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It is the policy of OMEGA Engineering, Inc. to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, human applications.
PSW-700 Series
Explosion-Proof Pressure Switches

Part Numbers:
PSW-701-717
PSW-721-726
PSW-731-735

Please read all instructional literature carefully and thoroughly before starting.

GENERAL

MISUSE OF THIS PRODUCT MAY CAUSE EXPLOSION AND PERSONAL INJURY. THESE INSTRUCTIONS MUST BE THOROUGHLY READ AND UNDERSTOOD BEFORE UNIT IS INSTALLED.

THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS I, DIVISION 1 & 2, GROUPS B, C AND D; CLASS II, DIVISION 1 & 2, GROUPS E, F AND G; CLASS III; OR NON-HAZARDOUS LOCATIONS ONLY.

BEFORE INSTALLING, CHECK THE SENSOR MODEL SELECTED FOR COMPATIBILITY TO THE PROCESS MEDIA IN CONTACT WITH THE SENSOR AND WETTED PARTS.

PROOF PRESSURE* LIMITS STATED IN THE LITERATURE AND ON NAMEPLATES MUST NEVER BE EXCEEDED, EVEN BY SURGES IN THE SYSTEM. OCCASIONAL OPERATION OF UNIT UP TO MAXIMUM PRESSURE IS ACCEPTABLE (E.G., START-UP, TESTING). CONTINUOUS OPERATION SHOULD NOT EXCEED THE DESIGNATED OVER RANGE PRESSURE.

*Proof Pressure: The maximum pressure to which a pressure sensor may be occasionally subjected, which causes no permanent damage (e.g., start-up testing). The unit may require re-gapping.

THESE PRODUCTS DO NOT HAVE ANY FIELD REPLACEABLE PARTS. ANY SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 1.

TO PREVENT IGNITION OF HAZARDOUS ATMOSPHERES, DISCONNECT SUPPLY CIRCUITS BEFORE OPENING. KEEP COVER TIGHT WHILE CIRCUITS ALIVE.

The PSW-700 Series pressure switches are actuated when a bellows, diaphragm or piston sensor responds to a pressure change. This response at a pre-determined set point(s) actuates a SPDT or dual SPDT snap-acting microswitch(es), which convert the pressure signal into an electrical signal. Switch set point(s) may be varied by turning the internal adjustment hex (PSW-721-726, 731-735 models) or the external knob and pointer (PSW-701-717 models) according to the procedures outlined.

Part I - Installation

Tools Needed
Screwdriver
Adjustable Wrench to 1-1/2"

MOUNTING

TO PREVENT IGNITION, SEAL ALL CONDUIT RUNS WITHIN 18 INCHES OF ENCLOSURE.

ALWAYS HOLD A WRENCH ON THE PRESSURE HOUSING HEX WHEN MOUNTING UNIT. DO NOT TIGHTEN BY TURNING ENCLOSURE. THIS WILL DAMAGE SENSOR AND WEAKEN SOLDER OR WELDED JOINTS.

INSTALL UNITS WHERE SHOCK, VIBRATION AND TEMPERATURE FLUCTUATIONS ARE MINIMAL. MOUNT UNIT TO PREVENT MOISTURE FROM ENTERING THE ENCLOSURE. IT IS IMPERATIVE TO USE PROPERLY RATED EXPLOSION-PROOF SEALING FITTINGS FOR ELECTRICAL WIRE ENTRY. DO NOT MOUNT UNIT IN AMBIENT TEMPERATURES LOWER THAN -40°F (-40°C) OR HIGHER THAN 160°F (71°C).

PSW-721-726, 731-735 ENCLOSURES ARE PROVIDED WITH TWO 3/4" NPT ELECTRICAL CONDUIT OPENINGS, EITHER OF WHICH OR BOTH CAN BE USED DURING INSTALLATION. A 3/4" EXPLOSION PROOF PLUG IS PROVIDED FOR PROPERLY SEALING THE UNUSED CONDUIT OPENING. THE EXPLOSION PROOF PLUG MUST BE PROPERLY SEALED DURING PRODUCT INSTALLATION.

Models PSW-701-717, 721-726, 731-735

Figure 1a: PSW-701-717
Figure 1b: PSW-721-726, 731-735

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Part II - Adjustments

Tools Needed
- Screwdriver
- 5/8” Open End Wrench
- 5/64” Allen Wrench

AFTER COMPLETING ADJUSTMENTS ON TYPES PSW-701-717, BE SURE TO RE-INSTALL ADJUSTMENT COVER. DO NOT OVER TIGHTEN COVER SCREWS.

For set point adjustment and gapping, connect control to a calibrated pressure source.

Models PSW-721-726, 731-735 (See Figure 3)

Remove cover. Loosen phillips screw adjustment lock. Adjust set point by turning 5/8” hex adjustment screw clockwise (left) to raise set point, or counterclockwise (right) to lower set point. Secure adjustment screw by tightening adjustment lock.

Models PSW-701-717

Individual microswitches may be set together or apart by up to 100% of range. When not set together, the front (Low) microswitch can not be set higher than the rear (High) microswitch (See figure 2 for switch layout). Turning external knobs will increase or decrease each switch setting independently.

Re-Gapping Procedure For PSW-721-726, 731-735

Tools Needed
- 5/8” Open End Wrench
- 3/16” Open End Wrench (2)

GAPPING IS FACTORY-SET AND CRITICAL TO THE FUNCTION OF THE SWITCH. THIS PROCEDURE SHOULD ONLY BE PERFORMED IF THE PLUNGER HAS ACCIDENTALLY BEEN ADJUSTED.
1) Loosen adjustment lock.
2) Turn 5/8” hex adjustment screw clockwise (left), to approximately midrange. This puts a load on the sensor and exposes the plunger flats. (See Figure 4).
3) Using a 3/16” wrench on the plunger flats and a 3/16” wrench on the plunger hex screw, turn hex counter clockwise (right) from plunger until micro-switch actuates. If microswitch has already actuated, turn plunger hex screw clockwise (left) until microswitch deactuates.
4) Continue per following instructions, depending on model.

**PSW-721-726**
Turn hex clockwise (left) an additional 1-1/2 flats from this point. This will provide a 5-9 mil gap.

**PSW-731-735**
Turn hex clockwise (left) 1 flat from this point. This will provide a 4-7 mil gap.

### Dimensions

#### Internal Set Point Adjustment
**PSW-721-726, 731-735**

<table>
<thead>
<tr>
<th>Models</th>
<th>Dimension A</th>
<th>NPT</th>
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<tbody>
<tr>
<td>PSIW-731-735</td>
<td>7.44</td>
<td>1/2</td>
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<tr>
<td>PSIW-721-726</td>
<td>8.84</td>
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#### External Set Point Adjustment
**PSW-701-717**

<table>
<thead>
<tr>
<th>Models</th>
<th>Dimension A</th>
<th>NPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSIW-701, 711-714</td>
<td>8.09</td>
<td>1/4</td>
</tr>
<tr>
<td>PSIW-702-704, 708-709</td>
<td>8.50</td>
<td>1/2</td>
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<tr>
<td>PSIW-705-707</td>
<td>7.81</td>
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</tr>
<tr>
<td>PSIW-710</td>
<td>8.75</td>
<td>1/4</td>
</tr>
<tr>
<td>PSIW-715-717</td>
<td>8.31</td>
<td>1/4</td>
</tr>
</tbody>
</table>

#### Pressure Connections

- **PSW-701, 711-714**
- **PSW-702-704, 708-709**
- **PSW-731-735**
- **PSW-705-707**
- **PSW-710, 715-717**
- **PSW-721-726**
WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

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RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:
1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR NON-WARRANTY REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:
1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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