Installation and Maintenance Instructions
for ASHCROFT® L-Series Snap Action
Switches for Differential Pressure Control

OPERATION
The ASHCROFT® differential pressure 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.
Several wetted material constructions for compatibility with
pressure media may be obtained.

Series LD-S switches have a fixed deadband which will be
within the limits noted on the nameplate.

Series LD-D switches may be set to operate simultaneously or
up to 85 percent of the range apart. The deadband of each
switch will be within the limits noted on the nameplate.

Series LD-A switches may be set to operate with any dead-
band within the limits shown on the nameplate.

MOUNTING
The “L” Series ASHCROFT® snap action differential pressure
switch has a NEMA-4X enclosure which is an epoxy coated
aluminum casting.

Two holes in the integral bracket are used to surface mount
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 in any
orientation.

PRESSURE CONNECTIONS
For operation as a differential pressure control – connect the
high pressure to the side port marked “H” and the low pressure
to the side port marked “L.”

CONDUIT CONNECTIONS
One ¾ NPT hole fitted with a shipping plug, and two additional
knock outs are provided. The knockouts may be removed by
placing a screwdriver in the slot and rapping sharply with a
hammer. It is recommended that Teflon tape or other sealant be
used on conduit bushing or plug threads to ensure integrity of
the enclosure.

ELECTRICAL CONNECTION
Remove cover, held in place by two screws.

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 (C), normally open (NO) and normally
closed (NC).
Setpoints are changed by means of the setpoint adjusters. The LD-S single switch has one adjuster and the LD-A adjustable deadband and LD-D dual switches each have two adjusters. On switches with two adjusters, the one on the left is referred to as “A” and the right one is referred to as “B”; see illustration. Setpoints can be adjusted from 20 to 100 percent of full range on increasing pressure.

SERIES LD-S SINGLE SWITCH
Remove cover. For setpoint adjustment on either increasing or decreasing pressure to within ±1% of nominal range, mount the switch on a calibration stand and use a suitable reference such as an ASHCROFT® Duragauge or test gauge. Monitor switch with a light or meter.

Apply Low pressure. Then apply High pressure equal to the low pressure plus the differential pressure setpoint. If setpoint is on increasing differential pressure, turn adjuster so that switch operates (if common—normally closed circuit is being monitored light goes off). If setpoint is on decreasing differential pressure, turn adjuster so that switch resets (if common—normally closed circuit is being monitored light comes on). When the setpoint has been achieved, raise and lower the high pressure to ensure that the setpoint is correct.

The deadband (difference between the operate and reset pressures) may be verified at this time to be between the values noted on the nameplate label.

SERIES LD-D DUAL SWITCH
Remove cover. For setpoint adjustment to within ±1% of nominal range, mount the switch on a calibration stand and use the suitable reference such as an ASHCROFT® Duragauge or test gauge. Monitor switch with a light or meter.

Apply Low pressure. Then apply High pressure to the higher of the two required setpoints. Turn adjuster “B” until the switch operates or resets as required. See discussion of increasing or decreasing differential pressure setpoints and deadband verification under Series LD-S Single Switch. When the setpoint has been achieved, raise and lower the High pressure. Then reduce the High pressure to the lower setpoint differential pressure and turn adjuster “A” until the switch operates or resets as required. Verify this setpoint by raising and lowering the High pressure. Now increase the High pressure to the higher setpoint and make final adjustment on “B.”

SERIES LD-A ADJUSTABLE DEADBAND SWITCH
Remove cover. Adjuster “B” controls the operating point of the switch on increasing pressure. Adjuster “A” controls the re-setpoint of the switch on decreasing pressure.

For accurate setpoint adjustment, mount the switch on a calibration stand and use a suitable reference such as an ASHCROFT® Duragauge or test gauge. Monitor switch with a light or meter. Apply Low pressure. Then apply High pressure to the required setpoint pressure.

Turn adjuster “B” until switch operates. Then lower differential pressure to the re-setpoint and turn adjuster “A” until the switch resets. Now increase pressure to the operating point and make final adjustment on “B.” Raise and lower pressure to ensure that the setpoint and re-setpoint are correct.

SOME PRECAUTIONS TO OBSERVE
Do not loosen the screws holding the precision switch element(s) or mounting bracket in place.

Nameplate PROOF pressure should not be exceeded.
Intermittent operation up to proof pressure is permissible, however, some change of setpoint may be noted.

Operation and correct setpoint actuation should be routinely tested.