Honeywell

Honeywell Pressure Switches

High Pressure: HP Series, HE Series

Factory set 150 psi to 4500 psi [10,34 bar to 310,26 bar]

Low Pressure: LP Series, LE Series

Factory set or field adjustable 3.5 psi to 150 psi [0,24 bar to 10,34 bar]



Honeywell Pressure Switches HP Series, HE Series, LP Series, LE Series

Honeywell Pressure Switches are durable, reliable electromechanical gauge pressure on/off switches that are available with either single pole single throw (SPST) normally open or normally closed circuitry, or single pole double throw (SPDT) circuitry. Their IP67 environmental sealing and high proof pressure and burst pressure ratings allow for use in many rugged applications that require the making or breaking of an electrical connection in response to a pressure change of the system media.

The media (gas or liquid) pressure is applied via the port of the switch to a diaphragm or sealed piston. A precompressed spring on the other side of the sealed piston or diaphragm controls the set-point pressure. If the force resulting from the pressure is greater than the load on the spring, the electrical contacts within the switch will change state. If the contacts are normally open when no pressure is applied, they close on increasing pressure when the set point is reached. On decreasing pressure, the contacts will open again at a pressure somewhat less than the set switching point. The difference between the activation point on increasing pressure and the deactivation point on decreasing pressure is called hysteresis. The set point pressure for the switch can be configured such that the switch will actuate on increasing or decreasing system pressure.

Features

- Life cycle rating: up to 2 million
- IP67 sealing rating
- Operating temperature range: -40 °C to 120 °C [-40 °F to 248 °F]
- Proof pressure: 10000 psi [689 bar] (High Pressure), 500 psi [34,47 bar] (Low Pressure)
- Burst pressure: 20000 psi [1379 bar] (High Pressure),
 750 psi for 3.5 psi to 22 psi, 1250 psi > 22 psi (Low Pressure)
- Hysteresis option (HP, HE, and LP Series only)
- Variety of pressure ports and electrical terminations
- Pressure switching set point range: Factory set 150 psi to 4500 psi [10,34 bar to 310,26 bar] (High Pressure) or factory set or field adjustable 3.5 psi to 150 psi [0,24 bar to 10,34 bar] (Low Pressure)
- Switching point accuracy: up to ±2 %

Potential Applications

TRANSPORTATION

- Agricultural machinery
- Heavy duty construction machinery
- Heavy duty trucks
- Lawn & garden
- Marine vessels
- Material handling machinery
- Railway

INDUSTRIAL

- CNC machines
- Compressors, boilers
- Fracking equipment
- Food & beverage equipment
- Generators
- HVAC/R equipment
- Mud pumps
- Pneumatic equipment
- Presses and punches
- Pressure washers
- Trash compactors
- Water jet cutting machines
- Water pumps

Table 2. Specifications

Characteristic	HP Series	HE Series	LP Series	LE Series
Product length (connector version AMP Super Seal)	see page 5	see page 5	see page 6	see page 6
Product length (blade)	see page 5	see page 5	see page 6	see page 6
Product length (wire out)	see page 5	see page 5	see page 6	see page 6
Hex size	27 mm	27 mm	27 mm	27 mm
Ease of installation	box spanner	box spanner	box spanner	box spanner
Snap-action switch	yes	yes	yes	no
Set point ¹ range	150 psi to 4500 psi	150 psi to 4500 psi	3.5 psi to 150 psi	3.5 psi to 150 psi
Set point ranges	6	6	4	4
Set point accuracy @ 25 °C (before test)	150 psi to 500 psi (±5 %) 500 psi to 4000 psi (±3.5 %) >4000 psi (±2 % [up to 2 %])	150 psi to 1000 psi (±14%) 1000 psi to 2000 psi (±12 %) 2000 psi to 4000 psi (±11 %) >4000 psi (±10 % [up to 10 %])	for 3.5 psi to 10 psi (\pm 1 psi), for >10 psi to 50 psi (\pm 3 psi), for >50 psi to 100 psi (\pm 7 psi), for >100 psi to 150 psi (\pm 10 psi)	for 3.5 psi to 10 psi (\pm 1 psi), for >10 psi to 50 psi (\pm 3 psi), for >50 psi to 100 psi (\pm 7 psi), for >100 psi to 150 psi (\pm 10 psi
Average deadband	n/a	n/a	n/a	for 3.5 psi to 10 psi (\pm 2.8 psi), for >10 psi to 50 psi (\pm 14 psi), for >50 psi to 100 psi (\pm 38 psi), for >100 psi to 150 psi (\pm 40 psi
Operating pressure ²	5,000 psi max.	5,000 psi max.	250 psi max.	250 psi max.
Proof pressure ³	10,000 psi	10,000 psi	500 psi	500 psi
Hysteresis	5 % to 55 % (based on set point range)	3 % to 65 % (based on set point range)	3 % to 50 % (based on set point range)	n/a
Burst pressure ⁴	20,000 psi	20,000 psi	750 psi for set points 3.5 psi to 22 psi, 1250 psi for set points > 22 psi	750 psi for set points 3.5 psi to 22 psi, 1250 psi for set points > 22 psi
Current rating (resistive)	5 A at 250 Vac 5 A at 24 Vdc	5 A at 250 Vac 3 A at 24 Vdc	7.5 mA to 5 A, 24 Vdc and 250 Vac	7.5 mA to 3 A, 24 Vdc and 250 Vac
Current rating (inductive)	5 A at 115 Vac (SX rating) 3 A at 28 Vdc	n/a	1 A at 28 Vdc	n/a
Temperature rating	-40 °C to 120 °C [-40 °F to 248 °F]	-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 120 °C [-40 °F to 248 °F]	-40 °C to 120 °C [-40 °F to 248 °F]
Media connection	multiple ports available	multiple ports available	multiple ports available	multiple ports available
Pressure ports	M14 × 1.5, M18 × 1.5, 1/2-20 UNF, 9/16-18 UNF, 3/4-16 UNF, 7/8-14 UNF		1/4-18 NPT,1/8-27 NPT, 1/2-20 UNF,1/8-27 PTF, M12 × 1.5, M14 × 1.5, 9/16-18 UNF, 3/4-16 UNF, G1/8 BSPP, 7/16-20 UNF, R1/8 BSPT, M10 × 1.0, R1/2 BSPT, G1/4 BSPP, R1/4 BSPT	1/4-18 NPT, 1/8-27 NPT, 1/2-20 UNF, 1/8-27 PTF, M12 × 1.5, M14 × 1.5, 9/16-18 UNF, 3/4-16 UNF, G1/8 BSPP, 7/16-20 UNF, R1/8 BSPT, M10 × 1.0, R1/2 BSPT, G1/4 BSPP, R1/4 BSPT

HP Series, HE Series, LP Series, LE Series

Table 2. Specifications (continued)

Characteristic	HP Series	HE Series	LP Series	LE Series	
Termination	AA = Spade Terminals BA = Screw Terminals CA = Deutsch DT04-3P-E005 (3-Pin Connector) DA = Amp Super Seal 1.5 - 282105-1 (3-Pin Connector) EA = 10-inch Cable, 18 AWG (Wire Out, No Connector) FA = 10-inch Cable w/Deutsch DT04-3P-E005 (3-Pin Connector) (16 AWG)* GA = 10-inch Cable w/Metripack 280 Delphi 15300002 (2-Pin Connector) (18 AWG)* HA = 10-inch Cable w/Metripack 280 Delphi 15300002 (2-Pin Connector) (18 AWG)* JA = 10-inch Cable w/M12x1 (Brad Harrison Micro) - 21032121306 Harting P/N (3-Pin Connector) (18 AWG) KA = 10-inch Cable w/M12x1 (Brad Harrison Micro) - 21032121306 Harting P/N (3-Pin Connector) (18 AWG) MA = 10-inch Cable w/Packard Weatherpack Male Terminal - 12020827 (3-Pin Connector) (18 AWG) MA = 10-inch Cable w/Packard Weatherpack Male Terminal - 12020827 (3-Pin Connector) (18 AWG) MA = 10-inch Cable w/Packard 2P Tower Connector - 12015792 (2-Pin Connector) (18 AWG) PA = 2.75-inch Cable w/Packard 2P Shroud Connector - 12010973 (2-Pin Connector) (18 AWG) PA = 2.75-inch Cable w/Packard 2P Shroud Connector - 12010973 (2-Pin Connector) (18 AWG) PA = 2.75-inch Cable w/TT Cannon 3P Sure-Seal Circular Connector - SS3R-120-8551-001 (3-Pin Connector) (18 AWG) TA = 8.5-inch Cable w/TT Cannon 3P Sure-Seal Circular Connector - SS3R-120-8551-001 (3-Pin Connector) (16 AWG)* UA = 10-inch Cable - Vacuum Impregnated w/Deutsch DT06-35-EP06 (3-Socket Connector) (16 AWG)* VA = 4.5-inch Cable w/Balde Terminals 6,3 mm x 0,8 mm (16 AWG)* VA = 4.5-inch Cable w/Balde Terminals 6,3 mm x 0,8 mm (16 AWG)* YA = 6-inch Cable w/Deutsch DT06-25-CE06 (2-Socket Connector) (18 AWG) AB = Deutsch DT04-2P-E005 (2-Pin Connector) (18 AWG) AB = Deutsch DT04-2P-E005 (2-Pin Connector) (18 AWG) AB = Deutsch DT04-2P-E005 (2-Pin Connector) (18 AWG)* EB = 10-inch Cable w/Metripack 150 Delphi 12129615 (3-Pin Connector) (18 AWG)* EB = 10-inch Cable w/MARP 2,5 mm System Series Connector) (18 AWG)* EB = 10-inch Cable w/Metripack 150 Delphi 12052641 (2-Pin Connector) (18 AWG) EB = 10-inch Cable w/Metripack 150 Delphi 12				
Circuit forms⁵	SPDT, SPST - NO/NC	SPDT, SPST - NO/NC	SPDT, SPST - NO/NC	SPDT, SPST - NO/NC	
Life	2 million	1 million	2 million	1 million	
Agency approvals (special use switches)	UL pending	UL pending	UL pending	UL pending	
Agency approvals (other)	CE	CE	CE pending	CE pending	
Field adjustability6	no	no	yes	yes	
Spike dampening	yes	yes	no	no	
Ingress protection ⁷	IP67	IP67	IP67	IP67	
Vibration resistance	10 Hz to 2000 Hz at 15 g 20 min/sweep	10 Hz to 2000 Hz at 15 g 20 min/sweep	10 Hz to 2000 Hz at 15 g 20 min/sweep	10 Hz to 2000 Hz at 15 g 20 min/sweep	
Shock resistance	500 m/sec ² , 11 mSEC, 100 shocks / axis	500 m/sec², 11 mSEC, 100 shocks / axis	500 m/sec ² , 11 mSEC	500 m/sec ² , 11 mSEC	
Wetted part (diaphragm)	n/a	n/a	Kapton® (Teflon® coated), Tefzel®	Kapton® (Teflon® coated), Tefzel®	
Wetted part (piston)	nitrile or EPDM O-ring, steel piston	nitrile or EPDM O-ring, steel piston	n/a	n/a	
Weight	0,133 g [4.7 oz]	0,133 g [4.7 oz]	0,058 kg [2.0 oz]	0,053 kg [1.9 oz]	
Weight Contacts	0,133 g [4.7 oz] silver / gold inlay	0,133 g [4.7 oz] silver	0,058 kg [2.0 oz] gold plated	0,053 kg [1.9 oz] gold plated	

¹Set point: Point at which switch actuates or de-actuates

²Operating pressure: Maximum normal system operating pressure (above set point)

³Proof pressure: Maximum pressure that the switch can handle while it maintains set point accuracy. Intermittent spikes to this level are acceptable. ⁴Burst pressure: Point of complete switch failure

⁵SPST: Single pole, single throw. SPDT: Single pole, double throw. NO: Normally open. NC: Normally closed.

⁶Field adjustability only available with AA, BA, CA, and DA (SPST only) terminations.

⁷IP00 for AA and BA terminations.

*These connectors are designed for dual circuit (SPDT) by default. They can be used for single-circuit applications (SPNC/SPNO) by making suitable connections. Refer to wiring diagram.

**Option AB is available only for LP and LE Series.

DIMENSIONS - HIGH PRESSURE: HP SERIES, HE SERIES



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DIMENSIONS - LOW PRESSURE: LP SERIES, LE SERIES



(bottom view) IP rating: IP67

Figure 11. Spade terminal



42,16 mm max.

[1.66 in] max.

Figure 12. Screw terminal



Figure 13. Low Pressure Port Dimensions





Table 3. Low Pressure Port Diameters and Heights

Port	Diameter "ØD"	Height "H"
R 1/2 BSPT	21,34 mm [0.840 in]	17,09 mm [0.673 in]
R 1/4 BSPT	13,46 mm [0.530 in]	13,74 mm [0.541 in]
R 1/8 BSPT	9,96 mm [0.392 in]	10,24 mm [0.403 in]
1/8-27 PTF	10,34 mm [0.407 in]	9,24 mm [0.364 in]
1/4-18 NPT	13,72 mm [0.540 in]	17,63 mm [0.694 in]
1/8-27 NPT	10,29 mm [0.405 in]	12,497 mm [0.492 in]
G 1/4 BSPP	11,1 mm [0.437 in]	11,20 mm [0.441 in]
G 1/8 BSPP	8,28 mm [0.326 in]	7,59 mm [0.299 in]
7/16-20 UNF	9,25 mm [0.364 in]	9,09 mm [0.358 in]
9/16-18 UNF	12,24 mm [0.482 in]	10,00 mm[0.394 in]
1/2-20 UNF	10,85 mm [0.427 in]	9,09 mm [0.358 in]
M14 × 1.5	11,71 mm [0.461 in]	10,998 mm [0.433 in]
M12 × 1.5	9,70 mm [0.382 in]	10,998 mm [0.433 in]
M10 × 1.0	8,41 mm [0.331 in]	8,51 mm [0.335 in]

NOMENCLATURE: HIGH PRESSURE

For example, **HPR05500PFNSPAA01** defines a high pressure switch, rising factory set, non-adjustable set point, 550 psi set point, psig, sealed gage pressure unit, M14 x 1.5 port type, SPST-NO silver contacts output, cold-rolled steel base, glycol-based fluid (EPDM) actuation/application, spade terminal connectors, standard switch, individually boxed units.



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NOMENCLATURE: LOW PRESSURE

For example, **LPR00550PFPVKAAA01** defines a low pressure switch, rising factory set, non-adjustable set point, 55 psi set point, psig, sealed gage pressure unit, M14 x 1.5 port type, SPST-NO gold-plated contacts output, stainless steel base, Kapton[®] diaphragm (Teflon[®] coated), Nitrile O-ring actuation/application, spade terminal connectors, standard switch, individually boxed units.



ADDITIONAL INFORMATION

The following associated literature is available on the Sensing and Control web site at sensing.honeywell.com:

- Product installation instructions
- Product range guide
- Product application-specific information

AWARNING 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.

AWARNING MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

WARRANTY/REMEDY

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