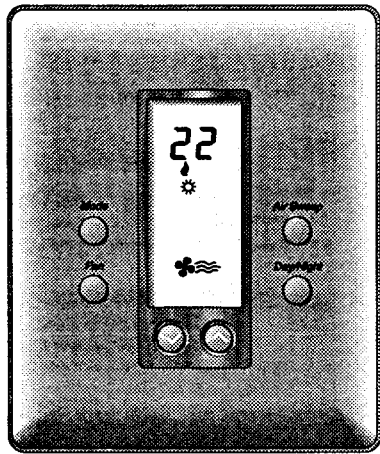


**DSL-303**  
**1 Cool, 1 Heat, 3 Speed Fan**  
**Climate Controller**  
**OPERATING INSTRUCTIONS**



SEE REVERSE FOR  
 INSTALLATION INSTRUCTIONS

Your new controller has been designed to provide accurate control and display of room temperature. In addition, it will also display all relevant information pertaining to your system.

The clearly marked buttons and informative display make it extremely easy to understand and simple to use.

Please take a few moments to read the brief instructions and familiarize yourself with the various functions in order to obtain maximum benefit from this truly unique electronic control.

**GENERAL INFORMATION**

The controller normally displays room temperature, mode of operation and whether Cooling or Heating is currently on. The six buttons on the front of the unit allow complete control of your equipment.

You may select different heating and cooling setpoints for the system to maintain, eg. 18° in heating and 26° in cooling. Raising or lowering the setpoints in heating or cooling is as simple as pushing a button. In addition, you may choose to display the temperature in °F or °C.

The controller also allows you to select continuous fan operation (useful when using an air cleaner). The fan will always come on with the equipment.

**USER CONTROLS**

**MODE:**

Select the desired mode of operation by repeated pressing of the MODE button:

● — controls Cooling system only (the word "COOL" is displayed for 5 seconds)

♣ — controls Heating system only (the word "HEAT" is displayed for 5 seconds)

♣♣ — controls both the Heat & Cool systems (the word "AUTO" is displayed for 5 seconds)

● **Blinking** — indicates Cool "ON"

♣ **Flickering** — indicates Heat "ON"

**OFF** — disables controller so equipment will not operate. In Heating or Cooling the fan is still operational by pressing the Fan button

**COOLING:** ●

Select the temperature you want your equipment to maintain while in the cooling mode by pressing and holding the ▼ or ▲ buttons. The control setpoint temperature is displayed for 5 seconds.

**HEATING:** ♣

Select the temperature you want your equipment to maintain while in the heating mode by pressing and holding the ▼ or ▲ buttons. The control setpoint temperature is displayed

**FAN:** ♣♣♣

The Fan will come on automatically when the system is operating, but there is no indication of this on the display. When the fan is operating in AUTO mode, its speed is determined on a load demand basis and selected by the algorithm logic. To select continuous Fan operation, press the FAN button and the display will show ♣♣♣. This is recommended for electronic air cleaners and continuous ventilation requirements.

♣♣♣ Indicates fan operating at 1<sup>st</sup> speed (G2)

♣♣♣ Indicates fan operating at 2<sup>nd</sup> speed (G1+G2)

♣♣♣ Indicates fan operating at 3<sup>rd</sup> speed (G1)

**OFF:**

When the word "OFF" is displayed, the equipment will not operate. The Fan will operate according to manual selection

*Avoid using the OFF mode during extremely cold weather to prevent damage to equipment from freezing.*

**USER CONTROLS (Cont'd)**

**AUTO:** ♣ ●

Selecting this mode of operation will control both Heating and Cooling functions. The controller will automatically switch from one to the other as determined by the selected setpoints in heating and cooling.

**NOTE:** The controller will not allow less than 2°F (1°C) difference between the heating and cooling setpoints.

**AIR SWEEP BUTTON**

Depress Air Sweep button to activate or deactivate motion of swing louvers (not available with cassette units). The Fan must be on for Air Sweep to operate

**DAY/NIGHT BUTTON**

When the controller is initially installed, the display will show the ☀ symbol for your day temperature. By pressing the DAY/NIGHT you may select an alternate or night temperature ☾ (the controller will remember this setpoint). Simply press the Day/Night button to alternate between temperature settings.

**CELSIUS / FAHRENHEIT**

Simultaneously press ▼ and ▲ to switch between Celsius (°C) and Fahrenheit (°F) temperature display.

**USER CONTROLS (Cont'd)**

**LIMITED OVERRIDE**

When the keyboard is locked (dipswitch #2 "ON"), the user may override the temperature setpoint for one (1) hour by pressing either ▼ or ▲ button. The range of temperature override is +/- 3 °F or °C from the programmed daytime setpoint.

**REMOTE SENSOR (OPTION)**

**RS1 — RS2 — RS+V**

The controller is designed to accept the Electronic Remote Sensor which will allow you to locate your controller in an area away from view. Indoor and outdoor are available separately.

**CLOCK TERMINALS (OPTION) CLK1 — CLK2**

Your controller is equipped with a dry contact closure input. By connecting to a remote clock/timer, the controller can be alternated between the DAY/NIGHT (set-back) temperature setpoints automatically.

**TEMPERATURE ACCURACY**

Full temperature accuracy will only be realized after the controller has been installed and powered for at least one (1) hour.

**POWER FAILURES**

Your controller employs the latest developments in solid state electronic technology.

One of the unique features of your controller is that there is no battery required to maintain your selected setpoints in the event of a power loss as the memory is unaffected by power failures of any duration.

When power is restored, the controller will continue operating as if the power had never been off.

**WARRANTY**

**LIMITED TWO YEAR WARRANTY**

The manufacturer warrants to the original purchaser that its product and component parts will be free from defects in workmanship and materials for a period of two years from the date of purchase. Your dealer will provide free replacement of your controller upon proof of purchase.

**EXCLUSIONS**

This warranty does not apply in the event of misuse, abuse or as a result of unauthorized alterations or repairs. The manufacturer will not be liable for any consequential damages including, without limitation, damages resulting from defects, loss of use, or misuse.

*This equipment, if installed in strict accordance with the manufacturer's instructions, complies with the limits for a Class B computing device pursuant to Subpart J of Part 15 of FCC rules.*

# INSTALLATION INSTRUCTIONS

### LOCATION:

To ensure proper operation, the controller should be mounted on an inside wall in a frequently occupied area of the building. In addition, its position must be at least 18" (46cm) from any outside wall, and approximately 5' (1.5m) above the floor in a location with freely circulating air of an average temperature.

### BE SURE TO AVOID THE FOLLOWING LOCATIONS:

- behind doors or in corners where freely circulating air is unavailable
- where direct sunlight or radiant heat from appliances might affect control operation
- on an outside wall
- adjacent to, or in line with, conditioned air discharge grills, stairwells, or outside doors
- where its operation may be affected by steam or water pipes or warm air stacks in an adjacent partition space, or by an unheated/uncooled area behind the controller
- where its operation will be affected by the supply air of an adjacent unit
- near sources of electrical interference such as arcing relay contacts

# SPECIFICATIONS

**Rated Voltage** 20-30 Vac, 24 nominal  
**Rated A.C.** . . . .0.050 Amps to 0.75 Amps continuous  
**Current** per output with surges to 3 Amp Max.  
**Rated** . . . . .0.0 Amps to 0.75 Amps continuous  
**Current** per output with surges to 3 Amp Max.  
**Control** . . . . .Heating: 38 to 88°F in 1° Steps  
**Range** 5 to 30°C in 1° Steps  
 Cooling: 60 to 108°F in 1° Steps  
 16 to 40°C in 1° Steps

**Controller**  
**Measurement** 28 to 124°F or 0 to 48°C  
**Range**  
**O.D.T. Measurement**  
**Range** . . . . .-50 to 124°F or -48 to 48°C

The ratings of this controller have been carefully selected and matched to the Duct Free system with standard factory options and accessories. For any other modifications or uses, consult your local equipment system representative.

**NOTE:** This controller contains electronic circuitry replacing the conventional mechanical anticipator.

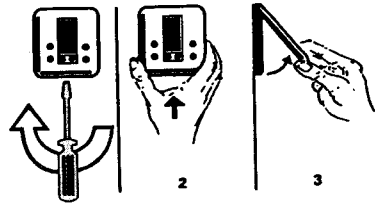
# INSTALLATION INSTRUCTIONS (CONT'D.)

### CONTROLLER INSTALLATION

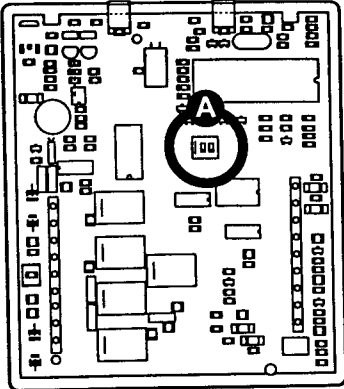
1. Lift the controller cover and insert a flat blade screwdriver, or a coin, approximately 1/8" (3mm) into the slot located in the bottom center of the case. Twist 1/4 turn (please refer to step 1 of the figure to the right) to pop the controller from its backplate.
2. Swing the controller out from the bottom, and lift up and out of the base (please refer to steps 2 & 3 of the figure to the right). Place the rectangular opening in the base over the equipment control wires protruding from the wall. Using the base as a template, mark the location of the two (2) mounting holes. No leveling is required.
3. Use the supplied anchors and screws for mounting on the dry-wall or plaster. Drill two (2) 3/16" (5mm) holes at the marked locations, tap nylon anchors flush to the wall surface, and fasten.
4. Connect the wires from the control panel to the controller terminals as shown in the wiring diagrams. Push any extra or slack wire back into the wall. Dress the remaining wires so they are flush to the mounting plate. The access hole should be sealed or stuffed to prevent drafts from the wall affecting the controller's performance.

Before the controller is re-installed on the subbase, install the optional setback, indoor/outdoor/remote sensors, if used. Refer to the installation instructions supplied with each option. Also, check the position of the slide switches on the lower left corner on the back of the controller.

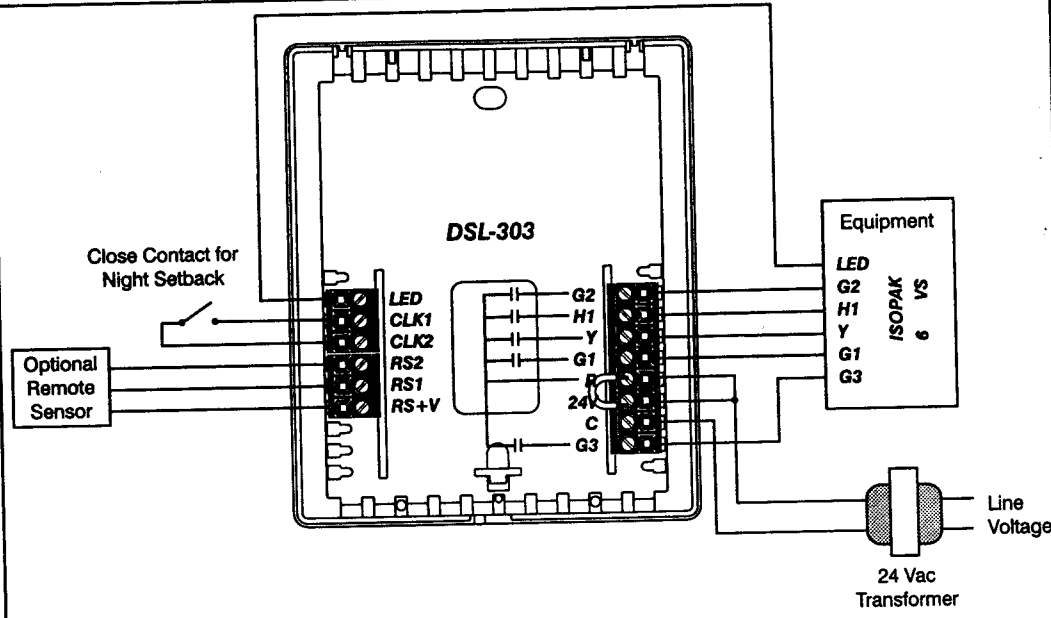
### REPLACING THE CONTROLLER ON THE SUBBASE



1. Position the controller on the hinged tabs located at the top of the subbase. (See 3 above)
2. Gently swing the controller down and press on the bottom center edge until it snaps in place.



**DETAIL A**



### OUTPUT TERMINAL FUNCTIONS

- G2** . . . . . Energized with a call for heating or cooling or as selected by fan button
- H1** . . . . . Energizes on call for heat
- Y** . . . . . Energized on a call for cooling
- G1** . . . . . Energized with a call for heating or cooling or as selected by fan button
- R** . . . . . Independent switching voltage
- 24VAC** . . . . . 24VAC Hot from equipment transformer
- C** . . . . . 24VAC Common from equipment transformer
- G3** . . . . . Energizes when Air Sweep is selected
- LED** . . . . . Fault indicator
- CLK1** . . . . . Use with remote clock/timer for alternate setpoints
- CLK2** . . . . . alternate setpoints
- RS1** . . . . . Use to connect Outdoor Temperature Sensor option and/or Indoor Remote Sensor option.
- RS+V** . . . . . Refer to the instructions included with the sensor