



## Mini-Hermet Pressure Switches

Form 456

### Mini-Hermet Pressure Switches

are robust field-mounted instruments. The pressure sensing assembly is similar to a conventional SOR type. The main difference is that the switching element assembly is hermetically sealed in an explosion proof steel capsule. Switching elements are SPDT or DPDT. See Principle description on page 2.

### Application Information

The pressure switches in this catalog are suitable for a variety of process applications in hazardous locations and hostile environments where stainless steel exterior parts are required and where space is limited. Basic models with standard wetted parts are normally suitable for air, oil, water and non-corrosive process fluids. See the Quick Selection Guide on page 4. Corrosive service and particular user requirements may require optional components. See How to Order on page 3. Adjustable ranges to accommodate lower Set Points, switching elements to handle heavier electrical loads and user preference may require Big Hermet models.

High pressure fluid power (hydraulic) applications where high shock pressures and high cycle rates are expected normally require Pivot Seal type pressure switches.

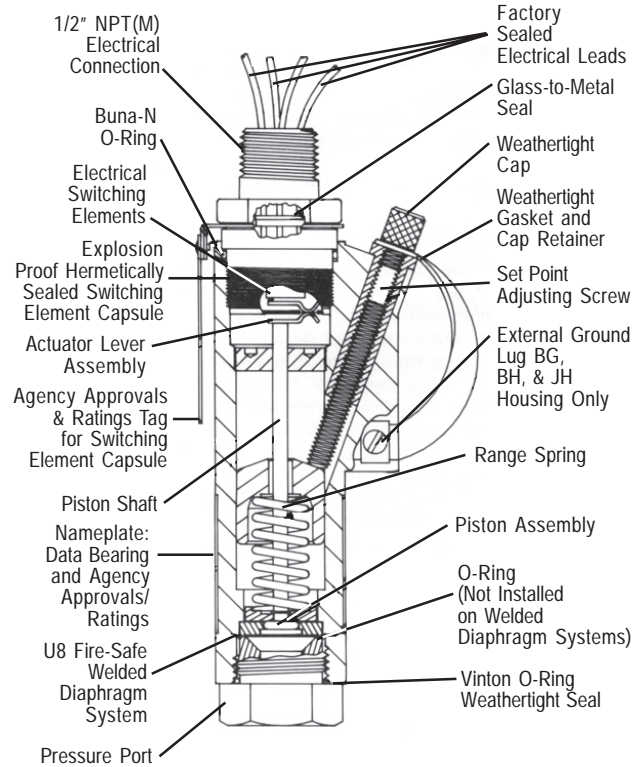


# Mini-Hermet Pressure Switches

## Principle

The pressure sensing element of the SOR Pressure Switch is a force-balance, piston-actuated assembly. The sensing element is sealed by a flexible diaphragm and a static o-ring. There are only three wetted parts in this arrangement: a pressure port, a diaphragm and an o-ring. A wide selection of wetted parts materials for media compatibility and containment are available. A metal diaphragm may be welded to the pressure port for certain applications, thereby eliminating the o-ring (Designators U8 and U9).

Media pressure on the piston counteracts the force of the range spring (adjustable by the adjusting screw) which moves the piston shaft only a few thousandths of an inch to directly actuate the electrical snap-action switching element that is enclosed in the hermetically sealed steel capsule. This design results in low friction and virtually no wear. The electrical switching element is isolated from corrosive atmospheres.



### Built-In Quality

- Rigid quality standards maintained from raw material to finished product.

### Explosion Proof Hermetically Sealed Switching Capsule

- Isolates switching elements from corrosive, hostile and hazardous environments and virtually eliminates problems from corrosion.

### UL Listed, CENELEC (BASEEFA), CSA Certified, SAA and JIS/RIIS Approved Models

- Meet most code and customer requirements.

### Field Adjustable Set Points

- Full range adjustability without disconnecting electrical power while maintaining explosion proof integrity, self-locking adjustment, no charge for factory calibration.

### Warranty

- 3 years from date of manufacture.

### Instrument Quality

- High resolution of Set Points, high repeatability, narrow dead band, negligible temperature effect, high overrange and proof pressures.

### Robust Construction

- High cycle rate tolerance, long life, not critical to vibration, protected internal hermetically sealed switching element capsule.

### Cost Effective

- Simple, fast installation without special tools, long service life. Periodic service or spare parts not required.

### Delivery

- Routine shipments 7 to 10 working days. Emergency shipments via air within 48 hours.

### Service

- Factory service engineers and area factory representatives provide effective and prompt worldwide service.

### Quick Selection Guide

Basic Mini-Hermet pressure switches in AG or AH housings with standard wetted parts are normally suitable for air, oil, water and non-corrosive process applications in hazardous locations and hostile environments where space is limited. Refer to the Quick Selection Guide section on page 4 for a basic model number. Corrosive service and particular customer requirements may require optional components. Refer to How to Order section below to build a customized model number or the dedicated page to locate optional components, such as: switching elements, diaphragm systems, pressure ports and accessories. Each position in the model number, except Accessories, must have a designator.

### Applications

Mini-Hermet pressure switches in the AG and AH housings are normally suitable for a variety of process applications in hazardous locations and hostile environments because the electrical switching elements are hermetically sealed in a stainless steel capsule that is UL Listed, CSA Certified and SAA Approved as an explosion proof snap switch. Specific customer or code requirements for the complete pressure switch to be UL Listed, CENELEC and CSA Certified or JIS/RIIS Approved can normally be met by specifying an AP, AS, BG, BH or JH housing and U8 diaphragm system. Other application requirements can normally be met by selecting optional components, such as: switching elements, diaphragm systems and pressure ports. Certain applications may require customized specials. Consult the factory or the SOR representative in your area. Conventional explosion proof pressure switches for process applications are shown in Form 216.

High pressure fluid power (hydraulic) applications where high shock pressure and high cycle rates are expected normally require Pivot Seal type pressure switches. Refer to SOR Catalog 219.

### How to Order

Information and data in this catalog are formatted to provide a convenient guide to assist instrument engineers, plant engineers and end users in selecting pressure switches for their unique applications.

Steps 1 through 5 required. Step 6 optional. Orders must have complete model numbers, i.e. each component must have a designator.

**Step 1:** Select Piston-Spring Adjustable Range/Set Point from **Specification**  
(Piston/Spring combination determines adjustable range.)

**Step 2:** Select **Housing** for type of pressure switch and service

**Step 3:** Select electrical **Switching Element** for electrical service

**Step 4:** Select **Diaphragm and O-Ring** for process compatibility and containment

**Step 5:** Select **Pressure Port** for process compatibility and connection

**Step 6:** Select **Accessories** required for service

If Agency Approved, Certified or Listed pressure switches are required, be specified.

# Mini-Hermet Pressure Switches

## Quick Selection

Basic Mini-Hermet pressure switches with AG - Aluminum or AH - Stainless Steel housings and standard wetted parts are normally suitable for air, oil, water and non-corrosive process in hazardous locations and hostile environments. The Set Point must be within the adjustable range. Refer to How to Order section on page 3 to locate optional components. Each position in the model number, except Accessories, must have a designator.

### Pressure

Model Number	Adjustable Range psi	Typical Dead Band psi	Overrange psi	Proof psi
6AG - EF2 - N4 - F1A	7 to 30	1.6	1500	2500
6AG - EF3 - N4 - F1A	12 to 100	2.7		
6AG - EF5 - N4 - F1A	20 to 180	4.2		
6AG - EF45 - N4 - F1A	25 to 275	5.7		
5AG - EF3 - N4 - F1A	25 to 240	6.6		
5AG - EF5 - N4 - F1A	35 to 375	9.3		
5AG - EF45 - N4 - F1A	45 to 550	11.7		
9AG - EF4 - N4 - F1A	100 to 500	15.9	2500	6000
9AG - EF5 - N4 - F1A	200 to 1000	27.6		
9AG - EF45 - N4 - F1A	200 to 1750	45		
1AG - EF45 - N4 - F1A	500 to 4000	294	5000	6000

### Vacuum

Model Number	Adjustable Range in. Hg vacuum to pressure	Typical Dead Band in. Hg	Overrange psi	Proof psi
56AG - EF216 - M2 - C1A	30 - 0 - 20	2.5	1500	2500
56AG - EF316 - M2 - C1A	30 - 0 - 160	3.5		

### Standard Construction

1. Housing: AG–Aluminum or AH - Stainless Steel.
2. Switching element: EF–SPDT 5A 250 VAC.
3. Diaphragm & O-Ring: N4–primary (wetted) diaphragm TCP, o-ring (wetted) Buna-N.
4. Pressure port: F1A–Carbon steel 1/4" NPT(F). When AH - Stainless Steel housing is specified, pressure port must be C1A - 316SS 1/4" NPT(F).
5. Dead band values are expressed as typical expected at mid-adjustable range with the standard EF switching element assembly installed.