

ET 141 High Limit Control Thermostat



Description The ET 141 high limit control thermostat is duct mounted and has a rigid bulb, bi-metal rod and tube construction.

Application Normally, the thermostat is used as a high limit control when a "lock-out" type control is desired or required by local code. Often it is located in a return air duct and is wired to shut down air conditioning or ventilating fans when the duct air temperature becomes excessive.

Product Number 141-0530

Specifications	Switch Action	Single-Pole, Single-Throw (SPST) manual reset
	Scale Range	Adjustable from 25°F (-4°C) to 215°F (102°C)
	Maximum Bulb Temperature	300°F (149°C)
	Cover Finish	Gray baked enamel galvanized steel
	Shipping Weight	1.8 lb (0.8 kg)
	Thermal System	Rigid bulb, bi-metal rod and tube construction
	Dimensions	See Figure 3
	Agency Certification	UL Listed: File MP3487, CCN MBPR CSA Certified: File LR 948, Class 4813 02

Table 1. Electrical Ratings.

Locked Rotor Amps (LRA)		Motor Ratings (Full Load Amps)		Non-Inductive Amps	
120 Vac	240 Vac	120 Vac	240 Vac	120 Vac	240 Vac
96	48	16	8	16	16

Operation and Adjustment

The setpoint adjustment knob (see Figure 2) permits adjustment of the setpoint between 25°F and 215°F (-4°C and 101°C).

The temperature differential is factory set, non-adjustable, and approximately 20°F (11°C), depending on the rate of temperature change.

The standard model includes a knob for setpoint adjustment.

Temperature Setpoint Stop

The temperature setpoint stop is an integral part of these controls, and is field adjustable. To set the stop, do the following:

1. Set dial temperature at desired stop.
2. Remove control cover.
3. Loosen the stop screw, slide the screw to the front of the control against the plastic stop behind the dial, and tighten the screw (see Figure 2). Sometimes, an exact stop setting is not possible, and the stop must be set to the closest stop corresponding to the required dial setting.

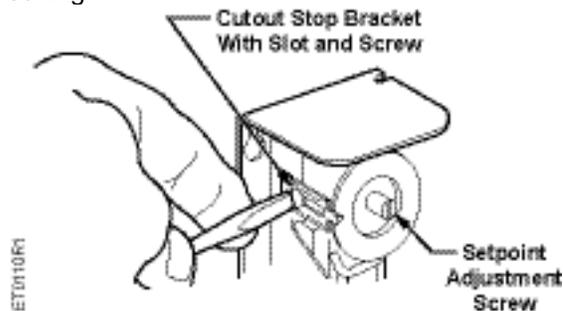


Figure 1. Setpoint Stop Screw.

Reset Procedure

Verify that the temperature has dropped to 20°F (11°C) below setpoint. Press the reset lever to reset the unit (closing the circuit).

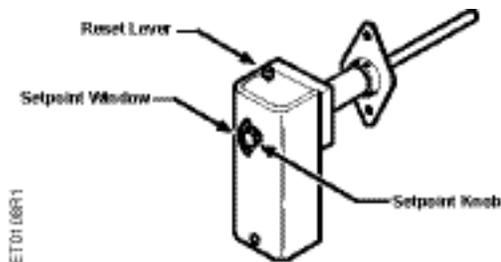


Figure 2.

Installation

1. Select a mounting location for the thermostat in the duct (or plenum). The location must allow the sensing element to measure the average temperature in the duct.
2. Drill (or cut) a 1-3/8 inch hole in the duct at the selected mounting location (see Figure 3).
3. Using the flange as a template on the duct, mark the location for two #10 x 1/2" long sheet metal screws.
4. Punch (or drill) both sheet metal screw holes in the duct at the marked locations.
5. Secure the flange to the duct with the two #10 x 1/2" long sheet metal screws provided.
6. Insert the sensing element and sleeve through the flange installed in Step 5 (and into the duct).
7. Secure the thermostat to the flange by screwing the set screw firmly against the sleeve. Do not over-tighten the set screw.

NOTE: Insert the sensing element as far as possible into the air stream without allowing it to contact any object inside the duct. Provide at least 5-3/4 inch (14 cm) clearance between the sensor and any other objects inside the duct.

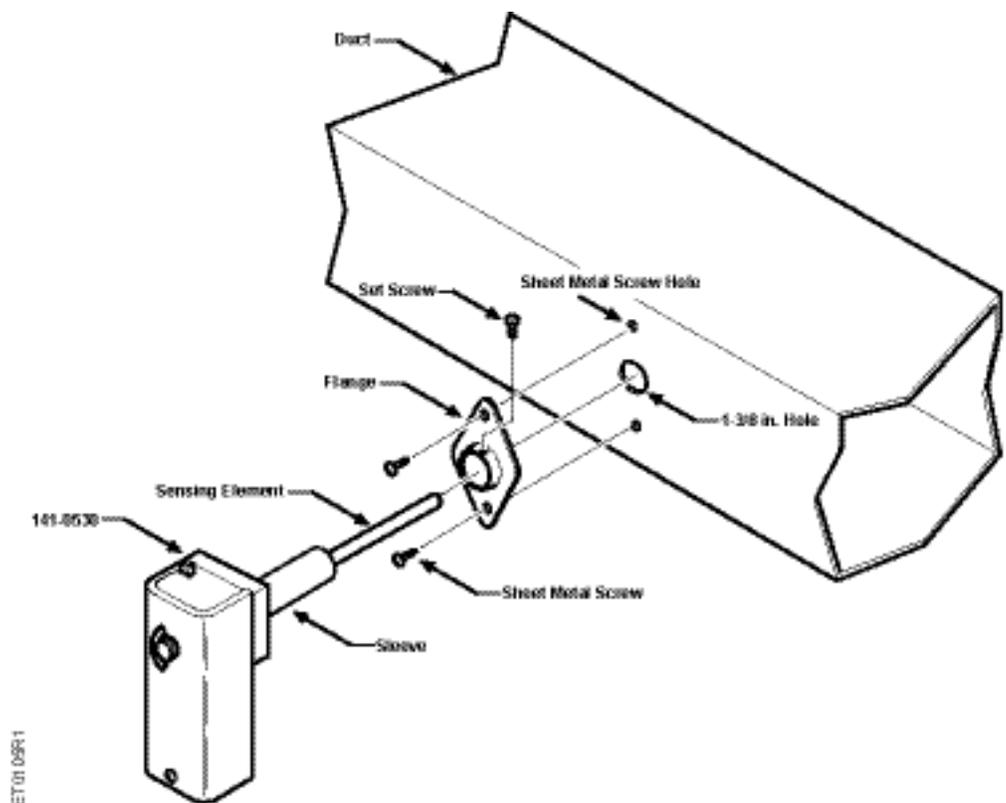


Figure 3. Installation.

Wiring Diagram

When the temperature increases to above the setpoint, the circuit opens. When the reset lever is pressed after the sensed temperature decreases to approximately 20F° (11C°) below the setpoint, the circuit closes.

See Figures 4 and 5 for terminal identification and typical wiring connections.

NOTE: Only use the terminal screws furnished with the thermostat (#8-32 × 1/4-inch binder head). Use of other screws will void warranty, may damage switch terminals, and result in improper connections

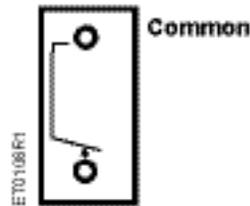


Figure 4. Terminal Identification.

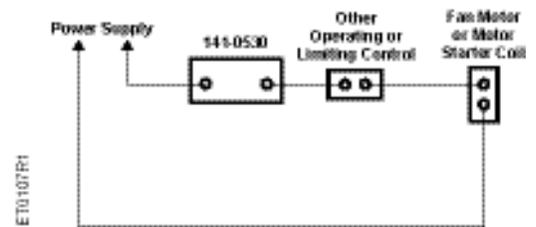


Figure 5. Typical Wiring Diagram.

Checkout Procedure

After installing the thermostat, perform the following procedures. Observe at least three complete operating cycles to verify that all components are functioning properly. If the unit fails to checkout, replace it.

Return Air Applications

1. After completing the installation and wiring procedures, turn on the power to the circuit.
2. Turn the setpoint knob counterclockwise until the thermostat shuts down the system. The thermostat should lock-out.

NOTE: The setpoint at shutdown should equal the approximate duct air temperature.

3. Turn the setpoint knob clockwise to the desired setpoint. Nothing should happen.
4. Press the reset lever. The system should restart.

Supply Air Applications

1. After completing the installation and wiring procedures, turn on the power to the circuit.
2. Raise the supply air temperature to the setpoint temperature.

NOTE: The supply air temperature can be raised by simulating a fan failure or restricting the return air flow.
3. When the system shuts down, determine the temperature at the thermostat sensing element. The temperature reading should closely approximate the thermostat's setpoint at which the system is shut down.
4. Return the system to normal operation by re-establishing the air flow or by restarting the fan.
5. Press the reset lever. The system should restart.

Service

There is no servicing of this thermostat. Replace if inoperative.

Dimensions

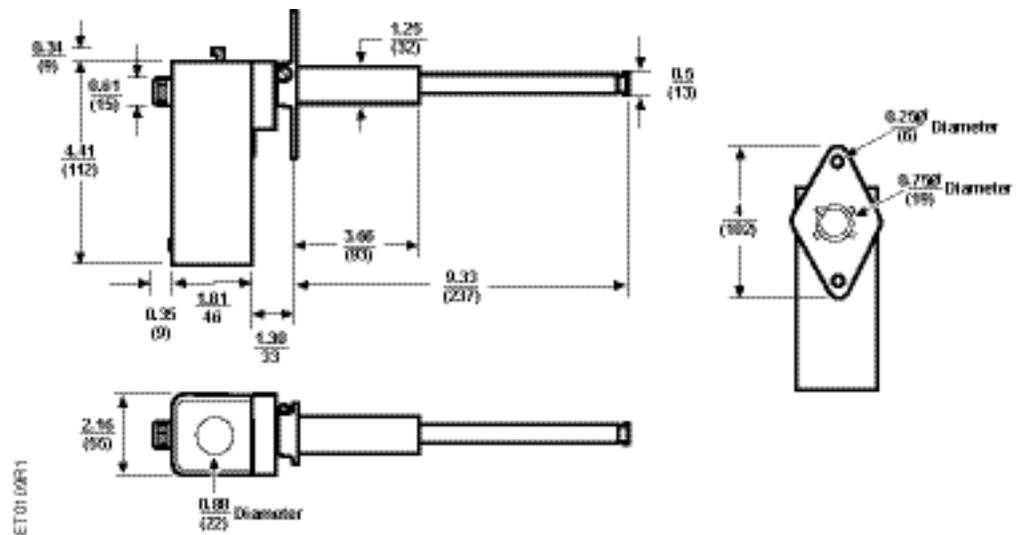


Figure 6. Dimensions in Inches (Millimeters in Parentheses).

Information in this publication is based on current specifications. The company reserves the right to make changes in specifications and models as design improvements are introduced. Product or company names mentioned herein may be the trademarks of their respective owners.
 © 2004 Siemens Industry, Inc.