

Installation and Operating Instructions RLV-240D

® **PSG Controls, Inc.**

Digital Non Programmable Line Voltage

General Information:

This thermostat is designed to operate line voltage electric resistance type heating.

A precision thermistor is employed to sense temperature. The thermistor resistance is read by a microprocessor to determine if there is a need for heat. If heat is required, the microprocessor turns on the heater. Once the need for heat is satisfied, the thermistor senses the change in temperature and causes the microprocessor to turn off the heater. The microprocessor will keep the heater on for at least two minutes before allowing a temperature change to turn it off again. As a result of using this method of temperature control, the thermostat can provide greater comfort and energy savings. To obtain even greater energy savings, this model can be easily placed into an economy/setback mode.

SPECIFICATIONS:

Temperature Range: 40.0°F to 85.0°F (4.4°C to 29.4°C)

Display Format: Liquid Crystal Display (LCD)

Sampling Rate: Every second

Accuracy: ±1.0°F

Power Source: 208VAC - 240VAC, 50 - 60Hz

Load: 16 amps resistive or 1/2 horsepower

Installation:

This device should be installed and serviced by a qualified electrician. The thermostat has been designed to mount to a standard 2" X 4" electrical outlet box. Leveling of the thermostat is not required. Mounting screws are provided. Mount the thermostat about five feet above the floor in an area with good air circulation.

Avoid mounting the thermostat where it will be affected by drafts, air from ducts, and radiant heat sources such as appliances or the sun.

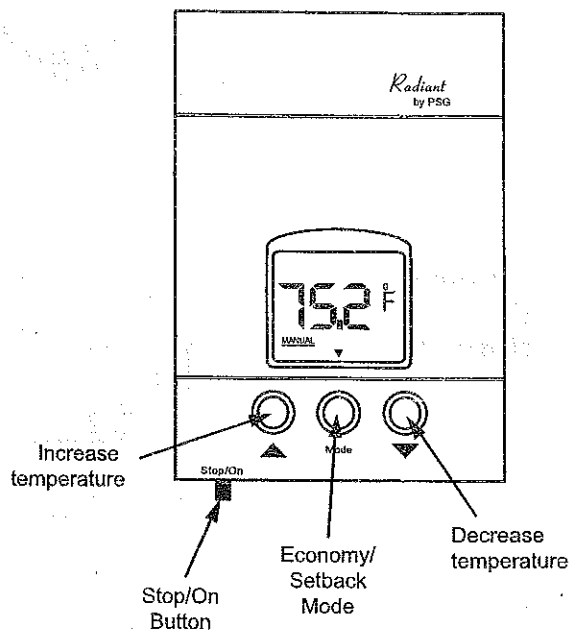
CAUTION:

"Stop" should not be used as a disconnect from power to the heating unit. If the thermostat or heating unit needs servicing, it must be disconnected at the source. This device should only be serviced by a qualified electrician.

SAFETY FEATURES / ERROR MESSAGES:

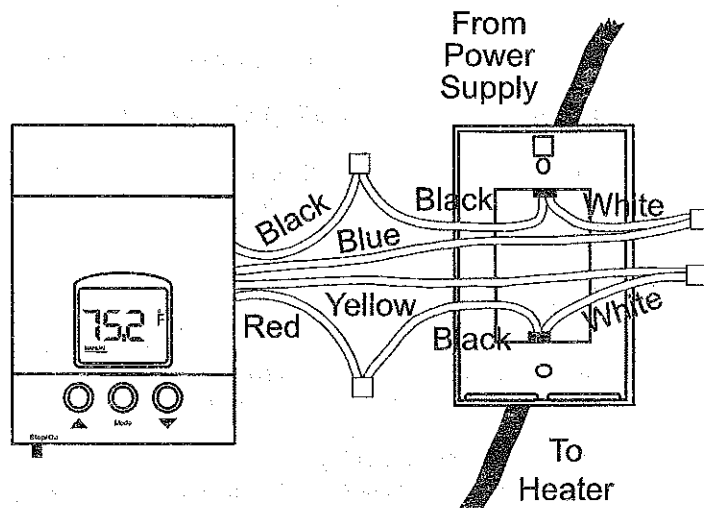
This RLV thermostat can detect several internal errors and can shut down safely and properly in the event one of these errors.

If the display shows "Ur" or "Or" there is thermistor error. When the thermistor returns to normal, the thermostat will continue to function. If the thermistor does not return to normal, the thermostat will be inoperable. If a severe internal error occurs the display will show "dEAd" and will be permanently inoperable. If a less severe error occurs the display will show "EOL". The thermostat will continue to partially function, but with a setpoint of 40°F to avoid damage from freezing.



Installation:

- Read "General Information" before beginning.
- Turn electrical power "OFF" where installation is being done!!
- Screw thermostat mounting plate to outlet box.



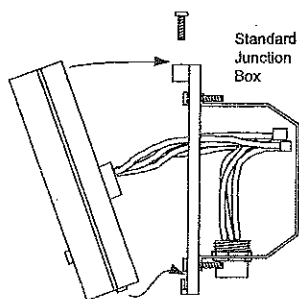
- Attach wires per diagram above.

Note:

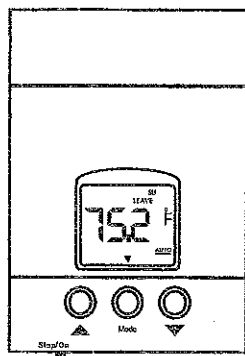
Provide proper wire size and overload protection to meet code and safety requirements. Insure proper line voltage for model being installed (208VAC to 240VAC).

- Push excess wires into outlet box.
- Insert groove on bottom of thermostat into lip on bottom of mounting plate (Refer to figure next page).
- Tilt thermostat up and flat against mounting plate. Drive holding screw into top of thermostat.
- Installation is now complete.
- Power can now be turned on.

Mounting Detail



Adjusting Comfort Setpoint: (For Installation Test)



- Press up arrow button to increase temperature
- Press down arrow button to decrease temperature
- Thermostat will automatically return to room temperature display within 30 seconds
- Heat will become active if new setpoint is above room temperature. Heat icon (H) will indicate that the thermostat is calling for heat.

How to program heating limit:

The heating limit is the maximum room temperature the thermostat will allow even if the setpoint is higher.

Programmable Range: 40.0°F to 85.0°F (4.5°C to 29.5°C)

The programming mode has a time limit of 5 minutes. The timer is automatically activated on initiation of the programming mode. At the end of 5 minutes the thermostat will resume normal operation.

To enter the programming mode:

- Slide the STOP/ON switch to the STOP position.
- Press and hold the up arrow button and programming mode button for 5 seconds. 00 will appear on the display.
- Press the up arrow button to access code 21.
- Press the mode button. The default temperature of 85.0°F (29.5°C) will appear on the display.
- Press either the up or down arrow button to reach the desired temperature.
- Press the mode button to complete.
- Slide the STOP/ON switch back to the ON position to resume normal operation.

User Note: The top of this unit will become warm to the touch. This is a normal operation. Internal heating is employed to continuously convect air through the thermostat, thereby improving room air temperature measurement.

How to set economy setpoint limit:

- Press mode button. ECON will appear on the display. The display will then flash room temperature and ECON.
- Press the up arrow button. MANUAL and the default temperature 62.0°F (16.5°C) will appear on the display.
- Press either the up or down arrow button to reach the desired temperature. Temperature range: 40°F to 85°F (4.5°C to 29.5°C)
- Press the mode button to complete.

To enter economy setpoint mode:

- Press mode button. The display will flash room temperature and ECON.

To exit economy setpoint mode and enter comfort setpoint mode:

- Press mode button. The display will show only room temperature.

How to change from °F to °C:

- Press and hold the mode and down arrow buttons. The display will change to °C from the default of °F. To change back, simply press and hold the buttons again.

Stop/On Mode:

While in normal operating mode, the slide switch should be in the **On** position. While in the **On** mode the thermostat will be active until the desired setpoint is reached.

When slide switch is in the **Stop** position the thermostat will not call for heating unless the temperature drops below 40°F (5°C). At this time the thermostat will be active until the temperature reaches 40°F. This mode may be useful to prevent pipes freezing while on vacation, etc.

Memory Retention:

When the power goes off the current parameters will be saved and then restored when power returns.

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