

Product Bulletin

# KLIXON

## 25PS, 42PS, 44PS, 45PS and 46PS Series Pressure Switches



### Key Features

- SPST or SPDT switch with normally open or closed contacts
- Electrically rated to 600 Vac (44/45PS)
- High cycle life capability (42/44PS)
- Factory calibrated pressure setpoints from vacuum to 750 psig
- Snap-acting stainless steel hermetically sealed sensor
- Available with environmentally sealed switch
- High current capability

The 25PS series is an automatic reset pressure switch designed to meet a broad variety of application requirements. This series is avail-

able in SPST and SPDT, offers a variety of pressure settings, port fittings and electrical connections.

### Applications

This line of pressure switches is designed for direct control of motors and other demanding loads requiring precise pressure settings.

Extended electrical capacities and life cycles, in both environmentally sealed and unsealed configurations, encourage usage in the most rigorous fan cycling and high/low pressure protection applications.

The 46PS pressure switch is capable of breaking 2 amp loads at 480 Vac

for 2.5 million cycles.† In applications such as split room air conditioning systems, the 46PS as a head pressure control can result in significant cost savings when used instead of a pilot duty switch and relay.

### Operation

The snap-acting stainless steel diaphragm reverses its curvature when pressurized to a customer specified value. When the disc snaps, it opens or closes a set of electrical contacts by means of a transfer pin. Resetting the switch occurs automatically when pressure drops below a preset value.

### Product Selection Matrix

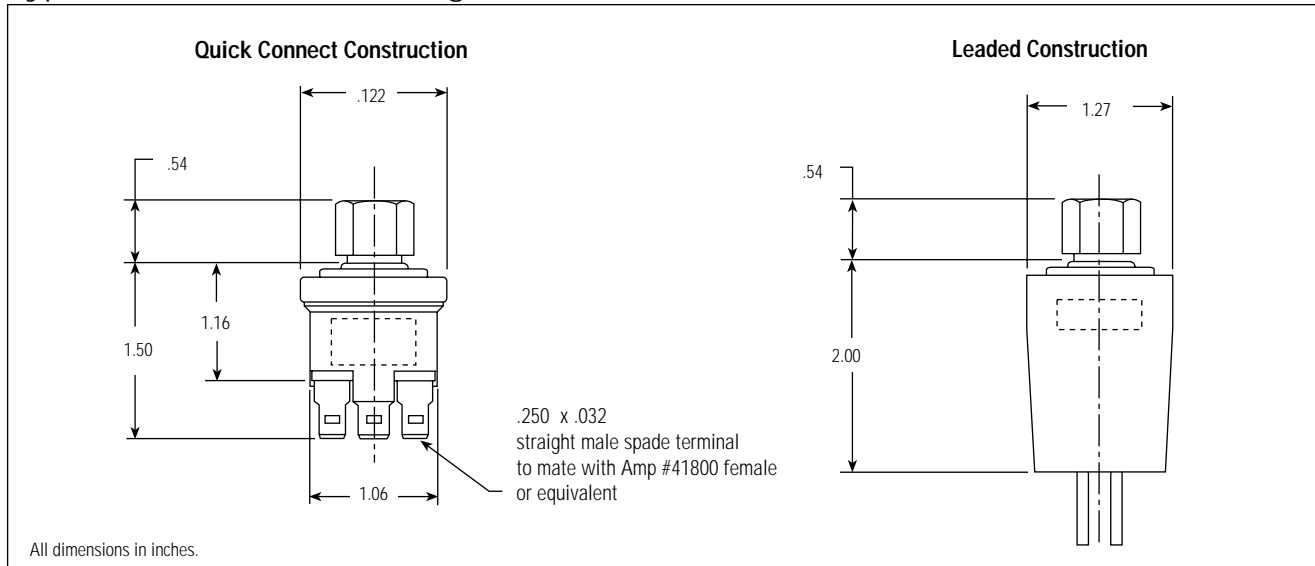
Switch Life Cycles	Application Voltage	Environmental Package	Model Number – Termination
250,000	480 - 600 Vac	Sealed	44PS - Wire Leads
		Unsealed	44PS - 1/4" Quick Connects
	28 Vdc - 240 Vac	Sealed	44PS - Wire Leads
		Unsealed	42PS - Wire Leads or 1/4" Quick Connects
100,000	480 - 600 Vac	Sealed	45PS - Wire Leads
		Unsealed	45PS - 1/4" Quick Connects
	28 Vdc - 240 Vac	Sealed	45PS - Wire Leads
		Unsealed	25PS - Wire Leads or 1/4" Quick Connects
2,500,000†	480 Vac	Sealed	46PS - Wire Leads
		Unsealed	46PS - Wire Leads or 1/4" Quick Connects
	120 Vac - 240 Vac	Sealed	46PS - Wire Leads
		Unsealed	46PS - Wire Leads or 1/4" Quick Connects

†Qualified by application current. Requires TI/customer specification closure and validation testing before application approval.

## Electrical Ratings

Device	Switch Type**	5-28 Vdc	120 Vac				240 Vac				480 Vac		600 Vac	
		Amps Inductive	Amps Res	F L A	L R A	VA Pilot Duty	Amps Res	F L A	L R A	VA Pilot Duty	F L A	L R A	F L A	L R A
25/42PS SPST	NO	15	13	13	65	480	10	10	45	720	-	-	-	-
	NC	15	25†	13	60	480	25†	10	45	720	-	-	-	-
25/42PS SPDT	NO	15	10	5.8	34.8	278	5	2.9	17.4	278	-	-	-	-
	NC	15	25†	13	60	480	25†	10	45	720	-	-	-	-
44/45/46PS SPST	NO	15	13	13	65	480	10	10	45	720	4	24	3.2	19.2
	NC	15	25†	13	60	480	25†	10	45	720	4	24	3.2	19.2
44/45PS SPDT	NO	15	10	5.8	34.8	278	5	2.9	17.4	278	-	-	-	-
	NC	15	25†	13	60	480	25†	10	45	720	-	-	-	-

## Typical Dimensional Drawings - 25PS, 42PS, 44PS, 45PS, 46PS



## Design Specifications - 25PS, 42PS, 44PS, 45PS, 46PS

Operating Pressure: Vacuum to 750 psig

Burst Pressure: 5000 psig

Life at rated Current: 100,000 Cycles (25/45PS)  
250,000 Cycles (42/44PS)  
2,500,000 Cycles (46PS) †

Dielectric Strength: 750 Vrms across open contacts  
1554 Vrms terminals to fitting (25/42PS)  
2200 Vrms terminals to fitting (44/45/46PS)

Ambient Temperature: -20°F to 150°F / -28.9°C to 65.6°C (Leaded)  
-40°F to 275°F / -40°C to 135°C (QuickConnect)

Fluid Temperature: -65°F to 275°F / -53.9°C to 135°C

Agency Approvals: UL Recognized File No. SA995  
U.S. Guide No. SDFY2 / Canada No. SDFY8  
PED CE0035 Module B/D  
ENEC Certified  
IP67 (Leaded)

## Standard Pressure Ranges

Upper Setpoint***	Differential Range <sup>Δ</sup>	Minimum Tolerance
10* Hg Min - 18 psig	50 - 70	Contact TI
15-50 psig	45 - 60	5
51-120 psig	50 - 70	7
121-250 psig	60 - 75	10
251-350 psig	60 - 75	10
351-500 psig	65 - 80	10
501-750 psig	70 - 80	15

\*SPST - single pole, single throw.  
SPDT - single pole, double throw

\*\*Switch logic at atmospheric pressure

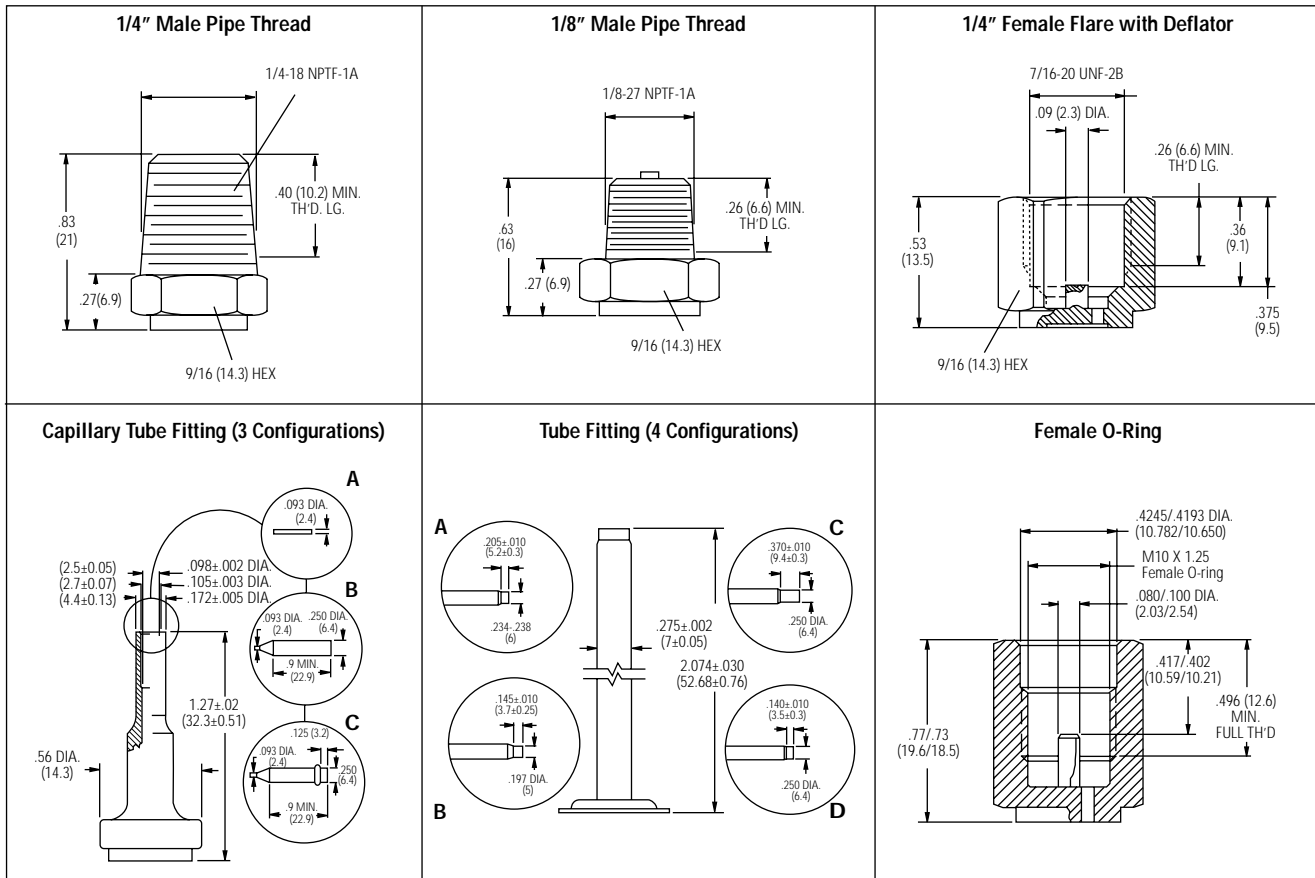
\*\*\*Maximum UL recognized pressure rating is 750 psig; non-UL ratings to 1000 psig.

† 25 amp rating for 25PS and 45PS only. For 42PS and 44PS, NC ratings same as NO ratings. Note 18 AWG.

†† Qualified by application current. Validation testing required.

Δ Differential = (Lower Setpoint / Upper Setpoint) x 100

Standard Fittings, others are available



## Complete Product Directory of Texas Instruments Hermetic Pressure Switches

Model	Switch Operation	Switch Configuration	Application Voltage	Electrical Current	Switch Life Cycles (K)	Features
<b>DC Voltage (&lt;28V), Low Current</b>						
36PS	Auto Reset	SPST	5-28 Vdc	5-400 mA	1,000	Narrow differential, tight tolerance
40PS	Auto Reset	SPST	5-28 Vdc	5-400 mA	>250	Dry circuit capability, extended life cycle
20PS	Auto reset	SPST	5-28 Vdc	5-400 mA	>100	Dry circuit capability, extended life cycle
<b>DC Voltage (&lt;28V), High Current</b>						
36PS	Auto Reset	SPST	5-28 Vdc	400 mA-2 A	250	Narrow differential, tight tolerance
39PS	Auto Reset	SPST	5-28 Vdc	400 mA-2 A	250	Extended life cycle
41PS	Auto Reset	SPST	5-28 Vdc	400 mA-2 A	250	High current loads
25PS	Auto Reset	SPST, SPDT	28 Vdc	15 A	100	High current loads
42PS	Auto Reset	SPST, SPDT	28 Vdc	15 A	250	Extended life cycles at high current
44PS	Auto Reset	SPST, SPDT	28 Vdc	15 A	250	Extended life cycles, sealed configuration
45PS	Auto Reset	SPST, SPDT	28 Vdc	15 A	100	High current in sealed configuration
<b>AC Voltage (&lt;240V), Low Current</b>						
20PS	Auto Reset	SPST	120/240 Vac	5.8/2.9 A	100	High current loads
29PS	Manual Reset	SPST	120/240 Vac	6.0/2.9 A	10	Trip free manual reset
36PS	Auto Reset	SPST	120/240 Vac	5.8/2.9 A	100	Narrow differential, tight tolerance
PS80	Auto Reset	SPST	240 Vac	6.0 A	100	Small, lightweight
<b>AC Voltage (&lt;240V), High Current</b>						
25PS	Auto Reset	SPST, SPDT†	120/240 Vac	13/10 A	100	High current loads
42PS	Auto Reset	SPST, SPDT	120/240 Vac	13/10 A	250	Extended life cycles
44PS	Auto Reset	SPST, SPDT†	120/240 Vac	13/10 A	250	Extended life cycles, sealed configuration
45PS	Auto Reset	SPST, SPDT†	120/240 Vac	13/10 A	100	High current in sealed configuration
46PS	Auto Reset	SPST, SPDT†	120/240 Vac	13/10 A	1,000+	Extended cycle life†
<b>High AV Voltage (&lt;600V), High Current</b>						
44PS	Auto Reset	SPST	480/600 Vac	4.0/3.2 A	250	Extended cycle life at high voltage
45PS	Auto Reset	SPST	480/600 Vac	4.0/3.2 A	100	High voltage capability
46PS	Auto Reset	SPST	480 Vac	2 A	1,000+	Extended cycle life†

†Normally open contact on double throw switch is rated 5.8/2.9 Amps. Contact Marketing for additional product information.

Sample Request Data Form *(Please complete as much as possible)*

Company Name and Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contact \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ Email \_\_\_\_\_

Description of Application \_\_\_\_\_  
\_\_\_\_\_

Exact Function of Switch in System \_\_\_\_\_

Cut In Pressure \_\_\_\_\_ Tolerance \_\_\_\_\_ Cut Out Pressure \_\_\_\_\_ Tolerance \_\_\_\_\_

Pressure Port Fitting \_\_\_\_\_ Switch Termination \_\_\_\_\_

Wire Lead Termination (e.g., 1/2 inch strip, 1/4 inch female Q.C, etc.) \_\_\_\_\_

Sustained System Pressure \_\_\_\_\_ Peak System Pressure \_\_\_\_\_

Switch Logic (Contacts to open / close on Pressure Rise) \_\_\_\_\_

Volts (AC/DC) \_\_\_\_\_ Amps \_\_\_\_\_ Inductive / Resistive \_\_\_\_\_

Cycle Life Requirement \_\_\_\_\_ Operating Temperature \_\_\_\_\_

Allowable Drift Over temperature / Life \_\_\_\_\_

Switch Environment (Protected/Unprotected) \_\_\_\_\_

Agency Approvals (UL, VDE, TUV, ?) \_\_\_\_\_ Estimated Annual Volume \_\_\_\_\_

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