



# SpringField Controls

Home | Products | Enquiry

**Springfield Controls 451 Series, Pressure, Vacuum, Diff. Pressure & Temp. Switches**  
**Explosion Proof, Adjustable Ranges 30" Vac to 6000 PSI,**  
**-180°F to 650°F**



**get a printer-friendly Acrobat™**  
file of this information

## **DESCRIPTION**

As safety requirements become more stringent, the determining factor in specifying an industrial pressure, differential pressure and/or temperature switch rests upon that switch protecting equipment, processes and personnel. Meeting hazardous location requirements through adherence to UL, CSA, and ATEX standards, the 451 Series is the choice where potentially explosive or highly corrosive atmospheres exist.

The 451 Series offers a variety of pressure, differential pressure, vacuum and temperature ranges, as well as port connections, wetted materials and sensor types. With common, flexible "platforms", models can quickly be adapted at the factory for special requirements, such as ranges, process connections and electrical ratings. Typical industries using 451 Series switches include chemical, petrochemical, refinery, oil and gas pipelines & production and pharmaceuticals.

- **APPROVALS INCLUDE CULUS, ATEX & SAA; COMPLIANCE WITH CE AND NACE STANDARDS**
- **INTERNAL ADJUSTMENT OR EXTERNAL ADJUSTMENT VIA CALIBRATED DIALS WITH TAMPER RESISTANT COVER**
- **SINGLE OR DUAL OUTPUT**
- **WIDE VARIETY OF SENSOR MATERIALS**
- **OPTIONAL HASTELLOY®, MONEL® AND TANTALUM SENSOR MATERIAL FOR CORROSIVE MEDIA**
- **FLUSH MOUNT SANITARY SENSORS**
- **STAINLESS STEEL, HASTELLOY®, MONEL® FLANGES CONFORMING TO ANSI STANDARDS**
- **INDICATING DIFFERENTIAL PRESSURE MODULE**
- **MOST MODELS AVAILABLE FOR IMMEDIATE DELIVERY!**

## SPECIFICATIONS

### GENERAL

Storage Temperature: -65° to 160°F (-54 to 71°C)  
Ambient Temperature: -58° to 160°F (-50 to 71°C); ranges 36-39, 520-525, 540-548, 701-705: 0 to 160°F (-17 to 71°C); Models 8320E, 8225E: -40° to 160°F (-40 to 71°C) set point typically shifts less than 1% of range for a 50°F (28°C) ambient temperature change; less than 2% for types E121 & E122  
Set Point Repeatability: Temperature models: ±1% of adjustable range. Pressure model ranges 126-164, S126B-S164B, 171-174, 270-274, 358-376, 520-535, 540-543, 560-564, 701-705: ±1% of adjustable range; ranges 450-559: ±1/2% of adjustable range; ranges 36-39, 183-194, 483-494, 544-548, 565-567, 612-680: ±1-1/2% of adjustable range  
Shock: Set point repeats after 15 G, 10 millisecond duration  
Vibration: Set point repeats after 2.5 G, 5-500 Hz  
Enclosure: Die cast aluminum (max. 0.4% copper), epoxy powder coated; gasketed; coverlock; internal set point lock standard on types J, C, F; gasketed aluminum tamper-resistant dial cover on types B, H, E; aluminum name plate  
Enclosure Class: Certified to enclosure type 4X. Types 820E, 822E; designed to meet NEMA 4 requirements with option M300; Class I, Division 1 product meet enclosure type 7; Class II, Division 1 products meet enclosure type 9. Certified to IP66 requirements  
Switch Output: One, two or three SPDT; switches may be separated up to 100% of range; except ranges 521-524, 531-534 (50%); ranges 520, 525, 530, 535, 570-572 (30%); Two SPDT hermetic sealed switches available on H122P models  
Electrical Rating: 15 A 125/250/480 VAC resistive except Pressure model H122P; 11A 125/250 VAC resistive; Temperature range codeHTFP: 22A 480VAC resistive  
Weight: 3-7.5 lbs; Varies with model  
Reference Scales: Types B, E & H: external dial. Scale divisions vary with range.  
Electrical Connection: Type H, B, E: one 3/4" NPT; Type J, C, F, 820E, 822E: two 3/4" NPT; terminal block standard  
Pressure Connection: Ranges S126B-S164B, 171-194, 483-494, 520-535: 1/2" NPT (female); ranges 560-564: 2" sanitary connection; ranges 565-567: 1 1/2" sanitary connection; ranges 540-548: 1/8" NPT

Temperature Deadband: Models T5441, 545E3, 6354E: typically 1%; B-, C-, and E- 121 and 126: typically 2% of range under laboratory conditions (70°F [21°C] ambient circulating bath at rate of 1/2°F per minute change)

Pressure Deadband: See model charts

Differential Pressure Indication: Differential pressure indication available models 56RT and JU768 with option M210; accuracy approximately ±1% mid 50% of range, ±3% at ends; window is plexiglass and gasketed; indicator may be field adjusted for approximately ±1% accuracy at any set point within range

Temperature Indication: Temperature indication available models 8560E and 82276E. Indication accuracy is +1% of adjustable range

Approvals:

Class I, Division 1 & 2, Groups B, C & D  
Class II, Division 1 & 2, Groups E, F & G  
Class III  
Class I, Zone 1, Group IIB + H2 T6

UL Listed, cUL Certified

Pressure: UL 50, 698; CSA C22.2 No. 25-1966, 30-M1986, CEC Part 1 – File #E40857  
Temperature: UL 50, 698; CSA C22.2 No. 25-1966, 30-M1986, CEC Part 1 – File #E43374

CENELEC/DEMKO A/S (N.B. #0539)  
Demko A/S certified to ATEX Directive (94/9/EC)  
II 2 G EEEx d IIC T6, Tamb.= -40°C to +71°C (-40°F to +160°F), IP 66  
II 2 D T+85°C, Tamb.= -40°C to +71 °C (-40°F to +160°F), IP 66  
EN 50 014, EN 50 018, EN 50 281, EN 60529  
Certificate #DEMKO 03 ATEX 0305048

CENELEC/TÜV Süddeutschland Bau und Betrieb GmbH (N.B. #0036)  
TÜV certified to PED (97/23/EC)  
Category IV, Module H1 (must select option M407)  
Certificate #USA 02/04/38/001 thru USA 02/07/38/033

UEC Compliant to LVD (73/23/EC & 93/68/EEC)  
Products rated lower than 50 VAC and 75 VDC are outside of the scope of the LVD The Low Voltage Directive does not apply to products

