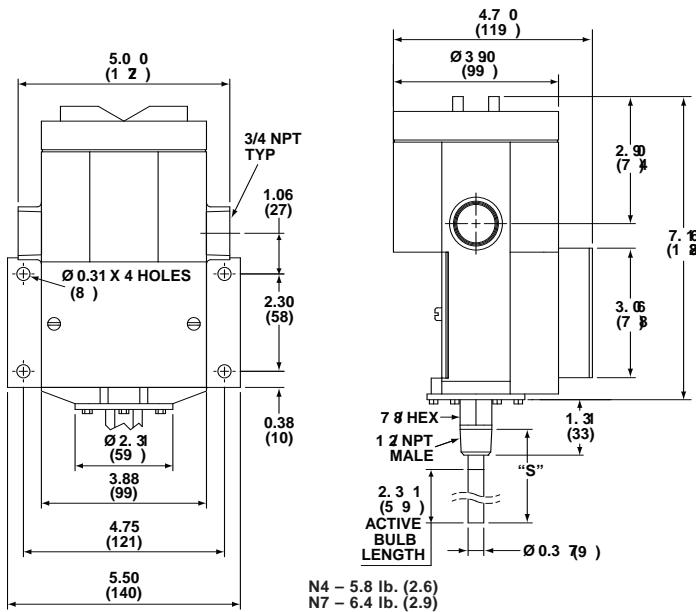


# Installation and Maintenance Instructions for ASHCROFT® P-Series Snap Action Switches for Temperature Control

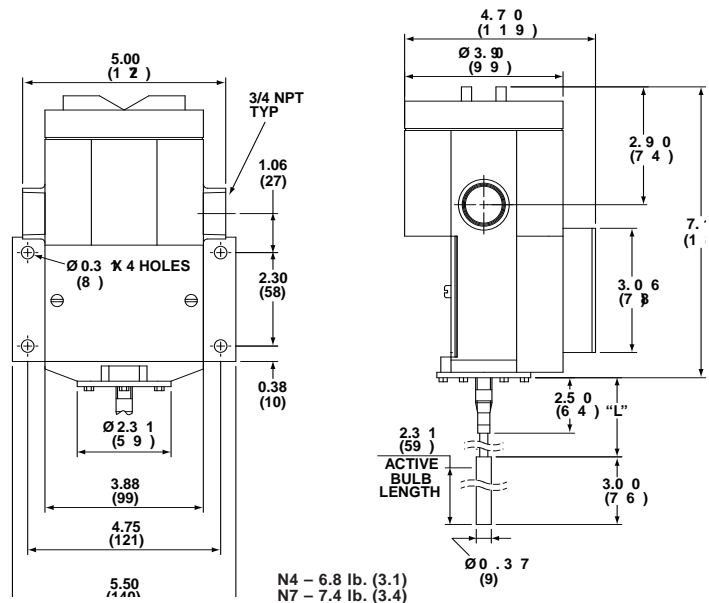


**Direct Mount**



STEM LENGTH (S)					
IN.	2 3/4	4	6	9	12
MM	(70)	(102)	(152)	(229)	(305)

**Remote Mount**



LINE LENGTH					
FT.	5	10	15	20	25

## INTRODUCTION

The Ashcroft temperature control is a precision device which features a snap action switch. Fixed deadband is available with single or dual SPDT independently adjustable switches with various electrical ratings. Adjustable deadband is available with a SPDT switch with various electrical ratings. Bulb material is stainless steel.

The "P" Series Ashcroft snap action pressure switch is available in both standard NEMA-4 and explosion-proof NEMA 7 & 9 configurations. The enclosure is an epoxy coated aluminum casting.

## INSTALLATION

This control is a precision instrument and should never be left with internal components exposed. During installation insure that covers are in place and conduit openings are sealed.

Good piping practice requires the use of a well for installation where pressure may be applied to the thermal system, for protection against physical damage as well as corrosive effects of media flow. Use of a well also facilitates removal of the bulb from the process line without disturbing the process. Standard well materials include brass, steel, and stainless steel; other materials are available on application. Selection should be based on corrosion resistance requirements and process pressure.

## MOUNTING

Four holes in the bracket supplied are used in surface mounting of the control. Location of these holes is shown on the

general dimension drawings. An optional pipe mounting bracket is also available. Mount on a vibration free surface or pipe.

## A. STEM MOUNTED CONTROLS

These controls have a 1/2 NPT threaded adapter and may be attached directly (or indirectly by means of a thermowell) to equipment to be controlled. WHEN INSTALLING OR REMOVING CONTROL ALWAYS USE THE WRENCH FLATS OR HEX ABOVE THE THREADS. DO NOT TWIST THE HOUSING.

## B. REMOTE MOUNTED CONTROLS

Two types of union bushings are available to install a remote-mounted control bulb into a thermowell or other 1/2 NPT threaded hole. A non-pressure-tight type consists of a bushing, split grommet and compression nut. To use this, the bulb is inserted through the nut and the split grommet is slipped onto the capillary between the compression nut, and the bushing. After positioning the bulb as desired, tighten the compression nut to the bushing. This will lock the capillary at the desired location. The pressure-tight type is clamped to the bulb after insertion by tightening a compression nut. To use this, the union bushing is screwed into the 1/2 NPT threaded hole. The compression nut and sleeve are slipped onto the bulb which is then inserted into the union bushing. Bulb is then positioned and compression nut is hand tightened plus 2 1/4 turns. This will lock the bulb at the desired location.

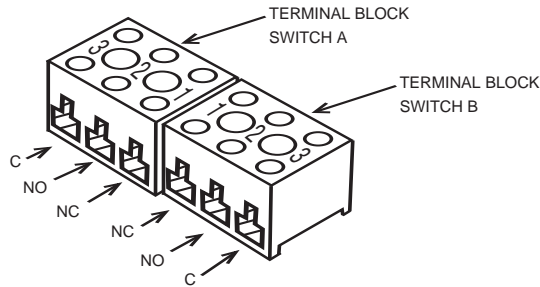
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## ELECTRICAL CONNECTION

Remove top cover, cover unscrews (CCW).

On all units except one with terminal blocks – wire directly to the switch according to circuit requirements. Units with terminal blocks – wire directly to terminal blocks as required. Terminals are marked common, norm open and norm closed.

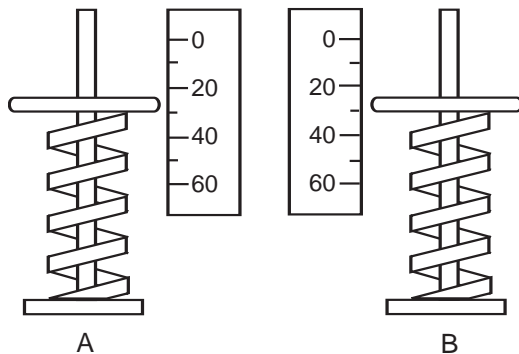


## CONDUIT CONNECTIONS

Two 3/4 NPT holes are provided, one fitted with a plug, the other with a cap. It is recommended that Teflon tape or of her sealant be used on conduit bushing or plug threads to ensure integrity of the enclosure. NEMA 7 & 9 enclosures require proper conduit seals and breathers as per the National Electrical Code.

## SETPOINT ADJUSTMENTS

**General Considerations** – When adjusting temperature controls optimum performance will be obtained if the bulb is fully immersed. After Initially inserting a bulb into a controlled bath allow five minutes for stabilization. Whenever setpoint adjustment requires a bath temperature to be varied (such as to observe setpoint and re-setpoint values) the rate of change in temperature should not exceed 1°F per minute. Switch operation should be monitored with a suitable pilot light or meter.



**Series PT-S Single Switch** – Remove front cover, held in place by two screws. Immerse bulb in a bath at the desired setpoint temperature. Adjust setpoint by rotating the adjustment wheel until the switch changes mode. It is desirable to recheck actuation point by varying the temperature of the bath as required and noting operate and reset values.

**Series PT-D Dual Switch** – Remove front cover, held in place by two screws. There are two setpoint adjusting wheels. The adjusting wheel on the left (labeled A) controls the left switch. The adjusting wheel on the right (labeled B) controls the right switch. The switches are set independently.

**Note:** Control is calibrated at the factory such that for proper operation switch B setpoint must be set higher than switch A setpoint.

Immerse bulb in a bath at the desired setpoint temperature. Adjust setpoint by rotating the adjustment wheel until the switches change mode. It is desirable to recheck actuation points by varying the temperature of the bath as required and noting operate and reset values. This must be done for both setpoint A and setpoint B.

**Series PT-A Adjustable Deadband Switch** – Remove front cover, held in place by two screws. The setpoint adjusting wheel labeled A controls the resetpoint of the switch. The adjusting wheel labeled B controls the setpoint of the switch.

**Note:** The units are calibrated at the factory such that for proper operation setpoint B is always higher than re-setpoint A.

Preset adjusting wheel A to a value less than the desired reset temperature. Preset adjusting wheel B to a value higher than the desired setpoint. Immerse bulb in a bath at the desired setpoint temperature. Adjust setpoint by rotating the adjustment wheel B until the switch changes mode. Then decrease the bath temperature to the desired resetpoint. Adjust resetpoint by rotating adjustment wheel A until switch changes mode (resets). Recheck these points by varying bath temperature.