**INTRODUCTION**

The Dwyer pressure switch is a precision built control device which features a polysilicon thin film pressure sensor (Transducer). Controllers are available for operation on pressure with fixed or variable differential. The standard electrical switch is a SPDT sealed mechanical relay. The wetted materials are 17-4PH and 316 stainless steel. The Dwyer pressure switch is furnished in the standard NEMA 4 and explosion proof NEMA 7/9 enclosure styles. Both enclosures are epoxy coated aluminum castings.

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**Specifications - Installation and Operating Instructions**

**ES04/ES14 & ES07 Series Electronic Switches for Pressure Control**

### Dimensions

- **Dimensions in () are in millimeters.**
- **Ranges –**
  - 60, 100, 200, 300, 500, 750, 1000, 2000, 3000, 5000, 7500, 10,000, 15,000, 20,000 psi

### Standard and Variation/Options

<table>
<thead>
<tr>
<th>HOLES</th>
<th>STANDARD</th>
<th>VARIATION</th>
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<tbody>
<tr>
<td>A</td>
<td>3/4 NPT</td>
<td>3/4 NPT</td>
</tr>
<tr>
<td>B</td>
<td>OMIT</td>
<td>3/4 NPT</td>
</tr>
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</table>

**ES04/ES14**

- **Diameter:** ø 0.28 (3 Holes)
- **Thread:** 1/4 NPT Male
- **Enclosure:** NE/ME A4

**ES07**

- **Diameter:** ø 2.0 (3 Places)
- **Thread:** 3/4 NPT Female
- **Enclosure:** NE/ME A7/9

**HOLE | TYPE | DIMENSIONS (mm) |
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<tbody>
<tr>
<td>A</td>
<td>3/4 NPT</td>
<td>127, 132, 111, 100, 31, 59, 8, 49</td>
</tr>
<tr>
<td>B</td>
<td>OMIT</td>
<td>70, 56, 70</td>
</tr>
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2C-5/02 Printed in U.S.A. 1P-5/02

I&M009-10141-01/10
INSTALLATION
These controls are precision instruments and should never be left with internal components exposed. After installation, ensure that the covers are in place and the conduit openings are closed.

MOUNTING ES04/ES14 & ES07 SERIES
There are three holes external to the enclosure for surface mounting. The locations of these holes are shown on the general dimension drawing. The controls may also be mounted directly on the pressure line using the pressure connection. When tightening the control to the pressure line, always use the wrench flats or the hex on the lower housing.

ELECTRICAL CONNECTIONS
Remove cover.
ES04/ES14 Series – Two screws hold cover to enclosure
ES07 Series – Cover unscrews

CONDUIT CONNECTIONS
Note: It is recommended that Teflon tape or other sealant be used on the conduit, bushing or plug threads to ensure the integrity of the enclosure.
ES04/ES14 Series Standard – One ¼ NPT conduit hole right side.
ES07 Series Standard – Two ¾ NPT conduit holes with one permanent plug. NEMA 7/9 enclosure require proper conduit seals and breathers as per the National Electrical Code.
ES04/ES14 and N7 Series – XJL Variation – ¾ NPT conduit holes with ¾ to ½ NPT reducing bushings.
ES07 Series – XJL Variation – Two ¾ NPT conduit holes.

ES04/ES14 & ES07 SERIES
SPDT – Wire directly to the terminal block according to circuit requirements. For 120Vac 60 Hz switch, wire power lines to terminal marked ac. For 24 Vdc switch, wire positive power line to terminal marked 24Vdc + and wire negative power line to terminal marked 24Vdc –.

ES04/ES14 & ES07 SERIES
Adjustment of Setpoint
A 25 turn adjustment potentiometer is located at the upper right corner on the inside of the enclosure. For accurate setpoint calibration, mount the switch on a calibration stand, a pump or deadweight gauge tester. A suitable reference standard such as an Test Gauge is necessary to observe changes in pressure.

As received, the pressure switch will normally be set to approximately 90% of the indicated range. Pressurize the system to the required setpoint and turn the adjustment potentiometer until the switch changes mode. Clockwise rotation of the potentiometer will increase the setpoint and counter-clockwise rotation of the potentiometer will decrease the setpoint. When the setpoint has been achieved, raise and lower the pressure to ensure that the setpoint id correct.

The indicating LEDs will show red when the pressure is below the setpoint and green when the pressure is above the setpoint.

For ES04/ES14 XEA switches equipped with optional external setpoint adjustment only – The setpoint is adjusted by a ten turn potentiometer located externally on the top right of the case. The setpoint is adjusted as above.

Adjustment of Deadband – A four turn adjustment potentiometer is located at the upper right corner on the inside of the enclosure just below the setpoint potentiometer.

The deadband is adjusted as above. Clockwise rotation of the potentiometer will increase the deadband and counter-clockwise rotation of the potentiometer will decrease the deadband.

After installation of the control replace cover to protect internal parts from the environment.