

## MODEL TH101A

### INSTALLATION

This thermostat has been designed to operate with any installation which has a resistive load (not exceeding 4000W / 240Vac or 2000W / 120Vac) such as electric baseboards, radiant ceilings and floors, electric convectors, etc. **IT IS NOT COMPATIBLE WITH A LOW VOLTAGE CONTROLLER USED BY A CENTRAL HEATING SYSTEM.**

Electricians or experienced technicians should install the thermostat.

This thermostat is designed to be used with a self-protected heating system equipped with a circuit breaker.

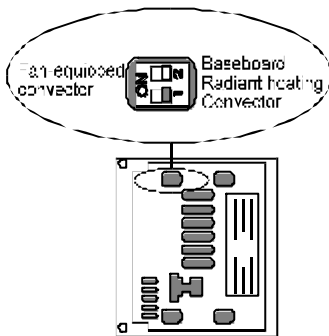
If you have any questions concerning the installation or programming of the thermostat, please call our technical assistance at (514) 358-4600 for Montreal area or 1-800-831-AUBE for outside area, between 8:30 AM and 5:00 PM, Monday to Friday, Montreal eastern time, Canada.

**TURN OFF POWER TO HEATING SYSTEM AT THE MAIN POWER PANEL TO AVOID ELECTRICAL SHOCK. Keep air vents of thermostat clean and free from obstructions.**

#### 1) What kind of heating system do you have ?

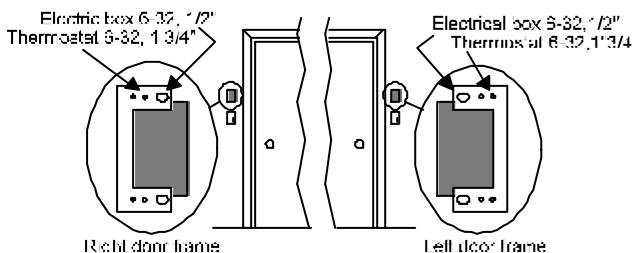
The thermostat has been factory set to proportionally control electric baseboards, radiant systems and convectors. Since proportionnal control uses a fast commutation rate (120/min) it is not compatible with fan equipped systems.

You can change the control mode to make it compatible with fan equipped convectors. In that case, slide switch #1 (SW1) located on the back of the thermostat at position « ON », then press on the « reset » button by using a fine probe.



#### 2) Mounting thermostat wallplate

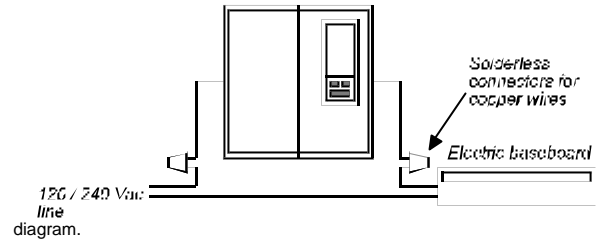
Wallplate is used when the thermostat is to be mounted close to a door frame or any other obstacle. It is also useful to level the thermostat.



Secure the wallplate to the electrical box using 6-32, 1/2" screws. See above drawing.

#### 3) Connecting wires and mounting thermostat

Connect the rear thermostat wires to the power supply and to the electric heater wires using solderless connectors for copper wires. See schematic



Push the excess wire back into the electrical box to prevent interference with the thermostat. Fix the thermostat using two (2) 6-32 screws 1 3/4 inches long. Once the thermostat is properly installed, return power to heating system.

**Note 1:** All cables and connections must conform to the local electrical code.

**Note 2:** In normal use, the thermostat's housing temperature can reach 35 to 45 °C.

**Warning :** Special service CO/ALR solderless connectors must be used when connecting with aluminium controllers.

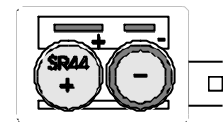
#### 4) Batteries

Your thermostat is provided with two (2) back-up batteries. Those batteries will protect the clock and your programs against power failure. Batteries are used only during power failure and provide 500 hrs of protection.



To install the back-up batteries, press the latch on the battery compartment and lift off the cover. Insert the batteries and respect the polarity. Replace the cover.

To check batteries condition, press BATT key. The display must show BATT OK. If LO BATT is displayed, change the batteries. If you have a new thermostat and the LO BATT indicator is displayed, check the batteries polarity or stretch out the contact on the battery cover.



1.5 volt battery type  
no 357 or 76

**WARNING :** Never let children play with batteries. Swallowing a button cell battery could be fatal.

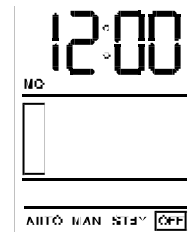
#### 5) First power-up

When power is applied for the first time, the display must show the day and hour as follows:

12:00 MO (Monday)

The active operation mode is the framed OFF mode.

If the display is different, press the RESET button. Use a fine probe such as a straightened paper clip to gently push the RESET button.



#### 6) Temperature displayed in °C or °F.

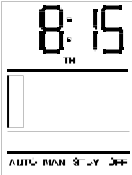
You can choose to display the temperature in Celsius (°C) or in Fahrenheit (°F). Your thermostat has been preset in Celsius. To change the display setting in °F, press and release the RESET button while the MODE button is pushed in.

## PROGRAMMING

**ATTENTION : The thermostat cannot be programmed if it is not connected on the 120/240 VAC line.**

### 1) Adjustment of time and day

Example of setting : Thursday 8:15 AM



**HOUR** Press once on HOUR key to enter time and day setting.

**HOUR** Press HOUR key a second time and hold it until 8:00 appears on the display.

**MIN** Press and hold MIN key until 8:15 appears on display.

**DAY** Press 3 times on DAY key until TH appears on display.

**RET** Press RET to exit the time and day adjustment mode.

*Note: The thermostat has an automatic return. When such functions as time recording, programs recording, etc., are not completed by pressing RET key, the thermostat will automatically exit the mode.*

### 2) Typical proposed programs

This thermostat can store up to six (6) programs. Four (4) programs for the weekdays and two (2) programs for the weekend.

To practice programming use the following example.

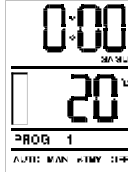
#### WEEKDAY PROGRAMS (MON...FRIDAY)

PROGRAM NUMBER	STARTING TIME	TEMPERATURE SETTING
Program 1	6:00 AM	20 °C
Program 2	8:30 AM	15 °C
Program 3	4:30 PM	20 °C
Program 4	11:00 PM	15 °C

#### WEEKEND PROGRAMS (SAT & SUN)

Program 1	7:00 AM	20 °C
Program 2	11:00 PM	15 °C

### 3) Programming the thermostat

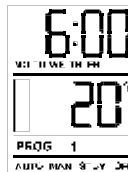


**PGM** Press PGM key once.

The default values or the last recorded program 1 will be displayed.

The default values are 20 °C and 0:00 hour.

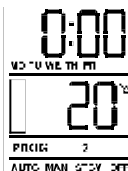
The days MOnDay to FRiday are displayed showing that this program is associated to weekdays.



**HOUR** Press HOUR key until 6:00 AM is displayed.

Press  $\blacklozenge$  or  $\blacklozenge$  button until 20 °C is displayed.

The first program is recorded.



**PGM** Press PGM key again to modify weekday programs 2, 3, 4, and weekend programs 1 and 2.


**HOUR** Use HOUR, MIN,  $\blacklozenge$  or  $\blacklozenge$  key to modify programs time and setpoint.

*Note: A program time left at 0:00 is considered not effective.*

*To reset a program, use PGM key to select the program, than press MODE button.*

Programming is now completed. Press RET key or wait for "automatic return" to exit the programming mode.

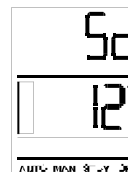
### 4) Programming the Stanby mode temperature



The STBY ( STANDBY ) temperature is the desired temperature setting for a prolonged absence.

**PGM** Press MODE button while PGM key is pressed in. Display shows Ad (SW1=Off) or OP (SW1=On).

**VOFF** *Attention : Do not modify Op setting (Op=5).*



**PGM** Press PGM key until display shows Sd and default value 10°C or the last recorded one.

Select the desired temperature with  $\blacklozenge$  or  $\blacklozenge$  button. ( ex: 12 °C ).

**RET** Press RET key to exit from programming the STBY mode temperature.

## OPERATION

### Operation modes

The thermostat has four (4) operation modes :

AUTO, MAN, STBY AND OFF.

They are selected through the MODE button. On display, the active mode is framed. The frame moves on to the next mode each time the MODE button is pressed.

#### NOTES :

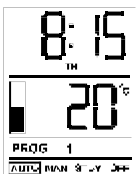
When scrolling from the operation mode OFF to an active mode, the thermostat will take 5 to 10 seconds to display the room temperature.



In normal use, the thermostat housing temperature can reach 35 °C to 45 °C.

**AUTO**

**MODE**

The AUTOmatic mode executes in sequence (hourly) the programs recorded by the user.

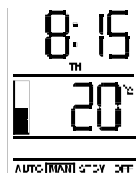




Pressing on the  or  button displays the temperature setting for five (5) seconds.

**MAN**

**MODE**

The MAN operation mode allows the user to bypass the programming and holds the present temperature.

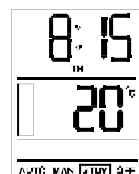




The first time the  or  button is pressed, the temperature setting is displayed. For all subsequent times pressed, the temperature setting will change 1°C.

**STBY**

**MODE**

The STBY (STANDBY) mode allows an immediate adjustment of the temperature setting. It is factory set to 10 °C. User can modify by referring to section: PROGRAMMING THE STBY MODE TEMPERATURE.



A pressure on the  or  button displays the temperature setting for five (5) seconds.

**OFF**

Why should you use the STBY mode?

If you leave your home for the weekend and you wish to keep the temperature to an economic level, instead of adjusting the thermostat in manual mode and changing the setpoint of all units, just set the thermostat in STBY mode.

In this mode, the electric heating system is turned off. Only the time and the operation OFF mode framed are displayed.

## CHARACTERISTICS

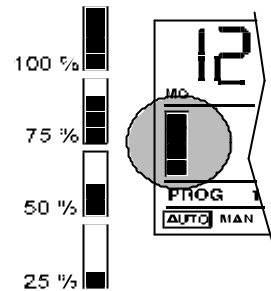
### 1) Proportional control

This thermostat works differently than the conventional electro-mechanic one. The latter can have a variation of the set temperature up to 4 °C while the electronic thermostat has a variation of only 0.3°C. This slight oscillation eliminates the discomfort of temperature variation often found with conventional electro-mechanic thermostat.

The proportional controller determines the amount of power required by the electric heating system to maintain the exact ambient temperature of the temperature setting.

The display shows, in real time, the applied power to the electric heating system.

If you have set the switch #1 at position «ON » to control a fan equipped system, the display will show 100 % when the heating system is turning on and 0 % when it is OFF. In that case, the temperature regulation is +/- 0.5°C around the set point.



### 2) Characteristics

- Model: TH101A
- Electronic Programmable line voltage thermostat (2 wires).
- Supply: 120/240 VAC, 50/60 Hz.
- Load: 16.6 Amp. maximum, 1.8 Amp minimum (Resistive only).
- Power: 4000 W / 240 VAC or 2000 W / 120 VAC.
- Power consumption (off) : 860mW.
- Approvals: CSA
- Display range: 0 to 40 °C (32 to 99 °F)
- Setting range: 5 to 35 °C (41 to 95 °F)
- Storage: -20 to 50 °C (-4 to 120 °F)
- Temperature control: 0.3 °C (SW1=Off), +/- 0.5 °C (SW1=On).
- Precision: ± 0.5°C (2500W), 0.9°C (4000W) of temperature setting.
- Six (6) programs: 4 weekday programs and 2 weekend programs.

## WARRANTY

### AUBE TECHNOLOGIES INC. LIMITED WARRANTY

This product is warranted against material defects and workmanship in normal use for a period of one year, from the date of the original purchase from authorized dealers. Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage.

This limited warranty is in lieu of all other warranties, obligations or liabilities expressed or implied by the company. In no event shall AUBE Technologies inc. be liable for consequential or incidental damages resulting from installation of the thermostat. Within this period, any thermostat proven defective in normal use will be repaired or replaced, at AUBE's option, without charge for either parts or labor, provided that the thermostat with the original sale receipt is returned to the original dealer or is shipped pre-paid, insured and addressed to

AUBE Technologies inc.  
Services centre  
705 Montrichard Av., Saint-Jean-sur-Richelieu ( Quebec)  
Canada J2X 5K8

## PROBLEMS AND SOLUTIONS

### PROBLEM

The thermostat goes to « OFF » after seconds into operation or  
The thermostat heating indicator is on but system doesn't work.

The heating system always on.

The thermostat loses programming and time.

Programs do not change as you want.

Erratic display.

Convector fan does not work well.

Battery test / Batt lo.

The thermostat moves to « OFF » and locks in.

The lights are flickering.

Room temperature shown is wrong.

The thermostat temperature is hot.

### CAUSE

- Installation not compatible with the specifications.  
- Load is less than 500 W.  
- Operating voltage is not 120/240 VAC.

- Bad installation.

- Defective batteries or bad contact in battery compartments.

- Wrong programming.

- Wrong mode selected.

- Wrong mode selection of heating system.

- Defective batteries.  
- Battery have a bad contact.

- Polarity is wrong.

- Circuit breaker is open.  
- Power failure.

-The wires gage is to small for proper operation of pulsed thermostat.

- A draft is near thermostat.

- The electronic thermostat uses a solid state component to control the power delivered to the load. Bigger is the load, higher is the temperature dissipated by the thermostat.  
- The housing temperature can reach 45°C under 3500 W load.

### SOLUTION

- If the thermostat is driving only a high voltage contactor, add a 500 W load on the circuit.

- Check if wires are not shorted between the thermostat and the electric box.  
- Press reset button.

- Check batteries and the polarity.  
- Straighten contacts placed inside battery compartment door.

Check actual time in AM & PM as well as program times (AM is not displayed).  
- Make sure operation mode is at « AUTO ».

- Press reset button.

- Make sure switch #1 is in « ON » position.  
- Press reset button.

- Change batteries.  
- Straighten contacts placed inside batteries compartment door.  
- Place batteries in right polarity.

- Check line voltage presence at the thermostat.

- Use the ON/OFF control mode (see instruction manual).

- Eliminate draft.

**NOTE : THE THERMOSTAT CANNOT BE PROGRAMMED IF IT IS NOT CONNECTED ON THE 120/240 VAC LINE.**

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