

## A70 Series Low Temperature Cutout Thermostat Line Voltage

### Application

The A70 low temperature cutout thermostats have electrical contacts operated by a temperature sensing element. The switching mechanism on the single-pole, single-throw models opens the circuit on a drop in temperature. On the 4-wire, two-circuit models the main load contacts (LINE-M2) open on a temperature drop and simultaneously the auxiliary or alarm contacts (LINE-M1) close.

The thermostat is used as a low temperature cutout device on heating and cooling coils or other applications where there is a possibility of air being stratified. It responds only to the lowest temperature along the 20 feet of the sensing element. The sensing element is usually located on the downstream side of the coil. When the temperature at any point along the sensing element reaches the set point, the thermostat will stop the fan. The outdoor damper is installed to close when the fan stops.

The thermostats with manual reset will lock out when the sensed temperature drops below the set point. The reset must be pushed and released before the

contacts can be reclosed.

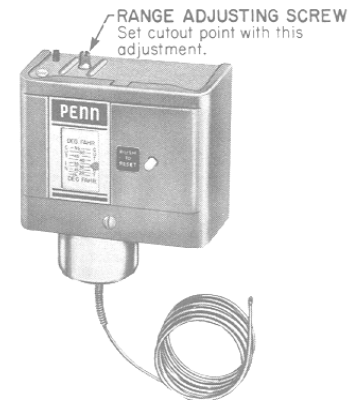
**All Series A70 thermostats are designed for use *only* as operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add devices (safety, limit controls) that protect against, or systems (alarm, supervisory systems) that warn of, control failure.**

### Installation

#### Mounting

**CAUTION:** Locate the thermostat case and bellows where the ambient temperature is always warmer than the set point. The thermostat operates only from the lowest temperature along the entire 20 foot sensing element. Avoid sharp bends or kinks in the sensing elements.

The thermostat may be mounted



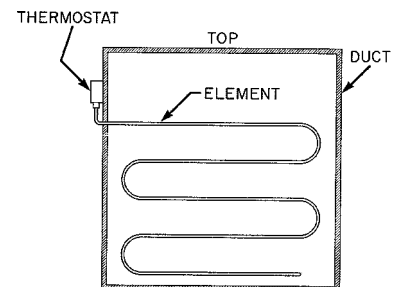
**Fig. 1 -- Electric thermostat shown with manual reset.**

to a wall surface or panel board using the two mounting holes provided in the back of the case. The desired mounting position is with the element bellows pointing down.

For accurate thermostat operation, the sensing element should be horizontally serpentine across the face of the coil to sense temperature in all areas.

### Specifications

<b>Type Number</b>	<b>A70AA</b>	SPST, Open on Temperature Drop
	<b>A70BA</b>	SPST, Open on Temperature Drop, Manual Reset
	<b>A70GA</b>	4-Wire, 2-Circuit, Main (LINE-M2) Contacts Open on Temperature Drop, Simultaneously Auxiliary Contacts Close
	<b>A70HA</b>	4-Wire, 2-Circuit, Main (LINE-M2) Contacts Open on Temperature Drop, Simultaneously Auxiliary Contacts Close, Manual Reset
<b>Range</b>	15 to 55°F (-9 to 13°C) With Stop at 35°F (1.7°C)	
<b>Minimum Differential</b>	Approximately 5°F (2.8°C) Nonadjustable	
<b>Maximum Overrun Temperature at the Element</b>	400°F (204°C)	
<b>Element</b>	Vapor Pressure, 20 ft (6.1 m) Long	



**Fig. 2 — Recommended mounting and sensing element installation.**

## Wiring

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

Make all wiring connections using copper conductors only, and in accordance with the National Electrical Code and local regulations. For maximum electrical rating of the thermostat, see the label on the inside of the thermostat cover. Loads exceeding the rating of the thermostat can be handled with a relay or motor starter.

**⚠ CAUTION: Use terminal screws furnished in the switch (8-32 × 1/4 in.). Longer terminal screws can interfere with the switch mechanism and damage the switch.**

## Checkout Procedure

The operating point of the thermostat should be confirmed by an accurate thermometer.

Before leaving the installation, observe at least three complete operating cycles to be sure that all components are functioning correctly.

## Repairs and Replacement

Field repairs must not be made. For a replacement thermostat, contact the nearest Johnson Controls distributor.

### SPST Electrical Ratings

Motor Ratings	120 V	208/240 V	240 V*
AC Full Load Amp	20.0	17.0	20.0
AC Locked Rotor Amp	120.0	102.0	102.0
Non-Inductive Amp	22.0	22.0	22.0
Pilot Duty — 125 VA, 120 to 600 VAC 57.5 VA, 120 to 300 VDC			

\*Ratings apply to hermetic compressors.

### 4-Wire, 2-Circuit

Pole Number Motor Rating	LINE-M2 (Main)				LINE-M1 (Auxiliary)			
	120 V	208 V	240 V	277 V	120 V	208 V	240 V	277 V
AC Full Load Amp	16.0	9.2	8.0	—	6.0	3.3	3.0	—
AC Locked Rotor Amp	96.0	55.2	48.0	—	36.0	19.8	18.0	—
AC Non-Inductive Amp	16.0	9.2	8.0	7.2	6.0	6.0	6.0	6.0
Pilot Duty — Both Poles		125 VA, 120 to 600 VAC 57.5 VA, 120 to 300 VDC						

**JOHNSON  
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Printed in U.S.A.