MODEL TH102D

SUMMARY

- **OPTIONS SELECTION**

  To change the temperature from °C to °F and back, maintain DAY buton pressed down as RESET button is being pressed on and released. Then release DAY button.

⇒ To change the time format from 24 hrs. to 12 hrs. and back, maintain HOUR button pressed down as RESET button is being pressed on and released. Then release HOUR button.

⇒ To change the heating control from proportional to on/off and back, maintain MIN button pressed down as RESET button is being pressed on and released. Then release MIN button.

- TO SET TIME AND DAY

  Press on DAY, HOUR and MIN buttons to adjust time and day.

- TO RECORD THE HEATING PROGRAMS

  Set the operating mode to AUTO. Use the PGM button to select the program to be recorded or modified. Once the program is selected, use HOUR and MIN buttons to set time and ▲ or ▼ to select temperature setting.

- TO RECORD THE ECONO PROGRAMS

  Set the operating mode to ECONO. Use the PGM button to select the program to be recorded or modified. Once the program is selected, use DAY, HOUR and MIN buttons to set time and ▲ or ▼ to select temperature setting.

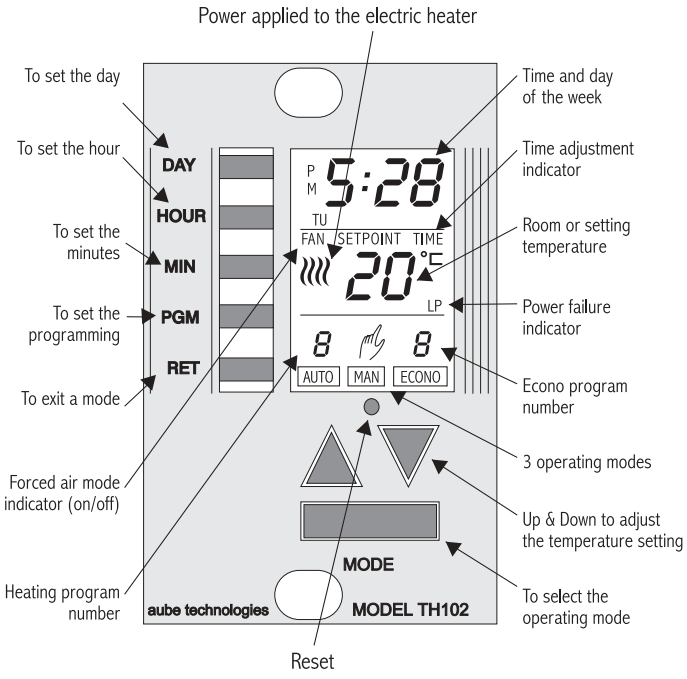
- OPERATING MODES

  To select an operating mode, use MODE button.

  AUTO: Runs the program. ▲ or ▼ shows temperature setting and can override temporarily your programming.

  MAN: Maintain the selected temperature. ▲ or ▼ change the temperature setting.

  ECONO: Maintain a temperature setting up to the user's pre-programmed day and time. ▲ or ▼ shows temperature setting and can override temporarily your programming.



NOTE: *To access the programmable keyboard, remove the cover by placing your fingers to the right side of the thermostat and pull toward you.*

INSTALLATION

Note: *The "Problems and Solutions" section at the end of this user's guide will help you to correct your problems during the installation.*

This thermostat has been designed to operate with any installation which has a RESISTIVE load not exceeding 2500 W @ 240 VAC or 1250 W @ 120 VAC 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 or systems using a contactor or a relay whose current is under 1.0 A.

Electricians or experienced technicians should install the thermostat.

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

PARTS INCLUDED

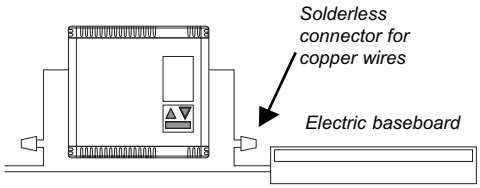
- One (1) TH102D thermostat
- Two (2) 6-32 screws, 1 ½ inches
- Two (2) solderless connectors

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

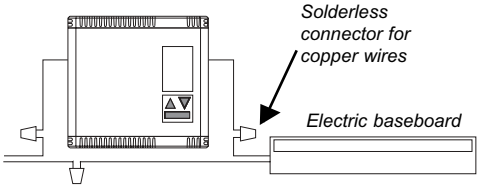
1) Connecting wires and mounting thermostat

Connect the rear thermostat wires to the power supply and to the electric heater wires using solderless connectors for copper wires **(there is no polarity for the wires)**. See schematic diagram.

2-wire installation :



4-wire installation :



Push the excess wire back into the electrical box to prevent interference with the thermostat. Secure the thermostat using the supplied screw. 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 at full capacity (2500 W), the housing temperature of the thermostat can reach 35 to 40 °C.*

WARNING : *Special CO/ALR solderless connectors must be used when connecting with aluminum conductors.*

2) Options selection

Some options have been factory set. Those default settings are :

- The temperature is in °C, the heating control is proportional and the time format is 24 hrs.

2.1 Temperature displayed in °C or °F

To change the temperature from °C to °F and back, maintain DAY button pressed down as RESET button is being pressed on and released. Then release DAY button.

2.2 Time format displayed in 24 hours or 12 hours

To change the time format from 24 hrs. to 12 hrs. and back, maintain HOUR button pressed down as RESET button is being pressed on and released. Then release HOUR button.

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2.3 Proportional or ON/OFF heating control

This thermostat has been factory set to proportionally control electric baseboards, radiant systems and convectors. Since proportional control uses a fast commutation rate, it is not compatible with fan equipped systems (see characteristics). Also, this control mode could occasionally create light flickering, especially in rural area.

You can change the control mode to make it compatible with fan equipped systems or to eliminate the light flickering.

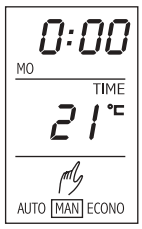
To do so, maintain MIN button pressed down as RESET button is being pressed on and released. Then release MIN button. Following this operation, the display will show the fan indicator. To return to proportional control, repeat the same operation.

3) Memory backup

In the event of a power failure, an internal circuit will maintain the programming. The display will stay on for 15 minutes. An indicator "LP" will be shown on the display. Beyond this period, the display will turn off. Only the time will have to be set if power failure is more than six hours. The thermostat will return to the same operation mode as set before the power failure.

4) First power-up

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



0:00 MO (Monday)

The active operation mode is the framed MAN mode, the temperature setpoint is 20 °C and the ambiant temperature is displayed.

If the display is different, maintain PGM button pressed down as RESET button is being pressed and released. Then release PGM button.

500 WATTS OR LESS INSTALLATION

During the 30 minute period following the installation or a long power failure (more than 6 hours), the light intensity of the display decreases when a button is pressed on while the thermostat is in the heat mode. This problem will disappear when the accumulator for the memory backup will be charged.

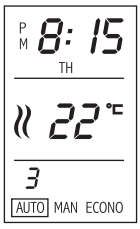
OPERATING MODES

The TH102D thermostat has three (3) operating modes:

AUTO, MAN and ECONO.

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 on.

AUTO



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

Pressing on the ▲ or ▼ displays the temperature setting and the SETPOINT indicator for five (5) seconds.

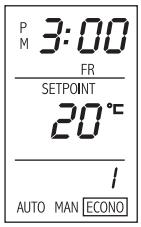
To see the weekday and weekend programs, select the AUTO mode and press successively on PGM button to see the programs appear on the display.

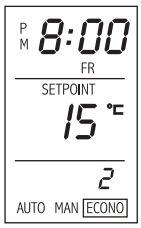
MAN

The MAN mode allows the user to override the programming.

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

ECONO





The ECONO mode has two (2) programs in which the day, the time and the setpoint has to be programmed. For instance, this operating mode can be used for a cottage installation where the user goes only on weekends.

Program 1: Friday 3:00 PM, 20 °C

Program 2: Friday 8:00 PM, 15 °C

The temperature will be maintained at 20 °C Friday from 3:00 PM to 8:00 PM, and maintained at 15 °C the rest of the week.

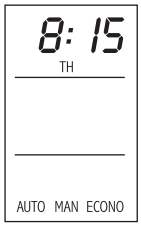
This gives you a comfortable temperature at your arrival and if you are not going to your cottage for the weekend, there will be only a minimal heating period.

To see the ECONO programs, select the ECONO operating mode and press on PGM button successively to see programs 1 and 2 appear on the display. In ECONO mode, pressing on the ▲ or ▼ displays the temperature setting.

PROGRAMMING

1) Adjustment of time and day

Example of setting: Thursday 8:15 AM



DAY — Use DAY, HOUR and MIN buttons to set the time.

HOUR

MIN

RET — Once set, press on RET button to exit the time and day adjustment mode

Note 1 : *Time indicator is showing you that the time must be set.*

Note 2 : *The thermostat has an automatic return. When such functions as time recording, programs recording, etc., are not completed by pressing on RET button, the thermostat will automatically exit the mode after 60 seconds.*

2) Typical suggested programs

This thermostat can store up to four (4) daily programs for weekdays and four (4) daily programs for the weekend. Also, there is two (2) programs for the ECONO mode. To practice programming use the following example.

Program number	Time	Temperature setting
Weekday programs (Mon...Friday)		
Program 1	6:30 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	8:30 AM	15 °C
Program 3	4:30 PM	20 °C
Program 4	11:00 PM	15 °C
ECONO mode programs (weekend cottage)		
Program 1	Friday 3:00 PM	20 °C
Program 2	Friday 8:00 PM	15 °C

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3) Recording the heating programs

Select the AUTO mode.

PGM

Press on PGM button once.

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

The default values are :
• 20 °C and the time -- -- : -- --

The days Monday to Friday are displayed to show that this program is for weekdays.

HOUR

MIN

Press on HOUR and MIN buttons until 6:30 AM is displayed.

▲ ▼

Press on ▲ or ▼ until 20 °C is displayed.

The first program is recorded.

PGM

Press on PGM button again to record or modify weekday programs 2, 3 and 4 and weekend programs 1, 2, 3 and 4.

HOUR

Use HOUR, MIN, ▲ or ▼ buttons to modify the time and setpoint of programs.

MIN

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

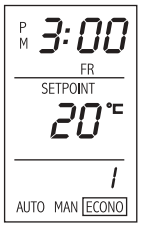
▲ ▼

Note: *A program time left at -- -- : -- -- is considered inactive.*

To reset a program, use PGM button to select the program, then press on MODE button.

To review programs, press on PGM button successively to see the programs one after the other and make modification if required.

4) Recording the ECONO programs



Select the ECONO mode.

PGM

Press on PGM button once.

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

DAY

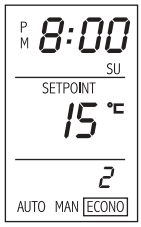
The default values are :
• 10 °C and the time -- -- : -- --

HOUR

Use DAY, HOUR, MIN and ▲ or ▼ buttons to record the day, the time and the setpoint of program 1.

MIN

▲ ▼



PGM

Press a second time on PGM key.

DAY

The default values or the last recording of program 2 will be displayed.

HOUR

Use DAY, HOUR, MIN and ▲ or ▼ buttons to modify the day, time and setpoint of program 2.

MIN

RET

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

CHARACTERISTICS

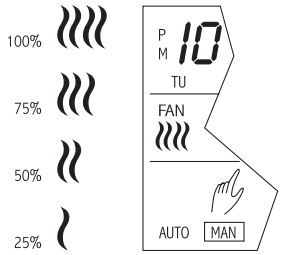
1) Proportional and on/off controls

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

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

To see this process, the display shows, in real time, the percentage of power applied to the electric heating system.

If you have programmed the heating control to ON/OFF to control a fan equipped system, the display will show the fan indicator and 100% when the heating system will turn ON and 0% when it will turn OFF. In this case, the temperature regulation will be ±0.5 °C around the setpoint.



2) Characteristics

- Model: TH102D
- Electronic programmable line voltage thermostat (2 wires non polarized)
- Supply: 120/240 VAC, 50/60 Hertz
- Load: 10.4 A maximum, 1.0 A minimum (Resistive only)
- Power: 2500 W @ 240 VAC or 1250 W @ 120 VAC
- Power consumption (off): 860 mW
- Approvals: CSA / UL
- Display range: 0 to 99 °C (0 to 99 °F)
- Setting range: 5 to 27 °C (40 to 80 °F)
- Storage: -20 to 50 °C (-4 to 120 °F)
- Temperature regulation: 0.3 °C (proportional), +/- 0.5 °C (ON/OFF)
- Precision: ± 0.5 °C (2500 W) of temperature setting
- 10 programs: 4 weekday programs, 4 weekend programs and 2 ECONO programs

NOTE : In normal use at full capacity (2500 W), the housing temperature of the thermostat can reach 35 to 40 °C.

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WARRANTY

AUBE TECHNOLOGIES INC. ONE (1) YEAR 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. During this period, AUBE technologies inc. will repair or replace the product with a new or of equivalent quality at AUBE'S option, without charge, any product proven defective in normal use.

Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage. This warranty does not cover the cost of installation, removal or reinstallation.

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 this product. Some states or provinces do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above exclusions or limitations may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

The defective product and the original sale receipt must be returned to the original dealer or shipped pre-paid, insured and addressed to:

Aube technologies inc.
Customer Service
705, Montrichard
Iberville (Quebec)
Canada J2X 5K8

If you have any questions concerning the installation or programming of this product, please call our technical assistance at (450) 358-4600 for the Montreal area or **1-800-831-AUBE** for outside area, Monday to Friday between 8:30 AM and 5:00 PM Eastern time.

PROBLEMS AND SOLUTIONS

PROBLEMS	CAUSES	SOLUTIONS
No display	- Circuit breaker is open - Power failure more than 15 minutes	- Check 120 / 240 VAC presence at the thermostat
The thermostat is hot	- In normal use at full capacity (2500 W), the housing temperature of the thermostat can reach 35 to 40 °C	
The thermostat is loosing the time but not the programming	- Power failure more than 6 hours	
Room temperature shown is wrong	- A draft is near the thermostat	- Eliminate the draft
Heating system always on	- Bad installation	- Check installation - Maintain PGM button pressed down as RESET button is being pressed and released. Then release PGM button.
The thermostat displays heating but heating system is not turned on	- Bad installation - Power failure ("LP" indicator shown on display)	- Check installation - Check 120 / 240 VAC presence at the thermostat
Programs do not change as you want	- Incorrect programming hours - Wrong programming mode selected	- Check actual time in AM & PM as well as program times (AM is not displayed) - Make sure operating mode is set to AUTO
The lights of the house flicker	- Flickering lights are due to the fast commutation of current through the baseboard controlled by the thermostat	- Use the ON/OFF control mode. Maintain MIN button pressed down as reset button is being pressed and released. Then release MIN button.
Erratic or dim display		- Maintain PGM button pressed down as RESET button is being pressed on and released - For a 500 W or less installation, the display could be dim after the first power-up or a long power failure when the thermostat is in heat mode. See first power-up section.

21/09/00