time. This ensures that the thermostat will not start or stop a cycle if the minimum operating time has not been reached.	4 min.	2 min.
5	Heating Gas/Oil = fan is OFF on a call for heat (the plenum thermostat starts the fan automatically). Electric = fan is ON on a call for heat.	Gas/Oil	Electric

\* If you have modified your default Heat and Cool setpoints and switched from °F to °C (or vice versa), the setpoints will revert to their default factory values (see 2.2).

† You should program your setpoints and schedule (prog. model) before you lock the keypad.

# 2. Basic Configuration



	Automatic Operating mode is executing your schedule. This icon is always displayed with the ☀ or ☾ icon which represent the programs setpoints.	
	Manual Operating mode. This icon is either displayed alone (a manual setpoint was set) or with the ☀ or ☾ icon	
	Comfort setpoint. Associated with programs 1 and 3. Can also be used with manual mode.	
	Economy setpoint. Associated with programs 2 and 4. Can also be used with manual mode.	
	Unoccupied setpoint. Activated from the TH144 or remotely (REM input is connected to a remote system)	
	Fan is ON, either manually (fan button) or automatically (on a call for cool or heat)	
	The heating system is ON.	
	The air conditioning system is ON.	

## 2.1 Select the Control Mode

The mode indicates which system is used for temperature control. Use the Heat / Cool button to select one of the following modes:



HEAT	Controls the heating unit(s). The heating unit is activated when the temperature falls below the pre-defined Heat setpoints.
COOL	Controls the cooling unit(s). The cooling unit is activated when the temperature exceeds the pre-defined Cool setpoints.
OFF	Both units (HEAT and COOL) are OFF. The fan function is still enabled but no setpoint changes are allowed.
AUTO	Automatic changeover. Automatically alternates between HEAT and COOL. See section 4.4 for details.

## 2.2 Define the Setpoints

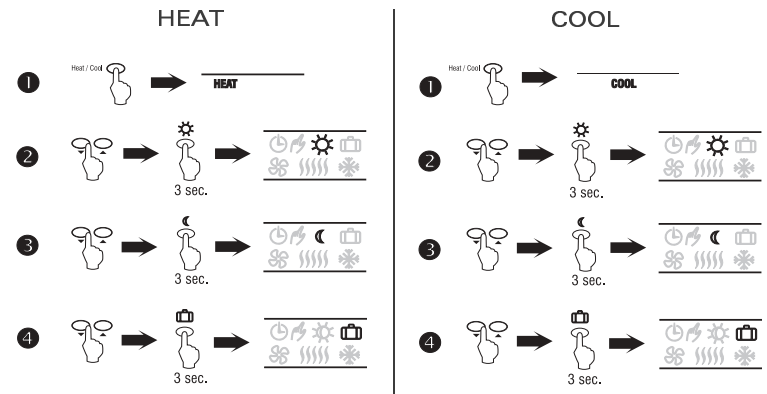
Setpoints represent the temperature that you wish to have during the day, at night or while you are away. The Comfort and Economy setpoints are used with the Automatic mode (schedule, for programmable models) while the Unoccupied setpoint can be used with the Unoccupied mode (activated manually or remotely). This table displays the default setpoints:

Symbol	Setting	HEAT	COOL
	Comfort	70°F (21°C)	78°F (25°C)
	Economy	62°F (17°C)	82°F (28°C)
	Unoccupied	50°F (10°C)	95°F (35°C)

### 2.2.1 To Modify the Setpoints

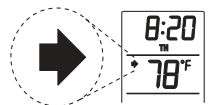
NOTE: If your thermostat controls both HEATING and COOLING, the setpoints must be configured for both applications.

NOTE: The COOL setpoints cannot be lower than the Comfort Heat setpoint. If this should happen, the TH144 will automatically set your COOL setpoint 1° higher than your Comfort Heat setpoint.



### 2.2.2 View the Current Setpoint

To view the current setpoint, quickly press once on one of these buttons ▲▼. The arrow indicates the setpoint.



# 3. Program Your Thermostat



## 3.1 Program Your Schedule

The TH144 allows four setting changes for each day of the week. There are no pre-set programs.

For each day, enter the time at which you wake up (P1), the time you leave for work (P2), the time you return home (P3) and the time you go to bed (P4):

Programs	Associated Setpoint	Time
P1	☀ (Comfort)	Wake up
P2	☾ (Economy)	Leave home
P3	☀ (Comfort)	Return home
P4	☾ (Economy)	Night

**NOTE:** For temperature increases (P1 and P3), allow at least 15 minutes per °C. For example, if you have lowered the temperature by 3°C during the night and you wake up at 7 a.m., program the change for 6:15 a.m.

To reduce energy costs, you must lower the temperature for a period of 2 to 3 times the delay required to bring the temperature back to your comfort level.

### 3.1.1 Set or Modify the Programs

- After 60 seconds of inactivity, the thermostat will automatically exit programming mode.
- It is sometimes faster to program the same schedule for the entire week and then modify the exception days.

- Press Program. MO and P1 are displayed.
- Press Day to select the day to be programmed or hold Day for 3 seconds to select all days of the week.
- Set the start time using the Hour and Minute buttons.
- To clear an entry, press Clear; the time zone indicates (- - : - -) when the program is inactive.
- Press Program to select the next program.
- Repeat steps 3 and 4 for remaining programs.
- Press Mode/Return to exit.

### 3.1.2 Programming Example

☀ Comfort (programs 1 and 3):

- Monday to Friday between 6:00 a.m. and 8:30 a.m. and between 4:00 p.m. and 11:00 p.m.
- Saturday and Sunday between 6:00 a.m. and 11:00 p.m.

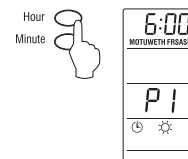
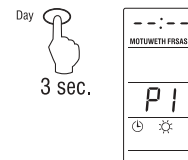
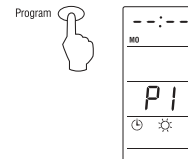
☾ Economy (programs 2 and 4):

- Monday to Friday between 8:30 a.m. and 4:00 p.m. and between 11:00 p.m. and 6:00 a.m.
- Saturday and Sunday between 11:00 p.m. and 6:00 a.m.

PROG	MON	TUE	WED	THU	FRI	SAT	SUN
1	☀	6:00	6:00	6:00	6:00	6:00	6:00
2	☾	8:30	8:30	8:30	8:30	--:--	--:--
3	☀	PM 4:00	PM 4:00	PM 4:00	PM 4:00	--:--	--:--
4	☾	PM 11:00	PM 11:00	PM 11:00	PM 11:00	PM 11:00	PM 11:00

## To program this schedule

- Press Program. MO and P1 are displayed.
- Press and hold Day for 3 seconds to select all days of the week (MOTUWETHFR-SASU).
- Set the time (6:00) for P1 using Hour and Minute.
- Press Program to select P2. Set the time (8:30) for P2 using Hour and Minute.
- Press Program to select P3. Set the time (4:00 p.m.) for P3 using Hour and Minute.
- Press Program to select P4. Set the time (11:00 p.m.) for P4 using Hour and Minute.
- Press Mode/Return to exit



## To erase programs 2 and 3 for Saturday and Sunday

- Press Program to access programming mode.
- Press Program until P2 is selected.
- Press Day to select Saturday (SA) and press Clear.
- Press Day to select Sunday (SU) and press Clear.
- Repeat steps 3 to 4 for P3.
- Press Mode/Return to exit.

## 3.2 Select the Operating Mode

The TH144 offers 2 operating modes:

### 3.2.1 Automatic

This mode executes the programmed schedule. To activate:

Press Mode/Return until ☀ is displayed. The associated program setpoint icon is also displayed.

**NOTE:** This mode can be bypassed for up to two hours (see 4.2).



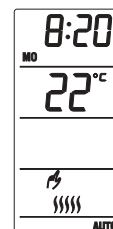
### 3.2.2 Manual

Maintains a constant temperature. To activate:

- Press Mode/Return until ⚡ is displayed.
- Set temperature ▲▼ OR quickly press ☀ or ☾ or ☒ to use a pre-defined setpoint.

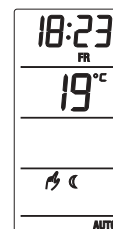


Temperature setpoint using arrow buttons.



\* fixed setpoint automatic changeover.

Temperature setpoint using a predefined setpoint button.




\* Heat and Cool setpoints are used for automatic changeover

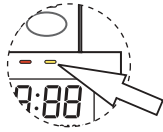
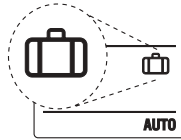
\* if you are using the automatic changeover mode, see 2.1 and 4.4).

# 4. Other Information

## 4.1 Remote Unoccupied

When the REM input is connected to a central system or a telephone controller and a signal is received through this input, the TH144 will switch to the unoccupied setpoint.

- The yellow LED on top of the display turns on when the unoccupied mode is activated.
- The  icon is also displayed.
- For details on how to operate your telephone controller (CT240/CT241), see your manual.
- When this mode is activated remotely it can only be deactivated remotely. Although, it can be bypassed for a 2-hour period (see 4.2).






## 4.2 2-hour Temporary Bypass

When the TH144 is in Automatic or Remote Unoccupied mode, you can temporarily bypass the current setpoint for a 2-hour period after which it will return to the previous mode.

Automatic (schedule programs)


- Set the desired temperature   or quickly press  or  to use a predefined setpoint.

Remote Unoccupied

- Only the   are available; all other buttons are disabled. Set the desired temperature.
- The yellow LED on top of the display remains on, but the  icon disappears.

## 4.3 Fan Control (Fan button)

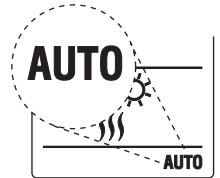
The TH144 thermostat is equipped with a fan button offering two fan settings: On and Automatic.

- When On: (  ) the fan runs continuously.
- The Automatic setting allows the fan to run only during heating or cooling cycles.



## 4.4 Automatic Changeover

When the AUTO mode (automatic changeover) is selected, the thermostat analyzes the system's requirements and automatically alternates between HEAT and COOL mode to provide occupant comfort.

There are two ways to use the automatic changeover mode:



### 4.4.1 Fixed Setpoint ( )

When you set the temperature using the   arrow buttons, the TH144 uses this unique temperature setpoint for temperature control.

The thermostat automatically switches to HEAT mode when the ambient temperature drops under the temperature setpoint whereas the COOL mode is activated when the temperature rises above the temperature setpoint.

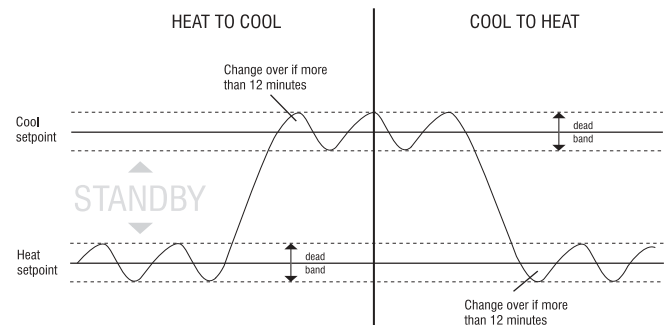
In order to switch modes, the ambient temperature must be maintained over or under the control band for more than 12 minutes.

### 4.4.2 Predefined Setpoint ( or or )

When a predefined setpoint button is selected, the TH144 uses the corresponding COOL and HEAT setpoint temperatures for temperature control.

The thermostat automatically switches to COOL mode when the ambient temperature rises above the COOL setpoint whereas the HEAT mode is activated when the ambient temperature drops below the HEAT setpoint.

In order to switch modes, the ambient temperature must be maintained over or under the setpoint control band for more than 12 minutes.



## Technical Specifications

Models: TH144

Power supply: 24 VAC

Maximum load: 1.5 A / 30 VAC per output

Remote input: dry contact, 24 VAC / 10 mA

Heat setting range: 40°F to 82°F (5°C to 28°C)

Cool setting range: 60°F to 95°F (15°C to 35°C)

Temperature display (ambient): 16°F to 158°F (-9°C to 70°C)

Temperature display (outdoor): -58°F to 158°F (-50°C to 70°C)

Temperature resolution (display): 1°

Accuracy: ± 0.5°C (0.9°F)

Anticipation: Electronic anticipation independent from the charge

Controller: Deadband adaptive

Cycles: 15 or 20 minutes (at 50% operation)

Clock protection: 2 hours

Programming: protected memory

Dimensions (H/W/D): 4.94 x 3.83 x 1 inches (125.4 x 97.3 x 25.4 mm)

## Accessories

AC144-02 Remote temperature interface with 10-foot indoor/outdoor probe.

AC144-03 Indoor/outdoor probe with 10-foot cable.

CT240 Telephone controller with one low voltage 12 VDC output and one universal relay output (simultaneous operation). 9 VAC adapter and phone cable included.

CT241 Telephone controller with four universal relay outputs (independent operation). 9 VAC adapter and phone cable included.

## Warranty

AUBE TECHNOLOGIES INC. TWO (2) YEAR LIMITED WARRANTY

This product is guaranteed against workmanship defects for a two-year period following the initial date of purchase. During this period, AUBE Technologies Inc. will repair or replace, at our option and without charge, any defective product which has been used under normal conditions.

The warranty does not cover delivery costs and does not apply to products poorly installed or randomly damaged following installation. This warranty cancels and replaces any other manufacturer's express or implied warranty as well as any other company commitment.

AUBE Technologies Inc. cannot be held liable for related or random damages following the installation of this product.

The defective product as well as the purchase invoice must be returned to the place of purchase or mailed, prepaid and insured, to:

705 Montrichard

Saint-Jean-sur-Richelieu

Quebec, Canada J2X 5K8

## Service

If you have any questions concerning the installation or programming of the TH144 programmable thermostat, contact our technical support team at:

Tel.: (450) 358-4600

Toll Free: 1-800-831-AUBE

Fax: (450) 358-4650

Email: [service@aubetech.com](mailto:service@aubetech.com)

For more information on our products, visit us at [www.aubetech.com](http://www.aubetech.com)