## CALIBRATION

1. For instruments which do not have a calibration specified by customer, the minimum setting is established with diaphragm in vertical position.
2. All diaphragm operated instruments are calibrated with diaphragm in vertical position, unless specified otherwise by customer.

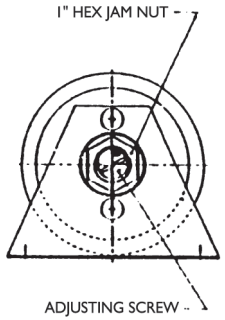
**RECALIBRATION PROCEDURE** (For Field Adjustable-Range Controls)

A. With no pressure applied to the Air Switch, attach a continuity meter to the Common and Normally Open terminals. There should be no continuity.

B. Proceed to change calibration setting. Rotate the slotted adjusting screw located inside the 7/8" external threaded adjusting screw retainer which is locked in place against the die cast housing shoulder with a 1" hex jam nut.

C.W. = Increase
C.C.W. = Decrease

C. If continuity occurs with no pressure applied to the Common and Normally Open terminals, rotate the slotted adjusting screw completely C.C.W. Unlock the 1" hex jam nut and rotate the 7/8" external threaded adjusting screw retainer C.W. until continuity disappears. Continue to rotate one/fourth additional revolution and secure the 1" hex jam nut. This will establish the minimum trip point of the switch contacts.




D. If a higher trip point is required, rotate the slotted adjusting screw C.W. as desired.

An internal O-ring provides friction positioning for the slotted adjusting screw.

For fixed set-point controls, do not tamper with adjusting mechanism. Consult factory.

## EXPLOSION-PROOF SERIES *(See Bulletin 900-X, R70-X, 50-X)*

1. All Explosion-Proof housing configurations should be mounted with mounting surface plane in vertical position.
2. The lid of the Explosion-Proof housing can be removed by unscrewing for access to adjusting screw and wire terminal block.
3. When re-assembling upper portion of Explosion-Proof housing (lid) make certain this part bottoms with lower portion of Explosion-Proof housing.

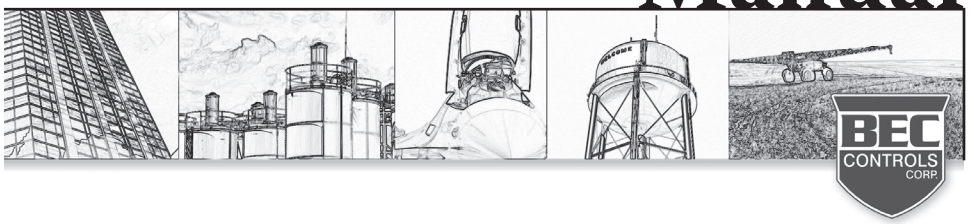
## SPARE PARTS

For reasons of economy and relative simplicity, unless arranged otherwise with customer, no attempt should be made for field overhaul except diaphragm replacement of the necessity to change pressure ranges with a different adjusting screw assembly.

Diaphragm Assembly: Order SYMBOL 03 and include Model No. of Control.

Adj. Screw Assembly: Order SYMBOL 22 and include Model No. of Control plus the spring No. of color. (Refer to Applicable BEC Series Bulletin).

# Instruction Manual



## Instructions for Installing, Operating and Maintaining

# BEC Differential Pressure Switches

**BEC Controls Corp**
121 Water Street
Mineral Point WI 53565
800-677-8876 • ph: 608-987-4100 • fax: 608-987-4300
www.beccontrols.com • sales@beccontrols.com

**FORM B-4021**
Rev. 1/10

# STANDARD SPECIFICATIONS
## of BEC Differential Pressure Switches Series 900, 800, 820, R70, 50

## INSTALLATION

"Mount with diaphragm vertical" *is applicable when indicated on instrument.*

**Caution:** All of the BEC controls described in this section are designed to be used with air or non-explosive media not harmful to silicone or aluminum.

1. To assure correct piping, one of the two pressure ports has a label reading "High" or "Low."
   If using STATIC or POSITIVE pressure only, pipe to "High" port.
   If using VACUUM or NEGATIVE pressure only, pipe to "Low" port.
   If sensing TWO DIFFERENT PRESSURES, the higher of the two pressures to be sensed should be piped to the "HIGH" PORT, the lower to the "LOW" port.
2. The large red plastic cap covering the adjusting screw can be left assembled during operation to keep calibration device free of foreign material.
   A metal adjusting mechanism cap is supplied on request. The 4-40 retaining screw head is crossed drilled to facilitate the use of a seal wire if FM approval is required.
3. All pressure port shipping plugs MUST be removed during operation to allow the diaphragm to "breathe."
4. BEC Diaphragm Operated Differential Pressure Controls may be installed by means of:
   a. A standard pipe nipple inserted in either port.
   b. Bulkhead Mounting Fitting assembled to either "HIGH" or "Low" pressure port. A 5/8" diameter panel hole is required with a nut and washer (included with Fitting) assembled from opposite side of the panel.
   c. Foot or Flange Mounting
   SERIES R70, 50 - May be re-positioned in the field. Remove the two 10-32 x 5/16 screws indicated by the arrow, place the Flange or Foot Mounting in the desired position and re-assemble the two screws.

   Series 900, 800, 820 - DO NOT attempt to add or remove Flange or Foot Mounts in the field.
5. Any port fitting with an orifice slug pressed in or drilled in place is for pressure pulsation dampening.

## ELECTRICAL

Applicable BEC Bulletins for each series show complete electrical ratings.

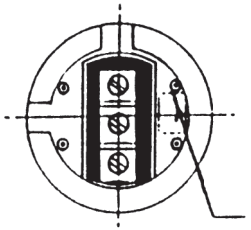
1. Instruments with integral Pilot Lights:
   a. Apply only the voltage and amps shown on nameplate.
   b. Circuit is affixed to underside of Knock-out box cover.
2. Instruments without Pilot Lights:
   a. Apply any voltage and amps up to maximum shown on nameplate.

If higher branch current and voltage are desired in series with the BEC switch than appears on the nameplate, refer to applicable series bulletin or consult factory.

ELECTRICAL (continued)

**Caution**

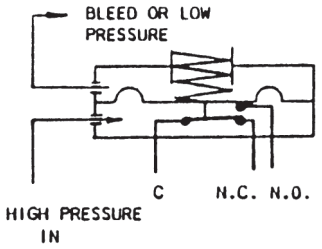
1. Disconnect Branch Circuit Power before connecting or disconnecting terminal wires or attempting any servicing of spare parts.
2. Some R70 and 50 Series are supplied with four (4) screws installed shown by arrow. The control will not operate without the screws in place.



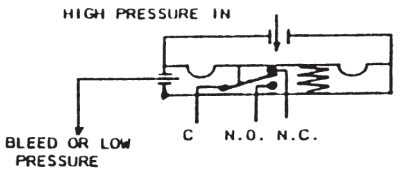
## OPERATION

All BEC controls described in this section operate on a pressure barrier principle converting pressure X area to mechanical force. This force actuates a basic S.P.D.T. switch. The basic switch contacts reverse at predetermined pressure setting which is accomplished by adjustable spring tension.

The following two basic schematics apply:




SCHEMATIC A




SCHEMATIC B

Note: BEC controls referenced this section will utilize schematic A or B theory.

## SERIAL NUMBER DATE CODING

Unless specified otherwise by customer, the serial number date code can be determined as follows:

A-Z = 1960 through 1985, 1A-1Z = 1986 through 2011
1-12 = January through December
i.e.: 1A8 indicates Instrument Built in 1986, August