

Installation and Maintenance Instructions for DDS-Series High Static Operating Pressure IWD Range Differential Pressure Switches



INSTALLATION

MOUNTING:

The DDS-Series differential pressure models will operate satisfactorily in any position; however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the sensing chambers.

PIPING:

While we do not recommend any specific method of piping, provisions for isolating the device for testing should be provided in the pipe system during installation. These switches are built to sense the difference between two pressure sources. The high pressure inlet must be connected to the higher source and the low pressure inlet must be connected to the lower pressure source.

WIRING:

The "Normally Open" (NO) and "Normally Closed" (NC) terminals of the micro switch show the position of the contacts in the unactuated position.

CAUTION: When wiring Ashcroft® switches, avoid large loops of wire between the terminals of the micro switch/s and conduit outlet. Wires which contact the movable parts of the switch mechanism will cause a shift in the settings of the switch. Neatly done wiring will produce the desired results. Avoid large diameter wires which are difficult to manipulate in the housing. We recommend the use of 18 AWG machine tool wire. Avoid the use of a large screwdriver when tightening or loosening the terminal screws of the micro switch. Do not push hard against the terminals with the screwdriver or over-torque the screws. Before operation we recommend the inspection of any pre-wired pressure switch, which may be part of an assembly, to insure the wires do not touch any of the movable parts of the mechanism. Further, any time the cover of the pressure switch is removed, the wiring should be inspected to insure that no wires are touching the movable parts of the mechanism.

EXPLOSION PROOF SWITCHES:

In order to have an explosion proof installation, it is necessary to seal the conduit near where it is connected to the switch, according to most codes.

CAUTION: TO PREVENT EXPLOSION, DISCONNECT SWITCH FROM ELECTRICAL CIRCUIT BEFORE OPENING COVER. KEEP COVER TIGHTLY CLOSED WHEN SWITCH IS IN OPERATION.

SETPOINT ADJUSTMENT:

Setpoint adjustments are made by turning the 3/8" hex nut on the spring stud. Use a 3/8" nut driver to reach the adjustment nut. Turn the nut clock-wise to increase the pressure setting. See illustrations on reverse for more detailed calibration instructions.

If unit has been factory set, it will have a tag noting the setpoint. If no setpoint is specified, the setpoint will be adjusted to approximately 1/3 of the range.

OPERATION:

The pressure switch must be supplied with pressure and electricity before operation. Periodic testing will ensure the pressure switch maintains its intended function. Calibration and test procedures are addressed in another section of this manual. Ashcroft recommends that the covers of all pressure switches be maintained in place while the pressure switch is in operation.

TESTING:

TEST EQUIPMENT:

Reliable testing will require the following:

1. An accurate manometer or gauge suitable for the range of switch being tested.
2. A sensitive pressure source.
3. A light source to indicate switch action.

Use of Light Source:

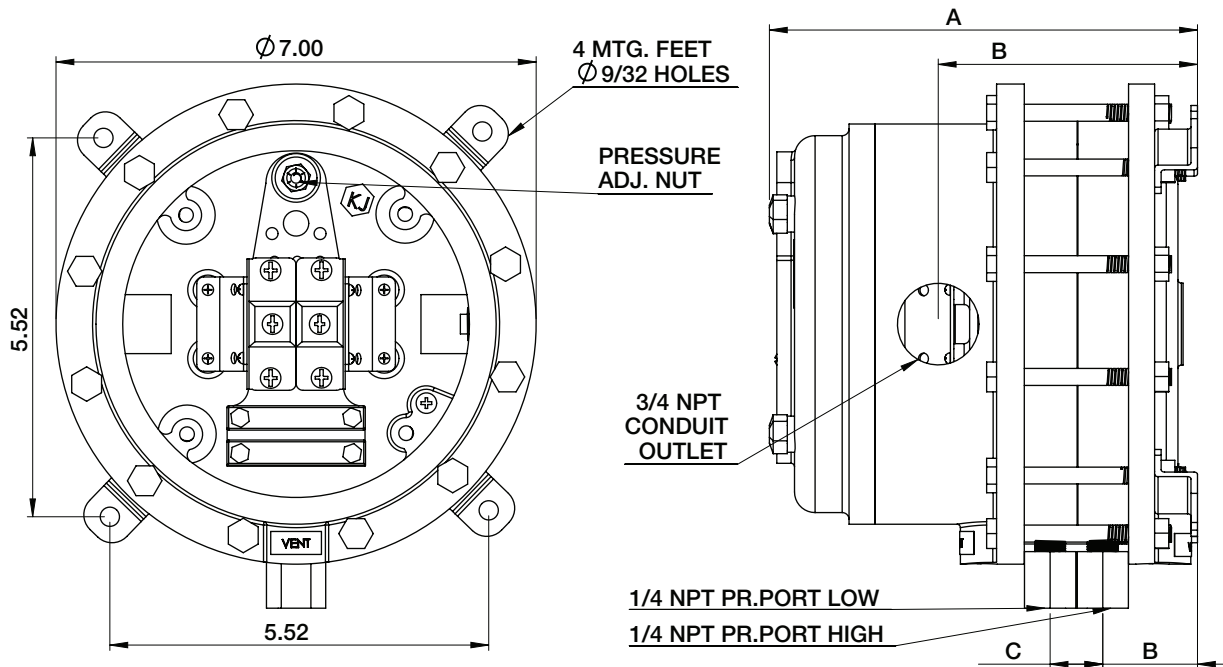
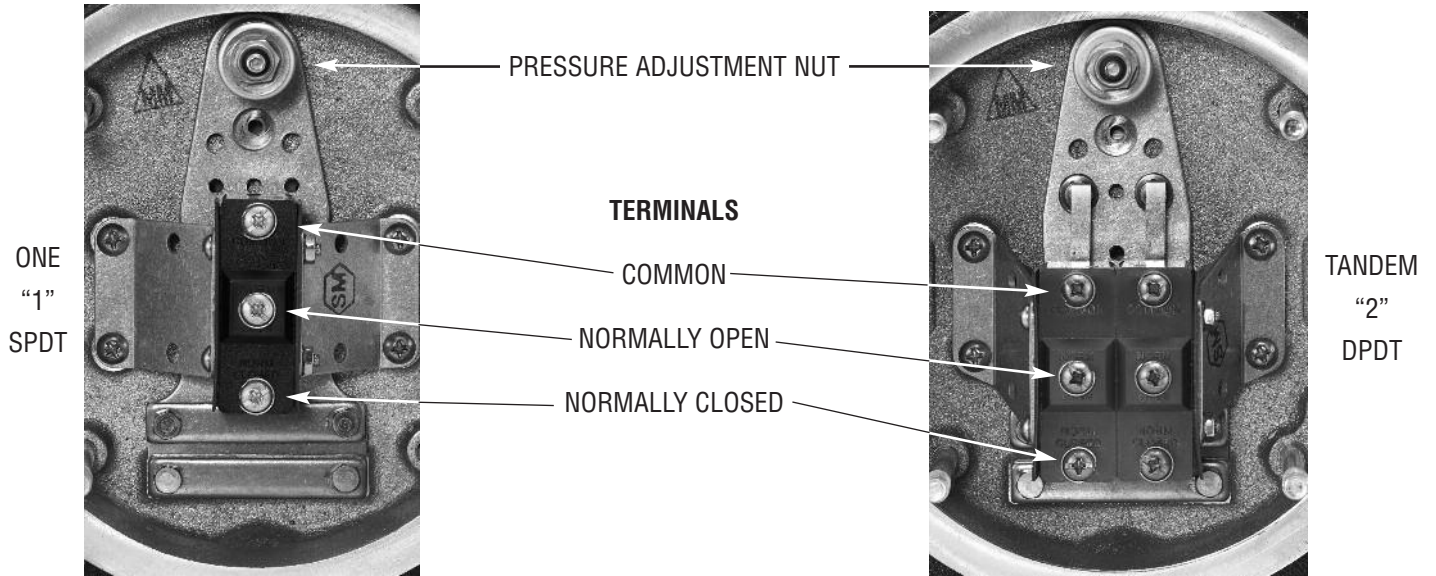
Ashcroft recommends that a test light be used to indicate the opening or closing of micro switch contacts. These test lights can be battery operated; however, if testing proceeds with the circuits live, a suitable light must be used which is compatible with the voltage supplied to the device.

CAUTION: When testing with live circuits, an accidental short circuit across the micro switch terminals will burn the contacts of the micro switch rendering it useless. A Volt-Ohm-Milliammeter is not recommended for testing the opening or closing of micro switch contacts.

Test Lights – For test bench or field testing, an ordinary flash light with test leads is acceptable. For accuracy in testing and calibration, the test lights must be located adjacent to the manometer so they can be seen out of the corner of the eyes while the main focus of the eyes is on the manometer or gauge.

CAUTION: DDS switches respond to change more rapidly than most manometers. For accurate manometer readings, the pressure must be changed slowly to ensure the manometer and switch are at the same pressure at the time the switch contacts transfer. Leakage in the tubing joining the manometer to the pressure source to the switch can also cause inaccurate manometer readings.

**Installation and Maintenance Instructions for
DDS-Series High Static Operating Pressure
IWD Range Differential Pressure Switches**



| NEMA Rating | Static Pressure | A | B | C | D |
|-------------|-----------------|------|------|------|------|
| 4 | 250 psi | 5.97 | 3.82 | 0.75 | 1.43 |
| 7 | 250 psi | 6.19 | 3.82 | 0.75 | 1.43 |
| 4 | 1500 psi | 6.57 | 4.41 | 1.13 | 1.53 |
| 7 | 1500 psi | 6.78 | 4.41 | 1.13 | 1.53 |