

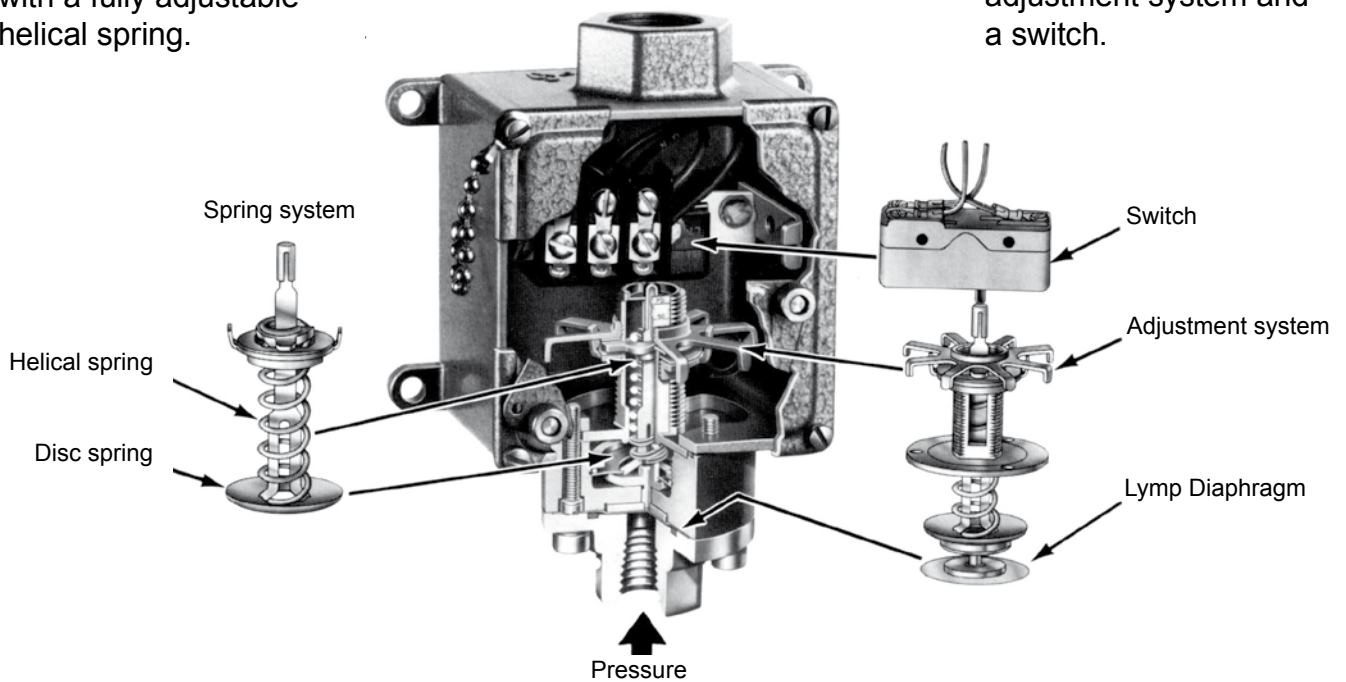
# How a wide range DUAL-SNAP® pressure switch works

## 1. The heart of the design...



## 2. Back up the disc spring with a fully adjustable helical spring.

## 3. Add a limp diaphragm, adjustment system and a switch.



By replacing the elastic creep deflection of conventional pressure switch sensors with the negative spring rate of a disc spring combination pressure switches have now become binary like computers. This revolutionary design has been proven to be so reliable that on jet aircraft, for instance, it has been the only design acceptable for many decades.

The diaphragm is not a sensing element. It simply seals the media and transfers pressure to the disc spring, which responds instantaneously when system pressure reaches the set points.

## 4. Complete the system

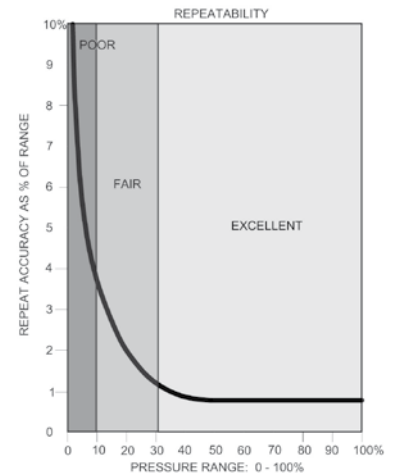
with components suitable for specific pressures, fluids and environments...and you have a Wide Range DUAL-SNAP® Pressure Switch with these advantages:

- Set points stay set – not sensitive to shock, vibration, temperature variations, or other ambient conditions.
- No “tracing” of fluctuating pressures – no “teasing” of the electrical element. The switch is either “on” or “off.”

- Reduces the adverse effects of pump ripple, contact chatter, fatigue, premature wear, and other common switch problems.
- Maximum life expectancy with lifelong reliability and precise repeatability assured.
- A wide range of set points available in each switch model series.

# Application and technical information

## Pressure switches



### Surge and ripples

The Disc Spring design used in DUAL-SNAP® switches makes them relatively impervious to surges or pump ripples that may be expected in conventional hydraulic systems.

This resistance to sharp pressure changes in the media has been the prime reason for many customers changing to DUAL-SNAP® pressure switches after experiencing false shutdown and failure with other competitive design principles such as flat metal diaphragms, bourdon tubes and bellows type. This makes DUAL-SNAP® switches particularly suitable for rugged applications on off the road machinery, heavy presses, and systems using pulsating piston pumps.

### Pressure switch application conditions

**Ambient Temperature:** The pressure switch should be installed wherever possible in a location that has the most constant ambient temperature available.

**Steam Service:** For steam or other high temperature applications the pressure switch should be mounted with the pressure connection up and with three or four circular loops, or pigtails, in the pressure lines. The vertical mounting allows condensate to accumulate in the dead ended pressure line and to be cooled in the pigtail which acts as a temperature buffer between the sensing element and the steam.

### Pressure switch installation

The pressure switches can be mounted in any position. When the electrical conduit is connected, it is recommended that the conduit line (if it is over 6 feet in length) be clamped firmly close to the switch to keep thermal expansion from causing it to place a high stress load onto the housing of the pressure switch. If moisture in the conduit line is a potential problem, it is recommended that a potting Y connection be placed between the switch and the conduit. This will eliminate drainage from the electrical conduit into the pressure switch housing.

Line mounting is possible and recommended for any of our "Compact" pressure switches. Installation must not impose loads on connections.

### Sismic shock and vibration

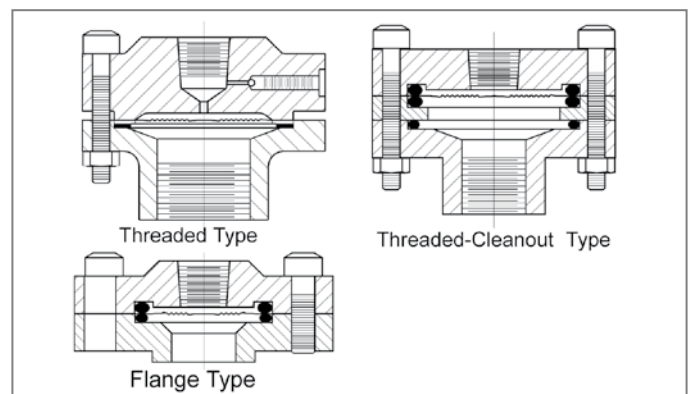
Due to their unique design principle, DUAL-SNAP® pressure and temperature switches will meet all the conventional seismic shock and vibration specifications now being applied to many projects such as power plants for ecological protection. These specifications by their severity eliminate the use of mercury filled switching elements and many vibration critical sensing elements found in most competitive designs.

### Corrosive fluids

Occasionally liquids or gases are encountered that are not compatible with the "wetted parts" as shown in the catalog. When this occurs it is common practice to use a chemical seal as an interface between the corrosive fluid and the pressure switch. Custom Control Sensors does not manufacture or accept orders for chemical seals. The reason for this is to insure that the customer gets exactly what he needs for his application.

We will drop ship switches to any manufacturer of chemical seals that the customer may specify, or we can recommend a suitable source of supply if asked (Note: The customer can then place a purchase order with appropriate instructions directly with his source of supply so that the supplier can then coordinate the customer's wishes with the chemical seal that will be assembled, filled, calibrated and tested to fit the needs outlined).

Typical and readily available chemical seals



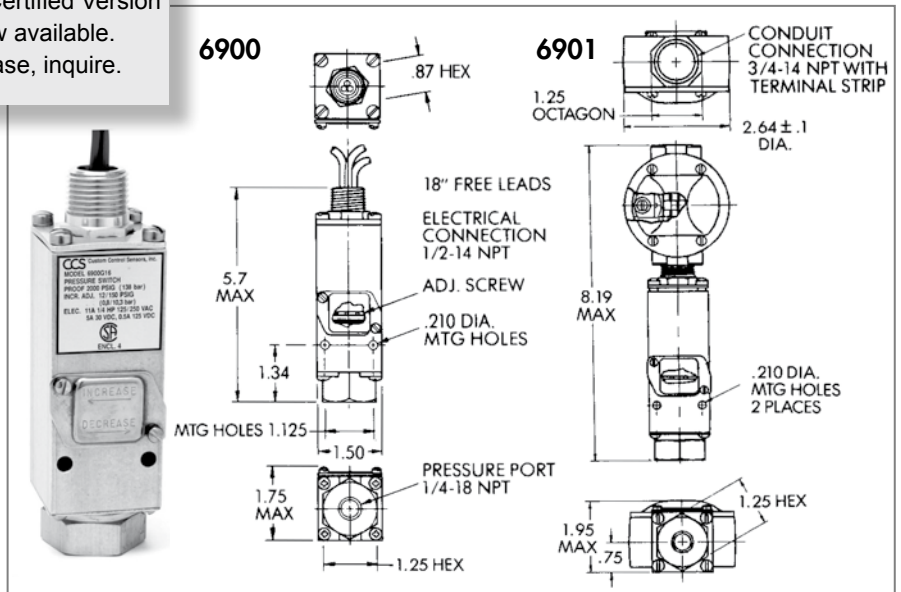
# Series 6900G, 6900GZ, 6900P Compact switches

Pressure 1 to 6500 psi

### Standard features

- External Adjustment
- Wide Range Diaphragm Piston
- NEMA 4, 13
- Weatherproof
- Model 6900 CSA
- Ambient temperature range -34 to 71 °C

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now available.  
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### Operating and ordering data

Pressure Switches MODEL 6900G		1/4" Aluminum Pressure Port & Polyimide Diaphragm			Wetted Parts	Aluminum Polyimide Buna N
Max Sys. Press. psi	Proof (Test) Press. psi	Adjustable Set-Point Range		Approx. Dead-band psi	Free Leads	
		On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
500	750	3-20	1-18	2	6900G12	6900GM12
500	750	6-75	2-71	4	6900G14	6900GM14
1500	2000	12-150	4-142	8	6900G16	6900GM16
1500	2000	30-375	10-355	20	6900G18	6900GM18
2000	3000	300-1000	250-950	50	6900G20	6900GM20
3000	4500	700-2500	600-2400	100	6900G22	6900GM22
Pressure Switches MODEL 6900GZ		1/2" Stainless Steel Pressure Port & Diaphragm			Wetted Parts	316SST Viton
500	750	3-20	1-18	2	6900GZ12	6900GZM12
500	750	9-75	3-69	6	6900GZ14	6900GZM14
1500	2000	18-150	6-138	12	6900GZ16	6900GZM16
1500	2000	45-375	15-345	30	6900GZ18	6900GZM18
2000	3000	300-1000	225-925	75	6900GZ20	6900GZM20
3000	4500	700-2500	520-2320	180	6900GZ22	6900GZM22
Pressure Switches MODEL 6900P		For high cycling - long life - hydraulic applications Piston Pressure Switch 1/4" Aluminum Pressure Port			Wetted Parts	Aluminum 400 SST Buna N Teflon
Hyd. psi	Hyd. psi					
2000	3000	15-200	5-190	10	6900P32	6900PM32
3000	5000	150-1600	40-1490	110	6900P34	6900PM34
5000	7500	500-3200	330-3030	170	6900P36	6900PM36
10,000	13,000	2000-6500	1500-6000	500	6900P38	6900PM38

Options code:

- "A" Viton O-ring
- "F" Ethylene Propylene O-ring
- "7008" Gold Contacts
- "7038" SST Port and SST Piston

Note: Order 6901 Model for terminal strip

**Enclosure/certifications:** MODEL 6900 ONLY

CSA Certified for enclosure (4) non-hazardous locations (File No. LR22665).

# Series 6900GE, 6900PE Compact switches



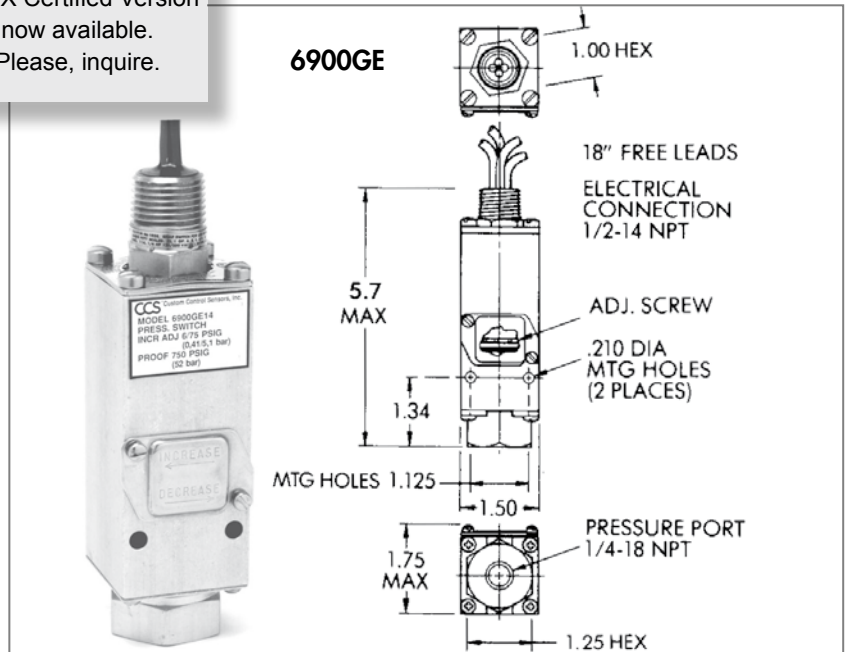
Pressure 1 to 6500 psi

## Standard features

- External Adjustment
- Wide Range Diaphragm Piston
- U.L./CSA
- Explosion Proof: Div. 1, 2
- NEMA: 4, 7, 9, 13
- Ambient temperature range -34 to 71 °C

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## Operating and ordering data

Pressure Switches MODEL 6900GE		1/4" Aluminum Pressure Port & Polyimide Diaphragm			Wetted Parts	Aluminum Polyimide Buna N
Max Sys. Press. psi	Proof (Test) Press. psi	Adjustable Set-Point Range		Approx. Dead-band psi	Model No.	
		On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
500	750	3-20	1-18	2	6900GE12	6900GEM12
500	750	6-75	2-71	4	6900GE14	6900GEM14
1500	2000	12-150	4-142	8	6900GE16	6900GEM16
1500	2000	30-375	10-355	20	6900GE18	6900GEM18
2000	3000	300-1000	250-950	50	6900GE20	6900GEM20
3000	4500	700-2500	600-2400	100	6900GE22	6900GEM22
Pressure Switches MODEL 6900PE		For high cycling - long life - hydraulic applications Piston Pressure Switch 1/4" Aluminum Pressure Port				
Hyd. psi	Hyd. psi			Wetted Parts	Aluminum 400 SST	Buna N Teflon
2000	3000	15-200	5-190	10	6900PE32	6900PEM32
3000	5000	150-1600	40-1490	110	6900PE34	6900PEM34
5000	7500	500-3200	330-3030	170	6900PE36	6900PEM36
10,000	13,000	2000-6500	1500-6000	500	6900PE38	6900PEM38

Options code:

- "A" Viton O-ring
- "F" Ethylene Propylene O-ring
- "7008" Gold Contacts
- "7038" SST Port and SST Piston
- "7043" SST Body & Gold Contacts
- "7076" Teflon Wire

## Enclosure/certifications:

Div. 1 explosion-proof and hermetically sealed electrical assembly Part No. 46-1058 (46-1061 for "M" model option), listed by both Underwriter's Laboratories, Inc. (File No. E32961) and CSA Testing Laboratories (File No. 22921) for hazardous locations, Class 1, Groups A, B, C, and D; Class 2 Groups E, F, and G.

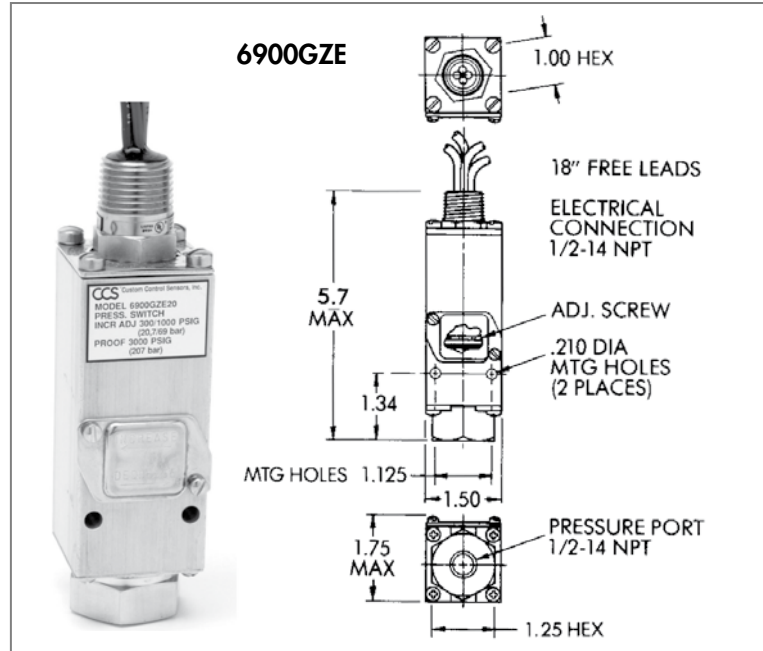
# Series 6900GZE Compact switches

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Pressure 1 to 2500 psi

### Standard features

- External Adjustment
- Wide Range Diaphragm Piston
- U.L./CSA
- Explosion Proof: Div. 1, 2
- NEMA: 4, 7, 9, 13
- Ambient temperature range -34 to 71 °C



PRESSIONE

### Operating and ordering data

Pressure Switches MODEL 6900GZE		1/2" Stainless Steel Pressure Port and Diaphragm		Wetted Parts	316 SST Viton	
Max Sys. Press. psi	Proof (Test) Press. psi	Adjustable Set-Point Range		Approx. Dead-band psi	Model No.	
		On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
500	750	3-20	1-18	2	6900G12	6900GM12
500	750	9-75	2-71	4	6900G14	6900GM14
1500	2000	18-150	4-142	8	6900G16	6900GM16
1500	2000	45-375	10-355	20	6900G18	6900GM18
2000	3000	300-1000	250-950	50	6900G20	6900GM20
3000	4500	700-2500	600-2400	100	6900G22	6900GM22

#### Options code:

- "F" Ethylene Propylene O-ring
- "7008" Gold Contacts
- "7042" SST Body
- "7043" SST Body & Gold Contacts
- "7044" Monel Port & Diaphragm
- "7045" Hastelloy Port & Diaphragm
- "7052" Exp. Proof w/3' Leads
- "7054" Exp. Proof w/6' Leads
- "7065" Exp. Teflon Wire & SST Diaphragm

#### Enclosure/certifications:

Div. 1 explosion-proof and hermetically sealed electrical assembly Part No. 6-1058 (46-1061 for "M" model option), listed by both Underwriter's Laboratories, Inc. (File No. E32961) and CSA Testing Laboratories (File No. 22921) for hazardous locations, Class 1, Groups A, B, C, and D; Class 2 Groups E, F, and G.



# Series 6900DZE Compact switches

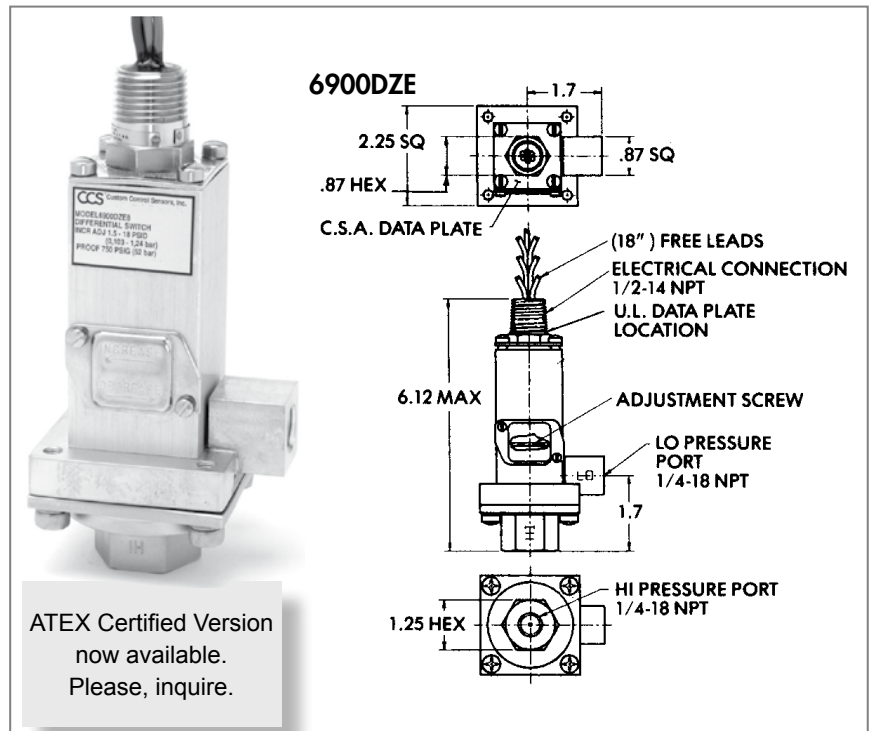


Diff. pressure 4 to 75 psid

## Standard features

- External Adjustment
- Wide Range Diaphragm Piston
- U.L./CSA  
Explosion Proof: Div. 1, 2
- NEMA: 4, 7, 9, 13
- Fire Resistant.  
Stainless Steel Body
- Ambient temperature range  
–34 to 71 °C

PRESSIONE



## Operating and ordering dData

Differential Pressure Switches MODEL 6900DZE				1/4" Stainless Steel Pressure Port and Diaphragm			Wetted Parts 300 SST Polyimide Viton	
Max Sys. Press. psi		Proof (Test) Press. psi		Adjustable Set-Point Range		Approx. Dead-band psi	Model No.	
High Press. Port	Low Press. Port	Both Ports Simult.	High Over Low Over High	On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
400		750	High 750 Low 400	1.2 to 18 6 to 75	.4 to 17.2 2 to 71	1 4	6900DZE8 6900DZE10	6900DZEM8 6900DZEM10

Options code:

"7008" Gold Contacts

"7076" Teflon Wire

### Enclosure/certifications:

Div. 1 explosion-proof and hermetically sealed electrical assembly Part No. 46-1058 (46-1061 for "M" model option), listed by both Underwriter's Laboratories, Inc. (File No. E32961) and CSA Testing Laboratories (File No. 22921) for hazardous locations, Class 1, Groups A, B, C, and D; Class 2 Groups E, F, and G.

## Electrical characteristics

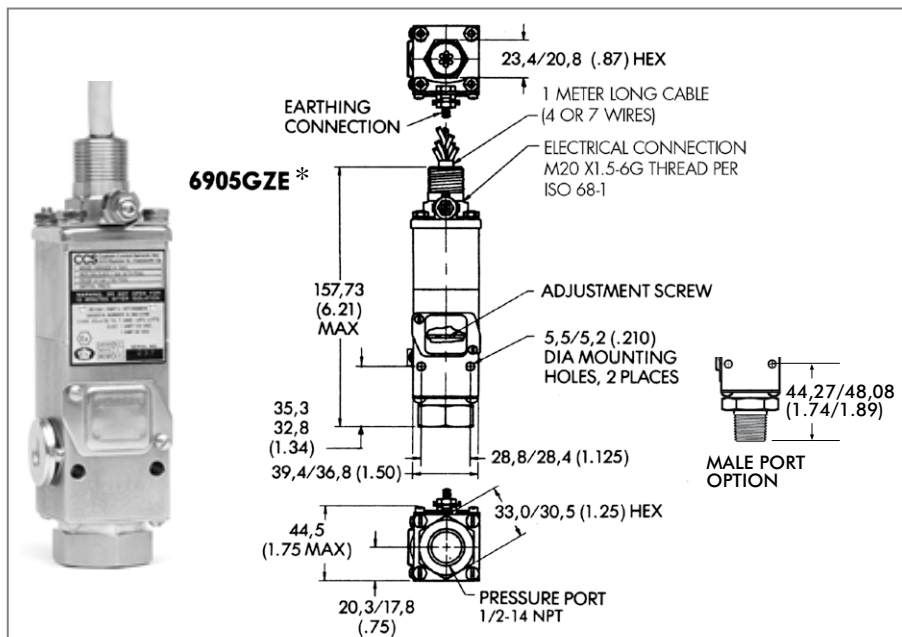
Rating of switch element		
Volts	Ampère	
	SPDT	DPDT "M"
	Res.	Res.
125 AC – 50/60 Hz	11	11
250 AC – 50/60 Hz	11	11
30 DC	5	5
125 DC	.5	.5

# Series 6905GZE\*, 6905PE\* Compact switches

Pressure 0,07 to 1100 bar

## Standard features

- External Adjustment
- Wide Range Diaphragm Piston
- ATEX Certified and Approved by BASEEFA (See Note)
- Flameproof (Explosion Proof)
- Weatherproof External Parts: Stainless Steel Construction
- IP66/67
- NACE
- Ambient temperature range -34 to 86 °C



## Operating and ordering data

Pressure Switches MODEL 6905GZE-7042/7082		Cable 1/2" Stainless Steel Pressure Port & Diaphragm			External Parts Stainless Steel Wetted Parts 316 SS, Viton	
Max Sys. Press. bar	Max. (Test) Proof Press. bar	Adjustable Set-Point Range		Approx. Dead-band bar	Model No.	
		On Incr. Press. bar	On Decr. Press. bar		MODEL-E SPDT	MODEL-M DPDT
34,5	52	0,21-1,4	0,07-1,2	0,14	6905GZE12-	6905GZEM12-
34,5	52	0,6-5,1	0,21-4,8	0,41	6905GZE14-	6905GZEM14-
103	138	1,2-10,3	0,41-9,5	0,8	6905GZE16-	6905GZEM16-
103	138	3,1-25,9	1,0-23,8	2,0	6905GZE18-	6905GZEM18-
138	207	20,7-69	15,5-64	5,1	6905GZE20-	6905GZEM20-
207	310	48,3-172	35,9-160	12,4	6905GZE22-	6905GZEM22-
Pressure Switches MODEL 6905PE-7042/7082		Cable Piston Pressure Switch 1/2" Stainless Steel Pressure Port			For High Cycling - Long Life - Hydraulic Application	
Hyd. bar	Hyd. bar	Notes: 6905PE38 - 7042 has 1/4" Port; 6905PE40 & 42 have 7/16" -20 UNF 59° coned and threaded to accept medium pressure fitting				
138	207	1,0-13,8	0,35-13,1	0,7	6905PE32-	6905PEM32-
207	345	10,3-110	2,8-103	7,6	6905PE34-	6905PEM34-
345	517	34,5-221	22,8-209	11,7	6905PE36-	6905PEM36-
689	896	138-448	103-414	34,5	6905PE38-	6905PEM38-
919	1379	345-758	334-655	103	6905PE40-	6905PEM40-
1149	1724	690-1100	517-931	172	6905PE42-	6905PEM42-

### Options code:

- "F" Ethylene Propylene O-ring
- "N" Teflon® Encapsulated Buna-N O-ring
- "7042" 316SS Port & Diaphragm
- "7043" Gold Microswitch contacts I/S
- "7058" Monel Port & Diaphragm
- "7059" Hastelloy C Port & Diaphragm
- "7078" 1/2" NPT Male 316SS Port -7042
- "7079" 1/2" NPT Male 316SS Port -7043
- "7082" 316SS Switch body

### Note:

ATEX Certified and Approved by BASEEFA (UK) Certificate No. Baseefa03ATEX0700X. Equipment for Protective System for use in Potentially Exposed Atmospheres. EU Directive 94/9/EC in Compliance with EN60079-0: 2006, EN60079-1:2004, EN61241-0: 2006 & EN61241-1: 2004. Marking: ExII2GD ExdIIc ExtDA21 IP6X, T85°C (Tamb -34°C to +71°C) and T100°C (Tamb -34°C to +86°C). IP 66/67.

# Series 6905DZE-7042\*

## Compact switches

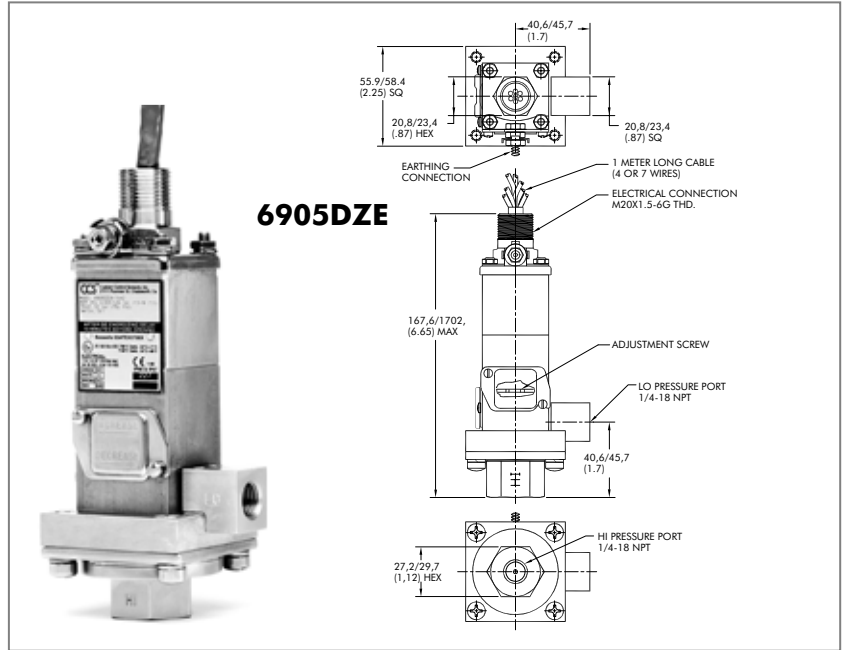


Diff. pressure 0,02 to 5,2 bar

### Standard features

- External Adjustment
- Wide Range Diaphragm Piston
- ATEX Certified & Approved by BASEEFA
- Flameproof (Explosion Proof)
- Weatherproof External Parts:  
Stainless Steel Construction
- IP 66/67
- Ambient temperature range -34 to 86 °C

PRESSIONE



### Operating and ordering data

Differential Pressure Switches MODEL 6905DZE-7042				1/4" Stainless Steel Pressure Ports and Polyamid Diaphragm			Wetted 300 SS Parts Polyamide Viton	
Max Sys. Press. bar		Proof (Test) Pressure bar		Adjustable Set-Point Range		Approx. Dead-band psi	Model No.	
High Press. Port	Low Press. Port	Both Ports Simult.	High Over Low Low Over High		On Incr. Press. psi		On Decr. Press. psi	MODEL SPDT-Std.
			High	Low				
27,6		52		0,8-1,2		0,6	6905DZE8 - 7042	6905DZEM8 - 7042
				0,41-5,2		0,28	6905DZE10 - 7042	6905DZEM10- 7042

Options code:

"F" Ethylene Propylene O-ring

"N" Teflon® Encapsulated Buna-N O-ring

"7043" Gold Microswitch contacts !/S

### Note:

ATEX Certified and Approved by BASEEFA (UK) Certificate No. Baseefa 03ATEX0700X. Equipment for Protective System for use in Potentially Exposive Atmospheres. EU Directive 94/9/ EC in Compliance with EN60079-0: 2006, EN60079-1:2004, EN61241-0: 2006 & EN61241-1: 2004. Marking: ExII2GD ExdIIC Extd A21 IPX, T85°C (Tamb -34°C to +71°C) and T100°C (Tamb -34° to + 86°C). IP 66/67.



# Series 611G, 611GE - 611V, 611VE

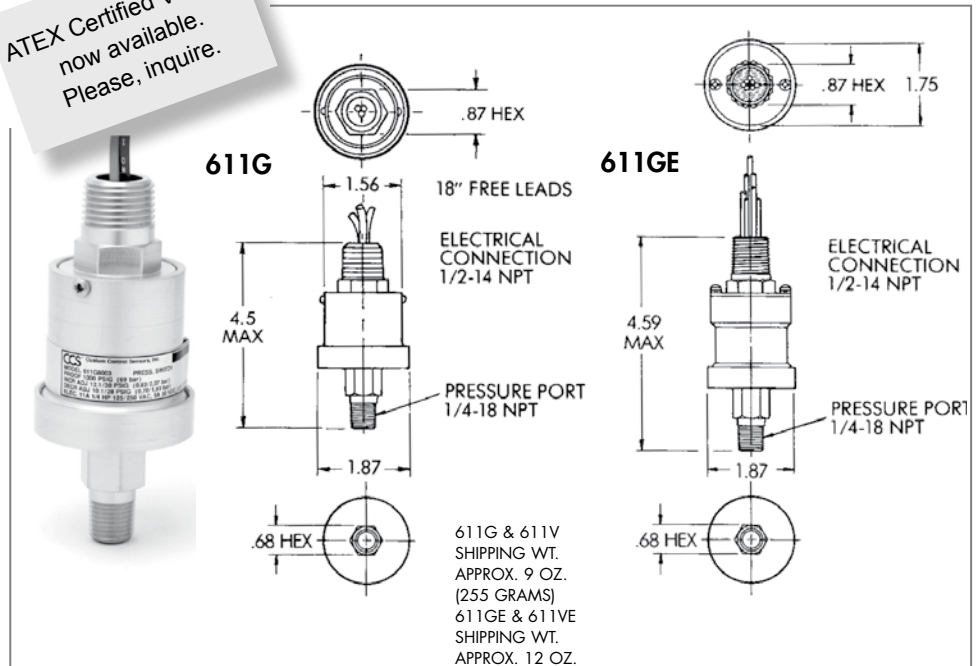
## Compact switches

Pressure .75 to 180 psi  
Vacuum 1.5 to 28.5" Hg

### Standard features

- Internal Adjustment
- Low Range Diaphragm
- NEMA: 4, 13
- Weatherproof
- Model 611GE/611VE U.L./CSA  
Explosion Proof: Div. 1, 2  
NEMA: 4, 7, 9, 13
- Ambient temperature range  
-34 to 71 °C

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### Operating and ordering data

Pressure Switches MODEL 611G		1/4" Aluminum Pressure Port & Polyimide Diaphragm			Wetted Parts Aluminum, Polyimide, Buna N, Cadmium Plated Steel, 300 SST	
Max Sys. Press. psi	Proof (Test) Press. psi	Adjustable Set-Point Range		Approx. Dead-band psi	Free Leads	
		On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
250	500	1.5-12.1	.75-11.35	.75	611G8001	611GM8001
500	1000	12.1-30	10.1-28	2.0	611G8003	611GM8003
500	1000	30.1-70	27.1-67	3.0	611G8005	611GM8005
500	1000	70.1-180	63.1-173	7.0	611G8007	611GM8007
Pressure Switches MODEL 611GE		1/4" Aluminum Pressure Port & Polyimide Diaphragm			Wetted Parts Aluminum, Polyimide, Buna N, Cadmium Plated Steel, 300 SST	
250	500	1.5-12.1	.75-11.35	.75	611GE8001	611GEM8001
500	1000	12.1-30	10.1-28	2.0	611GE8003	611GEM8003
500	1000	30.1-70	27.1-67	3.0	611GE8005	611GEM8005
500	1000	70.1-180	63.1-173	7.0	611GE8007	611GEM8007
Pressure Switches MODEL 611V		1/4" Aluminum Pressure Port Pressure Port & Diaphragm			Wetted Parts Aluminum, Polyimide, Buna N, Cadmium Plated Steel, 300 SST	
150	250	4-28.5	1.5-26	2.5	611V8000	611VM8000
Pressure Switches MODEL 611VE		1/4" Aluminum Pressure Port & Polyimide Diaphragm			Wetted Parts Aluminum, Polyimide, Buna N, Cadmium Plated Steel, 300 SST	
150	250	4-28.5	1.5-26	2.5	611VE8000	611VEM8000

### Options code:

- "A" Viton O-ring
- "F" Ethylene Propylene O-ring
- "7008" Gold Contacts
- "7052" Exp. Proof w/3' Leads
- "7054" Exp. Proof w/6' Leads
- "7076" Teflon Wire

### Enclosure/certifications:

Div. 1 explosion-proof and hermetically sealed electrical assembly Part No. 46-1058 (46-1061 for "M" model option), listed by both Underwriter's Laboratories, Inc. (File No. E32961) and CSA Testing Laboratories (File No. 22921) for hazardous locations, Class 1, Groups A, B, C, and D; Class 2 Groups E, F, and G.

# Series 611GZE Compact switches



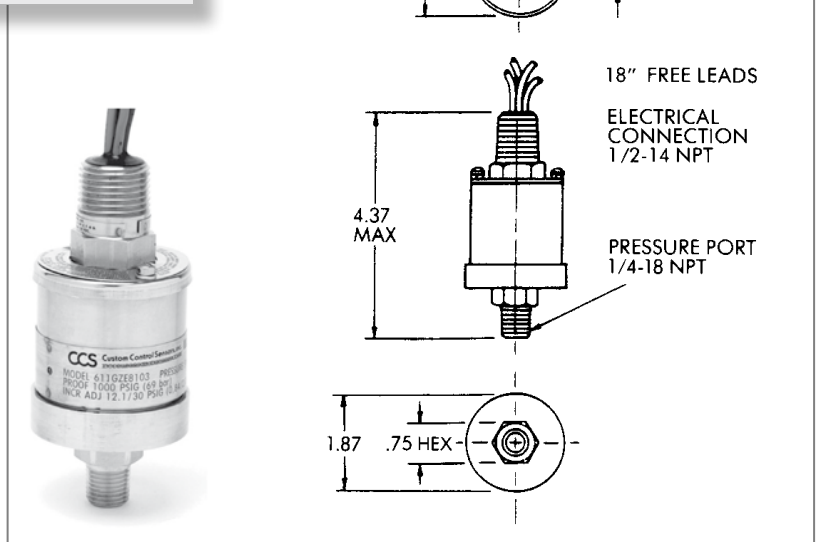
Pressure 1 to 180 psi

## Standard features

- External Parts:  
Stainless Steel Construction
- U.L./CSA  
Explosion Proof: Div. 1, 2
- NEMA: 4, 7, 9, 13
- Low Range
- Ambient temperature range  
-34 to 71 °C

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## Operating and ordering data

Pressure Switches MODEL 611GZE		1/4" Stainless Steel Pressure Port and Diaphragm			Wetted Parts 316 SST Inconel Viton	
Max Sys. Press. psi	Proof (Test) Press. psi	Adjustable Set-Point Range		Approx. Dead-band psi	Model No.	
		On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
250	500	3-12	1-10	2	611GZE8101	611GZEM8101
500	1000	12-30	9-27	3	611GZE8103	611GZEM8103
500	1000	30-70	25-65	5	611GZE8105	611GZEM8105
500	1000	70-180	60-170	10	611GZE8107	611GZEM8107

### Options code:

- "7008" Gold Contacts
- "7052" Exp. Proof w/3' Leads
- "7054" Exp. Proof w/6' Leads
- "7065" Teflon Wire

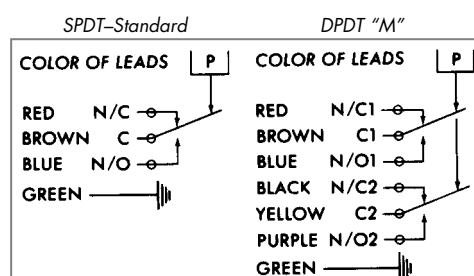
### Enclosure/certifications:

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## Electrical characteristics

Rating of Switch Element		
Volts	Ampère	
	SPDT	DPDT "M"
	Res.	Res.
125 AC - 50/60 Hz	11	11
250 AC - 50/60 Hz	11	11
30 DC	5	5
125 DC	.5	.5

## Schematic and wiring code



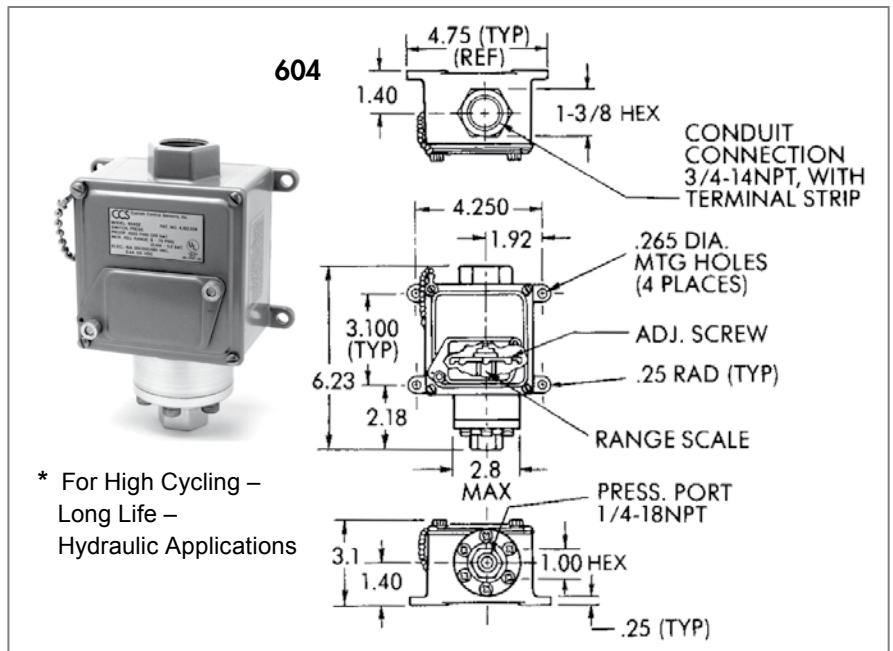
# Series 604G, 604P\*, 604V

## Standard pressure switches

Pressure .3 to 4700 psi  
 Vacuum 1.0 to 28.5" Hg

### Standard features

- External Adjustment
- Wide Range Diaphragm Piston
- U.L. Listed
- NEMA: 4, 13
- Weatherproof
- Internal Case Ground
- Ambient temperature range  
 -34 to 71 °C



### Operating and ordering data

Pressure Switches MODEL 604G		1/4" Aluminum Pressure Port & Polyimide Diaphragm		Wetted Parts	Aluminum Polyimide Buna N	
Max Sys. Press. psi	Proof (Test) Press. psi	Adjustable Set-Point Range		Approx. Dead-band psi	Model No.	
		On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
500	750	1-16	.3-15.3	.7	604G1	604GM1
3000	5000	8-75	3-70	5	604G2	604GM2
3000	5000	20-150	8-138	12	604G11	604GM11
3000	5000	50-375	22-347	28	604G3	604GM3
3000	5000	330-1000	265-935	65	604G5	604GM5
Pressure Switches MODEL 604P*		Piston Pressure Switch 1/4" Aluminum Pressure Port		Wetted Parts	Aluminum, 400 SST, Buna N, Teflon	
Hyd. psi	Hyd. psi	Piston switch dead bands shown are narrowest at bottom and widest at top adjustable range.				
2000	3000	20-200	10-188	10-12	604P12	604PM12
3000	5000	170-1400	90-1230	80-170	604P15	604PM15
5000	7500	300-3000	80-2780	120-220	604P21	604PM21
7500	10,000	2500-5000	2220-4520	280-480	604P31	604PM31
Pressure Switches MODEL 604V		1/4" Aluminum Pressure Port & Polyimide Diaphragm		Wetted Parts	Aluminum Polyimide Buna N	
Max Sys. Press. psi	Proof (Test) Press. psi	Adjustable Set-Point Range		Approx. Dead-band psi	Model No.	
		On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
150	250	3.5-28.5	1.0-26.0	2.5	604V1	604VM1

### Options code:

- "A" Viton O-ring
- "F" Ethylene Propylene O-ring
- "J" CSA Approved File No. LR22665
- "7008" Gold Contacts
- "7038" SST Port and SST Piston (604P Models Only)

### Enclosure/certifications:

All Models shown are Underwriter's Laboratories, Inc. listed in the Recognized Components Index, Guide NKPZ "Motor Controllers, Float and Pressure Operated," File No. E72038. Models 604GM1 & 604GX1 have an approximate dead band of .9 psi.

# Series 604GZ, 604GZ-7011 Compact switches

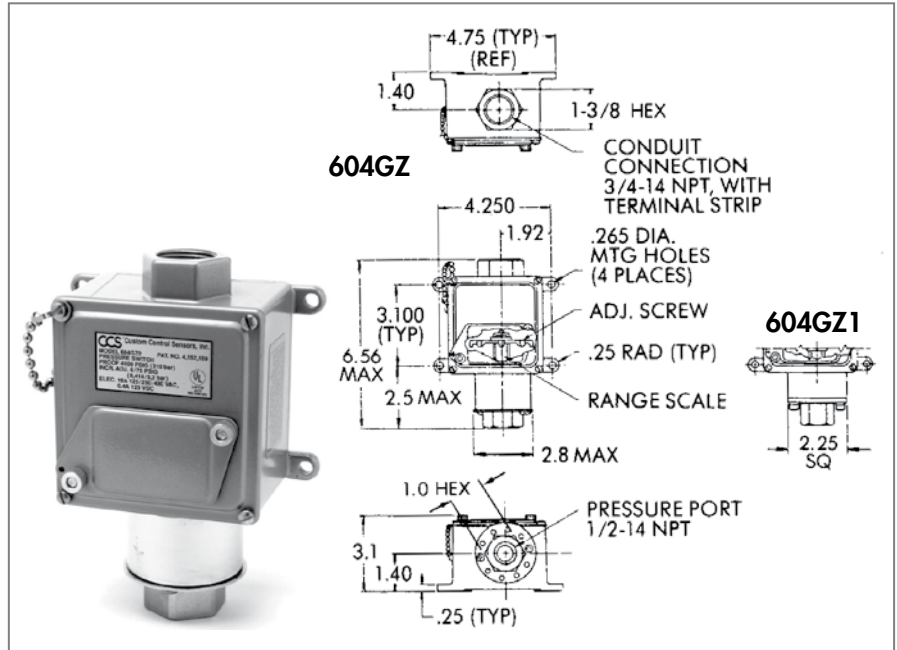


Pressure .3 to 5000 psi

## Standard features

- External Adjustment
- Wide Range Diaphragm Piston
- U.L. Listed
- NEMA: 4, 13
- Weatherproof
- Internal Case Ground
- Fire Resistant Steel Body
- Ambient temperature range -34 to 71 °C

PRESSIONE



## Operating and ordering data

Pressure Switches MODEL 604GZ		1/2" Stainless Steel Pressure Port & Polyimide Diaphragm			Wetted Parts 316 SST Polyimide Viton	
Max Sys. Press. psi	Proof (Test) Press. psi	Adjustable Set-Point Range		Approx. Dead-band psi	Model No.	
		On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
500	750	1.2-16	.4-15.2	8	604GZ1	604GZM1
3000	5000	8-75	3-70	5	604GZ2	604GZM2
3000	5000	20-150	8-138	12	604GZ11	604GZM11
3000	5000	50-375	22-347	28	604GZ3	604GZM3
3000	5000	330-1000	265-935	65	604GZ5	604GZM5
3000	5000	950-2300	775-2125	175	604GZ7	604GZM7
Pressure Switches MODEL 604GZ-7011		1/2" Stainless Steel Pressure Port & Polyimide Diaphragm			Wetted Parts 316 SST Viton	
500	750	1.4-16	.4-15	1	604GZ1-7011	604GZM1-7011
3000	5000	10-75	3-68	7	604GZ2-7011	604GZM2-7011
3000	5000	20-150	6-136	14	604GZ11-7011	604GZM11-7011
3000	5000	50-375	16-347	34	604GZ3-7011	604GZM3-7011
3000	5000	330-1000	250-920	80	604GZ5-7011	604GZM5-7011
3000	5000	950-2300	750-2100	200	604GZ7-7011	604GZM7-7011
5000	7500	2100-3400	1820-3120	280	604GZ9-7011	604GZM9-7011
5000	7500	3200-5000	2720-4520	480	604GZ10-7011	604GZM10-7011

### Options code:

- "F" Ethylene Propylene O-ring
- "J" CSA Approved File No. LR22665
- "7008" Gold Contacts
- "7030" Gold Contacts w/SST Diaphragm
- "7044" Monel Port and Diaphragm
- "7045" Hastelloy Port and Diaphragm

### Enclosure/certifications:

All Models shown are Underwriter's Laboratories, Inc. listed in the Recognized Components Index, Guide NKPZ "Motor Controllers, Float and Pressure Operated," File No. E72038. Model 604GZM1 has an approximate dead band of .9 psi.

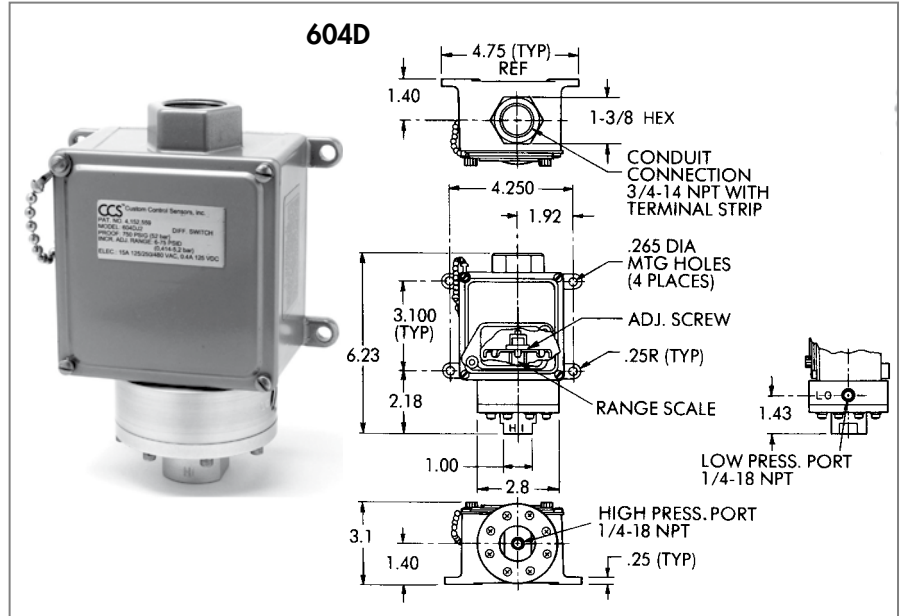
# Series 604D

## Standard pressure switches

Diff. pressure .3 to 75 psid

### Standard features

- External Adjustment
- Low/Mid Range Diaphragm
- U.L. Listed
- NEMA: 4, 13
- Weatherproof
- Internal Case Ground
- Ambient temperature range -34 to 71 °C



PRESSIONE

### Operating and ordering data

Differential Pressure Switches MODEL 604D				1/4" Aluminium Pressure Port and Diaphragm			Wetted 300 SST Viton		Parts Aluminum Polyimide	
Max Sys. Press. psi		Proof (Test) Press. psi		Adjustable Set-Point Range		Approx. Dead-band psi	Model No.			
High Press. Port	Low Press. Port	Both Ports Simult.	High Over Low Low Over High		On Incr. Press. psi		On Decr. Press. psi	MODEL SPDT-Std.	MODEL DPDT "M"	
400			750	High	Low	1 to 18 6 to 75	.3 to 17.5 2 to 71			604D1 604D2

#### Options code:

- "F" Ethylene Propylene O-ring
- "J" CSA Approved, File No. LR22665
- "Z" Stainless Steel Port
- "7008" Gold Contacts
- "7011" SST Port and SSt Diaphragm (only on 604DZ)
- "7030" SST Port and SST Diaphragm, w/Gold Contacts

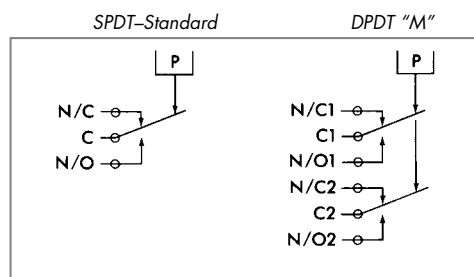
#### Enclosure/certifications:

All Models shown are Underwriter's Laboratories, Inc. listed in the Recognized Components Index, Guide NKPZ "Motor Controllers, Float and Pressure Operated," File No. E72038. Model 604DM1 has an approximate dead band of .9 psi.

### Electrical characteristics

Rating of Switch Element		
Volts	Ampère	
	SPDT	DPDT "M"
	Res.	Res.
125 AC - 50/60 Hz	15	5
250 AC - 50/60 Hz	15	5
480 AC - 50/60 Hz	15	-
28 DC	6	5
125 DC	.4	.5

### Schematic and wiring code





# Series 646GE, 646PE, 646VE

## Standard switches



Pressure .4 to 4700 psi  
Vacuum 1.0 to 28.5" Hg

### Standard features

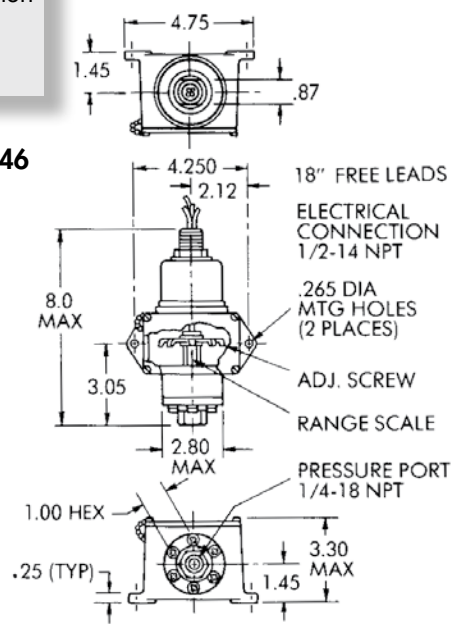
- External Adjustment
- Wide Range Diaphragm Piston
- U.L. / CSA; Explosion Proof: Div. 1, 2
- NEMA: 4, 7, 9, 13
- Ambient temperature range -34° to 71° C

PRESSIONE

ATEX Certified Version  
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646



### Operating and ordering dData

Pressure Switches MODEL 646GE		1/4" Aluminum Pressure Port & Polyimide Diaphragm			Wetted Parts	Aluminum Polyimide Buna N
Max Sys. Press. psi	Proof (Test) Press. psi	Adjustable Set-Point Range		Approx. Dead-band psi	Model No.	
		On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
500	750	1.2-16	.4-15.2	.8	646GE1	646GEM1
3000	5000	8-75	3-70	5	646GE2	646GEM2
3000	5000	20-150	8-138	12	646GE11	646GEM11
3000	5000	50-375	22-347	28	646GE3	646GEM3
3000	5000	330-1000	265-935	65	646GE5	646GEM5
Pressure Switches MODEL 646PE		For high cycling - long life - hydraulic applications Piston Pressure Switch 1/4" Aluminum Pressure Port			Wetted Parts	Aluminum Polyimide Buna N
Hyd. psi	Hyd. psi			Wetted Parts	Aluminum 400 SST	Buna N Teflon
2000	3000	20-200	10-188	10-12	646PE12	646PEM12
3000	5000	170-1400	90-1230	80-170	646PE15	646PEM15
5000	7500	300-3000	180-2780	120-220	646PE21	646PEM21
7500	10,000	2500-5000	2220-4520	280-480	646PE31	646PEM31
Pressure Switches MODEL 646VE		1/4" Aluminum Pressure Port & Polyimide Diaphragm			Wetted Parts	Aluminum Polyimide Buna N
Max Sys. Press. psi	Proof (Test) Press. psi	Adjustable Set-Point Range		Approx. Dead-band psi	Model No.	
		On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
150	250	3.5-28.5	1.0-26.0	2.5	646VE1	646VEM1

#### Options code:

- "A" Viton O-ring
- "F" Ethylene Propylene O-ring
- "Y" EECS Certified to EXsII T5
- "7008" Gold Contacts
- "7038" SST Port and SST Piston (PE Models Only)
- "7076" Teflon Wire

#### Enclosure/certifications:

Div. 1 explosion-proof and hermetically sealed electrical assembly Part No. 17-51 (17-73 for "M" model option), listed by both Underwriter's Laboratories, Inc. (File No. E32961) and CSA Testing Laboratories (File No. 22921) for hazardous locations, Class 1, Groups A, B, C, and D; Class 2 Groups E, F, and G.

# Series 646GZE, 646GZE-7011, 646VZE

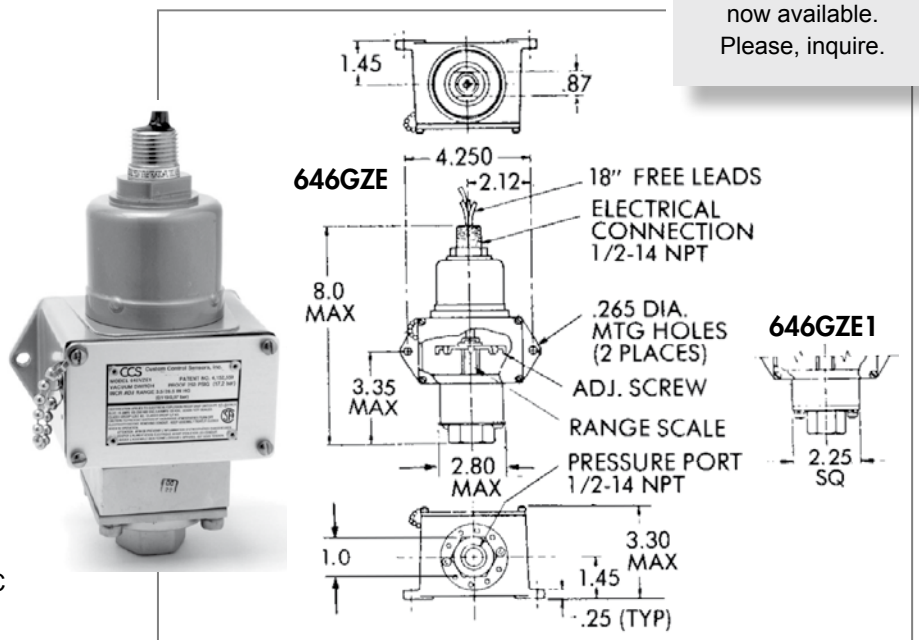
## Standard switches

ATEX Certified Version  
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Pressure .4 to 5000 psi  
Vacuum 1.0 to 28.5" Hg

### Standard features

- External Adjustment
- Wide Range Diaphragm Piston
- U.L. / CSA; Explosion Proof: Div. 1, 2
- NEMA: 4, 7, 9, 13
- Fire Resistant Steel Body
- Ambient temperature range -34° to 71° C



### Operating and ordering data

Pressure Switches MODEL 646GZE		1/2" AStainless Steel Port & Polyimide Diaphragm			Wetted Parts 316 SST, Polyimide, Viton	
Max Sys. Press. psi	Proof (Test) Press. psi	Adjustable Set-Point Range		Approx. Dead-band psi	Model No.	
		On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
500	750	1.2-16	.4-15.2	.8	646GZE1	646GZEM1
3000	5000	8-75	3-70	5	646GZE2	646GZEM2
3000	5000	20-150	8-138	12	646GZE11	646GZEM11
3000	5000	50-375	22-347	28	646GZE3	646GZEM3
3000	5000	330-1000	265-935	65	646GZE5	646GZEM5
3000	5000	950-2300	775-2125	175	646GZE7	646GZEM7
Pressure Switches MODEL 646GZE-7011		1/2" Stailness Steel Pressure Port & Diaphragm			Wetted Parts 316 SST, Viton	
500	750	1.4-16	.4-15	1	646GZE1-7011	646GZEM1-7011
3000	5000	10-75	3-68	7	646GZE2-7011	646GZEM2-7011
3000	5000	20-150	6-136	14	646GZE11-7011	646GZEM11-7011
3000	5000	50-375	16-347	34	646GZE3-7011	646GZEM3-7011
3000	5000	330-1000	250-920	80	646GZE5-7011	646GZEM5-7011
3000	5000	950-2300	750-2100	200	646GZE7-7011	646GZEM7-7011
5000	7500	2100-3400	1820-3120	280	646GZE9-7011	646GZEM9-7011
5000	7500	3200-5000	2720-4520	480	646GZE10-701	646GZEM10-701
Pressure Switches MODEL 646VZE		1/2" AStainless Steel Port & Polyimide Diaphragm			Wetted Parts 316 SST, Polyimide, Viton	
150	250	On Incr. Vacuum In. Hg	On Decr. Vacuum In. Hg	2.5	646VZE1	646VZEM1
		3.5-28.5	1.0-26.0			

### Options code:

- "F" Ethylene Propylene O-ring
- "Y" EECS Certified to EXsIIT5
- "7008" Gold Contacts
- "7030" Gold Contacts w/SST Diaphragm
- "7044" Monel Port and Diaphragm
- "7045" Hastelloy Port and Diaphragm
- "7065" Teflon Wire w/SST Diaphragm

### Enclosure/certifications:

Div. 1 explosion-proof and hermetically sealed electrical assembly Part No. 17-51 (17-73 for "M" model option), listed by both Underwriter's Laboratories, Inc. (File No. E32961) and CSA Testing Laboratories (File No. 22921) for hazardous locations, Class 1, Groups A, B, C, and D; Class 2 Groups E, F, and G.  
Model 646GZEM1 has an approximate dead band of .9 psi.

# Series 646DZE

## Standard switches

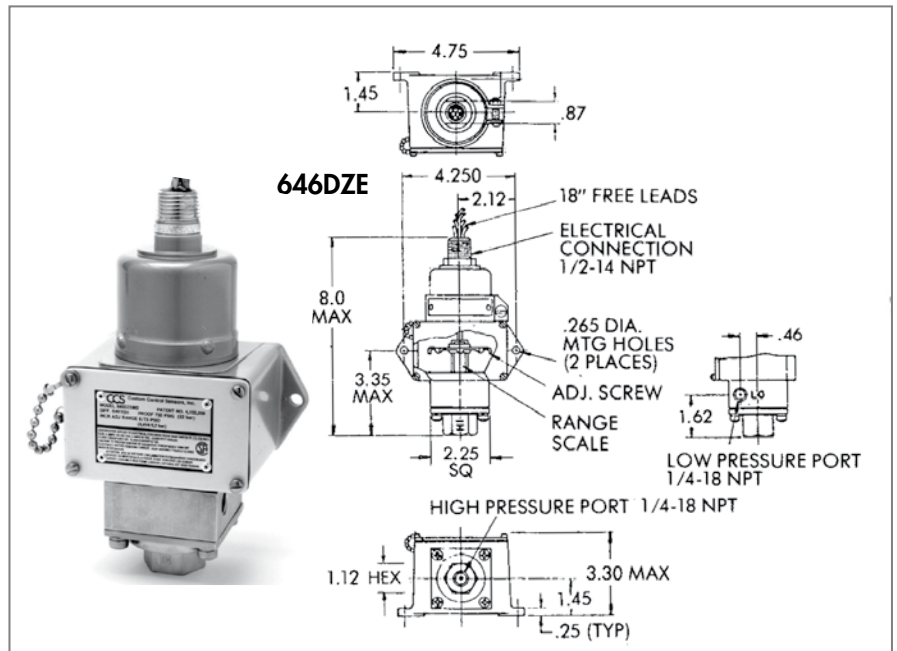


Diff. pressure 4 to 75 psid

### Standard features

- External Adjustment
- Low/Mid Range Diaphragm
- U.L./CSA  
Explosion Proof: Div. 1, 2
- NEMA: 4, 7, 9, 13
- Fire Resistant. Stainless Steel Body
- Ambient temperature range -34 to 71 °C

PRESSIONE



### Operating and ordering data

Differential Pressure Switches MODEL 646DZE				1/4" Stainless Steel Pressure Ports and Polyimide Diaphragm			Wetted Parts	300 SST Polyimide Viton
Max Sys. Press. psi		Proof (Test) Press. psi		Adjustable Set-Point Range		Approx. Dead-band psi	Model No.	
High Press. Port	Low Press. Port	Both Ports Simult.	High Over Low Low Over High	On Incr. Press. psi	On Decr. Press. psi		MODEL SPDT-Std.	MODEL DPDT "M"
400		750	High 750 Low 400	1.2 to 18 6 to 75	.4 to 17.2 2 to 71	.8 4	646DZE1 646DZE2	646DZEM1 646DZEM2

#### Options code:

- "F" Ethylene Propylene O-ring
- "Y" EECS Certified to EXsII T5
- "7008" Gold Contacts
- "7011" SST Diaphragm
- "7030" Gold Contacts w/SST Diaphragm
- "7065" Teflon Wire w/SST Diaphragm

#### Enclosure/certifications:

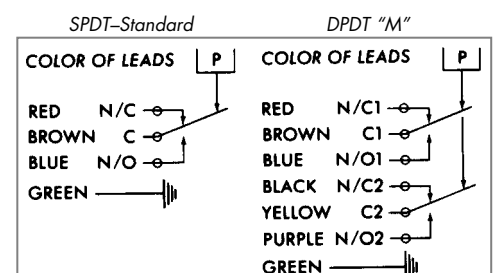
Div. 1 explosion-proof and hermetically sealed electrical assembly Part No. 17-51 (17-73 for "M" model option), listed by both Underwriter's Laboratories, Inc. (File No. E32961 and CSA Testing Laboratories (File No. 22921) for hazardous locations, Class 1, Groups A, B, C, and D; Class 2 Groups E, F, and G.

Model 646DZEM1 has an approximate dead band of .9 psi.

### Electrical characteristics

Rating of Switch Element		
Volts	Ampère	
	SPDT	DPDT "M"
	Res.	Res.
125 AC - 50/60 Hz	15	5
250 AC - 50/60 Hz	15	5
480 AC - 50/60 Hz	15	-
125 DC	.4	.5

### Schematic and wiring code

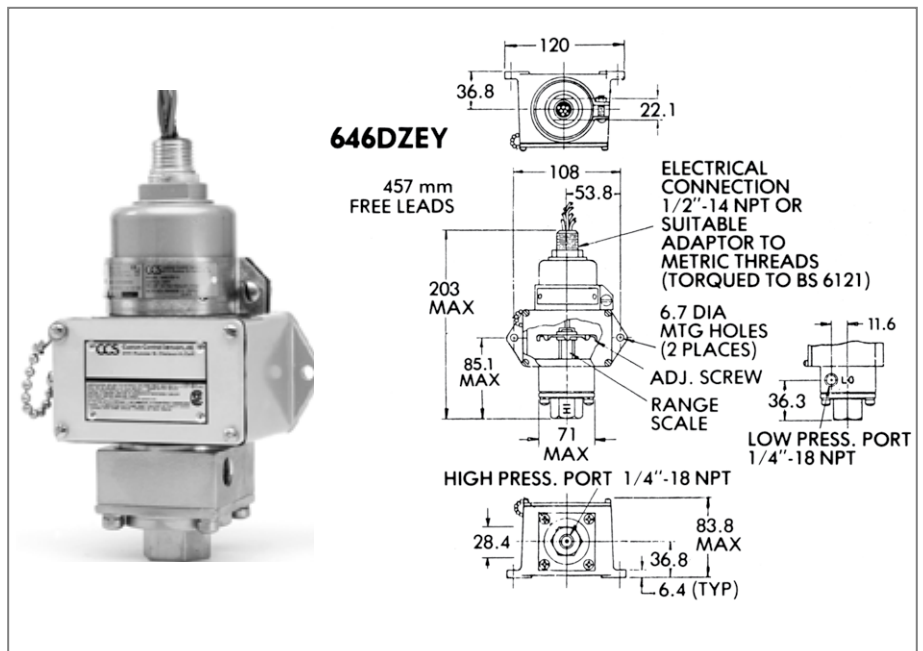


# Series 646DZEY\* Standard switches

Diff. pressure .03 to 5.1 bar

## Standard features

- External Adjustment
- Wide Range Diaphragm
- U.L./CSA  
Explosion Proof: Div. 1, 2
- NEMA: 4, 7, 9, 13
- ATEX Certified & Approved by BASEEFA
- Fire Resistant. Steel Body
- Ambient temperature range -34 to 71 °C



## Operating and ordering data

Differential Pressure Switches MODEL 646DZEY				1/4" Stainless Steel Pressure HI/LOW Port and Polyimide Diaphragm			Wetted Parts	300 SS Polyimide Viton	
Max Sys. Press. psi		Proof (Test) Press. psi		Adjustable Set-Point Range		Approx. Dead- band psi	Model No.		
High Press. Port	Low Press. Port	Both Ports Simult.	High Over Low Low Over High	On Incr. Press. psi	On Decr. Press. psi		MODEL-E SPDT-Std.	MODEL-M DPDT "M"	MODEL-X DbI. Break
27,6		52	High 52 Low 27,6	0,08-1,2 0,41-5,1	0,03-1,2 0,14-4,9	0,05 0,28	646DZEY1 646DZEY2	646DZEMY1 646DZEMY2	646DZEXY1 646DZEXY2

### Options code:

- "F" Ethylene Propylene O-ring
- "N" Teflon® Encapsulated Buna-N O-ring
- "7008" Gold Contacts
- "7011" 316SS Diaphragm
- "7030" Gold Contacts w/SST Diaphragm
- "7044" Monel Port and Diaphragm
- "7045" Hastelloy Port and Diaphragm
- "7065" Teflon Wire w/SST Diaphragm

### Enclosure/certifications:

Div. 1 explosion-proof and hermetically sealed electrical assembly Part No. 17-51 (17-73 for "M" model option), listed by both Underwriter's Laboratories, Inc. (File No. E32961) and CSA Testing Laboratories (File No. 22921) for hazardous locations. Class 1, Groups A, B, C and D: Class 2 Groups E, F and G. "X"-Double Break listed by Underwriter's Laboratories, Inc. (File No. E32961) for hazardous locations. Class 1, Groups A, B, C and D: Class 2 Groups E, F and G.

**ATEX certified and approved** by BASEEFA (UK) Certificate No. Baseefa05ATEX00IIX. Equipment for Protective System for use in Potentially Exposed Atmospheres.

EU Directive 94/9/EC in Compliance with EN60079-0: 2004, EN60079-1:2004, EN50281-1-1: 1998 + Amd 1. Marking: ExII2GD ExdIIC

T85°C (Tamb -34°C to +71°C) and T100°C (Tamb -34° to + 86°C). IP 66/67.