FEATURES

WH-T-42

- 4 digit display
- 4 outputs (can control 4 motors) for natural ventilation motors in 2 different rooms or zones
- 4 probes input : 1 for each output
- Heater interlock
- Pilot lights indicate the status of outputs and locked mode
- Cover is fastened to case by means of quarter turn screws which allow quick access to internal adjustments
- Overload protection on ventilation and heater outputs by means of fuses

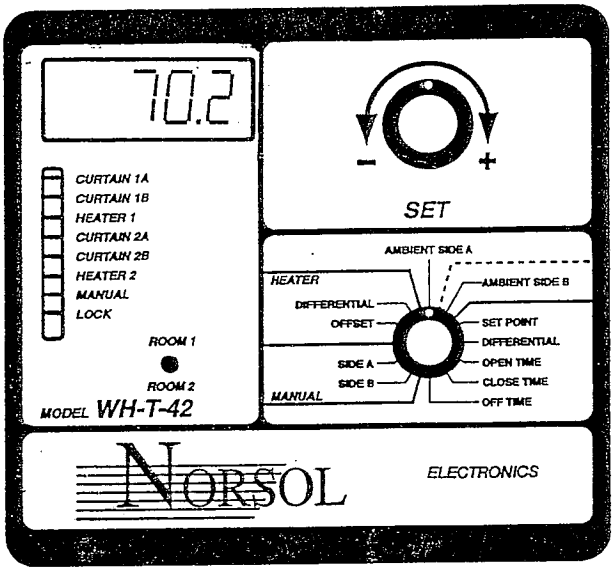


Figure 1 : Front cover

Figure 2 : Internal circuit

1- **Digital display (4 digits)**
Displays the ambient temperature and other parameters shown around selector 12.

2- **Unit 1-B pilot light**
Illuminates during the opening cycle of unit 1-B.
Flashes during the closing cycle of unit 1-B.

3- **Unit 1-A pilot light**
Illuminates during the opening cycle of unit 1-A.
Flashes during the closing cycle of unit 1-A.

4- **Heater 1 pilot light**
Illuminates while the heater in ROOM 1 is activated.

5- **Unit 2-A pilot light**
Illuminates during the opening cycle of unit 2-A.
Flashes during the closing cycle of unit 2-A.

6- **Unit 2-B pilot light**
Illuminates during the opening cycle of unit 2-B.
Flashes during the closing cycle of unit 2-B.

7- Heater 2 pilot light
Illuminates when the heater in ROOM 2 is activated.

8- **Manual mode pilot light**
Illuminates when the controller is used on manual mode.

9- **Locked mode pilot light**
Illuminates when the controller is in the locked mode.

10- **Room selection switch**
Use this switch to select the room in which you want to set or read parameters.

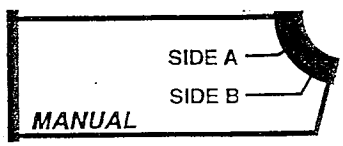
11- **Set knob**
Use the set knob to increase or decrease the value of the parameter being adjusted.

12- **Parameter selection knob**
Use the parameter selection knob to select the parameter that requires an adjustment.

13- **Locked mode switch**
The controller is in the locked mode when the locked mode switch is at ON. In the locked mode, only the TEMPERATURE SET POINT can be modified. All other parameters cannot be modified, though they may be visualized on the display.

14- Temperature unit selection switch
The temperature is displayed in degrees Celsius or Fahrenheit according to the position of this switch.

OPERATION



A) MANUAL MODE

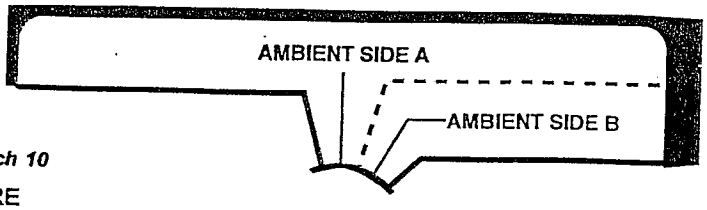
In each of the 2 rooms as selected with switch **10**, the WH-T-42 can be set in manual mode when the parameter selection knob **12** is in one of the 2 positions shown above. The manual mode is used to open, close or stop the element being controlled (panel, damper, curtain...).

To open or close unit A or B in the room selected, set the parameter selection knob 12 to the SIDE A or SIDE B position and turn set knob 11 till you read the word "OPEN" or "CLOSE" on the display. From this moment, a 5 seconds countdown is achieved and displayed before the activation is made.

Turning the set knob 11 again at this point permits you to access the OFF function and the AUTO function. If you set SIDE A or SIDE B to OFF, the unit related to these outputs will never be activated. If you set the output to AUTO, the controller refers to temperature setting and reading to activate automatically the unit. After you set the SIDE A or SIDE B to AUTO with knob 12, you can turn the parameter knob to any other position and the controller will work on automatic.

B) AUTOMATIC MODE

TEMPERATURE PARAMETERS



For ROOM 1 or ROOM 2 set with switch 10

AMBIENT A AND B TEMPERATURE

Use these positions to visualize the ambient temperature as well as the minimum and maximum temperatures recorded in each zone since their last reset. Note that when the display is not flashing, the value appearing on the display represents the ambient temperature. When the display is flashing, the value appearing on the display is either the minimum temperature or the maximum temperature.

TO VISUALIZE THE MINIMUM AND MAXIMUM TEMPERATURES

- Set selector **12** at **AMBIENT A** or **AMBIENT B** and turn adjustment knob **11** clockwise by one notch. The minimum temperature will then be displayed. Turn adjustment knob **11** clockwise one notch further and the maximum temperature will then be displayed. Turn adjustment knob **11** clockwise a third notch and the ambient temperature will again be displayed. If adjustment knob **11** is turned counterclockwise rather than clockwise, the display sequence will be reversed (ambient, maximum, minimum, ambient...).

TO RESET THE MINIMUM AND MAXIMUM TEMPERATURES

- Set selector **12** at **AMBIENT A** or **AMBIENT B** and turn adjustment knob **11** clockwise or counterclockwise as described above to display either the minimum temperature or the maximum temperature. The display will then be flashing. Leave adjustment knob **11** in this position. After 10 seconds, the minimum and maximum temperatures will be reset and the ambient temperature of the corresponding zone will be displayed.

CAUTION

In order to avoid resetting the minimum and maximum temperatures while visualizing them, return to the ambient display within 10 seconds using adjustment knob 11.

TEMPERATURE SET POINT

- This position is used to adjust target temperature in **ROOM 1** and in **ROOM 2** using switch **10**. Set parameter selection knob **12** at this position and set knob **11** to select the desired ambient temperature. The temperature set point can be adjusted between -40° and 40°C (-40° and 120°F).

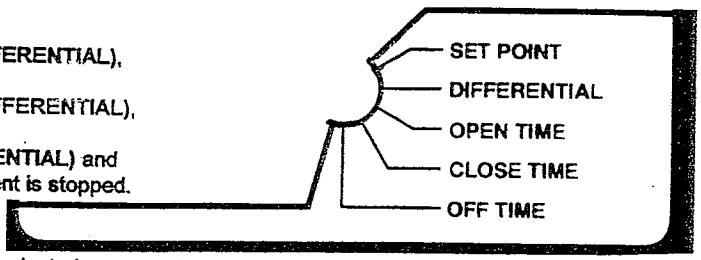
TEMPERATURE DIFFERENTIAL

- For **ROOM 1** and for **ROOM 2** using switch **10**. Set parameter selection knob 12 at this position and use set knob 11 to set the desired temperature differential. The temperature differential can be adjusted from 1° to 11.1°C (0.5° to 20.0°F). As shown in figure 3 below:

For each output :

For each of the probes, in ROOM 1 or in ROOM 2 :

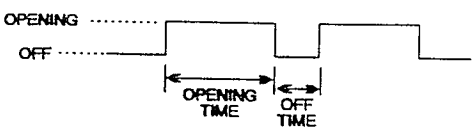
If **AMBIENT A or B** is lower than **(SET POINT - DIFFERENTIAL)**, the closing cycle is activated.
If **AMBIENT A or B** is higher than **(SET POINT + DIFFERENTIAL)**, the opening cycle is activated.
If **AMBIENT A or B** is within **(SET POINT + DIFFERENTIAL)** and **(SET POINT - DIFFERENTIAL)**, the controlled element is stopped.



OPENING AND CLOSING CYCLES

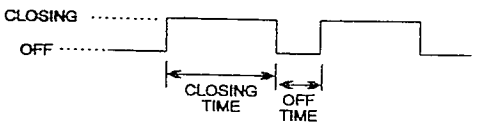
- You can set closing, opening and stop times in the selected room, and these will be applied to **SIDE 1** and **SIDE 2.**

OPENING CYCLE



- To adjust the opening time for both units in the selected room, set the parameter selection knob **12** at **OPEN TIME** and use set knob **11** to select the desired opening time. The opening time displayed is in seconds and can be adjusted from 1 to 900 seconds.
- To adjust the off time for both units, set the parameter selection knob **12** at **OFF TIME** and use set knob **11** to select the desired off time. The off time displayed is in seconds and can be adjusted from 0 to 900 seconds. You can set opening and stop times in each room and these will be applied to SIDE A and SIDE B.

CLOSING CYCLE



- To adjust the closing time for both units in the selected room, set the parameter selection knob **12** at **CLOSE TIME** and use set knob **11** to select the desired closing time. The closing time displayed is in seconds and can be adjusted from 1 to 900 seconds.
- To adjust the off time for both units, set the parameter selection knob **12** at **OFF TIME** and use set knob 11 to select the desired off time. The off time displayed is in seconds and can be adjusted from 0 to 900 seconds.

NOTE

The off time is the same for closing and opening cycles. It is the first value to be determined. Opening and closing speeds are determined according to opening and closing times. For example, in winter the opening time should be slower and the closing time faster than in summer. When off time is set at 0 second, opening and closing cycles are done without off time.

C) HEATER OPERATION

Heater is operated on a basis of average of ambient temperatures of both probes in a room.

HEATER OFFSET : Set knob **12** at this position and use knob **11** to select the required **HEATER OFFSET**. The offset can be adjusted between 0° to 20.0°F.

HEATER DIFFERENTIAL : Set knob **12** at this position and use knob 11 to select the required **HEATER DIFFERENTIAL**. The differential can be adjusted between 0.5° and 20.0°F.
As shown in figure 3 on the right :

Heating is activated when **(AMBIENT A + AMBIENT B) / 2 = SET POINT - HEATER OFFSET - HEATER DIFFERENTIAL** and stops when **AMBIENT = SET POINT - HEATER OFFSET**.

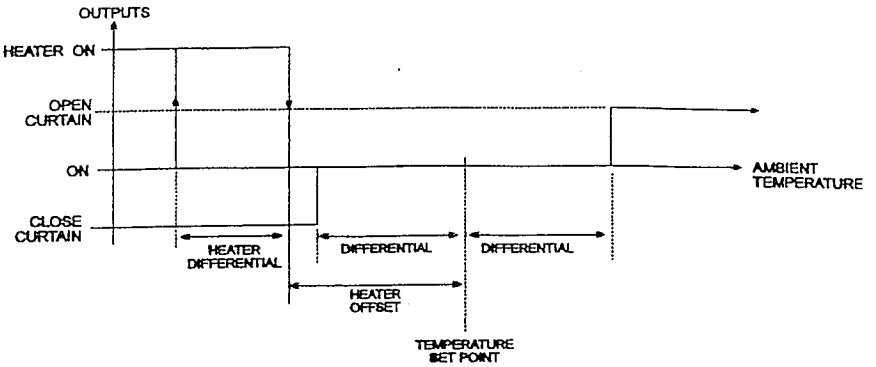
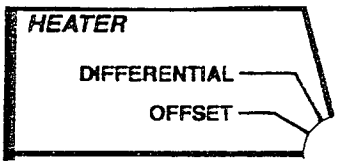


Figure 3 : Operation of temperature parameters



INSTALLATION

- Place the required number of cable holders in the provided holes at the bottom of the controller. If the controller is installed in a dusty or humid environment, use watertight cable holders.
- The room temperature where the controller is installed MUST ALWAYS REMAIN BETWEEN 0° AND 40°C (32° AND 104°F).
- Mount the controller on the wall with screws through the mounting holes located at the back of the case.
- FASTEN THE SUPPLIED BLACK CAPS ON EACH OF THE MOUNTING HOLES.

WIRING

- For typical hook-up, refer to figure 4.

CAUTION

DISCONNECT THE POWER SUPPLY BEFORE MAKING WIRING CONNECTIONS TO PREVENT ELECTRICAL SHOCK AND EQUIPMENT DAMAGE.
ALL WIRING MUST COMPLY WITH APPLICABLE CODES, ORDINANCES AND REGULATIONS.
INSTALLATION MUST BE DONE BY AN AUTHORIZED ELECTRICIAN.
Set the line voltage selector switch according to the line voltage being used.
If metal cable holders are used to secure cables entering the WH-T-42 **case, use the furnished ground plate. The ground wire must be connected to the screw on the ground plate.**
WH-T-42 **outputs must be coupled to a minimum load in order to be activated properly.**

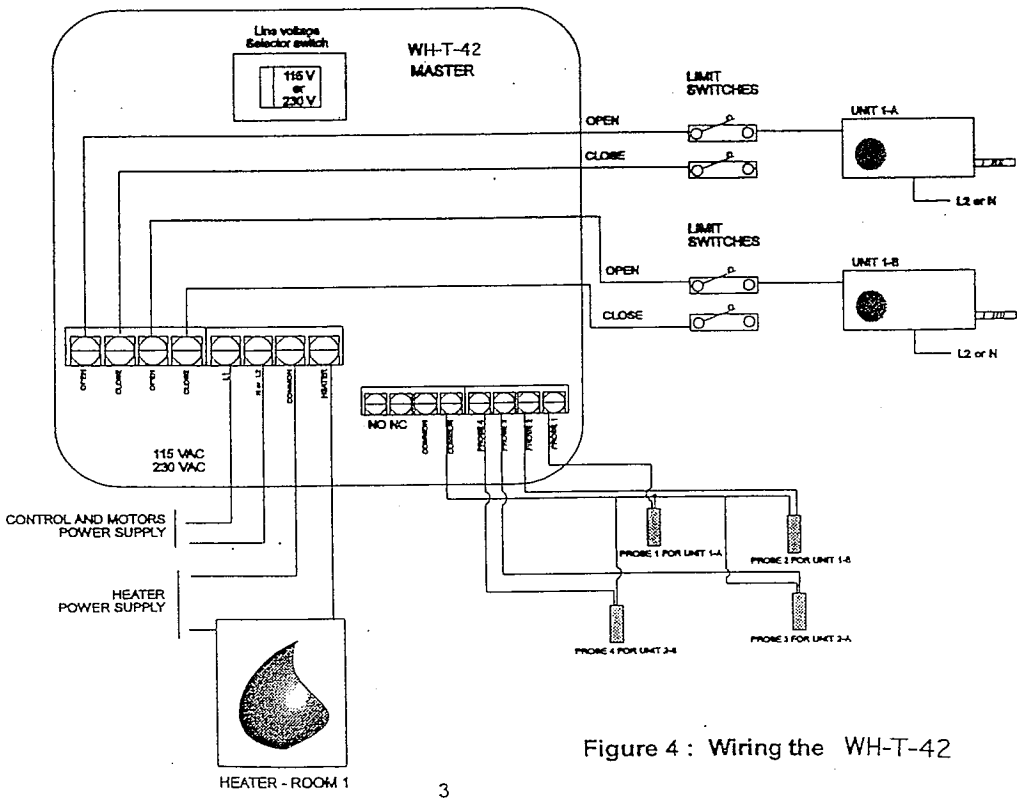


Figure 4 : Wiring the WH-T-42

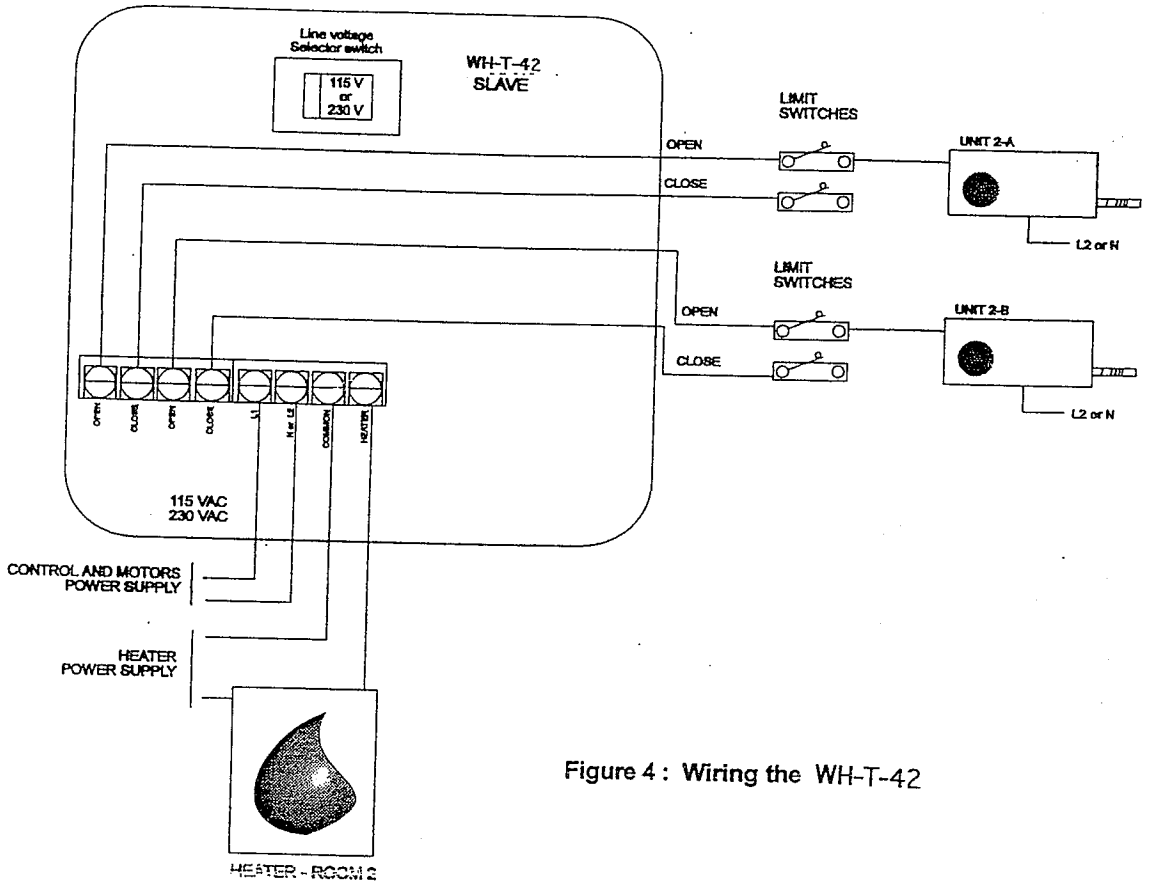


Figure 4 : Wiring the WH-T-42

TEMPERATURE PROBE

The temperature probe operates at low voltage and is completely isolated from line voltage. It can be extended up to 500 feet.
To extend the probe :

- Use shielded cable with an outside diameter between .245 and .2110 inch to ensure cable entry is dust tight.
- Isolate this cable from any other cable.

ELECTRICAL RATINGS

Input voltage : 115 VAC or 230 VAC, 50 or 60 Hz
Motor's outputs : **UNIT 1A, 1B, 2A AND 2B :** 115 VAC or 230 VAC, 3 Amp. max., *Fuses :* 5 Amp., slow blow
Heater output : 250 VAC or 30 VDC max., 10 Amp. max., *Fuses :* 10 Amp., slow blow
Probes : Low voltage (< 5V), isolated from line voltage, can be extended up to 500 feet. Accuracy : 1°C (1.8°F) between 5° and 35°C (41° and 95°F)
Operating temperature range : -40° to 40°C (-40° to 120°F)
Casing : ABS, moisture and dust tight

WARNING

DO NOT SPLASH WATER ON CONTROLLER