

Switch Definitions and Terminology

Pressure/Vacuum Switch - A device that senses a change in pressure/vacuum and opens or closes an electrical circuit when the set point is reached.

Set Point - The pre-determined pressure/vacuum value that is required to open or close the electrical contacts in the switch.

Electrical Contacts - The elements in the switch that electrically respond to the media applied to the actuator. Snap action contacts with a "self-cleaning" wiping effect are used in Series III and Series V switches. Direct action blade contacts are used in the 5000 Series.

Pressure Switch Actuator - The member in the switch which receives the media and ultimately strokes the electrical contacts to open or close at the designated set point. The actuator in the Series III is a beryllium copper or silicone rubber diaphragm. An elastomeric diaphragm or piston actuator is used in the Series V. The 5000 Series uses a polyimide film diaphragm.

Normally Open (SPST-N.O.) - A normally open switch does not conduct an electrical signal until the actuator is moved by the media causing the contacts to close.

Normally Closed (SPST-N.C.) - A normally closed switch conducts electricity until the actuator is moved by the media causing the contacts to open.

Dual Circuit (SPDT) - A normally open and normally closed circuit are contained in a switch.

Dual Circuit (N.O./N.O.) - Switch contains two normally open circuits.

Dual Circuit (N.C./N.C.) - Switch contains two normally closed circuits.

System Pressure/Vacuum - This is the normal pressure/vacuum that would be present at the switch actuator. This value is important in order to apply the proper switch configuration. Even though the set point may be relatively low, the system pressure would continue to be applied to the switch actuator in most cases.

Proof Pressure - This specification is the maximum over-pressure condition that the switch can have for a specified period of time and still maintain set point integrity.

Burst Pressure - This specification is the maximum over pressure condition that the switch can withstand without experiencing leakage.

Dry Circuit Load - Typically this would be a very low electrical load associated with microprocessors when the open circuit voltage is .03V or less and the current is 40mA or less.

Resistive Load - A load in which the voltage is in phase with the current.

Inductive Load - A load in which the voltage leads the current.

Motor Load - The load of a motor at rated horsepower and speed.

Capacitive Load - A load which the current leads the voltage.

Differential - The difference between opening (actuation) pressure and the closing (de-actuation) set points. This is also referred to as "dead band". For example, a switch set at 150 PSI to open on increasing pressure and close at 95 PSI on decreasing pressure would have a differential of 55 PSI (150-95=55).

Conversion Factors

Convert	To	Multiply By
kPa	PSI	.145
PSI	kPa	6.8948
BARS	PSI	14.5
PSI	BARS	.069
Hg"	PSI	.4912
PSI	Hg"	2.036
H ₂ O"	PSI	.03613
PSI	H ₂ O"	27.6778
H ₂ O"	Hg"	.07355
Hg"	H ₂ O"	13.5962
C°	F°	1.8(C° + 17.78)
F°	C°	F-32 ÷ 1.8