



United Electric pressure and temperature switches are designed for rugged industrial environments. Models are available with enclosures from cost-effective skeletons to cast aluminum and stainless steel. For high accuracy and performance, check out the SIL-rated UE One Series switches with built-in "I Am Working" diagnostics and integral display.

| | Prices Start at | See Page |
|--|-----------------|----------|
| Differential Pressure Switches | | |
| UE One Series Electronic Differential Pressure Switches | \$757.00 | 370 |
| UE 24 Series Delta-Pro Enclosure Type 4 Differential Pressure Switches | \$80.00 | 381 |
| UE 120 Series Explosion-Proof Differential Pressure Switches | \$470.00 | 383 |
| UE 400 Series Type 4X Multiswitch Differential Pressure Switches | \$332.00 | 382 |
| UE Differential Pressure Switches for Ultra-Low Pressure | \$496.00 | 384 |
| UE J21K Series Type 4X General Service Differential Pressure Switches | \$230.00 | 381 |
| Pressure Switches | | |
| UE One Series Electronic Pressure Switches | \$473.00 | 370 |
| UE 40 Series General Service Skeleton Design Pressure Switches | \$71.00 | 374 |
| UE 54 Series General Service Pressure Switches | \$60.00 | 374 |
| UE 100 Series Enclosure Type 4X Pressure Switches | \$125.00 | 377 |
| UE 117 Series Pressure Switches for Division 2 Use | \$269.00 | 377 |
| UE 120 Series Explosion-Proof Pressure Switches | \$246.00 | 380 |
| UE 400 Series Type 4X Multiswitch Pressure Switches | \$184.00 | 378 |
| UE J6 Series Enclosure Type 4X Pressure Switches | \$141.00 | 376 |
| UE Spectra 10 Compact Cylindrical Pressure Switches | \$52.00 | 375 |
| UE Spectra 12 Vibration-Resistant Compact Pressure Switches | \$234.00 | 379 |
| Temperature Switches | | |
| UE One Series Electronic Temperature Switches | \$462.00 | 370 |
| UE 54 Series General Service Temperature Switches | \$117.00 | 385 |
| UE 100 Series Enclosure Type 4X Temperature Switches | \$221.00 | 386 |
| UE 117 Series Temperature Switches for Division 2 Use | \$322.00 | 388 |
| UE 120 Series Explosion-Proof Temperature Switches | \$327.00 | 388 |
| UE 400 Series Type 4X Multiswitch Temperature Switches | \$246.00 | 387 |
| UE 800 Series Indicating Temperature Switches | \$476.00 | 385 |
| UE Spectra 12 Division 1, Zone 1 Temperature Switches | \$234.00 | 386 |
| Accessories | | |
| UE Wells and Union Connectors | \$29.00 | 387 |
| UE Precision Sensors' Pressure-Alarming Monitors | \$255.00 | 384 |



Rotary and Smart Actuator Motors

Instrument Valves

Process Control Accessories

Pressure and Temperature Switches

ASCO Solenoid Valves

Pressure Gauges

Prices in this catalog are current at the publication date, and are subject to change without notice. Due to manufacturer agreements, some products may not be available in all Lesman markets or geographic areas.

Choosing the Right Pressure or Temperature Switch



Points to Consider in Making Your Selections

Considerations of life, range, and sensitivity are factors in selecting the best pressure or temperature switch for your application.

The anticipated life, either time in service or number of cycles, is an important consideration. Surges, pulses, process temperatures, and overpressures can reduce sensor life. High electrical loads can reduce microswitch life. Severe environmental conditions, including shock and vibration, can affect overall product life.

UE microswitches are tested to 100,000 cycle life. Sensors are tested to pressures at a minimum of four times the range pressure. All electromechanical switches are designed to shock and vibration MIL-STD-810C.

A wide choice in pressure and temperature ranges is available for each series. For best performance, select a range where your setpoint will be at or near the middle of the switch range.

The sensor is the key determinant of range, sensitivity, accuracy, life expectancy, and cost of a switch. UE uses a variety of sensor configurations to provide the right control for your application. Bellows, metal and elastomer diaphragms, and pistons are used in pressure switches; liquid-filled temperature systems are used for local or remote mount bulb and capillary temperature switches.

To select the correct pressure switch model, first determine the proof pressure, or amount of pressure beyond the target range. Surges that exceed the proof pressure rating can permanently damage the sensor and cause a shift in setpoint repeatability. High pressure can damage or burst the sensor. Plan to install dampeners or pressure protectors to prevent excessive surges.

Build Your Complete Model Number:

- 1. Choose a Switch Series:** (Factors: Switch output, enclosure, adjustment, etc.) In the table, a • denotes standard features, and an **X** denotes an option not available for that series.
- 2. Choose a Model:** Select from the Model Chart (Factors: Range, deadband, proof pressure). Models in these series denote sensor type (bellows, diaphragm, piston) and performance. Some standard options are available, and are included in the Model Chart.
- 3. Choose your Options:** In some cases, modifications or additions to standard products are required. (E.g., narrow the on/off deadband by selecting a 5 Amp switch in lieu of a standard 15 Amp switch. Determine the options you need, and add the option codes to your Model Number.

Complete Model Numbers will follow this format:

_____ - _____ * _____ \ _____ (for as many options as you need)

Switch Type - Model * Option \ Option

Add Optional Capillary Length, Material, and Armor

To specify, place codes in corresponding boxes and add to model number after type and model selection, separated by a dash.

_ ^ _ _ ^ _ (Material ^ Capillary Length ^ Armor)

Material: S=304 SS; C=Copper

Capillary Length: Length= 06, 10, 15, 20, 25, 30, 40, 50. Call for repeatability and ambient effects on lengths above 30 feet.

Armor: 0=None, 1=Stainless steel, 2=Teflon shrink coat over stainless steel capillary. Maximum temperature limit 550°F.

1. Choose a Switch Series

| Switch Series | | 800 | 400 | 120 | 117 | 100 | J6 | J21K | One Series |
|---|----------------------------|-----|-------------------|--------------------|----------|---------------|-----|------|------------|
| For pricing and available models, see page: | | 385 | 378-379, 382, 387 | 380, 383, 384, 388 | 377, 388 | 377, 384, 386 | 376 | 381 | 370-373 |
| Process Variable | Pressure | | • | • | • | • | • | X | • |
| | Vacuum | | • | • | • | • | • | X | X |
| | Differential Pressure | | • | • | • | • | | • | • |
| | Temperature | • | • | • | • | • | | | • |
| Enclosure Rating | Division 1 | • | | • | | | | | • |
| | Division 2 | • | | • | • | | | | • |
| | NEMA 1 General Purpose | • | | • | • | • | | | • |
| | NEMA 4X Watertight | X | • | • | • | • | • | • | • |
| | NEMA 7 | | | • | • | • | | | |
| Switch Output | NEMA 9 | | | • | • | • | | | |
| | NEMA 13 | | X | | | | | | |
| | Single SPST | • | • | • | • | • | • | • | • |
| | Single SPDT | • | • | • | • | • | • | • | • |
| | DPDT | | | X | | X | | | |
| Sensors | Dual SPDT | • | • | • | | | | | |
| | Triple SPDT | | • | • | | | | | |
| | Hermetic Seal SPDT or DPDT | | | X | • | | | | |
| | MOSFET/Solid State Relay | | | | | | | | • |
| | Welded Stainless Steel | | • | • | • | • | • | • | • |
| Sensors | Elastomer Diaphragm | | • | • | • | • | • | • | • |
| | Brass/Bronze Bellows | | • | • | • | • | • | • | • |
| | Piston | | • | • | • | • | • | • | • |
| | Process Alloy | | X | X | X | X | | | |
| | Local Temperature | | • | • | • | • | | | • |
| | Bulb and Capillary | • | • | • | • | • | | | X |
| RTD with Extension | | | | | | | | • | |

2. Choose a Model

Pressure Chart

| Models | Sensor Type | Range | Proof Pressure |
|--------------|----------------------------|-----------------|-------------------|
| 22-28 | Diaphragm, Buna-N | 30"HgVac to 500 | 50 to 600 PSI |
| 36-39 | Diaphragm, Buna-N | 3 to 500 PSID | 1000 to 2500 PSID |
| 126-164 | Bellows, Brass | 30"HgVac to 200 | 30"HgVac to 200 |
| 147-157 | Bellows, Brass | 3 to 100 PSID | 30"HgVac to 180 |
| S126B-S164B | Bellows, 316 SS Welded | 30"HgVac to 200 | 30"HgVac to 200 |
| S147B-S157B | Bellows, 316 SS Welded | 3 to 100 PSID | 30"HgVac to 300 |
| 171-4 | Diaphragm, 316 SS Welded | 1 to 200 PSI | 500 PSI |
| 183-6, 483-6 | Diaphragm, 316 SS | 1 to 200 PSI | 1000 PSI |
| 188-9, 488-9 | Diaphragm, 316 SS | 50 to 3500 PSI | 7000 PSI |
| 190-4, 490-4 | Diaphragm, 316 SS Welded | 5 to 1700 PSI | 2500 PSI |
| 218-274 | Bellows, Phosphor Bronze | 30"HgVac to 300 | 30"HgVac to 350 |
| 354-376 | Bellows, 316 SS Welded | 0 to 500 PSI | 250 to 800 PSI |
| 440-449 | Diaphragm, Buna-N | 80"WC Vac-80"WC | 225 PSI |
| 450-454 | Diaphragm, Buna-N | 30"HgVac to 30 | 225 PSI |
| 455-457 | Diaphragm, Buna-N | 5"WC to 30 PSID | 225 PSI |
| 520-525 | Diaphragm, Buna-N | -300" to 250"WC | 400 PSI |
| 530-535 | Diaphragm, 316 SS Welded | -300" to 250"WC | 100 PSI |
| 550-555 | Diaphragm, Teflon | 30"HgVac to 100 | 225 PSI |
| 559 | Diaphragm, Teflon | 10 to 100 PSID | 225 PSI |
| 610-616 | Piston, 316 SS | 75 to 6000 PSI | 10,000 PSI |
| 680 | Bellows, 316 SS | 100 to 1700 PSI | 2,500 PSI |
| 700-706 | Diaphragm, Buna-N or Viton | 1.5 to 1700 PSI | 600 to 2,500 PSI |

Temperature Chart

| Models | Sensor Type/Material | Temperature Range |
|----------------------|--|--------------------------------|
| 1BS-8BS | Bulb and capillary, stainless steel Liquid-filled bellows | -180 to 650°F -118 to 343°C |
| 1BC-8BC | Bulb and capillary, copper Liquid-filled bellows | -180 to 650°F -118 to 343°C |
| D20BS- D23BS | Bulb and capillary, 304 SS Liquid-filled diaphragm | -130 to 650°F -90 to 343°C |
| D20BC- D23BC | Bulb and capillary, copper Liquid-filled diaphragm | -130 to 650°F -30 to 343°C |
| 120-121 | Immersion stem, plated brass Liquid-filled inverted bellows | 0 to 425°F -178 to 218°C |
| Heat Trace | Immersion stem, stainless steel | 25 to 325°F -5 to 163°C |
| Freeze Protection | Bulb and capillary, Non-toxic, oil-filled | 15 to 140°F -10 to 60°C |

All remote-mounted temperature controls have six-foot capillaries standard. Other lengths are available.

3. Choose Your Options

| Options | 800 | 400 | 120 | 117 | 100 | J6 | J21K |
|--|-----|-----|-----|-----|-----|----|------|
| 0140: Gold flashed contacts, 1 Amp 125 VAC resistive (low energy) | | • | • | | • | • | • |
| 0500: Close deadband, 5 Amp 125/250 VAC resistive | • | • | • | | • | • | • |
| 1010: DPDT switch, 10 Amp 125/250 VAC resistive | | • | • | | • | • | |
| 1070: 10 Amp 125VDC resistive | | • | • | | • | • | |
| 1180: Hermetically sealed, 11 Amp 125/250 VAC resistive | | | • | | | | |
| 1190: Hermetically sealed, DPDT, 11 Amp 125/250 VAC | | | • | • | | | |
| 1519: Adjustable deadband, 15 Amp 125/250/480 VAC resistive | | | • | | • | | |
| 1520: Adjustable deadband, 15 Amp 125/250/277 VAC resistive | | • | | | | • | • |
| 1530: External manual reset, 15 Amp 125/250/480 VAC resistive | | • | • | | • | • | |
| 1535: High ambient, 125/250 VAC resistive; temperature up to 250°F | | • | • | | • | • | |
| 1539: Fungus-resistant case, 15 Amp 125/250 VAC resistive | | • | • | | • | • | |
| 2000: 20 Amp 125/250 VAC resistive | • | • | • | | • | • | |
| 3000: 30 Amp 125/250 VAC resistive | | | • | | • | | |
| M411: Compliance to NACE standard MR-0175 | | | • | • | | | |
| M540: Viton sensor construction plus standard connection materials | | • | • | • | • | • | |
| Optional materials for "WC sensors and hazardous locations | | • | • | • | • | • | |
| M020: Red status light, 115 VAC only | | • | | | • | | |
| M210: Differential pressure indication | | • | • | | | | |
| M300: NEMA 4 construction | • | | | | | | |
| M311: Venting of adjustment chamber, 1/8" NPTF | | | | | | | |
| M315: Epoxy coating of enclosure, external aluminum parts | | • | • | | • | • | |
| M321: Gasketed Lexan window | | • | | | | | |
| M414: ISSEP/INIEX (CENELEC) Explosion-proof approval EExdIICT6 | • | | • | | | | |
| M415: FM approval | | • | | | | | |
| M449: Surface mounting hardware | • | • | • | • | • | | |
| M450: Breather drain | | • | | | | | |
| M550: Oxygen service cleaning; internal construction may change | | • | • | • | • | • | • |
| M900: Watertight conduit fitting; converts 7/8" hole to 1/2" NPT fitting | • | • | | • | | | • |
| Q: BASEEFA (CENELEC) Explosion-proof approval EExdIIBT6 | • | | • | | | | |

One Series Electronic Pressure and Temperature Switches



Ideal for SIL1 and SIL2 safety applications! FMEDA and SIL verification reports available.

Features Built Into All One Series Switches

Keypad display: Large, easy-to-read display, showing process condition and switch status. Setpoint, deadband and min/max process values can be easily accessed from the keypad during operation. Settings are protected from unauthorized access via specific keypad sequencing. All values are stored in non-volatile memory.

IAW® (I AM WORKING) self-diagnostics: UE's patented IAW® self-diagnostics give you peace-of-mind that the instrument is operating and will switch when required. Locally, animated IAW arrows and display messages identify the problems detected. The remote switch output can be configured to alert the control room operator of IAW® status.

Two-wire design (2W2D & 2W3A models): UE's two-wire innovative design allows the unit to power itself, and switch, using the same two wires. Low power requirements let the One Series 2-Wire operate using residual current from the PLC's discrete input, totally undetected during open switch condition.

Easy wiring: One Series 2-Wire is a direct drop-in replacement for a switch attached to a PLC, using the same two wires. Power and switching signals are run over the existing wire pair.

Recording minimum/maximum process readings: The One Series reads and records minimum and maximum process "extremes" in non-volatile memory. The values remain in memory until they are manually reset, using the keypad.

Plugged Port detection: One Series IAW® includes an algorithm for detecting a plugged or isolated pressure sensor port, where the medium is viscous or contains particulate matter.

Latching or automatic reset: Switch output can be field-configured for automatic reset or latching. Latching provides a "manual reset" requirement, making it necessary for the operator to intervene and determine why the alarm occurred. (Not on model 8W2D)

Delay (nuisance trip) filtering: The One Series is designed to react within 60 mS to process variations. Pressure spikes and transients can cause nuisance trips, and shut down a process unnecessarily. Delay filtering can be enabled by choosing a duration within which the One Series will filter out the process variation.

Say goodbye to mechanical switch failures! Programmable deadbands let you tailor the switch to your application. Models now available with two switch outputs!

Features

- Analog 4-20 mA, SSR and SPST switch output models
- Two-wire models for PLC and DCS input switching
- High-power models for local switching applications
- Patented IAW® (I Am Working) self-diagnostics software assures the One Series will switch when needed
- Plugged port detection: Detects clogged pressure sensors
- Local LCD indication of process and programming values
- No regular calibration required — solid state construction, no moving parts, extended service life
- Field adjustments for offset and span; Setpoint and deadband adjustable over full range
- Digital accuracy and 0.1% repeatability over wide temperature range
- Intrinsically safe — For Class I, Div 1 applications when installed with suitable intrinsic safety barrier (2-Wire only)
- UL and ATEX certified for hazardous locations



Non-incendive, intrinsically safe, flameproof and explosion-proof models available for pressure, temperature, and differential pressure!

One Series is the Cost-Effective Answer:

The UE One Series combines the simplicity and low cost features of a switch and the reliability features of a transmitter, at less than half the price of the transmitter.

One Series has a large, easy-to-read display that shows the process condition and the status of the switch. Setpoint, deadband, and minimum/maximum process values can easily be accessed from the keypad during operation. You can make field adjustments to offset and span for calibrating to instrument and system requirements.

The One Series is designed to react quickly to very small process variations. Certain short-duration events (pressure spikes and transient signals) can cause nuisance trips to the field and shut down a process unnecessarily. Delay filtering can be enabled by choosing the maximum time duration (from 0.25 to 2 seconds) within which the One Series will filter out the process variation. With the feature disabled, the switch reacts within 50 mS to all process variations.

One Series has the ability to record and store the minimum and maximum process extremes in non-volatile memory. The values remain in memory until they are manually reset through a keypad sequence.

One Series Electronic Pressure and Temperature Switches

Specifications

Accuracy: ±0.5% full range span at room temperature;
Repeatability: ±0.1% full range span

Long-Term Stability: ±0.25% of range per year max.

Temperature Drift: 0.3% full scale/°C



Approved Operating Temperature Range

| Models | cULus Division System | cULus/ATEX Zone System |
|------------------|------------------------------|------------------------------|
| 2W2D, 2W3A, 2X4D | -40° to 185°F (-40° to 85°C) | -40° to 140°F (-40° to 60°C) |
| 2X2D, 2X3A | -40° to 185°F (-40° to 85°C) | -40° to 185°F (-48° to 85°C) |
| 2WLP, 8W2D | -40° to 176°F (-40° to 80°C) | -40° to 140°F (-40° to 60°C) |
| 2XLP, 8X2D | -40° to 176°F (-40° to 80°C) | -40° to 176°F (-40° to 80°C) |
| 4W3A | -40° to 158°F (-40° to 70°C) | -40° to 140°F (-40° to 60°C) |
| 4X3A | -40° to 158°F (-40° to 70°C) | -40° to 158°F (-40° to 70°C) |
| 2W4D | — | — |

Switch Response Time: Change-of-output response within 60 mS for detection of full step change and change of output state, delay feature off

Display Response Time: 400 mS (2.5 Hz)

Response Time Filtering (Delay): Software-configurable between 250 mS and 2 seconds in 2X increments

Diagnostics (IAW®): Open or short sensor; plugged port (pressure models only); power supply variance; over- and under-range conditions; microprocessor faults or failure; keypad short; open or shorted output

Control Modes: Field configurable for change of state above or below setpoint value, software-configurable for automatic or manual reset

Output States: Field selectable for 2-state or 3-state operation. *2-state operation:* Output will remain in one state (open or close) during normal (inside threshold) operation. Changes to opposite state for at- or outside-threshold conditions. Unit must be configured as normally closed (Open rise, open fall) to distinguish between a diagnostic or other failure and a process upset. *3-state operation:* Output will remain in closed state during normal (inside threshold) operation. Changes to open state to indicate a fault/failure, and rapidly changes between closed and open (pulse) state during at- and outside-threshold conditions. Pulse rate varies by model. Fast and slow rates are selectable.

Analog Output: 4-20 mA output, 700Ω max at 24 VDC, field scalable, 2:1 turndown. Various faults are indicated at 0 mA, 3.5 mA, 22 mA, and 24 mA (2WLP, 2XLP, 8W2D, 8X2D models only)

Enclosure: Type 4X/IP66 certified epoxy coated aluminum; *Explosion-proof models only:* Epoxy-coated aluminum cover, tempered glass insert; Conduit, 1/2" NPTF stainless steel fitting; 3/4" NPTF aluminum casting

Faceplate: UV-resistant pressure sensitive keypad and display overlay

Display: Local 4-digit x 0.5" LCD with I Am Working (IAW®) status arrows. Displays process variable, units of measure, switch status, latch status, setpoint value, deadband value, min/max values, fault codes.

Programmable Settings: 100% adjustable setpoint, deadband, switch mode; tamper-resistant keypad; plugged port detection; PV extremes memory; offset and span; latching switch output; sensor delay

Sensors: *Pressure:* 316SS welded diaphragm, 1/2" NPTF connection, micromachined piezoresistive strain gauge silicon element, silicone fill; *Differential Pressure:* 316SS welded diaphragm, 1/4" NPTM connection, micromachined piezoresistive strain gauge silicon element, silicone fill; *Temperature:* 316SS 0.25" OD sheath with 100Ω 4-wire RTD element, epoxy filled (local low temp) or powder packed (remote high temp)

Approvals and Ratings (UL Listed, cUL Certified, CSA Approved)

2W2D: Intrinsically safe when used with a suitable barrier; Class I, Div 1, Groups A-D; Class 2, Div 1, Groups E-G; Class III; Class I, Zone 0 AEx ia IIC T5; Class I, Zone 0, EX ia IIC T5; Per UE drawing #A-62174-19

2W2D, 2W3A: Non-Incendive; Class I, Div 2, Groups A-D; Class II, Div 2, Groups F-G; Class III; Class I, Zone 2, AEx nC IIC T5; Class I, Zone 2, Ex nC IIC T5

2W4D: None available

2WLP, 4W3A, 8W2D: Non-Incendive; Class I, Div 2, Groups A-D; Class II, Div 2, Groups F-G; Class III; Class I, Zone 2, AEx nC IIC T4; Class I, Zone 2, Ex nC IIC T4

2X2D, 2X3A, 2X4D, 2XLP, 4X3A, 8X2D: Explosion-Proof, Flameproof; Class I, Div 1, Groups A-D; Class II, Div 1, Groups E-G; Class III; Class I, Zone 1, AEx nC IIC T3/T5**; Class I, Zone 1, Ex nC IIC T5 (** T3 for pressure sensor ranges P10-P16. T5 for all other models)

Call for European, Australian, and Russian approvals.

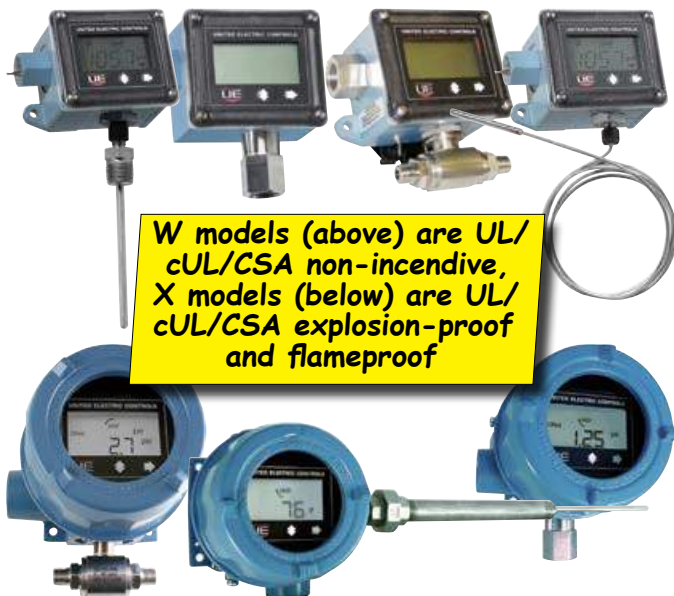
Switch Selection

| Model | Description | Outputs and SPST Switch Rating | Temperature Derating | Min. Load Required | Zone | | | Div | |
|--------------------------------------|--|---|--------------------------|-------------------------|------|---|---|-----|---|
| | | | | | 0 | 1 | 2 | 1 | 2 |
| 2W2D00 2X2D00 | Two-wire 24 VDC discrete input powered, 12-30 VDC @ 750 μA max (24 VDC 2-Wire) | 12-30 VDC @ 40 mA | — | 2.3 mA | ✓ | ✓ | ✓ | ✓ | ✓ |
| 2W4D00 2X4D00 | Two-wire 48 VDC discrete input powered, 30-50 VDC @ 750 μA max (48 VDC 2-Wire) | 30-50 VDC @ 40 mA | | 2.0 mA | | ✓ | ✓ | ✓ | ✓ |
| 2W3A00 2X3A00 | Two-wire 120 V discrete input powered, 90-130 VAC/VDC @ 1 mA (115 VAC 2-Wire) | 90-130 VAC/VDC @ 0.1 A | | 3.75 mA | | | ✓ | | ✓ |
| 2WLP41 2XLP41 2WLP43 2XLP43 | Two-wire 24 VDC analog input loop powered, 10-36 VDC @ 4-20 mA | 0-140 VAC/VDC @ 0.6A SSR, 4-20 mA output 0-280 VAC/VDC @ 0.3 A SSR, 4-20 mA output | 8% per 10°C above 21°C | 0 mA | | | ✓ | ✓ | ✓ |
| 4W3A01 4X3A01 | Four-wire 120 VAC external power supply, 90-130 VAC @ 15 mA | 24-180 VAC @ 10 A SSR | 1.8A per 10°C above 38°C | 150 mA | | | ✓ | ✓ | ✓ |
| 8W2D42 8X2D42 | Eight-wire 24 VDC external power supply, 10-30 VDC @ 30 mA | SW1&2: 75-250 VAC @ 1.5A SSR, 4-20 mA output | 10% per 10°C above 21°C | 50 mA | | | ✓ | | ✓ |
| 8W2D44 8X2D44 | | SW1: 750-250 VAC @ 1.5A SSR SW2: 0-140 VAC/VDC @ 0.6A SSR, 4-20 mA output | 8% per 10°C above 21°C | SW1: 50 mA SW2: 0 mA | | | ✓ | | ✓ |
| 8W2D45 8X2D45 | | SW1&2: 0-140 VAC/VDC @ 0.6A SSR, 4-20 mA output | | 0 mA | | | ✓ | | ✓ |
| | | | | | | ✓ | ✓ | ✓ | ✓ |

Ordering Instructions

Make one selection from each table section below, using the availability column as your guide. See notes below for any restrictions or comments. A finished catalog number looks like this: 2W2D00-P-10/M276

If you order a temperature sensor with a custom cable length, please be sure to include that length with the model number..



W models (above) are UL/cUL/CSA non-incendive, X models (below) are UL/cUL/CSA explosion-proof and flameproof

Still using transmitters for alarms and shutdown? Want to upgrade from your existing mechanical switches?

Typically, transmitters have been used in switching applications for their "live zero" reading. But, transmitters have two weaknesses — they are typically slow to react to process changes, and they're expensive. The One Series' versatility makes it the ideal solution for alarm and shutdown applications.

The One Series can directly switch a variety of outputs: up to 200 VDC, up to 280 VAC, and from mA loads to 10 Amps.

Now, by drawing low power from the host, the One Series two-wire can provide digital switching on a single pair of wires. This lets you retrofit existing mechanical switches **with no wiring changes** — just as long as the circuit is low power DC, such as a PLC or DCS input.

Just drop it in, and hook up the wires! It's that easy.

Notes:

- a A safety barrier is required for Class I Div. 1 IS use. Call Lesman.
- b Please specify extension length: Model No, Length= __ feet
- c Please specify extension length: Model No, Length= __ feet Available with 2W2D, 2X2D, 2WLP, 2XLP, 8W2D, and 8X2D units only.

Model Selection Guide

| Description | Catalog Number | Avail-ability | Price |
|---|---|---|---------------|
| One Series digital indicating MOSFET switch, two wire, discrete input power | | | |
| Dust-Ignition proof, 12-30 VDC, 40 mA switch | 2W2D00 | a a a | \$380.00 |
| Explosion/Flameproof, 12-30 VDC, 40 mA switch | 2X2D00 | ↓ ↓ ↓ | 577.00 |
| Dust-Ignition proof, 30-50 VDC, 40 mA switch | 2W4D00 | ↓ ↓ ↓ | 410.00 |
| Explosion/Flameproof, 30-50 VDC, 40 mA switch | 2X4D00 | ↓ ↓ ↓ | 607.00 |
| Dust-Ignition proof, 90-130 VAC/DC, 100 mA switch | 2W3A00 | ↓ ↓ ↓ | 410.00 |
| Explosion/Flameproof, 90-130 VAC/DC, 100 mA switch | 2X3A00 | ↓ ↓ ↓ | 607.00 |
| One Series digital solid state relay switch, two wire, loop power, with 4-20 mA output | | | |
| Dust-Ignition proof, 0-140 VAC/DC, 0.6A SSR | 2WLP41 | ↓ ↓ ↓ | 416.00 |
| Explosion/Flameproof, 0-140 VAC/DC, 0.6A SSR | 2XLP41 | ↓ ↓ ↓ | 579.00 |
| Dust-Ignition proof, 0-280 VAC/DC, 0.3A SSR | 2WLP43 | ↓ ↓ ↓ | 416.00 |
| Explosion/Flameproof, 0-280 VAC/DC, 0.3A SSR | 2XLP43 | ↓ ↓ ↓ | 579.00 |
| One Series digital solid state relay switch, four wire, external power | | | |
| Dust-Ignition proof, 90-130 VAC, 24-280 VAC, 10A SSR | 4W3A01 | ↓ ↓ ↓ | 526.00 |
| Explosion/Flameproof, 90-130 VAC, 24-280 VAC, 10A SSR | 4X3A01 | ↓ ↓ ↓ | 723.00 |
| One Series digital indicating, external power, 10-30 VDC, dual solid state relay switch, with 4-20 mA output | | | |
| Dust-ignition proof, Two 75-250 VAC 1.5A SSRs | 8W2D42 | ↓ ↓ ↓ | 648.00 |
| Explosion/Flameproof, Two 75-250 VAC 1.5A SSRs | 8X2D42 | ↓ ↓ ↓ | 845.00 |
| Dust-ignition proof, Two 0-140 VAC/VDC 0.6A SSRs | 8W2D45 | ↓ ↓ ↓ | 648.00 |
| Explosion/Flameproof, Two 0-140 VAC/VDC 0.6A SSRs | 8X2D45 | ↓ ↓ ↓ | 845.00 |
| Dust-ignition proof, One 75-250 VAC 1.5A SSR, One 0-140 VAC/VDC 0.6A SSR | 8W2D44 | ↓ ↓ ↓ | 648.00 |
| Explosion/Flameproof, One 75-250 VAC 1.5A SSR, One 0-140 VAC/VDC 0.6A SSR | 8X2D44 | ↓ ↓ ↓ | 845.00 |
| Sensor Type and Range Selection | | | |
| Pressure Sensor, 1/2" NPTF | P | ↓ | 0.00 |
| Differential Pressure Sensor, 1/4" NPTM | K | ↓ | 0.00 |
| Temperature Sensor, 100Ω RTD, 304SS Sheath | T | ↓ | 0.00 |
| Pressure Ranges | Range | Max. Overrange | |
| | -14.7 to 30 PSI | 60 PSI | -06 |
| | -14.7 to 100 PSI | 200 PSI | -08 |
| | 0-5 PSI | 10 PSI | -10 |
| | 0-15 PSI | 30 PSI | -11 |
| | 0-30 PSI | 60 PSI | -12 |
| | 0-50 PSI | 100 PSI | -13 |
| | 0-100 PSI | 200 PSI | -14 |
| | 0-300 PSI | 600 PSI | -15 |
| | 0-500 PSI | 1000 PSI | -16 |
| | 0-1000 PSI | 2000 PSI | -17 |
| 0-3000 PSI | 6000 PSI | -18 | |
| 0-4500 PSI | 9000 PSI | -19 | |
| 0-6000 PSI | 12000 PSI | -20 | |
| Differential Pressure Ranges | 0-5 PSID | 10 PSID | -10 |
| | 0-50 PSID | 100 PSID | -11 |
| | 0-100 PSID | 200 PSID | -12 |
| | 0-200 PSID | 400 PSID | -13 |
| Temperature Range and Configuration | | | |
| Local Sensor | -50° to 450°F, 4" probe length | -L1 | 96.00 |
| | -50° to 450°F, 6" probe length | -L2 | 96.00 |
| | -50° to 450°F, 10" probe length | -L3 | 96.00 |
| Remote Sensor | -300° to 200°F, 2.5" probe length, 6' MI cable | -C1 | 160.00 |
| | -50° to 450°F, 6" probe length, 6' Teflon® cable | -R1 | 160.00 |
| | -50° to 1000°F, 2.5" probe length, 6' MI cable | -H1 | 160.00 |
| Remote Sensor | -300° to 200°F, 2.5" probe length, Up to 30' MI extension cable (Base + per ft price) | -CC* | 160.00 + 4.50 |
| | Custom Cable Length | -50° to 450°F, 6" probe length, Up to 30' Teflon® extension cable (Base + per ft price) | -RC |
| Custom Cable Length | -50° to 1000°F, 2.5" probe length, Up to 30' MI extension cable (Base + per ft price) | -HC* | 160.00 + 4.50 |
| | | | |
| Options | | | |
| Factory set parameters | M201 | • • • | 12.00 |
| Display units in Bar or mBar | M276 | • • • | 0.00 |
| Paper tag | M444 | • • • | 5.00 |
| 1/2" NPTM compression fitting (for TL and TR sensors) | W073 | • | 17.00 |

Rotary and Smart Actuator Motors

Instrument Valves

Process Control Accessories

Pressure and Temperature Switches

ASCO Solenoid Valves

Pressure Gauges

General Purpose Pressure Switches



54 Series SPDT Switches for General Service Use



Approvals: UL listed, cUL certified, CE

Repeatability: ±1% of adjustable range, except for Models 610-614: ±1.5% of adjustable range

Switch Output: One SPDT output. Can be wired normally open or normally closed.

Cover: Lexan®, black finish.

Electrical Connections: *Electrical:* 7/8" diameter

Electrical Rating: 15 Amp 125/250/480 resistive.

Model Selection Guide

| Adjustable Range | Deadband | Proof Pressure | Catalog Number | Price |
|---|----------------|----------------|----------------|---------|
| Type J54*: One SPDT output, internal adjustment. Buna-N diaphragm, o-ring and 1/4" NPTM aluminum pressure connection. NEMA 1 cover. | | | | |
| 30" to 0 HgVac | 1 to 3.5" Hg | 50 PSI | J54-22 | \$75.00 |
| 3 to 30 PSI | 0.4 to 1.3 PSI | 200 PSI | J54-24 | 75.00 |
| 10 to 100 PSI | 1.0 to 2.5 PSI | 300 PSI | L J54-25 | 75.00 |
| 30 to 300 PSI | 1.3 to 4.0 PSI | 500 PSI | J54-27 | 75.00 |
| Type J54S*: Skeleton construction, no enclosure. One SPDT output, internal adjustment. Buna-N diaphragm, o-ring and 1/4" NPTM aluminum pressure connection. | | | | |
| 3 to 30 PSID | 4 to 1.3 PSI | 200 PSI | L J54S-24 | 60.00 |
| 10 to 100 PSI | 1 to 2.5 PSI | 200 PSI | L J54S-25 | 60.00 |
| 30 to 300 PSI | 1.3 to 4 PSI | 200 PSI | L J54S-27 | 60.00 |
| Type J54: One SPDT output, internal adjustment. 303 SS piston and 1/4" NPTF pressure connection, and Buna-N o-ring. (Not for gas service.) | | | | |
| 75 to 1,000 PSI | 30 to 150 PSI | 10,000 PSI | L J54-610 | 157.00 |
| 125 to 3,000 PSI | 40 to 250 PSI | 10,000 PSI | J54-612 | 157.00 |
| 700 to 6,000 PSI | 50 to 400 PSI | 10,000 PSI | J54-614 | 157.00 |
| Type H54*: One SPDT output, internal adjustment, and reference dial. Buna-N diaphragm, o-ring and 1/4" NPTM aluminum pressure connection. | | | | |
| 30" to 0 HgVac | 1.5 to 3.5" Hg | 50 PSI | L H54-22 | 104.00 |
| 3 to 30 PSI | 0.4 to 1.3 PSI | 200 PSI | L H54-24 | 104.00 |
| 10 to 100 PSI | 1.0 to 2.5 PSI | 300 PSI | L H54-25 | 104.00 |
| 30 to 300 PSI | 1.6 to 4.0 PSI | 600 PSI | L H54-27 | 104.00 |
| Type H54S*: Skeleton construction. No enclosure. One SPDT output. Adjustment by reference dial. Buna-N diaphragm, o-ring and 1/4" NPTM aluminum pressure connection. | | | | |
| 30" to 0 HgVac | 1.5 to 3.5" Hg | 50 PSI | H54S-22 | 88.00 |
| 3 to 30 PSI | 0.4 to 1.3 PSI | 200 PSI | L H54S-24 | 88.00 |
| 10 to 100 PSI | 1.0 to 2.5 PSI | 300 PSI | L H54S-25 | 88.00 |
| 30 to 300 PSI | 1.6 to 4.0 PSI | 600 PSI | H54S-27 | 88.00 |

* Limited to process temperatures below 200° F.

J40 Series for General Service OEM Use



Specifications

Approvals: UL and cUL recognized component. CE

Setpoint Repeatability: ±1% of adjustable range.

Switch Output: Single SPDT switch can be wired normally open or normally closed.

Electrical Rating: 15 Amp 125/250 VAC resistive.

Model Selection Guide

| Adjustable Range | Deadband | Proof Pressure | Catalog Number | Price |
|---|----------------|----------------|----------------|---------|
| J40: Phosphor bronze bellows, 1/4" NPTF brass pressure connection. | | | | |
| 30" to 0 HgVac | 1.0 to 2.5" Hg | 5 PSI | L J40-218 | \$78.00 |
| 0 to 20 PSI | 0.2 to 1.3 PSI | 30 PSI | L J40-222 | 78.00 |
| 0 to 30 PSI | 0.2 to 1.3 PSI | 45 PSI | L J40-224 | 78.00 |
| 0 to 50 PSI | 0.2 to 1.3 PSI | 75 PSI | J40-226 | 78.00 |
| 0 to 100 PSI | 1.0 to 2.3 PSI | 110 PSI | J40-230 | 78.00 |
| J40: Brass bellows and 1/8" NPTM brass pressure connection. | | | | |
| 0 to 30 PSI | 1.5 to 2.5 PSI | 45 PSI | L J40-256 | 71.00 |
| 0 to 60 PSI | 1.5 to 4.0 PSI | 90 PSI | J40-260 | 71.00 |
| 0 to 90 PSI | 1.5 to 4.0 PSI | 135 PSI | L J40-262 | 71.00 |
| 0 to 100 PSI | 2.0 to 4.0 PSI | 150 PSI | J40-266 | 71.00 |
| 0 to 240 PSI | 2.0 to 6.0 PSI | 330 PSI | L J40-271 | 71.00 |
| 0 to 300 PSI | 4.0 to 6.0 PSI | 350 PSI | J40-274 | 71.00 |

Understanding Environmental Protection Ratings (Part 1: IEC/IP)

There are two recognized systems used for rating enclosures, the National Electrical Manufacturers Association (NEMA) and the International Electrotechnical Commission (IEC). Generally, the NEMA rating is used in North America and IEC in Europe.

(a) Solids Protection

- 0 No special protection.
- 1 Protection against ingress of solid objects, diameter >50mm.
- 2 Protection against penetration by solid objects, diam. >12mm.
- 3 Protection against ingress of solid objects, diameter >2.5mm.
- 4 Protection against ingress of solid objects, diameter >1 mm.
- 5 Dust-protected.
- 6 Dust-tight.

IEC standards use a designation of **IP(ab)**, where (a) denotes the enclosure's degree of protection against contact and ingress of solid bodies and (b) denotes the enclosure's degree of protection against ingress of water.

(b) Water Protection

- 0 No special protection.
- 1 Protection against dripping water falling vertically.
- 2 Protection against dripping water falling at 75° to 90° angles.
- 3 Protection against water being sprayed.
- 4 Protection against water being splashed.
- 5 Protection against water jets.
- 6 Protection against heavy seas.
- 7 Protection against the effects of immersion.
- 8 Protection against indefinite immersion.



Newly redesigned!

UE's cylindrical pressure switch offers several models for more powerful performance and long life. Rugged design and an Epoxy-sealed electrical termination let the Spectra 10 withstand harsh environments.

Two adjustment windows provide tamper resistance and easy access for field setting. The adjustability reduces inventory costs while still allowing for occasional field recalibration.

If you have an application that requires small deadbands, repeatability of $\pm 1\%$ span, the Spectra 10 offers a diaphragm sensor.

A piston sensor is available for applications with high pressure settings, high surges, or high cycle frequency. (Not recommended for use with gas media.)

Specifications

Ambient Temperature: Buna-N sensor: 0 to 160°F, (media to 200°F); Viton sensor: 0 to 180°F, (media to 250°F). Setpoints shift < 1% span for 50°F ambient change.

Setpoint Repeatability: Models 10-12: $\pm 1\%$ span; Models 13-16: $\pm 1.5\%$ span; Shock: SP repeats after 50G's, 10 millisecond duration. Vibration: SP repeats after 10G's.

Switch Output: SPDT. Mechanical contact life of 10 million cycles. Actual life depends on load and cycle frequency. Rated 5 Amp resistive and inductive @ 125/250 VAC, 1/4 HP; 5 Amp resistive, 3 Amp inductive @ 30VDC; 0.5 Amp resistive, 0.25 Amp inductive @ 125VDC. Optional gold clad silver contacts for loads down to 5 mA @ 6 VDC, 2mA @ 12VDC and 1 mA @ 24VDC.

Enclosure/Cover: Aircraft-grade, corrosion-resistant aluminum enclosure with two adjustment windows standard.

Pressure Connection: Models 10-12: 1/8" NPT; Models 13-16: 1/4" NPT.

Mounting: NPT pressure connection; optional mounting bracket.

Adjustment: Lift cover to access slotted adjustment. Turn screwdriver blade left to increase pressure setting.

Approvals: UL 508 recognized; cUL recognized; CE compliance with Low Voltage Directive



Now standard with two adjustment windows (right), for mounting flexibility and easier access to the slotted setpoint adjustment screw.



Spectra 10 Miniature Pressure Switch

Model Selection Guide

| Adjustable Range | Deadband | Proof Pressure | Overrange Pressure | Catalog Number | Price |
|--|---|----------------|--------------------|----------------|---------|
| 10-A: One SPDT output, 0.11" push-on terminals. Mating terminals supplied. | | | | | |
| 4 to 50 PSI | 1.0 to 6.0 PSI | 3000 PSI | 1000 PSI | 10-A10 | \$52.00 |
| 10 to 150 PSI | 2.0 to 10 PSI | 3000 PSI | 1500 PSI | 10-A11 | 52.00 |
| 30 to 600 PSI | 8.0 to 60 PSI | 3000 PSI | 2500 PSI | 10-A12 | 52.00 |
| 100 to 1500 PSI | 20 to 220 PSI | 10000 PSI | 8000 PSI | 10-A13 | 52.00 |
| 180 to 3000 PSI | 50 to 400 PSI | 10000 PSI | 8000 PSI | 10-A14 | 52.00 |
| 400 to 4700 PSI | 100 to 600 PSI | 10000 PSI | 8000 PSI | 10-A15 | 52.00 |
| 4000 to 7500 PSI | 400 to 950 PSI | 10000 PSI | 10000 PSI | 10-A16 | 52.00 |
| 10-B: One SPDT output, three potted male 0.25" push-on terminals. | | | | | |
| 4 to 50 PSI | 1.0 to 6.0 PSI | 3000 PSI | 1000 PSI | 10-B10 | 62.00 |
| 10 to 150 PSI | 2.0 to 10 PSI | 3000 PSI | 1500 PSI | 10-B11 | 62.00 |
| 30 to 600 PSI | 8.0 to 60 PSI | 3000 PSI | 2500 PSI | 10-B12 | 62.00 |
| 100 to 1500 PSI | 20 to 220 PSI | 10000 PSI | 8000 PSI | 10-B13 | 62.00 |
| 180 to 3000 PSI | 50 to 400 PSI | 10000 PSI | 8000 PSI | 10-B14 | 62.00 |
| 400 to 4700 PSI | 100 to 600 PSI | 10000 PSI | 8000 PSI | L 10-B15 | 62.00 |
| 4000 to 7500 PSI | 400 to 950 PSI | 10000 PSI | 10000 PSI | 10-B16 | 62.00 |
| 10-C: One SPDT output, NEMA 4 enclosure, 1/2" NPTM. Conduit connection, 20" leads. | | | | | |
| 4 to 50 PSI | 1.0 to 6.0 PSI | 3000 PSI | 1000 PSI | L 10-C10 | 69.00 |
| 10 to 150 PSI | 2.0 to 10 PSI | 3000 PSI | 1500 PSI | L 10-C11 | 69.00 |
| 30 to 600 PSI | 8.0 to 60 PSI | 3000 PSI | 2500 PSI | L 10-C12 | 69.00 |
| 100 to 1500 PSI | 20 to 220 PSI | 10000 PSI | 8000 PSI | 10-C13 | 69.00 |
| 180 to 3000 PSI | 50 to 400 PSI | 10000 PSI | 8000 PSI | L 10-C14 | 69.00 |
| 400 to 4700 PSI | 100 to 600 PSI | 10000 PSI | 8000 PSI | 10-C15 | 69.00 |
| 4000 to 7500 PSI | 400 to 950 PSI | 10000 PSI | 10000 PSI | 10-C16 | 69.00 |
| 10-D: One SPDT output, NEMA 4 enclosure, 20" leads. Three 18-AWG potted leads. Two-wire SPST also available. Call Lesman. | | | | | |
| 4 to 50 PSI | 1.0 to 6.0 PSI | 3000 PSI | 1000 PSI | L 10-D10 | 63.00 |
| 10 to 150 PSI | 2.0 to 10 PSI | 3000 PSI | 1500 PSI | 10-D11 | 63.00 |
| 30 to 600 PSI | 8.0 to 60 PSI | 3000 PSI | 2500 PSI | L 10-D12 | 63.00 |
| 100 to 1500 PSI | 20 to 220 PSI | 10000 PSI | 8000 PSI | 10-D13 | 63.00 |
| 180 to 3000 PSI | 50 to 400 PSI | 10000 PSI | 8000 PSI | L 10-D14 | 63.00 |
| 400 to 4700 PSI | 100 to 600 PSI | 10000 PSI | 8000 PSI | 10-D15 | 63.00 |
| 4000 to 7500 PSI | 400 to 950 PSI | 10000 PSI | 10000 PSI | 10-D16 | 63.00 |
| 10-E: One SPDT output, NEMA 4 enclosure. 1/2" NPTF, 5 ft. cord. Rugged 18-AWG wire, oil-resistant cable. Potted. Accepts 1/2" NPTM conduit fitting. | | | | | |
| 4 to 50 PSI | 1.0 to 6.0 PSI | 3000 PSI | 1000 PSI | 10-E10 | 72.00 |
| 10 to 150 PSI | 2.0 to 10 PSI | 3000 PSI | 1500 PSI | 10-E11 | 72.00 |
| 30 to 600 PSI | 8.0 to 60 PSI | 3000 PSI | 2500 PSI | L 10-E12 | 72.00 |
| 100 to 1500 PSI | 20 to 220 PSI | 10000 PSI | 8000 PSI | 10-E13 | 72.00 |
| 180 to 3000 PSI | 50 to 400 PSI | 10000 PSI | 8000 PSI | L 10-E14 | 72.00 |
| 400 to 4700 PSI | 100 to 600 PSI | 10000 PSI | 8000 PSI | 10-E15 | 72.00 |
| 4000 to 7500 PSI | 400 to 950 PSI | 10000 PSI | 10000 PSI | 10-E16 | 72.00 |
| 10-F: One SPDT output, NEMA 4 enclosure, DIN connector. | | | | | |
| 4 to 50 PSI | 1.0 to 6.0 PSI | 3000 PSI | 1000 PSI | L 10-F10 | 82.00 |
| 10 to 150 PSI | 2.0 to 10 PSI | 3000 PSI | 1500 PSI | L 10-F11 | 82.00 |
| 30 to 600 PSI | 8.0 to 60 PSI | 3000 PSI | 2500 PSI | L 10-F12 | 82.00 |
| 100 to 1500 PSI | 20 to 220 PSI | 10000 PSI | 8000 PSI | 10-F13 | 82.00 |
| 180 to 3000 PSI | 50 to 400 PSI | 10000 PSI | 8000 PSI | L 10-F14 | 82.00 |
| 400 to 4700 PSI | 100 to 600 PSI | 10000 PSI | 8000 PSI | 10-F15 | 82.00 |
| 4000 to 7500 PSI | 400 to 950 PSI | 10000 PSI | 10000 PSI | 10-F16 | 82.00 |
| 10-G: One SPDT output, NEMA 4 enclosure, 5 foot cable. | | | | | |
| 4 to 50 PSI | 1.0 to 6.0 PSI | 3000 PSI | 1000 PSI | 10-G10 | 70.00 |
| 10 to 150 PSI | 2.0 to 10 PSI | 3000 PSI | 1500 PSI | 10-G11 | 70.00 |
| 30 to 600 PSI | 8.0 to 60 PSI | 3000 PSI | 2500 PSI | 10-G12 | 70.00 |
| 100 to 1500 PSI | 20 to 220 PSI | 10000 PSI | 8000 PSI | 10-G13 | 70.00 |
| 180 to 3000 PSI | 50 to 400 PSI | 10000 PSI | 8000 PSI | L 10-G14 | 70.00 |
| 400 to 4700 PSI | 100 to 600 PSI | 10000 PSI | 8000 PSI | 10-G15 | 70.00 |
| 4000 to 7500 PSI | 400 to 950 PSI | 10000 PSI | 10000 PSI | 10-G16 | 70.00 |
| Options | Factory-set switch; Specify increasing or decreasing pressure and setpoint | | | M201 | 7.00 |
| | 1/4" NPT Male 316SS pressure connection | | | M511 | 22.00 |
| | 1/4" NPT Male brass pressure connection (Available only on Models -10, -11, and -12.) | | | M512 | 12.00 |

Enclosure Type 4X Pressure Switches

J6 Series

Specifications

Approvals: UL listed, cUL certified, CE

Output: 1 SPDT output. N/O or N/C.

Electrical Rating: 15 Amp, 125/250/480 VAC resistive.

Enclosure: Blue Epoxy-coated aluminum, designed to meet NEMA 4X requirements

Setpoint Repeatability: ±1% to ±1.5% adjustable range, depending on model. **Shock:** Setpoint repeats after 15 G, 10 msec. **Vibration:** Setpoint repeats after 2.5 G, 5-500 CPS

Connections: Electrical: 1/2" NPTF. Pressure: 1/4" NPTF.

Vacuum Models: J6-126, -218 wetted parts have cadmium-plated spring.



Model Selection Guide

| Adjustable Range | Deadband | Proof Pressure | Catalog Number | Price |
|---|----------------|----------------|----------------|----------|
| J6: Brass bellows and 1/4" NPT nickel-plated brass pressure connection. Optional 316LSS bellow and 1/2" NPT pressure connection. | | | | |
| 30"HgVac-0 psi | 0.2 to 0.8" Hg | 5 PSI | J6-126 | \$208.00 |
| 30"HgVac-20psi | 0.2 to 0.8" Hg | 25 PSI | J6-134 | 208.00 |
| 0 to 50"WC | 3.0 to 6.0"WC | 5 PSI | J6-136 | 208.00 |
| 0 to 18 PSI | 4.0 to 7.0"WC | 25 PSI | J6-142 | 208.00 |
| 0 to 40 PSI | 0.1 to 0.4 PSI | 40 PSI | J6-148 | 208.00 |
| 0 to 50 PSI | 0.1 to 0.5 PSI | 75 PSI | J6-152 | 208.00 |
| 3 to 100 PSI | 0.2 to 0.8 PSI | 125 PSI | J6-156 | 208.00 |
| 50 to 180 PSI | 0.3 to 1.0 PSI | 180 PSI | J6-160 | 208.00 |
| J6: Phosphor bronze bellows, nickel-plated brass pressure connection. | | | | |
| 30"HgVac-0psi | 1.0 to 2.0" Hg | 30 PSI | J6-218 | 150.00 |
| 0 to 20 PSI | 0.5 to 1.0 PSI | 30 PSI | J6-222 | 150.00 |
| 0 to 30 PSI | 0.5 to 1.0 PSI | 45 PSI | J6-224 | 150.00 |
| 0 to 50 PSI | 0.7 to 1.3 PSI | 75 PSI | J6-226 | 150.00 |
| 0 to 100 PSI | 1.0 to 2.0 PSI | 110 PSI | J6-230 | 150.00 |
| 0 to 50 PSI | 1.5 to 2.5 PSI | 75 PSI | J6-258 | 141.00 |
| 0 to 100 PSI | 2.0 to 5.0 PSI | 150 PSI | J6-266 | 141.00 |
| 0 to 200 PSI | 3.0 to 5.0 PSI | 250 PSI | J6-270 | 141.00 |
| 0 to 250 PSI | 3.0 to 5.0 PSI | 330 PSI | J6-272 | 141.00 |
| 0 to 300 PSI | 4.0 to 6.0 PSI | 350 PSI | J6-274 | 141.00 |
| J6: Welded 316SS bellows and pressure connection. | | | | |
| 0 to 50 PSI | 1.5 to 2.5 PSI | 75 PSI | J6-354 | 202.00 |
| 0 to 100 PSI | 2.0 to 4.0 PSI | 150 PSI | J6-356 | 202.00 |
| 0 to 200 PSI | 3.0 to 5.0 PSI | 250 PSI | J6-358 | 202.00 |
| 0 to 250 PSI | 3.0 to 5.0 PSI | 330 PSI | J6-360 | 202.00 |
| 0 to 350 PSI | 2.0 to 8.0 PSI | 430 PSI | J6-362 | 202.00 |
| 0 to 500 PSI | 3.0 to 9.0 PSI | 575 PSI | J6-364 | 202.00 |
| 100 to 1700 PSI | 9.0 to 23 PSI | 2500 PSI | J6-680 | 333.00 |
| J6: 303SS piston and Buna-N O-ring, 303SS pressure connection (Not recommended for gas service). | | | | |
| 75 to 1000 PSI | 30 to 150 PSI | 10000 PSI | J6-610 | 188.00 |
| 125 to 3000 PSI | 40 to 250 PSI | 10000 PSI | J6-612 | 188.00 |
| 500 to 6000 PSI | 50 to 400 PSI | 10000 PSI | J6-614 | 188.00 |



Understanding Environmental Protection Ratings (Part 2: NEMA)

Enclosure and Classification Designations

National Electrical Manufacturers Association (NEMA) enclosure ratings are defined as follows:

- NEMA 1** General Purpose. For indoor protection, where conditions are not unusually severe.
- NEMA 2** Drip-tight. Designed to exclude falling moisture or dirt. Particularly applicable to cooling rooms, laundries, etc., where condensation is prevalent. For indoor use.
- NEMA 3** Weatherproof. For outdoor use; designed to withstand all normal exposure to natural elements. Controls mounted on pullout racks for easy access. With rain hood and weather seals.
- NEMA 4** Watertight and Dust-tight. Intended for use indoors or outdoors to protect equipment against splashing, falling, or hose-directed water, external condensation and water seepage. Withstands water pressure from 1" hose nozzle, 65 gallons per minute, from distance of not less than 10 feet for five minutes.
- NEMA 4X** Watertight, dust-tight and corrosion-resistant enclosures with same qualifications as NEMA 4, but with added corrosion resistance.
- NEMA 5** Dust-tight. Equipped with dust-tight gaskets. Suitable for mills and other high-dust atmospheres.
- NEMA 6** Submersible. For submerged operation under specified pressures and time.
- NEMA 7** Enclosures for indoor Class I Division 1 Hazardous locations with gas or vapor atmospheres, National Electrical Code Class 1 (circuit breaks in air).
- NEMA 8** Hazardous Locations, National Electrical Code Class 1 (circuit breaks immersed in oil).
- NEMA 9** For indoor Class II Division 1 Hazardous locations with combustible dust atmospheres, National Electrical Code Class 2.
- NEMA 10** Explosion-proof. Meets U.S. Bureau of Mines requirements for explosive atmospheres. (Units that are designed to contain gas or vapor explosions within the enclosure and prevent ignition of the surrounding atmosphere.)
- NEMA 11** Acid or Fume Resistant. Provides for immersion of enclosed equipment in oil.
- NEMA 12** Industrial Use. Excludes oils, dust, moisture, to satisfy individual requirements.
- NEMA 13** Oil-tight and dust-tight, intended for indoor use.

Comparing NEMA and IEC Ratings

Though the two systems seem to parallel each other, there is no direct conversion between the two. The following chart shows the highest IEC rating equivalent to the corresponding NEMA type, but *should not be used* to convert IEC classifications to NEMA types.

| Enclosure | IP10 | IP30 | IP32 | IP55 | IP64 | IP65 | IP66 | IP67 |
|----------------|------|------|------|------|------|------|------|------|
| NEMA 1 | • | | | | | | | |
| NEMA 2 | | • | | | | | | |
| NEMA 3 | | | | | • | | | |
| NEMA 3R | | | • | | | | | |
| NEMA 3S | | | | | • | | | |
| NEMA 4 | | | | | | | • | |
| NEMA 4X | | | | | | | • | |
| NEMA 6 | | | | | | | | • |
| NEMA 12 | | | | | | • | | |
| NEMA 13 | | | | | | • | | |

H100 Enclosure Type 4X Switches

Specifications

Approvals: UL listed, cUL certified, CE.



Output: 1 SPDT. Can be wired N/O or N/C.

Setpoint Repeatability: Models 701-705, 270-376 ±1% adjustable range. 190-194, 612-680 ±1.5% adjustable range.

Enclosure: Epoxy-coated aluminum, designed to meet NEMA 4X.

Connections: *Electrical:* 1/2" NPT, two 7/8" diam. knockouts. *Pressure:* 1/4" NPTF, except where noted.










Electrical Rating: 15 Amp 125/250/480 VAC resistive.

Ambient Temperature Limits: -40 to 160°F, except models 701-705, 0° to 160°F. Setpoint typically shifts <1% of range for a 50°F ambient shift.



Includes "High/Low" reference scale

Model Selection Guide

| Adjustable Range | Deadband | Proof Pressure | Catalog Number | Price |
|--|-----------------|----------------|--|----------|
| H100: One SPDT output, internal reference dial, Buna-N diaphragm, O-ring and brass pressure connection. | | | | |
| 1.5 to 30 PSI | 1.0 to 2.0 PSI | 600 PSI |  H100-701 | \$125.00 |
| 3 to 100 PSI | 1.0 to 4.0 PSI | 600 PSI |  H100-702 | 125.00 |
| 9 to 300 PSI | 1.0 to 5.0 PSI | 600 PSI |  H100-703 | 125.00 |
| 15 to 500 PSI | 2.0 to 8.0 PSI | 2500 PSI | H100-704 | 125.00 |
| 30 to 1000 PSI | 3.0 to 20.0 PSI | 2500 PSI | H100-705 | 125.00 |
| H100: One SPDT output, 316L SS diaphragm; Viton GLT O-ring, internal reference dial, 1/2" NPT process connection. | | | | |
| 1 to 20 | 0.3 to 2.5 PSI | 1000 PSI | H100-183 | 368.00 |
| 8 to 200 | 1 to 11 PSI | 1000 PSI | H100-186 | 368.00 |
| 50 to 1000 | 25 to 125 PSI | 7000 PSI | H100-188 | 210.00 |
| 250 to 3500 | 50 to 300 PSI | 7000 PSI | H100-189 | 210.00 |
| H100: One SPDT output, internal reference dial, welded 316 SS diaphragm and 1/2" NPTF pressure connection. | | | | |
| 5 to 30 PSI | 1.0 to 3.0 PSI | 2500 PSI |  H100-190 | 158.00 |
| 10 to 100 PSI | 1.0 to 8.0 PSI | 2500 PSI |  H100-191 | 158.00 |
| 15 to 300 PSI | 3.0 to 18.0 PSI | 2500 PSI |  H100-192 | 158.00 |
| 20 to 500 PSI | 4.0 to 30.0 PSI | 2500 PSI |  H100-193 | 158.00 |
| 80 to 1700 PSI | 5.0 to 120 PSI | 2500 PSI | H100-194 | 158.00 |
| H100: One SPDT output, internal reference dial, phosphor bronze bellows and brass pressure connection. | | | | |
| 30" HgVac-0 | 1.0 to 2.0" Hg | 30 PSI |  H100-218 | 149.00 |
| 4 to 200 PSI | 1.0 to 8.0 PSI | 250 PSI | H100-270 | 149.00 |
| H100: One SPDT output, internal reference dial, welded 316 SS bellows and pressure connection. | | | | |
| 15 to 200 PSI | 1.0 to 3.0 PSI | 800 PSI | H100-358 | 215.00 |
| 25 to 500 PSI | 1.5 to 5.0 PSI | 800 PSI | H100-376 | 215.00 |
| H100: 1 SPDT output, internal reference dial, welded 316L SS diaphragm, 2" quick disconnect 316L SS pressure connection. For Tri-Clamp® fitting system. Designed to meet 3-A Sanitary standard. | | | | |
| 0.5 to 15 PSI | 0.1 to 1 PSI | 300 PSI | H100-560 | 268.00 |
| 1 to 25 PSI | 0.1 to 1.5 PSI | 300 PSI | H100-561 | 268.00 |
| 2 to 50 PSI | 0.1 to 2.5 PSI | 300 PSI | H100-562 | 268.00 |
| 4 to 100 PSI | 0.1 to 4 PSI | 300 PSI | H100-563 | 268.00 |
| 8 to 200 PSI | 0.1 to 5 PSI | 1300 PSI | H100-564 | 268.00 |
| H100: One SPDT output, internal reference dial, 303 SS piston and pressure connection. Buna-N O-ring (not recommended for gas service). | | | | |
| 125 to 3000 PSI | 40 to 250 PSI | 10000 PSI |  H100-612 | 185.00 |
| H100: One SPDT output, internal reference dial, 316 SS bellows and pressure connection. | | | | |
| 100 to 1700 PSI | 9.0 to 40.0 PSI | 2500 PSI | H100-680 | 278.00 |

H117 for Division 2 Use

More than 95% of all hazardous locations in U.S. plants are rated Division 2!

They mandate explosion-proof protection and other safety features that require bulky cast metal housings. UE's 117 is compact, low-priced, and ideal for harsh environments where contact corrosion can lead to switch failure. A hermetically sealed switch isolates the contacts from moisture, humidity, and chemicals.



Specifications

Approvals: UL listed; Class I Div. 2, Groups A-D; Class II, Groups E-G; Class III; cUL Certified

Ambient Temperature Limits: -40 to 160°F, (Models 700-706: 0 to 160°F). Setpoint typically shifts <1% range for a 50°F ambient change.

Setpoint Repeatability: Models 218, 700-706: ±1% of adjustable range; 190-195: ±1.5% of adjustable range. Gasketed internal setpoint lock.

Output: 1 SPDT hermetically sealed snap-action switch. N/O or N/C.


Electrical Rating: 11 Amp 125/250 VAC resistive; 5 Amp 28 VDC resistive; 1 Amp 48 VDC resistive; 1/2 Amp 125 VDC resistive.

Enclosure: Epoxy-coated diecast aluminum. Designed to meet enclosure type 4X standards; Corvel ECA-1555-FC4 Epoxy finish. 2 mils thick.



Electrical Connection: 1/2" NPT plus (2) 7/8" diameter knockouts.

Model Selection Guide

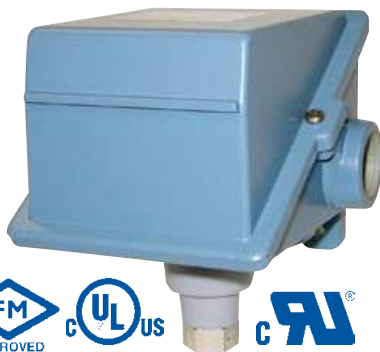
| Adjustable Range | Deadband (75%/25%) | Proof Pressure | Catalog Number | Price |
|--|--------------------|----------------|--|----------|
| H117: One 11 Amp SPDT output, Buna-N diaphragm, O-ring, 1/4" NPTF 303 SS process connection. Optional Viton diaphragm. | | | | |
| 3 to 20 PSI | 1.0 to 4.0 PSI | 1000 PSI | H117-700 | \$269.00 |
| 3 to 100 PSI | 2.0 to 12 PSI | 1000 PSI | H117-702 | 269.00 |
| 15 to 500 PSI | 15 to 30 PSI | 2500 PSI | H117-704 | 269.00 |
| H117: One 11 Amp SPDT output, Phosphor bronze bellows, 1/4" NPTF brass process connection. | | | | |
| 30" HgVac to 0 | 2.0 to 5.0" Hg | 30 PSI | H117-218 | 329.00 |
| H117: One SPDT output, integral diaphragm; Viton GLT O-ring, 1/2 NPT process connection. | | | | |
| 1 to 20 | 0.3 to 5.0 PSI | 1000 PSI | H117-183 | 496.00 |
| 4 to 100 | 0.5 to 10 PSI | 1000 PSI | H117-185 | 493.00 |
| 8 to 200 | 0.5 to 17 PSI | 1000 PSI | H117-186 | 493.00 |
| 50 to 1000 | 30 to 300 PSI | 7000 PSI | H117-188 | 339.00 |
| 250 to 3500 | 50 to 500 PSI | 7000 PSI | H117-189 | 339.00 |
| H117: 11 Amp SPDT switch, 316 SS diaphragm, 1/2" NPTF process conn. | | | | |
| 5 to 30 PSI | 3.0-8.0/10 Max. | 2500 PSI | H117-190 | 295.00 |
| 10 to 100 PSI | 3-30/45 Max. | 2500 PSI |  H117-191 | 295.00 |
| 15 to 300 PSI | 10-40/60 Max. | 2500 PSI | H117-192 | 295.00 |
| 20 to 500 PSI | 15-45/75 Max. | 2500 PSI | H117-193 | 295.00 |
| 80 to 1700 PSI | 5-120/200 Max. | 2500 PSI | H117-194 | 295.00 |
| H117: 1 SPDT output, welded 316L SS diaphragm, 1.5" quick disconnect 316L SS pressure connection. Mates with Tri-Clamp® fitting system. Designed to meet 3-A Sanitary standard. | | | | |
| 5 to 30 PSI | 3.0 to 15 PSI | 1500 PSI | H117-565 | 388.00 |
| 10 to 100 PSI | 3.0 to 36 PSI | 1500 PSI | H117-566 | 388.00 |
| 15 to 300 PSI | 9.0 to 66 PSI | 1500 PSI | H117-567 | 388.00 |

Enclosure Type 4X Multiswitch Pressure Switches



Features

- 1, 2, or 3 SPDT switch outputs. Two electrical knockouts and 3/4" NPT simplify wiring
- Internal reference dial available on "H" types



Specifications

Approvals: FM Approved, UL listed, cUL certified (400, 402), cUL recognized (403).



Output: 1, 2 or 3 SPDT. Can be separated to full range, wired N/O or N/C. Rated 15 Amp @ 125/250 VAC resistive.

Setpoint Repeatability: Mod. 164-376: ±2% adjustable range; Mod. 440-555: ±1% adjustable range; Mod. 610-614: ±3% adjustable range.

Enclosure: Blue Epoxy-coated aluminum enclosure, gasketed. Meets NEMA 4X requirements.

Model Selection Guide

| Adjustable Range | Deadband (75%/25%) | Proof Pressure | Catalog Number | Price |
|--|--------------------|----------------|----------------|----------|
| J400: One SPDT Switch Output, Internal Hex Screw Adjustment | | | | |
| Welded 316 SS bellows, 1/2" NPTF pressure connection. | | | | |
| 0 to 80"WC | 2 to 6"WC | 5 PSI | J400-5137B | \$328.00 |
| 0 to 20 PSI | 0.1 to 0.5 PSI | 40 PSI | J400-5146B | 328.00 |
| 0 to 100 PSI | 0.2 to 0.8 PSI | 125 PSI | J400-5156B | 328.00 |
| 0 to 200 PSI | 0.3 to 2.0 PSI | 200 PSI | J400-5164B | 328.00 |
| Welded 316L SS bellows, 1/4" NPTF pressure connection. | | | | |
| 0 to 200 PSI | 1.5 to 8 PSI | 250 PSI | J400-358 | 238.00 |
| 0 to 300 PSI | 2 to 9 PSI | 350 PSI | J400-361 | 238.00 |
| 0 to 500 PSI | 3 to 12 PSI | 575 PSI | J400-376 | 238.00 |
| Brass bellows with nickel-plated brass 1/4" NPTF pressure connection. | | | | |
| 30" HgVac-20 PSI | 0.2" to 1.2" Hg | 25 PSI | J400-134 | 210.00 |
| 0 to 20 PSI | 0.1 to 0.5 PSI | 25 PSI | J400-144 | 210.00 |
| 0 to 30 PSI | 0.1 to 0.6 PSI | 40 PSI | J400-146 | 210.00 |
| 0 to 100 PSI | 0.2 to 0.8 PSI | 125 PSI | J400-156 | 210.00 |
| 0 to 200 PSI | 0.3 to 2.0 PSI | 200 PSI | J400-164 | 210.00 |
| Phosphor bronze bellows, nickel-plated brass 1/4" NPTF pressure conn. | | | | |
| 0 to 200 PSI | 1.5 to 8.0 PSI | 250 PSI | J400-270 | 184.00 |
| Buna-N diaphragm and O-ring, aluminum cap, 1/4" NPTF pressure conn. | | | | |
| 0 to 2"WC | 0.07 to 0.25"WC | 225 PSI | J400-440 | 216.00 |
| 0 to 20"WC | 0.20 to 0.50"WC | 225 PSI | J400-442 | 216.00 |
| 0 to 80"WC | 0.50 to 1.80"WC | 225 PSI | J400-443 | 216.00 |
| 0 to 80"WC/Vac | 1.0 to 3.0"WC | 225 PSI | J400-448 | 216.00 |
| 0-80"WC | 1.0 to 3.0"WC | 225 PSI | J400-451 | 203.00 |
| 30" HgVac-20 PSI | 0.2 to 1" Hg | 225 PSI | J400-452 | 203.00 |
| 0 to 20 PSI | 0.05 to 0.2 PSI | 225 PSI | J400-453 | 203.00 |
| 0 to 30 PSI | 0.05 to 0.3 PSI | 225 PSI | J400-454 | 203.00 |
| Teflon diaphragm and O-ring, 316L SS cap, 1/4" NPTF pressure conn. | | | | |
| 30" HgVac-0 PSI | 0.1 to 0.6" Hg | 225 PSI | J400-550 | 256.00 |
| 0 to 80"WC | 1.50 to 3.5"WC | 225 PSI | J400-551 | 256.00 |
| 30" HgVac-20 PSI | 0.2 to 1.0" Hg | 225 PSI | J400-552 | 256.00 |
| 0 to 20 PSI | 0.05 to 0.30 PSI | 225 PSI | J400-553 | 256.00 |
| 0 to 30 PSI | 0.1 to 0.4 PSI | 225 PSI | J400-554 | 256.00 |
| 0 to 100 PSI | 0.25 to 0.75 PSI | 225 PSI | J400-555 | 256.00 |
| H400: One SPDT Output, Internal Adjustment via Reference Dial | | | | |
| Brass bellows with nickel-plated brass 1/4" NPTF pressure connection. | | | | |
| 30" HgVac-0 PSI | 0.2 to 0.9" Hg | 5 PSI | H400-126 | 257.00 |
| 30" HgVac-20 PSI | 0.2 to 1.2" Hg | 25 PSI | H400-134 | 257.00 |
| 0 to 80"WC | 2 to 6"WC | 5 PSI | H400-137 | 257.00 |
| 0 to 100 PSI | 0.2 to 0.8 PSI | 125 PSI | H400-156 | 257.00 |

Model Selection Guide

| Adjustable Range | Deadband (75%/25%) | Proof Pressure | Catalog Number | Price |
|---|--------------------|----------------|----------------|--------|
| H400: One SPDT Output, Internal Adjustment via Reference Dial | | | | |
| Buna-N diaphragm, O-ring, aluminum cap, 1/4" NPTF pressure conn. | | | | |
| 0 to 10"WC | 0.15 to 0.3"WC | 225 PSI | H400-441 | 266.00 |
| 0 to 20"WC | 0.2 to 0.5"WC | 225 PSI | H400-442 | 266.00 |
| 0 to 20 PSI | 0.05 to 0.2 PSI | 225 PSI | H400-453 | 251.00 |
| 0 to 30 PSI | 0.05 to 0.3 PSI | 225 PSI | H400-454 | 251.00 |
| Teflon diaphragm, O-ring, 316L SS cap, 1/4" NPTF pressure connection. | | | | |
| 0 to 100 PSI | 0.25 to 0.75 PSI | 225 PSI | H400-555 | 301.00 |
| J402: Two SPDT Outputs, Internal Hex Screw Adjustment | | | | |
| Buna-N diaphragm, O-ring with epoxy-coated aluminum 1/2" NPTF pressure connection. Large 0.72" orifice for clean-out purposes. | | | | |
| 10 to 250"WC | 0.1 to 10"WC | 400 PSI | J402-525 | 422.00 |
| Welded 316L SS diaphragm, 1/2" NPTF pressure connection. Large 0.72" orifice for clean-out purposes. | | | | |
| 0.5 to 5.0"WC | 0.1 to 0.3"WC | 100 PSI | J402-533 | 544.00 |
| Welded 316L SS bellows, 1/2" NPTF pressure connection. | | | | |
| 0 to 80"WC | 4.0 to 12"WC | 5 PSI | J402-S137B | 380.00 |
| 0 to 200 PSI | 0.6 to 2.4 PSI | 200 PSI | J402-S164B | 380.00 |
| Welded 316L SS bellows and 1/4" NPTF pressure connection. | | | | |
| 0 to 200 PSI | 3.0 to 15.0 PSI | 250 PSI | J402-358 | 285.00 |
| 0 to 300 PSI | 4.0 to 16.0 PSI | 350 PSI | J402-361 | 285.00 |
| 0 to 500 PSI | 6.0 to 20.0 PSI | 575 PSI | J402-376 | 285.00 |
| Brass bellows, nickel-plated brass 1/4" NPTF pressure connection. | | | | |
| 30" HgVac-0 PSI | 0.4 to 1.6" Hg | 5 PSI | J402-126 | 255.00 |
| 30" HgVac-20 PSI | 0.4 to 2.0" Hg | 25 PSI | J402-134 | 255.00 |
| 0 to 80"WC | 2 to 6"WC | 5 PSI | J402-137 | 255.00 |
| 0 to 20 PSI | 0.2 to 0.6 PSI | 25 PSI | J402-144 | 255.00 |
| 0 to 30 PSI | 0.2 to 0.8 PSI | 40 PSI | J402-146 | 255.00 |
| 0 to 100 PSI | 0.4 to 1.6 PSI | 125 PSI | J402-156 | 255.00 |
| 0 to 200 PSI | 0.6 to 2.4 PSI | 200 PSI | J402-164 | 255.00 |
| Phosphor bronze bellows, nickel-plated brass 1/4" NPTF pressure conn. | | | | |
| 0 to 200 PSI | 3.0 to 15.0 PSI | 250 PSI | J402-270 | 230.00 |
| 0 to 300 PSI | 4.0 to 18.0 PSI | 350 PSI | J402-274 | 230.00 |
| Buna-N diaphragm, O-ring, aluminum cap, 1/4" NPTF pressure conn. | | | | |
| 0 to 80"WC | 0.5 to 1.8"WC | 225 PSI | J402-443 | 267.00 |
| 80"WC Vac - 0 | 1 to 3"WC | 225 PSI | J402-448 | 267.00 |
| 0 to 30" HgVac | 0.2 to 0.8" Hg | 225 PSI | J402-450 | 255.00 |
| 0 to 80"WC | 2.0 to 6.0"WC | 225 PSI | J402-451 | 255.00 |
| 30" HgVac-20 PSI | 0.20 to 2.0" Hg | 225 PSI | J402-452 | 255.00 |
| 0 to 20 PSI | 0.1 to 0.4 PSI | 225 PSI | J402-453 | 255.00 |
| 0 to 30 PSI | 0.05 to 0.3 PSI | 225 PSI | J402-454 | 255.00 |
| Teflon diaphragm, O-ring, 316L SS cap, 1/4" NPTF pressure conn. | | | | |
| 30" HgVac-0 PSI | 3.0 to 7.0"WC | 225 PSI | J402-551 | 307.00 |
| 30" HgVac-20 PSI | 0.4 to 2.0" Hg | 225 PSI | J402-552 | 307.00 |
| 0 to 20 PSI | 0.1 to 0.60 PSI | 225 PSI | J402-553 | 307.00 |
| 0 to 30 PSI | 0.2 to 0.8 PSI | 225 PSI | J402-554 | 307.00 |
| 0 to 100 PSI | 0.5 to 1.5 PSI | 225 PSI | J402-555 | 307.00 |
| H402: Two SPDT Switch Outputs, Internal Adjustment via Reference Dial | | | | |
| Brass bellows, nickel-plated brass 1/4" NPTF pressure connection. | | | | |
| 30" HgVac-20 PSI | 0.2 to 1.2" Hg | 25 PSI | H402-134 | 317.00 |
| 0 to 20 PSI | 0.1 to 0.5 PSI | 25 PSI | H402-144 | 317.00 |
| 0 to 30 PSI | 0.1 to 0.6 PSI | 40 PSI | H402-146 | 317.00 |
| 0 to 100 PSI | 0.4 to 1.6 PSI | 125 PSI | H402-156 | 317.00 |
| 0 to 200 PSI | 0.6 to 2.4 PSI | 200 PSI | H402-164 | 317.00 |
| Teflon diaphragm, O-ring, 316L SS cap, 1/4" NPTF pressure connection. | | | | |
| 0 to 100 PSI | 0.25 to 0.75 PSI | 225 PSI | H402-553 | 362.00 |

Note: Any model numbers ending in -126 or -134 have zinc-plated steel springs that are exposed to media.

Spectra 12 Vibration-Resistant Compact Pressure Switch

Features

- Compact stainless steel construction
- Easy field setting/adjustment
- UL, cUL, and ATEX approvals
- SPDT or DPDT sealed switches
- Pressure ranges: 8 to 6,000 PSI (0,6 to 414 bar)
- Snap-action Belleville spring for long life, vibration resistance and stability
- Mounting bracket for retrofit applications



Model Selection Guide

(Bold Character in Model Number Indicates Sensor Type. E.g., 12SHSN3A is Type 3)

| Adjustable Range | Deadband | Proof Pressure | Catalog Number | Price Each | Catalog Number | Price Each |
|--|-------------|----------------|----------------|------------|----------------|------------|
| 5 Amp SPDT Switch. 316 SS Sensor, Welded Diaphragm, 1/2" NPTF Pressure Connection, 23/32" Orifice. Not for high cycling use. | | | | | | |
| 10 to 25 | 2 to 7 | 2,500 PSI | 12SHSN2A | \$249.00 | | |
| 15 to 45 | 3 to 10 | 2,500 PSI | 12SHSN2B | 249.00 | | |
| 25 to 85 | 5 to 20 | 2,500 PSI | 12SHSN2C | 249.00 | | |
| 50 to 130 | 7 to 25 | 2,500 PSI | 12SHSN2D | 249.00 | | |
| 100 to 210 | 8 to 30 | 2,500 PSI | 12SHSN2E | 249.00 | | |
| 160 to 400 | 10 to 50 | 2,500 PSI | 12SHSN2F | 249.00 | | |
| 275 to 850 | 40 to 125 | 2,500 PSI | 12SHSN2G | 249.00 | | |
| 5 Amp SPDT Switch. 316 SS Sensor, Kapton (Teflon-coated Polyamid) Diaphragm, Buna-N O-ring. Type 3: 1/2" NPTF Pressure Connection, 1/2" Orifice. Type 4: 1/4" NPTF Pressure Connection, 1/8" Orifice. | | | | | | |
| 8 to 30 | 2 to 6 | 1,000 PSI | 12SHSN3A | 234.00 | 12SHSN4A | \$234.00 |
| 15 to 55 | 3 to 8 | 1,000 PSI | 12SHSN3B | 234.00 | 12SHSN4B | 234.00 |
| 30 to 170 | 5 to 15 | 1,000 PSI | 12SHSN3C | 234.00 | 12SHSN4C | 234.00 |
| 100 to 370 | 15 to 50 | 1,000 PSI | 12SHSN3D | 234.00 | 12SHSN4D | 234.00 |
| 200 to 700 | 40 to 90 | 3,000 PSI | 12SHSN3E | 234.00 | 12SHSN4E | 234.00 |
| 400 to 1500 | 100 to 250 | 4,500 PSI | 12SHSN3F | 234.00 | 12SHSN4F | 234.00 |
| 1000 to 3200 | 100 to 500 | 10,000 PSI | 12SHSN3G | 234.00 | 12SHSN4G | 234.00 |
| 2000 to 6000 | 400 to 800 | 10,000 PSI | 12SHSN3H | 234.00 | 12SHSN4H | 234.00 |
| 5 Amp SPDT Switch. 316 SS Sensor and Diaphragm, Viton O-ring. Type 5: 1/2" NPTF Pressure Connection, 1/2" Orifice. Type 6: 1/4" NPTF Pressure Connection, 1/8" Orifice. | | | | | | |
| 9 to 35 | 2 to 7 | 1,000 PSI | 12SHSN5A | 246.00 | 12SHSN6A | 246.00 |
| 25 to 65 | 3 to 10 | 1,000 PSI | 12SHSN5B | 246.00 | 12SHSN6B | 246.00 |
| 50 to 150 | 5 to 15 | 1,000 PSI | 12SHSN5C | 246.00 | 12SHSN6C | 246.00 |
| 100 to 350 | 15 to 50 | 1,000 PSI | 12SHSN5D | 246.00 | 12SHSN6D | 246.00 |
| 250 to 700 | 40 to 95 | 3,000 PSI | 12SHSN5E | 246.00 | 12SHSN6E | 246.00 |
| 400 to 1500 | 100 to 300 | 4,500 PSI | 12SHSN5F | 246.00 | 12SHSN6F | 246.00 |
| 1000 to 3200 | 100 to 500 | 10,000 PSI | 12SHSN5G | 246.00 | 12SHSN6G | 246.00 |
| 2000 to 6000 | 400 to 1000 | 10,000 PSI | 12SHSN5H | 246.00 | 12SHSN6H | 246.00 |

Specifications

Temperature: Ambient: -58° to 203°F; Process: -30° to 400°F

Materials: Sensor/wetted materials: 316 stainless steel or Kapton, others available on request; Enclosure: 300 SS, Certified to enclosure type 4X; Class I, Div 1 product meets enclosure type 7; Class II, Div 1 product meets enclosure type 9; Certified to IP66 requirements

Mounting: 1/2" NPT male conduit connection.

Approvals: UL Listed, cUL Certified: Class I, Div. 1, 2, Groups A-D, Class II, Div. 1, 2, Groups E-G, Class III; ATEX directive 94/9/EC and others.



Model Selection Guide

| Adjustable Range | Deadband (75%/25%) | Proof Pressure | Catalog Number | Price |
|--|--------------------|----------------|-------------------|----------|
| J403: Three SPDT Switch Outputs, Internal Hex Screw Adjustment | | | | |
| 316L SS diaphragm, Viton O-ring, 316L SS 1/4" NPTF pressure conn. | | | | |
| 0 to 30 PSI | 0.1 to 0.6 PSI | 40 PSI | J403-S146B | \$448.00 |
| Brass bellows, nickel-plated brass 1/4" NPTF pressure connection. | | | | |
| 30" HgVac-20 PSI | 0.2 to 1.2" Hg | 25 PSI | J403-134 | 324.00 |
| 0 to 20 PSI | 0.1 to 0.5 PSI | 25 PSI | J403-144 | 324.00 |
| 0 to 100 PSI | 0.4 to 1.6 PSI | 125 PSI | J403-156 | 324.00 |
| 0 to 200 PSI | 0.3 to 2 PSI | 200 PSI | J403-164 | 324.00 |
| Buna-N diaphragm, O-ring, aluminum cap, 1/4" NPTF pressure conn. | | | | |
| 30" HgVac-0 PSI | 0.1 to 0.4" Hg | 225 PSI | J403-450 | 321.00 |
| 0 to 80" WC | 2.0 to 6.0" WC | 225 PSI | L J403-451 | 321.00 |
| 30" HgVac-20 PSI | 0.2 to 1" Hg | 225 PSI | J403-452 | 321.00 |
| 0 to 20 PSI | 0.05 to 0.2 PSI | 225 PSI | J403-453 | 321.00 |
| Teflon diaphragm, O-ring, 316L SS cap, 1/4" NPTF pressure connection. | | | | |
| 0 to 80" WC | 1.5 to 3.5" WC | 225 PSI | J403-551 | 375.00 |
| 0 to 100 PSI | 0.5 to 1.5 PSI | 225 PSI | J403-555 | 375.00 |
| H403: Three SPDT Switch Outputs, Internal Adjustment via Reference Dial | | | | |
| Brass bellows, nickel-plated brass 1/4" NPTF pressure connection. | | | | |
| 30" HgVac-20 PSI | 0.2 to 1.2" Hg | 25 PSI | H403-134 | 386.00 |
| 0 to 20 PSI | 0.1 to 0.5 PSI | 25 PSI | H403-144 | 386.00 |
| 0 to 100 PSI | 0.4 to 1.6 PSI | 125 PSI | H403-156 | 386.00 |
| 0 to 200 PSI | 0.3 to 2 PSI | 200 PSI | H403-164 | 386.00 |

Popular Options

| Option Code | Price |
|---------------------------------|---------------|
| Adjustable Deadband | -1520 \$28.00 |
| Watertight 1/2" Conduit Fitting | -M900 20.00 |

Call for factory presetting. Specify setpoint and increasing or decreasing pressures.

Explosion-Proof Pressure Switches



Specifications

Approvals: UL. Meets Class I, Div. 1, 2 (Zone 1), Groups B-D, Class II, Groups E-G, Class III. ATEX directive 94/9/EC and others.



Output: One or two SPDT. Dual switch can be separated to 100% range, wired normally open or normally closed. Rated 15A @ 125/250 VAC resistive.

Ambient Temperature Range: -40 to 160° F. Setpoint shifts <1% range for 50° F ambient change. Mod. 701-705: 0 to 160°F.

Enclosure: Certified to enclosure type 4X. Class I, Div 1 products meet enclosure type 7; Class II, Div 1 product meets enclosure type 9. Certified to IP66 requirements. Diecast aluminum (max.0.4% copper) light gray aluminum lacquer finish, gasketed. *H Series:* Gasketed aluminum tamper-resistant dial cover.

Setpoint Repeatability: Mod. 126-376, 701-705: ±1% adjustable range (AR); Mod. 453-555: ±0.5% AR; Mod. 612-680: ±1.5% AR.

Model Selection Guide

| Adjustable Range | Deadband | Proof Pressure | Catalog Number | Price |
|---|-----------------|----------------|----------------|----------|
| H121: Single SPDT switch with external adjustment via reference dial, single conduit. | | | | |
| Brass bellows, nickel-plated brass 1/4" NPTF pressure connection. | | | | |
| 0 to 20 PSI | 0.1 to 0.5 PSI | 25 PSI | H121-144 | \$399.00 |
| 0 to 100 PSI | 0.2 to 0.8 PSI | 125 PSI | H121-156 | 399.00 |
| Buna-N diaphragm and O-ring with nickel-plated brass 1/4" NPTF pressure connection. (Limited to process temperatures below 200°F.) | | | | |
| 50 to 500 PSI | 3 to 12 PSI | 2500 PSI | H121-704 | 349.00 |
| Welded 316L stainless steel bellows, 1/2" NPTF pressure connection. | | | | |
| 0 to 100 PSI | 0.2 to 0.8 PSI | 125 PSI | H121-S156B | 537.00 |
| H122: Dual SPDT switch with external adjustment via reference dial, single conduit. | | | | |
| Brass bellows, nickel-plated brass 1/4" NPTF pressure connection. | | | | |
| 0 to 20 PSI | 0.2 to 1 PSI | 25 PSI | H122-144 | 509.00 |
| 0 to 100 PSI | 0.4 to 1.6 PSI | 125 PSI | H122-156 | 509.00 |
| Buna-N diaphragm and O-ring with nickel-plated brass 1/4" NPTF pressure connection. (Limited to process temperatures below 200°F.) | | | | |
| 10 to 100 PSI | 2 to 10 PSI | 1000 PSI | H122-702 | 440.00 |
| 200 to 1000 PSI | 10 to 50 PSI | 2500 PSI | H122-705 | 440.00 |
| 316L SS bellows and 1/4" NPTF pressure connection. | | | | |
| 0 to 200 PSI | 3.0 to 16 PSI | 250 PSI | H122-358 | 542.00 |
| 0 to 300 PSI | 4.0 to 18 PSI | 350 PSI | H122-361 | 542.00 |
| 0 to 500 PSI | 6.0 to 24 PSI | 575 PSI | H122-376 | 542.00 |
| Teflon diaphragm and O-ring, 316 SS cap, 1/4" NPTF pressure connection. | | | | |
| 0 to 20 PSI | 0.1 to 0.6 PSI | 225 PSI | H122-553 | 632.00 |
| 0 to 100 PSI | 0.5 to 1.5 PSI | 225 PSI | H122-555 | 632.00 |
| Buna-N O-ring, 303 SS piston and 1/4" NPTF pressure connection. (Not recommended for gas service). | | | | |
| 125 to 3000 PSI | 80 to 500 PSI | 10000 PSI | H122-612 | 547.00 |
| Welded 316L SS bellows and 1/2" NPTF pressure connection. | | | | |
| 0 to 20 PSI | 0.2 to 1 PSI | 25 PSI | H122-S144B | 648.00 |
| 0 to 30 PSI | 0.2 to 0.6 PSI | 40 PSI | H122-S146B | 648.00 |
| 0 to 100 PSI | 0.2 to 0.8 PSI | 125 PSI | H122-S156B | 648.00 |
| 0 to 200 PSI | 0.6 to 4.0 PSI | 200 PSI | H122-S164B | 648.00 |
| J120: Single SPDT switch with internal adjustments, and dual conduits. | | | | |
| Brass bellows, nickel-plated brass 1/4" NPTF pressure connection. | | | | |
| 0.5 to 20 PSI | 0.1 to 0.3 PSI | 25 PSI | J120-144 | 296.00 |
| 1 to 50 PSI | 0.1 to 0.5 PSI | 75 PSI | J120-152 | 296.00 |
| 2 to 100 PSI | 0.2 to 0.6 PSI | 125 PSI | J120-156 | 296.00 |
| Buna-N diaphragm and O-Ring, aluminum cap, 1/4" NPTF pressure conn. | | | | |
| 2 to 80"WC | 0.8 to 2.0"WC | 225 PSI | J120-451 | 390.00 |
| 0.5 to 20 PSI | 0.05 to 0.1 PSI | 225 PSI | J120-453 | 390.00 |
| 316 SS bellows, 1/4" NPTF pressure connection. (Not recommended for rapid or high cycling pressure changes.) | | | | |
| 100 to 1700 PSI | 9.0 to 23.0 PSI | 2500 PSI | J120-680 | 390.00 |

| Adjustable Range | Deadband | Proof Pressure | Catalog Number | Price |
|---|-----------------|----------------|----------------|----------|
| J120: Single SPDT switch with internal adjustments, and dual conduits. | | | | |
| Phosphor bronze bellows, nickel-plated brass 1/4" NPTF pressure conn. | | | | |
| 4 to 200 PSI | 1 to 4 PSI | 250 PSI | J120-270 | 276.00 |
| Welded 316L SS bellows, 1/4" NPTF pressure connection. | | | | |
| 0.5 to 20 PSI | 0.1 to 0.3 PSI | 25 PSI | J120-S144B | 451.00 |
| 1 to 50 PSI | 0.1 to 0.5 PSI | 50 PSI | J120-S152B | 451.00 |
| 2 to 100 PSI | 0.2 to 0.6 PSI | 125 PSI | J120-S156B | 451.00 |
| 4 to 200 PSI | 0.2 to 1.0 PSI | 200 PSI | J120-S164B | 451.00 |
| Welded 316L SS bellows, 1/4" NPTF pressure connection. | | | | |
| 15 to 100 PSI | 0.7 to 1.8 PSI | 800 PSI | J120-356 | 337.00 |
| 15 to 200 PSI | 1.0 to 3.0 PSI | 800 PSI | J120-358 | 337.00 |
| 20 to 300 PSI | 1.0 to 4.0 PSI | 800 PSI | J120-361 | 337.00 |
| 25 to 500 PSI | 1.5 to 5.0 PSI | 800 PSI | J120-376 | 337.00 |
| Buna-N diaphragm and O-Ring, nickel-plated brass 1/4" NPTF pressure connection. (For process temperature below 200°F.) | | | | |
| 3 to 100 PSI | 1.0 to 4.0 PSI | 1000 PSI | J120-702 | 246.00 |
| 9 to 300 PSI | 1.0 to 5.0 PSI | 1000 PSI | J120-703 | 246.00 |
| 30 to 1000 PSI | 3.0 to 20.0 PSI | 2500 PSI | J120-705 | 246.00 |
| Teflon diaphragm and O-ring, 316 SS cap, 1/4" NPTF pressure connection. | | | | |
| 2 to 80"WC | 1.0 to 4.0"WC | 225 PSI | J120-551 | 440.00 |
| 30"HgVac-20psi | 0.2 to 0.5" Hg | 225 PSI | J120-552 | 440.00 |
| 0.5 to 20 PSI | 0.1 to 0.2 PSI | 225 PSI | J120-553 | 440.00 |
| 0.8 to 30 PSI | 0.1 to 0.3 PSI | 225 PSI | J120-554 | 440.00 |
| 2 to 100 PSI | 0.2 to 0.4 PSI | 225 PSI | J120-555 | 440.00 |
| Buna-N O-ring, 303 SS piston and 1/4" NPT pressure connection. (Not recommended for gas service). | | | | |
| 125 to 3000 PSI | 40 to 250 PSI | 10000 PSI | J120-612 | 348.00 |
| Buna-N diaphragm, O-ring, epoxy-coated aluminum 1/2" NPTF pressure connection, large 0.72" orifice for clean-out purposes. | | | | |
| 2.5"WC | 0.1 to 6"WC | 400 PSI | J120-524 | 450.00 |
| 316L SS diaphragm, Viton GLT O-Ring, 316 SS 1/2" NPTF pressure connection. Large 0.72" orifice for clean-out purposes. (Model 189 has NACE MR-0175 compliant 316L SS 1/2" NPTF pressure connection.) | | | | |
| 2 to 50 PSI | 0.3 to 3.0 PSI | 1000 PSI | J120-184 | \$498.00 |
| 4 to 100 PSI | 0.5 to 6.0 PSI | 1000 PSI | J120-185 | 498.00 |
| 8 to 200 PSI | 1.0 to 11.0 PSI | 1000 PSI | J120-186 | 498.00 |
| 250 to 3500 PSI | 50 to 300 PSI | 7000 PSI | J120-189 | 326.00 |
| Welded 316 SS diaphragm, 1/2" NPTF pressure connection. Large 0.72" orifice for clean-out purposes. NACE MR-0175 compliant. | | | | |
| 5 to 30 PSI | 1.0 to 6.0 PSI | 2500 PSI | J120-190 | 296.00 |
| 10 to 100 PSI | 3.0 to 15.0 PSI | 2500 PSI | J120-191 | 296.00 |
| 20 to 500 PSI | 4.0 to 45.0 PSI | 2500 PSI | J120-193 | 296.00 |
| 2" sanitary welded 316L SS diaphragm and pressure connection. For Tri-Clamp® fitting systems. Designed to meet 3-A Sanitary standard. | | | | |
| 5 to 30 PSI | 1 to 5 PSI | 1500 PSI | J120-565 | 372.00 |
| 10 to 100 PSI | 1 to 12 PSI | 1500 PSI | J120-566 | 372.00 |
| 15 to 300 PSI | 3 to 22 PSI | 1500 PSI | J120-567 | 372.00 |

Rotary and Smart Actuator Motors

Instrument Valves

Process Control Accessories

Pressure and Temperature Switches

ASCO Solenoid Valves

Pressure Gauges

General Service Differential Pressure Switches

DeltaPro Series 24 DP Switch

Features

- Small size, small price!
- Narrow deadband
- Available from stock

The Delta-Pro differential pressure switch offers a unique blend of small size, excellent performance, environmental protection, and low price.

The precision snap-acting switch and sensitive diaphragms combine to provide a narrow deadband and repeatability of approximately $\pm 1\%$ of span. Mechanical contact life is 10 million cycles, and actual switch life can be longer, depending on pilot duty loads.

The small Delta-Pro enclosure fits a 1/2" NPT conduit connection and terminal block wiring. Plastic materials in the body and port make Delta-Pro strong, durable, and light weight, while providing corrosion resistance to harsh media and environments.

The adjustment screw is externally accessible for convenience and multi-turn for excellent setting resolution. Force balanced design provides vibration resistance for pump applications.

Specifications

Approvals: UL Listed, cUL certified, CE

Setpoint Repeatability: Typically $\pm 1\%$ span. Application dependent. *Shock:* SP repeats after 15G, 10 msec duration. *Vibration:* MIL Standard, SP repeats after 2.5G, 5-500 CPS.

Output: 1 SPDT. Can be wired normally open or normally closed.

Electrical Rating: 11 Amp resistive, inductive at 125/240VAC.

Process Connection: 1/4" NPT brass or 1/4" NPSF FDA approved polysulfone, non-tapered to minimize connection stress with 1/4" NPT fitting; maximum torque 2 ft/lbs.

Maximum Media Temperature: 200°F at 100 PSI working pressure

Operating Pressure: 0 to 150 PSIG at up to 160°F air temperatures

Enclosure Classification: Reinforced polyester body, stainless steel cover with neoprene gasket. Complies with Type 4 requirements when used with optional watertight conduit connector.

Wetted Materials: *Brass Connections:* Polyurethane diaphragm, Ethylene Propylene, Polysulfone, and brass. *Polysulfone Connections:* Polyurethane diaphragm, Ethylene Propylene, Polysulfone.

Model Selection Guide

| Adjustable Range | Port Material | Deadband | Catalog Number | Price |
|------------------|---------------|----------|----------------|---------|
| 1.0 to 10 PSID | Polysulphone | 0.75 | L 24-011 | \$80.00 |
| 4.0 to 45.0 PSID | Polysulphone | 1.0 | 24-012 | 80.00 |
| 1.0 to 10.0 PSID | Brass | 0.75 | L 24-013 | 93.00 |
| 4.0 to 45.0 PSID | Brass | 1.0 | L 24-014 | 93.00 |



J21K General Service Differential Pressure Switch

Features

- Adjustable ranges within 30" Hg VacD to 90 PSID
- SPDT switch output
- Most models available from stock



Specifications

Approvals: UL listed. cUL certified, CE.

Setpoint Repeatability: $\pm 1\%$ adjustable range. *Shock:* SP repeats after 15G, 10 millisecond duration. *Vibration:* SP repeats after 2.5G, 5-500 CPS.

Output: 1 SPDT. Can be wired normally open or normally closed. *Replacement Part #:* SD6286-51

Electrical Rating: 15 Amp 125/250/480 VAC resistive.

Enclosure: Blue Epoxy finish. Designed to meet type 4X enclosure standard when used with optional watertight conduit connector.

Connections: *Electrical:* 7/8" diameter conduit. *Pressure:* 1/4" NPTF.

Model Selection Guide

| Adjustable Range | Dead-band | Proof Pressure | Working Pressure Range | Catalog Number | Price |
|--|-----------|----------------|------------------------|----------------|----------|
| One SPDT output, brass bellows, 1/4" NPTF process connection. | | | | | |
| 0-6 PSID | 0.1-0.4 | 6 PSID | 30"HgVac-30 PSI | J21K-140 | \$344.00 |
| 0-40 PSID | 0.3-0.7 | 40 PSID | 30"HgVac-180 PSI | L J21K-150 | 344.00 |
| One SPDT output, phosphor bronze bellows, 1/4" NPTF brass process conn. | | | | | |
| 0-25 PSID | 0.6-1.0 | 25 PSID | 30"HgVac-110 PSI | J21K-232 | 230.00 |
| 0-90 PSID | 2.0-4.0 | 90 PSID | 30"HgVac-200 PSI | J21K-254 | 230.00 |
| One SPDT output, 316 SS bellows, 1/4" NPTF process connection. | | | | | |
| 0-70 PSID | 2.0-4.0 | 70 PSID | 30"HgVac-350 PSI | L J21K-357 | 331.00 |
| One SPDT output, wetted 316 SS bellows, 1/4" process connection. | | | | | |
| 0-6 PSID | 0.1-0.4 | 6 PSID | 30"HgVac-30 PSI | J21K-S140B | 585.00 |
| 0-40 PSID | 0.3-0.7 | 40 PSID | 30"HgVac-180 PSI | L J21K-S150B | 585.00 |

Popular Options

Adjustable Deadband

Option Code

-1520

Price

\$28.00

From UE...

**UL, CSA, and ATEX approved
Explosion-Proof and
Flameproof One Series
electronic switches for
differential pressure
applications. Now SIL rated!**

See page 370 for more information.



Enclosure Type 4X Multiswitch Differential Pressure Switches



Features

- Ranges from 1" WCD to 200 PSID
- 1 or 2 SPDT switch outputs. Internal reference dial available on "H" types
- Available with M210 differential pressure indicator option (shown)

Specifications

Approvals: UL listed, cUL certified, UL 508; CSA C22.2 Certified; FM Approved Class 3510

Output: 1, 2 or 3 SPDT. Can be separated to full range, wired N/O or N/C. Rated 15 Amp @ 125/250 VAC resistive.

Setpoint Repeatability: Mod. 164-376: ±2% adjustable range; Mod. 440-555: ±1% adjustable range; Mod. 610-614: ±3% adjustable range.

Enclosure: Blue Epoxy-coated aluminum enclosure, gasketed. Meets NEMA 4X requirements.

Electrical Connection: One 3/4" NPT and two 7/8" diameter knockouts

Indicator Option M210: Differential pressure indicator available on J400, J402K models 147-S157B; Accuracy: 3%-1.5%-3%. Plexiglass gasketed window. Indicator can be field-adjusted to approximately ±1% accuracy at any setpoint within range.

Model Selection Guide

| Adjustable Setpoint Range | Deadband | Proof Pressure | Working Pressure Range | Catalog Number | Price |
|---|----------------|----------------|------------------------|----------------|----------|
| J400K: Single SPDT switch output with internal hex screw adjustment. | | | | | |
| Welded 316L stainless steel bellows, 1/2" NPTF pressure connections. | | | | | |
| 3 to 30 PSID | 0.5 to 2 PSI | 300 PSI | 30" HgVac to 100 PSI | J400K-S147B | \$677.00 |
| Brass bellows, nickel-plated brass 1/4" NPTF pressure connections. | | | | | |
| 3 to 30 PSID | 0.5 to 2 PSI | 180 PSI | 30" HgVac to 100 PSI | J400K-147 | 443.00 |
| 10 to 100 PSID | 0.5 to 3 PSI | 180 PSI | 30" HgVac to 150 PSI | J400K-157 | 443.00 |
| Buna-N diaphragm and O-ring, aluminum 1/4" NPTF pressure connections. | | | | | |
| 5" to 80" WCD | 1" to 4" WCD | 225 PSI | 30" HgVac to 225 PSI | J400K-455 | 332.00 |
| 2 to 20 PSID | 0.1 to 0.3 PSI | 225 PSI | 30" HgVac to 225 PSI | J400K-456 | 332.00 |
| 3 to 30 PSID | 0.1 to 0.4 PSI | 225 PSI | 30" HgVac to 225 PSI | J400K-457 | 332.00 |
| H400K: Single SPDT switch output with internal adjustment via reference dial. | | | | | |
| Buna-N diaphragm and O-ring, aluminum 1/4" NPTF pressure connections. | | | | | |
| 5" to 80" WCD | 1" to 4" WC | 225 PSI | 30" HgVac to 225 PSI | H400K-455 | 365.00 |
| 2 to 20 PSID | 0.1 to 0.3 PSI | 225 PSI | 30" HgVac to 225 PSI | H400K-456 | 365.00 |
| 3 to 30 PSID | 0.1 to 0.4 PSI | 225 PSI | 30" HgVac to 225 PSI | H400K-457 | 365.00 |
| J402K: Dual SPDT switch output with internal hex screw adjustment. | | | | | |
| Brass bellows with nickel-plated brass 1/4" NPTF pressure connections. | | | | | |
| 3 to 30 PSID | 0.5 to 2 PSI | 180 PSI | 30" HgVac to 100 PSI | J402K-147 | 481.00 |
| 10 to 100 PSID | 0.5 to 3 PSI | 180 PSI | 30" HgVac to 150 PSI | J402K-157 | 481.00 |
| Buna N diaphragm and O-ring, aluminum 1/4" NPTF pressure connections. | | | | | |
| 5" to 80" WCD | 1" to 4" WC | 225 PSI | 30" HgVac to 225 PSI | J402K-455 | 380.00 |
| 2 to 20 PSID | 0.1 to 0.3 PSI | 225 PSI | 30" HgVac to 225 PSI | J402K-456 | 380.00 |
| 3 to 30 PSID | 0.1 to 0.4 PSI | 225 PSI | 30" HgVac to 225 PSI | J402K-457 | 380.00 |
| Kapton diaphragm, Buna-N sealing diaphragms, epoxy-coated aluminum 1/8" NPTF pressure connections. | | | | | |
| 2" to 20" WCD | 0.5" to 2" WCD | 400 PSI | 30" HgVac to 200 PSI | J402K-541 | 609.00 |
| 5" to 50" WCD | 0.5" to 5" WCD | 400 PSI | 30" HgVac to 200 PSI | J402K-542 | 609.00 |
| 15" to 100" WCD | 0.5" to 7" WCD | 400 PSI | 30" HgVac to 200 PSI | J402K-543 | 609.00 |
| 2 to 20 PSID | 1 to 2.5 PSI | 2500 PSI | 30" HgVac to 1200 PSI | J402K-544 | 585.00 |
| 5 to 50 PSID | 1 to 3 PSI | 2500 PSI | 30" HgVac to 1200 PSI | J402K-545 | 585.00 |
| H402K: Dual SPDT switch output with internal adjustment via reference dial. | | | | | |
| Buna N diaphragm and O-ring, aluminum 1/4" NPTF pressure connections. | | | | | |
| 5" to 80" WCD | 1" to 4" WC | 225 PSI | 30" HgVac to 225 PSI | H402K-455 | 435.00 |
| 2 to 20 PSID | 0.1 to 0.3 PSI | 225 PSI | 30" HgVac to 225 PSI | H402K-456 | 435.00 |
| 3 to 30 PSID | 0.1 to 0.4 PSI | 225 PSI | 30" HgVac to 225 PSI | H402K-457 | 435.00 |
| Teflon and Buna-N diaphragms, Buna-N O-ring, aluminum 1/4" NPTF pressure connections. | | | | | |
| 10 to 100 PSID | 0.2 to 1 PSI | 225 PSI | 30" HgVac to 225 PSI | H402K-559 | 466.00 |



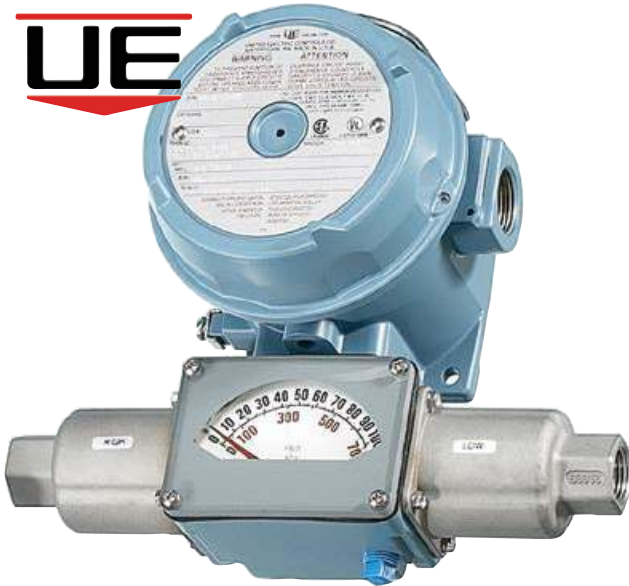
Also from UE...

NEMA 4X One Series SIL rated electronic switches for differential pressure applications

See page 370 for more information.

Add a Differential Pressure Indicator -M210 \$90.00

Explosion Proof Differential Pressure Switches



*Shown here: Model H121K with optional indicator.
To order the indicator, add suffix -M210 to your model number, and add \$90.00 to the price.*

Specifications

Approvals: UL listed. cUL certified. Meets Class I Div. 1 & 2; Class I, Groups B (UL only), C and D; Class II, Groups E-G; Class III. ATEX directive 94/9/EC and others — call Lesman.



Temperature: Storage: -65° to 160°F; Ambient Limits: -40° to 60°F.

Setpoint Repeatability: Mod. 455-559: ±0.5% adjustable range. Mod. 147-367: ±1% adjustable range. Shock: SP repeats after 15G, 10 msec duration. Vibration: SP repeats after 2.5 G, 5-500 CPS.

Output: 1 or 2 SPDT. Dual switch can be separated up to 100% range. Can be wired normally open or normally closed.

Electrical Rating: 15 Amp 125/250/480 VAC resistive.

Enclosure: NEMA 4X, 7, 9, IP66; Blue Epoxy finish, gasketed. Internal setpoint lock standard on J types. Gasketed aluminum tamper-resistant dial cover B, E & H types.

Connections: Electrical: 3/4" NPT. Terminal block standard. Pressure: 1/4" NPTF. Optional 1/2" NPTF available models S147B-S157B

Pressure Reversal: Models 455-559: High/Low pressure reversal std.

Indicator Option M210: Differential pressure indication 3%–1.5%–3%. Plexiglass, gasketed window. Indicator can be field adjusted for approx. ±1% accuracy at any setpoint within range. Available on H121K and H122K models 147, 157, 147B, and 157B only.

For Hazardous Locations

- Working pressure ranges within 30" Hg to 1000 PSI
- Cast aluminum enclosures with low copper content
- 120K explosion proof (Divisions 1 & 2)
- Internal adjustment and lock or external calibrated dials with tamper-resistant cover
- 1 or 2 SPDT, DPDT or hermetic seal switch outputs
- Optional differential pressure indication
- Terminal block wiring
- Direct replacement for UE 110K

Model Selection Guide

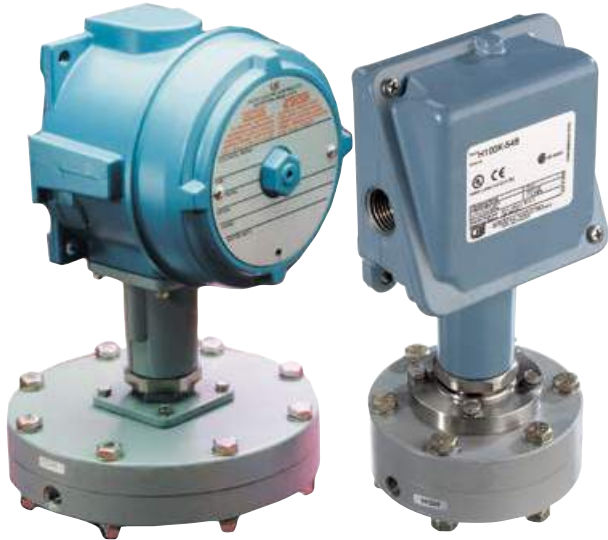
| Adjustable Range | Dead-band | Proof Pressure | Working Pressure Range | Catalog Number | Price | |
|---|-----------|----------------|------------------------|----------------|----------------|--------|
| Internal adjustment, Buna-N diaphragm O-Ring, 1/4" NPT 304 SS process conn. | | | | | | |
| 3–30 PSID | 1.0–5.0 | 1000 PSI | 0–350 PSI | J120K-36 | \$470.00 | |
| 10–100 PSID | 2.0–8.0 | 1000 PSI | 0–500 PSI | J120K-37 | 470.00 | |
| 30–300 PSID | 2.0–15.0 | 2500 PSI | 0–1000 PSI | J120K-38 | 470.00 | |
| 50–500 PSID | 3.0–20.0 | 2500 PSI | 0–1000 PSI | J120K-39 | 470.00 | |
| Internal adjustment, brass bellows, 1/4" NPTF process connections. Optional 316 SS bellows 1/2" NPT process connection and 300 psi proof pressure. | | | | | | |
| 3–30 PSID | 0.3–1.5 | 180 PSI | 30"Hg–100 PSI | J120K-147 | 533.00 | |
| 10–100 PSID | 0.5–2.0 | 180 PSI | 30"Hg–150 PSI | J120K-157 | 533.00 | |
| Internal adjustment, stainless steel bellows, 1/4" NPTF process connection. | | | | | | |
| 10–100 PSID | 4.0–10 | 500 PSI | 0–350 PSI | J120K-367 | 557.00 | |
| Internal adjustment, Buna-N diaphragm, O-ring, 1/4" NPTF aluminum process connection. | | | | | | |
| 5–80"WC | 1–4"WC | 225 PSI | 30"Hg–255 PSI | J120K-455 | 466.00 | |
| 2–20 PSID | 0.1–0.3 | 225 PSI | 30"Hg–225 PSI | J120K-456 | 466.00 | |
| 3–30 PSID | 0.1–0.4 | 225 PSI | 30"Hg–225 PSI | J120K-457 | 466.00 | |
| Internal adjustment, Teflon diaphragm, 1/4" NPTF aluminum process conn. | | | | | | |
| 10-100 PSID | 0.2–1 | 225 PSI | 30"Hg–225 PSI | J120K-559 | 494.00 | |
| Adjustable Range | Dead-band | Proof Pressure | Working Pressure Range | Dial Divis. | Catalog Number | Price |
| External calibrated dial, tamper resistant cover, brass bellows, 1/4" NPTF process connection. Optional 316 SS bellows, 1/2" NPT process connection, 300 psi proof pressure. Indication option available models 147-S157B. | | | | | | |
| 3–30 PSID | 0.3–2 | 180 PSI | 0–100 PSI | 0.5 PSI | H121K-147 | 623.00 |
| 10–100 PSID | 0.5–3 | 180 PSI | 0–150 PSI | 2 PSI | H121K-157 | 623.00 |
| External calibrated dial, tamper resistant cover, Buna-N diaphragm, O-ring, 1/4" NPTF aluminum process connection. | | | | | | |
| 2–20 PSID | 0.1–0.3 | 225 PSI | 30"Hg–225 PSI | 0.5 PSI | H121K-456 | 583.00 |
| 2–30 PSID | 0.1–0.4 | 225 PSI | 30"Hg–225 PSI | 0.5 PSI | H121K-457 | 583.00 |
| External calibrated dial, tamper resistant cover, Teflon diaphragm, 1/4" NPTF aluminum process connection. | | | | | | |
| 10–100 PSID | 0.2–1.0 | 225 PSI | 30"Hg–225 PSI | 2 PSI | H121K-559 | 598.00 |

| To Order Option | Add to Catalog Number | Price Adder |
|---------------------------------|-----------------------|-------------|
| Differential Pressure Indicator | -M210 | \$90.00 |

Pressure alarming monitors prevent costly shutdowns!
Prices start at \$255.
See page 384 for more details.



Differential Pressure Switches for Ultra-Low Pressure



Features

- Low adjustable pressure ranges and high working pressures
- Explosion-proof or general purpose enclosures
- Corrosion-resistant, epoxy-coated aluminum sensor housing
- Suitable for fluids, air, and gas media



Pressure Alarming Monitors

Preventing Costly Shutdowns

- For filling systems, clean room pressure monitoring, HEPA filter monitoring and alarms, coating/painting booths, fume hoods, HVAC, exhaust, and ventilation systems

- 0.2" WC to 50" WC and compound ranges
- Measures both positive and negative pressures
- 1/16 DIN size for easy panel mounting; EASY CAL includes compact DIN enclosure
- Selectable time delay eliminates nuisance alarms
- Bright LED displays process and high/low alarm states
- Isolated Form A contacts
- High and low limit monitor
- 4-20 mA analog output standard; 0-10 VDC optional
- Removable terminal block for 18-26 AWG wire
- 12-24 VAC/VDC power
- Solid state sensors
- Analog circuit design eliminates potential microprocessor software problems
- Compliant to UL 508 and CE EN 61326 EMI requirements
- EASY CAL™ for front panel calibration and certification
- **Prices start at \$255. Call Lesman for availability.**

Specifications

100 Series

Ambient Temperature Limits: -40° to 160° F; setpoint typically shifts less than 1% of range for a 50° F ambient temperature change

Shock: Setpoint repeats after 15 Gs, 10 millisecond duration; **Vibration:** Setpoint repeats after 2.5 Gs, 5 to 500 Hz

Setpoint Repeatability: ±1% or 1.5% adjustable range (varies by model)

Switch Output: One SPDT snap-action switch; switch can be wired normally open or normally closed

Electrical: Rating: 15 Amps 125/250/480 VAC resistive; Connection: 1/2" NPT, two 7/8" diameter knockouts

Enclosure: Diecast aluminum (max 0.6% copper), Epoxy powder coated, gasketed captive cover screws; Designed to meet NEMA 4X standards, IP65

Approvals: UL listed, CSA certified

120 Series

Ambient Temperature Limits: 0° to 160° F; setpoint typically shifts less than 1% of range for a 50° F ambient temperature change

Shock: Setpoint repeats after 15 Gs, 10 millisecond duration; **Vibration:** Setpoint repeats after 2.5 Gs, 5 to 500 Hz

Setpoint Repeatability: ±0.5% or 1.5% adjustable range (varies by model)

Switch Output: One or two SPDT; dual switch can be set up to 100% of range; switches can be wired normally open or normally closed

Electrical: Rating: 15 Amps 125/250/480 VAC resistive; Internal reference scale; Connection: 3/4" NPT, terminal block standard

Enclosure: Diecast aluminum (max 0.4% copper), Epoxy coated; gasketed; Internal setpoint lock; Aluminum nameplate; NEMA 4X, 7, 9; IP66

Approvals: Class I, Div. 1, 2, Groups B-D; Class II, Div. 1, 2, Groups E-G; UL listed; cUL certified, ATEX

Model Selection Guide

| Adjustable Range | Typical Deadband | Maximum Working Pressure* | Proof Pressure | Catalog Number | Price |
|---|------------------|---------------------------|----------------|--------------------|----------|
| 100 Series: General Service, NEMA 4X/IP65 Housing | | | | | |
| 0.2 to 7"WC | 0.05-0.6"WC | 200 PSI | 400 PSI | H100K-540 | \$518.00 |
| 1 to 20"WC | 0.1-1.0"WC | 200 PSI | 400 PSI | H100K-541 | 518.00 |
| 5 to 50"WC | 0.2-2.5"WC | 200 PSI | 400 PSI | L H100K-542 | 518.00 |
| 10 to 200"WC | 0.5-8"WC | 200 PSI | 400 PSI | H100K-543 | 518.00 |
| 2 to 20 PSI | 0.1-1.3 PSI | 1200 PSI | 2500 PSI | H100K-544 | 496.00 |
| 5 to 50 PSI | 0.2-2.2 PSI | 1200 PSI | 2500 PSI | H100K-545 | 496.00 |
| 10 to 125 PSI | 0.4-5.0 PSI | 1200 PSI | 2500 PSI | H100K-546 | 496.00 |
| 50 to 250 PSI | 0.8-10 PSI | 1200 PSI | 2500 PSI | H100K-547 | 496.00 |
| 100 to 500 PSI | 2.0-15 PSI | 1200 PSI | 2500 PSI | H100K-548 | 496.00 |
| 120 Series: Explosion-Proof Flameproof, NEMA 4X, 7, 9; IP66 Housing, Class I and II, Div 1, 2 Approvals; UL Listed, cUL certified, ATEX. | | | | | |
| 0.2 to 7"WC | 0.05-0.6"WC | 200 PSI | 400 PSI | J120K-540 | 636.00 |
| 1 to 20"WC | 0.1-1.0"WC | 200 PSI | 400 PSI | J120K-541 | 636.00 |
| 5 to 50"WC | 0.2-2.5"WC | 200 PSI | 400 PSI | J120K-542 | 636.00 |
| 10 to 200"WC | 0.5-8"WC | 200 PSI | 400 PSI | J120K-543 | 636.00 |
| 2 to 20 PSI | 0.1-1.3 PSI | 1200 PSI | 2500 PSI | J120K-544 | 605.00 |
| 5 to 50 PSI | 0.2-2.2 PSI | 1200 PSI | 2500 PSI | J120K-545 | 605.00 |
| 10 to 125 PSI | 0.4-5.0 PSI | 1200 PSI | 2500 PSI | J120K-546 | 605.00 |
| 50 to 250 PSI | 0.8-10 PSI | 1200 PSI | 2500 PSI | J120K-547 | 605.00 |
| 100 to 500 PSI | 2.0-15 PSI | 1200 PSI | 2500 PSI | J120K-548 | 605.00 |

* Minimum working pressure on all ranges is 30" Hg.



Indicating Temperature Switch

Features

- Temperature indication and control switching
- Stainless steel bulb and capillary
- Adjustable ranges (-180° to 1000°F)
- Large, readable scale for process temperature and setpoint both in °F and °C
- Simple to adjust via external knob
- One or two SPDT switch output. (Left: Type 800 single output, and Right: explosion-proof models shown)



Specifications

Approvals: UL listed. Models 820E/822E meet Class I Div. 1 and 2; Groups B-D; Class II Groups E-G; Class III.

Ambient Temperature Limits: -40 to 160°F. Setpoint typically shifts <1% range for a 50°F ambient temperature change.

Enclosure: 800, 802: Lexan, black finish, clear Lexan faceplate, NEMA 1 or NEMA 4; 820E, 822E: Explosion-proof diecast aluminum (max. 0.4% copper) (NEMA 4, 7, and 9), light gray aluminum lacquer finish, gasketed. Faceplate is clear Lexan.

Accuracy and Setpoint Repeatability: ±1% adjustable range.

Output: 1 or 2 SPDT. Dual switch models can be separated up to 100% adjustable range. Can be wired normally open or normally closed.

Dual Switch Adjustment: Dual switches come standard with separate knob and temperature pointers for each switch. (Inner knob for #1 switch and outer knob for #2 switch.)

Electrical Rating: 15 Amp 125/250/480 VAC resistive.

Electrical Connection: 800, 802: Two 7/8" diameter knockouts; 820E, 822E: 3/4" NPT right-hand side, terminal block standard.

Temperature Assembly: Bulb/Capillary: 6 ft. 304 stainless steel. Contact Lesman for optional lengths and armor. Fill: Oil. Deadband: Typically 1% range under lab conditions (70°F ambient, circulating bath at 0.5°F per minute change).

Model Selection Guide

| Adjustable Range | | Max. Temp. °F/°C | Bulb Size OD x Length | Catalog Number | Price |
|--|------------|------------------|-----------------------|----------------|----------|
| °F | °C | | | | |
| 800: One SPDT output, 6 ft. 304 SS capillary, bulb | | | | | |
| -180 to 120 | -115 to 50 | 170/75 | 3/8 x 3 3/4" | 800-1BS | \$476.00 |
| -40 to 120 | -40 to 50 | 170/75 | 3/8 x 6 3/4" | 800-4BS | 476.00 |
| 0 to 250 | -20 to 120 | 300/145 | 3/8 x 4 1/2" | 800-6BS | 476.00 |
| 0 to 400 | -20 to 200 | 450/230 | 3/8 x 3" | 800-7BS | 476.00 |
| 50 to 650 | 10 to 340 | 700/370 | 3/8 x 3 1/4" | 800-8BS | 476.00 |
| 820E: One SPDT output, 6 ft. 304 SS capillary, bulb, explosion proof | | | | | |
| 0 to 250 | -20 to 120 | 300/145 | 3/8 x 4 1/2" | 820E-6BS | 904.00 |
| 0 to 400 | -20 to 200 | 450/230 | 3/8 x 3" | 820E-7BS | 904.00 |
| 802: Two SPDT outputs, 6 ft. 304 SS capillary, bulb | | | | | |
| -40 to 120 | -40 to 50 | 170/75 | 3/8 x 6 3/4" | 802-4BS | 639.00 |
| -40 to 180 | -40 to 80 | 230/110 | 3/8 x 5" | 802-5BS | 639.00 |
| 0 to 250 | -20 to 120 | 300/145 | 3/8 x 4 1/2" | 802-6BS | 639.00 |
| 50 to 650 | 10 to 340 | 700/370 | 3/8 x 3 1/4" | 802-8BS | 639.00 |
| 822E: Two SPDT outputs, 6 ft. 304 SS capillary, bulb, explosion proof | | | | | |
| 0 to 250 | -20 to 120 | 300/145 | 3/8 x 4 1/2" | 822E-6BS | 1035.00 |
| 0 to 400 | -20 to 200 | 450/230 | 3/8 x 3" | 822E-7BS | 1035.00 |



Series 54 General Service Temperature Switch

Specifications

Setpoint Repeatability: ±1% adjustable range; *Deadband:* Typically 1% range under lab conditions.

Output: Single SPDT output, N/O or N/C.

Temperature Assembly: Bulb/Capillary: 6 ft. copper. Immersion Stem: Brass, Nickel-plated brass model also available. Fill: Oil.

Enclosure: NEMA 1; Lexan®, black finish with 7/8" diameter electrical connection. Zinc plated, chromated, rolled steel bracket.

Electrical Rating: 15 Amp 125/250/480 resistive.

Model Selection Guide

| Adjustable Range | | Max. Temp. °F/°C | Stem Length and Bulb Size (OD) | Catalog Number | Price |
|---|------------|------------------|--------------------------------|----------------|----------|
| °F | °C | | | | |
| E54: Internal reference dial, 6 ft. copper capillary and bulb. | | | | | |
| 0 to 150 | -15 to 65 | 200/90 | 3/8" x 6 7/8" | E54-D21BC | \$182.00 |
| 50 to 300 | 10 to 150 | 350/175 | 3/8" x 4 1/2" | 8 E54-D22BC | 182.00 |
| 150 to 650 | 70 to 340 | 700/370 | 3/8" x 3 5/8" | 8 E54-D23BC | 182.00 |
| E54: 6 ft. stainless steel capillary. | | | | | |
| 50 to 300 | 10 to 150 | 350/175 | 3/8" x 4 1/2" | E54-D22BS | 207.00 |
| 150 to 650 | 70 to 340 | 700/370 | 3/8" x 3 5/8" | E54-D23BS | 207.00 |
| C54: Internal adjustment via hex nut, brass immersion stem, 3/8" NPT conn. | | | | | |
| 0 to 225 | -15 to 110 | 250/120 | 2 1/8" Stem BT | 8 C54-103 | 117.00 |
| B54: Internal reference scale, brass immersion stem, 3/8" NPT conn. | | | | | |
| 0 to 225 | -15 to 100 | 250/120 | 2 1/8" Stem BT | 8 B54-103 | 134.00 |
| 200 to 425 | 95 to 220 | 425/220 | 2 1/8" Stem BT | B54-109 | 134.00 |
| B54S: Skeleton construction, immersion stem, adjustment with reference dial. | | | | | |
| 0 to 225 | -15 to 110 | 250/120 | 2 1/8" Stem BT | 8 B54S-103 | 118.00 |

NEMA 4X, 7, and 9 Temperature Switches

100 Series Temperature Switch

Specifications

Approvals: UL listed; cUL certified.

Enclosure: Diecast aluminum, (max 0.04% copper). Epoxy, powder-coated finish, gasketed. Designed to meet NEMA 4X requirements.

Setpoint Repeatability: ±1% of adjustable range.

Output: One SPDT. Can be wired N/O or N/C. Switch rated at 15 Amp 125/250/480 VAC resistive.

Temperature Assembly: Bulb and Capillary: 6 ft. copper or stainless steel. Also available in 10 ft. stainless steel armored. Immersion Stem: Nickel plated brass. Fill: Oil fill.

Ambient Temperature Limits: -40 to 160°F. Setpoint typically shifts less than 1% range for a 50°F ambient temperature shift.

Temperature Deadband: Typically 1% range under lab conditions.

Heat Trace/Freeze Protection: Designed specifically for heat tracing and freeze protection applications. Specifications are same as above except: B100-13546 includes a 22 Amp switch and stainless steel stem. E100-13545 includes a 22 Amp switch and a 10 ft. stainless steel capillary.



Heat trace and freeze protection models available.

Spectra 12 Div 1, Zone 1 Temperature Switch

Features

- -130° to 650° F Adjustable Range
- Stainless Steel Body, 304 SS Bulb and Capillary
- Ambient Temperature Compensation
- Add Capillary to Mount up to 50 Feet Away



Specifications

Approvals: UL listed, cUL certified; Class I, Div. 1-2, Grps. A-D; Class II, Div. 1-2, Grps. E-G; Class III; ATEX directive 94/9/EC and others



Operating Temperature: -58° to 203° F. Setpoint shifts less than 1% of range for 50° F ambient temperature change. Slight ambient effects for 25' to 50' extra capillary length.

Temperature Deadband: 2% of range under lab conditions

Shock: Setpoint repeats after 15 Gs, 10 millisecond duration

Vibration: Setpoint repeats after 2.5 Gs, 10 to 2000 Hz

Setpoint Repeatability: 1% of adjustable range

Output: One SPDT, factory-sealed leadwires. Mechanical contact life 10 million cycles. Two SPDT for DPDT action.

Electrical: Ratings: 5 Amp at 250 VAC, 5 Amps resistive, 3 Amps inductive at 28 VDC. Silver contacts. 1 Amp (code L) at 125 VAC, 1 Amp resistive and 0.5 Amp inductive at 28 VDC. Bifurcated gold contacts; Connection: 1/2" NPT (male) with 72" leadwires.

Bulb and Capillary: Non-toxic oil fill; 6' 304 stainless steel

Immersion Stem Sensor: Stainless steel, 9/16" OD x 1-25/32" below thread, 1/2" NPTM connection

Enclosure: 300 series stainless steel; NEMA 4X, 7, 9; IP66

Ordering Instructions

Make a selection from each table section below. A finished model number looks like this: 12S-H-D-M-R2/M430

Model Selection Guide

| Description | Catalog Number | Price | |
|--|-------------------------------------|----------|--------|
| Spectra 12 Switch, Stainless Steel Housing | 12S | \$234.00 | |
| 5 Amp Electrical Rating | H | 0.00 | |
| 1 Amp Electrical Rating | L | 10.00 | |
| Output | SPDT | 0.00 | |
| | DPDT | 30.00 | |
| | | | |
| Conn- ection | 1/2" NPTM Electrical Conduit | N | 0.00 |
| | M20 Electrical Conduit | M | 26.00 |
| Model | -130° to 120° F, 3/8" x 4-7/8" Bulb | R1 | 125.00 |
| | 0° to 150° F, 3/8" x 7-1/4" Bulb | R2 | 125.00 |
| | 50° to 300° F, 3/8" x 4-7/8" Bulb | R3 | 125.00 |
| | 150° to 650° F, 3/8" x 4" Bulb | R4 | 125.00 |
| | 0° to 225° F, SS Immersion Stem | L1 | 87.00 |
| | 200° to 425°, SS Immersion Stem | L2 | 87.00 |
| Options | Factory Set Switch | M201 | 28.00 |
| | Cover Lock | M430 | 18.00 |
| | Stainless Steel ID Tag and Wire | M446 | 12.00 |
| | DIN Connector, 4 Terminal | M515 | 26.00 |
| | Mounting Bracket Kit | 62169-13 | 21.00 |

Call for pricing on other lengths or capillary with armored cable.

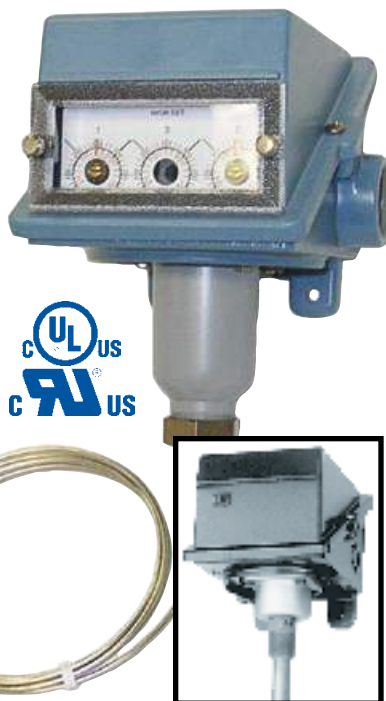
Model Selection Guide

| Adjustable Range | | Max. Temp. °F/°C | Bulb Size OD x Length | Catalog Number | Price |
|---|------------|---------------------|--------------------------|-------------------|----------|
| °F | °C | | | | |
| E100: SPDT output, 6 ft. copper capillary and bulb, and internal reference dial. | | | | | |
| -120 to 100 | -85 to 35 | 150/66 | 3/8" x 2 7/16" | E100-2BCA | \$254.00 |
| 30 to 250 | 0 to 120 | 300/149 | 3/8" x 2 7/16" | E100-2BCB | 254.00 |
| 100 to 400 | 35 to 200 | 450/232 | 3/8" x 2 1/8" | E100-3BC | 254.00 |
| 350 to 640 | 175 to 335 | 690/366 | 3/8" x 3 1/4" | E100-8BC | 254.00 |
| E100: SPDT output, 6 ft. SS capillary and bulb, and internal reference dial. | | | | | |
| 100 to 400 | 35 to 200 | 450/232 | 3/8" x 2 1/8" | E100-3BS | 283.00 |
| E100: SPDT output, internal reference dial, 10 ft. SS capillary and bulb, NEMA 4X with epoxy polyamid enclosure coating. | | | | | |
| 30 to 250 | 0 to 120 | 300/149 | 3/8" x 2 7/16" | E100-2BSB | 284.00 |
| E100: For freeze protection — With 10 ft. SS capillary. Heat Trace. | | | | | |
| 25 to 325 | Heat Trace | 360/182 | 1/8" x 11 5/8" | E100-13545 | 276.00 |
| F100: SPDT output, uncalibrated internal adjustment, 6 ft. copper capillary and bulb. | | | | | |
| -40 to 180 | -40 to 80 | 230/110 | 3/8" x 5" | F100-5BC | 232.00 |
| 0 to 250 | -20 to 120 | 300/145 | 3/8" x 4 1/2" | F100-6BC | 232.00 |
| 0 to 400 | -20 to 200 | 450/230 | 3/8" x 3" | F100-7BC | 232.00 |
| F100: SPDT output, uncalibrated internal adjustment, 6 ft. SS capillary and bulb. | | | | | |
| -125 to 350 | -85 to 175 | 400/200 | 3/8" x 2 7/16" | F100-2BS | 261.00 |
| 0 to 250 | -20 to 120 | 300/145 | 3/8" x 4 9/32" | F100-6BS | 261.00 |
| 0 to 400 | -20 to 200 | 450/230 | 3/8" x 3" | F100-7BS | 261.00 |
| 50 to 650 | 10 to 340 | 700/370 | 3/8" x 3 1/4" | F100-8BS | 261.00 |
| C100: SPDT output, internal uncalibrated adjustment, 1/2" NPT brass immersion stem. | | | | | |
| 0 to 225 | -15 to 105 | 275/135 | 1 7/8" Stem BT | C100-120 | 221.00 |
| 200 to 425 | 95 to 215 | 475/245 | 1 7/8" Stem BT | C100-121 | 221.00 |
| B100: SPDT output, internal reference scale, 1/2" NPT brass immersion stem. | | | | | |
| 0 to 225 | -15 to 105 | 275/135 | 1 7/8" Stem BT | B100-120 | 243.00 |
| B100: Freeze protection, 1/2" NPT SS stem, 9/16" OD X 2 11/16" length. | | | | | |
| 15 to 40 | Heat Trace | 160/71 | 2 11/16" Stem BT | B100-13546 | 258.00 |

Multi-Switch NEMA 4X Temperature Switch

Features

- Choice of one, two or three SPDT switch outputs
- Wide selection of ranges, sensors and wetted materials
- Cast aluminum enclosure conforms to NEMA 1, 13, 4X/IP65
- Internal reference dial available on "B" and "E" series models
- 3/4" NPT and two electrical knock-outs to simplify wiring



Also available as multiple SPDT output, switch designed to meet NEMA 4X, with 1/2" NPT stem connection (inset)

Model Selection Guide

| Adjustable Range | | Max. Temp. °F/°C | Stem Length | Catalog Number | Price |
|---|------------|---------------------|--------------------------|----------------|----------|
| °F | °C | | | | |
| B400: One SPDT output, 1/2" NPT brass immersion stem, internal reference dials. | | | | | |
| 0 to 225 | -15 to 105 | 275/135 | 1 7/8" BT | B400-120 | \$288.00 |
| B402: Two SPDT outputs, 1/2" NPT brass immersion stem, internal reference dials. | | | | | |
| 0 to 225 | -15 to 105 | 275/135 | 1 7/8" BT | B402-120 | 358.00 |
| 200 to 425 | 95 to 215 | 475/245 | 1 7/8" BT | B402-121 | 358.00 |
| B403: 3 SPDT outputs, 1/2" NPT brass immersion stem, internal reference dials. | | | | | |
| 0 to 225 | -15 to 105 | 275/135 | 1 7/8" BT | B403-120 | 436.00 |
| C400: SPDT output, 1/2" NPT brass connect stem, internal uncalibrated adjustment. | | | | | |
| 0 to 225 | -15 to 105 | 275/135 | 1 7/8" BT | C400-120 | 246.00 |
| C402: 2 SPDT outputs, 1/2" NPT brass connect stem, internal uncalibrated adjustment. | | | | | |
| 0 to 225 | -15 to 105 | 275/135 | 1 7/8" BT | C402-120 | 306.00 |
| 200 to 425 | 95 to 215 | 475/245 | 1 7/8" BT | C402-121 | 306.00 |
| C403: 3 SPDT outputs, 1/2" NPT brass connect stem, internal uncalibrated adjustment. | | | | | |
| 0 to 250 | -15 to 105 | 275/135 | 1 7/8" BT | C403-120 | 386.00 |
| Adjustable Range | | Max. Temp. °F/°C | Bulb Size OD x Length | Catalog Number | Price |
| °F | °C | | | | |
| E400: SPDT output, internal reference dial, 6 ft. 304 SS capillary and bulb. | | | | | |
| 30 to 250 | 0 to 120 | 300/150 | 3/8" x 2 5/8" | E400-2BSB | 374.00 |
| 100 to 400 | 35 to 200 | 450/230 | 3/8" x 2 1/8" | E400-3BS | 374.00 |
| E402: 2 SPDT outputs, internal reference dial, 6 ft. 304 SS capillary and bulb. | | | | | |
| 30 to 250 | 0 to 120 | 300/150 | 3/8" x 2 5/8" | E402-2BSB | 440.00 |
| 100 to 400 | 35 to 200 | 450/230 | 3/8" x 2 1/8" | E402-3BS | 440.00 |
| F400: SPDT output, 6 ft. 304 SS capillary and bulb, internal uncalibrated adjustment. | | | | | |
| -125 to 350 | -85 to 175 | 400/200 | 3/8" x 2 7/16" | F400-2BS | 335.00 |
| 0 to 250 | -20 to 120 | 300/145 | 3/8" x 4 1/2" | F400-6BS | 335.00 |
| 0 to 400 | -20 to 200 | 450/230 | 3/8" x 3" | F400-7BS | 335.00 |
| 50 to 650 | 10 to 340 | 700/300 | 3/8" x 3 1/4" | F400-8BS | 335.00 |
| F402: 2 SPDT outputs, 6 ft. 304 SS capillary and bulb, internal uncalibrated adjustment. | | | | | |
| 0 to 250 | -20 to 120 | 300/145 | 3/8" x 4 1/2" | F402-6BS | 388.00 |
| 0 to 400 | -20 to 200 | 450/230 | 3/8" x 3" | F402-7BS | 388.00 |
| 50 to 650 | 10 to 340 | 700/300 | 3/8" x 3 1/4" | F402-8BS | 388.00 |

Call for factory-set switches. Specify setpoint and increasing or decreasing temperature.

Specifications

Approvals: UL listed, cUL certified. CE compliant to low voltage directive. Certified to ATEX directive 94/9/EC and others

Enclosure Classification: Designed to meet NEMA 1, 13, 4X/IP65 when used with a watertight electrical connection. Part #: SD6286-51

Enclosure: Diecast aluminum, gray baked enamel finish.

Setpoint Repeatability: ±1% of adjustable range.

Switch Output: 1, 2, or 3 SPDT. Switches can be separated up to 100% of range and wired N/O or N/C. Rated 15 Amps at 125/250 VAC resistive.

Temperature Assembly: Bulb and Capillary: 6 ft. 304 stainless steel. Some models are available with 10 ft stainless steel armored capillary. **Immersion Stem:** Brite dip brass. **Fill:** Oil. **Exception:** Mod.F400-M9B(9469) has a 347 stainless steel bulb and 6 ft. capillary, and a mercury fill.

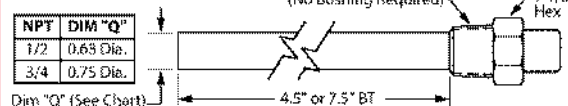
Temperature Deadband: Typically 1% range under lab conditions (70°F ambient circulating bath at 0.5°F per minute).

Wells and Union Connectors

Solid-Bored Wells for Bulb & Capillary-Type Switches

All wells come with 1/2" or 3/4" NPT connections. Wells with U lengths of 4" will fit any bulb 3/8" O.D. by 4" long or less. Wells with a U length of 7" will fit any bulb 3/8" O.D. by 7" or less.

Solid-Bored Well



| Material | "U" Length | Catalog Number | Price |
|----------|-------------------|----------------|---------|
| Brass | 4" BT, 1/2" NPT | SD6225-191 | \$49.00 |
| Brass | 4" BT, 3/4" NPT | SD6225-75 | 61.00 |
| Brass | 7" BT, 1/2" NPT | SD6225-192 | 53.00 |
| 316 SS | 4.5" BT, 3/4" NPT | SD6225-76 | 105.00 |
| 316 SS | 7.5" BT, 3/4" NPT | SD6225-119 | 126.00 |
| 316 SS | 7.5" BT, 1/2" NPT | SD6225-177 | 117.00 |
| 316 SS | 4.5" BT, 1/2" NPT | SD6225-193 | 99.00 |

Separable Wells for Immersion Stem-Type Switches

| Material | Pipe Thread | "U" Length | Catalog Number | Price |
|--|-------------|-------------|----------------|---------|
| For Series 100, 117, 120 and 400 Only | | | | |
| Brass | 3/4" NPT | 1 23/32" BT | SD6225-139 | \$38.00 |
| 316 SS | 3/4" NPT | 1 23/32" BT | SD6225-140 | 72.00 |
| 54 Series Only | | | | |
| Brass | 1/2" NPT | 1 9/16" BT | SD6225-141 | 30.00 |
| 316 SS | 1/2" NPT | 1 9/16" BT | SD6225-146 | 68.00 |

Fabricated Union Connectors for All Remote Bulb Temperature Controls

| Material | Pipe Thread | Catalog Number | Price |
|----------|------------------------|----------------|---------|
| Brass | 1/2" NPT | SD6213-51 | \$29.00 |
| Brass | 3/4" NPT | SD6213-45 | 34.00 |
| 304 SS | 1/2" NPT, 3/4" Bushing | SD6213-28 | 67.00 |
| 304 SS | 1/2" NPT | SD6213-50 | 44.00 |
| 304 SS | 3/4" NPT | SD6213-46 | 61.00 |

Hazardous Environment Temperature Switches



Div 2 Temperature Switches

Specifications

Approvals: UL listed, Class I, Div. 2, Gr A-D; Class II, Gr E-G; Class III; cUL certified



Ambient Temperature Limits: -40° to 160°F. Setpoint typically shifts less than 1% range for a 50°F ambient change.

Setpoint Repeatability: ±1% of adjustable range. Internal setpoint lock on all models.

Output: 1 SPDT hermetically sealed snap-action switch (N/O or N/C). DPDT also available.

Electrical Rating: 11 Amp 125/250 VAC resistive; 5 Amp @ 28 VDC; 1 Amp @ 48 VDC; 1/2 Amp @ 125 VDC

Construction: Enclosure: Epoxy-coated diecast aluminum. Designed to meet enclosure type 4X. Electrical Connection: 1/2" NPT, two 7/8" knockouts.



Model Selection Guide

| Adjustable Range | | Max Temp °F/°C | Bulb OD x Length | Catalog Number | Price |
|--|------------|-------------------|---------------------|-------------------|----------|
| °F | °C | | | | |
| E117: Internal reference, 6 ft. 304 SS capillary and bulb. 1 SPDT output. | | | | | |
| -120 to 100 | -85 to 35 | 150/65 | 3/8" x 2 7/16" | E117-2BSA | \$383.00 |
| 30 to 250 | 0 to 120 | 300/150 | 3/8" x 2 7/16" | E117-2BSB | 383.00 |
| 100 to 400 | 35 to 200 | 450/230 | 3/8" x 2 1/8" | E117-3BS | 383.00 |
| 350 to 640 | 175 to 335 | 690/365 | 3/8" x 3 1/4" | E117-8BS | 383.00 |
| Adjustable Range | | Max Temp °F/°C | Stem Length | Catalog Number | Price |
| °F | °C | | | | |
| B117: Internal reference dial, nickel-plated brass immersion stem, 1 SPDT output and 1/2" NPT connection. | | | | | |
| 0 to 225 | -15 to 105 | 275/135 | 1 7/8" BT | B117-120 | 322.00 |
| 200 to 425 | 95 to 215 | 475/245 | 1 7/8" BT | B117-121 | 322.00 |

Explosion Proof Div 1 and 2 Temperature Switch

Features

- Explosion proof — Div 1 and 2. Epoxy-coated, NEMA 4X cast aluminum enclosure with low copper content
- Many adjustable ranges, sensors, and wetted materials
- Internal blind adjustment or external calibrated dials with tamper-resistant cover
- One or two SPDT outputs
- Terminal block wiring



Specifications

Approvals: UL listed. cUL certified. Meets Class I, Div. 1, 2, Gr C, D, Class II, Gr E-G. Class III. CE compliant to applicable directives, ATEX approved.



Ambient Temperature Limits: -40 to 160° F. Setpoint shifts <1% range for a 50° F ambient change.

Temperature Deadband: Typically 1% of range under laboratory conditions (70°F, circulating bath at 1/2°F/minute change).

Setpoint Repeatability: ±1% adjustable range.

Output: 1 or 2 SPDT. Dual switch can be separated to 100% of range, wired N/O or N/C. Rated 15 Amps 125/250 VAC resistive.

Electrical Connection: 3/4" NPT. Terminal block standard.

Temperature Assembly: Bulb and Capillary: 6 ft. 304 stainless steel except models M9BA, M9B and M9BB, which are 316 stainless steel. Some stock models are available with optional 10 ft stainless steel armor capillary. Immersion Stem: Nickel plated brass. Fill: Oil fill except where noted. Enclosure: NEMA 4X, 7, 9, and IP66 classified, diecast aluminum (max. 0.4% copper) light gray aluminum lacquer finish, gasketed. Internal setpoint lock standard on C and F type. Gasketed aluminum tamper-resistant dial cover on E type.

Heat Trace/Freeze Protection: Available for types B121 and E121. Specs are the same as above except B121-13272 has a 22 Amp 480 VAC switch and E121-13273 has 10 ft. stainless steel capillary and a 22 Amp 480 VAC switch (2% deadband).

Model Selection Guide

| Adjustable Range | | Max Temp °F/°C | Bulb Size OD x Length | Catalog Number | Price |
|---|------------|-------------------|--------------------------|-------------------|----------|
| °F | °C | | | | |
| F120: One SPDT output, internal adjustment, 304 SS bulb, 6 ft. capillary. | | | | | |
| -125 to 350 | -85 to 175 | 400/200 | 3/8" x 2 7/16" | F120-2BS | \$406.00 |
| -40 to 120 | -40 to 50 | 170/75 | 3/8" x 6 3/4" | F120-4BS | 406.00 |
| 0 to 250 | -20 to 120 | 300/145 | 3/8" x 4 1/2" | F120-6BS | 406.00 |
| 0 to 400 | -20 to 200 | 450/230 | 3/8" x 3" | F120-7BS | 406.00 |
| 50 to 650 | 10 to 340 | 700/370 | 3/8" x 3 1/4" | F120-8BS | 406.00 |
| E121: One SPDT output, external calibrated reference scale, 304 SS bulb and 6 ft. capillary. | | | | | |
| -20 to 80 | -30 to 25 | 130/55 | 3/8" x 5" | E121-5BS | 489.00 |
| 25 to 100 | -5 to 35 | 150/65 | 3/8" x 6 3/4" | E121-4BS | 489.00 |
| 30 to 250 | 0 to 120 | 300/150 | 3/8" x 2 7/16" | E121-2BSB | 489.00 |
| 100 to 400 | 35 to 200 | 450/230 | 3/8" x 2 1/8" | E121-3BS | 489.00 |
| 350 to 640 | 175 to 335 | 690/395 | 3/8" x 3 1/4" | E121-8BS | 489.00 |
| 25 to 325 | Heat Trace | 360/182 | 1/4" x 10 1/4" | E121-13273 | 428.00 |
| E122: Two SPDT outputs, external calibrated reference scale, 304 SS bulb and 6 ft. capillary. | | | | | |
| 25 to 100 | -5 to 35 | 150/65 | 3/8" x 6 3/4" | E122-4BS | 565.00 |
| 30 to 250 | 0 to 120 | 300/150 | 3/8" x 2 7/16" | E122-2BSB | 565.00 |
| 100 to 400 | 35 to 200 | 450/230 | 3/8" x 2 1/8" | E122-3BS | 565.00 |
| 350 to 640 | 175 to 335 | 690/395 | 3/8" x 3 1/4" | E122-8BS | 565.00 |
| Adjustable Range | | Max Temp °F/°C | Stem Length | Catalog Number | Price |
| °F | °C | | | | |
| B121: One SPDT output, 1/2" NPT connection, external calibrated reference scale, tamper-resistance cover, nickel-plated brass immersion stem. | | | | | |
| 0 to 225 | -15 to 105 | 275/135 | 1 7/8" BT | B121-120 | \$393.00 |
| 200 to 425 | 95 to 215 | 475/245 | 1 7/8" BT | B121-121 | 393.00 |
| 15 to 140 | * | 160/71 | 2 11/16" BT ‡ | B121-13272 | 372.00 |
| B122: Two SPDT outputs, 1/2" NPT connection, external calibrated reference scale, tamper-resistance cover, nickel-plated brass immersion stem. | | | | | |
| 0 to 225 | -15 to 105 | 275/135 | 1 7/8" BT | B122-120 | 516.00 |
| 200 to 425 | 95 to 215 | 475/245 | 1 7/8" BT | B122-121 | 516.00 |
| C120: One SPDT output, 1/2" NPT connection, internal adjustment and nickel-plated brass immersion stem. | | | | | |
| 0 to 225 | -15 to 105 | 275/135 | 1 7/8" BT | C120-120 | 327.00 |
| 200 to 425 | 95 to 215 | 475/245 | 1 7/8" BT | C120-121 | 327.00 |

‡ 9/16" O.D. stainless steel stem

* Freeze protection.

Rotary and Smart Actuator Motors

Instrument Valves

Process Control Accessories

Pressure and Temperature Switches

ASCO Solenoid Valves

Pressure Gauges