

# Ruelco



**SS-E Electric Pressure Switch**

**Model 4E02**

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# SS-E Manufactured under U.S. Patent number 5155310

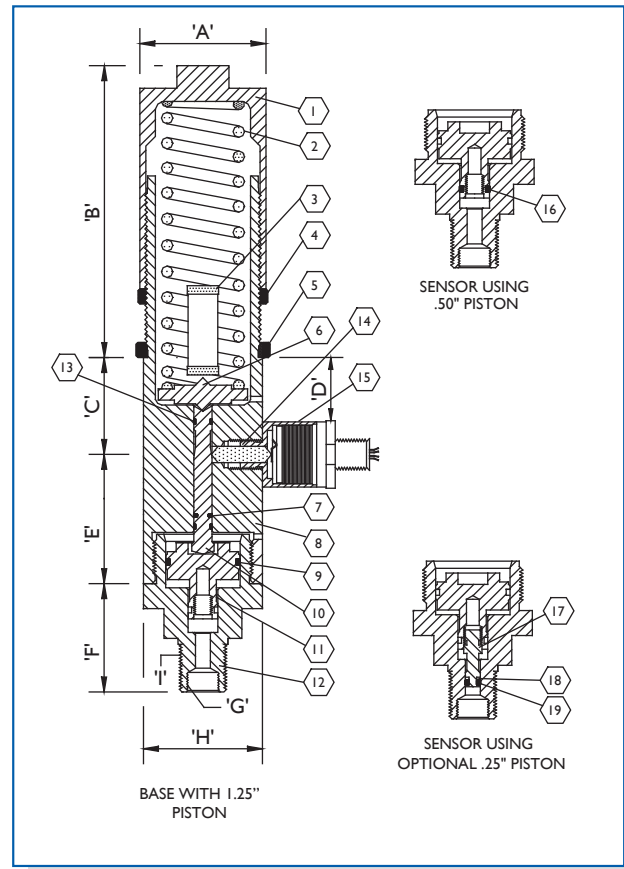
## Electric Pressure Switch

### FEATURES

- 316 Stainless steel construction (models to N.A.C.E. MR0175 available).
- Standard base range 10-10,000 p.s.i. (with 1/4" piston option).
- Operating pressure range from .5 to 20,000 p.s.i.
- Holds constant and accurate set points.
- Designed for 1% plus or minus repeatability on set points.
- Minimum deadband between trip and reset pressure.
- Uses hermetically sealed, snap acting, dry contact switches rated explosion proof. (U.L.® rated Class I, Div. I, Groups A, B, C, D).
- Spring may be replaced with sensing pressure present in the sensor.
- Vent above sensing piston prevents high pressure from entering the switch assembly should a piston seal leak develop.
- Optional tamper proof lock-out device available upon request.

### GENERAL DESCRIPTION:

The Ruelco 'SS-E' electric pressure switch is operated by pressure acting on a piston opposing an adjustable spring force. It functions as a normally closed or normally open switch, depending on which contacts are used. Pressure applied to the sense port will cause the switch to operate.



## Parts List For Pressure Switch Model SS-E

| ITEM | QTY. | DESCRIPTION                 | MATERIAL              | PART No.   |
|------|------|-----------------------------|-----------------------|------------|
| 1    | 1    | SPRING CAP                  | STAINLESS STEEL       | 41-009-0A0 |
| 2A   | 1    | SPRING (BLUE)               | ASTM-401              | 41-012-000 |
| 2B   | 1    | SPRING (RED)                | ASTM-401              | 41-013-000 |
| 2C   | 1    | SPRING (SILVER)             | ASTM-401              | 41-014-000 |
| 2D   | 1    | SPRING (GREEN)              | INCONEL               | 41-019-000 |
| 2E   | 1    | SPRING (YELLOW)             | INCONEL               | 41-020-000 |
| 2F   | 1    | SPRING (PURPLE)             | INCONEL               | 41-021-000 |
| 3    | 1    | PARTS TUBE                  | ACETATE BUTYRATE      | 4E-010-000 |
| 4    | 1    | LOCK RING                   | STAINLESS STEEL       | 41-015-000 |
| 5    | 1    | PANEL MOUNT RING (OPTIONAL) | STAINLESS STEEL       | 41-023-000 |
| 6    | 1    | SPRING PLATE                | STAINLESS STEEL       | 41-008-0A0 |
| 7    | 1    | SHAFT-O-RING                | VITON                 | V0-008-75T |
| 8    | 1    | BODY                        | STAINLESS STEEL       | 4E-001-000 |
| 9    | 1    | O-RING F/1.25" PISTON       | VITON                 | VO-024-75T |
| 10   | 1    | SPOOL                       | STAINLESS STEEL       | 4E-005-000 |
| 11   | 1    | 1.25"/.50" PISTON           | STAINLESS STEEL       | 42-005-001 |
| 12   | 1    | 1.25"/.50"/.25" SENSOR BASE | STAINLESS STEEL       | 41-004-0A0 |
| 13   | 2    | WEAR RING                   | DELRIN                | 4E-004-000 |
| 14   | 1    | PUSH ROD                    | DELRIN                | 4E-002-0A0 |
| 15A  | 1    | SPDT SWITCH ASSEMBLY        | STAINLESS STEEL       | 88-030-RKO |
| 15B  | 1    | DPDT SWITCH ASSEMBLY        | STAINLESS STEEL       | 88-031-RKO |
| 16   | 1    | O-RING F/5" PISTON          | VITON                 | V0-012-75T |
| 17   | 1    | .25" PISTON (OPTIONAL)      | STAINLESS STEEL       | 41-011-0A0 |
| 18   | 1    | BACKUP F/.25" PISTON        | TEFLON                | TB-006-00C |
| 19   | 1    | O-RING F/.25" PISTON        | VITON                 | VO-006-75T |
| 20   | -    | REPAIR KIT                  | ITEMS 7,9,13,16,18,19 | 4E-003-000 |

### Switch Specifications

|                           |                               |
|---------------------------|-------------------------------|
| SET POINT DEVIATION       | ± 1%                          |
| DEADBAND                  | 5% OF RANGE                   |
| SWITCHTYPE                | SPDT OT DPDT                  |
| AC RATING                 | 250 VOLTS @ 5 AMPS            |
| DC RATING                 | 30 VOLTS @ 5 AMPS             |
| AMBIENT TEMPERATURE RANGE | -20 TO 167° F<br>-29 TO 75° C |

### 1.25"/.50"/.25" Switch Sensor Specifications

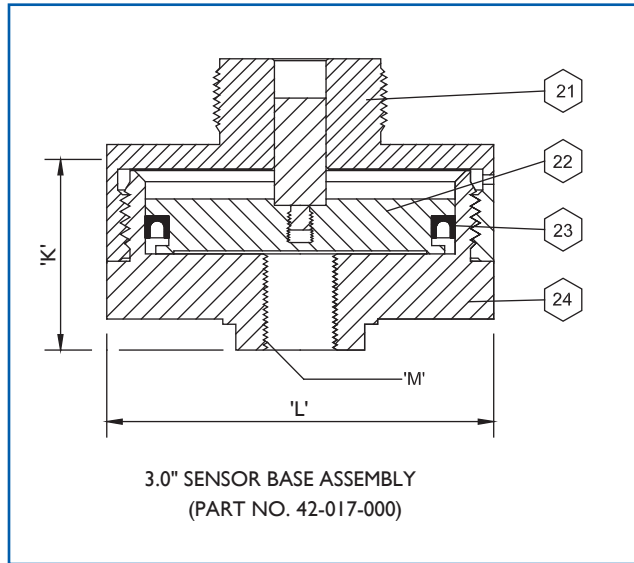
|                           |                                |
|---------------------------|--------------------------------|
| SENSOR TYPE               | PISTON                         |
| MAX. OPER. PRESSURE       | 10,000 PSI (690 BAR)           |
| BURST PRESSURE            | 20,000 PSI (1380 BAR)          |
| AMBIENT TEMPERATURE RANGE | -20 TO 250° F<br>-29 TO 122° C |

### Dimensions Inch (MM)

|                  |                     |
|------------------|---------------------|
| A                | 2.12 in (53.8 mm)   |
| B (MAX)          | 6.13 in. (155.7 mm) |
| C                | 1.39 in. (35.3 mm)  |
| D                | .90 in. (22.9 mm)   |
| E                | .98 in. (24.9 mm)   |
| F                | 1.82 in. (46.2 mm)  |
| G                | 1/4" FNPT           |
| H                | 2 in. (50.8 mm)     |
| I                | 1/2" MNPT           |
| PANEL MOUNT HOLE | 1.875 in. (48.0 mm) |
| WEIGHT *         | 6.1 LBS. (2.8 Kg.)  |
| WIRE LEADS       | 18" 18AWG. STRANDED |

\* FOR SWITCH AND 1.25/.50/.25 SENSOR BASE

| Spring Codes<br>(COLOR) |            | Available Ranges - PSI (BAR) |                   |                   |                    |                      |                    |                        |                          |                       |                       |                        |                          |                        |                        |                           |
|-------------------------|------------|------------------------------|-------------------|-------------------|--------------------|----------------------|--------------------|------------------------|--------------------------|-----------------------|-----------------------|------------------------|--------------------------|------------------------|------------------------|---------------------------|
|                         |            | .5-20<br>(.03-1.4)           | 4-40<br>(.3-2.75) | 10-80<br>(.7-5.5) | 10-115<br>(.7-7.9) | 20-230<br>(1.4-15.8) | 50-450<br>(3.4-31) | 200-750<br>(13.8-51.8) | 500-1500<br>(34.5-103.5) | 1000-3000<br>(69-207) | 1000-3000<br>(69-207) | 2000-5000<br>(138-345) | 5000-10,000<br>(345-689) | 2000-5000<br>(138-345) | 3500-9000<br>(241-620) | 8500-20,000<br>(586-1380) |
| B (Blue)                | G (Green)  | X                            |                   |                   | X                  |                      |                    | X                      |                          | X                     |                       |                        | X                        |                        |                        |                           |
| R (Red)                 | Y (Yellow) |                              | X                 |                   |                    | X                    |                    |                        | X                        |                       | X                     |                        |                          | X                      |                        |                           |
| S (Silver)              | P (Purple) |                              |                   | X                 |                    |                      | X                  |                        |                          | X                     |                       | X                      |                          |                        | X                      |                           |
| PISTON DIA.             |            | 3.0"                         | 3.0"              | 3.0"              | 1.25"              | 1.25"                | 1.25"              | .50"                   | .50"                     | .50"                  | .25"                  | .25"                   | .25"                     | .187"                  | .187"                  | .187"                     |
| PISTON CODE             |            | 0                            | 0                 | 0                 | 1                  | 1                    | 1                  | 2                      | 2                        | 2                     | 3                     | 3                      | 3                        | 4                      | 4                      | 4                         |
|                         |            | OPTIONAL BASE                |                   |                   |                    |                      | OPTIONAL PISTON    |                        |                          |                       |                       | OPTIONAL BASE          |                          |                        |                        |                           |



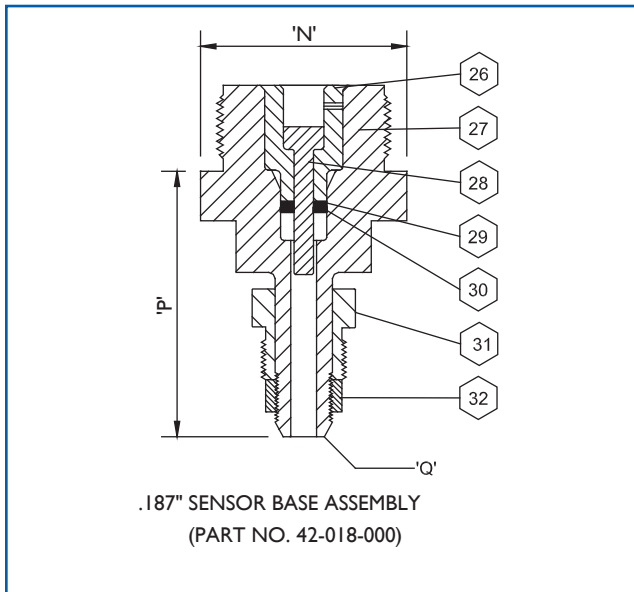
### Parts List 3.0" Sensor Base

| Item | Qty. | Description            | Material         | Part No.   |
|------|------|------------------------|------------------|------------|
| 21   | 1    | UPPER HOUSING          | 17-4 PH ST. STL. | 42-011-000 |
| 22   | 1    | PISTON ASSEMBLY        | 17-4 PH ST. STL. | 42-024-000 |
| 23   | 1    | SEAL                   | VITON            | VU-334-75T |
| 24   | 1    | LOWER HOUSING          | 17-4 PH ST. STL. | 42-012-000 |
| 25   | -    | REPAIR KIT F/3.0" BASE | ITEMS 7,13,23    | 42-015-000 |

| SENSOR TYPE               | PISTON                         |
|---------------------------|--------------------------------|
| MAX. OPER. PRESSURE       | 5,000 PSI (345 BAR)            |
| BURST PRESSURE            | 10,000 PSI (690 BAR)           |
| AMBIENT TEMPERATURE RANGE | -20 TO 250° F<br>-29 TO 122° C |

|          |                    |
|----------|--------------------|
| K        | 2.0 IN. (50.8 mm)  |
| L        | 3.75 IN. (95.2 mm) |
| M        | 1/2" FNPT          |
| WEIGHT * | 8.5 LBS. (3.7 KG.) |

\* FOR SWITCH AND 3.0" SENSOR BASE



### Parts List .187" Sensor Base

| Item | Qty. | Description        | Material          | Part No.   |
|------|------|--------------------|-------------------|------------|
| 26   | 1    | RETAINER SLEEVE    | AISI 316 ST. STL. | 42-021-0A0 |
| 27   | 1    | .187" SENSOR BASE  | 17-4 PH ST. STL.  | 42-019-0A0 |
| 28   | 1    | .187" PISTON       | 17-4 PH ST. STL.  | 42-020-000 |
| 29   | 1    | BACK-UP RING       | TEFLON            | 42-010-3B0 |
| 30   | 1    | SEAL               | VITON             | VP-201-75H |
| 31   | 1    | 9/16" GLAND NUT    | AISI 316 ST. STL. | 42-022-000 |
| 32   | 1    | 9/16" GLAND COLLAR | AISI 316 ST. STL. | 42-023-000 |
| 33   | -    | REPAIR KIT         | ITEM 7,13,29,30   | 42-016-000 |

| SENSOR TYPE               | PISTON                         |
|---------------------------|--------------------------------|
| MAX. OPER. PRESSURE       | 20,000 PSI (1380 BAR)          |
| BURST PRESSURE            | 40,000 PSI (2760 BAR)          |
| AMBIENT TEMPERATURE RANGE | -20 TO 250° F<br>-29 TO 122° C |

|          |                     |
|----------|---------------------|
| N        | 2.0 IN. (50.8 mm)   |
| P        | 2.57 IN. (65.3 mm)  |
| Q        | 9/16"/M/P AUTOCLAVE |
| WEIGHT * | 5.0 LBS. (2.3 KG.)  |

\* FOR SWITCH AND .187" SENSOR BASE

**Ordering Code: 4E02 X X X 0 0 0**

BASE MODEL NUMBER

Standard Corrosive Service - (-)

N.A.C.E. Option - N

SPRING CODE (See Range Chart)

PISTON CODE (See Range Chart)



# **SS Series Pressure Switches**

**SS-1 High Flow**

**SS-2 Standard**

**SS-2 High Flow (Pneumatic or Hydraulic)**

**SS-1 Differential**

**SS-2 Differential**

**SS-4 Hydraulic Bleed**

**SS-E Electric**

**SS-E Electric Differential**