SIEMENS

Technical Instructions
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SW 134-3
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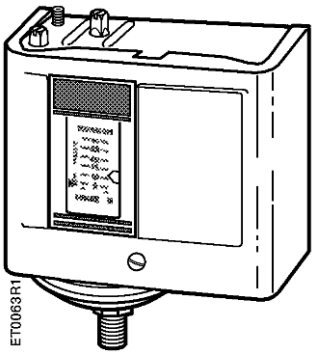
Powers™ Controls

SW 134 Pressure Electric Switch (Adjustable Differential)



Description

The SW 134 Pressure Electric Switch actuates electrical circuits from pneumatic control signals.

Features

- Double-Pole, Single-Throw (DPST), snap-acting
- External adjustment and indication of setpoint and differential
- Screw terminals are easily accessible for field wiring
- Long life, heavy duty contact mechanism
- Normally open or normally closed contact models available
- Not position-sensitive, can be mounted in any position
- Mounting bracket and two screws included

Product Numbers

Table 1.

Product Number	Description
134-1450	Pressure Electric Switch, normally open, close on pressure rise
134-1451	Pressure Electric Switch, normally closed, open on pressure rise

Warning/Caution Notations

WARNING	⚠	Personal injury/loss of life may occur if you do not perform a procedure as specified.
CAUTION	⚠	Equipment damage, or loss of data may occur if you do not perform a procedure as specified.

Application

These pressure electric switches are used wherever it is necessary to close (or open) an electrical circuit on the basis of a predetermined air pressure signal. This switch should be used in areas protected from the weather. Typical applications include the control of air compressors, fans, pilot lights, and resistance heating elements.

⚠ **WARNING:**

The pressure electric switches are 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 installer's responsibility to add devices (safety, limit controls) or systems (alarm, supervisory systems) that protect against, or warn of control failure.

Specifications

Medium	Compressed air
Setpoint range	3 to 30 psig (20 to 200 kPa)
Differential	Adjustable from 1.5 to 20 psig (10 to 138 kPa)
Switch	DPST, snap acting
Maximum pressure	50 psig (345 kPa)
Pressure connection	1/8-inch male NPT
Electrical ratings	See Table 1
Conduit opening	1/2-inch conduit
Ambient temperature	32 to 140°F (0 to 60°C)
Weight	2 lb (0.9 kg)
Dimensions	See Figure 3
Approval (for 134-1450 only)	UL file E 35198

Operation

The pressure electric switch incorporates a non-metallic diaphragm, which is positioned by air pressure changes, to actuate a heavy-duty electrical contact mechanism.

Model 134-1450

When signal pressure is equal to or greater than setpoint pressure, switch contacts are closed. When signal pressure is below setpoint pressure an amount equal to or greater than the differential pressure, switch contacts are open.

Model 134-1451

When signal pressure is equal to or greater than setpoint pressure, switch contacts are open. When signal pressure is below setpoint pressure an amount equal to or greater than the differential pressure, switch contacts are closed.

Operation, Continued

Table 2. Electrical Ratings.

Motor Ratings	120V	240V	208V	277V
A.C. Full Load Amps	12.0	12.0	12.0	—
A.C. Locked Rotor Amps	72.0	72.0	72.0	—
A.C. Non-Inductive Amps	12.0	12.0	12.0	12.0
D.C. Non-Inductive Amps	3.0	0.5	0.5	—
Pilot Duty-	125 VA 120/600 Vac 57.5 VA 120/300 Vdc			

Mounting and Installation

The switch is not position-sensitive and can be mounted in any position.

1. Mount the switch to the mounting surface directly or with the mounting bracket furnished.

2. Connect the switch to the air supply line using the 1/8-inch male National Pipe Tapered (NPT) fitting. See Figure 1.

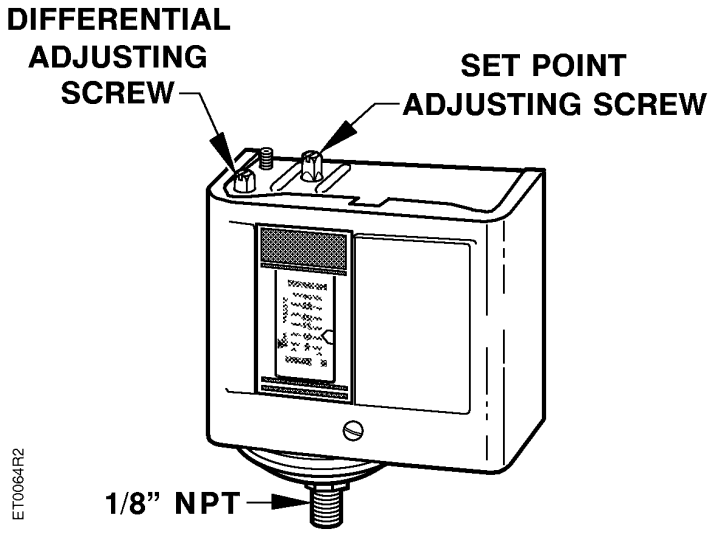


Figure 1. Setpoint and Differential Adjusting Screws.

Wiring

WARNING:

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

Wiring, Continued

- Make all wiring connections using only copper conductors and in accordance with the National Electrical Code and local regulations. Loads exceeding the rating of the switches should be controlled by means of an intermediate relay or starter.
- Loosen the screw on the front cover of the switch for access to the terminals.
- See Figure 2 for typical wiring diagram.

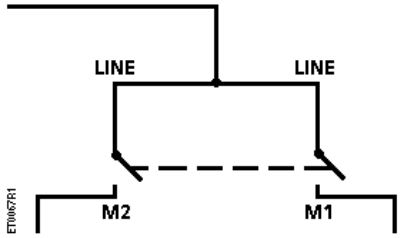


Figure 2. Wiring Diagram.

CAUTION:

Use terminal screws furnished in the switches (#8-32 × 1/4 inch). Longer terminal screws can interfere with the switch mechanism and damage the switch.

Adjustment (See Figure 1)

1. Setpoint. Use a flat blade screwdriver to turn the setpoint adjusting screw to the desired setpoint on increase of pressure.

   On the 134-1450 normally open switch, the pointer on the scale marked "Cut-in" indicates the setpoint pressure.

   On the 134-1451 normally closed switch, the scale marked "Cut-out" indicates this pressure.

2. Differential. Use a flat blade screwdriver to turn the differential adjusting screw to the desired setpoint on decrease of pressure.

   On the 134-1450 normally open switch, the pointer on the scale marked "Cut-out" indicates this pressure.

   On the 134-1451 normally closed switch, the scale marked "Cut-in" indicates this pressure.

3. Raise and lower the pressure to check the accuracy of the settings.

Troubleshooting

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

Service

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

Dimensions

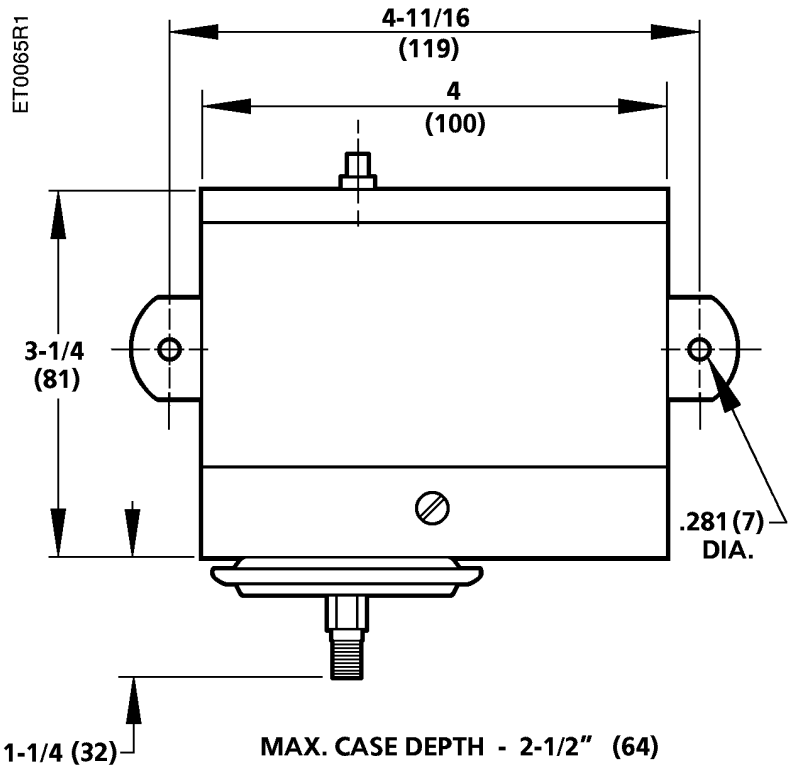


Figure 3. Dimensions in Inches (Millimeters).