

Sensing and Control

SWITCHES

CONTROLS

HOURMETERS

LIGHTING

CUSTOMER

ELECTRONIC

ELECTRO-MECHANICAL



ISO 9001
QS9000

SWITCH APPLICATIONS

The odds are that Honeywell Sensing and Control can meet your switch demands. Designers of heavy-duty equipment have trusted Honeywell pressure and vacuum switches for many years in applications that are constantly subjected to harsh environments...from chemical splashes, salt water, high pressure spikes...we've got you covered. Our standard line is quite extensive, but if it is not exactly what your requirements call for we can modify an existing part or create an original just for you. Honeywell has produced millions of custom-built switches for automotive, pool and spa, powershift transmissions, anti-skid braking systems, excavator hydraulic systems, water pump systems, and dental air compressors, to name just a few. Our highly skilled model shop, certified lab and engineering staff can work with you through the design phase, prototype stage, all the way through to the testing phase. And if time is a crucial factor, rapid prototyping technology can now allow us to provide you with a sample in days.



WARNING! Suitability of application is responsibility of user. Extreme heat and vibration should be avoided at mounting points such as on top of an engine over a hot manifold. (MAX operation temp 250° F). Always install by using a wrench on the hex base. Torquing at any other part of the switch voids the warranty or may cause malfunction. A Polyimide film diaphragm is utilized in the pressure switch and is not recommended for use with water. However, a Teflon diaphragm is available for water applications. Compatibility with the brass or steel external pressure switch material is the responsibility of the user. For maximum operating pressures see appropriate switch family specifications. Contact Honeywell Engineering whenever use of switch or fluid compatibility is questioned.

CONTENTS

- Ultra Duty Pressure Switches 10-400 psi p.3
- Extended Duty Pressure Switches 0.5-150 psi p.4
- Extended Duty Vacuum Switches 1.1-22" Hg p.6
- Extended Duty Piston Switches 200-1000 psi p.7
- Factory Set Variable Differential Pressure & Vacuum Switches 2-70 psi & 2-22" Hg ... p.8
- High Pressure Environmentally Sealed Extreme-Duty Switches 35-3000 psi p.9



WARNING PERSONAL INJURY

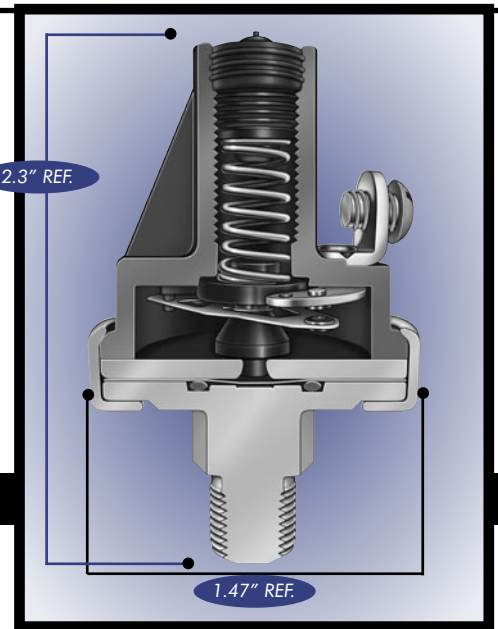
DO NOT USE these products as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury. **Failure to comply with these instructions could result in death or serious injury.**

Set Points from 10-400 psi

5000 Series Ultra Duty Pressure Switch

Honeywell Sensing and Control has designed a high pressure/low set point pressure switch for applications that see sudden pressure spikes and high system pressures that can result in early switch failures. This series has been strengthened to prevent cracking of the base with plated steel and screw machined components in a 3-piece design. Modifications to the effective area of the pressure cavity and size of the diaphragm button and diaphragm o-ring are what makes the switch capable of handling sudden pressure transients and high system pressures that are common in applications such as braking, transmission and hydraulic systems.

The switch's physical appearance is similar to our 5000 Series switches with a height of only 2.3" (approx) and a diameter of 1.47". In comparison to our 5000 Series Switch the burst rating has significantly increased from 1250 psi to over 4000 psi on the new design.



Specifications

Type: Direct action blade contact
 Contacts: Silver alloy, gold plated
 Set Point Range: 10-400 PSI
 Operating Pressure: 500 PSI
 Proof Pressure: 2000 PSI
 Burst Pressure: 4000 PSI
 Base: Plated Steel — Screw Machined
 3-piece construction
 Diaphragm: Polyimide Film
 Connector: 1/8-27 NPT Male Thread
 Temperature Range: -40°F to +250°F
 Terminals: #8-32 screws, 1/4" blade, 280 Series Metripack
 Circuitry: SPST-N.O., N.C., SPDT
 Cover: Glass Reinforced Polyester
 Options: Base connector sizes, wire leads, N.O./N.O. dual circuit and N.C./N.C. dual circuit.

Ratings:

Resistive: 15 AMP- 6 VDC
 8 AMP- 12 VDC
 4 AMP- 24 VDC
 Inductive: 1 AMP- 120 VAC
 0.5 AMP- 240 VAC

5000 Series Ultra Duty Pressure Switches			2 Terminals		Metri-Pack Integral Connector (See Note 1)			
Contact Setting	Factory Set At	Circuitry	Screw Part #	Blade Part #	Contact Setting	Factory Set At	Circuitry	Part #
10-35 PSI ±4 psi	20 PSI	N.O.	83298	83313	10-30 PSI ± 4 psi	20 PSI	N.O.	83328
		N.C.	83299	83314			N.C.	83329
		DC*	83300	83315			DC*	83330
35-75 PSI ± 6 psi	60 PSI	N.O.	83301	83316	30-65 PSI ± 5 psi	45 PSI	N.O.	83331
		N.C.	83302	83317			N.C.	83332
		DC*	83303	83318			DC*	83333
75-150 PSI ±10 psi	100 PSI	N.O.	83304	83319	65-125 PSI ± 7 psi	85 PSI	N.O.	83334
		N.C.	83305	83320			N.C.	83335
		DC*	83306	83321			DC*	83336
150-250 PSI ± 15 psi	200 PSI	N.O.	83307	83322	125-200 PSI ± 10 psi	165 PSI	N.O.	83337
		N.C.	83308	83323			N.C.	83338
		DC*	83309	83324			DC*	83339
250-400 PSI ± 20 psi	300 PSI	N.O.	83310	83325	200-400 PSI ± 15 psi	300 PSI	N.O.	83340
		N.C.	83311	83326			N.C.	83341
		DC*	83312	83327			DC*	83342

Approximate Dead Band Standard Switches

Contact Setting	Dead Band
10-35 PSI	15-25 PSI
35-75 PSI	25-35 PSI
75-150 PSI	40-60 PSI
150-250 PSI	50-70 PSI
250-400 PSI	80-100 PSI

Metri-Pack Switches

10-30 PSI	20-35 PSI
30-65 PSI	35-55 PSI
65-125 PSI	60-85 PSI
125-200 PSI	85-115 PSI
200-400 PSI	150-200 PSI

Note 1: Mating connector for N.O. and N.C. is Packard Part# 15300027; Mating connector for DC is Packard Part# 12034147.

DC*: The N.C. is the reference circuit for the DC Switch; the N.O. circuit is not adjusted. The approximate dead band between the N.C. and N.O. circuit is shown in the charts. For applications requiring the N.O. circuit as the reference circuit, the N.C. circuit is not adjusted.

Set Points from 0.5 to 150 psi

5000 Series Extended Duty Pressure Switch With Direct Action Blade Contacts

The 5000 Series switch is specifically designed to stand up to extended duty applications. This switch is factory set but capable of field adjustment. It features a Kapton diaphragm for compatibility with a wide variety of fluids, and various terminations including a Metri-Pack connector that forms a tight seal when connected. Among the outstanding design benefits are its durable construction, compact size, and enhanced set point integrity.

Standard Specifications

Type: Direct action blade contact

Contacts: Silver alloy, gold plated

Set Point: Factory set from 0.5 to 150 PSI

Operating Pressure: 150 PSI for 0.5-24 PSI set point range, 250 PSI for 25-150 PSI set point range

Proof Pressure: 500 PSI

Burst Pressure: 750 PSI for 0.5-24 PSI set point range, 1250 PSI for 25-150 PSI set point range.



Switch Boot P/N 79380 for Vacuum and Pressure

Ratings:

Resistive:	15 AMP-	6 VDC
	8 AMP-	12 VDC
	4 AMP-	24 VDC
Inductive:	1 AMP-	120 VAC
	0.5 AMP-	240 VAC

Diaphragm: Polyimide film

Temperature

Range: -40° F to + 250° F

Connector: 1/8 -27 NPT male thread

Terminals: #8-32 screws, 1/4" blade,

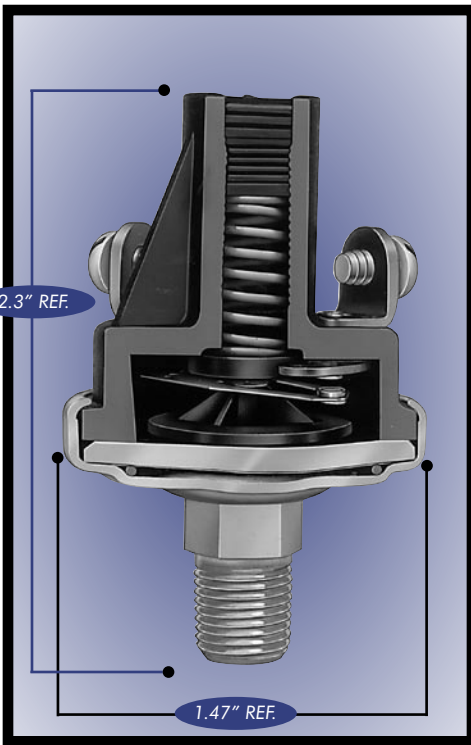
Circuitry: 280 Series Metri-Pack SPST-N.O., N.C., 1 circuit adjustable dual circuit, or 2 circuits adjustable dual circuit.

Also available are N.O./N.O. dual circuit and N.C./N.C. dual circuit.

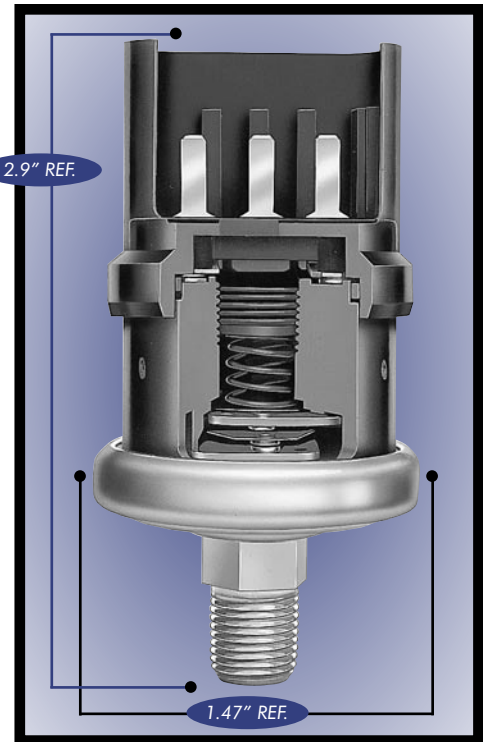
Base: Plated Steel

Cover: Glass reinforced polyester

Options: Brass, plastic or stainless steel base; various base connector thread sizes; wire leads (potted & sealed).



5000 Series Switch with Screw Terminals



5000 Series Switch with Metri-Pack Terminal

NOTE: OPERATING MEDIA (PRESSURE SWITCH)

The pressure switch is designed to operate with air, motor oils, transmission oils, jet fuels and other similar hydrocarbon media.

5000 Series Pressure Switch With Standard Terminal

			Single Circuit 1 Terminal		Single Circuit 2 Terminals		Dual Circuit One circuit adjustable ¹		Dual Circuit Both circuits adjustable ²		
Contact Setting	Factory Set At	Circuitry	Part Number		Part Number		Part Number		Contact Setting ³	Part Number	
			Screw	Blade	Screw	Blade	Screw	Blade		Screw	Blade
0.5-1 PSI ±0.3	1 PSI	N.O.	78630	78631	78628	78629	78711	78712	3-4 PSI ±0.5	76081	76086
		N.C.	78634	78635	78632	78633					
1.1-3 PSI ±0.5	2 PSI	N.O.	78142	78399	76051	76056	76071	76076	5-8 PSI ±1	76582	76590
		N.C.	78149	78406	76061	76066					
3.1-7 PSI ±1	4 PSI	N.O.	78143	78400	76575	76583	76579	76587	9-24 PSI ±2	76082	76087
		N.C.	78150	78407	76577	76585					
8-13 PSI ±2	10 PSI	N.O.	78144	78401	76576	76584	76580	76588	25-50 PSI ±3	76083	76088
		N.C.	78151	78408	76578	76586					
14-24 PSI ±3	15 PSI	N.O.	78145	78402	76052	76057	76072	76077	51-90 PSI +5/-2	76084	76089
		N.C.	78152	78409	76062	76067					
25-50 PSI ±5	35 PSI	N.O.	78146	78403	76053	76058	76073	76078	91-150 PSI +8/-2	76085	76090
		N.C.	78153	78410	76063	76068					
51-90 PSI ±7	60 PSI	N.O.	78147	78404	76054	76059	76074	76079			
		N.C.	78154	78411	76064	76069					
91-150 PSI ±10	100 PSI	N.O.	78148	78405	76055	76060	76075	76080			
		N.C.	78155	78412	76065	76070					

5000 Series Pressure Switch With Metri-Pack Terminal

			Single Circuit (Mates with Packard P/N 15300027)		Dual Circuit One circuit adjustable ¹ (Mates with Packard P/N 12034147)		Dual Circuit Both circuits adjustable ² (Mates with Packard P/N 12034147)	
Contact Setting	Factory Set At	Circuitry	Part Number	Part Number	Contact Setting ³	Part Number		
1-3 PSI ±0.5	2 PSI	N.O.	77029	77038	3-4 PSI ±0.5	77047		
		N.C.	77020					
4-6 PSI ±1	5 PSI	N.O.	77030	77039	5-10 PSI ±1	77048		
		N.C.	77021					
7-12 PSI ±2	10 PSI	N.O.	77031	77040	11-24 PSI ±2	77049		
		N.C.	77022					
13-24 PSI ±3	20 PSI	N.O.	77032	77041	25-46 PSI ±3	77050		
		N.C.	77023					
25-46 PSI ±5	35 PSI	N.O.	77033	77042	47-76 PSI +5/-2	77051		
		N.C.	77024					
47-76 PSI ±6	60 PSI	N.O.	77034	77043	77-100 PSI +7/-2	77052		
		N.C.	77025					
77-100 PSI ±7	85 PSI	N.O.	77035	77044	101-126 PSI +9/-2	77053		
		N.C.	77026					
101-126 ±9	115 PSI	N.O.	77036	77045	127-150 PSI +10/-2	77054		
		N.C.	77027					
127-150 PSI ±10	135 PSI	N.O.	77037	77046				
		N.C.	77028					

Notes:

- The N.C. circuit is the reference circuit for the dual circuit switch; the normally open circuit is not adjusted. The expected dead band between the N.C. & N.O. circuit is shown in the chart below. For applications requiring the normally open circuit as the reference circuit the N.C. circuit is not adjusted.
- Switch may be adjusted so that:
 - N.C. circuit opens before N.O. circuit closes.
 - N.C. and N.O. circuit have same set point.
 - N.O. circuit closes before the N.C. circuit opens. (There is no dead band and both circuits are on for a brief period of time.)
- The tolerances given in the table are applicable to a switch adjusted so that the N.O. circuit closes before the N.C. circuit opens and applies to the N.C. circuit. The N.O. set point and tolerances are such that a minimum overlap of 1 PSI exists during which both circuits are on.

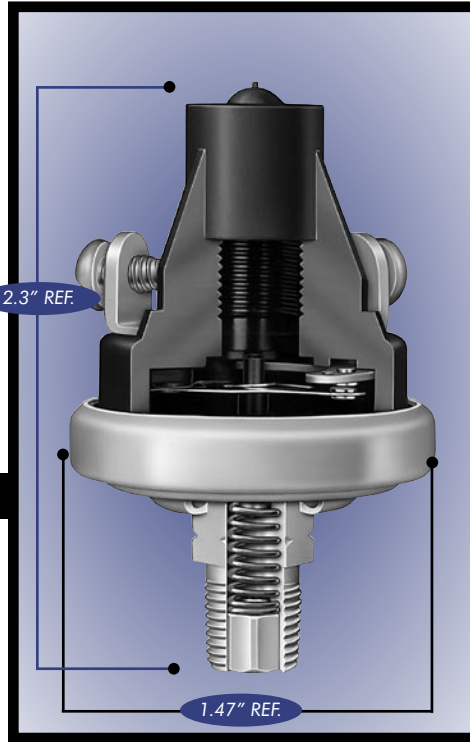
Note 1: Expected Dead Band (Higher than N.C. circuit)

Contact Setting	Dead Band
0.5-3 PSI	1.5 PSI
4-7 PSI	2.5 PSI
8-13 PSI	3.5 PSI
14-24 PSI	8 PSI
25-50 PSI	15 PSI
51-90 PSI	23 PSI
91-150 PSI	40 PSI

Set Points from 1.1" to 22" Hg

5000 Series Extended Duty Vacuum Switches With Direct Action Blade Contacts

The 5000 Series switch is specifically designed to stand up to extended duty applications. This switch is factory set. It features a fluorosilicone rubber diaphragm for compatibility with a wide variety of fluids, and various terminations including a Metri-Pack connector that forms a tight seal when connected. Among the outstanding design benefits are its durable construction, compact size, and enhanced set point integrity.



5000 Series Switch with Screw Terminals



Switch Boot P/N 79380 for Vacuum and Pressure

Standard Specifications

- Type: Direct action blade contact
- Contacts: Silver alloy, gold plated
- Set Point: Factory set
- Vacuum: 1.1 to 22" Hg
- Operating Pressure: 30" Hg vacuum max.
- Burst Pressure: 150 PSI

Ratings:

- Resistive: 15 AMP- 6 VDC
- 8 AMP- 12 VDC
- 4 AMP- 24 VDC
- Inductive: 1 AMP- 120 VAC
- 0.5 AMP- 240 VAC
- Diaphragm: Fluorosilicone elastomer

- Temperature Range: -40° F to + 250° F
- Connector: 1/8-27 NPT male thread
- Terminals: #8-32 screws, 1/4" blade, 280 Series Metri-Pack
- Circuitry: SPST-N.O., N.C.
- Base: Brass
- Cover: Glass reinforced polyester
- Options: Various base connector thread sizes; wire leads (potted & sealed).

5000 Series Vacuum Switch					
Contact Setting	Circuitry	Internally Grounded		Two Terminals	
		Part Number		Part Number	
		Screw	Blade	Screw	Blade
1.1-22" Hg	N.O.	78813	78814	77342	77344
	N.C.	78815	78816	77343	77345

Standard set points are 2"Hg(27" H₂O), 4"Hg, 9"Hg, and 17"Hg

Contact Setting	Tolerance
1.1-3"Hg (15-41"H ₂ O)	±.22"Hg(3"H ₂ O)
4-8"Hg	±1"Hg
9-17"Hg	±2"Hg
18-22"Hg	±3"Hg