SIEMENS

Technical Instructions

Document No. 155-115P25 ET 134-20 November 18, 2021

Powers[™] Controls

ET 134 Low Temperature Detection Control



Description	The Electric Low Temperature Detection Control has a remote bulb and a Single Pole Double Throw (SPDT) switch that closes and opens a circuit in both directions.
Features	Compact and sturdy
	Adjustable range with fixed differential
	Unaffected by ambient temperature at case
	Manual or automatic reset available
	 The set point adjustment screw is accessible at the bottom of the control or at the top with the cover removed
	Mounting bracket standard
Product Numbers	

Description	Product Numbers
Low Temperature Detection Control Automatic reset	134-1510
Manual reset	134-1511

Warning/Caution Notations

WARNING:	Personal injury/loss of life may occur if a procedure is not performed as specified.
CAUTION:	Equipment damage or loss of data may occur if the user does not follow a procedure as specified

Application

The electric low temperature detection controls are especially suited for sensing low temperature conditions to avoid freeze-up of hydronic heating coils, cooling coils, liquid heating pipes and similar applications. Typically, the switch opens an electrical circuit to stop the supply fan motor when the temperature at the sensing element falls below the setting of the instrument.



WARNING:

The low temperature detection control is designed for use only as an operating control. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add devices (safety, limit controls) or systems (alarm, supervisory systems) that protect against, or warn of control failure.

Specifications	Switch action Control purpose	SPDT Low temperature
	Control construction	Electromechanical independently mounted
	Cycles	30K auto reset, 6K manual reset
	Mounting method	Permanently attached through mounting bracket hole
	Grounding method	Wire bound screw terminal
	Type 1 or Type 2 action	Type 1.B (micro-disconnection)
	Pollution solution	External - Degree 3, Internal Degree 2
	Rated impulse voltage	4,000 Vac
	Ball pressure temperature	Switch component 302°F (150°C)
	Range	35 to 45°F (2 to 7°C)
	Maximum bulb temperature	250°F (121°C)
	Ambient temperature at thermostat	0 to 140°F (-18 to 60°C)
	Differential	
	134-1510	12°F (6.7°C)
	134-1511	Temperature must be 12°F (6.7°C) above cutout point before control can be reset
	Bulb	1/8-inch (3.2 mm) × 20 feet (6 m)
	Capillary length	4 feet (1 2 m)
	Sensing element	Vapor filled
	Reset type	See Product Number
	Electrical ratings	See Table 1
	Enclosure	UL: Type 1 (NEMA)
	Conduit opening	7/8-inch (22 mm) for 1/2-inch conduit
		for 1/2" trade size (or PG16) conduit
	Wiring connection	3 color-coded screw terminals (SPDT
	Miring voting	only) and one ground terminal
	Winng Faung	194°F (90°C)
	Finish	Galvanized steel
	Weight	1.8 lbs. (0.8 kg)
	Dimensions	See Figure 4
	Approvals	
	North America	cULus listed; UL60730, CSA E60730 UL File: SA10816

Operation

Any 1-foot length of the element subjected to temperatures below the temperature setting of the control will actuate the control switch mechanism regardless of the temperature being sensed by the remainder of the element. The sensing element is unaffected by the ambient temperature at the control body if it is warmer than the set point temperature.

The 134-1511 control has a manual reset feature. (See Figure 5.)

- **NOTES**: 1. The reset lever must be pressed manually and released to resume normal fan system operation.
 - 2. The manual reset may have tripped during shipping and may need to be reset prior to installation for normal operation.

		Volte AC 50/60Hz CULus					
		VOILS AC 50/00HZ	120	208	240		
		Full Load Amps	16	9.2	8		
		Lock Rotor Amps	96	55.2	48		
		Resistive Amps	16	9.2	8		
		Pilot Duty	125 \	VA, 24 to 277	Vac		
						-	
Mounting and	٠	Locate the sensing e	element in th	e downstrea	m side of th	ne coil.	
Installation	٠	Locate the case and	bellows whe	ere the ambi	ent tempera	ature is always warmer than	
General Guidelines		the set point.			·		
	•	• Install the control case so that the reset button is readily accessible and the element bellows point down.					
	•	Avoid sharp bends o	or kinks in the	e sensing ele	ement.		
	•	Install as much of the is vertical, it will not o	e bulb as pos operate prop	ssible in a ho erly.	orizontal pla	ne. If too much of the bulb	
Large Walk-in Ducts (Figure 1)	1.	Attach the mounting provided.	bracket to th	ne control ca	se with the	two round head screws	
	2.	Mount the two perforated steel strap hangers inside the duct with the wide part of the hanger strap parallel to the air flow.					
	3.	Drill a hole through the side of the duct. With the bulb still coiled, thread the bulb through the hole using a rotary movement.					
	4.	Mount the control ca	se on the ou	tside of the	duct.		
	5.	Carefully uncoil the b	oulb avoiding	sharp benc	ls or kinks i	n the sensing element.	
	6.	Mount the bulb in a h shown in the detail ir	norizontal se n <i>Figure 1</i> .	rpentine ma	nner. Attacł	ning the bulb to the strap as	
	Th	e installation is now co	omplete.				
	Fo ho	r an alternate method Id the bulb in a horizor	of mounting ntal serpentir	, use coil clip ne pattern.	os (part nun	nber 356-115) in the fins to	

Table 1. Electrical Ratings



- 5. Insert the tubing and bulb through the access hole and into the duct-mounted flange. Fasten the 8-inch by 4-inch sheet metal plate to the duct.
- 6. Mount the control case on the outside of the duct.

The installation is now complete.

Mounting and Installation,

continued



Figure 2. Bulb Mounting for Limited Access Ducts with Mounting Flange.

Wiring



WARNING:

Disconnect the power supply before wiring connections are made to avoid possible electrical shock or damage to the equipment.

All wiring should conform to the National Electrical Code and local regulations. Loads exceeding the rating of the control should be handled by means of a relay or motor starter.

Red is common. See *Figure 3* for terminal identification.



Red to Yellow opens on temp. decrease below set point.

Red to Blue closes on temp. decrease below set point.



Red to Blue closes on temp. decrease below set point.

Red to Yellow opens on temp. decrease below set point.

Figure 3. Terminal Identification.



CAUTION:

Use terminal screws furnished (M4 x 8 mm combo binder head screw). Substitution of other screws can cause problems in making proper connections.

Dimensions



Figure 4. Dimensions of the 134-1510 and 134-1511 Control.

Adjustment

Change the set point by turning the adjusting screw until the pointer is opposite the desired cutout point.

The adjusting screw is accessible at the bottom of the control or at the top when the cover is removed. See *Figure 5* for the location of the adjusting screw.

The direct reading scale was calibrated at 800 feet (244 m) above sea level at $35^{\circ}F$ (2°C). For critical installations in higher altitudes raise the set point by 1°F (0.56°C) for each 1,800 feet (549 m) of elevation.



Figure 5. Internal View of Control.

Troubleshooting Observe a complete operating cycle to be sure that all components function correctly.

Service

There is no servicing of the control. Replace if inoperative.

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. Powers is a registered trademark of Siemens Industry, Inc. Product or company names mentioned herein may be the trademarks of their respective owners. © 2021 Siemens Industry, Inc.

Siemens Industry, Inc. Smart Infrastructure 1000 Deerfield Parkway Buffalo Grove, IL 60089 + 1 847-215-1000 Your feedback is important to us. If you have comments about this document, please send them to sbt_technical.editor.us.sbt@siemens.com Document No. 155-115P25 Printed in the USA Page 8