



# Big Hermet Pressure Switches with Hermetically Sealed Switching Elements

Form 455

**Big Hermet pressure switches** are robust field-mounted instruments. The pressure sensing assembly is identical to a conventional Static "O" Ring type. The main difference is that the switching element assembly is hermetically sealed in a steel capsule. Switching elements are SPDT or DPDT. A description of the operating principle can be found on page 2.

Design and specifications are subject to change without notice.

## Application Information

The pressure switches in this catalog are suitable for a variety of process applications in hazardous locations and hostile environments. 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 particle user requirements may require optional components. See How to Order on page 3. More hostile environments, space restrictions and user preference may require Mini 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. (Refer to Form 219.)



Model 4BA

### Built-In Quality

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

### Explosion Proof Hermetically Sealed Switching Element Capsule

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

### UL Listed, CSA Certified, SAA Approved Models

- Meets 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 special tools required, no-charge factory calibration.

### 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 and fast installation without special tools, long service life.

### Delivery

- Routine shipments 7 to 10 working days. Emergency shipments via same day.

### Service

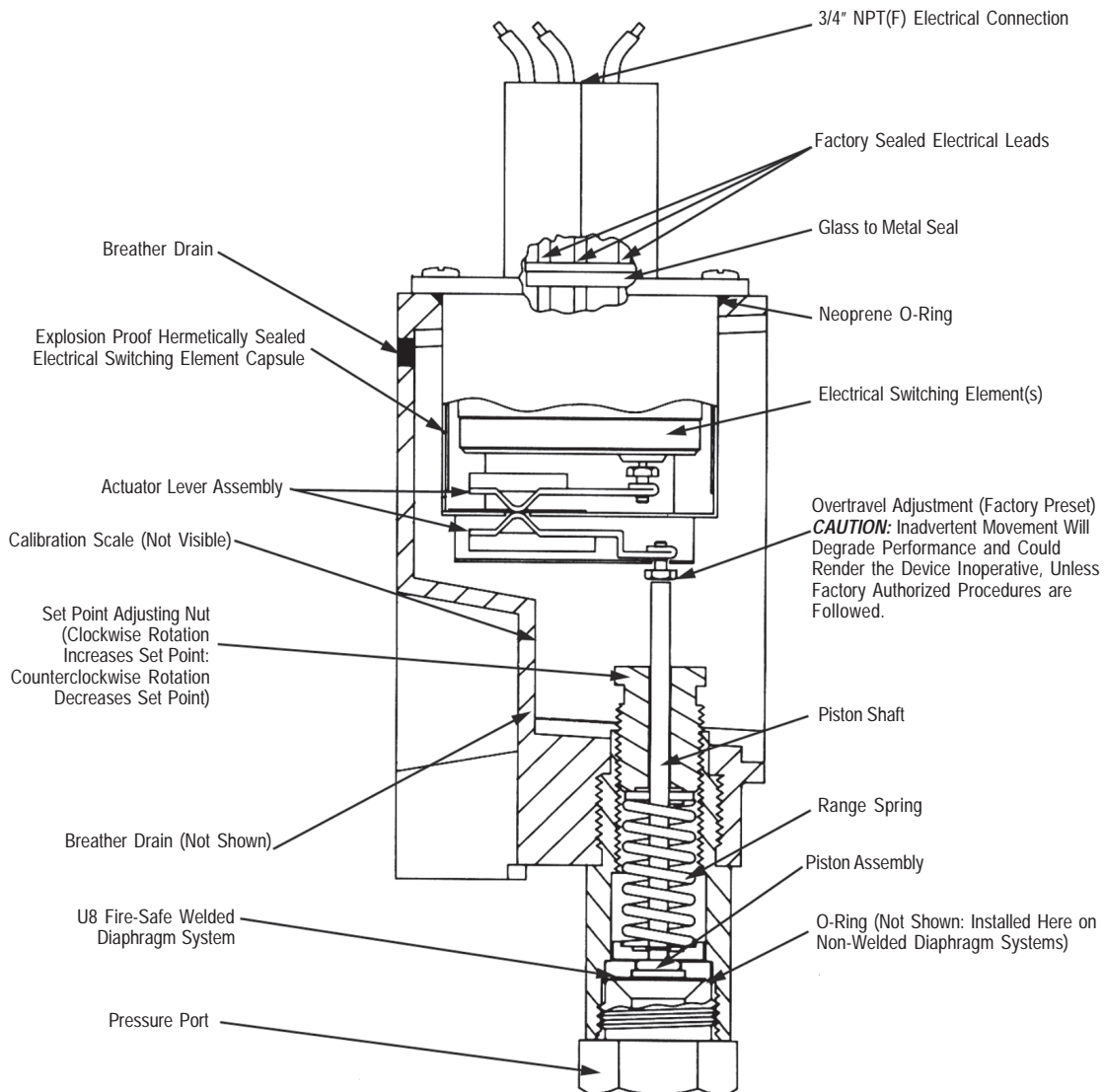
- Factory service engineers and area factory representatives provide effective and prompt worldwide service.

### Warranty

- 3 years from date of manufacture.

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 is available. A metal diaphragm may be welded to the pressure port for certain applications, thereby eliminating the o-ring (designators U7, U8 and U9).

Media pressure on the piston counteracts the force of the range spring (adjustable by the adjusting nut) 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.



### Quick Selection Guide

Basic Big Hermet pressure switches with standard wetted parts are normally suitable for air, oil, water and non-corrosive process applications in hazardous locations and hostile environments. 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. Follow the steps for ordering to build a customized model number referring to 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

Pressure switches in the BA housing 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 steel capsule that is UL Listed, CSA Certified and SAA Approved. Specific customer or code requirements for the complete pressure switch to be UL Listed/CSA Certified can normally be met by specifying a BL housing and U8 diaphragm system. See pages 6, 7, 8 and 10 for details. 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 available

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.

### How to Order

Steps 1 through 5 are required. Step 6 is 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 Specifications. (Piston/Spring combination determines Adjustable Range.)

**Step 2:** Select **Housing**. BA Housing is standard; BA designator must appear in model number unless BL is specified

**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

Agency Approved, Certified or Listed pressure switches are required.

Basic Big Hermet pressure switches with 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 Switches

Model Number	Adjustable Range psi (in. wc)	Typical Dead Band psi (in. wc)	Overrange psi	Proof psi
12BA-KB614-N4-B1A	(10 to 45)	(1.2)	200	400
12BA-KB2-N4-B1A	0.4 to 2	0.15		
12BA-KB4-N4-B1A	0.5 to 6	0.2		
12BA-KB5-N4-B1A	0.75 to 12	0.2		
12BA-KB45-N4-B1A	1 to 16	0.2		
4BA-KB2-N4-B1A	2 to 8	0.3	750	1000
4BA-KB4-N4-B1A	2 to 25	0.5		
4BA-KB5-N4-B1A	3 to 50	0.7		
4BA-KB45-N4-B1A	4 to 75	0.8		
6BA-KB2-N4-F1A	7 to 30	0.8	1500	2500
6BA-KB3-N4-F1A	12 to 100	1.3		
6BA-KB5-N4-F1A	20 to 180	2		
6BA-KB45-N4-F1A	25 to 275	3		
5BA-KB3-N4-F1A	25 to 240	3		
5BA-KB5-N4-F1A	35 to 375	4.5	2500	6000
5BA-KB45-N4-F1A	45 to 550	6		
9BA-KB4-N4-F1A	100 to 500	10		
9BA-KB5-N4-F1A	200 to 1000	14	2500	6000
9BA-KB45-N4-F1A	200 to 1750	23		
1BA-KB45-N4-F1A	500 to 4000	150	5000	6000

### Vacuum Switches

Model Number	Adjustable Range in. Hg (in. wc) (vacuum to pressure)	Typical Dead Band in. Hg (in. wc)	Overrange psi	Proof psi
52BA-KB116-N4-B1A	(20 - 0 -20)	(1.4)	200	400
52BA-KB117-N4-B1A	(40 - 0 - 40)	(1.6)		
54BA-KB117-N4-B1A	15 - 0 - 15	0.7	750	1000
54BA-KB118-N4-B1A	30 - 0	0.9		
56BA-KB216-M2-F1A	30 - 0 - 20	1.5	1500	2500
56BA-KB316-M2-F1A	30 - 0 - 160	2.1		

### Standard Construction

- Housing: BA-Aluminum. See housing and dimensions pages for details.
- Switching Element: KB-SPDT 15a 250 VAC. See page 7 for optional switching elements.
- Diaphragm & O-Ring: N4-primary (wetted) diaphragm TCP, o-ring (wetted) Buna-N. See page 8 for optional diaphragm and o-ring systems.
- Pressure Port: B1A-Aluminum 1/4" NPT(F); F1A-Carbon steel 1/4" NPT(F). See page 9 for optional pressure ports.
- Dead Band values are expressed as typical expected at mid-adjustable range with the standard KB switching element installed.