EMS-100 Thermostat

EMS-100 THERMOSTAT INSTALLATION

General Description

The EMS-100 Thermostat (Enerstat Thermostat) offers user-friendly control of the heating/cooling system. It also has an easy-to-read vertical LCD that displays complete operation status. A direct wire, easy-to-install backplate mounts on a standard vertical outlet box or any drywall surface using anchors and hardware provided.

Specifications

Rated Voltage .... 20-30 VAC
Rated AC .... 0.05-0.75 A continuous/output (surges to 3.00 A, max.)
Rated DC @ 'R' .... 0.00-0.75 A continuous/output (surges to 3.00 A, max.)
Control range:Heating ...... 5-30°C in (1° steps); or 38-88°F (in 1° steps)
                Cooling .... 16-40°C in (1° steps); or 60-108°F (in 1° steps)
Measurement range .... 0-48°C; or 28-124°F
ODT Measurement range. –40-48°C; or –40-124°F
Control accuracy .... ±0.5°C, at 20°C; or ±1°F, at 68°F
Minimum deadband .... (between heating and cooling) 1°C; or 2°F

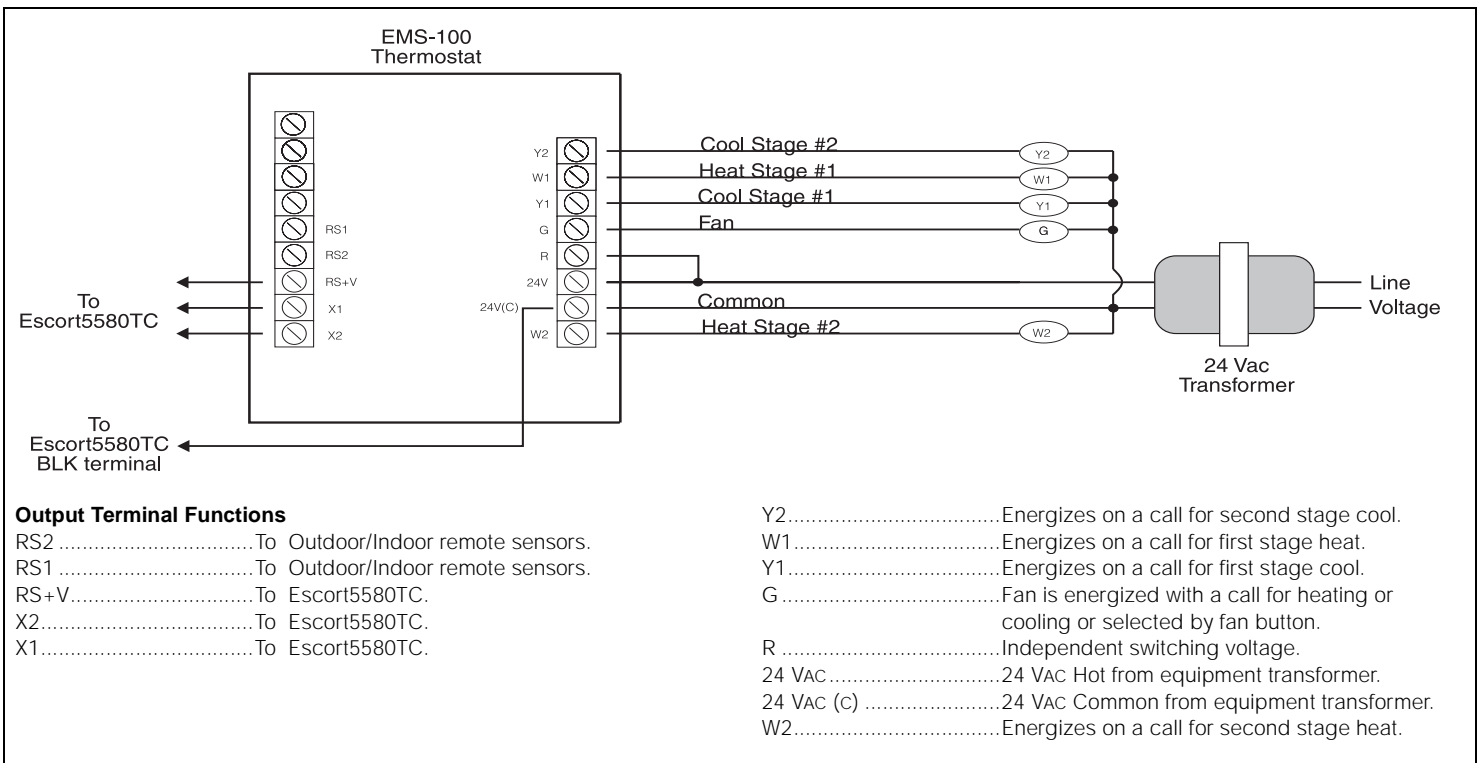NOTE: this thermostat contains electronic circuitry that replaces the conventional mechanical anticipator.

Location

For accurate temperature detection, thermostats should be mounted on an inside wall (46 cm or 18″ from any outside wall) in a frequently occupied area with freely circulating air. It should be approximately 1.5 m (5′) above floor. Avoid direct sunlight, radiant heat from appliances, air conditioner grills, stairwells, water pipes, warm air stacks, and sources of electrical interference such as arcing relay contacts.

Installation

1. Lift thermostat cover and insert flat blade screwdriver or coin, approx. 3 mm (1/8″) into the slot located in bottom centre of case. Twist ¼ turn to pop the thermostat loose from its backplate.
2. Swing thermostat from bottom (hinge at top), raise from backplate, and remove from hinge tabs. Place the backplate's rectangular opening over control panel wires protruding from the wall. Use backplate as a template to mark location of two mounting holes.
3. Use supplied anchors and screws for mounting. Drill two 5 mm (3/16″) mounting holes. Tap nylon anchors flush to wall and fasten backplate with screws.
4. Connect control panel wires to thermostat as shown in wiring diagram. Push any slack wire back into wall. Dress remaining wires to make them flush with backplate. Seal or stuff access hole to prevent drafts through wall from affecting thermostat's performance.
5. Install optional setback, indoor/outdoor remote sensors, if used.
6. Replace thermostat to backplate by inserting its top into backplate's hinge tabs, swinging downward and snapping back into place.

Output Terminal Functions

RS2 ....To Outdoor/Indoor remote sensors.
RS1 ....To Outdoor/Indoor remote sensors.
RS+V..............................To Escort5580TC.
X2...................................To Escort5580TC.
X1...................................To Escort5580TC.

Y2....................................Energizes on a call for second stage cool.
W1...................................Energizes on a call for first stage heat.
Y1....................................Energizes on a call for first stage cool.
G ....Fan is energized with a call for heating or cooling or selected by fan button.
R ....Independent switching voltage.
24 VAC............................24 VAC Hot from equipment transformer.
24 VAC (C) ....24 VAC Common from equipment transformer.
W2...................................Energizes on a call for second stage heat.

OPERATING INSTRUCTIONS

The thermostat normally displays room temperature, mode of operation (i.e. Day or Night), and whether Cooling or Heating is currently on. The six buttons on the front of the unit allow complete control of the thermostat. The user may specify different Heating and Cooling setpoints, and change them easily by pushing a button. Temperature can be displayed in either C or F. The thermostat also allows the user to select either continuous fan operation, or fan operation only during operation of the heating/cooling device(s).

• W A R N I N G •

This sheet contains information on limitations regarding product use and function and information on the limitations as to liability of the manufacturer.

Modes

Select the desired mode of operation by toggling through them with 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 and Cool systems (the word AUTO is displayed for 5 seconds).

❄ (flashing)—indicates Cool ON.

♦ (flashing)—indicates Heat ON.

OFF—disables thermostat so it will not operate.

Cooling: ❄

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

Heating: ♦

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

Fan: ☀≈

The Fan will come on automatically when the system is operating, but there is no indication of this on the display. 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.

OFF:

When the word "OFF" is displayed, the thermostat will not operate.

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

Auto: ♦ ❄

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

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

Outdoor (ODT) Button

When the outdoor temperature sensor option is connected to your thermostat, you can display the current outdoor temperature by pressing the button. If this option is not connected, the thermostat will display _ _ ⍨⎮ with no numbers.

Day/Night Button

When the thermostat is initially installed, the display will show the ☼ symbol for your Day temperature. By pressing the Day/Night button you may select the Night temperature where the display will show the ☾ symbol. This button can be used to toggle between Day and Night modes. Within each mode the temperature can be modified. The thermostat will remember any new settings.

Celsius/Fahrenheit

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

Remote Sensor (Option—RS1, RS2, RS+V)

The thermostat is designed to accept the Electronic Remote Sensor (indoor or outdoor) so that temperatures remote from the thermostat can be monitored. Indoor sensors increase the flexibility of where the thermostat itself can be located. Indoor/outdoor sensors are available separately.

Temperature Accuracy

Full accuracy is only achieved after the thermostat has been installed and powered for at least one hour.

Power Failures

No battery is required to maintain the temperature setpoints in the case of a power loss, regardless of duration.

LIMITED WARRANTY

FCC COMPLIANCE STATEMENT

CAUTION: Changes or modifications not expressly approved by Digital Security Controls Ltd. could void your authority to use this equipment.

This equipment generates and uses radio frequency energy and if not installed and used properly, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for Class B device in accordance with the specifications in Subpart "B" of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in any residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to television or radio reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna
- Relocate the alarm control with respect to the receiver
- Move the alarm control away from the receiver
- Connect the alarm control into a different outlet so that alarm control and receiver are on different circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the FCC helpful: "How to Identify and Resolve Radio/Television Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock # 004-000-00345-4.