From 2 to 6000 PSI (40 mbar to 400 bar), GEMS Pressure Switches Cover A Wide Range of Applications

- General, Vacuum, Specialty
- Field-Adjustable or Factory Set Switches
- High Proof Pressure
- Rugged and Dependable

GEMS offers a choice of pressure switches, from compact cylindrical models for OEM use, to larger, enclosed units for rugged process applications. These switches are ideal for the filtering process of coolants in the machine tool industry, use in transmissions of off-highway vehicles and as redundant systems with existing monitors such as transducers.

Unique Piston/Diaphragm Design

A piston/diaphragm design, incorporating the high proof pressure of piston technology allows these switches to operate with the sensitivity and accuracy of a diaphragm design. Repeatability ranges from 0.25 percent to 5 percent of the set point.

Many Materials To Choose From

Enclosures include aluminum, stainless steel, brass, reinforced plastic and zinc-plated steel. Wetted parts include a diaphragm available in Buna-n, Teflon® coated Kapton®, stainless steel, PTFE, EPDM or Viton® and a pressure port available in stainless steel, brass or zinc-plated steel.

Pressure Switch Option Descriptions

G: Gold contacts are usually required for low DC current loads (<12 VDC @ 12 mA) associated with TTL input devices. They provide decreased contact resistance, which results in more reliable switching especially in the presence of an oxidizing atmosphere.

OF: Wetted Materials are ultrasonically cleaned to remove oil and debris.

10A: 10A option is provided by a microswitch rated 10 Amperes at 250 VAC. This microswitch has a wide movement differential, which results in a larger deadband than listed in the standard catalog pages.

IP: Ingress Protection is provided by either an epoxy sealed cap (IP65) or silicon wire seals (IP66). On some models, this option is only available with FS option.

RB: Rubber Boot is designed to be cut out for the proper wire or cable size by the customer and sealed with an appropriate sealant in the field.

WF: Weatherpack female termination consists of the following Delphi P/N's:(12045793 Conn "C" Circuit), 12089188 Female Pins and 12015323 Wire Seals.

WM: Weatherpack male termination consists of the following Delphi P/N's: 12010973 Connector, (12010717 Conn "C" Circuit), 12089040 Male Pins and 12015323 Wire Seals.

DE: Deutsch male termination consists of the following Deutsch P/N's: DT04-2P Connector, (DTO4-3P "C" Circuit) 1060-16-0122 Male Pins and W(2 or 3)P Wedgelok.

FS: Gems will preset switches to the indicated set point within repeatability limits listed on the specific product catalog page.

R: The restrictor option is recommended for hydraulic and pneumatic systems that need a small reduction in pressure pulsations to increase pressure switch life. It is a pressed in part that has an orifice size of 0.045˝ (1.4 mm)

SR: The spiral restrictor option heavily dampens pressure pulsations in any hydraulic system, which prevents false signaling and premature wear. It is not recommended for pressure settings below 1500 psig (103 bar) because it slows the response time of the pressure switch depending on fluid viscosity.

Selection Guide

	Pressure Range	Proof Pressure	Switch	Notes	Series	Page
Subminiature Pressure Switches	0.75 to 15 psi (52 to 1034 mbar)	150 psi (10 bar)	SPST, SPDT	—	**PS11**	I-9
	5 to 150 psi (0.35 to 10 bar)	500 psi (35 bar)	SPST	Kapton® Diaphragm	**PS31**	I-11
	5 to 100 psi (0.35 to 7 bar)	500 psi (35 bar)		Elastomer Diaphragm	**PS32**	I-13
	50 to 300 psi (3.45 to 20 bar)	500 psi (35 bar)	SPST	Kapton® Diaphragm	**PS51**	I-11
				Elastomer Diaphragm	**PS52**	I-13
	15 to 600 psi (1.03 to 207 bar	3000 psi (207 bar)	SPST	—	**PS62**	I-21
	15 to 3000 psi (1.03 to 207 bar)	6000 psi (414 bar)	SPST	—	**PS61**	I-17
	510 to 4350 psi (35 to 300 bar)	7000 psi (483 bar)	SPST	—	**PS61P**	I-19
	5 to 6000 psi (0.35 to 414 bar)	7500 psi (517 bar)	SPST, SPDT, DPST, DPDT	—	**PS75**	I-27
Miniature Pressure Switches	3.5 to 100 psi (0.24 to 7 bar)	350 psi (24 bar)	SPST, SPDT	—	**PS41**	I-15
	10 to 5000 psi (0.7 to 344 bar)	6000 psi (414 bar)	SPST, SPDT	—	**PS71**	I-23
	10 to 750 psi (0.7 to 52 bar)	3000 psi (207 bar)	SPST, SPDT	—	**PS72**	I-25
	15 to 1750 psi (1 to 121 bar)	4500 psi (310 bar)	SPST, DPDT	—	**PS76**	I-29
Vacuum Switches	1.5˝ to 15˝ Hg (51 to 508 mbar)	150 psi (10 bar)	SPST, SPDT	—	**PS81**	I-31
	5˝ to 28˝ Hg (169 to 948 mbar)	350 psi (24 bar)	SPST, SPDT	—	**PS82**	I-33

Plastic Diaphragms*

Option K or Standard Teflon® Coated Kapton® (Polyimide) Diaphragm

Teflon® is compatible with almost every liquid and gaseous media. Kapton® has very stable physical properties over a wide temperature range. This results in pressure switches that exhibit very little set point shift due to temperature extremes. Kapton® possesses exceptional fatigue strength but is very stiff which results in wider but more stable deadbands than most elastomers.

Elastomer Diaphragms*

Elastomers offer incredible sensitivity coupled with extremely long life. This results in stable set points over the life of the pressure switch as well as tight deadbands. Their biggest weakness is the increase in modulus (stiffening) that occurs at lower temperatures. This results in pressure switch set points to shift higher and deadbands to increase with decreasing temperature. They also exhibit more hysteresis than Kapton® diaphragms.

Standard: Nitrile (Buna-N). Typically specified on water and petroleum based hydraulic oils.

Option V: Viton® (Fluoroelastomer) Diaphragm. Typically used with alcohols, diesters, solvents, acids and synthetic oils. Also used for high vacuum service.

Option E: EPDM (Ethylene Propylene) Diaphragm. Typically used with phosphate ester based hydraulic fluids, brake fluids, ketones, steam and hot water.

Option N: Neoprene (Chloroprene) Diaphragm. Typically specified for refrigerant systems.

* See individual product data sheets for temperature ranges.

PS11 – Ultra-Long Life OEM Pressure Switches

- 0.75 to 15 psi (52 to 1034 mbar)
- Factory Set or Adjustable Set Points

For low pressure applications, the longevity of our PS11 Series is hard to beat. Their snap-action microswitch resets automatically and meets or exceeds industry standards. The brass housing offers chemical resistance at an affordable price.

Specifications

Switch*	5 Amp @ 24 VDC and 250 VAC 1.0 Amp resistive 0.5 Amp inductive @ 24 VDC (-G option)
Repeatability	See Table 1
Wetted Parts	
Diaphragm	Nitrile (optional Viton®, EPDM or Kapton®)
Fitting	Brass
Housing	Brass
O-Ring	Nitrile (optional Viton® or EPDM)
Ingress Protection**	DIN 43650A IP00; Terminals IP00; Flying Leads IP00
Proof Pressure	0 psia to 150 psi (-1 bar to 10.3 bar)
Burst Pressure	300 psi (20.7 bar)
Approvals	CE, UL Approved units available
Weight, Approximate	0.31 lbs. (0.14 kg)

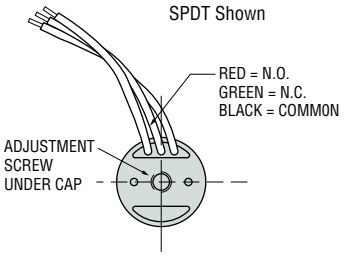
* Gold contacts (option G) may be required for less than 12 VDC and 20 mA.
** Plastic housing is vented to atmosphere. Consult factory for non-vented version, IP-rated version.

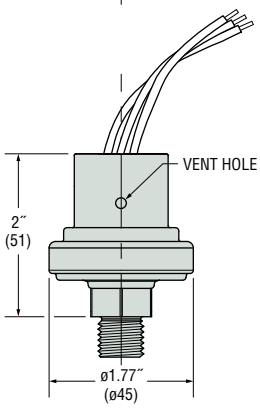
Recommended Operating Temperature Limits

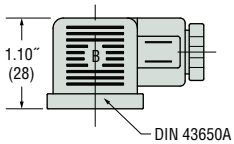
Diaphragm Material	Range
Nitrile	15°F to 250°F (-9°C to +121°C)
Viton®	0°F to 250°F (-18°C to +121°C)
EPDM	-20°F to +250°F (-29°C to +121°C)
Kapton®	-40°F to +250°F (-40°C to +121°C)

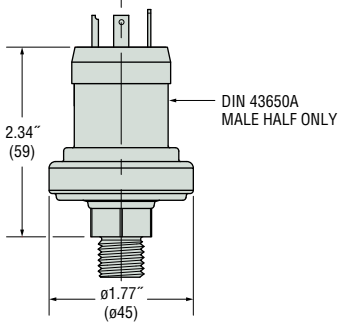
Note: Switches may function below the cold temperature limit but the set point and deadband will increase. Consult factory for details.

Dimensions









PRESSURE SWITCHES

How To Order

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

PS11 -10 -4MNB -C -HC -XX -XXXX

(1) (2) (3) (4) (5) (6)

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

(2) Pressure Fitting[1]
-2MNB = 1/8˝ NPTM Brass
-4MNB = 1/4˝ NPTM Brass
-4MGB = 1/4˝ BSPM Brass (G type)
-4MSB = 7/16˝-20 SAE Male, Brass

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

(4) Electrical Termination[2]
-FLXX = Flying Leads[3]
-ELXX = 1/2˝ Male NPT Conduit w/Flying Leads[3]
-H = DIN 43650A Male Half Only
-HC = DIN 43650A 9mm Cable Clamp
-HN = DIN 43650A 1/2˝ NPT Female Conduit

(5) Options
-V = Viton® Diaphragm
-E = EPDM Diaphragm
-K = Kapton® Diaphragm
-G = Gold Contacts
(for loads less than 12 mA @ 12 VDC)
-OF = Oil Free Cleaned
-WF = Weather Pack Connector, Female
-WM = Weather Pack Connector, Male
-DE = Deutsch Connector, Male, DT04 Series

(6) Fixed Set Point (optional)
A. Specify set point **-FS** (in PSI or mBAR, see example)[4]
B. Set Point Actuation
R on Rising Pressure
F on Falling Pressure
Example: **-FS200MBARF** for 200 mBAR Falling
or **-FS3PSIR** for 3 PSI Rising

Notes:
1. Other fittings available. Consult factory.
2. DIN units are available with **-C** SPDT circuit only.
3. 18˝ is standard. Specify lead length in inches (max. 48˝). e.g. **-FL18** or **-EL30**.
4. Set Point must be within Pressure Range selected in Step 1.

Table 1 — Pressure Range Codes

Pressure Range Code	Pressure Range	Accuracy*	Average Deadband**
10	0.75-4 psig (51-276 mbar)	±0.15 psi (10 mbar) +4% of setting	0.2 psi (14 mbar) +9% of setting
20	3.5-15 psig (241-1034 mbar)	±0.25 psi (17 mbar) +5% of setting	0.4 psig (26 mbar) +11% of setting

* Accuracy and set point of units may change due to the effects of temperature.
** In certain applications deadband can be tailored and controlled to customer specifications. Consult factory for details.

Order from: C A Briggs Company; 622 Mary Street; Suite 101 - Warminster, PA 18974
Phone: 267-673-8117 - Fax: 267-673-8118; E-Mail: Sales@cabriggs.com - www.cabriggs.com

PS31/PS51 – Kapton® Diaphragm OEM Subminiature Pressure Switch

- 5 to 300 psi (0.345 to 20 bar)
- Ideal for Low Temperature Pneumatic Applications
- Adjustable or Factory Set

These compact pressure switches are designed for OEM applications. Made economical with metal blade contacts in lieu of microswitches, these switches feature Kapton® diaphragms. Kapton® polyimide maintains excellent physical properties over a wide temperature range. It also offers superb chemical resistance and has no known organic solvents.

The PS31 and PS51 share identical construction and envelope dimensions, with the PS51 Series providing higher pressure ranges.

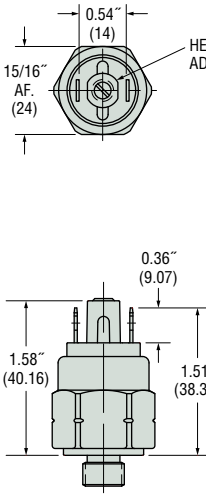
Specifications

Operating Temperature	-40°F to +230°F (-40°C to +110°C)
Switch*	100 VA Max.
Repeatability	See Table 1
Wetted Parts	
Diaphragm	Teflon® Coated Kapton® (Solid Teflon® Available)
O-Ring	Nitrile (Std.) Consult factory for other materials
Fitting	Brass (optional 316 Stainless Steel)
Electrical Termination	Exposed Terminals IP00; IP option IP66
Deadband	See Table 1
Proof Pressure	500 psi (35 bar)
Burst Pressure	1000 psi (69 bar)
Approvals	CE (limits switch voltage to 42 VDC)
Weight, Approximate	Brass: 0.14 lbs. (0.06 kg)

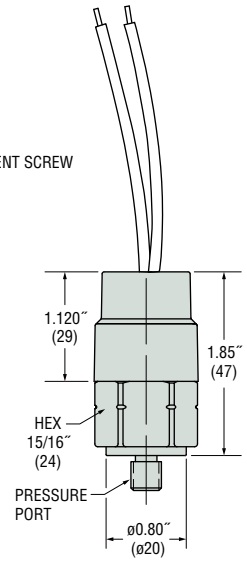
* Gold contacts (option G) may be required for less than 12 VDC and 20 mA.

Dimensions

1/4˝ Spades



Flying Leads with IP Option



PRESSURE SWITCHES

Order from: C A Briggs Company; 622 Mary Street; Suite 101 - Warminster, PA 18974
Phone: 267-673-8117 - Fax: 267-673-8118; E-Mail: Sales@cabriggs.com - www.cabriggs.com

How To Order

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

PS31 (1) **-20** (2) **-4MNB** (3) **-A** (4) **-SP** (5) **-XX** (6) **-XXXX** (7)

1 Series
PS31 or **PS51**

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

3 Pressure Fitting[1]

Brass
- **-2MNB** = 1/8˝ NPTM
- **-4MNB** = 1/4˝ NPTM
- **-2MGB** = 1/8˝ BSPM (G type)
- **-4MGB** = 1/4˝ BSPM (G type)
- **-8MGB** = 1/2˝ BSPM (G type)
- **-M10B** = M10 x 1.0, Straight
- **-M12B** = M12 x 1.5, Straight
- **-4MSB** = 7/16˝-20 SAE Male
- **-6MSB** = 9/16˝-18 SAE Male

316 Stainless Steel
- **-2MNS** = 1/8˝ NPTM
- **-4MNS** = 1/4˝ NPTM
- **-2MGS** = 1/8˝ BSPM (G type)
- **-4MGS** = 1/4˝ BSPM (G type)
- **-4MSS** = 7/16˝-20 SAE Male
- **-6MSS** = 9/16˝-18 SAE Male

4 Circuit
- **-A** = SPST/N.O.
- **-B** = SPST/N.C.

5 Electrical Termination
- **-SP** = Spade Terminals (standard)
- **-TS** = Terminal Screws
- **-FLXX** = Flying Leads[2]
- **-FLSXX** = Flying Leads w/PVC Shrink Tubing[2]
- **-CABXX** = 18 AWG PVC Cable[3]

6 Options
- **-G** = Gold Contacts (for loads less than 12 mA @ 12 VDC)
- **-IP** = Ingress Protection[4]
- **-IPA** = Removable Silicone Seal for Set Point Adjustment[5]
- **-OF** = Oil Free Cleaned
- **-RB** = Rubber Boot (shipped loose)
- **-WF** = Weather Pack Connector, Female
- **-WM** = Weather Pack Connector, Male
- **-DE** = Deutsch Connector, Male, DT04 Series

7 Fixed Set Point (optional)
A. Specify set point **-FS** (in PSI or BAR, see example)[6]
B. Set Point Actuation
R on Rising Pressure
F on Falling Pressure
Example: **-FS0.6BARF** for 0.6 BAR Falling or **-FS10PSIR** for 10 PSI Rising

Notes:
1. Other fittings available. Consult factory.
2. 18˝ is standard. Specify lead length in inches (max. 48˝). e.g. **-FL18** or **-FLS30**.
3. 36˝ is minimum. Specify cable length in inches. e.g. **-CAB36** or **-CAB120**.
4. Ingress Protection is available only with **-FL**, **-FLS** or **-CAB** Electrical Termination choices.
5. IPA protection is available only with **-FL** or **-FLS**.
6. Set Point must be within Pressure Range selected in Step 2.

Table 1 — Pressure Range Codes

PS31

Pressure Range Code	Pressure Range	Accuracy*	Average Deadband**
20	5-25 psi (0.3-1.7 bar)	±1 psi (0.07 bar) +3% of setting	2 psi (0.14 bar) +4% of setting
30	20-60 psi (1.4-4.1 bar)	±1.5 psi (0.10 bar) +3% of setting	3 psi (0.21 bar) +4% of setting
40	50-150 psi (3.4-10.3 bar)	±2.5 psi (0.17 bar) +3% of setting	4 psi (0.28 bar) +4% of setting

PS51

Pressure Range Code	Pressure Range	Accuracy*	Average Deadband**
15	50-150 psi (3.4-10.3 bar)	±3.0 psi (0.21 bar) +4% of setting	5 psi (0.14 bar) +5% of setting
20	150-300 psi (10.3-20.7 bar)	±4 psi (0.28 bar) +4% of setting	8 psi (0.21 bar) +5% of setting

* Accuracy and set point of units may change due to the effects of temperature.
** In certain applications deadband can be tailored and controlled to customer specifications. Consult factory for details.

PS32/PS52 – Elastomer Diaphragm OEM Subminiature Pressure Switch

- 10 to 300 psi (0.69 to 20 bar)
- Ideal for Pneumatic and Low Pressure Hydraulic Applications
- Adjustable or Factory Set

These compact pressure switches are designed for OEM applications. Made economical by using metal blade contacts in lieu of microswitches, the series features long-lasting Elastomer diaphragms in three materials. Elastomer diaphragms offer increased sensitivity and life for applications without temperature extremes.

The PS32 and PS52 share identical construction and envelope dimensions, with the PS52 Series providing higher pressure ranges.

Specifications

Switch*	100 VA Max.
Repeatability	See Table 1
Wetted Parts	
Diaphragm	Elastomer (Nitrile standard) (Viton®, EPDM optional)
Fitting	Brass standard (optional 316 SS)
Electrical Termination	Exposed Terminals IP00; IP option IP66
Deadband	See Table 1
Proof Pressure	500 psi (35 bar)
Burst Pressure	1000 psi (69 bar)
Approvals	CE (limits switch voltage to 42 VDC)
Weight, Approximate	Brass: 0.14 lbs. (0.06 kg)

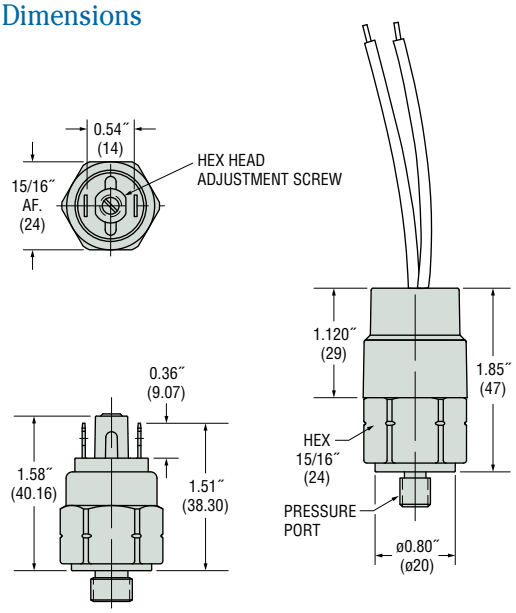
* Gold contacts (option G) may be required for less than 12 VDC and 20 mA.

Recommended Operating Temperature Limits

Diaphragm Material	Range
Nitrile	15°F to 230°F (-9°C to 110°C)
Viton®	0°F to 230°F (-18°C to 110°C)
EPDM	-10°F to 230°F (-23°C to 110°C)

Note: Switches may function below the cold temperature limit but the set points and deadband will increase. Consult factory for details.

Dimensions



PRESSURE SWITCHES

Order from: C A Briggs Company; 622 Mary Street; Suite 101 - Warminster, PA 18974
Phone: 267-673-8117 - Fax: 267-673-8118; E-Mail: Sales@cabriggs.com - www.cabriggs.com

How To Order

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

PS32 -20 -4MNB -A -SP -XX -XXXX

1 2 3 4 5 6 7

1 Series
PS32 or **PS52**

2 Pressure Range Code
Insert Pressure Range Code from Tables 1, below.

3 Pressure Fitting[1]
Brass
-2MNB = 1/8˝ NPTM
-4MNB = 1/4˝ NPTM
-2MGB = 1/8˝ BSPM (G type)
-4MGB = 1/4˝ BSPM (G type)
-4MSB = 7/16˝-20 SAE Male

316 Stainless Steel
-2MNS = 1/8˝ NPTM
-4MNS = 1/4˝ NPTM
-2MGS = 1/8˝ BSPM (G type)
-4MGS = 1/4˝ BSPM (G type)
-4MSS = 7/16˝-20 SAE Male

4 Circuit
-A = SPST/N.O.
-B = SPST/N.C.

5 Electrical Termination
-SP = Spade Terminals (standard)
-TS = Terminal Screws
-FLXX = Flying Leads[2]
-FLSXX = Flying Leads w/PVC Shrink Tubing[2]
-CABXX = 18 AWG PVC Cable[3]

6 Options
-V = Viton® Diaphragm
-E = EPDM Diaphragm
-H = ECOH Diaphragm
-G = Gold Contacts
(for loads less than 12 mA @ 12 VDC)
-IP = Ingress Protection[4]
-IPA = Removable Silicone Seal for Set Point Adjustment[5]
-OF = Oil Free Cleaned
-RB = Rubber Boot (shipped loose)
-WF = Weather Pack Connector, Female
-WM = Weather Pack Connector, Male
-DE = Deutsch Connector, Male, DT04 Series

7 Fixed Set Point (optional)
A. Specify set point **-FS**
(in PSI or BAR, see example)[6]
B. Set Point Actuation
R on Rising Pressure
F on Falling Pressure
Example: **-FS0.6BARF** for 0.6 BAR Falling
or **-FS10PSIR** for 10 PSI Rising

Notes:
1. Other fittings available. Consult factory.
2. 18˝ is standard. Specify lead length in inches (max. 48˝). e.g. **-FL18** or **-FLS30**.
3. 36˝ is minimum. Specify cable length in inches. e.g. **-CAB36** or **-CAB120**.
4. Ingress Protection is available only with **-FL**, **-FLS** or **-CAB** Electrical Termination choices.
5. IPA protection is available only with **-FL** or **-FLS**.
6. Set Point must be within Pressure Range selected in Step 2.

Table 1 — Pressure Range Codes

PS32

Pressure Range Code	Pressure Range	Accuracy*	Average Deadband**
20	10-25 psi (0.69-1.7 bar)	±1 psi (0.07 bar) +3% of setting	2 psi (0.14 bar) +4% of setting
30	20-60 psi (1.4-4.1 bar)	±1.5 psi (0.10 bar) +3% of setting	3 psi (0.21 bar) +4% of setting
40	50-150 psi (3.4-10.3 bar)	±2.5 psi (0.17 bar) +3% of setting	4 psig (0.28 bar) +4% of setting

PS52

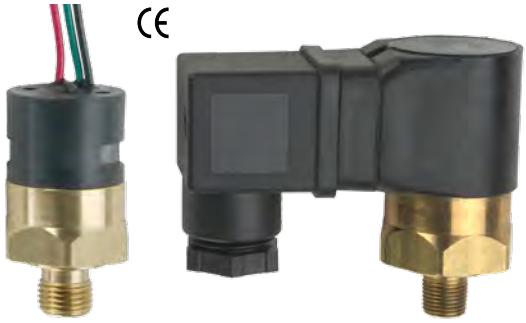
Pressure Range Code	Pressure Range	Accuracy*	Average Deadband**
15	50-150 psi (3.4-10.3 bar)	±3.0 psi (0.21 bar) +4% of setting	5 psi (0.14 bar) +5% of setting
20	150-300 psi (10.3-20.7 bar)	±4 psi (0.28 bar) +4% of setting	8 psi (0.21 bar) +5% of setting

* Accuracy and set point of units may change due to the effects of temperature.
** In certain applications deadband can be tailored and controlled to customer specifications. Consult factory for details.

PS41 – Economical Miniature Pressure Switches

- 4 to 100 psi (0.28 to 7 bar)

These miniature pressure switches are designed for demanding applications where space and/or price are strong concerns. The switches utilize a piston/diaphragm design, which incorporates the high proof pressure of piston technology with the sensitivity of diaphragm designs. Switches are field adjustable via an Allen head screw that is hidden to protect against unauthorized tampering.



Specifications

Switch	SPST; SPDT
Repeatability	See Table 1
Wetted Parts	
Diaphragm Material	Nitrile (optional EPDM, Viton® or Neoprene)
Fitting	Brass (optional 316 Stainless Steel)
Electrical Termination	DIN 43650A IP65; Terminals IP00; Flying Leads IP65; Option IP: IP66; Conduit with Flying Leads IP65
Proof Pressure	350 psi (24 bar)
Burst Pressure	700 psi (48 bar)
Approvals	CE, UL Approved units available
Weight, Approximate	Brass: 0.3 lbs. (0.14 kg)

Recommended Operating Temperature Limits

	Options Selected		
Diaphragm Material	**No option, -10A, -SP or -RD**	**-RD or -RD and -G**	**-SP or -10A**
Nitrile	15°F to 185°F (-9°C to +85°C)	15°F to 250°F (-9°C to +121°C)	15°F to 212°F (-9°C to +100°C)
Viton®	0°F to 185°F (-18°C to +85°C)	0°F to 250°F (-18°C to +121°C)	0°F to 212°F (-18°C to +100°C)
EPDM	-10°F to +185°F (-23°C to +85°C)	-10°F to +250°F (-23°C to +121°C)	-10°F to +212°F (-23°C to +100°C)
Neoprene	-10°F to +185°F (-23°C to +85°C)	-10°F to +250°F (-23°C to +121°C)	-10°F to +212°F (-23°C to +100°C)

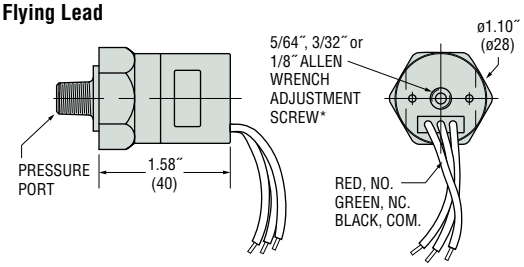
Note: Switches may function below the cold temperature limit but the set points and deadband will increase. Consult factory for details.

Electrical Switch Ratings

Options Selected	AC	DC
No option or **-RD**	5 amps @ 125/250 Volts	5 amps resistive, 3 amps inductive @ 28 Volts
-G or **-RD** with **-G**	1 amp @ 125 Volts	1 amp resistive, 0.5 amp inductive @ 28 Volts
-SP without **-G**	10.1 amps @ 125/250 Volts	—
-SP with **-G**	2 amps @ 125/250 Volts	—

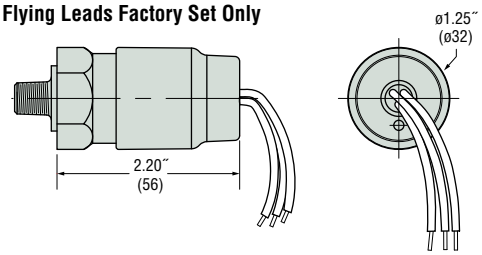
Dimensions

Flying Lead

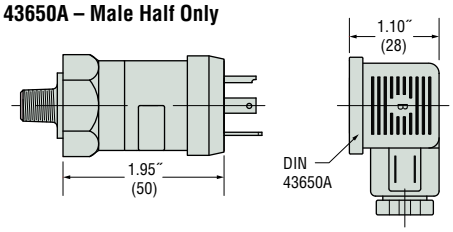


* Adjustment screw is located under protective screw.

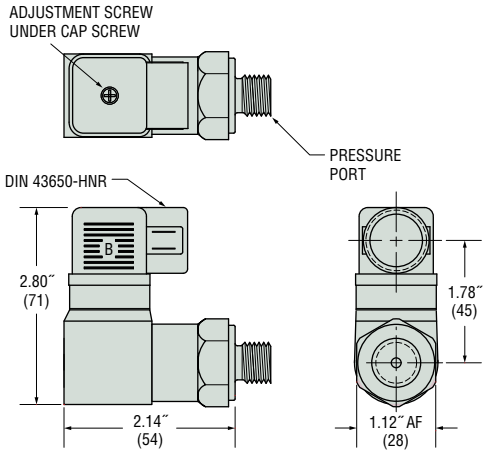
Ingress Protection Option (IP66) with Flying Leads Factory Set Only



DIN 43650A – Male Half Only



Right Angle DIN (HNR)



PRESSURE SWITCHES

Order from: C A Briggs Company; 622 Mary Street; Suite 101 - Warminster, PA 18974
Phone: 267-673-8117 - Fax: 267-673-8118; E-Mail: Sales@cabriggs.com - www.cabriggs.com

How To Order

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

PS41 -10 -4MNB -C -H -XX -XXXX

(1) (2) (3) (4) (5) (6)

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

(2) Pressure Fitting[1]

Brass
- **-2MNB** = 1/8˝ NPTM
- **-4MNB** = 1/4˝ NPTM
- **-2MGB** = 1/8˝ BSPM (G type)
- **-4MGB** = 1/4˝ BSPM (G type)
- **-4MSB** = 7/16˝-20 SAE Male
- **-6MSB** = 9/16˝-18 SAE Male

316 Stainless Steel
- **-2MNS** = 1/8˝ NPTM
- **-4MNS** = 1/4˝ NPTM
- **-4MGS** = 1/4˝ BSPM (G type)
- **-4MSS** = 7/16˝-20 SAE Male

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

(4) Electrical Termination
- **-SP** = Spade Terminals[2]
- **-FLXX** = Flying Leads[3]
- **-FLSXX** = Flying Leads w/PVC Shrink Tubing[3]
- **-ELXX** = 1/2˝ NPT Male Conduit w/Flying Leads[4]
- **-CABXX** = 18 AWG PVC Cable[5]
- **-H** = DIN 43650A Male Half Only[6]
- **-HR** = Right Angle DIN 43650A Male Half Only[6]
- **-HC** = DIN 43650A 9mm Cable Clamp[6]
- **-HCR** = Right Angle DIN 43650A 9mm Cable Clamp[6]
- **-HN** = DIN 43650A with 1/2˝ Female NPT Conduit[6]
- **-HNR** = Right Angle DIN 43650A with 1/2˝ Female NPT Conduit[6]

(5) Options[7]
- **-V** = Viton® Diaphragm
- **-N** = Neoprene Diaphragm
- **-E** = EPDM Diaphragm
- **-10A** = 10A @ 125/250 VAC Max. Rating
- **-G** = Gold Contacts (for loads less than 12 mA @ 12 VDC)
- **-RD** = Reduced Differential (25% reduction typical)
- **-IP** = Ingress Protection[8]
- **-OF** = Oil Free Cleaned
- **-WF** = Weather Pack Connector, Female
- **-WM** = Weather Pack Connector, Male
- **-DE** = Deutsch Connector, Male, DT04 Series

(6) Fixed Set Point (optional)

A. Specify set point **-FS** (in PSI or BAR, see example)[9]

B. Set Point Actuation
R on Rising Pressure
F on Falling Pressure
Example: **-FS0.5BARF** for 0.5 BAR Falling or **-FS5PSIR** for 5 PSI Rising

Notes:
1. Other fittings available. Consult factory.
2. Requires **-10A** or **-G** option. (20% increase in deadband typical)
3. 18˝ is standard. Specify lead length in inches (max. 48˝). e.g. **-FL18** or **-FLS30**.
4. 18˝ is standard. Specify lead length in inches (max. 48˝). e.g. **-EL18** or **-EL30**.
5. 36˝ is minimum. Specify cable length in inches. e.g. **-CAB36** or **-CAB120**.
6. DIN connectors require **-C** SPDT circuit.
7. Options **-10A**, **-G** or **-RD** cannot be combined.
8. Ingress Protection is available only with **-FL**, **-FLS** or **-CAB** Electrical Termination choices. Ingress Protection requires Fixed Set Point **-FS**.
9. Set Point must be within Pressure Range selected in Step 1.

Table 1 — Pressure Range Codes

Pressure Range Code	Pressure Range	Accuracy*	Average Deadband**
10	4-8 psi (0.28-0.55 bar)	±0.35 psi (0.024 bar) +2% of setting	1.50 psi (0.10 bar) +7% of setting
20	7-30 psi (0.48-2.07 bar)	±0.8 psi (0.055 bar) +2% of setting	3 psi (0.21 bar) +8% of setting
30	25-100 psi (1.7-6.9 bar)	±2.0 psi (0.138 bar) +2% of setting	5 psig (0.28 bar) +10% of setting

* Accuracy and set point of units may change due to the effects of temperature.
** These numbers are for the standard microswitch. With either the -SP or -10A option, the values are typically 20% greater than those listed. With the -RD option, the values will be typically 25% less than those listed. In certain applications deadband can be tailored and controlled to customer specifications. Consult factory for details.

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, FVMQ [Fluorosilicone] or EPDM)
Fitting	Zinc-Plated Steel (316 L Stainless Steel available)
Wetted Parts (Pressure Range Codes 70-100)	
Seal	Internally Lubricated 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
Life Cycle**	2 MM cycles with checks every 250k for all 10 pressure ranges. Range 10-40: 0 - 500 - 0 PSI @ ~1Hz Range 40-60: 0 - 3000 - 0 PSI @ ~1Hz Range 70-100: 0 - 6000 - 0 PSI @ ~1Hz
Approvals	CE, RoHS

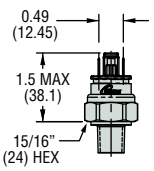
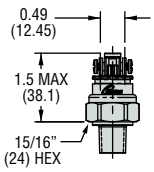
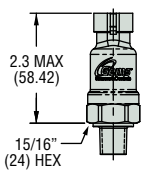
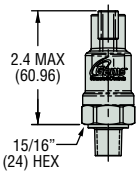
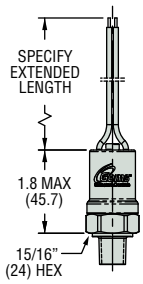
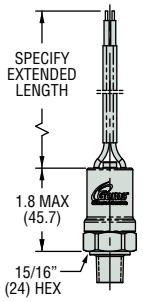
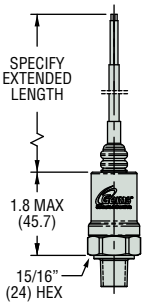
* Gold contacts (option G) may be required for less than 12 VDC and 20 mA.
** Contact Factory for life cycle on FVMQ (Fluorosilicone) diaphragm option.

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)
FVMQ (Pressure Range Codes 10-40)	-40°F to +250°F (-40°C to +121°C)
Nitrile (Pressure Range Codes 70-100)	15°F to 250°F (-9°C to +121°C)
FKM (All Ranges)	0°F to 250°F (-18°C to +121°C)
EPDM (All Ranges)	-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)				

Order from: C A Briggs Company; 622 Mary Street; Suite 101 - Warminster, PA 18974
Phone: 267-673-8117 - Fax: 267-673-8118; E-Mail: Sales@cabriggs.com - www.cabriggs.com

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** = 1/8-28 BSPP; ISO 228-G 1/8 B (Pressure Range Codes 10-60 Only)
- **-4MGZ** = 1/4-19 BSPP; ISO 228-G 1/4 B
- **-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** = 1/4-19 BSPP; ISO 228-G 1/4 B
- **-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
- **-F** = FVMQ (Fluorosilicone; Pressure Range Codes 10-40 Only)[6]
- **-G** = Gold Contacts
- **-OF** = Oil Free Cleaned (Pressure Range Codes 10-60 Only; 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. (Tamper-resistant hex bit 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**.
6. Consult factory for life cycle information.

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.

PS61P – OEM Subminiature Pressure Switch

- 510 to 4,350 psi (35 to 300 bar)
- Exceptional Size-to-Pressure-Range Ratio
- Piston Actuator with Exceptional Overpressure Capability
- Perfect for Demanding Hydraulic and OHV Applications

All new and available with the most popular electrical connector options. These subminiature pressure switches are designed for medium- to high-pressure OEM applications. They are equipped with high proof and burst pressure capabilities for demanding hydraulic applications such as forklifts, scissor lifts, and off road equipment.

Specifications

Switch*	100 VA Max.
Repeatability	See Table 1
Deadband	See Table 1
Wetted Parts	
Seal	Nitrile (optional EPDM or Viton®)
Fitting	Zinc-Plated Steel
Bearing	Proprietary plastic resistant to almost all chemicals
Piston	Hardened Alloy Steel
Temperatures	
Fluid	See Table 2
Ambient	-40°F to +250°F (-40°C to +121°C)
Storage	-65°F to +275°F (-54°C to +135°C)
Proof Pressure	7,000 psi (483 bar)
Burst Pressure	22,000 psi (1,517 bar)
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 – Pressure Range Codes

Pressure Range Code	Pressure Range	Repeatability*	Average Deadband**
10	510-1,235 psi (35-85 bar)	±30 psi (2.1 bar) +4% of setting	+16% of setting
20	800-1,960 psi (55-135 bar)	±48 psi (3.3 bar) +4% of setting	+13% of setting
30	1,835-3,115 psi (127-215 bar)	±110 psi (7.6 bar) +6% of setting	+24% of setting
40	2,970-4,350 psi (205-300 bar)	±190 psi (13.1 bar) +6% of setting	+20% of setting

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

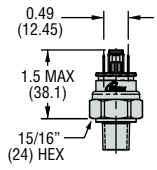
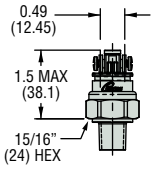
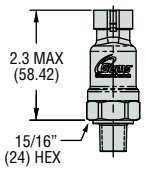
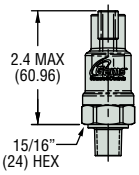
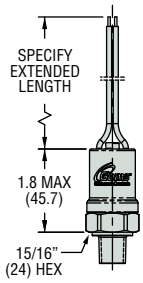
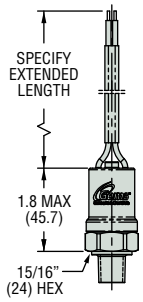
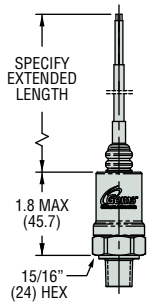
** Deadband values are an approximation at room temperature with a 100 Cp fluid. At lower temperature and/or higher fluid viscosities the deadband will be much larger than the value shown. At high fluid temperature and a rapid cycle rate, the deadband may be lower than the approximations given. Please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

Table 2 – Recommended Fluid Temperature Limits

Seal Material	Range
Nitrile	15°F to 250°F (-9°C to +121°C)
Viton®	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).
3. 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.

PS61P -10 -4MNZ -A -SP -X-X-XX

(1) (2) (3) (4) (5)

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

(2) Pressure Fitting[1]
12L14 Zinc-Plated Steel
-2MNZ = 1/8˝ NPT Male
-4MNZ = 1/4˝ NPT Male
-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
-M14Z = M14 x 1.5 ISO 6149-2

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

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

(5) Options
-V = Viton® Seals
-E = EPDM Seals
-G = Gold Contacts
-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 available. Consult factory.
2. 18˝ is standard. Specify lead length in inches (max. 48˝). e.g. **-FLA18** or **-FLF30**.
3. 36˝ is minimum. Specify cable length in inches. e.g. **-CAB36** or **-CAB120**.

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Phone: 267-673-8117 - Fax: 267-673-8118; E-Mail: Sales@cabriggs.com - www.cabriggs.com

PS62 – OEM Subminiature Pressure Switch

- 15 to 600 psi (1 to 41 bar)
- Exceptional Size-to-Pressure-Range Ratio
- Adjustable or Factory Set
- Minimal Set Point Change at Low Temperature Extremes

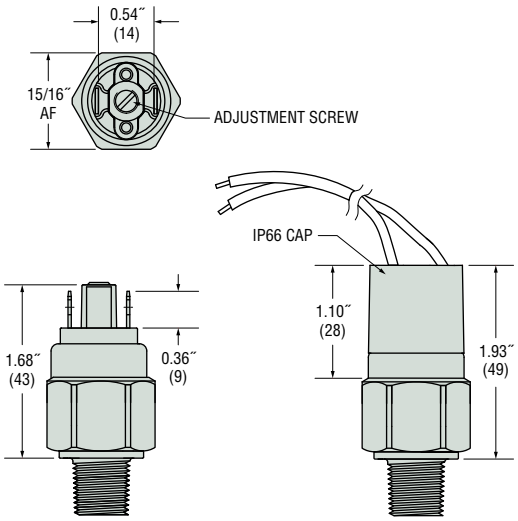
These compact pressure switches are designed for medium pressure OEM applications. They offer all the performance of our proven PS61 model with the low temperature capability of Kapton®.

Specifications

Operating Temperature	-40°F to +230°F (-40°C to +110°C)
Switch*	100 VA Max.
Repeatability	See Table 1
Wetted Parts	
Housing	Zinc-Plated Steel (optional 316L Stainless Steel)
Diaphragm	Kapton® (polyimide)
O-Ring	Nitrile (other materials available)
Electrical Termination	Exposed Terminals IP00; IP option IP66
Deadband	See Table 1
Proof Pressure	3000 psi (207 bar)
Burst Pressure	6000 psi (414 bar)
Approvals	CE (limits switch voltage to 42 VDC)
Weight, Approximate	Steel: 0.14 lbs. (0.06 kg)

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

Dimensions



PRESSURE SWITCHES

How To Order

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

PS62 -10 -4MNZ -A -SP -XX -XXXX
(1) (2) (3) (4) (5) (6)

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

(2) Pressure Fitting[1]

12L14 Zinc-Plated Steel
- **-2MNZ** = 1/8˝ NPTM 12L14
- **-4MNZ** = 1/4˝ NPTM 12L14
- **-2MGZ** = 1/8˝ BSPM 12L14 (G type)
- **-4MGZ** = 1/4˝ BSPM 12L14 (G type)
- **-4MSZ** = 7/16˝-20 SAE Male
- **-6MSZ** = 9/16˝-18 SAE Male
- **-M10Z** = M10 x 1.0, Straight
- **-M14Z** = M14 x 1.5, Straight

316L Stainless Steel
- **-2MNS** = 1/8˝ NPTM
- **-4MNS** = 1/4˝ NPTM
- **-2MGS** = 1/8˝ BSPM (G type)
- **-4MGS** = 1/4˝ BSPM (G type)
- **-4MSS** = 7/16˝-20 SAE Male
- **-6MSS** = 9/16˝-18 SAE Male

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

(4) Electrical Termination
- **-SP** = Spade Terminals (standard)
- **-TS** = Terminal Screws
- **-FLXX** = Flying Leads[2]
- **-FLSXX** = Flying Leads w/PVC Shrink Tubing[2]
- **-CABXX** = 18 AWG PVC Cable[3]

(5) Options
- **-G** = Gold Contacts (for loads less than 12 mA @ 12 VDC)
- **-IP** = Ingress Protection[4]
- **-IPA** = Removable Silicone Seal for Set Point Adjustment[5]
- **-R** = Restrictor (low damping coefficient) Brass
- **-SR** = Spiral Restrictor (high damping coefficient) 12L14 Steel w/Black Oxide Finish[6]
- **-OF** = Oil Free Cleaned (requires SS housing)
- **-RB** = Rubber Boot (shipped loose)
- **-WF** = Weather Pack Connector, Female
- **-WM** = Weather Pack Connector, Male
- **-DE** = Deutsch Connector, Male, DT04 Series

(6) Fixed Set Point (optional)
A. Specify set point **-FS** (in PSI or BAR, see example)[7]
B. Set Point Actuation
R on Rising Pressure
F on Falling Pressure
Example: **-FS3BARF** for 3 BAR Falling or **-FS60PSIR** for 60 PSI Rising

Notes:
1. Other fittings available. Consult factory.
2. 18˝ is standard. Specify lead length in inches (max. 48˝). e.g. **-FL18** or **-FLS30**.
3. 36˝ is minimum. Specify cable length in inches. e.g. **-CAB36** or **-CAB120**.
4. Ingress Protection is available only with **-FL**, **-FLS** or **-CAB** Electrical Termination choices.
5. IPA protection is available only with **-FL** or **-FLS**.
6. **-SR** will result in wider deadbands and lower response time.
7. Set Point must be within Pressure Range selected in Step 1.

Table 1 — Pressure Range Codes

Pressure Range Code	Pressure Range	Accuracy*	Average Deadband**
10	15-60 psi (1-4 bar)	±1.5 psi (0.10 bar) +4% of setting	3 psi (0.21 bar) +6% of setting
20	40-150 psi (3-10 bar)	±2.5 psi (0.17 bar) +4% of setting	5 psig (0.34 bar) +7% of setting
30	75-275 psi (5.2-18.9 bar)	±3.75 psi (0.26 bar) +4% of setting	7 psig (0.48 bar) +9% of setting
40	150-600 psi (10.3-41.4 bar)	±5 psi (0.34 bar) +4% of setting	10 psi (0.69 bar) +11% of setting

* Accuracy and set point of units may change due to the effects of temperature.
** In certain applications deadband can be tailored and controlled to customer specifications. Consult factory for details.

Order from: C A Briggs Company; 622 Mary Street; Suite 101 - Warminster, PA 18974
Phone: 267-673-8117 - Fax: 267-673-8118; E-Mail: Sales@cabriggs.com - www.cabriggs.com

PS71 – General Purpose Mini Pressure Switches

- 10 to 5000 psi (0.7 to 344 bar)

These versatile general purpose switches with snap action microswitches can be used in a wide range of hydraulic and pneumatic applications. Their proven piston/diaphragm design offers outstanding accuracy over a very wide pressure range with an outstanding 6000 psi proof pressure. Their modular construction allows Gems to offer a large number of standard pressure fittings in two materials as well as numerous electrical ratings and terminations. Users can easily configure this model to meet their needs.

Specifications

Switch	SPST; SPDT
Repeatability	See Table 1
Wetted Parts	
Diaphragm	Nitrile (optional EPDM, Viton® or Neoprene)
Fitting	Zinc-Plated Steel (Optional 316 SS)
Electrical Termination	DIN 43650A IP65; Spade Terminals IP00; Flying Leads IP65; Conduit with Flying Leads IP65; IP option IP66
Proof Pressure	6000 psi (414 bar)
Burst Pressure	9000 psi (621 bar)
Approvals	CE, UL Approved units available
Weight, Approximate	0.4 lbs. (0.15 kg)

Recommended Operating Temperature Limits

	Options Selected		
Diaphragm Material	**No option, -10A, -SP or -RD**	**-RD or -RD and -G**	**-SP or -10A**
Nitrile	15°F to 185°F (-9°C to +85°C)	15°F to 250°F (-9°C to +121°C)	15°F to 212°F (-9°C to +100°C)
Viton®	0°F to 185°F (-18°C to +85°C)	0°F to 250°F (-18°C to +121°C)	0°F to 212°F (-18°C to +100°C)
EPDM	-10°F to +185°F (-23°C to +85°C)	-10°F to +250°F (-23°C to +121°C)	-10°F to +212°F (-23°C to +100°C)
Neoprene	-10°F to +185°F (-23°C to +85°C)	-10°F to +250°F (-23°C to +121°C)	-10°F to +212°F (-23°C to +100°C)

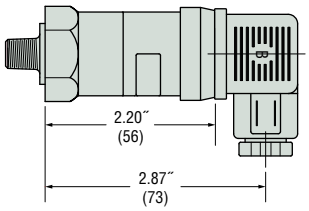
Note: Switches may function below the cold temperature limit but the set points and deadband will increase. Consult factory for details.

Electrical Switch Ratings

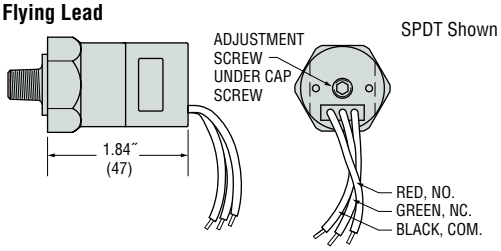
Options Selected	AC	DC
No option or **-RD**	5 amps @ 125/250 Volts	5 amps resistive, 3 amps inductive @ 28 Volts
-G only or **-RD** with **-G**	1 amp @ 125 Volts	1 amp resistive, 0.5 amp inductive @ 28 Volts
-10A only or **-SP** without **-G**	10.1 amps @ 125/250 Volts	—
-SP with **-G**	2 amps @ 125/250 Volts	—

Dimensions

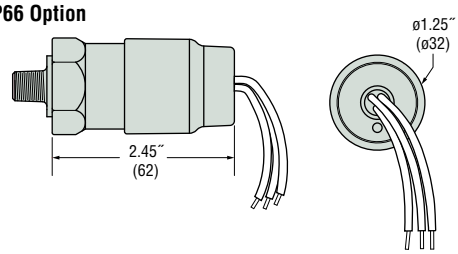
DIN 43650A with Cable Clamp



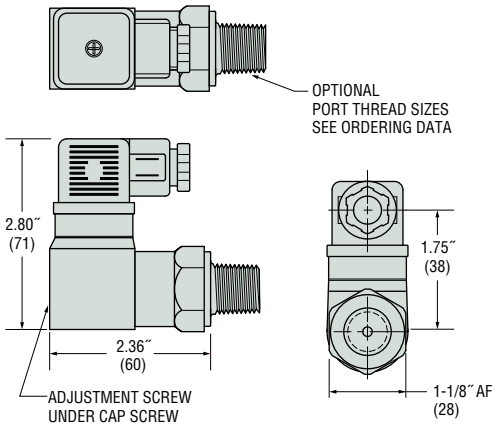
Flying Lead



IP66 Option



Right Angle DIN 43650A with Cable Clamp



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Phone: 267-673-8117 - Fax: 267-673-8118; E-Mail: Sales@cabriggs.com - www.cabriggs.com

How To Order

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

PS71 -10 -4MNZ -C -H -XX -XXXX
(1) (2) (3) (4) (5) (6)

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

(2) Pressure Fitting[1]

12L14 Zinc-Plated Steel
- **-2MNZ** = 1/8˝ NPTM
- **-4MNZ** = 1/4˝ NPTM
- **-8MNZ** = 1/2˝ NPTM
- **-2MGZ** = 1/8˝ BSPM (G type)
- **-4MGZ** = 1/4˝ BSPM (G type)
- **-4MSZ** = 7/16˝-20 SAE Male
- **-6MSZ** = 9/16˝-18 SAE Male
- **-M10Z** = M10 x 1.0, Straight
- **-M12Z** = M12 x 1.5, Straight
- **-M14Z** = M14 x 1.5, Straight

316 Stainless Steel
- **-2MNS** = 1/8˝ NPTM
- **-4MNS** = 1/4˝ NPTM
- **-2MGS** = 1/8˝ BSPM (G type)
- **-4MGS** = 1/4˝ BSPM (G type)

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

(4) Electrical Termination
- **-SP** = Spade Terminals[2]
- **-FLXX** = Flying Leads[3]
- **-FLSXX** = Flying Leads w/PVC Shrink Tubing[3]
- **-ELXX** = 1/2˝ NPT Male Conduit w/Flying Leads[4]
- **-CABXX** = 18 AWG PVC Cable[5]
- **-H** = DIN 43650A Male Half Only[6]
- **-HR** = Right Angle DIN 43650A Male Half Only[6]
- **-HC** = DIN 43650A 9mm Cable Clamp[6]
- **-HCR** = Right Angle DIN 43650A 9mm Cable Clamp[6]
- **-HN** = DIN 43650A with 1/2˝ Female NPT Conduit[6]
- **-HNR** = Right Angle DIN 43650A with 1/2˝ Female NPT Conduit[6]

(5) Options[7]
- **-V** = Viton® Diaphragm
- **-E** = EPDM Diaphragm
- **-N** = Neoprene Diaphragm
- **-10A** = 10A @ 125/250 VAC Max. Rating
- **-G** = Gold Contacts (for loads less than 12 mA @ 12 VDC)
- **-RD** = Reduced Differential (25% reduction typical)
- **-IP** = Ingress Protection[8]
- **-OF** = Oil Free Cleaned[9]
- **-R** = Restrictor (low damping coefficient) Brass
- **-SR** = Spiral Restrictor (high damping coefficient) 300 Series Stainless Steel[10]
- **-WF** = Weather Pack Connector, Female
- **-WM** = Weather Pack Connector, Male
- **-DE** = Deutsch Connector, Male, DT04 Series

(6) Fixed Set Point (optional)
A. Specify set point **-FS** (in PSI or BAR, see example)[11]
B. Set Point Actuation
R on Rising Pressure
F on Falling Pressure
Example: **-FS2BARF** for 2 BAR Falling or **-FS20PSIR** for 20 PSI Rising

Notes:
1. Other fittings available. Consult factory.
2. 20% increase in deadband typical.
3. 18˝ is standard. Specify lead length in inches (max. 48˝). e.g. **-FL18** or **-FLS30**.
4. 18˝ is standard. Specify lead length in inches (max. 48˝). e.g. **-EL18** or **-EL30**.
5. 36˝ is minimum. Specify cable length in inches. e.g. **-CAB36** or **-CAB120**.
6. DIN connectors require **-C** SPDT circuit.
7. Options **-10A**, **-G** or **-RD** cannot be combined.
8. Ingress Protection is available only with **-FL**, **-FLS** or **-CAB** Electrical Termination choices. Ingress Protection requires Fixed Set Point **-FS**.
9. Requires stainless steel housing.
10. **-SR** will result in wider deadbands and slower response time.
11. Set Point must be within Pressure Range selected in Step 1.

Table 1 — Pressure Range Codes

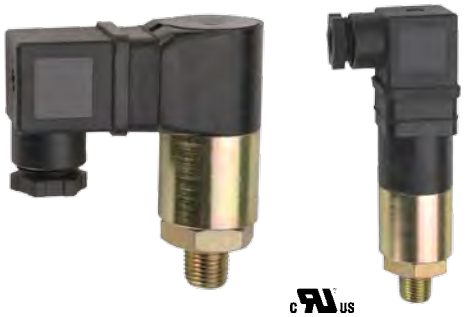
Pressure Range Code	Pressure Range	Accuracy*	Average Deadband**
10	10-30 psi (0.7-2.1 bar)	±1.5 psi (0.103 bar) +2% of setting	3.5 psi (0.28 bar) +11% of setting
20	25-75 psi (1.7-5.2 bar)	±2.5 psi (0.172 bar) +2% of setting	3.5 psi (0.28 bar) +11% of setting
30	65-300 psi (4.5-20.7 bar)	±5.0 psi (0.345 bar) +2% of setting	20 psig (1.38 bar) +11% of setting
40	250-1000 psi (17.2-69.0 bar)	±15 psi (1.03 bar) +2% of setting	45 psig (3.10 bar) +12% of setting
50	1000-3000 psi (69-206.8 bar)	±30 psi (2.06 bar) +3% of setting	70 psig (4.83 bar) +12% of setting
60	2500-5000 psi (172.4-344.7 bar)	±50 psi (3.45 bar) +4% of setting	140 psi (9.65 bar) +13% of setting

* Accuracy and set point of units may change due to the effects of temperature.
** These numbers are for the standard microswitch. With either the -SP or -10A option, the values are typically 20% greater than those listed. With the -RD option, the values will be typically 25% less than those listed. In certain applications deadband can be tailored and controlled to customer specifications. Consult factory for details.

PS75 – Rugged Cylindrical Pressure Switch

- Side Mounted DIN Connection
- Top Mounted Electrical Connection
- 5 to 6000 psi (0.35 to 414 bar)
- Wear Disc Design for Longer Life

Gems PS75 Series have all metal surfaces for overload stops and deliver reliable operation under extremely high pressure surges. They are designed with a wear disc and cushioning ring for increased life. The switches use a piston/diaphragm design, which combine the high proof pressure of piston technology with the sensitivity of a diaphragm design. They can be field or factory adjusted.



Specifications

Switch	SPST; SPDT
Repeatability	See Table 1
Wetted Parts	
Diaphragm	Nitrile (optional Viton®, Neoprene or EPDM)
Fitting	Zinc-Plated Steel (optional 316 Stainless Steel)
Housing	Brass or Zinc-Plated Steel (optional 316 Stainless Steel)
Electrical Termination	DIN 43650A IP65; Conduit with Flying Leads IP65; Flying Leads IP65
Proof Pressure	7500 psi (517 bar) except range 10: 500 psi (35 bar)
Burst Pressure	9000 psi (621 bar)
Approvals	CE, UL Approved units available
Weight, Approximate	Steel: 0.6 lbs. (0.27 kg)

Recommended Operating Temperature Limits

	Circuit Codes	
Diaphragm Material	**-A, -B, -C**	**-A, -B, -C with -RD option**
Nitrile (Std)	15°F to 185°F (-9°C to +85°C)	15°F to 250°F (-9°C to +121°C)
Viton®	0°F to 185°F (-18°C to +85°C)	0°F to 250°F (-18°C to +121°C)
EPDM	-10°F to +185°F (-23°C to +85°C)	-10°F to +250°F (-23°C to +121°C)
Neoprene	-10°F to +185°F (-23°C to +85°C)	-10°F to +250°F (-23°C to +121°C)

Note: Switches may function below the cold temperature limit but the set points and deadband will increase. Consult factory for details.

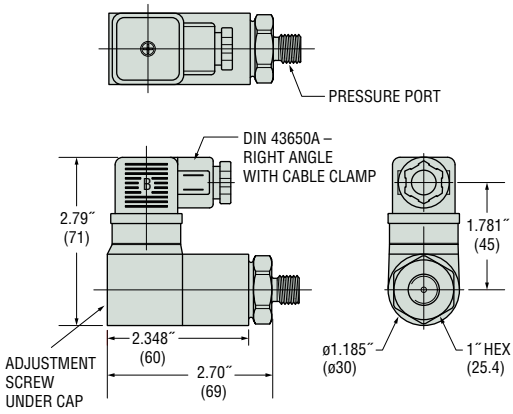
Electrical Switch Ratings

Circuit Code	AC	DC
-A, -B, -C[1]	5 amps @ 125/250 Volts	5 amps resistive, 3 amps inductive @ 28 Volts
-A, -B, -C[2]	1 amp @ 125 Volts	1 amp resistive, 0.5 amp inductive @ 28 Volts

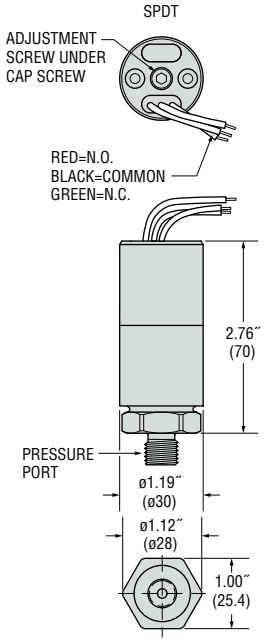
Notes:
1. Without Gold Contacts Option (-G).
2. With Gold Contacts Option (-G).

Dimensions

Right Angle DIN 43650A with Cable Clamp



Flying Lead



PRESSURE SWITCHES

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Phone: 267-673-8117 - Fax: 267-673-8118; E-Mail: Sales@cabriggs.com - www.cabriggs.com

How To Order

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

PS75 -10 -4MNZ -C -H -XX -XXXX

(1) (2) (3) (4) (5) (6)

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

(2) Pressure Fitting[1]

12L14 Zinc-Plated Steel
- **-2MNZ** = 1/8˝ NPTM
- **-4MNZ** = 1/4˝ NPTM
- **-4FNZ** = 1/4˝ NPTF
- **-4MGZ** = 1/4˝ BSPM (G type)
- **-4FGZ** = 1/4˝ BSPF (G type)
- **-4MSZ** = 7/16˝-20 SAE Male
- **-6MSZ** = 9/16˝-18 SAE Male
- **-4SSZ** = 7/16˝-20 SAE Male Swivel

316 Stainless Steel
- **-4MNS** = 1/4˝ NPTM
- **-4MGS** = 1/4˝ BSPM (G type)
- **-4FGS** = 1/4˝ BSPF (G type)
- **-4FNS** = 1/4˝ NPTF
- **-6MSS** = 9/16˝-18 SAE Male

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

(4) Electrical Termination
- **-FLXX** = Flying Leads[2]
- **-FLSXX** = Flying Leads w/PVC Shrink Tubing[2]
- **-ELXX** = 1/2˝ NPT Male Conduit w/Flying Leads[3]
- **-H** = DIN 43650A Male Half Only[4]
- **-HR** = Right Angle DIN 43650A Male Half Only[4]
- **-HC** = DIN 43650A 9mm Cable Clamp[4]
- **-HCR** = Right Angle DIN 43650A 9mm Cable Clamp[4]
- **-HN** = DIN 43650A with 1/2˝ Female NPT Conduit[4]
- **-HNR** = Right Angle DIN 43650A with 1/2˝ Female NPT Conduit[4]

(5) Options
- **-V** = Viton® Diaphragm
- **-N** = Neoprene Diaphragm
- **-E** = EPDM Diaphragm
- **-G** = Gold Contacts (for loads less than 12 mA @ 12 VDC)
- **-RD** = Reduced Differential (25% reduction typical)
- **-OF** = Oil Free Cleaned[5]
- **-R** = Restrictor (low damping coefficient) Brass
- **-SR** = Spiral Restrictor (high damping coefficient) 300 Series Stainless Steel[6]
- **-WF** = Weather Pack Connector, Female
- **-WM** = Weather Pack Connector, Male
- **-DE** = Deutsch Connector, Male, DT04 Series

(6) Fixed Set Point (optional)
A. Specify set point **-FS** (in PSI or BAR, see example)[7]
B. Set Point Actuation
R on Rising Pressure
F on Falling Pressure
Example: **-FS1BARF** for 1 BAR Falling
or **-FS20PSIR** for 20 PSI Rising

Notes:
1. Manifold mounts available. Consult factory.
2. 18˝ is standard. Specify lead length in inches (max. 48˝). e.g. **-FL18** or **-FL30**.
3. 18˝ is standard. Specify lead length in inches (max. 48˝). e.g. **-EL18** or **-EL30**.
4. DIN connectors require **-C** SPDT circuit.
5. Requires stainless steel pressure fitting.
6. **-SR** will result in wider deadbands and slower response times.
7. Set Point must be within Pressure Range selected in Step 1.

Table 1 — Pressure Range Codes

For Circuit Codes -A, -B and -C

Pressure Range Code	Pressure Range	Accuracy*	Average Deadband**
10	5-25 psi (0.35-1.7 bar)	±1.0 psi (0.07 bar) +2% of setting	3 psi (0.21 bar) +5% of setting
20	15-75 psi (1.0-5.2 bar)	±2.5 psi (0.17 bar) +2% of setting	5 psig (0.34 bar) +10% of setting
30	50-150 psi (3.5-10.3 bar)	±6 psi (0.41 bar) +2% of setting	15 psig (1.03 bar) +13% of setting
40	150-650 psi (10.3-44.8 bar)	±15 psi (1.03 bar) +2% of setting	25 psi (1.72 bar) +14% of setting
50	500-1750 psi (34.5-121 bar)	±25 psi (1.72 bar) +2% of setting	55 psi (3.79 bar) +15% of setting
60	1000-3500 psi (69-241 bar)	±45 psi (3.10 bar) +3% of setting	100 psi (6.89 bar) +16% of setting
70	2500-6000 psi (172-414 bar)	±80 psi (5.51 bar) +4% of setting	200 psi (13.8 bar) +17% of setting

* Accuracy and set point of units may change due to the effects of temperature.
** In certain applications deadband can be tailored and controlled to customer specifications. Consult factory for details.