#### Issue 6

# **PRESSURE SWITCHES**

HP, HE, MH, ME, LP, LE, 5000, and 1000 Series



#### **DESCRIPTION**

The Honeywell Pressure Switch portfolio consists of:

- High Pressure (HE/HP Series)
- Medium Pressure (ME/MH Series)
- Low Pressure (LE/LP Series)
- 5000 Series, 1000 Series

These 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 high proof pressure and burst pressure ratings can 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.

#### DIFFERENTIATION

- Through optional smart diagnostic technology, Honeywell pressure switches are able to detect failures such as open circuits, cut wires, worn insulation, and more<sup>6</sup>
- Optional smart diagnostic technology allows up to four segregated signal amplitudes to perform diagnostics and status<sup>6</sup>
- Pressure port snubber suppresses pressure spikes<sup>2</sup>
- IP67 sealing provides enhanced durability in harsh environmental and washing applications<sup>1</sup>

#### **VALUE TO CUSTOMERS**

- Designed to provide resistance to corrosion and enhances equipment life with available two million life cycle rating and IP67 rating<sup>1</sup>
- Can expedite design and product cycle due to ability to receive samples in two weeks and production units in four weeks
- Can reduce tooling, service, and manufacturing labor costs due to standard connections, extended product life, and expedited design and production cycle

#### **FEATURES**

- Pressure switching set point range: 3.5 psi to 4500 psi
- Proof pressure: from 500 psi up to 10.000 psi
- Burst pressure: from 1250 psi up to 20,000 psi
- Life cycle rating up to 2 million
- IP67 sealing rating4
- Operating temperature: -40°C to 120°C [-40°F to 248°F]
- Hysteresis option<sup>5</sup>
- More than 15 pressure port options and over 30 electrical terminations
- Plated steel, brass or stainless steel options<sup>3</sup>
- Switching point accuracy up to ±2 %

#### **POTENTIAL APPLICATIONS**





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



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

#### **PORTFOLIO**

Honeywell also offers the PBN1 Series and PBN3 Series Pressure Sensor.

- <sup>1</sup> HP, HE, MH, ME, LP, LE Series
- <sup>2</sup> HP, HE Series
- <sup>3</sup> ME, LP, LE Series
- <sup>4</sup> HP, HE, LP, LE, ME Series
- <sup>5</sup> HP, HE, LP Series
- <sup>6</sup> HP, HE, ME, LP, LE Series

Honeywell

TABLE 1. SP	ECIFICATION	S						
Character- istic	HP Series	HE Series	ME Series	MH Series	LP Series	LE Series	5000 Series	1000 Series
Product length (various terminations)	see pages 5 and 6	see page 5	see page 8	see page 7	see page 9	see page 9	see page 10	-
Product length (blade)	see pages 5 and 6	see page 5	see page 8	see page 7	see page 9	see page 9	58,42 mm [2.3 in]	65,6 mm [2.583 in]
Product length (#8-32 screws)	see pages 5 and 6	see page 5	see page 8	see page 7	see page 9	see page 9	60,96 mm [2.4 in]	-
Product length (Metripack)	see pages 5 and 6	see page 5	see page 8	see page 7	see page 9	see page 9	73,66 mm [2.9 in]	-
Hex size	27 mm	27 mm	27 mm	27 mm	27 mm	27 mm	0.50 in (steel) 0.437 in (brass)	M10 x 1.25 banjo fitting
Ease of installation	box spanner	box spanner	box spanner	box spanner	box spanner	box spanner	1/2 in open spanner	18 mm open spanner
Snap-action switch	yes	yes	no	no	yes	no	no	no
Set point <sup>1</sup>	100 psi to 4500 psi	150 psi to 4500 psi	25 psi to 350 psi	40 psi to 500 psi	3.5 psi to 150 psi	3.5 psi to 150 psi	75 psi to 150 psi	10 psi to 60 psi [0,69 bar to 2,7 bar]
range Set point ranges	6 (Base Style A) 7 (Base Style B)	6	4	4	4	4	8	[U,U9 Dai tu 2,1 Dai]
Set point accuracy @ 25°C (before test)	100 psi to 150 psi (±10 %); 150 psi to 500 psi (±6 %); 501 psi to 4000 psi (±3.5 %); 4000 psi to 4500 psi (±2 %)	150 psi to 1000 psi (±14%); 1000 psi to 2000 psi (±12 %); 2000 psi to 4000 psi (±11 %); >4000 psi (±10 %)	25 psi to 50 psi (±3 psi); >50 psi to 100 psi (±7 psi); >100 psi to 150 psi (±10 psi); >150 psi to 250 psi (±13 psi); >250 psi to 350 psi (±16 psi)	40 psi to 70 psi (±7 psi); >70 psi to 130 psi (±10 psi); >130 psi to 200 psi (±15 psi); >200 psi to 280 psi (±20 psi); >280 psi to 350 psi (±30 psi); >350 psi to 500 psi (±40 psi)	>10 psi to 50 >50 psi to 10	0 psi (±1 psi); 0 psi (±3 psi); 0 psi (±7 psi); 50 psi (±10 psi)	0.5 psi to 1 psi (±0.3 psi); 1.1 psi to 3 psi (±0.5 psi); 3.1 psi to 7 psi (±1 psi); 8 psi to 13 psi (±2 psi); 14 psi to 24 psi (±3 psi); 25 psi to 50 psi (±5 psi); 51 psi to 90 psi (±7 psi); 91 psi to 150 psi (±10 psi)	20 psi ±10 psi; 58 psi ±20 psi
Average dead- band max.	n/a	n/a	25 psi to 50 psi (20 psi); >50 psi to 100 psi (30 psi); >100 psi to 150 psi (40 psi); >150 psi to 250 psi (50 psi); >250 psi to 350 psi (60 psi)	40 psi to 70 psi (±6 psi); >70 psi to 130 psi (±10 psi); >130 psi to 200 psi (±15 psi); >200 psi to 280 psi (±20 psi); >280 psi to 350 psi (±30 psi); >350 psi to 500 psi (±40 psi)	n/a	3.5 psi to 10 psi (±2.8 psi); >10 psi to 50 psi (±14 psi); >50 psi to 100 psi (±38 psi); >100 psi to 150 psi (±40 psi)	0.5 psi to 3 psi (±1.5 psi); 4 psi to 7 psi (±2.5 psi); 8 psi to 13 psi (±3.5 psi); 14 psi to 24 psi (±8 psi); 25 psi to 50 psi (±15 psi); 51 psi to 90 psi (±23 psi); 91 psi to 150 psi (±40 psi)	n/a
Operating pressure <sup>2</sup>	5,000 psi max.	5,000 psi max.	500 psi max.	600 psi max.	250 psi max.	250 psi max.	150 psi, 250 psi	1400 psi [96,5 bar] max.
Proof pressure <sup>3</sup>	10,000 psi (Base Style A) 6,500 psi (Base Style B)	10,000 psi	4,000 psi	6,000 psi	500 psi	500 psi	500 psi	2973 psi [205 bar]
Hysteresis	5 % to 55 % (based on set point range)	3 % to 65 % (based on set point range)	n/a	n/a	5 % to 55 % (based on set point range)	n/a	n/a	n/a
Burst pressure <sup>4</sup>	20,000 psi (Base Style A); 9,000 psi (Base Style B)	20,000 psi	8,000 psi	9,000 psi	1250 psi	1250 psi	4000 psi	3500 psi [241 bar]
Current rating (resistive)	5 A at 250 Vac 5 A at 24 Vdc	3 A at 250 Vac 3 A at 24 Vdc	7.5 mA to 3 A, 24 Vdc and 250 Vac	100 mA to 3 A max.	7.5 mA to 5 A, 24 Vdc and 250 Vac	7.5 mA to 3 A, 24 Vdc and 250 Vac	15 A, 6 Vdc; 8 A, 12 Vdc; 4 A, 24 Vdc	12 Vdc with two- 1157 bulbs (4.4 A)
Current rating (inductive)	5 A at 115 Vac (SX rating); 3 A at 28 Vdc	n/a	n/a	n/a	1 A at 28 Vdc	n/a	1 A, 120 Vac 0.5 A, 240 Vac	n/a

<sup>&</sup>lt;sup>8</sup>Port Style C: Switches less than 975 psi will use Base Style B; switches greater than 975 psi will use Base Style A. Port Styles F and G: Switches less than 350 psi will use Base Style B; switches greater than 350 psi will use Base Style A. Port Styles A, B, E, M, P, T, and Y will use Base Style B. Switches less than 150 psi will only use Base Style B.

TABLE 1. SP	ECIFICATION	IS						
Character- istic	HP Series	HE Series	ME Series	MH Series	LP Series	LE Series	5000 Series	1000 Series
Rated thermal current	5 A	3 A	3 A	n/a	5 A	3 A	n/a	n/a
Rated insula- tion voltage	28 V	28 V	28 V	n/a	28 V	28 V	n/a	n/a
Short-circuit protective device c-type max. rating Conditional	(	Class J fuse (10 A, 600	V)	n/a	Class J fuse	(10 A, 600 V)	n/a	n/a
short circuit current		1000 A		n/a	1000 A	1000 A	n/a	n/a
Pollution degree		3 (macro environment	)	n/a	3 (macro e	nvironment)	n/a	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 121°C [-40°F to 250°F]	-20°C to 74°C [-4°F to 165°F]
Media connection	multiple ports available	multiple ports available			rts available		1/8-27 NPT male thread	multiple ports available
Pressure ports	Refer to product nomenclature for pressure port types.	C = 1/2-20 UNF F = M14 × 1.5 G = 9/16-18 UNF H = 3/4-16 UNF K = M18 × 1.5 N = 7/8-14 UNF	A = 1/4-18 NPT B = 1/8-27 NPT C = 1/2-20 UNF D = 1/8-27 PTF E = M12 × 1.5 F = M14 × 1.5 G = 9/16-18 UNF H = 3/4-16 UNF J = G1/8 BSPP M = 7/16-20 UNF R = R1/8 BSPT T = M10 × 1.0 V = R1/2 BSPT Y = G1/4 BSPP Z = R1/4 BSPT	A = 1/4-18 NPT B = 1/8-27 NPT C = 1/2-20 UNF D = 1/8-27 PTF E = M12 × 1.5 F = M14 × 1.5 G = 9/16-18 UNF H = 3/4-16 UNF J = G1/8 BSPP L = 3/8-24 UNF M = 7/16-20 UNF P = 1/2-14 NPT R = R1/8 BSPT T = M10 × 1.0 V = R1/2 BSPT Y = G1/4 BSPP Z = R1/4 BSPT	A = 1/4-18 NPT B = 1/8-27 NPT C = 1/2-20 UNF D = 1/8-27 PTF E = M12 × 1.5 F = M14 × 1.5 G = 9/16-18 UNF H = 3/4-16 UNF J = G1/8 BSPP M = 7/16-20 UNF R = R1/8 BSPT T = M10 × 1.0 V = R1/2 BSPT Y = G1/4 BSPP Z = R1/4 BSPT	A = 1/4-18 NPT B = 1/8-27 NPT C = 1/2-20 UNF D = 1/8-27 PTF E = M12 × 1.5 F = M14 × 1.5 G = 9/16-18 UNF H = 3/4-16 UNF J = G1/8 BSPP M = 7/16-20 UNF R = R1/8 BSPT T = M10 × 1.0 V = R1/2 BSPT Y = G1/4 BSPP Z = R1/4 BSPT	1/8-27 NPT	M10 x 1.25 double banjo; M10 x 1; 1/8-27 NPT
Circuit forms <sup>5</sup>	SPDT, SPS	ST - NO/NC	SPDT, SPST - NO/NC	SPST - NO/NC	SPDT, SPST - NO/NC	SPDT, SPST - NO/NC	SPST-NO; SPST-NC	SPNO
Smart pressure		or dual-resistor topology	available	-	single- or dual-resis	tor topology available	-	-
Life	2 million (Base A) 1 million (Base B)	1 million	1 million	1 million	2 million	1 million	100,000 cycles	100,000 cycles
Agency approvals (special use switches)	-	-	-	-	-	-	UL Custom (select models)	-
Agency approvals (other)	CE	CE	CE	CE	CE	CE	-	-
Field adjustability <sup>6</sup>	no	no	yes	yes	yes	yes	yes	no
Spike dampening	yes	yes	no	no	no	no	no	no
Ingress protection <sup>7</sup>	IP67 (connecetors) IP67 (wire/Base A) IP69K (wire/Base B) IP00 (blade/screw)	IP67 (connectors) IP00 (blade/screw)	IP67 (connectors) IP67 (wire out) IP00 (blade/screw)	IP67 (connectors) IP00 (blade/screw)	IP67 (connectors) IP67 (wire out) IP00 (blade/screw)	IP67 (connectors) IP67 (wire out) IP00 (blade/screw)	IP00	IP65
Vibration resistance				g, 20 min/sweep; 8 ho urs/axis; 14,88 g-RMS			-	-
Shock resistance	500 m/sec <sup>2</sup> , 11 mS	EC, 100 shocks / axis		500 m/sec	c², 11 mSEC			15 G @ 5 mSEC
Wetted part (diaphragm)	n/a Kapton* (Teflon* coated)			Nitrile/EPDM/LTNB	Kapton <sup>®</sup> (Teflon <sup>®</sup> coated)	Tefzel*	Polymide film	EPDM
Wetted part (piston)	nitrile o-ring	g, steel piston	nitrile or EPDM o-ring	nitrile or EPDM o-ring	nitrile or EPDM o-ring	nitrile or EPDM o-ring	nitrile or EPDM o-ring	EPDM
Weight		] (Base Style A) z] (Base Style B)	53 g [1.9 oz]	53 g [1.9 oz]	58 g [2.0 oz]	53 g [1.9 oz]	65 g [2.3 oz]	40 g [1.4 oz]
Contacts	silver / gold inlay	silver	gold plated	gold plated	gold plated	gold plated	silver-plated copper	silver-plated copper
Product finish	zinc plating	zinc plating	zinc plating	zinc plating	zinc plating	zinc plating	glass reinforced polyester (housing); plated steel (base)	Rynite 545 glass filled (housing); Travalent plated steel (base)

<sup>&</sup>lt;sup>1</sup>Set point: Point at which switch actuates or de-actuates

<sup>&</sup>lt;sup>2</sup>Operating pressure: Maximum normal system operating pressure

<sup>&</sup>lt;sup>3</sup>Proof pressure: Maximum pressure that the switch can handle while it maintains set point accuracy. Intermittent spikes to this level are acceptable.

<sup>&</sup>lt;sup>4</sup>Burst pressure: Point of complete switch failure

 $<sup>^5</sup>$ SPST: Single pole, single throw. SPDT: Single pole, double throw. NO: Normally open. NC: Normally closed.

<sup>&</sup>lt;sup>6</sup>Field adjustability only available with AA, BA, CA, and DA (SPST only) terminations.

 $<sup>^7\</sup>mbox{IPOO}$  for AA and BA terminations.

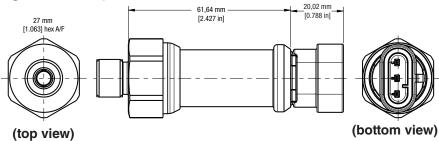
TABLE 2. TE	RMINATIONS
Series	Available Terminations
HP, HE, ME, LP, LE	AA = Spade Terminals BA = Screw Terminals CA = Deutsch DT04-3P-E005 (3-Pin Connector) DA = Amp Super Seal 1.5 - 282105-1 (3-Pin Connector) EA = 10-inch Cable, 18 AWG (Wire Out, No Connector) FA = 10-inch Cable w/Deutsch DT04-3P-E005 (3-Pin Connector) (16 AWG)* GA = 10-inch Cable w/Mamp Super Seal 1.5 - 282105-1 (3-Pin Connector) (18 AWG)* HA = 10-inch Cable w/Metripack 280 Delphi 15300002 (2-Pin Connector) (18 AWG)* HA = 10-inch Cable w/Mil2x1 (Brad Harrison Micro) - 21032121306 Harting P/N (3-Pin Connector) (18 AWG)* KA = 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) NA = 3-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) (16 AWG) SA = 5.5-inch Cable w/Packard 2P Shroud Connector - 12010973 (2-Pin Connector) (16 AWG) FA = 8.5-inch Cable w/TIT Cannon 2P 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 = 10-inch Cable w/Blade Terminals 6,3 mm x 0,8 mm (16 AWG)* VA = 4.5-inch Cable w/Blade Terminals 6,3 mm x 0,8 mm (16 AWG)* VA = 6-inch Cable w/Bade Terminals 6,3 mm x 0,8 mm (16 AWG)* VA = 10-inch Cable w/Budsch DT06-25-CE06 (2-Socket Connector) (18 AWG) AB = Deutsch DT04-2P-E005 (2-Pin Connector) BB = 10-inch Cable w/Metripack 12-Pin Shroud Connector (18 AWG) BB = 10-inch Cable w/Metripack 15 Delphi 12129615 (3-Pin Connector) (18 AWG) BB = 10-inch Cable w/Metripack 15 Delphi 12129615 (3-Pin Connector) (18 AWG) BB = 10-inch Cable w/Metripack 15 Delphi 12129615 (3-Pin Connector) (18 AWG) BB = 10-inch Cable w/Metripack 15 Delphi 12129619 (2-Pin Connector) (18 AWG) BB = 10-inch Cable w/Amp 2,5 mm System Series Connector 1-967402-1 (18 AWG) BB = 10-inch Cable w/Deuts
МН	AA = Spade Terminals BA = Screw Terminals DA = Amp Super Seal 1.5 - 282105-1 (3-Pin Connector) EA = 10-inch Cable, 18 AWG (Wire Out, No Connector) HA = 10-inch Cable w/Metripack 280 Delphi 15300002 (2-Pin Connector) (18 AWG)* MA = 10-inch Cable w/Deutsch DT04-2P-E005 (2-Pin Connector) (18 AWG) NA = 3-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) RA = 4-inch Cable w/Packard 2P Shroud Connector - 12010973 (2-Pin Connector) (16 AWG) SA = 5.5-inch Cable w/ITT Cannon 2P Sure-Seal Circular Connector - SS2R-120-1804-000 (2-Pin Connector) (18 AWG) WA = 4.5-inch Cable w/Blade Terminals 6,3 mm x 0,8 mm (16 AWG)* XA = 10-inch Cable w/ Metripack 2-Pin Shroud Connector 153000027 (18 AWG) YA = 6-inch Cable w/Amp Super Seal 1.5 - 282104-1 (2-Pin Connector) (18 AWG)* ZA = 10-inch Cable w/Deutsch DT06-25-CE06 (2-Socket Connector) (18 AWG) AB = Deutsch DT04-2P-E005 (2-Pin Connector) CB = 6-inch Cable w/AMP Super Seal 1.5 - 282080-1 (2-Pin Connector) (18 AWG) DB = 10-inch Cable w/AMP 2.5 mm System Series Connector 1-967402-1 (18 AWG) EB = 4.5-inch Cable w/Packard Shroud Connector 12015792 (2-Pin Connector) (18 AWG) FB = 10-inch Cable w/Metripack 150 Delphi 12052641 (2-Pin Connector) (18 AWG)

<sup>\*</sup>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.

#### DIMENSIONS - HIGH PRESSURE: HP SERIES (BASE STYLE A), HE SERIES

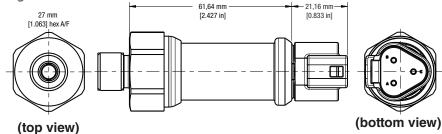
Base Style A key specifications • Life: 2 million (HP), 1 million (HE); Burst pressure: 20,000 psi





Female Connector Part Number (included): C-282105 Male Mating Connector (customer provided): C-282087 IP Rating: IP67

Figure 2. Deutsch



Female Connector Part Number (included): DT04-3P Male Mating Connector (customer provided): DT06-3S IP Rating: IP67

Figure 3. Spade Terminal

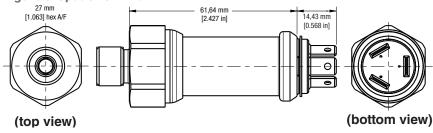


Figure 4. Screw Terminal

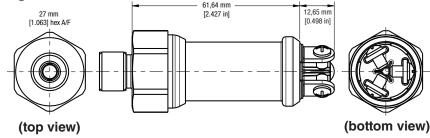
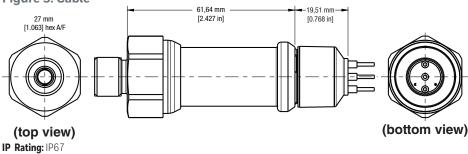


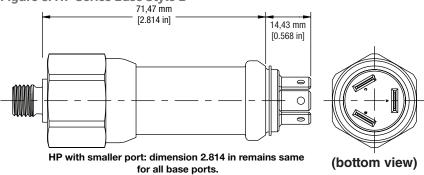
Figure 5. Cable



#### **DIMENSIONS - HIGH PRESSURE: HP SERIES (BASE STYLE B)**

Base Style B key specifications • Life: 1 million; Burst pressure: 9,000 psi

Figure 6. HP Series Base Style B



**Figure 7. HP Series Pressure Port Dimensions** 

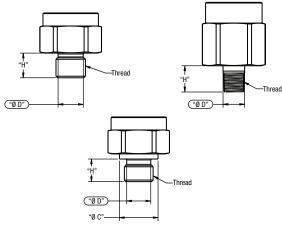


TABLE 3. HP/HE SER	TABLE 3. HP/HE SERIES PRESSURE PORT DIAMETERS AND HEIGHTS								
Nomenclature Code	Thread	Height "A"	Diameter "ØD"	Diameter "ØC"	Height "H"				
М	7/16-20 UNF	-	9,25 mm [0.364 in]	-	11 mm [0.433 in]				
C¹	1/2-20 UNF	-	10,85 mm [0.427 in]	-	11 mm [0.433 in]				
G <sup>2</sup>	9/16-18 UNF	-	12,24 mm [0.482 in]	-	12 mm [0.472 in]				
Н	3/4-16 UNF	-	16,74 mm [0.66 in]	-	14 mm [0.551 in]				
N	7/8-14 UNF	-	19,6 mm [0.773 in]	-	16 mm [0.630 in]				
Т	M10 x 1.0	1,60 mm [0.063 in]	9,25 mm [0.364 in]	13,79 mm [0.543 in]	11 mm [0.433 in]				
E	M12 x 1.5	2,48 mm [0.098 in]	10,85 mm [0.427 in]	16,79 mm [0.661 in]	11 mm [0.433 in]				
$\mathbf{F}^2$	M14 x 1.5	2,48 mm [0.098 in]	12,24 mm [0.482 in]	18,8 mm [0.74 in]	12 mm [0.472 in]				
K	M18 x 1.5	2,48 mm [0.098 in]	16,74 mm [0.66 in]	23,8 mm [0.937 in]	14 mm [0.551 in]				
В	1/8-27 NPT	-	10,29 mm [0.405 in]	-	12,497 mm [0.492 in]				
Α	1/4-18 NPT	=	13,72 mm [0.540 in]	-	17,63 mm [0.694 in]				

<sup>&</sup>lt;sup>1</sup>Port Style C: Switches less than 975 psi will use Base Style B; switches greater than 975 psi will use Base Style A. <sup>2</sup>Port Styles F and G: Switches less than 350 psi will use Base Style B; switches greater than 350 psi will use Base Style A. Switches less than 150 psi will use only Base Style B.

#### **DIMENSIONS - MEDIUM PRESSURE: MH SERIES**

Figure 8. AMP Superseal 1.5

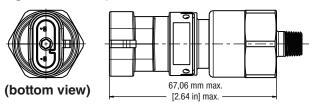


Figure 9. Deutsch 2-pin

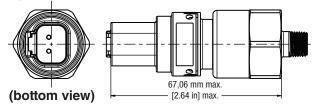


Figure 10. Wire out

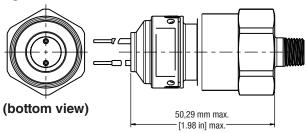


Figure 11. Blade terminal

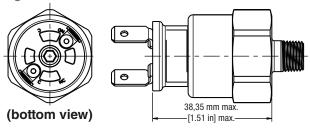


Figure 12. Screw terminal

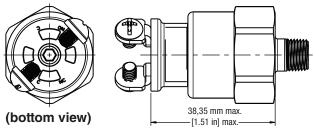


Figure 13. MH Series Pressure Port Dimensions

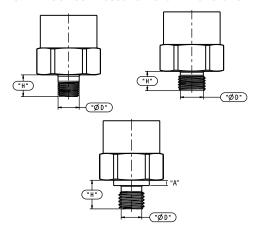
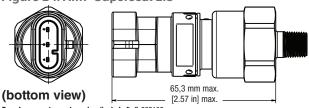


TABLE 4. MH SERIES PRESSURE PORT DIAMETERS AND HEIGHTS							
Port	Diameter "ØD"	Height "H"					
R 1/2 BSPT	21,34 mm [0.840 in]	17,09 mm [0.673 in]					
R 1/4 BSPT	13,46 mm [0.530 in]	13,74 mm [0.541 in]					
R 1/8 BSPT	9,96 mm [0.392 in]	10,24 mm [0.403 in]					
1/8-27 PTF	10,34 mm [0.407 in]	9,24 mm [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]					
3/4-16 UNF	16,74 mm [0.659 in]	11,1 mm [0.437 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]					

Port	Height "A"	Diameter "ØC"	Diameter "ØD"	Height "H"
M14 × 1.5	2,49 mm	18,8 mm	11,71 mm	10,998 mm
	[0.098 in]	[0.74 in]	[0.461 in]	[0.433 in]
M12 × 1.5	2,49 mm	16,79 mm	9,70 mm	10,998 mm
	[0.098 in]	[0.661 in]	[0.382 in]	[0.433 in]
M10 × 1.0	1,6 mm	13,79 mm	8,41 mm	8,51 mm
	[0.063 in]	[0.543 in]	[0.331 in]	[0.335 in]

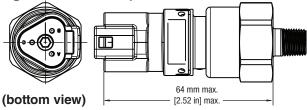
#### **DIMENSIONS - MEDIUM PRESSURE: ME SERIES**

Figure 14. AMP Superseal 1.5



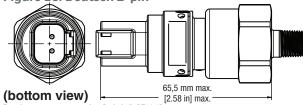
Female connector part number (included): C-282105 Male mating connector (customer provided): C-282087 IP rating: IP67

Figure 15. Deutsch 3-pin



Female connector part number (included): DT04-3P Male mating connector (customer provided): DT06-3S IP rating: IP67

Figure 16. Deutsch 2-pin



Female connector part number (included): DT04-2P Male mating connector (customer provided): DT06-2S IP rating: IP67

Figure 17. Wire out

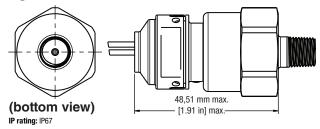


Figure 18. Blade terminal

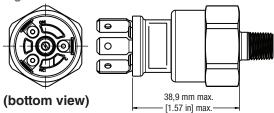


Figure 19. Screw terminal

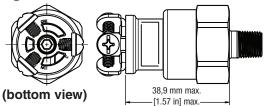
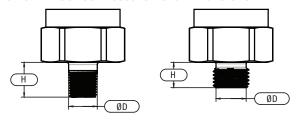
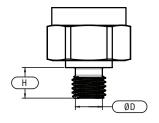


Figure 20. ME Series Pressure Port Dimensions





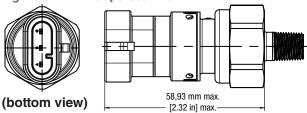
## TABLE 5. ME SERIES PRESSURE PORT DIAMETERS AND HEIGHTS

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]
3/4-16 UNF	16,74 mm [0.659 in]	11,1 mm [0.437 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]

Port	Height "A"	Diameter "ØC"	Diameter "ØD"	Height "H"
M14 × 1.5	2,49 mm	18,8 mm	11,71 mm	10,998 mm
	[0.098 in]	[0.74 in]	[0.461 in]	[0.433 in]
M12 × 1.5	2,49 mm	16,79 mm	9,70 mm	10,998 mm
	[0.098 in]	[0.661 in]	[0.382 in]	[0.433 in]
M10 × 1.0	1,6 mm	13,79 mm	8,41 mm	8,51 mm
	[0.063 in]	[0.543 in]	[0.331 in]	[0.335 in]

#### **DIMENSIONS - LOW PRESSURE: LP SERIES, LE SERIES**

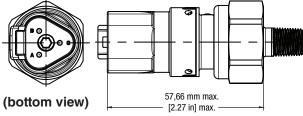
Figure 21. AMP Superseal 1.5



(H ØD )

Figure 27. LP/LE Series Pressure Port Dimensions

Figure 22. Deutsch 3-pin



ØD

Figure 23. Deutsch 2-pin

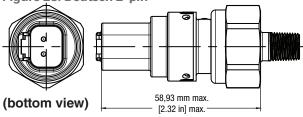


Figure 24. Wire out

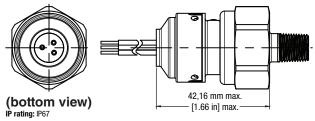
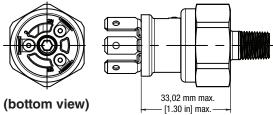
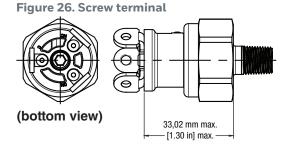


Figure 25. Spade terminal





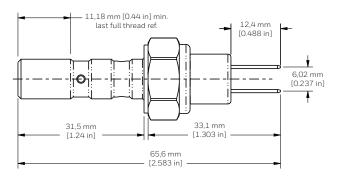
# **TABLE 6. LP/LE SERIES PRESSURE PORT DIAMETERS**

AND REIGHT	3	
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]
3/4-16 UNF	16,74 mm [0.659 in]	11,1 mm [0.437 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]

Port	Height "A"	Diameter "ØC"	Diameter "ØD"	Height "H"
M14 × 1.5	2,49 mm	18,8 mm	11,71 mm	10,998 mm
	[0.098 in]	[0.74 in]	[0.461 in]	[0.433 in]
M12 × 1.5	2,49 mm	16,79 mm	9,70 mm	10,998 mm
	[0.098 in]	[0.661 in]	[0.382 in]	[0.433 in]
M10 × 1.0	1,6 mm [0.063 in]	13,79 mm [0.543 in]	8,41 mm [0.331 in]	8,51 mm [0.335 in]

#### **DIMENSIONS - 1000 SERIES, 5000 SERIES**

Figure 28. 1000 Series Dimensions



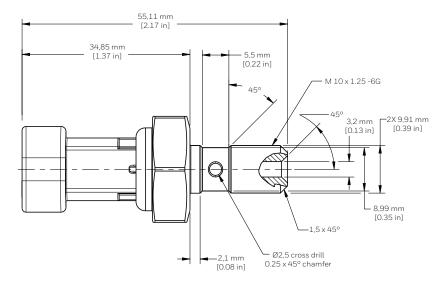
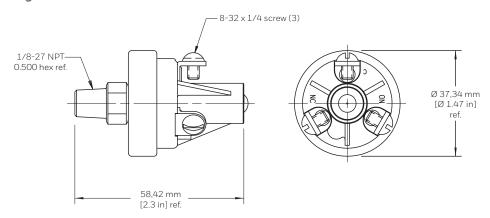


Figure 29. 5000 Series Dimensions



#### **NOMENCLATURE: HIGH PRESSURE**

For example, HPR05500PFNSPAAA01 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.

HP	R	05500	P	F	N	S	P	AA	A	01
Series	Set Point	Pressure Set Point	Pressure Unit	Port Type	Output	Base	Actuation/ Application	Connector Type	Options	Packaging Options
HP Series HE Series	Rising factory set, non-adjustable	6,89 bar to 310,26 bar [100 psi to 4500 psi]	P psig, sealed gage	<b>A</b> 1/4-18 NPT	N SPST-NO, silver contacts	S Cold-rolled steel	Petroleum-based hydraulic fluid (Nitrile)	AA 1/4 in Spade Terminals*	A Standard switch	O1 Individually boxed units*
(100 psi to 4500 psi),	Falling factory set, non-adjustable	NOTE: Pressure set point is always five digits.	B bar, sealed gage	<b>B</b> 1/8-27 NPT	C SPST-NC, silver contacts		P Glycol-based fluid (EPDM)	BA Screw Terminals*	B With 3 shrink sleeve	02 Individually boxed units**
High Pressure	NOTE: Set point below 100 psi is available only with	For bar, the set point		C 1/2-20 UNF	SPDT-NO/NC, silver contacts		EDPM 0-ring option only available from 100 psi to 250 psi.	CA Deutsch DT04-3P-E005 (3-Pin Connector)*	With shrink sleeve (plastic coating)	25 individual boxes packed in bulk packaging*
Switch	HP Series (Body Style B).	<ul> <li>by 100 and entered in the listing. For example, 15,45 Bar is noted as 01545.</li> </ul>		<b>E</b> M12 x 1.5	NO, gold inlay contacts			Amp Super Seal 1.5 - 282105-1 (3-Pin Connector)*	With shrink sleeve (acrylic coating)	16 boxes packed in bulk packaging**
		This allows for 2 decimal places.		F M14 x 1.5	J NC, gold inlay contacts			EA 10-inch Cable, 18 AWG (Wire Out, No Connector)	F 304,8 mm [12 in] total wire length	20 50 individual boxes packed in bulk packaging*
		For psi, the set point value will be multiplied		<b>G</b> 9/16-18 UNF	SPDT(NO/NC), gold inlay contacts			TA 10-inch Cable w/Deutsch DT04-3P-E005 (3-Pin Connector) (16 AWG)*	<b>G</b> With conduit sleeve	50 individual boxes packed in bulk packaging**
		by 10 and entered in the listing. For example, 245.5 psi is noted as 02455.		3/4-16 UNF	NO, with 510 Ω/ 0.5 W & 160 Ω/ 0.5 W resistors			GA 10-inch Cable w/Amp Super Seal 1.5 - 282105-1 (3-Pin Connector) (18 AWG)*	With Vibra seal for port threads	25 25 units in bulk packaging*
		This allows for 1 decimal place	i.	<b>K</b> M18 x 1.5	NC, with 3000 Ω/ 0.125 W resistor			HA 10-inch Cable w/Metripack 280 Delphi 15300002 (2-Pin Connector) (18 AWG)	#8-32 screw with external tooth lockwasher***	26 25 units in bulk packaging**
				7/16-20 UNF				JA 10-inch Cable w/ Din43650-C (3-Pin Connector) (18 AWG)*	K 914,4 mm [36 in] total wire length	50 individual parts in bulk packaging*
				<b>N</b> 7/8-14 UNF				10-inch Cable w/M12x1 (Brad Harrison Micro) - 21032121306 Harting P/N (3-Pin Connector) (18 AWG)*	304,8 mm [12 in] total wire length with acrylic sleeve	* Not applicable for HP Series (Base Style B) ** Not applicable for
				<b>T</b> M10 x 1.0				10-inch Cable w/Packard Weatherpack Male Terminal - 12020827 (3-Pin Connector) (18 AWG)*	914,4 mm [36 in] total wire length with acrylic sleeve  *** For screw terminal option	HP (Base Style A) & HE Series
			LID Covic	a Davit Turner				MA DOI-10-inch Cable w/Deutsch		

#### **HP Series Port Types**

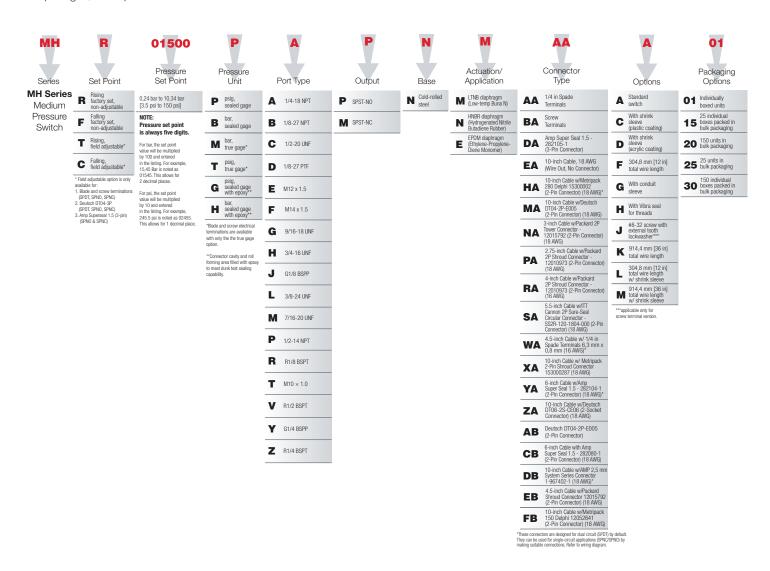
Thread Type	Base Style A	Base Style B
A = 1/4-18 NPT	n/a	100 psi to 4500 psi
B = 1/8-27 NPT	n/a	100 psi to 4500 psi
C = 1/2-20 UNF	>975 psi	n/a
E = M12 x 1.5	n/a	100 psi to 4500 psi
F = M14 x 1.5	>350 psi	n/a
G = 9/16-18 UNF	>350 psi	<350 psi
H = 3/4-16 UNF	>150 psi	<150 psi
K = M18 x 1.5	150 psi to 4500 psi	n/a
M = 7/16-20 UNF	n/a	100 psi to 4500 psi
N = 7/8-14 UNF	150 psi to 4500 psi	n/a
T = M10 x 1.0	n/a	100 psi to 4500 psi

Port Type A, B, E, M, and T will be available only with HP Series. Base Style B will be available only with HP Series

GA	Super Seal 1.5 - 282105-1 (3-Pin Connector) (18 AWG)*	
НА	10-inch Cable w/Metripack 280 Delphi 15300002 (2-Pin Connector) (18 AWG)	Ī
JA	10-inch Cable w/ Din43650-C (3-Pin Connector) (18 AWG)*	Ī
KA	10-inch Cable w/M12x1 (Brad Harrison Micro) - 21032121306 Harting P/N (3-Pin Connector) (18 AWG)*	
LA	10-inch Cable w/Packard Weatherpack Male Terminal - 12020827 (3-Pin Connector) (18 AWG)*	-
MA	10-inch Cable w/Deutsch DT04-2P-E005 (2-Pin Connector) (18 AWG)	
NA	3-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)	
RA	4-inch Cable w/Packard 2P Shroud Connector - 12010973 (2-Pin Connector) (16 AWG)	
SA	5.5-inch Cable w/ITT Cannon 2P Sure-Seal Circular Connector - SS2R-120-1804-000 (2-Pin Connector) (18 AWG)	
TA	8.5-inch Cable w/ITT Cannon 3P Sure-Seal Circular Connector - SS3R-120-8551-001 (3-Pin Connector) (16 AWG)*	
UA	10-inch Cable - Vacuum Impregnated w/Deutsch DT06-3S-EP06 (3-Socket Connector) (16 AWG)*	
VA	10-inch Cable - Vacuum Impregnated w/Deutsch DT04-3P-E005 (3-Pin Connector) (16 AWG)*	
WA	4.5-inch Cable w/ 1/4 in Spade Terminals 6,3 mm x 0,8 mm (16 AWG)	
XA	10-inch Cable w/ Metripack 2-Pin Shroud Connector 153000027 (18 AWG)	
YA	6-inch Cable w/Amp Super Seal 1.5 - 282104-1 (2-Pin Connector) (18 AWG)	
ZA	10-inch Cable w/Deutsch DT06-2S-CE06 (2-Socket Connector) (18 AWG)	
ВВ	10-inch Cable w/Metripack 150 Delphi 12129615 (3-Pin Connector) (18 AWG)	
СВ	6-inch Cable w/ AMP Super Seal 1.5 - 282080-1 (2-Pin Connector) (18 AWG)	
DB	10-inch Cable w/AMP 2,5 mm System Series Connector 1-967402-1 (18 AWG)*	
EB	4.5-inch Cable w/Packard Shroud Connector 12015792 (2-Pin Connector) (18 AWG)	
FB	10-inch Cable w/Metripack 150 Delphi 12052641 (2-Pin Connector) (18 AWG)	
GB	8.5-inch Cable w/Deutsch Plug HD 16-3 96S (3-Pin Connector) (16 AWG)* are designed for duci (ISPDT) by for single-circuit applications (ISPDT) by nections, Refer to wiring diagram.	

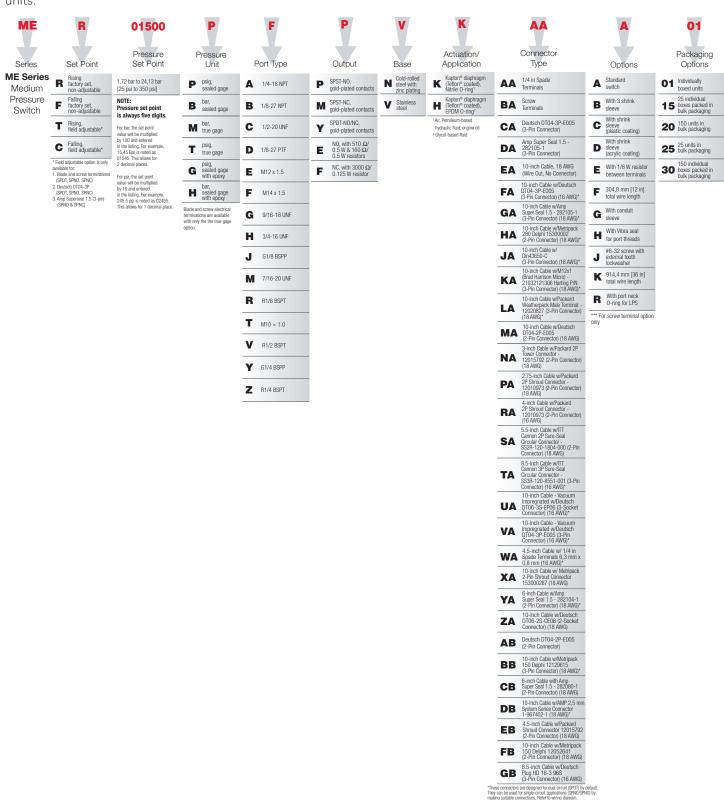
#### NOMENCLATURE: MEDIUM PRESSURE, HIGH BURST

For example, MHR01500PFPNMAAA01 defines a medium pressure, high burst switch, rising factory set, non-adjustable set point, 150 psi set point, psig, sealed gage pressure unit, 1/4-18 NPT port type, SPST-NO contacts output, plated steel base, LTNB diaphragm, and spade terminal connectors.



#### **NOMENCLATURE: MEDIUM PRESSURE**

For example, **MER01500PFPVKAAA01** defines a medium 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.



#### **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

P	n	00550	P			V			AA	<b>A</b>	01
ies	Set Point	Pressure Set Point	Pressure Unit	Port Type	Output	Base	Actuation/ Application		Connector Type	Options	Packag Optio
eries, eries	Rising factory set, non-adjustable	0,24 bar to 10,34 bar [3.5 psi to 150 psi]	P psig, sealed gage	<b>A</b> 1/4-18 NPT	P SPST-NO, gold-plated contacts	<b>B</b> Brass	Kapton® diaphragm (Teflon® coated), Nitrile O-ring¹	AA	1/4 in Spade Terminals	A Standard switch	O1 Individually boxed unit
ow ssure ritch	Falling factory set, non-adjustable	NOTE: Pressure set point is always five digits.	B bar, sealed gage	<b>B</b> 1/8-27 NPT	M SPST-NC, gold-plated contacts	Cold-rolled steel with zinc plating	Kapton® diaphragm (Teflon® coated), EPDM 0-ring²	ВА	Screw Terminals	B With 3 shrink sleeve	15 25 individ boxes pac bulk pack
	T Rising, field adjustable*  C Falling, field adjustable*	For bar, the set point value will be multiplied by 100 and entered in the listing. For example, 15,45 Bar is noted as 01545. This allows for	M bar, true gage	C 1/2-20 UNF	Y SPDT-NO/NC, gold-plated contacts	V Stainless steel	Tefzel® and Kapton® diaphragm, Nitrile 0-ring³	CA	Deutsch DT04-3P-E005 (3-Pin Connector)	With shrink sleeve (plastic coating)	20 150 units bulk pack
			T psig, true gage	<b>D</b> 1/8-27 PTF	N0, with 510 Ω/ 1 W & 160 Ω/ 1 W resistors****		Tefzel® and Kapton® diaphragm, EPDM 0-ring <sup>4</sup>	DA	Amp Super Seal 1.5 - 282105-1 (3-Pin Connector)**	With shrink sleeve (acrylic coating)	25 units bulk pack
	available for:  1. Blade and screw terminations (SPDT, SPNO, SPNC)  2. Deutsch DT04-3P (SPDT, SPNO, SPNC)	2 decimal places.	<b>G</b> psig, sealed gage with epoxy	M12 x 1.5	F NC, with 3000 Ω/ 0.125 W resistor		<sup>1</sup> Air, Petroleum-based hydraulic fluid, engine oil <sup>2</sup> Glycol-based fluid	EA	(Wife Out, NO Confilector)	F 304,8 mm [12 in] total wire length	30 boxes pa bulk paci
2.			bar, sealed gage with epoxy with epoxy with epoxy.  Blade and store electrical terminations are available with only the the true gage option.  True gage option is available only up to 20 psig set point for integral connectors and where out descrized terminations.	M14 x 1.5	NC with 510 Ω/ 0.5 W and 160 Ω/ 0.5 W resistors****		<sup>3</sup> For high temperature fluid media (LE Series only) <sup>4</sup> For high temperature	FA	10-inch Cable w/Deutsch DT04-3P-E005 (3-Pin Connector) (16 AWG)*	G With conduit sleeve	
				<b>G</b> 9/16-18 UNF	**** Available only on LP Series		fluid media, glycol-based fluid (LE Series only)	GA	10-inch Cable w/Amp Super Seal 1.5 - 282105-1 (3-Pin Connector) (18 AWG)* 10-inch Cable w/Metripack	With Vibra seal for port threads	
				3/4-16 UNF				HA	280 Delphi 15300002 (2-Pin Connector) (18 AWG)*	914,4 mm [36 in] total wire length 304,8 mm [12 in]	
				J G1/8 BSPP				JA	Din43650-C (3-Pin Connector) (18 AWG)* 10-inch Cable w/M12x1	total wire length with acrylic sleeve	
				7/16-20 UNF				KA	(Brad Harrison Micro) - 21032121306 Harting P/N (3-Pin Connector) (18 AWG)*	total wire length with acrylic sleeve	
				R R1/8 BSPT				LA	10-inch Cable w/Packard Weatherpack Male Terminal - 12020827 (3-Pin Connector) (18 AWG)*	only	
				<b>T</b> M10 × 1.0				MA	10-inch Cable w/Deutsch DT04-2P-E005 (2-Pin Connector) (18 AWG)		
				V R1/2 BSPT					3-inch Cable w/Packard 2P Tower Connector - 12015792 (2-Pin Connector)		
				▼ G1/4 BSPP				PA	2.75-inch Cable w/Packard		
				Z R1/4 BSPT					(18 AWG) 4-inch Cable w/Packard		
								RA	2P Shroud Connector - 12010973 (2-Pin Connector) (16 AWG) 5.5-inch Cable w/ITT		
								SA	Cannon 2P Sure-Seal Circular Connector - SS2R-120-1804-000 (2-Pin		
								TA	Connector) (18 AWG)  8.5-inch Cable w/ITT Cannon 3P Sure-Seal Circular Connector -		
									SS3R-120-8551-001 (3-Pin Connector) (16 AWG)* 10-inch Cable - Vacuum		
								UA	Impregnated w/Deutsch DT06-3S-EP06 (3-Socket Connector) (16 AWG)*		
								VA	10-inch Cable - Vacuum Impregnated w/Deutsch DT04-3P-E005 (3-Pin Connector) (16 AWG)*		
								WA	4.5-inch Cable w/ 1/4 in Spade Terminals 6,3 mm x 0,8 mm (16 AWG)*		
								XA	10-inch Cable w/ Metrinack		
								YA	6-inch Cable w/Amp Super Seal 1.5 - 282104-1 (2-Pin Connector) (18 AWG)*		
								ZA	10-inch Cable w/Deutsch		
								AB	Deutsch DT04-2P-E005 (2-Pin Connector)		
								ВВ	10-inch Cable w/Metripack 150 Delphi 12129615 (3-Pin Connector) (18 AWG)*		
								СВ	6-inch Cable with Amp Super Seal 1.5 - 282080-1 (2-Pin Connector) (18 AWG)		
								DB	10-inch Cable w/AMP 2,5 mm System Series Connector 1-967402-1 (18 AWG)*		
								EB	4.5-inch Cable w/Packard Shroud Connector 12015792 (2-Pin Connector) (18 AWG)		
								FB	10-inch Cable w/Metripack 150 Delphi 12052641 (2-Pin Connector) (18 AWG)		

#### WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items that Honeywell, in its sole discretion, finds defective.

The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.

While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is buyer's sole responsibility to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this writing. However, Honeywell assumes no responsibility for its use.

# **⚠ 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.

# **⚠ WARNING**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.

#### FOR MORE INFORMATION

Honeywell Sensing and Internet of Things services its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing, or the nearest Authorized Distributor, visit sensing.honeywell.com or call:

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