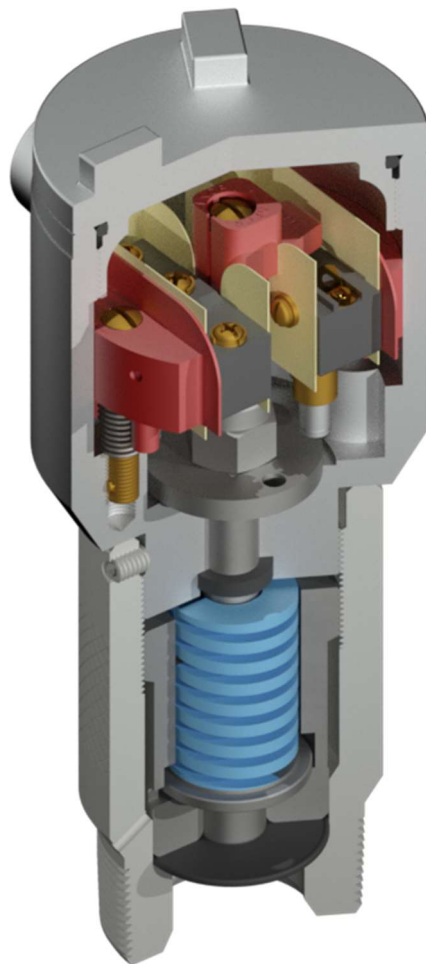


Presco[®]-Switch

Electric Pressure Switch Assemblies With:
Base Housings, Type D and Type S
Switch Housings, Type F, FF, V, VV, FV and M



The Presco-Switch is a Dual-Seal pressure-responsive device that opens or closes one or more integral electrical switches at predetermined setpoints in order to:

- start or stop pump motors for pump jacks and electric submersible pump systems
- stop gas engines
- control valve operations

Switch Features:

- convenient microswitch adjustments make field setting easy
- versatile switching arrangements satisfy most applications
- switch housings explosion-proof design is CSA approved for Class 1 Div.1 Group D hazardous locations
- Dual-Seal design is certified to meet ANSI/ISA-12.27.01-2003 requirement for process sealing between electrical systems and combustible process fluids

Pressure Sensing Base Features:

- Pressure sensing bases use diaphragms and plungers to register pressure
- Component wetted parts meeting the requirements of NACE MR0175 are available on select models
- Interchangeable springs enable each basic unit to be used for a variety of pressure ranges
- Accurate operation and repeatability are provided by smooth plunger movement and precision manufacturing
- Long life is ensured by a guided plunger, resulting in a useful life that exceeds other types of pressure switch mechanisms
- High proof pressure is provided by a positive plunger stop so that the Presco-Switch will withstand overpressure and surges
- Rugged design enables the Presco-Switch to withstand severe operating conditions including shock, vibration and corrosion
- Standard 2” male NPT pressure sensing connection provides a solid mount that will not plug off or freeze readily
- Certificate of authorization issued by ABSA is OF20302.2

General Specifications:

Repeatability	1% to 2% of adjustable range
Service	Standard and H ₂ S NACE MR0175 on Select Models
Electrical Temperature Rating	-58°F to 180°F (-50°C to 82°C)
Electrical Rating	5A – 125/250/480 VAC; 0.5A – 125VDC; 0.25A – 250VDC
Electrical Classification	CSA c/us Approved per C22.2/UL1203/UL508; Class 1, Group D Hazardous Locations; Dual Seal Compliant per ANSI/ISA-12.27.01 requirements
Electrical Housing	Cast Aluminum; 3-1/2” OD
Electrical Connection	1/2”-14 NPT (female)
Pressure Connection	2” NPT (male); Zinc Electroplated High Strength Carbon Steel
Pressure Rating	Type D: 3,000psig (20,684kPag); -58°F to 180°F (-50°C to 82°C) Type S: 5,000psig (34,474kPag); -58°F to 180°F (-50°C to 82°C)
Canadian Registration Number	OF20302.2
Quality Program	AQP-5164

Accessories:



Isolation Valves:

- 2” NPT(m) x 2” NPT(f), 4000WOG, Low Temp, NACE with two (2) 1/2” NPT ports downstream
- 2” 600RF x 2” NPT(f), Low Temp, NACE with two (2) 1/2” NPT ports downstream
- Custom units available to fit specific piping requirements including, double block and bleed assemblies

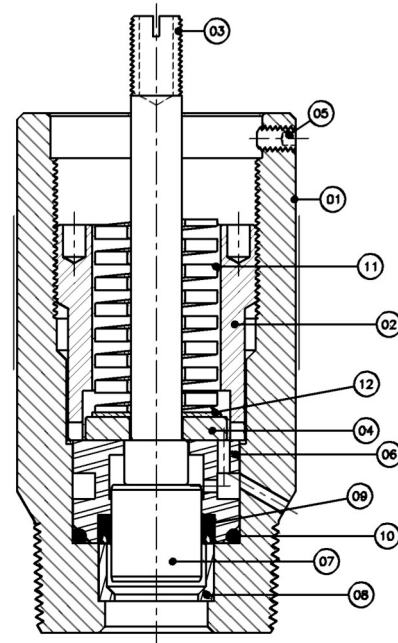
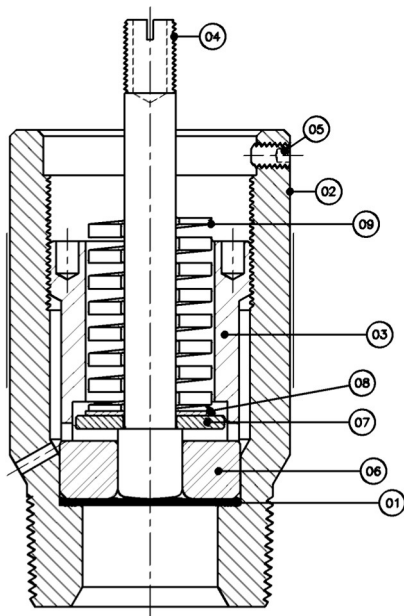


Cables:

- Installation cable, 3C-14 SOW Water Resistant Cable with poured seal for class 1 areas
- 40ft and 60ft lengths in stock

Pressure Sensing Base Housing Models:

Model	Design	Operating Conditions	Maximum Working Pressure kPa (psi)	Length mm (in)	Weight kg (lbs)
D	Hydrin® diaphragm pressure sensor with backup plunger	Standard oilfield and mildly sour and corrosive gas, crude oil and water service	1,379 (200) 1.25" Piston	Standard 225 (8.8)	2.6 (5.8)
			20,684 (3,000) 0.63" Piston	Reset(-M) 272 (10.7)	2.7 (6.0)
S	Lapped stainless steel plunger pressure sensor with energized Teflon® seal	Standard oilfield and sour and corrosive gas, crude oil and water service	34,474 (5,000)	Standard 236 (9.3)	3.0 (6.6)
				Reset(-M) 283 (11.2)	3.1 (6.8)



Type D Base:

Item No.	Description
01	Diaphragm, Hydrin®
02	Type D Base (NACE)
03	Piston Guide Sleeve
04	Piston, 0.625" or 1.25" dia.
05	Set Screw
06	Piston Guide
07	Spring Base Plate
08	Spring Spacer
09 [†]	Spring

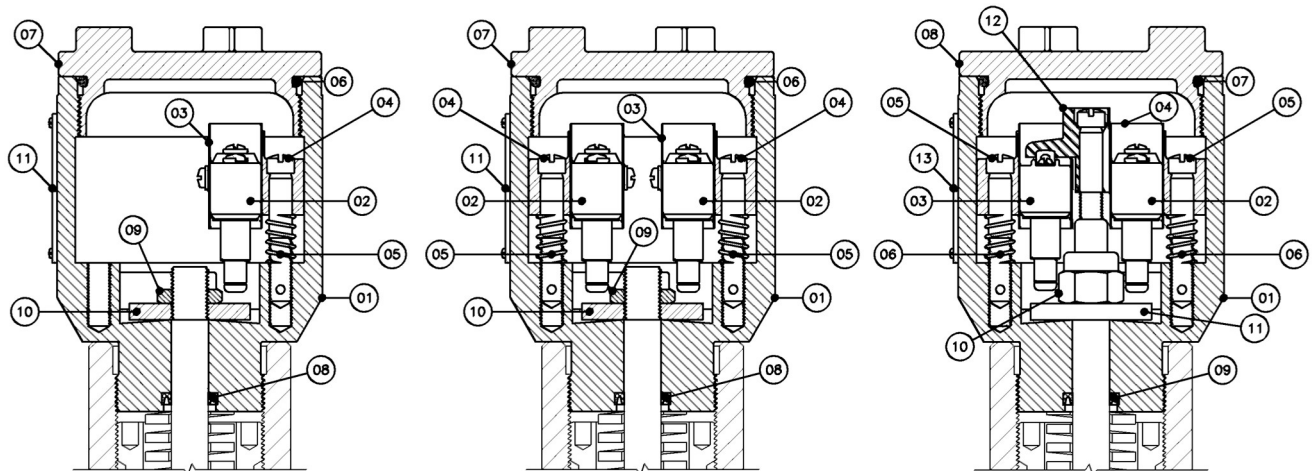
Type S Base:

Item No.	Description
01	Type S Base (NACE)
02	Piston Guide Sleeve
03	Piston Extension
04	Spring Base Plate
05	Set Screw
06	Plunger Guide, 3/8", 5/8" or 7/8" dia.
07	Plunger, 3/8", 5/8" or 7/8" dia.
08	Plunger Retainer, 3/8", 5/8" or 7/8" dia.
09	Plunger Seal, Teflon®
10	O-Ring, Teflon®
11 [†]	Spring
12	Spring Spacer

[†] Refer to Table-1: Presco-Switch Spring Range Chart on back page

Switch Arrangement Types:

Type	Switch Function	Description
F	Fixed Differential	Switch setting is adjustable within the pressure range of the switch. The fixed differential is approximately 4% of the pressure switch range.
FF	Dual Fixed Differential	Two independently adjustable microswitches provide separate circuits; each with a fixed differential.
FV	Fixed and Variable Differential	Two independently adjustable microswitches provide separate circuits; one with a fixed differential and one with a variable differential.
V	Variable Differential	One independently adjustable microswitch for low or high settings with a variable differential
VV	Dual Variable Differential	Two independently adjustable microswitch provide separate circuits; each with a variable differential
M	Manual Reset	A tripping microswitch actuates on increasing pressure. When the pressure decreases, and the manual reset knob is pushed, the microswitch will then reset



Type F Switch Housing:

Item No.	Description
01	Switch Housing
02	Fixed Microswitch Assy.
03	Insulating Barrier
04	Adjusting Screw
05	Adjusting Spring
06	Cover O-Ring
07	Standard Cover
08	U-Cup Seal
09	Locknut
10	Trip Plate
11	Nameplate
*	Ground Screw
*	Drain Screw
*	Roll Pin

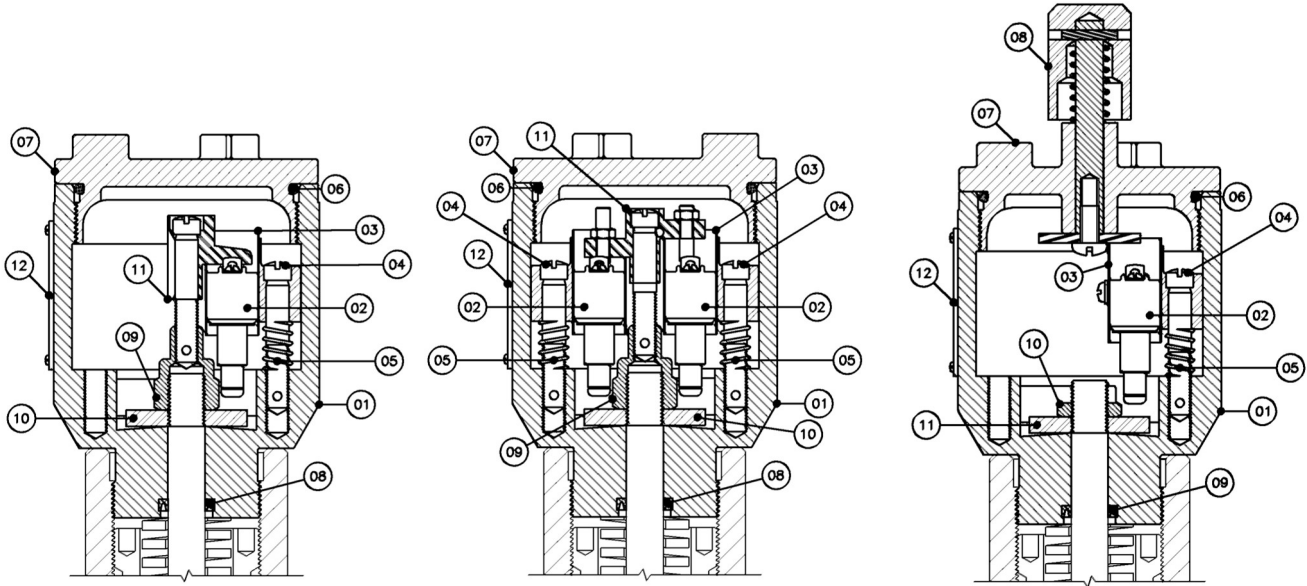
Type FF Switch Housing:

Item No.	Description
01	Switch Housing
02	Fixed Microswitch Assy.
03	Insulating Barrier
04	Adjusting Screw
05	Adjusting Spring
06	Cover O-Ring
07	Standard Cover
08	U-Cup Seal
09	Locknut
10	Trip Plate
11	Nameplate
*	Ground Screw
*	Drain Screw
*	Roll Pin

Type FV Switch Housing:

Item No.	Description
01	Switch Housing
02	Fixed Microswitch Assy.
03	Variable Microswitch Assy.
04	Insulating Barrier
05	Adjusting Screw
06	Adjusting Spring
07	Cover O-Ring
08	Standard Cover
09	U-Cup Seal
10	Extension Nut
11	Trip Plate
12	Reset Tripper Assembly
13	Nameplate
*	Ground Screw
*	Drain Screw
*	Roll Pin

* Not Shown



Type V Switch Housing:

Type VV Switch Housing:

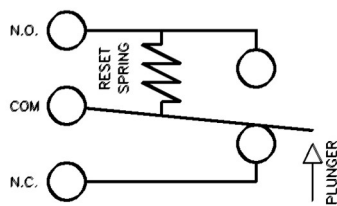
Type M Switch Housing:

Item No.	Description
01	Switch Housing
02	Variable Microswitch Assy.
03	Insulating Barrier
04	Adjusting Screw
05	Adjusting Spring
06	Cover O-Ring
07	Standard Cover
08	U-Cup Seal
09	Extension Nut
10	Trip Plate
11	Reset Tripper Assembly
12	Nameplate
*	Ground Screw
*	Drain Screw
*	Roll Pin

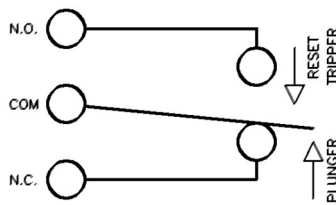
Item No.	Description
01	Switch Housing
02	Variable Microswitch Assy.
03	Insulating Barrier
04	Adjusting Screw
05	Adjusting Spring
06	Cover O-Ring
07	Standard Cover
08	U-Cup Seal
09	Extension Nut
10	Trip Plate
11	Dual Reset Tripper Assy.
12	Nameplate
*	Ground Screw
*	Drain Screw
*	Roll Pin

Item No.	Description
01	Switch Housing
02	Manual Microswitch Assy.
03	Insulating Barrier
04	Adjusting Screw
05	Adjusting Spring
06	Cover O-Ring
07	Manual Reset Cover
08	Manual Reset Pushbutton
09	U-Cup Seal
10	Locknut
11	Trip Plate
12	Nameplate
*	Ground Screw
*	Drain Screw
*	Roll Pin

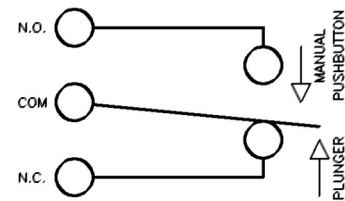
Microswitch Circuit Diagrams:



Type F – Circuit Diagram



Type V – Circuit Diagram



Type M – Circuit Diagram

* Not Shown

Presco-Switch Model Number Breakdown:

Base Arrangement Type:

- Type **D** – Diaphragm model for mildly sour and corrosive gas, crude oil and water service
- Type **S** – Plunger model for sour and corrosive gas, crude oil and water service

Switch Housing Arrangement Type:

- Type **F** – Single Fixed Differential Switch, approximately +/- 4% differential
- Type **FF** – Dual Fixed Differential Switch, with independent circuits
- Type **FV** – One Fixed Differential Switch, One Variable Differential Switch
- Type **V** – Single Variable Differential Switch, for high / low setting differential
- Type **VV** – Dual Variable Differential Switch, with independent circuits
- Type **M** – Single Switch, manually reset after trip

Spring Pressure Range Number:

See spring range from the chart below

DFF - 100 (This is the Presco-Switch Model Number for Ordering)

Table 1 – Presco-Switch Spring Range Chart

Range No.	Piston Dia.	Type D Base		Plunger Dia.	Type S Base	
		kPa	Psi		kPa	psi
7	* 1.25"	69 – 483	10 – 70	-	-	-
15	* 1.25"	103 – 621	15 – 90	-	-	-
20	* 1.25"	138 – 1,379	20 – 200	-	-	-
30	-	-	-	0.87"	276 – 2,068	40 – 300
40	* 0.63"	276 – 2,758	40 – 400	0.87"	345 – 2,758	50 – 400
50	-	-	-	0.87"	414 – 3,447	60 – 500
60	* 0.63"	414 – 4,137	60 – 600	0.87"	483 – 4,137	70 – 600
70	-	-	-	0.87"	621 – 4,826	90 – 700
80	-	-	-	* 0.63"	689 – 5,516	100 – 800
100	* 0.63"	689 – 6,895	100 – 1,000	* 0.63"	862 – 6,895	125 – 1,000
125	* 0.63"	1,034 – 8,618	150 – 1,250	* 0.63"	1,103 – 8,618	160 – 1,250
150	* 0.63"	2,068 – 10,342	300 – 1,500	* 0.63"	1,379 – 10,342	200 – 1,500
200	* 0.63"	2,758 – 13,789	400 – 2,000	0.38"	1,896 – 13,790	275 – 2,000
250	* 0.63"	3,447 – 17,237	500 – 2,500	0.38"	2,413 – 17,237	350 – 2,500
300	* 0.63"	4,137 – 20,684	600 – 3,000	0.38"	2,930 – 20,684	425 – 3,000

*Component wetted parts meeting the requirements of NACE MR0175 available on select models

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