PS61 – OEM Subminiature Pressure Switch

- 10 to 4,350 psi (0.7 to 300 bar)
- Exceptional Size-to-Pressure-Range Ratio
- Perfect for Demanding Applications

Available with enhanced ingress protection and integral electrical connections. These subminiature pressure switches are suitable for a wide range of hydraulic and pneumatic applications including medical, general industrial, fire suppression, and off highway vehicle.

Specifications

Switch*	100 VA Max.
Repeatability	See Table 2
Deadband	See Table 2
Wetted Parts (Pressure Range Codes 10-60)	
Diaphragm	Low-Temp Nitrile (optional FKM or EPDM)
Fitting	Zinc-Plated Steel (316 L Stainless Steel available)
Wetted Parts (Pressure Range Codes 70-100)	
Seal	Low-Temp Nitrile (optional FKM or EPDM)
Piston	Hardened alloy steel
Bearing	Proprietary plastic resistant to almost all chemicals
Fitting	Zinc-Plated Steel
Temperatures	
Fluid	See Table 1
Ambient	-40°F to +250°F (-40°C to +121°C)
Storage	-65°F to +275°F (-54°C to +135°C)
Vibration	
Sinusoidal	MIL-STD-202G, Method 204D, 173m²/sec, 91-2000Hz, 8 hours/axis
Random	MIL-STD-202G, Method 214A, 146m²/sec, 5-2000 Hz, 8 hours/axis
Shock, Operating	MIL-STD-202G, Method 213B, 500m²/sec, 18X
Salt Spray	ASTM B117, 95°F (35°C) for 96 hours
Thermal Shock	-40°F to +250°F (-40°C to +121°C), 1 hour dwells, 1 minute change, 15 cycles
Approvals	CE, RoHS

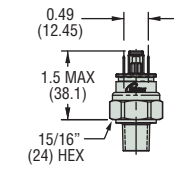
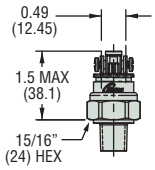
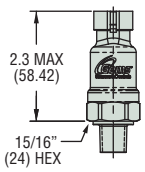
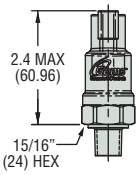
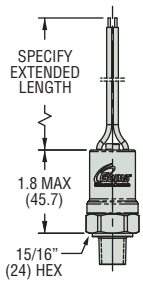
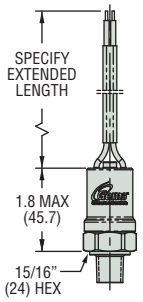
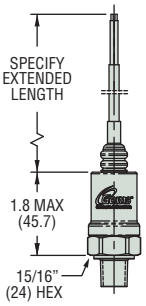
* Gold contacts (option G) may be required for less than 12 VDC and 20 mA.

Table 1 – Recommended Fluid Temperature Limits

Seal Material	Range
Nitrile (Pressure Range Codes 10-60)	-22°F to +250°F (-30°C to +121°C)
Nitrile (Pressure Range Codes 70-100)	15°F to 250°F (-9°C to +121°C)
FKM	0°F to 250°F (-18°C to +121°C)
EPDM	-10°F to +250°F (-23°C to +121°C)

Notes:
1. Switches may function below the cold temperature limit but the set points and deadband will increase. Consult factory for details.
2. Temperature performance is dependent on set point and fluid viscosity (fluids must remain free flowing liquids for Ranges 70-100).
3. Ranges 70-100 not recommended for use with gases.

Electrical Connectors

	1/4˝ Spade	6-32 Terminal Screws	Amp Superseal 1.5	Deutsch DT04-2P	Flying Leads	Flying Leads with Shrink Tubing	Cable
inch (mm)							
Ingress Protection	IP00		IPX7 Per IEC 60529 (1 Meter Submergence) IPX9K Per DIN40050-9 (High Pressure/High Temperature Washdown) IP6KX Per DIN40050-9 (Inorganic Dust Intrusion)				

How To Order

Use the **Bold** characters from the chart below to construct a product code. Please reference Notes.

PS61 -10 -4MNZ -A -SP -X-X-XX
(1) (2) (3) (4) (5)

(1) Pressure Range Code
Insert Pressure Range Code from Table 2, below.

(2) Pressure Fitting[1]
12L14 Zinc-Plated Steel
-2MNZ = 1/8˝ NPT Male
-4MNZ = 1/4˝ NPT Male
-2MGZ = 1/8˝ BSP G Style Male (Range 10-60 Only)
-4MGZ = 1/4˝ BSP G Style Male
-4MSZ = 7/16˝-20 SAE J1926-2
-6MSZ = 9/16˝-18 SAE J1926-2
-M10Z = M10 x 1.0 ISO 6149-2
-M12Z = M12 x 1.5 ISO 6149-2
-M14Z = M14 x 1.5 ISO 6149-2

316 Stainless Steel (Range 10-60 Only[2])
-2MNS = 1/8˝ NPT Male
-4MNS = 1/4˝ NPT Male
-4MGS = 1/4˝ BSP G Style Male
-4MSS = 7/16˝-20 SAE J1926-2
-6MSS = 9/16˝-18 SAE J1926-2

(3) Circuit
-A = SPST/N.O.
-B = SPST/N.C.

(4) Electrical Termination
-SP = 2x 1/4˝ x 1/32˝ Spade, Factory Set or Adjustable[3]
-TS = 6-32 Terminal Screws, Factory Set or Adjustable[3]
-SS = Amp Superseal 1.5 Integral Male, Factory Set
-DT = Deutsch DT04-2P Integral Male, Factory Set
-FLAXX = 18 AWG Flying Leads[4], Adjustable[3]
-FLFXX = 18 AWG Flying Leads[4], Factory Set
-FLSAXX = 18 AWG Flying Leads w/PVC Shrink Tubing[4], Adjustable[3]
-FLSFXX = 18 AWG Flying Leads w/PVC Shrink Tubing[4], Factory Set
-CABXX = 18 AWG PVC Cable[5], Factory Set

(5) Options
-V = FKM
-E = EPDM
-G = Gold Contacts
-OF = Oil Free Cleaned (Pressure Range Codes 10-60; Stainless Steel Housing Required)
-RB = Rubber Boot (Shipped Loose)
-WF = Weather Pack Connector, Female P/N 12015792
-WM = Weather Pack Connector, Male P/N 12010973
-DE = Deutsch Connector, Male P/N DT04-2P-E003
-FS = Factory Set Specify Value & Rising/Falling

Notes:
1. Other fittings and materials available. Consult factory.
2. Consult factory for use with Pressure Range 70-100.
3. Use a Security hex key, 5/32˝ or 4mm, to adjust set point. (Available as Gems P/N 249230)
4. 18˝ is standard. Specify lead length in inches (max. 48˝). e.g. **-FLA18** or **-FLF30**.
5. 36˝ is minimum. Specify cable length in inches. e.g. **-CAB36** or **-CAB120**.

Table 2 – Pressure Range Codes

Pressure Range Code	Style	Recommended Media	Pressure Range	Repeatability*	Average Deadband**	Proof Pressure	Burst Pressure
10	Diaphragm	Liquids & Gases	10-60 psig (.7-4.1 bar)	±1.5 psi (0.10 Bar) +3% of setting	12% of setting	6,000 psi (414 bar)	9,000 psi (620 bar)
20			40-150 psig(2.8-10.3 bar)	±2.5 psi (0.17 Bar) +3% of setting	13% of setting		
30			75-275 psig (5.2-19 bar)	±3.75 psi (0.26 Bar) +3% of setting	13% of setting		
40			150-500 psig (10.3-34.5 bar)	±5 psi (0.34 Bar) +3% of setting	14% of setting		
50			275-800 psig (19-55.1 bar)	±8 psi (0.55 Bar) +3% of setting	15% of setting		
60			400-1,350 psig (27.6-93 bar)	±13 psi (0.90 Bar) +3% of setting	17% of setting		
70	Piston	Liquids	510-1,235 psig (35-85 bar)	±30 psi (2.1 Bar) +4% of setting	14% of setting	7,000 psi (483 bar)	22,000 psi (1517 bar)
80			800-1,960 psig(55-135 bar)	±48 psi (3.3 Bar) +4% of setting	17% of setting		
90			1,835-3,115 psig (125-215 bar)	±110 psi (7.6 Bar) +6% of setting	21% of setting		
100			2,970-4,350 psig (205-300 bar)	±190 psi (13.1 Bar) +6% of setting	24% of setting		

* Repeatability and set point of units will vary depending on temperature, fluid viscosity, cycle rate and ramp rate. Repeatability values are based on room temperature. Long term inactuation will lead to a higher initial set point reading due to the non-linear behavior of the elastomer diaphragms or seals. Fluids with low and stable viscosities over the expected temperature range will exhibit better performance.

** Deadband values are an approximation at room temperature with nitrogen or compressed air (Ranges 10-40) or a 100 Cp fluid (Ranges 40-100). At lower temperatures and/or higher fluid viscosities the deadband will be much larger than the value shown. At high fluid temperature and a rapid cycle rate, the deadband may be lower than the approximations given. Please consult the factory if specific statistical analysis is required.