

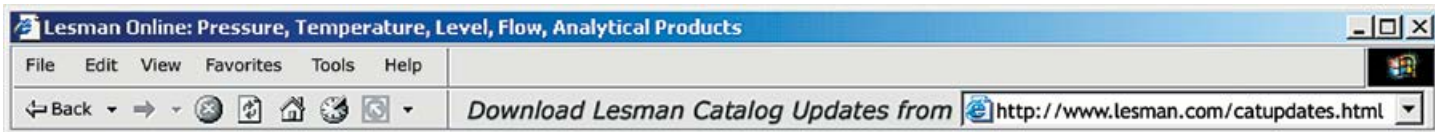
# PRESSURE & TEMPERATURE SWITCHES

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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.



## Differential Pressure Switches

	Prices Start at	See Page
UE One Series Differential Pressure Hybrid Transmitter-Switches	\$1047.00	370
UE 24 Series Delta-Pro Enclosure Type 4 Differential Pressure Switches	\$103.00	381
UE 120 Series Explosion-Proof Differential Pressure Switches	\$581.00	383
UE 400 Series Type 4X Multiswitch Differential Pressure Switches	\$387.00	382
UE Differential Pressure Switches for Ultra-Low Pressure	\$553.00	384
UE J21K Series Type 4X General Service Differential Pressure Switches	\$287.00	381

## Pressure Switches

UE One Series Electronic Pressure Hybrid Transmitter-Switches	\$763.00	370
UE 40 Series General Service Skeleton Design Pressure Switches	\$99.00	374
UE 54 Series General Service Pressure Switches	\$84.00	374
UE 100 Series Enclosure Type 4X Pressure Switches	\$146.00	377
UE 117 Series Pressure Switches for Division 2 Use	\$312.00	377
UE 120 Series Explosion-Proof Pressure Switches	\$312.00	380
UE 400 Series Type 4X Multiswitch Pressure Switches	\$259.00	378
UE J6 Series Enclosure Type 4X Pressure Switches	\$233.00	376
UE Spectra 10 Compact Cylindrical Pressure Switches	\$66.00	375
UE Spectra 12 Vibration-Resistant Compact Pressure Switches	\$260.00	379

## Temperature Switches

UE One Series Electronic Temperature Hybrid Transmitter-Switches	\$763.00	370
UE 54 Series General Service Temperature Switches	\$162.00	385
UE 100 Series Enclosure Type 4X Temperature Switches	\$251.00	386
UE 117 Series Temperature Switches for Division 2 Use	\$381.00	388
UE 120 Series Explosion-Proof Temperature Switches	\$411.00	388
UE 400 Series Type 4X Multiswitch Temperature Switches	\$349.00	387
UE 800 Series Indicating Temperature Switches	\$684.00	385
UE Spectra 12 Division 1, Zone 1 Temperature Switches	\$260.00	386

## Accessories

UE Wells and Union Connectors	\$34.00	387
UE Precision Sensors' Pressure-Alarming Monitors	Call	384



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# 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 electro-mechanical 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
<b>For pricing and available models, see page:</b>		<b>385</b>	<b>378-379, 382, 387</b>	<b>380, 383, 384, 388</b>	<b>377, 388</b>	<b>377, 384, 386</b>	<b>376</b>	<b>381</b>	<b>370-373</b>
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			
	Dual SPDT	•	•	•					
Sensors	Triple SPDT		•						
	Hermetic Seal SPDT or DPDT			X	•				•
	MOSFET/Solid State Relay								•
	Welded Stainless Steel		•	•	•	•	•	•	•
	Elastomer Diaphragm		•	•	•	•	•	•	•
Process Alloy	Brass/Bronze Bellows		•	•	•	•	•	•	•
	Piston		•	•	•	•	•	•	•
	Process Alloy		X	X	X	X			
	Local Temperature		•	•	•	•			•
	Bulb and Capillary	•	•	•	•	•			X
	RTD with Extension								•

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**SWITCH  
SELECTION**

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## 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.



**Need help selecting the right switch for your process? Visit [www.Lesman.com/datasheets](http://www.Lesman.com/datasheets) for the UE application datasheet.**

## 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	•		•				

**Want your switches preset for your process? Call Lesman for details.**

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## One Series Hybrid Transmitter-Switches



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

### Features

- Transmitter-only, switch-only and hybrid transmitter-switch models available
- Digital process display — know what's happening in your process at a glance
- NAMUR standard and HART®-enabled transmitter 4-20 mA output + programmable switch for process monitoring, alarm, and shutdown
- Display and keypad provide easy, fast, and secure field programming while in service
- Switch-only model drops in to replace mechanical switches for cost-effective upgrades using existing wires
- Programmable setpoint and deadband provides accurate and fast cycling for rotating equipment
- Configurable IAW™ self-diagnostics make sure the instrument is functioning properly by communicating with the control system using a dedicated discrete output
- Plugged port detection: Detects clogged pressure sensors to help avoid potentially dangerous process conditions
- Min/Max memory samples and stores the lowest and highest extreme process variables for diagnostics and learning
- Nuisance trip filtering eliminates unwanted nuisance trips and unnecessary alarms
- Programmable trip delay holds off the trip decision for tenths of seconds to several minutes
- Trip counter records trips for up to two relays for process diagnostics and learning
- Transmitter models programmable via keypad or HART v7
- Worldwide hazardous location approvals

### Features Built Into 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:** 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 Two-Wire operate using residual current from the PLC's discrete input, totally undetected during open switch condition.

**Easy wiring:** One Series Two-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.

### 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: For Alarm, Shutdown, and Control Applications

Increased safety at a decreased cost. It sounds too good to be true, but United Electric has made it a reality. With the introduction of the One Series threshold detection switches for pressure and temperature, UE breaks down the barriers of performance and affordability.

Have you ever lost or damaged a large pump or compressor because your pressure or temperature switch didn't work when it was needed? Has the failure of a traditional switch created an unsafe situation in your plant? Wouldn't it make your life easy if you could be assured that a switch would work when you need it to?

The One Series eliminates guesswork by providing both local and remote status signals, continuously telling you "I Am Working" and "I Have Switched." Combine status with a local pressure or temperature display and you have the complete picture, all the time. You can even monitor process trends remotely via an optional 4-20 mA output.

But it doesn't end there. You can feel confident that the One Series is working for you. With solid-state performance and reliability built in, the One Series offers many unique features that make your job easier. A simple-to-use front keypad allows you to choose your operating mode AFTER you have installed the switch, enabling you to reconfigure, rather than rewire the unit as your application needs change.

UE's One Series also eliminates the need to trade wide range adjustability to achieve narrow deadbands, with setpoint and deadband values



that can be precisely adjusted from 0 to 100 percent of the operating range. All values are displayed locally with the touch of a button, but stay protected from unauthorized access.

The One Series combines the best features of traditional mechanical switches and transmitters into a single affordable package, eliminating the need to overspecify instrumentation to achieve the on/off threshold detection required for most critical watchdog applications.

Through a single process connection, the One Series combines several monitoring functions traditionally performed separately by transmitters, switches, and gauges.

All that adds up to huge cost savings for you!

- Save inventory costs. There's no need to stock multiple devices to perform threshold detection functions.
- Eliminate "leak paths" and reduce hardware costs with a single process connection.
- Reduce labor costs with easy set-in-place, test-in-place capabilities.

The One Series, a completely self-contained field device, is designed to provide the utmost performance under harsh conditions.

Add versatility, reliability, direct switching of loads to 10 Amps, and rugged construction for Class 1, Div. 2 performance — and the One Series truly fills the gap in safety systems.

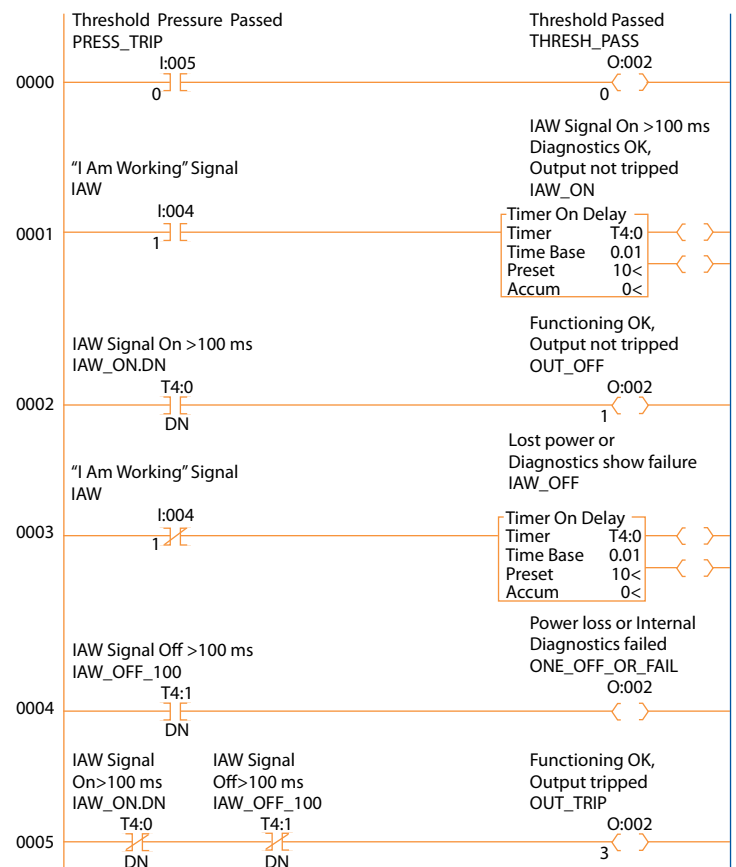
Backed by United Electric's full three-year warranty, the One Series costs far less than other instrumentation options available to ensure compliance with today's emerging safety standards.

## TECHNOTE

### Using the One Series with a PLC

Connecting the One Series to your PLC allows you to remotely monitor the switch's health and activity. You can also use the One Series "I Am Working" (IAW) signal to activate an alarm on the PLC. To the right is a schematic of the IAW ladder logic, as used for the pulsed output.

- 0000 The first rung assumes that the input for the contact closure from the ONE pressure switch is connected to I:5/0. When the input is on (the pressure threshold is passed), the output is turned on.
- 0001 The second rung assumes that the "I Am Working" (IAW) signal is connected to I:4/1. If the signal is on for more than 100 ms, the ONE is powered, internal diagnostics have determined that it is functioning okay, and the output has not tripped.
- 0002 If the timer from the previous rung is done, then the IAW signal must have been on for more than 100 ms and the ONE is powered, internal diagnostics have determined that it is functioning okay, and the output has not tripped.
- 0003 This rung assumes that the IAW signal is connected to I:4/1. If the signal is off for more than 100 ms, then the ONE is either not powered, or internal diagnostics have determined that it is not functioning correctly.
- 0004 If the timer from the previous rung is done, then the IAW signal must have been off for more than 100 ms, and the ONE is either not powered or internal diagnostics have determined that it is not functioning correctly.
- 0005 If the IAW signal is cycling on and off every 50 ms, then neither the 100 ms IAW\_On timer nor the 100 ms IAW\_Off timer will ever stay on until they are done. This means that both timers will be off when the ONE is functioning properly but the output has tripped.



# One Series Hybrid Transmitter-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 (0.12% for the K10 range)

**Approved Operating Temperature Range:** -40° to 185° F (-40° to 85°C)

**Switch Response Time:** ≤100 mS for detection of full step change and change of output state with Trip Delay and Filter turned off

**Display Response Time:** 400 mS updated 2.5 times per second

**Filter:** Transient filtering to prevent nuisance trips; Programmable time constants for 0.25, 0.5, 1, and 2 seconds, default OFF

**Trip Delay:** Switch decision delay; 0–999.9 seconds in 0.1 second increments

**Set 4MA (Scale 4 mA Output):** Programmable from -3 to 25% of sensor range, values in units of measure selected and range dependent

**Set 20MA (Scale 20 mA Output):** Programmable from 50 to 110% of sensor range, values in units of measure selected and range dependent

**Diagnostics (IAW®):** Upon detecting a fault, the local display will show a fault code, the setpoint switch will change to the as-programmed tripped state, the normally closed IAW Output switch will fail-safe open, and the NAMUR NE43 standard 4-20 mA output will indicate ≤3.6 mA.

### Switch Control Modes (1XTXSW and 1XSW Only):

Mode	Setpoint Switch Action	IAW™ Output (On Fault)
Open Rise	Normally closed, opens at setpoint on rising media and fault	Opens
Open Fall	Normally closed, opens at setpoint on falling media and fault	Opens
Close Rise	Normally open, closes at setpoint on rising media and fault	Opens
Close Fall	Normally open, closes at setpoint on falling media and fault	Opens
Open Out of Window	Normally closed, opens above setpoint high and below setpoint low and fault, closes below deadband high and above deadband low	Opens
Close Out of Window	Normally open, closes above setpoint high and below setpoint low and fault, opens below deadband high and above deadband low	Opens



**Analog Output (1XTX Models):** 4-20 mA NAMUR NE43 compliant and HART v7 compatible current output, 360Ω max at 24 VDC, field scalable 2:1 turndown. Faults are indicated at ≤ 3.6 mA

**Enclosure:** Type 4X/IP66 certified epoxy coated aluminum alloy 360 with tempered glass window

**Conduit:** 3/4" NPTF aluminum casting, two openings

**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

**Effective Transmission Distance (1XSW Models):** 2000 feet (610 meters) at rated voltage

**Sensors:** *Pressure:* 316L SS wetted parts and welded diaphragm, 1/2" NPTF connection, micromachined piezoresistive strain gauge silicon element, silicone fill; *Differential Pressure:* 316L SS 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)

**1XSWLL:** cULus Listed, Class I, Div 1, Groups A-D; Class II, Div 1, Groups E-G; Class III; Class I, Div 2, Groups A-D; Class II, Div 2, Groups E-G; Class III; Class I, Zone 1; Class I, Zone 0; Class I, Zone 2

**1XTXSW/1XTX00:** cULus Listed, Class I, Div 1, Groups A-D; Class II, Div 1, Groups E-G; Class III; Class I, Div 2, Groups A-D; Class II, Div 2, Groups E-G; Class III; Class I, Zone 1; Class I, Zone 2

**Call for European, Australian, and Russian approvals.**

**Learn about using instrumentation for protection from cyber-attacks. Watch our free webinar with UE's Wil Chin, [www.lesman.com/train/](http://www.lesman.com/train/)**

## Switch Selection

Model	Replaces Older Model	Description	Max Power Rating/Output Signal	Setpoint Switch Ratings (SPST)	IAW™ Switch Rating (SPST)	Min. Load Required	Off State Leakage	Zone			Div	
								0	1	2	1	2
1XSWLL	2W2D, 2X2D, 2W4D, 2X4D	Switch Only	Two-wire 7.8-50 VDC discrete input powered @ 0.75 mA	7.8-50.0 VDC @ 0.1 A MOSFET derate @ 1 mA per °C > 25°C	7.8-50.0 VDC @ 0.1 A MOSFET derate @ 1 mA per °C > 25°C	2.0 mA	0.8 mA	0	✓	✓	0	✓
1XTXSW	2WLP, 2XLP, 8W2D, 8X2D	Transmitter/Switch Combination	Two-wire 20-40 VDC @ 21 mA Loop-powered 4-20 mA output with HART® v7	SW1/SW2: 0-280 VAC & VDC @ 0.3 A derate 8% per 10° C > 21° C	0-30 VDC @ 0.02 A MOSFET	0 mA	0.01 mA		✓	✓	✓	✓
1XTX00	—	Transmitter Only	Two-wire 20-40 VDC @ 21 mA Loop-powered 4-20 mA output with HART® v7	—	—	—	—		✓	✓	✓	✓

0 Requires safety barrier for intrinsically safe areas, Zone 0 and Div 1 Ex ia.

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**ELECTRONIC SWITCHES**

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### 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 200VDC, up to 280VAC, 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.

### 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: 1XSWLL-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.

### Model Selection Guide

Description	Catalog Number	Availability	Price
<b>One Series discrete input powered two-wire switch</b>			
Two-wire switch only	1XSWLL	↓ ↓ ↓	\$664.00
<b>One Series loop-powered HART® transmitter with relay outputs</b>			
Two-wire combination transmitter/switch	1XTXSW	↓ ↓ ↓	915.00
<b>One Series loop-powered HART® transmitter</b>			
Two-wire HART transmitter only	1TX00	↓ ↓ ↓	805.00
<b>Sensor Type and Range Selection</b>			
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
<b>Pressure Ranges</b>	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 •	
<b>Differential Pressure Ranges</b>	0-5 PSID	10 PSID	-10 •
	0-50 PSID	100 PSID	-11 •
	0-100 PSID	200 PSID	-12 •
	0-200 PSID	400 PSID	-13 •
<b>Temperature Range and Configuration</b>			
Local Sensor	-50° to 450°F, 4" probe length	-L1	•
	-50° to 450°F, 6" probe length	-L2	•
	-50° to 450°F, 10" probe length	-L3	•
Remote Sensor	-300° to 200°F, 2.5" probe length, 6' MI cable	-C1	•
	-50° to 450°F, 6" probe length, 6' Teflon® cable	-R1	•
	-50° to 1000°F, 2.5" probe length, 6' MI cable	-H1	•
Remote Sensor	-300° to 200°F, 2.5" probe length, Up to 30' MI extension cable (Base + per ft price)	-CC*	b + 4.50
Custom Cable Length	-50° to 450°F, 6" probe length, Up to 30' Teflon® extension cable (Base + per ft price)	-RC	b + 4.50
	-50° to 1000°F, 2.5" probe length, Up to 30' MI extension cable (Base + per ft price)	-HC*	c + 4.50
<b>Options</b>			
Factory set parameters	M201	• • •	20.00
Display units in Bar or mBar	M276	• • •	0.00
Paper tag	M444	• • •	6.00
1/2" NPTM compression fitting (for TL and TR sensors)	W073	•	26.00

### 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.

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Pressure and Temperature Switches

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## 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

**Electrical:** Connections: 7/8" diameter; Rating: 15 Amp 125/250/480 resistive

**Cover:** Lexan®, black finish



#### Model Selection Guide

Adjustable Range	Deadband	Proof Pressure	Catalog Number	Price
<b>Type J54*: One SPDT output, internal adjustment. Buna-N diaphragm, o-ring and 1/4" NPTM aluminum pressure connection. NEMA 1 cover.</b>				
30" to 0 HgVac	1 to 3.5" Hg	50 PSI	J54-22	102.00
3 to 30 PSI	0.4 to 1.3 PSI	200 PSI	L J54-24	102.00
10 to 100 PSI	1.0 to 2.5 PSI	300 PSI	L J54-25	102.00
30 to 300 PSI	1.3 to 4.0 PSI	500 PSI	J54-27	102.00
<b>Type J545*: Skeleton construction, no enclosure. One SPDT output, internal adjustment. Buna-N diaphragm, o-ring and 1/4" NPTM aluminum pressure connection.</b>				
30" to 0 HgVac	1 to 3.5" Hg	50 PSI	L J54S-22	84.00
3 to 30 PSID	4 to 1.3 PSI	200 PSI	L J54S-24	84.00
10 to 100 PSI	1 to 2.5 PSI	200 PSI	J54S-25	84.00
30 to 300 PSI	1.3 to 4 PSI	200 PSI	J54S-27	84.00
<b>Type J545*: Skeleton construction. One SPDT output, internal adjustment. Brass bellows, nickel-plated brass 1/4" NPTF pressure connection.</b>				
0" to 80" WC	0.2" to 0.9" Hg	5 PSI	L J54S-137	228.00
<b>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.)</b>				
75 to 1,000 PSI	30 to 150 PSI	10,000 PSI	L J54-610	213.00
125 to 3,000 PSI	40 to 250 PSI	10,000 PSI	J54-612	213.00
700 to 6,000 PSI	50 to 400 PSI	10,000 PSI	J54-614	213.00
<b>Type H54*: One SPDT output, internal adjustment, and reference dial. Buna-N diaphragm, o-ring and 1/4" NPTM aluminum pressure connection.</b>				
30" to 0 HgVac	1.5 to 3.5" Hg	50 PSI	L H54-22	144.00
3 to 30 PSI	0.4 to 1.3 PSI	200 PSI	L H54-24	144.00
10 to 100 PSI	1.0 to 2.5 PSI	300 PSI	L H54-25	144.00
30 to 300 PSI	1.6 to 4.0 PSI	600 PSI	L H54-27	144.00
<b>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.</b>				
30" to 0 HgVac	1.5 to 3.5" Hg	50 PSI	H54S-22	122.00
3 to 30 PSI	0.4 to 1.3 PSI	200 PSI	L H54S-24	122.00
10 to 100 PSI	1.0 to 2.5 PSI	300 PSI	L H54S-25	122.00
30 to 300 PSI	1.6 to 4.0 PSI	600 PSI	H54S-27	122.00

\* 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
<b>J40: Phosphor bronze bellows, 1/4" NPTF brass pressure connection.</b>				
30" to 0 HgVac	1.0 to 2.5" Hg	5 PSI	L J40-218	113.00
0 to 20 PSI	0.2 to 1.3 PSI	30 PSI	L J40-222	113.00
0 to 30 PSI	0.2 to 1.3 PSI	45 PSI	L J40-224	113.00
0 to 50 PSI	0.2 to 1.3 PSI	75 PSI	L J40-226	113.00
0 to 100 PSI	1.0 to 2.3 PSI	110 PSI	J40-230	113.00
<b>J40: Brass bellows and 1/8" NPTM brass pressure connection.</b>				
0 to 30 PSI	1.5 to 2.5 PSI	45 PSI	L J40-256	99.00
0 to 60 PSI	1.5 to 4.0 PSI	90 PSI	J40-260	99.00
0 to 90 PSI	1.5 to 4.0 PSI	135 PSI	L J40-262	99.00
0 to 100 PSI	2.0 to 4.0 PSI	150 PSI	J40-266	99.00
0 to 240 PSI	2.0 to 6.0 PSI	330 PSI	L J40-271	99.00
0 to 300 PSI	4.0 to 6.0 PSI	350 PSI	J40-274	99.00

## 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.



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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 ±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.)



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

**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: ±1% span; Models 13-16: ±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



# Spectra 10 Miniature Pressure Switch

**Model Selection Guide**

Adjustable Range	Deadband	Proof Pressure	Overrange Pressure	Catalog Number	Price
<b>10-A: One SPDT output, 0.11" push-on terminals. Mating terminals supplied.</b>					
4 to 50 PSI	1.0 to 6.0 PSI	3000 PSI	1000 PSI	10-A10	\$66.00
10 to 150 PSI	2.0 to 10 PSI	3000 PSI	1500 PSI	10-A11	66.00
30 to 600 PSI	8.0 to 60 PSI	3000 PSI	2500 PSI	10-A12	66.00
100 to 1500 PSI	20 to 220 PSI	10000 PSI	8000 PSI	10-A13	66.00
180 to 3000 PSI	50 to 400 PSI	10000 PSI	8000 PSI	10-A14	66.00
400 to 4700 PSI	100 to 600 PSI	10000 PSI	8000 PSI	10-A15	66.00
4000 to 7500 PSI	400 to 950 PSI	10000 PSI	10000 PSI	10-A16	66.00
<b>10-B: One SPDT output, three potted male 0.25" push-on terminals.</b>					
4 to 50 PSI	1.0 to 6.0 PSI	3000 PSI	1000 PSI	10-B10	76.00
10 to 150 PSI	2.0 to 10 PSI	3000 PSI	1500 PSI	10-B11	76.00
30 to 600 PSI	8.0 to 60 PSI	3000 PSI	2500 PSI	10-B12	76.00
100 to 1500 PSI	20 to 220 PSI	10000 PSI	8000 PSI	10-B13	76.00
180 to 3000 PSI	50 to 400 PSI	10000 PSI	8000 PSI	10-B14	76.00
400 to 4700 PSI	100 to 600 PSI	10000 PSI	8000 PSI	10-B15	76.00
4000 to 7500 PSI	400 to 950 PSI	10000 PSI	10000 PSI	10-B16	76.00
<b>10-C: One SPDT output, NEMA 4 enclosure, 1/2" NPTM. Conduit connection, 20" leads.</b>					
4 to 50 PSI	1.0 to 6.0 PSI	3000 PSI	1000 PSI	10-C10	87.00
10 to 150 PSI	2.0 to 10 PSI	3000 PSI	1500 PSI	10-C11	87.00
30 to 600 PSI	8.0 to 60 PSI	3000 PSI	2500 PSI	10-C12	87.00
100 to 1500 PSI	20 to 220 PSI	10000 PSI	8000 PSI	10-C13	87.00
180 to 3000 PSI	50 to 400 PSI	10000 PSI	8000 PSI	10-C14	87.00
400 to 4700 PSI	100 to 600 PSI	10000 PSI	8000 PSI	10-C15	87.00
4000 to 7500 PSI	400 to 950 PSI	10000 PSI	10000 PSI	10-C16	87.00
<b>10-D: One SPDT output, NEMA 4 enclosure, 20" leads. Three 18-AWG potted leads. Two-wire SPST also available. Call Lesman.</b>					
4 to 50 PSI	1.0 to 6.0 PSI	3000 PSI	1000 PSI	10-D10	77.00
10 to 150 PSI	2.0 to 10 PSI	3000 PSI	1500 PSI	10-D11	77.00
30 to 600 PSI	8.0 to 60 PSI	3000 PSI	2500 PSI	10-D12	77.00
100 to 1500 PSI	20 to 220 PSI	10000 PSI	8000 PSI	10-D13	77.00
180 to 3000 PSI	50 to 400 PSI	10000 PSI	8000 PSI	10-D14	77.00
400 to 4700 PSI	100 to 600 PSI	10000 PSI	8000 PSI	10-D15	77.00
4000 to 7500 PSI	400 to 950 PSI	10000 PSI	10000 PSI	10-D16	77.00
<b>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.</b>					
4 to 50 PSI	1.0 to 6.0 PSI	3000 PSI	1000 PSI	10-E10	95.00
10 to 150 PSI	2.0 to 10 PSI	3000 PSI	1500 PSI	10-E11	95.00
30 to 600 PSI	8.0 to 60 PSI	3000 PSI	2500 PSI	10-E12	95.00
100 to 1500 PSI	20 to 220 PSI	10000 PSI	8000 PSI	10-E13	95.00
180 to 3000 PSI	50 to 400 PSI	10000 PSI	8000 PSI	10-E14	95.00
400 to 4700 PSI	100 to 600 PSI	10000 PSI	8000 PSI	10-E15	95.00
4000 to 7500 PSI	400 to 950 PSI	10000 PSI	10000 PSI	10-E16	95.00
<b>10-F: One SPDT output, NEMA 4 enclosure, DIN connector.</b>					
4 to 50 PSI	1.0 to 6.0 PSI	3000 PSI	1000 PSI	10-F10	103.00
10 to 150 PSI	2.0 to 10 PSI	3000 PSI	1500 PSI	10-F11	103.00
30 to 600 PSI	8.0 to 60 PSI	3000 PSI	2500 PSI	10-F12	103.00
100 to 1500 PSI	20 to 220 PSI	10000 PSI	8000 PSI	10-F13	103.00
180 to 3000 PSI	50 to 400 PSI	10000 PSI	8000 PSI	10-F14	103.00
400 to 4700 PSI	100 to 600 PSI	10000 PSI	8000 PSI	10-F15	103.00
4000 to 7500 PSI	400 to 950 PSI	10000 PSI	10000 PSI	10-F16	103.00
<b>10-G: One SPDT output, NEMA 4 enclosure, 5 foot cable.</b>					
4 to 50 PSI	1.0 to 6.0 PSI	3000 PSI	1000 PSI	10-G10	89.00
10 to 150 PSI	2.0 to 10 PSI	3000 PSI	1500 PSI	10-G11	89.00
30 to 600 PSI	8.0 to 60 PSI	3000 PSI	2500 PSI	10-G12	89.00
100 to 1500 PSI	20 to 220 PSI	10000 PSI	8000 PSI	10-G13	89.00
180 to 3000 PSI	50 to 400 PSI	10000 PSI	8000 PSI	10-G14	89.00
400 to 4700 PSI	100 to 600 PSI	10000 PSI	8000 PSI	10-G15	89.00
4000 to 7500 PSI	400 to 950 PSI	10000 PSI	10000 PSI	10-G16	89.00
Options	Factory-set switch; Specify increasing or decreasing pressure and setpoint			M201	12.00
	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

Rotary and Smart Actuator Motors

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Pressure and Temperature Switches

ASCO Solenoid Valves

Pressure Gauges

# 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.



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### Model Selection Guide

Adjustable Range	Deadband	Proof Pressure	Catalog Number	Price
<b>J6: Brass bellows and 1/4" NPT nickel-plated brass pressure connection. Optional 316LSS bellow and 1/2" NPT pressure connection.</b>				
30"HgVac-0 psi	0.2 to 0.8" Hg	5 PSI	J6-126	\$341.00
30"HgVac-20psi	0.2 to 0.8" Hg	25 PSI	J6-134	341.00
0 to 50" WC	3.0 to 6.0" WC	5 PSI	J6-136	341.00
0 to 18 PSI	4.0 to 7.0" WC	25 PSI	J6-142	341.00
0 to 40 PSI	0.1 to 0.4 PSI	40 PSI	J6-148	341.00
0 to 50 PSI	0.1 to 0.5 PSI	75 PSI	J6-152	341.00
3 to 100 PSI	0.2 to 0.8 PSI	125 PSI	J6-156	341.00
50 to 180 PSI	0.3 to 1.0 PSI	180 PSI	J6-160	341.00
<b>J6: Phosphor bronze bellows, nickel-plated brass pressure connection.</b>				
30"HgVac-0psi	1.0 to 2.0" Hg	30 PSI	J6-218	248.00
0 to 20 PSI	0.5 to 1.0 PSI	30 PSI	J6-222	248.00
0 to 30 PSI	0.5 to 1.0 PSI	45 PSI	J6-224	248.00
0 to 50 PSI	0.7 to 1.3 PSI	75 PSI	J6-226	248.00
0 to 100 PSI	1.0 to 2.0 PSI	110 PSI	J6-230	248.00
0 to 50 PSI	1.5 to 2.5 PSI	75 PSI	J6-258	233.00
0 to 100 PSI	2.0 to 5.0 PSI	150 PSI	J6-266	233.00
0 to 200 PSI	3.0 to 5.0 PSI	250 PSI	J6-270	233.00
0 to 250 PSI	3.0 to 5.0 PSI	330 PSI	J6-272	233.00
0 to 300 PSI	4.0 to 6.0 PSI	350 PSI	J6-274	233.00
<b>J6: Welded 316SS bellows and pressure connection.</b>				
0 to 50 PSI	1.5 to 2.5 PSI	75 PSI	J6-354	333.00
0 to 100 PSI	2.0 to 4.0 PSI	150 PSI	J6-356	333.00
0 to 200 PSI	3.0 to 5.0 PSI	250 PSI	J6-358	333.00
0 to 250 PSI	3.0 to 5.0 PSI	330 PSI	J6-360	333.00
0 to 350 PSI	2.0 to 8.0 PSI	430 PSI	J6-362	333.00
0 to 500 PSI	3.0 to 9.0 PSI	575 PSI	J6-364	333.00
100 to 1700 PSI	9.0 to 23 PSI	2500 PSI	J6-680	548.00
<b>J6: 303SS piston and Buna-N O-ring, 303SS pressure connection (Not recommended for gas service).</b>				
75 to 1000 PSI	30 to 150 PSI	10000 PSI	J6-610	300.00
125 to 3000 PSI	40 to 250 PSI	10000 PSI	J6-612	300.00
500 to 6000 PSI	50 to 400 PSI	10000 PSI	J6-614	300.00



## 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
<b>NEMA 1</b>	•							
<b>NEMA 2</b>		•						
<b>NEMA 3</b>					•			
<b>NEMA 3R</b>			•					
<b>NEMA 3S</b>					•			
<b>NEMA 4</b>							•	
<b>NEMA 4X</b>							•	
<b>NEMA 6</b>								•
<b>NEMA 12</b>						•		
<b>NEMA 13</b>						•		

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**PRESSURE SWITCHES**

**377** 

## H100 Enclosure Type 4X Switches

### Specifications

**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.

**Approvals:** UL listed, cUL certified, CE.



### Model Selection Guide

Adjustable Range	Deadband	Proof Pressure	Catalog Number	Price
<b>All H100 switches include one SPDT output and internal adjustment with "High/Low" reference scale.</b>				
<b>Phosphor bronze bellows and brass pressure connection.</b>				
30" HgVac-0 4 to 200 PSI	1.0 to 2.0" Hg 1.0 to 8.0 PSI	30 PSI 250 PSI	 H100-218 H100-270	173.00 169.00
<b>Buna-N diaphragm, O-ring and brass pressure connection.</b>				
1.5 to 30 PSI 3 to 100 PSI 9 to 300 PSI 15 to 500 PSI 30 to 1000 PSI	1.0 to 2.0 PSI 1.0 to 4.0 PSI 1.0 to 5.0 PSI 2.0 to 8.0 PSI 3.0 to 20.0 PSI	600 PSI 600 PSI 600 PSI 2500 PSI 2500 PSI	 H100-701  H100-702  H100-703 H100-704 H100-705	\$146.00 146.00 146.00 146.00 146.00
<b>Buna-N diaphragm and O-ring, 1/2" NPTF aluminum pressure connection. 0.72" orifice for clean-out.</b>				
10 Vac to 10" WC 50 Vac to 50" WC 0.5" to 5.0" WC 2.5" to 50" WC	0.1" to 0.6" WC 0.1" to 3.0" WC 0.1" to 0.3" WC 0.1" to 0.8" WC	400 PSI 400 PSI 400 PSI 400 PSI	 H100-521 H100-522  H100-523  H100-524	377.00 377.00 377.00 377.00
<b>316L SS diaphragm; Viton GLT O-ring, internal reference dial, 1/2" NPT process connection.</b>				
1 to 20 8 to 200 50 to 1000 250 to 3500	0.3 to 2.5 PSI 1 to 11 PSI 25 to 125 PSI 50 to 300 PSI	1000 PSI 1000 PSI 7000 PSI 7000 PSI	H100-183 H100-186 H100-188 H100-189	411.00 411.00 236.00 236.00
<b>Welded 316 SS diaphragm and 1/2" NPTF pressure connection.</b>				
5 to 30 PSI 10 to 100 PSI 15 to 300 PSI 20 to 500 PSI 80 to 1700 PSI	1.0 to 3.0 PSI 1.0 to 8.0 PSI 3.0 to 18.0 PSI 4.0 to 30.0 PSI 5.0 to 120 PSI	2500 PSI 2500 PSI 2500 PSI 2500 PSI 2500 PSI	 H100-190  H100-191  H100-192  H100-193  H100-194	179.00 179.00 179.00 179.00 179.00
<b>Welded 316 SS bellows and pressure connection.</b>				
15 to 200 PSI 25 to 500 PSI	1.0 to 3.0 PSI 1.5 to 5.0 PSI	800 PSI 800 PSI	H100-358 H100-376	242.00 242.00
<b>Welded 316 SS diaphragm, 1/2" NPTF pressure connection, 0.06" orifice to dampen pulsations.</b>				
15 to 300 PSI	3 to 18 PSI	2500 PSI	 H100-492	179.00
<b>316 SS bellows and pressure connection.</b>				
100 to 1700 PSI	9.0 to 40.0 PSI	2500 PSI	 H100-680	
<b>311.00S03 SS piston and pressure connection. Buna-N O-ring (not recommended for gas service).</b>				
125 to 3000 PSI	40 to 250 PSI	10000 PSI	 H100-612	208.00

## 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
<b>H117: One 11 Amp SPDT output, Phosphor bronze bellows, 1/4" NPTF brass process connection.</b>				
30" HgVac to 0	2.0 to 5.0" Hg	30 PSI	H117-218	354.00
<b>H117: One 11 Amp SPDT output, Buna-N diaphragm, O-ring, 1/4" NPTF 303 SS process connection. Optional Viton diaphragm.</b>				
3 to 20 PSI 3 to 100 PSI 15 to 500 PSI	1.0 to 4.0 PSI 2.0 to 12 PSI 15 to 30 PSI	1000 PSI 1000 PSI 2500 PSI	H117-700 H117-702 H117-704	\$312.00 312.00 312.00
<b>H117: One SPDT output; welded 316L SS diaphragm, 1/2" NPTF pressure connection, 0.72" orifice for cleanout. NACE-MR-0175 compliant.</b>				
1 to 20 2 to 50	0.1 to 3.0 PSI 0.1 to 5.0 PSI	1000 PSI 1000 PSI	 H117-171  H117-172	458.00 458.00
<b>H117: One SPDT output, integral diaphragm; Viton GLT O-ring, 1/2 NPT process connection.</b>				
1 to 20 4 to 100 8 to 200 50 to 1000 250 to 3500	0.3 to 5.0 PSI 0.5 to 10 PSI 0.5 to 17 PSI 30 to 300 PSI 50 to 500 PSI	1000 PSI 1000 PSI 1000 PSI 7000 PSI 7000 PSI	H117-183 H117-185 H117-186 H117-188 H117-189	565.00 565.00 565.00 391.00 391.00
<b>H117: 1 SPDT output, welded 316L SS diaphragm, 1.5" quick disconnect 316L SS pressure connection. Mates with Tri-Clamp® fitting systems (Not UE-supplied). Designed to meet 3-A Sanitary standard.</b>				
5 to 30 PSI 10 to 100 PSI 15 to 300 PSI	3.0 to 15 PSI 3.0 to 36 PSI 9.0 to 66 PSI	1500 PSI 1500 PSI 1500 PSI	H117-565 H117-566 H117-567	446.00 446.00 446.00
<b>H117: 11 Amp SPDT switch, 316 SS diaphragm, 1/2" NPTF process conn.</b>				
5 to 30 PSI 10 to 100 PSI 15 to 300 PSI 20 to 500 PSI 80 to 1700 PSI	3.0-8.0/10 Max. 3-30/45 Max. 10-40/60 Max. 15-45/75 Max. 5-120/200 Max.	2500 PSI 2500 PSI 2500 PSI 2500 PSI 2500 PSI	H117-190 H117-191 H117-192 H117-193 H117-194	341.00 341.00 341.00 341.00 341.00

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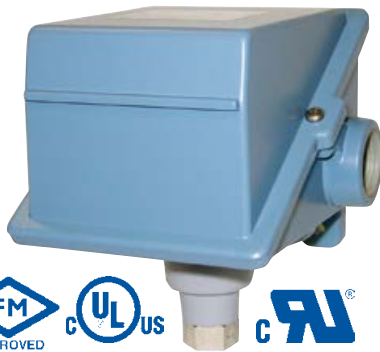
ASCO Solenoid Valves

Pressure Gauges

# UE NEMA 4X Multiswitch Pressure Switches

## Features

- One, two, or three SPDT switch outputs
- Two electrical knockouts and 3/4" NPT connection simplify wiring



## 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:** Epoxy-coated aluminum enclosure, gasketed. Meets NEMA 4X.

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

## Model Selection Guide

Adjustable Range	Deadband (75%/25%)	Proof Pressure	Catalog Number	Price
<b>J400: One SPDT Switch Output, Internal Hex Screw Adjustment</b>				
<b>Welded 316 SS bellows, 1/2" NPTF pressure connection.</b>				
0 to 80" WC	2 to 6" WC	5 PSI	J400-S137B	\$402.00
0 to 20 PSI	0.1 to 0.5 PSI	40 PSI	J400-S146B	402.00
0 to 100 PSI	0.2 to 0.8 PSI	125 PSI	J400-S156B	402.00
0 to 200 PSI	0.3 to 2.0 PSI	200 PSI	J400-S164B	402.00
<b>Welded 316L SS bellows, 1/4" NPTF pressure connection.</b>				
0 to 200 PSI	1.5 to 8 PSI	250 PSI	J400-358	333.00
0 to 300 PSI	2 to 9 PSI	350 PSI	J400-361	333.00
0 to 500 PSI	3 to 12 PSI	575 PSI	J400-376	333.00
<b>Brass bellows with nickel-plated brass 1/4" NPTF pressure connection.</b>				
30" HgVac-20 PSI	0.2" to 1.2" Hg	25 PSI	J400-134	279.00
0 to 20 PSI	0.1 to 0.5 PSI	25 PSI	J400-144	279.00
0 to 30 PSI	0.1 to 0.6 PSI	40 PSI	J400-146	279.00
0 to 100 PSI	0.2 to 0.8 PSI	125 PSI	J400-156	279.00
0 to 200 PSI	0.3 to 2.0 PSI	200 PSI	J400-164	279.00
<b>Phosphor bronze bellows, nickel-plated brass 1/4" NPTF pressure conn.</b>				
0 to 200 PSI	1.5 to 8.0 PSI	250 PSI	J400-270	259.00
<b>Buna-N diaphragm and O-ring, aluminum cap, 1/4" NPTF pressure conn.</b>				
0 to 2" WC	0.07 to 0.25" WC	225 PSI	J400-440	272.00
0 to 20" WC	0.20 to 0.50" WC	225 PSI	J400-442	272.00
0 to 80" WC	0.50 to 1.80" WC	225 PSI	J400-443	272.00
80" WC Vac to 0	1.0 to 3.0" WC	225 PSI	J400-448	272.00
0 to 20" WC	1.0 to 2.0" WC	225 PSI	J400-449	272.00
0-80" WC	1.0 to 3.0" WC	225 PSI	J400-451	255.00
30" HgVac-20 PSI	0.2 to 1" Hg	225 PSI	J400-452	255.00
0 to 20 PSI	0.05 to 0.2 PSI	225 PSI	J400-453	255.00
0 to 30 PSI	0.05 to 0.3 PSI	225 PSI	J400-454	255.00
<b>Teflon diaphragm and O-ring, 316L SS cap, 1/4" NPTF pressure conn.</b>				
30" HgVac-0 PSI	0.1 to 0.6" Hg	225 PSI	J400-550	309.00
0 to 80" WC	1.50 to 3.5" WC	225 PSI	J400-551	309.00
30" HgVac-20 PSI	0.2 to 1.0" Hg	225 PSI	J400-552	309.00
0 to 20 PSI	0.05 to 0.30 PSI	225 PSI	J400-553	309.00
0 to 30 PSI	0.1 to 0.4 PSI	225 PSI	J400-554	309.00
0 to 100 PSI	0.25 to 0.75 PSI	225 PSI	J400-555	309.00

## Popular Options

Option Code	Price
Adjustable Deadband	-1520 \$30.00
Watertight 1/2" Conduit Fitting	-M900 20.00

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

## Model Selection Guide

Adjustable Range	Deadband (75%/25%)	Proof Pressure	Catalog Number	Price
<b>H400: One SPDT Output, Internal Adjustment via Reference Dial</b>				
<b>Welded 316 SS bellows, 1/2" NPTF pressure connection.</b>				
0 to 100 PSI	0.2 to 0.8 PSI	125 PSI	J400-S156B	439.00
<b>Brass bellows with nickel-plated brass 1/4" NPTF pressure connection.</b>				
30" HgVac-0 PSI	0.2 to 0.9" Hg	5 PSI	H400-126	342.00
30" HgVac-20 PSI	0.2 to 1.2" Hg	25 PSI	H400-134	342.00
0 to 80" WC	2 to 6" WC	5 PSI	H400-137	342.00
0 to 100 PSI	0.2 to 0.8 PSI	125 PSI	H400-156	342.00
<b>Buna-N diaphragm, O-ring, aluminum cap, 1/4" NPTF pressure conn.</b>				
0 to 10" WC	0.15 to 0.3" WC	225 PSI	H400-441	322.00
0 to 20" WC	0.2 to 0.5" WC	225 PSI	H400-442	322.00
0 to 20 PSI	0.05 to 0.2 PSI	225 PSI	H400-453	306.00
0 to 30 PSI	0.05 to 0.3 PSI	225 PSI	H400-454	306.00
<b>Teflon diaphragm, O-ring, 316L SS cap, 1/4" NPTF pressure connection.</b>				
0 to 100 PSI	0.25 to 0.75 PSI	225 PSI	H400-555	364.00
<b>J402: Two SPDT Outputs, Internal Hex Screw Adjustment</b>				
<b>Buna-N diaphragm, O-ring with epoxy-coated aluminum 1/2" NPTF pressure connection. Large 0.72" orifice for clean-out purposes.</b>				
10 to 250" WC	0.1 to 10" WC	400 PSI	J402-525	565.00
<b>Welded 316L SS diaphragm, 1/2" NPTF pressure connection. Large 0.72" orifice for clean-out purposes.</b>				
0.5 to 5.0" WC	0.1 to 0.3" WC	100 PSI	J402-533	726.00
<b>Welded 316L SS bellows, 1/2" NPTF pressure connection.</b>				
0 to 80" WC	4.0 to 12" WC	5 PSI	J402-S137B	465.00
0 to 100" WC	0.2 to 0.8" WC	125 PSI	J402-S156B	465.00
0 to 200 PSI	0.6 to 2.4 PSI	200 PSI	J402-S164B	465.00
<b>Welded 316L SS bellows and 1/4" NPTF pressure connection.</b>				
0 to 200 PSI	3.0 to 15.0 PSI	250 PSI	J402-358	352.00
0 to 300 PSI	4.0 to 16.0 PSI	350 PSI	J402-361	352.00
0 to 500 PSI	6.0 to 20.0 PSI	575 PSI	J402-376	352.00
<b>Brass bellows, nickel-plated brass 1/4" NPTF pressure connection.</b>				
30" HgVac-0 PSI	0.4 to 1.6" Hg	5 PSI	J402-126	340.00
30" HgVac-20 PSI	0.4 to 2.0" Hg	25 PSI	J402-134	340.00
0 to 80" WC	2 to 6" WC	5 PSI	J402-137	340.00
0 to 20 PSI	0.2 to 0.6 PSI	25 PSI	J402-144	340.00
0 to 30 PSI	0.2 to 0.8 PSI	40 PSI	J402-146	340.00
0 to 100 PSI	0.4 to 1.6 PSI	125 PSI	J402-156	340.00
0 to 200 PSI	0.6 to 2.4 PSI	200 PSI	J402-164	340.00
<b>Phosphor bronze bellows, nickel-plated brass 1/4" NPTF pressure conn.</b>				
0 to 200 PSI	3.0 to 15.0 PSI	250 PSI	J402-270	286.00
0 to 300 PSI	4.0 to 18.0 PSI	350 PSI	J402-274	286.00
<b>Buna-N diaphragm, O-ring, aluminum cap, 1/4" NPTF pressure conn.</b>				
0 to 20" WC	0.20 to 0.50" WC	225 PSI	J402-442	349.00
0 to 80" WC	0.5 to 1.8" WC	225 PSI	J402-443	349.00
80" WC Vac - 0	1 to 3" WC	225 PSI	J402-448	349.00
0 to 30" HgVac	0.2 to 0.8" Hg	225 PSI	J402-450	322.00
0 to 80" WC	2.0 to 6.0" WC	225 PSI	J402-451	322.00
30" HgVac-20 PSI	0.20 to 2.0" Hg	225 PSI	J402-452	322.00
0 to 20 PSI	0.1 to 0.4 PSI	225 PSI	J402-453	322.00
0 to 30 PSI	0.05 to 0.3 PSI	225 PSI	J402-454	322.00
<b>Teflon diaphragm, O-ring, 316L SS cap, 1/4" NPTF pressure conn.</b>				
30" HgVac-0 PSI	3.0 to 7.0" WC	225 PSI	J402-551	372.00
30" HgVac-20 PSI	0.4 to 2.0" Hg	225 PSI	J402-552	372.00
0 to 20 PSI	0.1 to 0.60 PSI	225 PSI	J402-553	372.00
0 to 30 PSI	0.2 to 0.8 PSI	225 PSI	J402-554	372.00
0 to 100 PSI	0.5 to 1.5 PSI	225 PSI	J402-555	372.00
<b>303 SS piston, Buna-N O-ring, 303SS 1/4" NPTF pressure connection. (Not recommended for gas service.)</b>				
100 to 1000 PSI	30 to 150 PSI	10000 PSI	J402-610	347.00
2 to 3000 PSI	40 to 250 PSI	10000 PSI	J402-612	347.00

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**PRESSURE SWITCHES**

**379** 



**Model Selection Guide**

Adjustable Range	Deadband (75%/25%)	Proof Pressure	Catalog Number	Price
<b>H402: Two SPDT Switch Outputs, Internal Adjustment via Reference Dial</b>				
<b>Brass bellows, nickel-plated brass 1/4" NPTF pressure connection.</b>				
30" HgVac-20 PSI	0.2 to 1.2" Hg	25 PSI	H402-134	422.00
0 to 20 PSI	0.1 to 0.5 PSI	25 PSI	H402-144	422.00
0 to 30 PSI	0.1 to 0.6 PSI	40 PSI	 H402-146	422.00
0 to 100 PSI	0.4 to 1.6 PSI	125 PSI	H402-156	422.00
0 to 200 PSI	0.6 to 2.4 PSI	200 PSI	H402-164	422.00
<b>Teflon diaphragm, O-ring, 316L SS cap, 1/4" NPTF pressure connection.</b>				
0 to 100 PSI	0.25 to 0.75 PSI	225 PSI	H402-553	438.00
<b>Welded 316L SS bellows and 1/4" NPTF pressure connection.</b>				
0 to 500 PSI	6.0 to 20.0 PSI	575 PSI	 H402-376	420.00
<b>Welded 316L SS bellows, 1/2" NPTF pressure connection.</b>				
0 to 100" WC	0.2 to 0.8" WC	125 PSI	 H402-S156B	524.00

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Adjustable Range	Deadband (75%/25%)	Proof Pressure	Catalog Number	Price
<b>J403: Three SPDT Switch Outputs, Internal Hex Screw Adjustment</b>				
<b>316L SS diaphragm, Viton O-ring, 316L SS 1/4" NPTF pressure conn.</b>				
0 to 30 PSI	0.1 to 0.6 PSI	40 PSI	J403-S146B	\$576.00
<b>Brass bellows, nickel-plated brass 1/4" NPTF pressure connection.</b>				
30" HgVac-20 PSI	0.2 to 1.2" Hg	25 PSI	J403-134	421.00
0 to 20 PSI	0.1 to 0.5 PSI	25 PSI	J403-144	421.00
0 to 100 PSI	0.4 to 1.6 PSI	125 PSI	J403-156	421.00
0 to 200 PSI	0.3 to 2 PSI	200 PSI	J403-164	421.00
<b>Buna-N diaphragm, O-ring, aluminum cap, 1/4" NPTF pressure conn.</b>				
30" HgVac-0 PSI	0.1 to 0.4" Hg	225 PSI	J403-450	409.00
0 to 80" WC	2.0 to 6.0" WC	225 PSI	 J403-451	409.00
30" HgVac-20 PSI	0.2 to 1" Hg	225 PSI	J403-452	409.00
0 to 20 PSI	0.05 to 0.2 PSI	225 PSI	J403-453	409.00
<b>Teflon diaphragm, O-ring, 316L SS cap, 1/4" NPTF pressure connection.</b>				
0 to 80" WC	1.5 to 3.5" WC	225 PSI	 J403-551	476.00
0 to 100 PSI	0.5 to 1.5 PSI	225 PSI	J403-555	476.00
<b>H403: Three SPDT Switch Outputs, Internal Adjustment via Reference Dial</b>				
<b>Brass bellows, nickel-plated brass 1/4" NPTF pressure connection.</b>				
30" HgVac-20 PSI	0.2 to 1.2" Hg	25 PSI	H403-134	500.00
0 to 20 PSI	0.1 to 0.5 PSI	25 PSI	H403-144	500.00
0 to 100 PSI	0.4 to 1.6 PSI	125 PSI	H403-156	500.00
0 to 200 PSI	0.3 to 2 PSI	200 PSI	H403-164	500.00

# 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. <i>Not for high cycling use.</i>						
10 to 25	2 to 7	2,500 PSI	12SHSN <b>2</b> A	\$288.00		
15 to 45	3 to 10	2,500 PSI	12SHSN <b>2</b> B	288.00		
25 to 85	5 to 20	2,500 PSI	12SHSN <b>2</b> C	288.00		
50 to 130	7 to 25	2,500 PSI	12SHSN <b>2</b> D	288.00		
100 to 210	8 to 30	2,500 PSI	12SHSN <b>2</b> E	288.00		
160 to 400	10 to 50	2,500 PSI	12SHSN <b>2</b> F	288.00		
275 to 850	40 to 125	2,500 PSI	12SHSN <b>2</b> G	288.00		
5 Amp SPDT Switch. 316 SS Sensor, Kapton (Teflon-coated Polyamid) Diaphragm, Buna-N O-ring. <b>Type 3:</b> 1/2" NPTF Pressure Connection, 1/2" Orifice. <b>Type 4:</b> 1/4" NPTF Pressure Connection, 1/8" Orifice.						
8 to 30	2 to 6	1,000 PSI	12SHSN <b>3</b> A	260.00	12SHSN <b>4</b> A	\$260.00
15 to 55	3 to 8	1,000 PSI	12SHSN <b>3</b> B	260.00	12SHSN <b>4</b> B	260.00
30 to 170	5 to 15	1,000 PSI	12SHSN <b>3</b> C	260.00	12SHSN <b>4</b> C	260.00
100 to 370	15 to 50	1,000 PSI	12SHSN <b>3</b> D	260.00	12SHSN <b>4</b> D	260.00
200 to 700	40 to 90	3,000 PSI	12SHSN <b>3</b> E	260.00	12SHSN <b>4</b> E	260.00
400 to 1500	100 to 250	4,500 PSI	12SHSN <b>3</b> F	260.00	12SHSN <b>4</b> F	260.00
1000 to 3200	100 to 500	10,000 PSI	12SHSN <b>3</b> G	260.00	12SHSN <b>4</b> G	260.00
2000 to 6000	400 to 800	10,000 PSI	12SHSN <b>3</b> H	260.00	12SHSN <b>4</b> H	260.00
5 Amp SPDT Switch. 316 SS Sensor and Diaphragm, Viton O-ring. <b>Type 5:</b> 1/2" NPTF Pressure Connection, 1/2" Orifice. <b>Type 6:</b> 1/4" NPTF Pressure Connection, 1/8" Orifice.						
9 to 35	2 to 7	1,000 PSI	12SHSN <b>5</b> A	274.00	12SHSN <b>6</b> A	277.00
25 to 65	3 to 10	1,000 PSI	12SHSN <b>5</b> B	274.00	12SHSN <b>6</b> B	277.00
50 to 150	5 to 15	1,000 PSI	12SHSN <b>5</b> C	274.00	12SHSN <b>6</b> C	277.00
100 to 350	15 to 50	1,000 PSI	12SHSN <b>5</b> D	274.00	12SHSN <b>6</b> D	277.00
250 to 700	40 to 95	3,000 PSI	12SHSN <b>5</b> E	274.00	12SHSN <b>6</b> E	277.00
400 to 1500	100 to 300	4,500 PSI	12SHSN <b>5</b> F	274.00	12SHSN <b>6</b> F	277.00
1000 to 3200	100 to 500	10,000 PSI	12SHSN <b>5</b> G	274.00	12SHSN <b>6</b> G	277.00
2000 to 6000	400 to 1000	10,000 PSI	12SHSN <b>5</b> H	274.00	12SHSN <b>6</b> H	277.00

**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.



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# 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.

**Don't see the range or material you need? Call us or check [www.Lesman.com](http://www.Lesman.com).**



## Model Selection Guide

Adjustable Range	Deadband	Proof Pressure	Catalog Number	Price
<b>H121: Single SPDT, external adjustment via reference dial, single conduit.</b>				
<b>Brass bellows, nickel-plated brass 1/4" NPTF pressure connection.</b>				
0 to 20 PSI	0.1 to 0.5 PSI	25 PSI	H121-144	\$569.00
0 to 100 PSI	0.2 to 0.8 PSI	125 PSI	H121-156	569.00
<b>Buna-N diaphragm and O-ring with nickel-plated brass 1/4" NPTF pressure connection. (Limited to process temperatures below 200°F.)</b>				
50 to 500 PSI	3 to 12 PSI	2500 PSI	H121-704	454.00
<b>Welded 316L stainless steel bellows, 1/2" NPTF pressure connection.</b>				
0 to 100 PSI	0.2 to 0.8 PSI	125 PSI	H121-S156B	688.00
<b>H122: Dual SPDT, external adjustment via reference dial, single conduit.</b>				
<b>Brass bellows, nickel-plated brass 1/4" NPTF pressure connection.</b>				
0 to 20 PSI	0.2 to 1 PSI	25 PSI	H122-144	726.00
0 to 100 PSI	0.4 to 1.6 PSI	125 PSI	H122-156	726.00
<b>Buna-N diaphragm and O-ring with nickel-plated brass 1/4" NPTF pressure connection. (Limited to process temperatures below 200°F.)</b>				
10 to 100 PSI	2 to 10 PSI	1000 PSI	H122-702	572.00
200 to 1000 PSI	10 to 50 PSI	2500 PSI	H122-705	572.00
<b>316L SS bellows and 1/4" NPTF pressure connection.</b>				
0 to 200 PSI	3.0 to 16 PSI	250 PSI	H122-358	698.00
0 to 300 PSI	4.0 to 18 PSI	350 PSI	H122-361	698.00
0 to 500 PSI	6.0 to 24 PSI	575 PSI	H122-376	698.00
<b>Teflon diaphragm and O-ring, 316 SS cap, 1/4" NPTF pressure connection.</b>				
0 to 20 PSI	0.1 to 0.6 PSI	225 PSI	H122-553	808.00
0 to 100 PSI	0.5 to 1.5 PSI	225 PSI	H122-555	808.00
<b>Buna-N O-ring, 303 SS piston and 1/4" NPTF pressure connection. (Not recommended for gas service).</b>				
125 to 3000 PSI	80 to 500 PSI	10000 PSI	H122-612	704.00
<b>Welded 316L SS bellows and 1/2" NPTF pressure connection.</b>				
0 to 20 PSI	0.2 to 1 PSI	25 PSI	H122-S144B	829.00
0 to 30 PSI	0.2 to 0.6 PSI	40 PSI	H122-S146B	829.00
0 to 100 PSI	0.2 to 0.8 PSI	125 PSI	H122-S156B	829.00
0 to 200 PSI	0.6 to 4.0 PSI	200 PSI	H122-S164B	829.00
<b>J120: Single SPDT switch with internal adjustments, and dual conduits.</b>				
<b>Brass bellows, nickel-plated brass 1/4" NPTF pressure connection.</b>				
30" to 3" HgVac	0.2" to 0.6" Hg	80" WC	J120-126	381.00
0.5 to 20 PSI	0.1 to 0.3 PSI	25 PSI	J120-144	381.00
1 to 50 PSI	0.1 to 0.5 PSI	75 PSI	J120-152	381.00
2 to 100 PSI	0.2 to 0.6 PSI	125 PSI	J120-156	381.00
<b>Buna-N diaphragm and O-Ring, aluminum cap, 1/4" NPTF pressure conn.</b>				
2 to 80" WC	0.8 to 2.0" WC	225 PSI	J120-451	474.00
0.5 to 20 PSI	0.05 to 0.1 PSI	225 PSI	J120-453	474.00
<b>316 SS bellows, 1/4" NPTF pressure connection. (Not recommended for rapid or high cycling pressure changes.)</b>				
100 to 1700 PSI	9.0 to 23.0 PSI	2500 PSI	J120-680	484.00

Adjustable Range	Deadband	Proof Pressure	Catalog Number	Price
<b>J120: Single SPDT switch with internal adjustments, and dual conduits.</b>				
<b>Phosphor bronze bellows, nickel-plated brass 1/4" NPTF pressure conn.</b>				
4 to 200 PSI	1 to 4 PSI	250 PSI	J120-270	345.00
<b>Welded 316L SS bellows, 1/4" NPTF pressure connection.</b>				
0.5 to 20 PSI	0.1 to 0.3 PSI	25 PSI	J120-S144B	558.00
1 to 50 PSI	0.1 to 0.5 PSI	50 PSI	J120-S152B	558.00
2 to 100 PSI	0.2 to 0.6 PSI	125 PSI	J120-S156B	558.00
4 to 200 PSI	0.2 to 1.0 PSI	200 PSI	J120-S164B	558.00
<b>Welded 316L SS bellows, 1/4" NPTF pressure connection.</b>				
15 to 100 PSI	0.7 to 1.8 PSI	800 PSI	J120-356	419.00
15 to 200 PSI	1.0 to 3.0 PSI	800 PSI	J120-358	419.00
20 to 300 PSI	1.0 to 4.0 PSI	800 PSI	J120-361	419.00
25 to 500 PSI	1.5 to 5.0 PSI	800 PSI	J120-376	419.00
<b>Buna-N diaphragm and O-Ring, nickel-plated brass 1/4" NPTF pressure connection. (For process temperature below 200°F.)</b>				
3 to 100 PSI	1.0 to 4.0 PSI	1000 PSI	J120-702	312.00
9 to 300 PSI	1.0 to 5.0 PSI	1000 PSI	J120-703	312.00
30 to 1000 PSI	3.0 to 20.0 PSI	2500 PSI	J120-705	312.00
<b>Teflon diaphragm and O-ring, 316 SS cap, 1/4" NPTF pressure connection.</b>				
2 to 80" WC	1.0 to 4.0" WC	225 PSI	J120-551	534.00
30" HgVac-20psi	0.2 to 0.5" Hg	225 PSI	J120-552	534.00
0.5 to 20 PSI	0.1 to 0.2 PSI	225 PSI	J120-553	534.00
0.8 to 30 PSI	0.1 to 0.3 PSI	225 PSI	J120-554	534.00
2 to 100 PSI	0.2 to 0.4 PSI	225 PSI	J120-555	534.00
<b>Buna-N O-ring, 303 SS piston and 1/4" NPT pressure connection. (Not recommended for gas service).</b>				
125 to 3000 PSI	40 to 250 PSI	10000 PSI	J120-612	425.00
<b>Buna-N diaphragm, O-ring, epoxy-coated aluminum 1/2" NPTF pressure connection, large 0.72" orifice for clean-out purposes.</b>				
2.5" WC	0.1 to 6" WC	400 PSI	J120-524	583.00
<b>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.)</b>				
2 to 50 PSI	0.3 to 3.0 PSI	1000 PSI	J120-184	\$603.00
4 to 100 PSI	0.5 to 6.0 PSI	1000 PSI	J120-185	603.00
8 to 200 PSI	1.0 to 11.0 PSI	1000 PSI	J120-186	603.00
250 to 3500 PSI	50 to 300 PSI	7000 PSI	J120-189	398.00
<b>Welded 316 SS diaphragm, 1/2" NPTF pressure connection. Large 0.72" orifice for clean-out purposes. NACE MR-0175 compliant.</b>				
5 to 30 PSI	1.0 to 6.0 PSI	2500 PSI	J120-190	363.00
10 to 100 PSI	3.0 to 15.0 PSI	2500 PSI	J120-191	363.00
20 to 500 PSI	4.0 to 45.0 PSI	2500 PSI	J120-193	363.00
<b>2" sanitary welded 316L SS diaphragm and pressure connection. For Tri-Clamp® fitting systems. Designed to meet 3-A Sanitary standard.</b>				
5 to 30 PSI	1 to 5 PSI	1500 PSI	J120-565	453.00
10 to 100 PSI	1 to 12 PSI	1500 PSI	J120-566	453.00
15 to 300 PSI	3 to 22 PSI	1500 PSI	J120-567	453.00

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V 12.2016 **DIFFERENTIAL PRESSURE 381** 

## 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

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

**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.

**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.

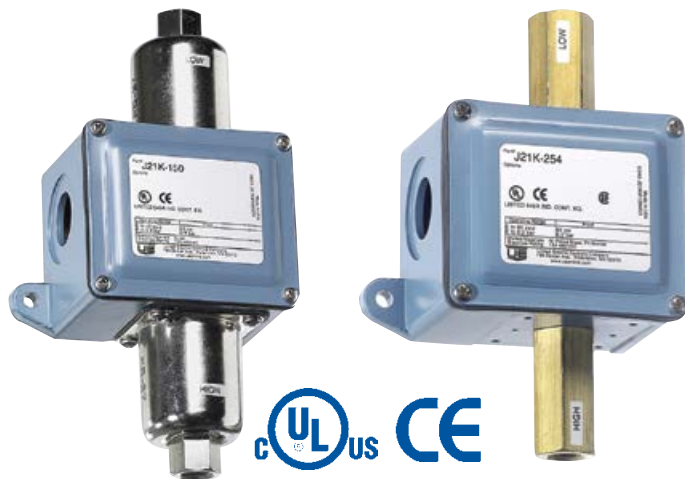
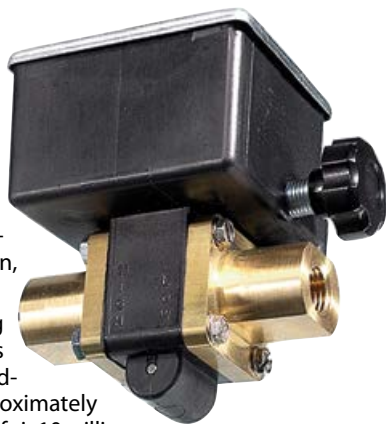
**Media Temperature:** 200°F max. at 100 PSI working pressure

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

**Enclosure:** 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.

**Approvals:** UL Listed, cUL certified, CE



### J21K General Service Differential Pressure Switch

#### 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
<b>One SPDT output, brass bellows, 1/4" NPTF process connection.</b>					
0-6 PSID	0.1-0.4	6 PSID	30"HgVac-30 PSI	J21K-140	\$426.00
0-40 PSID	0.3-0.7	40 PSID	30"HgVac-180 PSI	J21K-150	426.00
1-15 PSID	0.1-0.6	125 PSID	30"HgVac-125 PSI	J21K-16020	441.00
<b>One SPDT output, phosphor bronze bellows, 1/4" NPTF brass process conn.</b>					
0-25 PSID	0.6-1.0	25 PSID	30"HgVac-110 PSI	J21K-232	287.00
0-90 PSID	2.0-4.0	90 PSID	30"HgVac-200 PSI	J21K-254	287.00
<b>One SPDT output, 316 SS bellows, 1/4" NPTF process connection.</b>					
0-70 PSID	2.0-4.0	70 PSID	30"HgVac-350 PSI	J21K-357	410.00
<b>One SPDT output, wetted 316 SS bellows, 1/4" process connection.</b>					
0-6 PSID	0.1-0.4	6 PSID	30"HgVac-30 PSI	J21K-S140B	717.00
0-40 PSID	0.3-0.7	40 PSID	30"HgVac-180 PSI	J21K-S150B	717.00

**Popular Options**  
Adjustable Deadband

**Option Code**  
-1520 **Price**  
\$30.00

#### Model Selection Guide

Adjustable Range	Port Material	Deadband	Catalog Number	Price
1.0 to 10 PSID	Polysulphone	0.75	J 24-011	\$103.00
4.0 to 45.0 PSID	Polysulphone	1.0	J 24-012	103.00
1.0 to 10.0 PSID	Brass	0.75	J 24-013	120.00
4.0 to 45.0 PSID	Brass	1.0	J 24-014	120.00



### 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.



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# Enclosure Type 4X Multiswitch Differential Pressure Switches



Search [www.lesman.com](http://www.lesman.com) for "UE 400"



## 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
<b>J400K: Single SPDT switch output with internal hex screw adjustment.</b>					
<b>Welded 316L stainless steel bellows, 1/2" NPTF pressure connections.</b>					
3 to 30 PSID	0.5 to 2 PSI	300 PSI	30" HgVac to 100 PSI	J400K-S147B	\$779.00
<b>Brass bellows, nickel-plated brass 1/4" NPTF pressure connections.</b>					
3 to 30 PSID	0.5 to 2 PSI	180 PSI	30" HgVac to 100 PSI	J400K-147	551.00
10 to 100 PSID	0.5 to 3 PSI	180 PSI	30" HgVac to 150 PSI	J400K-157	551.00
<b>Buna-N diaphragm and O-ring, aluminum 1/4" NPTF pressure connections.</b>					
5" to 80" WCD	1" to 4" WCD	225 PSI	30" HgVac to 225 PSI	J400K-455	387.00
2 to 20 PSID	0.1 to 0.3 PSI	225 PSI	30" HgVac to 225 PSI	J400K-456	387.00
3 to 30 PSID	0.1 to 0.4 PSI	225 PSI	30" HgVac to 225 PSI	J400K-457	387.00
<b>H400K: Single SPDT switch output with internal adjustment via reference dial.</b>					
<b>Buna-N diaphragm and O-ring, aluminum 1/4" NPTF pressure connections.</b>					
5" to 80" WCD	1" to 4" WC	225 PSI	30" HgVac to 225 PSI	H400K-455	411.00
2 to 20 PSID	0.1 to 0.3 PSI	225 PSI	30" HgVac to 225 PSI	H400K-456	411.00
3 to 30 PSID	0.1 to 0.4 PSI	225 PSI	30" HgVac to 225 PSI	H400K-457	411.00
<b>J402K: Dual SPDT switch output with internal hex screw adjustment.</b>					
<b>Brass bellows with nickel-plated brass 1/4" NPTF pressure connections.</b>					
3 to 30 PSID	0.5 to 2 PSI	180 PSI	30" HgVac to 100 PSI	J402K-147	618.00
10 to 100 PSID	0.5 to 3 PSI	180 PSI	30" HgVac to 150 PSI	J402K-157	618.00
<b>Buna N diaphragm and O-ring, aluminum 1/4" NPTF pressure connections.</b>					
5" to 80" WCD	1" to 4" WC	225 PSI	30" HgVac to 225 PSI	J402K-455	443.00
2 to 20 PSID	0.1 to 0.3 PSI	225 PSI	30" HgVac to 225 PSI	J402K-456	443.00
3 to 30 PSID	0.1 to 0.4 PSI	225 PSI	30" HgVac to 225 PSI	J402K-457	443.00
<b>Kapton diaphragm, Buna-N sealing diaphragms, epoxy-coated aluminum 1/8" NPTF pressure connections.</b>					
2" to 20" WCD	0.5" to 2" WCD	400 PSI	30" HgVac to 200 PSI	J402K-541	749.00
5" to 50" WCD	0.5" to 5" WCD	400 PSI	30" HgVac to 200 PSI	J402K-542	749.00
15" to 100" WCD	0.5" to 7" WCD	400 PSI	30" HgVac to 200 PSI	J402K-543	749.00
2 to 20 PSID	1 to 2.5 PSI	2500 PSI	30" HgVac to 1200 PSI	J402K-544	721.00
5 to 50 PSID	1 to 3 PSI	2500 PSI	30" HgVac to 1200 PSI	J402K-545	721.00
<b>H402K: Dual SPDT switch output with internal adjustment via reference dial.</b>					
<b>Buna N diaphragm and O-ring, aluminum 1/4" NPTF pressure connections.</b>					
5" to 80" WCD	1" to 4" WC	225 PSI	30" HgVac to 225 PSI	H402K-455	513.00
2 to 20 PSID	0.1 to 0.3 PSI	225 PSI	30" HgVac to 225 PSI	H402K-456	513.00
3 to 30 PSID	0.1 to 0.4 PSI	225 PSI	30" HgVac to 225 PSI	H402K-457	513.00
<b>Teflon and Buna-N diaphragms, Buna-N O-ring, aluminum 1/4" NPTF pressure connections.</b>					
10 to 100 PSID	0.2 to 1 PSI	225 PSI	30" HgVac to 225 PSI	H402K-559	528.00



**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 \$105.00

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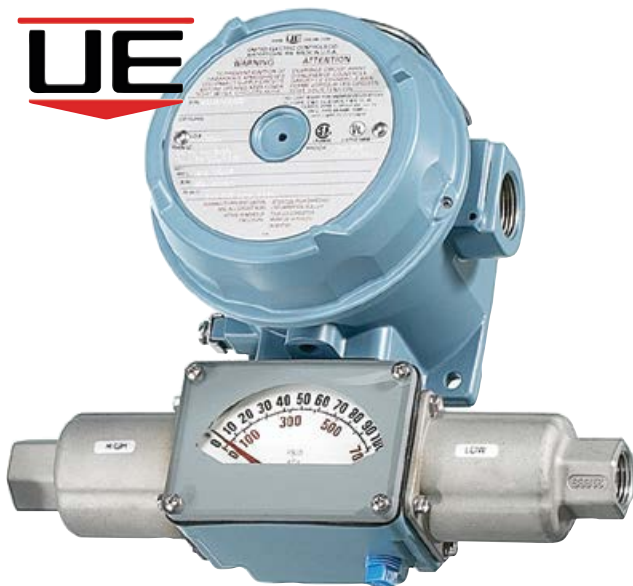


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# Explosion Proof Differential Pressure Switches




Shown here: Model H121K with optional indicator.  
To order the indicator, add suffix -M210 to your model number, and add \$105.00 to the price.

## 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

Search [www.lesman.com](http://www.lesman.com) for "United Electric 120" 

### Model Selection Guide

Adjustable Range	Dead-band	Proof Pressure	Working Pressure Range	Catalog Number	Price	
<b>Internal adjustment, Buna-N diaphragm O-Ring, 1/4" NPT 304 SS process conn.</b>						
3-30 PSID	1.0-5.0	1000 PSI	0-350 PSI	J120K-36	\$581.00	
10-100 PSID	2.0-8.0	1000 PSI	0-500 PSI	J120K-37	581.00	
30-300 PSID	2.0-15.0	2500 PSI	0-1000 PSI	J120K-38	581.00	
50-500 PSID	3.0-20.0	2500 PSI	0-1000 PSI	J120K-39	581.00	
<b>Internal adjustment, brass bellows, 1/4" NPTF process connections. Optional 316 SS bellows 1/2" NPT process connection and 300 psi proof pressure.</b>						
3-30 PSID	0.3-1.5	180 PSI	30"Hg-100 PSI	J120K-147	656.00	
10-100 PSID	0.5-2.0	180 PSI	30"Hg-150 PSI	J120K-157	656.00	
<b>Internal adjustment, stainless steel bellows. 1/4" NPTF process connection.</b>						
10-100 PSID	4.0-10	500 PSI	0-350 PSI	J120K-367	684.00	
<b>Internal adjustment, Buna-N diaphragm, O-ring, 1/4" NPTF aluminum process connection.</b>						
5-80"WC	1-4"WC	225 PSI	30"Hg-255 PSI	J120K-455	554.00	
2-20 PSID	0.1-0.3	225 PSI	30"Hg-225 PSI	J120K-456	554.00	
3-30 PSID	0.1-0.4	225 PSI	30"Hg-225 PSI	J120K-457	554.00	
<b>Internal adjustment, Teflon diaphragm, 1/4" NPTF aluminum process conn.</b>						
10-100 PSID	0.2-1	225 PSI	30"Hg-225 PSI	 J120K-559	593.00	
Adjustable Range	Dead-band	Proof Pressure	Working Pressure Range	Dial Divis.	Catalog Number	Price
<b>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.</b>						
3-30 PSID	0.3-2	180 PSI	0-100 PSI	0.5 PSI	H121K-147	790.00
10-100 PSID	0.5-3	180 PSI	0-150 PSI	2 PSI	H121K-157	790.00
<b>External calibrated dial, tamper resistant cover, Buna-N diaphragm, O-ring, 1/4" NPTF aluminum process connection.</b>						
2-20 PSID	0.1-0.3	225 PSI	30"Hg-225 PSI	0.5 PSI	H121K-456	670.00
2-30 PSID	0.1-0.4	225 PSI	30"Hg-225 PSI	0.5 PSI	H121K-457	670.00
<b>External calibrated dial, tamper resistant cover, Teflon diaphragm, 1/4" NPTF aluminum process connection.</b>						
10-100 PSID	0.2-1.0	225 PSI	30"Hg-225 PSI	2 PSI	H121K-559	687.00

### 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.

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



To Order Option	Add to Catalog Number	Price Adder
Differential Pressure Indicator	-M210	\$105.00

**Don't see what you need?**  
Looking for other ranges, different materials?

Check out the UE application datasheet from [www.Lesman.com/datasheets](http://www.Lesman.com/datasheets) and see all the options we can add to pressure and temperature switches.

Rotary and Smart Actuator Motors

Instrument Valves

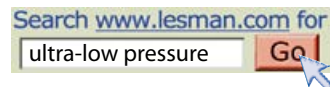
Process Control Accessories

Pressure and Temperature Switches

ASCO Solenoid Valves

Pressure Gauges

# 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

**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
<b>100 Series: General Service, NEMA 4X/IP65 Housing</b>					
0.2 to 7" WC	0.05-0.6" WC	200 PSI	400 PSI	<b>L</b> H100K-540	\$577.00
1 to 20" WC	0.1-1.0" WC	200 PSI	400 PSI	H100K-541	577.00
5 to 50" WC	0.2-2.5" WC	200 PSI	400 PSI	H100K-542	577.00
10 to 200" WC	0.5-8" WC	200 PSI	400 PSI	H100K-543	577.00
2 to 20 PSI	0.1-1.3 PSI	1200 PSI	2500 PSI	H100K-544	553.00
5 to 50 PSI	0.2-2.2 PSI	1200 PSI	2500 PSI	H100K-545	553.00
10 to 125 PSI	0.4-5.0 PSI	1200 PSI	2500 PSI	H100K-546	553.00
50 to 250 PSI	0.8-10 PSI	1200 PSI	2500 PSI	H100K-547	553.00
100 to 500 PSI	2.0-15 PSI	1200 PSI	2500 PSI	H100K-548	553.00
<b>120 Series: Explosion-Proof Flameproof, NEMA 4X, 7, 9; IP66 Housing, Class I and II, Div 1, 2 Approvals; UL Listed, cUL certified, ATEX.</b>					
0.2 to 7" WC	0.05-0.6" WC	200 PSI	400 PSI	J120K-540	757.00
1 to 20" WC	0.1-1.0" WC	200 PSI	400 PSI	J120K-541	757.00
5 to 50" WC	0.2-2.5" WC	200 PSI	400 PSI	J120K-542	757.00
10 to 200" WC	0.5-8" WC	200 PSI	400 PSI	J120K-543	757.00
2 to 20 PSI	0.1-1.3 PSI	1200 PSI	2500 PSI	J120K-544	721.00
5 to 50 PSI	0.2-2.2 PSI	1200 PSI	2500 PSI	J120K-545	721.00
10 to 125 PSI	0.4-5.0 PSI	1200 PSI	2500 PSI	J120K-546	721.00
50 to 250 PSI	0.8-10 PSI	1200 PSI	2500 PSI	J120K-547	721.00
100 to 500 PSI	2.0-15 PSI	1200 PSI	2500 PSI	J120K-548	721.00

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

Illinois, Indiana, Missouri, and Iowa  
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Fax: 262-923-1797

V 12.2016 **TEMPERATURE SWITCHES 385 L**

# UE 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				
<b>800: One SPDT output, 6 ft. 304 SS capillary, bulb</b>					
-180 to 120	-115 to 50	170/75	3/8 x 3 3/4"	800-1BS	\$684.00
-40 to 120	-40 to 50	170/75	3/8 x 6 3/4"	800-4BS	684.00
0 to 250	-20 to 120	300/145	3/8 x 4 1/2"	800-6BS	684.00
0 to 400	-20 to 200	450/230	3/8 x 3"	800-7BS	684.00
50 to 650	10 to 340	700/370	3/8 x 3 1/4"	800-8BS	684.00
<b>820E: One SPDT output, 6 ft. 304 SS capillary, bulb, explosion proof</b>					
0 to 250	-20 to 120	300/145	3/8 x 4 1/2"	820E-6BS	1301.00
0 to 400	-20 to 200	450/230	3/8 x 3"	820E-7BS	1301.00
<b>802: Two SPDT outputs, 6 ft. 304 SS capillary, bulb</b>					
-40 to 120	-40 to 50	170/75	3/8 x 6 3/4"	802-4BS	919.00
-40 to 180	-40 to 80	230/110	3/8 x 5"	802-5BS	919.00
0 to 250	-20 to 120	300/145	3/8 x 4 1/2"	802-6BS	919.00
50 to 650	10 to 340	700/370	3/8 x 3 1/4"	802-8BS	919.00
<b>822E: Two SPDT outputs, 6 ft. 304 SS capillary, bulb, explosion proof</b>					
0 to 250	-20 to 120	300/145	3/8 x 4 1/2"	822E-6BS	1491.00
0 to 400	-20 to 200	450/230	3/8 x 3"	822E-7BS	1491.00



## 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				
<b>E54: Internal reference dial, 6 ft. copper capillary and bulb.</b>					
0 to 150	-15 to 65	200/90	3/8" x 6 7/8"	E54-D21BC	\$252.00
50 to 300	10 to 150	350/175	3/8" x 4 1/2"	E54-D22BC	252.00
150 to 650	70 to 340	700/370	3/8" x 3 5/8"	E54-D23BC	252.00
<b>E54: 6 ft. stainless steel capillary.</b>					
50 to 300	10 to 150	350/175	3/8" x 4 1/2"	E54-D22BS	285.00
150 to 650	70 to 340	700/370	3/8" x 3 5/8"	E54-D23BS	285.00
<b>C54: Internal adjustment via hex nut, brass immersion stem, 3/8" NPT conn.</b>					
0 to 225	-15 to 110	250/120	2 1/8" Stem BT	C54-103	162.00
<b>B54: Internal reference scale, brass immersion stem, 3/8" NPT conn.</b>					
0 to 225	-15 to 100	250/120	2 1/8" Stem BT	B54-103	186.00
200 to 425	95 to 220	425/220	2 1/8" Stem BT	B54-109	186.00
<b>B54S: Skeleton construction, immersion stem, adjustment with reference dial.</b>					
0 to 225	-15 to 110	250/120	2 1/8" Stem BT	B54S-103	163.00

Rotary and Smart Actuator Motors

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Pressure and Temperature Switches

ASCO Solenoid Valves

Pressure Gauges

# NEMA 4X, 7, and 9 Temperature Switches

## 100 Series Temperature Switch

### Specifications

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

**Setpoint Repeatability:** ±1% of adjustable range.

**Deadband:** Typically 1% range under lab conditions.

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

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

**Special Versions:** Designed specifically for heat tracing and freeze protection. Specifications are same as above except: B100-13546 has a 22 Amp switch and stainless steel stem. E100-13545 has a 22 Amp switch and a 10' stainless steel capillary.

**Approvals:** UL listed; cUL certified.



Search [www.lesman.com](http://www.lesman.com) for "United Electric 100"

### Model Selection Guide

Adjustable Range		Max. Temp. °F/°C	Bulb Size OD x Length	Catalog Number	Price
°F	°C				
<b>E100: SPDT output, 6 ft. copper capillary and bulb, and internal reference dial.</b>					
-120 to 100	-85 to 35	150/66	3/8" x 2 7/16"	E100-2BCA	\$297.00
30 to 250	0 to 120	300/149	3/8" x 2 7/16"	E100-2BCB	289.00
100 to 400	35 to 200	450/232	3/8" x 2 1/8"	E100-3BC	289.00
350 to 640	175 to 335	690/366	3/8" x 3 1/4"	E100-8BC	289.00
<b>E100: SPDT output, 6 ft. SS capillary and bulb, and internal reference dial.</b>					
-20 to 80	-28.9 to 26.7	130/54.4	3/8" x 5"	E100-5BS	330.00
100 to 400	35 to 200	450/232	3/8" x 2 1/8"	E100-3BS	330.00
<b>E100: SPDT output, internal reference dial, 10 ft. SS capillary and bulb, NEMA 4X with epoxy polyamid enclosure coating.</b>					
30 to 250	0 to 120	300/149	3/8" x 2 7/16"	E100-2BSB	320.00
<b>E100: For freeze protection — With 10 ft. SS capillary. Heat Trace.</b>					
25 to 325	Heat Trace	360/182	1/8" x 11 5/8"	E100-13545	313.00
<b>F100: SPDT output, uncalibrated internal adjustment, 6 ft. copper capillary and bulb.</b>					
-40 to 180	-40 to 80	230/110	3/8" x 5"	F100-5BC	265.00
0 to 250	-20 to 120	300/145	3/8" x 4 1/2"	F100-6BC	265.00
0 to 400	-20 to 200	450/230	3/8" x 3"	F100-7BC	265.00
<b>F100: SPDT output, uncalibrated internal adjustment, 6 ft. SS capillary and bulb.</b>					
-125 to 350	-85 to 175	400/200	3/8" x 2 7/16"	F100-2BS	296.00
0 to 250	-20 to 120	300/145	3/8" x 4 9/32"	F100-6BS	296.00
0 to 400	-20 to 200	450/230	3/8" x 3"	F100-7BS	296.00
50 to 650	10 to 340	700/370	3/8" x 3 1/4"	F100-8BS	296.00
<b>C100: SPDT output, internal uncalibrated adjustment, 1/2" NPT brass immersion stem.</b>					
0 to 225	-15 to 105	275/135	1 7/8" Stem BT	C100-120	251.00
200 to 425	95 to 215	475/245	1 7/8" Stem BT	C100-121	251.00
<b>B100: SPDT output, internal reference scale, 1/2" NPT brass immersion stem.</b>					
0 to 225	-15 to 105	275/135	1 7/8" Stem BT	B100-120	275.00
200 to 425	95 to 215	475/245	1 7/8" Stem BT	B100-121	275.00
<b>B100: Freeze protection, 1/2" NPT SS stem, 9/16" OD X 2 11/16" length.</b>					
15 to 40	Heat Trace	160/71	2 11/16" Stem BT	B100-13546	292.00

## 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	\$260.00	
5 Amp Electrical Rating	H	0.00	
1 Amp Electrical Rating	L	10.00	
Output	SPDT	0.00	
	DPDT	35.00	
Conn- ection	1/2" NPTM Electrical Conduit	N	0.00
	M20 Electrical Conduit	M	0.00
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	13.00
	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.

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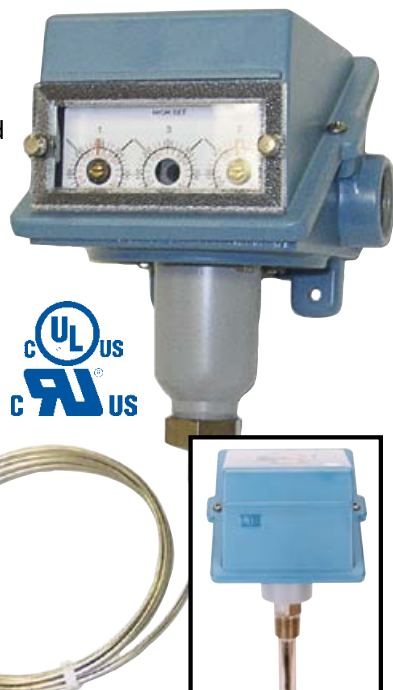
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# Multi-Switch NEMA 4X Temperature Switch

## 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



Search [www.lesman.com](http://www.lesman.com) for

"UE 400 Series"







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



## 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).

## Model Selection Guide

Adjustable Range		Max. Temp. °F/°C	Stem Length	Catalog Number	Price
°F	°C				
<b>B400: One SPDT output, 1/2" NPT brass immersion stem, internal reference dials.</b>					
0 to 225	-15 to 105	275/135	1 7/8" BT	 B400-120	\$405.00
<b>B402: Two SPDT outputs, 1/2" NPT brass immersion stem, internal reference dials.</b>					
0 to 225	-15 to 105	275/135	1 7/8" BT	B402-120	422.00
200 to 425	95 to 215	475/245	1 7/8" BT	B402-121	422.00
<b>B403: 3 SPDT outputs, 1/2" NPT brass immersion stem, internal reference dials.</b>					
0 to 225	-15 to 105	275/135	1 7/8" BT	 B403-120	515.00
<b>C400: SPDT output, 1/2" NPT brass connect stem, internal uncalibrated adjustment.</b>					
0 to 225	-15 to 105	275/135	1 7/8" BT	 C400-120	349.00
<b>C402: 2 SPDT outputs, 1/2" NPT brass connect stem, internal uncalibrated adjustment.</b>					
0 to 225	-15 to 105	275/135	1 7/8" BT	 C402-120	363.00
200 to 425	95 to 215	475/245	1 7/8" BT	C402-121	363.00
<b>C403: 3 SPDT outputs, 1/2" NPT brass connect stem, internal uncalibrated adjustment.</b>					
0 to 250	-15 to 105	275/135	1 7/8" BT	C403-120	485.00
Adjustable Range		Max. Temp. °F/°C	Bulb Size OD x Length	Catalog Number	Price
°F	°C				
<b>E400: SPDT output, internal reference dial, 6 ft. 304 SS capillary and bulb.</b>					
30 to 250	0 to 120	300/150	3/8" x 2 5/8"	E400-2BSB	490.00
100 to 400	35 to 200	450/230	3/8" x 2 1/8"	E400-3BS	490.00
<b>E402: 2 SPDT outputs, internal reference dial, 6 ft. 304 SS capillary and bulb.</b>					
30 to 250	0 to 120	300/150	3/8" x 2 5/8"	 E402-2BSB	520.00
100 to 400	35 to 200	450/230	3/8" x 2 1/8"	E402-3BS	520.00
<b>F400: SPDT output, 6 ft. 304 SS capillary and bulb, internal uncalibrated adjustment.</b>					
-125 to 350	-85 to 175	400/200	3/8" x 2 7/16"	F400-2BS	445.00
0 to 250	-20 to 120	300/145	3/8" x 4 1/2"	F400-6BS	445.00
0 to 400	-20 to 200	450/230	3/8" x 3"	 F400-7BS	445.00
50 to 650	10 to 340	700/300	3/8" x 3 1/4"	F400-8BS	445.00
<b>F402: 2 SPDT outputs, 6 ft. 304 SS capillary and bulb, internal uncalibrated adjustment.</b>					
0 to 250	-20 to 120	300/145	3/8" x 4 1/2"	F402-6BS	460.00
0 to 400	-20 to 200	450/230	3/8" x 3"	F402-7BS	460.00
50 to 650	10 to 340	700/300	3/8" x 3 1/4"	F402-8BS	460.00

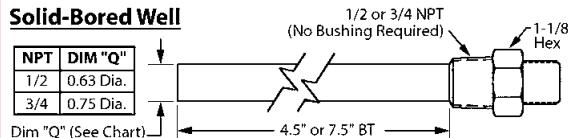
Call for factory-set switches. Specify setpoint and increasing or decreasing temperature.




## 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

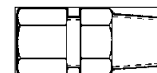




Material	"U" Length	Catalog Number	Price
Brass	4" BT, 1/2" NPT	SD6225-191	\$49.00
Brass	4" BT, 3/4" NPT	 SD6225-75	61.00
Brass	7" BT, 1/2" NPT	SD6225-192	53.00
316 SS	4.5" BT, 3/4" NPT	 SD6225-76	115.00
316 SS	7.5" BT, 3/4" NPT	SD6225-119	135.00
316 SS	7.5" BT, 1/2" NPT	SD6225-177	130.00
316 SS	4.5" BT, 1/2" NPT	 SD6225-193	108.00

### Separable Wells for Immersion Stem-Type Switches

Material	Pipe Thread	"U" Length	Catalog Number	Price
<b>For Series 100, 117, 120 and 400 Only</b>				
Brass	3/4" NPT	1 23/32" BT	SD6225-139	\$48.00
316 SS	3/4" NPT	1 23/32" BT	 SD6225-140	85.00
<b>54 Series Only</b>				
Brass	1/2" NPT	1 9/16" BT	SD6225-141	40.00
316 SS	1/2" NPT	1 9/16" BT	SD6225-146	80.00

### Fabricated Union Connectors for All Remote Bulb Temperature Controls



Material	Pipe Thread	Catalog Number	Price
Brass	1/2" NPT	 SD6213-51	\$34.00
Brass	3/4" NPT	SD6213-45	42.00
304 SS	1/2" NPT, 3/4" Bushing	SD6213-28	75.00
304 SS	1/2" NPT	 SD6213-50	50.00
304 SS	3/4" NPT	SD6213-46	68.00

Rotary and Smart Actuator Motors

Instrument Valves

Process Control Accessories

Pressure and Temperature Switches

ASCO Solenoid Valves

Pressure Gauges

# 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

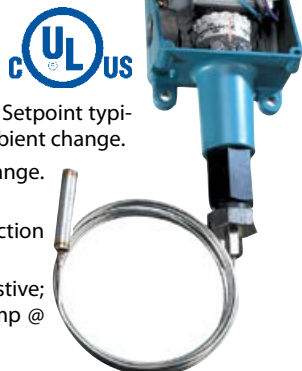
**Ambient Temperature Limits:** -40° to 160°F. Setpoint typically shifts less than 1% range for a 50°F ambient change.

**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.



Search [www.lesman.com](http://www.lesman.com) for "United Electric 117"

### Model Selection Guide

Adjustable Range		Max Temp °F/°C	Bulb OD x Length	Catalog Number	Price
°F	°C				
<b>E117: Internal reference, 6 ft. 304 SS capillary and bulb. 1 SPDT output.</b>					
-120 to 100	-85 to 35	150/65	3/8" x 2 7/16"	E117-2BSA	\$452.00
30 to 250	0 to 120	300/150	3/8" x 2 7/16"	E117-2BSB	452.00
100 to 400	35 to 200	450/230	3/8" x 2 1/8"	E117-3BS	452.00
350 to 640	175 to 335	690/365	3/8" x 3 1/4"	E117-8BS	452.00
Adjustable Range		Max Temp °F/°C	Stem Length	Catalog Number	Price
°F	°C				
<b>B117: Internal reference dial, nickel-plated brass immersion stem, 1 SPDT output and 1/2" NPT connection.</b>					
0 to 225	-15 to 105	275/135	1 7/8" BT	B117-120	381.00
200 to 425	95 to 215	475/245	1 7/8" BT	B117-121	381.00



**Need an intrinsic safety barrier? Call Lesman.**

## 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 347 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				
<b>F120: One SPDT output, internal adjustment, 304 SS bulb, 6 ft. capillary.</b>					
-125 to 350	-85 to 175	400/200	3/8" x 2 7/16"	F120-2BS	\$510.00
-40 to 120	-40 to 50	170/75	3/8" x 6 3/4"	F120-4BS	510.00
0 to 250	-20 to 120	300/145	3/8" x 4 1/2"	F120-6BS	510.00
0 to 400	-20 to 200	450/230	3/8" x 3"	F120-7BS	510.00
50 to 650	10 to 340	700/370	3/8" x 3 1/4"	F120-8BS	510.00
<b>E121: One SPDT output, external calibrated reference scale, 304 SS bulb and 6 ft. capillary.</b>					
-20 to 80	-30 to 25	130/55	3/8" x 5"	E121-5BS	622.00
25 to 100	-5 to 35	150/65	3/8" x 6 3/4"	E121-4BS	622.00
30 to 250	0 to 120	300/150	3/8" x 2 7/16"	E121-2BSB	622.00
100 to 400	35 to 200	450/230	3/8" x 2 1/8"	E121-3BS	622.00
350 to 640	175 to 335	690/395	3/8" x 3 1/4"	E121-8BS	622.00
25 to 325	Heat Trace	360/182	1/4" x 10 1/4"	E121-13273	547.00
<b>E122: Two SPDT outputs, external calibrated reference scale, 304 SS bulb and 6 ft. capillary.</b>					
25 to 100	-5 to 35	150/65	3/8" x 6 3/4"	E122-4BS	673.00
30 to 250	0 to 120	300/150	3/8" x 2 7/16"	E122-2BSB	673.00
100 to 400	35 to 200	450/230	3/8" x 2 1/8"	E122-3BS	673.00
350 to 640	175 to 335	690/395	3/8" x 3 1/4"	E122-8BS	673.00
Adjustable Range		Max Temp °F/°C	Stem Length	Catalog Number	Price
°F	°C				
<b>B121: One SPDT output, 1/2" NPT connection, external calibrated reference scale, tamper-resistance cover, nickel-plated brass immersion stem.</b>					
0 to 225	-15 to 105	275/135	1 7/8" BT	B121-120	\$491.00
200 to 425	95 to 215	475/245	1 7/8" BT	B121-121	491.00
15 to 140	*	160/71	2 11/16" BT ‡	B121-13272	465.00
<b>B122: Two SPDT outputs, 1/2" NPT connection, external calibrated reference scale, tamper-resistance cover, nickel-plated brass immersion stem.</b>					
0 to 225	-15 to 105	275/135	1 7/8" BT	B122-120	642.00
200 to 425	95 to 215	475/245	1 7/8" BT	B122-121	642.00
<b>C120: One SPDT output, 1/2" NPT connection, internal adjustment and nickel-plated brass immersion stem.</b>					
0 to 225	-15 to 105	275/135	1 7/8" BT	C120-120	411.00
200 to 425	95 to 215	475/245	1 7/8" BT	C120-121	411.00

‡ 9/16" O.D. stainless steel stem

\* Freeze protection.