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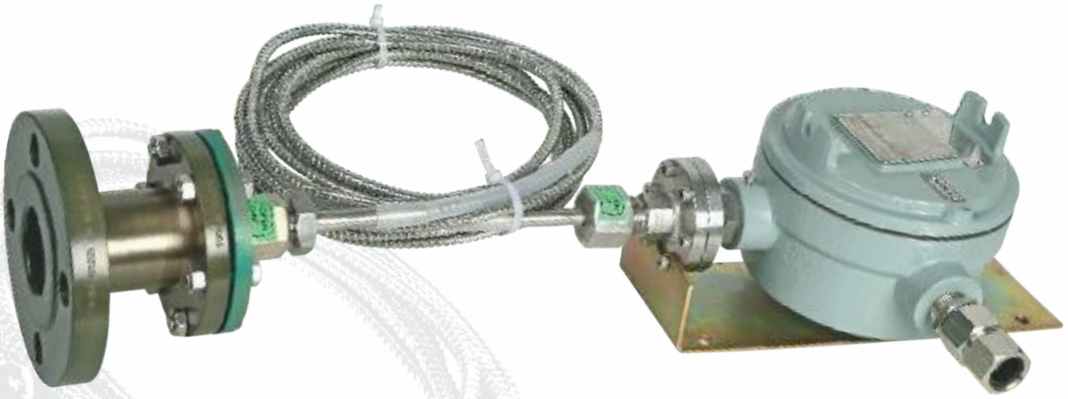
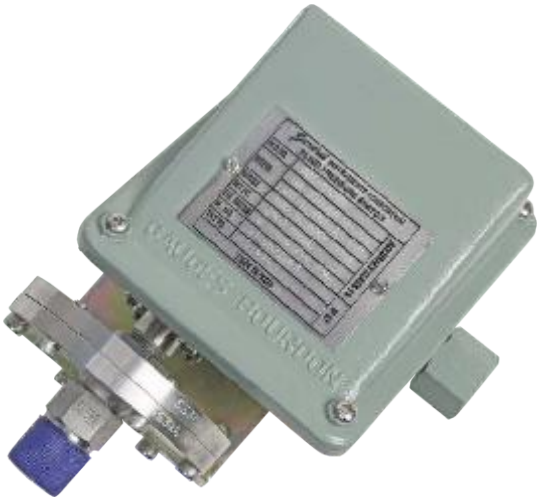


BLIND PRESSURE AND DIFFERENTIAL PRESSURE SWITCHES

Blind Pressure & Diff. Pressure Switches

GENERAL has been designing and manufacturing reliable, high quality Pressure Switches and Differential Pressure Switches for accurate control of the process equipments to suit to most of the industrial applications in various process industries including Oil, Gas, Power, Steel, Chemical, Petrochemical, Soap, Cement, Paper, Sugar, pharmaceutical etc. Generally Pressure Switches are available with sensing element of Bellow, Diaphragm & Piston and Differential Pressure Switches with sensing element of Diaphragm. Rigorous and continuous tests are conducted for design and quality conformance.



Blind Pressure Switches

Application Area:
Safety, Alarming & Tripping of following systems

- Compressors, Pumps
- Turbines, Generators
- Boilers
- Fluid Power/ Hydraulics
- High/ Low Limit level staging functions.

Blind Differential Pressure Switches

Application Area:
Loss of pressure due to choking

- Across Filters
- Across Blowers
- Across Orifice Plates, Nozzle & Venturi
- Across water steam interface in boilers etc…

The parameters mentioned here are the standard specifications / values generally used for most of the process applications. Any other specification not appearing here also can be provided as per customer requirement.

Under Technical Collaboration with M/s. Gauges Bourdon, France

Blind Pressure & Diff. Pressure Switches

Salient Features

Complete Product Range	Standard and customized special models covering pressure ranges from 1kg/cm2 (Vacuum) to high pressure 400kg/cm2(g)
Robust Construction	Robust Construction, Rugged, long life, non critical to vibration, high over range & and proof pressures, excellent resistance to corrosive process media / hostile environments.
Instrument Quality	High resolution of Set Points, high repeatability, fixed/adjustable dead band, negligible temperature effect
Wetted Parts & Process Connection	Wide selection of Materials depending upon the nature of process fluids. For highly corrosive / viscous fluids, Diaphragm Seals with suitable material & process connection can be provided
Snap Action Electrical Switching	Wide selection of UL listed and CSA Certified switching elements for AC and DC service. Optionally Gold Plated Contacts and Environmentally Sealed Switches available. Hermetically Sealed Microswitches can be provided for hazardous and hostile environments
Field Adjustment	All Switches are calibrated and set point pre-set at factory. The set point is field adjustable, without any special tools. Tamper proof locking arrangement is provided. For Switches with adjustable dead band, dead band also shall be field adjustable.
Additional Feature	External Pressure Setting with externally visible Reference Scale (Optional)
Cost Effectiveness	Simple and fast installation without special tools, provides longer service life, periodic service or spare parts not required
Quality Control	Rigid quality standards are maintained from raw material to finished product.
Testing	"General" Pressure & Differential Pressure Switches have been tested as per BS-6134: 1991 Standard for all Routine as well as Type tests, certified by Third Party Inspection Agency

Blind Pressure Switches

Technical Specifications

Standard	BS-6134:1991
Enclosure	Weatherproof / Weatherproof with CE/ Flameproof IIA, IIB & IIC / Flameproof with Atex (Refer Table-IV)
Cable Entry	Different types of Cable entries with or without Cable Glands (Refer Table – VI)
Type of Sensor	Bellow / Diaphragm / Piston (Refer Table – II)
Sensor & Wetted Parts Material	SS304 / SS316 / SS316L / Monel / Hastelloy-C (Refer Table – VII)
Process Connection	Threaded Connection as per Table-VIII Flanged Connection through Diaphragm Seal (Refer Page 20 & 22)
Mounting	Field (Direct) / Surface / Yoke (2" Pipe)
Type of Micro-switch	1SPDT/ 2SPDT Snap Action Microswitch / Gold Plated Contacts/ Environmentally Sealed Microswitches / Hermetically Sealed Microswitches (Refer Table – V). All switches are of potential free contacts.
Switching Differential	Fixed/ Adjustable (Refer Table-I) (For Switching Differential Values refer Table – XI to XVI)
Set Point	To be specified by Customer (Adjustable from 10 to 90% of the Maximum Range, with tamperproof locking arrangement
Ranges	For different Ranges, Refer Table – III
Over Range	130% FSD as standard / higher on request
Repeatability	+/- 0.5% FSR
Switching Accuracy	+/- 0.5% FSR
Scale Accuracy	+/- 3% FSR
Ambient Temperature	(-)20°C to 70°C
Process Temperature	(-)20°C to 170°C (for SS wetted parts with Teflon Seal)
High Voltage Strength	Withstands 0.5 KV between open contact for 1 Sec & 2 KV between terminals and earth for one minute.
Insulation Resistance	Insulation Resistance >10 M Ohms at 500VDC
Intrinsic Safety	Switches are classified as Simple Electrical Apparatus as per BS-5345 as they neither generate nor store energy. Hence Pressure switches are suitable to be used in intrinsically safe systems without certification, provided the power source is certified intrinsically Safe.
Accessories	For different Accessories, Refer Table – X

Blind Differential Pressure Switches

Technical Specifications

Standard	BS-6134:1991
Enclosure	Weatherproof / Weatherproof with CE/ Flameproof IIA, IIB & IIC / Flameproof with Atex (Refer Table-IV)
Cable Entry	Different types of Cable entries with or without Cable Glands (Refer Table – VI)
Type of Sensor	Diaphragm
Sensor & Wetted Parts Material	SS304 / SS316 / SS316L / Monel / Hastelloy-C (Refer Table – VII)
Process Connection	Threaded Connection as per Table-VIII Flanged Connection through Diaphragm Seal (Refer Page 20 & 22)
Mounting	Field (Direct) / Surface / Yoke (2" Pipe)
Type of Micro-switch	1SPDT/ 2SPDT Snap Action Microswitch / Gold Plated Contacts / Environmentally Sealed Microswitches / Hermetically Sealed Microswitches (Refer Table – V). All switches are of potential free contacts.
Switching Differential	Fixed / Adjustable (Refer Table-I) (For Switching Differential Values refer Table - XVII & XVIII)
Set Point	To be specified by Customer (Adjustable from 10 to 90% of the Maximum Range, with tamperproof locking arrangement
Ranges	For different Ranges, Refer Table – III
Over Range	130% FSD as standard/ higher on request
Static pressure	Static Standard Pressure values as shown below
Repeatability	+/- 0.5% FSR
Switching Accuracy	+/- 0.5% FSR
Scale Accuracy	+/- 3% FSR
Ambient Temperature	(-)20°C to 70°C
Process Temperature	(-)20°C to 170°C (for SS wetted parts with Teflon Seal)
High Voltage Strength	Withstands 0.5 KV between open contact for 1 Sec & 2 KV between terminals and earth for one minute.
Insulation Resistance	Insulation Resistance >10 M Ohms at 500VDC
Intrinsic Safety	Switches are classified as Simple Electrical Apparatus as per BS-5345 as they neither generate nor store energy. Hence Pressure switches are suitable to be used in intrinsically safe systems without certification, provided the power source is certified intrinsically Safe.
Accessories	For different Accessories, Refer Table – X

Static Pressure Values

DP Range	Static Pressure
DP Range up to 1000 mmWC	1 kg/cm^2
Above 1000 mm WC upto 6000 mm WC	10 kg/cm^2
Above 6000 mm WC upto 2 kg/cm^2	20 kg/cm^2
Above 2 kg/cm^2 upto 10 kg/cm^2	40 kg/cm^2
Above shown are the standard values available. Higher Static Pressure on request.	

Under Technical Collaboration with M/s. Gauges Bourdon, France

Common Notes for Blind Pressure & Differential Pressure Switches

1. Weatherproof Enclosure, IP-68 as per IS/IEC-60529:2001

2. Weatherproof Enclosure, IP-68 as per IS/IEC-60529:2001, approved by CE

3. Flameproof Enclosure, Gr. IIA, IIB & IIC T6 as per IS/IEC-60079.1/2007 & Weatherproof to IP 66 as per IS-12063:1987 (IEC-60529), approved by CIMFR/CCOE/PESO

4. Flameproof Enclosure, Atex approved, Ⓔx II 2 GD Ex d IIC T6 Gb -20°C≤Ta≤+60°C
   Ex tb IIIC T72°C Db -20°C≤Ta≤+60°C

5. Weatherproof enclosure is effective only if all entries and joint faces are properly sealed.

6. Flameproof enclosure is weatherproof only if cover 'O' ring is retained in position; and flameproof only if suitable Flameproof Cable Gland is provided. It is highly recommended to procure Cable Glands along with flameproof instruments to avoid negligence of the same during installation.

7. Switch Accuracy & Repeatability are one and the same for all blind Pressure / Differential pressure switches. A shift of ±2% may be observed in set point when pressure falls from full static pressure. Settings may also shift with varying temperature.

8. The instrument is calibrated in vertical mounting position. Hence mounting in any other position may cause a minor range shift, especially in low and compound ranges.

9. A pressure switch is a switching device and not a measuring instrument, even though it is provided with a scale to assist setting. Therefore Test Certificates will not specify individual On-Off switching values at different scale readings. Maximum differential obtained alone will be declared, in addition to other specifications.

10. Switching differential (dead band) values furnished are nominal maximum values under test conditions at mid-scale, which may vary with range settings and operating conditions.

11. On-Off setting should not exceed the upper or lower range of the span.

12. Ambient temperature range: All models are suitable for operating within a range of ambient temperature from (–) 20°C to (+) 70°C provided the process fluid does not freeze within this range. Below 0°C, precautions should be taken in humid atmospheres to prevent frost formation inside the instrument from jamming the mechanism. Occasional excursions beyond this range are possible but accuracy might be impaired. The microswitch is the limiting factor which should never exceed the limits (–) 25°C to (+) 80°C.

13. Fluid Temperature: A pressure switch connected to the main pipe is not subjected to the flow and therefore is not fully exposed to the fluid temperature. Use of sufficient length of impulse tubing will greatly reduce excessive heating of the sensing element. For Steam / condensable vapours, a Syphon is recommended between the Process Line & Pressure Switch to reduce excess temperature.

14. Ensure that impulse pipe work applies no stress on sensing element housing and use spanners to hold pressure port / housing when connections are made.

15. It is recommended to select the range of the instrument such that the set value falls between 35% to 65% of the FSR.

16. Scale Markings are for guidance only. Set the correct set value against precision Master Gauge.

17. Pressure & Differential Pressure Switches with dual set points (2 distinct set points) also available on request

Model Code / Ordering Information

A) Example for Model Selection:

GF	SS	010K	WA	103	W1E	SX	15NTM	IK	P
Type	Sensor	Range	Type of Enclosure	Type of Microswitch	Cable Entry	Wetted Parts	Process Connection	Mode of Calibration	Accessories

Code	Select from	Description
GF	Table-I	BPS with fixed switching differential
SS	Table-II	BPS with Sensor of Diaphragm
010K	Table-III	Range 1-10 kg/cm^2
WA	Table-IV	Weather proof, Aluminium Enclosure
103	Table-V	1 SPDT, 15A @230VAC, General purpose snap acting switch
W1E	Table-VI	1/2" NPT Brass Nickel plated DCCG
SX	Table-VII	SS316L Diaphragm with SS316 wetted parts & Teflon seal
15NTM	Table-VIII	½" NPT(M) Process Connection
IK	Table-IX	Calibration for increasing pressure in kg/cm^2
P	Table-X	2" Pipe mounting Bracket

B) How to select Model Code?

Please select one code from each of the following Tables (I to X), as shown in the above Example.

Table - I : Type of Instrument & Type of Switching Differential

DESCRIPTION	CODE
Blind Pressure Switch with Fixed Switching Differential	GF
Blind Pressure Switch with Adjustable Switching Differential	GA
Blind Differential Pressure Switch with Fixed Switching Differential	DF
Blind Differential Pressure Switch with Adjustable Switching Differential	DA

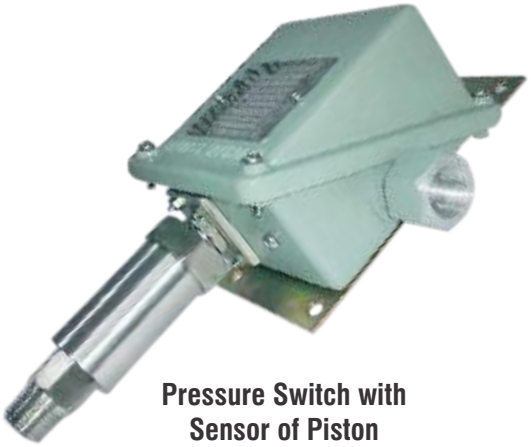
Table - II : Type of Sensor

DESCRIPTION	CODE
Pressure Switch Sensor of Bellow	SB
Pressure Switch Sensor of Piston	SP
Pressure Switch Sensor of Diaphragm	SS
Differential Pressure Switch Sensor of Diaphragm	DS

Blind Pressure & Diff. Pressure Switches

Pressure Switch with Sensor of Diaphragm

Pressure Switch with Sensor of Bellow



Pressure Switch with Sensor of Piston

Differential Pressure Switch with Sensor of Diaphragm

Table III : Ranges

Range	Unit	Code	Range	Unit	Code	Availability in Series
-600 to 0	mmWC	VW06	-60 to 0	mBar	VM06	SS
-1000 to 0	mmWC	VW10	-100 to 0	mBar	VM10	SS
-1600 to 0	mmWC	VW16	-160 to 0	mBar	VM16	SB, SS
-2500 to 0	mmWC	VW25	-250 to 0	mBar	VM25	SB, SS
-4000 to 0	mmWC	VW40	-400 to 0	mBar	VM40	SB, SS
-6000 to 0	mmWC	VW60	-600 to 0	mBar	VM60	SB, SS
-1 to 0	kg/cm^2	VP1K	-1 to 0	Bar	VP1B	SB, SS
-0.5 to 0.5	kg/cm^2	C50K	-0.5 to 0.5	Bar	C50B	SB, SS
-1 to 1.5	kg/cm^2	C15K	-1 to 1.5	Bar	C15B	SB, SS
-1 to 3	kg/cm^2	C30K	-1 to 3	Bar	C30B	SB, SS
-200 to 200	mmWC	CW02	-20 to 20	mBar	CM02	SS
-400 to 400	mmWC	CW04	-40 to 40	mBar	CM04	SS
-500 to 500	mmWC	CW05	-50 to 50	mBar	CM05	SS
20 to 200	mmWC	PW02	2 to 20	mBar	PM02	DS, SS
30 to 300	mmWC	PW03	3 to 30	mBar	PM03	DS, SS
40 to 400	mmWC	PW04	4 to 40	mBar	PM04	DS, SS
60 to 600	mmWC	PW06	6 to 60	mBar	PM06	DS, SS
100 to 1000	mmWC	PW10	10 to 100	mBar	PM10	DS, SB, SS
160 to 1600	mmWC	PW16	16 to 160	mBar	PM16	DS, SB, SS
200 to 2000	mmWC	PW20	20 to 200	mBar	PM20	DS, SB, SS
250 to 2500	mmWC	PW25	25 to 250	mBar	PM25	DS, SB, SS
400 to 4000	mmWC	PW40	40 to 400	mBar	PM40	DS, SB, SS
600 to 6000	mmWC	PW60	60 to 600	mBar	PM60	DS, SB, SS
0.1 to 1	kg/cm^2	001K	0.1 to 1	Bar	001B	DS, SB, SS
0.2 to 2	kg/cm^2	002K	0.2 to 2	Bar	002B	DS, SB, SS
0.3 to 3	kg/cm^2	003K	0.3 to 3	Bar	003B	DS, SB, SS
0.4 to 4	kg/cm^2	004K	0.4 to 4	Bar	004B	DS, SB, SS
0.5 to 5	kg/cm^2	005K	0.5 to 5	Bar	005B	DS, SB, SS
0.6 to 6	kg/cm^2	006K	0.6 to 6	Bar	006B	DS, SB, SS
0.7 to 7	kg/cm^2	007K	0.7 to 7	Bar	007B	DS, SB, SS
1 to 10	kg/cm^2	010K	1 to 10	Bar	010B	DS, SB, SS
1.6 to 16	kg/cm^2	016K	1.6 to 16	Bar	016B	SB, SS
2 to 20	kg/cm^2	020K	2 to 20	Bar	020B	SB, SS
2.5 to 25	kg/cm^2	025K	2.5 to 25	Bar	025B	SB, SS
4 to 40	kg/cm^2	040K	4 to 40	Bar	040B	SS
6 to 60	kg/cm^2	060K	6 to 60	Bar	060B	SS
10 to 100	kg/cm^2	100K	10 to 100	Bar	100B	SP
16 to 160	kg/cm^2	160K	16 to 160	Bar	160B	SP
20 to 200	kg/cm^2	200K	20 to 200	Bar	200B	SP
25 to 250	kg/cm^2	250K	25 to 250	Bar	250B	SP
35 to 350	kg/cm^2	350K	35 to 350	Bar	350B	SP
40 to 400	kg/cm^2	400K	40 to 400	Bar	400B	SP

Table IV : Type of Enclosure

DESCRIPTION	CODE
Weather proof, Die-Cast Aluminium enclosure, epoxy powder coated, conforming to IP-68 protection, in accordance with IS/IEC-60529:2001	WA
Weather proof, SS304 enclosure, conforming to IP-68 protection, in accordance with IS/IEC-60529:2001	W4
Weather proof, SS316 enclosure, conforming to IP-68 protection, in accordance with IS/IEC-60529:2001	W6
Weather proof, Die-Cast Aluminium enclosure, epoxy powder coated, conforming to IP-68 protection, in accordance with IS/IEC-60529:2001, CE approved	CA
Weather proof, SS304 enclosure, conforming to IP-68 protection, in accordance with IS/IEC-60529:2001, CE approved	C4
Weather proof, SS316 enclosure, conforming to IP-68 protection, in accordance with IS/IEC-60529:2001, CE approved	C6
Flameproof Die Cast Aluminum Enclosure, epoxy powder coated, conforming to Gr. IIA, IIB & IIC T6 in accordance with IS/IEC-60079.1/2007) & Weatherproof to IP 66 in accordance with IS-12063:1987 (IEC-60529), approved by CIMFR/CCOE/PESO	FA
Flameproof Die Cast Aluminum epoxy powder coated Enclosure, Atex approved, Ex II 2 GD Ex d IIC T6 Gb -20°C≤Ta≤+60°C, Ex tb IIIC T72°C Db -20°C≤Ta≤+60°C	AA

Pressure Switch with Weather proof Aluminium Enclosure

Pressure Switch with Weather proof SS Enclosure

Pressure Switch with Flame proof Aluminium Enclosure

Differential Pressure Switch with Flame proof Aluminium Enclosure

Table V : Type of Micro Switch

DESCRIPTION	CODE	AVAILABILITY IN TYPE	A.C.RATING		D.C.RATING	
			Current Voltage	Volt -	Current Resistive	Inductive
1-SPDT General Purpose	100	GF *	5A-250VAC	220	0.25A	0.03A
				110	0.50A	0.07A
2-SPDT General Purpose	200	GF *		24	5.0A	3.00A
1-SPDT Low switching differential	101	GF/GA	15A-250 VAC	220	0.2 A	0.03 A
				110	0.4 A	0.03 A
2-SPDT Low switching differential	201	GF		24	2 A	1 A
1-SPDT-General Purpose	102	GF/DF/GA/DA	5A-250VAC	220	0.25 A	0.1 A
				110	0.5 A	0.2 A
2-SPDT-General Purpose	202	GF/DF/GA/DA		24	8 A	7 A
1-SPDT-General Purpose	103	GF/DF/GA/DA	15A-250VAC	220	0.25 A	0.1 A
				110	0.5 A	0.2 A
2-SPDT-General Purpose	203	GF/DF/GA/DA		24	8 A	7 A
1-SPDT- Very low switching differential	104	GF/DF/GA/DA	10A-250 VAC	220	0.2 A	0.03 A
				110	0.4 A	0.03 A
2-SPDT- Very low switching differential	204	GF/DF		24	2 A	1 A
1-SPDT, Gold Contact	105	GF/ DF/ GA/ DA	1A - 250 VAC	---	---	---
2-SPDT, Gold Contact	205	GF/ DF/ GA/ DA				
1-SPDT-General Purpose	106	GF/ DF/ GA/ DA	10A - 250 VAC	30	6A	6A
2-SPDT-General Purpose	206	GF/ DF/ GA/ DA				
1-SPDT, Environmentally Sealed	108	GF/ DF/ GA/ DA	5A - 250 VAC	30	3	---
2-SPDT, Environmentally Sealed	208	GF/ DF/ GA/ DA				
1-SPDT, Hermetically Sealed, Silver Contacts	109	GF/ DF/ GA/ DA	5A - 250 VAC	30	3	---
2-SPDT, Hermetically Sealed, Silver Contacts	209	GF/ DF/ GA/ DA				
1-SPDT, Hermetically Sealed, Gold Contacts	110	GF/ DF/ GA/ DA	1A - 250 VAC	---	---	---
2-SPDT, Hermetically Sealed, Gold Contacts	210	GF/ DF/ GA/ DA				
Any special requirement	XXX	---	---	---	---	---

NOTE : * Microswitch Codes 100 & 200 are not available in Piston type Pressure Switches

Table VI: Type of Cable Entry

Cable Entry	Single Cable Entry				Double Cable Entries				Double Cable Entries, one plugged			
	W/P	FLP (IIA/ IIB IIC)	W/P CE	FLP Atex	W/P	FLP (IIA/ IIB) IIC)	W/P CE	FLP Atex	W/P	FLP (IIA/ IIB) IIC)	W/P CE	FLP Atex
¾" ET(F)	W10	F10	C10	-	W20	F20	C20	-	WP0	FP0	CP0	-
3/8" BSP(F)	W11	F11	C11	-	W21	F21	C21	-	WP1	FP1	CP1	-
½" BSP(F)	W12	F12	C12	-	W22	F22	C22	-	WP2	FP2	CP2	-
½" NPT(F)	W13	F13	C13	A13	W23	F23	C23	A23	WP3	FP3	CP3	AP3
¾" BSP(F)	W14	F14	C14	-	W24	F24	C24	-	WP4	FP4	CP4	-
¾" NTP(F)	W15	F15	C15	A15	W25	F25	C25	A25	WP5	FP5	CP5	AP5
¾"ET, DCCG - SS	W1B	F1B	C1B	-	W2B	F2B	C2B	-	WPB	FPB	CPB	-
½"BSP, DCCG - Brass	W1C	F1C	C1C	-	W2C	F2C	C2C	-	WPC	FPC	CPC	-
½"BSP, DCCG - SS	W1D	F1D	C1D	-	W2D	F2D	C2D	-	WPD	FPD	CPD	-
½"NPT, DCCG - Brass	W1E	F1E	C1E	A1E	W2E	F2E	C2E	A2E	WPE	FPE	CPE	APE
½"NPT, DCCG - SS	W1F	F1F	C1F	A1F	W2F	F2F	C2F	A2F	WPF	FPF	CPF	APF
¾"NPT, DCCG - Brass	W1G	F1G	C1G	A1G	W2G	F2G	C2G	A2G	WPG	FPG	CPG	APG
¾"NPT, DCCG - SS	W1H	F1H	C1H	A1H	W2H	F2H	C2H	A2H	WPH	FPH	CPH	APH
¾"BSP, DCCG - Brass	W1J	F1J	C1J	-	W2J	F2J	C2J	-	WPJ	FPJ	CPJ	-
¾"BSP, DCCG - SS	W1K	F1K	C1K	-	W2K	F2K	C2K	-	WPK	FPK	CPK	-
¾" ET, SCCG - PVC	PVC	-	-	-	-	-	-	-	-	-	-	-
4 Pin Connector	4PC	-	-	-	-	-	-	-	-	-	-	-
7 Pin Connector	7PC	-	-	-	-	-	-	-	-	-	-	-

NOTE :
a) SCCG: Single Compression Cable Gland
b) DCCG: Double Compression Cable Gland
c) Specify "99X" for any special requirement.

Table VII : Sensor System (Sensor & Wetted Parts)

DESCRIPTION	CODE
SS316L Sensor with SS304 wetted parts & Teflon seal	SS
SS316LSensor with SS316 wetted parts & Teflon seal	SX
SS316LSensor with SS316L wetted parts & Teflon seal	SL
Monel Sensor with Monel wetted parts &Teflon seal	MM
Hastelloy-C Sensor with Hastelloy-C wetted parts &Teflon seal	HC
Any other Material (Please specify the details separately)	XX

NOTE :
a) Materials shown in the above Table are meant for Threaded Process Connection. Any other material shall be provided through Diaphragm Seal (Refer Page No: 18-22 for details of Diaphragm Seal)
b) Flanged process connection of any material shall be provided through Diaphragm Seal (Refer Page No: 18-22 for details of Diaphragm Seal)
c) Diaphragm Seals for Differential Pressure Switches shall be provided along with Capillary (suitable for Remote Mounting)
d) Optionally, Wetted Parts with NACE conformance can be provided (Specify Code "N" in Accessory Column, Refer Table-X)

Table VIII : Type of Process Connection

Conn	Code	Size	Code	Type	Code	Male/ Female	Code
Thread	T	1/4"	**06**	NPS	**NS**	Male	**M**
		3/8"	**10**	NPT	**NT**	Female	**F**
		1/2"	**15**	BSP	**BP**		
		3/4"	**20**	BSPT	**BT**		
		1"	**25**	JIS-PF	**PF**		
		M20	**M20**	JIS-PT	**PT**		
				Gas	**GS**		
				R	**RR**		
				Rp	**RP**		
				Pitch 1.5	**C**		

e.g. For 1/2"NPT(M), Code: **T15NTM**
For M20x1.5 (F), Code: **TM20CF**
For any other connection, mention code -XX

Table IX : Mode of Calibration / Units

DESCRIPTION	CODE
Calibration in Increasing Pressure in kg/cm2	IK
Calibration in Decreasing Pressure in kg/cm2	DK
Calibration in Increasing Pressure in Bar	IB
Calibration in Decreasing Pressure in Bar	DB
Calibration in Increasing Pressure in mmWC	IW
Calibration in Decreasing Pressure in mmWC	DW
Calibration in Increasing Pressure in mBar	IM
Calibration in Decreasing Pressure in mBar	DM
Calibration in Increasing Pressure in any other Unit	IX
Calibration in Decreasing Pressure in any other Unit	DX

Pressure Switch with External Setting

Table X : Options

DESCRIPTION	CODE
Surface Mounting bracket	S
2" Pipe mounting bracket	Y
External Pressure Setting, with Reference Scale	EXT
NACE compliance for Wetted Parts	NAC
Diaphragm Seal (Chemical seal) *	CSU*
Accessories**	ACC**
No accessory	L

* Model Code for Diaphragm Seal to be mentioned separately (Refer Page 109 to 113)
** Model Code for Accessories to be mentioned separately (Refer Catalogue for Accessories)

Differential Pressure Switch with External Setting

Table XI :
Pressure Switch With Diaphragm Sensor - Fixed Differential

RANGE CODE	RANGE	UNIT	Micro Switch Code					
			100	101	102/103	104	105/106	108/109/110
VW06	-600 to 0	mmWC	75	65	65	55	---	---
VW10	-1000 to 0	mmWC	75	65	65	55	---	---
VW16	-1600 to 0	mmWC	110	100	110	70	250	350
VW25	-2500 to 0	mmWC	160	140	160	120	300	400
VW40	-4000 to 0	mmWC	270	240	270	200	400	500
VW60	-6000 to 0	mmWC	430	400	430	300	500	600
VP1K/B	-1 to 0	kg/cm^2 / Bar	0.20	0.10	0.20	0.06	0.20	0.30
C50K/B	-0.5 to 0.5	kg/cm^2 / Bar	0.20	0.10	0.20	0.06	0.20	0.30
C15K/B	-1 to 1.5	kg/cm^2 / Bar	0.35	0.20	0.30	0.16	0.30	0.35
C30K/B	-1 to 3	kg/cm^2 / Bar	0.50	0.40	0.40	0.20	0.40	0.50
CW02	-200 to 200	mmWC	30	30	30	30	---	---
CW04	-400 to 400	mmWC	60	60	60	50	---	---
CW05	-500 to 500	mmWC	80	80	80	60	---	---
PW02	20 to 200	mmWC	30	30	30	30	---	---
PW03	30 to 300	mmWC	30	30	30	30	---	---
PW04	40 to 400	mmWC	40	40	40	40	---	---
PW06	60 to 600	mmWC	60	55	60	50	---	---
PW10	100 to 1000	mmWC	70	60	70	50	---	---
PW16	160 to 1600	mmWC	100	90	100	70	250	350
PW20	200 to 2000	mmWC	130	120	130	100	250	350
PW25	250 to 2500	mmWC	150	140	150	120	300	400
PW40	400 to 4000	mmWC	250	220	250	200	400	500
PW60	600 to 6000	mmWC	400	375	400	300	500	600
001K/B	0.1 to 1	kg/cm^2 / Bar	0.15	0.10	0.20	0.08	0.20	0.20
002K/B	0.2 to 2	kg/cm^2 / Bar	0.20	0.15	0.25	0.12	0.25	0.30
003K/B	0.3 to 3	kg/cm^2 / Bar	0.30	0.22	0.35	0.20	0.35	0.40
004K/B	0.4 to 4	kg/cm^2 / Bar	0.40	0.30	0.45	0.25	0.45	0.50
005K/B	0.5 to 5	kg/cm^2 / Bar	0.45	0.40	0.50	0.30	0.50	0.60
006K/B	0.6 to 6	kg/cm^2 / Bar	0.50	0.40	0.55	0.40	0.55	0.80
007K/B	0.7 to 7	kg/cm^2 / Bar	0.60	0.50	0.65	0.40	0.65	0.90
010K/B	1 to 10	kg/cm^2 / Bar	0.70	0.60	0.75	0.50	0.75	1.10
016K/B	1.6 to 16	kg/cm^2 / Bar	1.00	0.90	1.20	0.70	1.20	2.00
020K/B	2 to 20	kg/cm^2 / Bar	2.00	1.80	2.40	1.60	2.40	2.50
025K/B	2.5 to 25	kg/cm^2 / Bar	2.50	2.20	3.00	2.00	3.00	3.00
040K/B	4 to 40	kg/cm^2 / Bar	3.00	2.70	3.50	2.20	3.50	4.50
060K/B	6 to 60	kg/cm^2 / Bar	5.00	4.50	5.50	3.00	5.50	7.50

NOTE :

1. Above values are applicable for 1SPDT Microswitch. For Switching differential of 2SPDT, multiply above values with 1.5
2. Switching differentials are nominal maximum values at mid-point and change along the set points
3. For switching Differential Value in mBar, please consider equivalent Range in mmWC, which will be 10 times the Range in mBar (e.g, for Range of 16 to 160 mBar consider the Range of 160 to 1600 mmWC). Take the Switching Differential value in mmWC and divide the same by 10, to get switching differential value in mBar (e.g. If the Switching differential value in the above Table is 150 mmWC, equivalent value in mBar shall be 15)

Table XII :
Pressure Switch With Bellow Sensor - Fixed Differential

RANGE CODE	RANGE	UNIT	Micro Switch Code					
			100	101	102/103	104	105/106	108/109/110
PW10	100 to 1000	mmWC	56	48	56	40	-	-
PW16	160 to 1600	mmWC	80	72	80	56	200	280
PW20	200 to 2000	mmWC	104	96	104	80	200	280
PW25	250 to 2500	mmWC	120	112	120	96	240	320
PW40	400 to 4000	mmWC	200	176	200	160	320	400
PW60	600 to 6000	mmWC	320	300	320	240	400	480
001K/B	0.1 to 1	kg/cm^2 / Bar	0.12	0.08	0.16	0.06	0.16	0.16
002K/B	0.2 to 2	kg/cm^2 / Bar	0.16	0.12	0.20	0.10	0.20	0.24
003K/B	0.3 to 3	kg/cm^2 / Bar	0.24	0.18	0.28	0.16	0.28	0.32
004K/B	0.4 to 4	kg/cm^2 / Bar	0.32	0.24	0.36	0.20	0.36	0.40
005K/B	0.5 to 5	kg/cm^2 / Bar	0.36	0.32	0.40	0.24	0.40	0.48
006K/B	0.6 to 6	kg/cm^2 / Bar	0.40	0.32	0.44	0.32	0.44	0.64
007K/B	0.7 to 7	kg/cm^2 / Bar	0.48	0.40	0.52	0.32	0.52	0.72
010K/B	1 to 10	kg/cm^2 / Bar	0.56	0.48	0.60	0.40	0.60	0.88
016K/B	1.6 to 16	kg/cm^2 / Bar	0.80	0.72	0.96	0.56	0.96	1.60
020K/B	2 to 20	kg/cm^2 / Bar	1.60	1.44	1.92	1.28	1.92	2.00
025K/B	2.5 to 25	kg/cm^2 / Bar	2.00	1.76	2.40	1.60	2.40	2.40

Table XIII :
Pressure Switch with Piston sensor - Fixed Differential

RANGE CODE	RANGE	UNIT	Micro Switch Code					
			100	101	102/103	104	105/106	108/109/110
100K/B	10 to 100	kg/cm^2 / Bar	---	7	8	6	8	10
160K/B	16 to 160	kg/cm^2 / Bar	---	8	9	7	9	16
200K/B	20 to 200	kg/cm^2 / Bar	---	9	11	8	12	20
250K/B	25 to 250	kg/cm^2 / Bar	---	10	12	9	14	25
350K/B	35 to 350	kg/cm^2 / Bar	---	16	20	12	22	35
400K/B	40 to 400	kg/cm^2 / Bar	---	20	25	16	27	40

NOTE :

1. Above values are applicable for 1SPDT Microswitch. For Switching differential of 2SPDT, multiply above values with 1.5
2. Switching differentials are nominal maximum values at mid-point and change along the set points
3. For switching Differential Value in mBar, please consider equivalent Range in mmWC, which will be 10 times the Range in mBar (e.g, for Range of 16 to 160 mBar consider the Range of 160 to 1600 mmWC). Take the Switching Differential value in mmWC and divide the same by 10, to get switching differential value in mBar (e.g. If the Switching differential value in the above Table is 150 mmWC, equivalent value in mBar shall be 15)

Table XIV :
Pressure Switch With Diaphragm Sensor - Adjustable Differential

RANGE CODE	RANGE	UNIT	Micro Switch Code					
			100	101	102/103	104	105/106	108/109/110
C15K/B	-1 to 1.5	kg/cm^2 / Bar	---	0.20 to 0.75	0.30 to 0.75	0.16 to 0.50	0.30 to 0.75	0.35 to 0.75
C30K/B	-1 to 3	kg/cm^2 / Bar	---	0.40 to 1.20	0.40 to 1.20	0.20 to 0.80	0.40 to 1.20	0.50 to 1.20
PW10	100 to 1000	mmWC	---	60 to 250	70 to 300	---	---	---
PW16	160 to 1600	mmWC	---	90 to 400	100 to 480	70 to 320	250 to 480	350 to 480
PW20	200 to 2000	mmWC	---	120 to 500	130 to 600	100 to 400	250 to 600	350 to 600
PW25	250 to 2500	mmWC	---	140 to 625	150 to 750	120 to 500	300 to 750	400 to 750
PW40	400 to 4000	mmWC	---	220 to 1000	250 to 1200	200 to 800	400 to 1200	500 to 1200
PW60	600 to 6000	mmWC	---	375 to 1500	400 to 1800	300 to 1200	500 to 1800	600 to 1800
001K/B	0.1 to 1	kg/cm^2 / Bar	---	0.10 to 0.25	0.20 to 0.30	0.08 to 0.20	0.20 to 0.35	0.20 to 0.35
002K/B	0.2 to 2	kg/cm^2 / Bar	---	0.15 to 0.50	0.25 to 0.60	0.12 to 0.40	0.25 to 0.60	0.30 to 0.60
003K/B	0.3 to 3	kg/cm^2 / Bar	---	0.22 to 0.75	0.35 to 0.90	0.20 to 0.60	0.35 to 0.90	0.40 to 0.90
004K/B	0.4 to 4	kg/cm^2 / Bar	---	0.30 to 1.00	0.45 to 1.20	0.25 to 0.80	0.45 to 1.20	0.50 to 1.20
005K/B	0.5 to 5	kg/cm^2 / Bar	---	0.40 to 1.25	0.50 to 1.50	0.30 to 1.00	0.50 to 1.50	0.60 to 1.50
006K/B	0.6 to 6	kg/cm^2 / Bar	---	0.40 to 1.50	0.55 to 1.80	0.40 to 1.20	0.55 to 1.80	0.80 to 1.80
007K/B	0.7 to 7	kg/cm^2 / Bar	---	0.50 to 1.75	0.65 to 2.10	0.40 to 1.40	0.65 to 2.10	0.90 to 2.10
010K/B	1 to 10	kg/cm^2 / Bar	---	0.60 to 2.50	0.75 to 3.00	0.50 to 2.00	0.75 to 3.00	1.10 to 3.00
016K/B	1.6 to 16	kg/cm^2 / Bar	---	0.9 to 4.0	1.2 to 4.8	0.7 to 3.2	1.2 to 4.8	2.0 to 4.8
020K/B	2 to 20	kg/cm^2 / Bar	---	1.8 to 5.0	2.4 to 6.0	1.6 to 4.0	2.4 to 6.0	2.5 to 6.0
025K/B	2.5 to 25	kg/cm^2 / Bar	---	2.2 to 6.0	3.0 to 7.5	2.0 to 5.0	3.0 to 7.5	3.0 to 7.5
040K/B	4 to 40	kg/cm^2 / Bar	---	2.7 to 10.0	3.5 to 12.0	2.2 to 8.0	3.5 to 12.0	4.5 to 12.0
060K/B	6 to 60	kg/cm^2 / Bar	---	4.5 to 15.0	5.5 to 18.0	3.0 to 12.0	5.5 to 18.0	7.5 to 18.0

NOTE :

1. Above values are applicable for 1SPDT Microswitch. For Switching differential of 2SPDT, multiply above values with 1.5
2. Switching differentials are nominal maximum values at mid-point and change along the set points
3. Microswitch Codes 201 & 204 are not available with Adjustable Differential
4. For Compound Ranges, Switching differential adjustment shall be applicable in pressure side only (not in vacuum side)
5. For switching Differential Value in mBar, please consider equivalent Range in mmWC, which will be 10 times the Range in mBar (e.g, for Range of 16 to 160 mBar consider the Range of 160 to 1600 mmWC). Take the Switching Differential value in mmWC and divide the same by 10, to get switching differential value in mBar (e.g. If the Switching differential value in the above Table is 150 mmWC, equivalent value in mBar shall be 15)

Table XV :
Pressure Switch With Bellow Sensor - Adjustable Differential

RANGE CODE	RANGE	UNIT	Micro Switch Code					
			100	101	102/103	104	105/106	108/109/110
PW10	100 to 1000	mmWC	---	48 to 250	56 to 300	---	---	---
PW16	160 to 1600	mmWC	---	72 to 400	80 to 480	56 to 320	200 to 480	280 to 480
PW20	200 to 2000	mmWC	---	96 to 500	104 to 600	80 to 400	200 to 600	280 to 600
PW25	250 to 2500	mmWC	---	112 to 625	120 to 750	96 to 500	240 to 750	320 to 750
PW40	400 to 4000	mmWC	---	176 to 1000	200 to 1200	160 to 800	320 to 1200	400 to 1200
PW60	600 to 6000	mmWC	---	300 to 1500	320 to 1800	240 to 1200	400 to 1800	480 to 1800
001K/B	0.1 to 1	kg/cm^2 / Bar	---	0.08 to 0.25	0.16 to 0.30	0.06 to 0.20	0.16 to 0.35	0.16 to 0.35
002K/B	0.2 to 2	kg/cm^2 / Bar	---	0.12 to 0.50	0.20 to 0.60	0.10 to 0.40	0.20 to 0.60	0.24 to 0.60
003K/B	0.3 to 3	kg/cm^2 / Bar	---	0.18 to 0.75	0.28 to 0.90	0.16 to 0.60	0.28 to 0.90	0.32 to 0.90
004K/B	0.4 to 4	kg/cm^2 / Bar	---	0.24 to 1.00	0.36 to 1.20	0.20 to 0.80	0.36 to 1.20	0.40 to 1.20
005K/B	0.5 to 5	kg/cm^2 / Bar	---	0.32 to 1.25	0.40 to 1.50	0.24 to 1.00	0.40 to 1.50	0.48 to 1.50
006K/B	0.6 to 6	kg/cm^2 / Bar	---	0.32 to 1.50	0.44 to 1.80	0.32 to 1.20	0.44 to 1.80	0.64 to 1.80
007K/B	0.7 to 7	kg/cm^2 / Bar	---	0.40 to 1.75	0.52 to 2.10	0.32 to 1.40	0.52 to 2.10	0.72 to 2.10
010K/B	1 to 10	kg/cm^2 / Bar	---	0.48 to 2.50	0.60 to 3.00	0.40 to 2.00	0.60 to 3.00	0.88 to 3.00
016K/B	1.6 to 16	kg/cm^2 / Bar	---	0.72 to 4.00	0.96 to 4.80	0.56 to 3.20	0.96 to 4.80	1.60 to 4.80
020K/B	2 to 20	kg/cm^2 / Bar	---	1.44 to 5.00	1.44 to 6.00	1.28 to 4.00	1.92 to 6.00	2.50 to 6.00
025K/B	2.5 to 25	kg/cm^2 / Bar	---	1.76 to 6.00	1.76 to 7.50	1.60 to 5.00	2.40 to 7.50	3.00 to 7.50

Table XVI :
Pressure Switch with Piston sensor - Adjustable Differential

RANGE CODE	RANGE	UNIT	Micro Switch Code					
			100	101	102/103	104	105/106	108/109/110
100K/B	10 to 100	kg/cm^2 / Bar	---	7 to 25	8 to 30	6 to 20	8 to 30	10 to 30
160K/B	16 to 160	kg/cm^2 / Bar	---	8 to 40	9 to 50	7 to 32	9 to 50	16 to 50
200K/B	20 to 200	kg/cm^2 / Bar	---	9 to 50	11 to 60	8 to 40	12 to 60	20 to 60
250K/B	25 to 250	kg/cm^2 / Bar	---	10 to 65	12 to 75	9 to 50	14 to 75	25 to 75
350K/B	35 to 350	kg/cm^2 / Bar	---	16 to 85	20 to 105	12 to 70	22 to 105	35 to 105
400K/B	40 to 400	kg/cm^2 / Bar	---	20 to 100	25 to 120	16 to 80	27 to 120	40 to 120

NOTE :

1. Above values are applicable for 1SPDT Microswitch. For Switching differential of 2SPDT, multiply above values with 1.5
2. Switching differentials are nominal maximum values at mid-point and change along the set points
3. Microswitch Codes 201 & 204 are not available with Adjustable Differentia
4. For switching Differential Value in mBar, please consider equivalent Range in mmWC, which will be 10 times the Range in mBar (e.g, for Range of 16 to 160 mBar consider the Range of 160 to 1600 mmWC). Take the Switching Differential value in mmWC and divide the same by 10, to get switching differential value in mBar (e.g. If the Switching differential value in the above Table is 150 mmWC, equivalent value in mBar shall be 15)

Table XVII :
Differential Pressure Switch With Diaphragm Sensor - Fixed Differential

RANGE CODE	RANGE	UNIT	Micro Switch Code					
			100	101	102/103	104	105/106	108/109/110
PW02	20 to 200	mmWC	---	---	40	40	---	---
PW03	30 to 300	mmWC	---	---	60	60	---	---
PW04	40 to 400	mmWC	---	---	80	80	---	---
PW06	60 to 600	mmWC	---	---	100	100	---	---
PW10	100 to 1000	mmWC	---	---	150	150	---	---
PW16	160 to 1600	mmWC	---	---	250	230	250	320
PW20	200 to 2000	mmWC	---	---	350	330	350	350
PW25	250 to 2500	mmWC	---	---	400	375	400	400
PW40	400 to 4000	mmWC	---	---	450	425	450	500
PW60	600 to 6000	mmWC	---	---	500	470	500	600
001K/B	0.1 to 1	kg/cm^2 / Bar	---	---	0.12	0.10	0.12	0.20
002K/B	0.2 to 2	kg/cm^2 / Bar	---	---	0.25	0.20	0.25	0.30
003K/B	0.3 to 3	kg/cm^2 / Bar	---	---	0.35	0.30	0.35	0.40
004K/B	0.4 to 4	kg/cm^2 / Bar	---	---	0.50	0.40	0.50	0.60
005K/B	0.5 to 5	kg/cm^2 / Bar	---	---	0.60	0.50	0.60	0.70
006K/B	0.6 to 6	kg/cm^2 / Bar	---	---	0.70	0.60	0.70	0.80
007K/B	0.7 to 7	kg/cm^2 / Bar	---	---	0.80	0.70	0.80	1.00
010K/B	1 to 10	kg/cm^2 / Bar	---	---	1.35	1.00	1.35	1.50

Table XVIII :
Differential Pressure Switch with Diaphragm sensor - Adjustable Differential

RANGE CODE	RANGE	UNIT	Micro Switch Code					
			100	101	102/103	104	105/106	108/109/110
PW16	160 to 1600	mmWC	---	---	250 to 480	230 to 400	250 to 480	320 to 500
PW20	200 to 2000	mmWC	---	---	350 to 600	330 to 500	350 to 600	350 to 650
PW25	250 to 2500	mmWC	---	---	400 to 750	375 to 625	400 to 750	400 to 800
PW40	400 to 4000	mmWC	---	---	450 to 1200	425 to 1000	450 to 1200	500 to 1250
PW60	600 to 6000	mmWC	---	---	500 to 1800	470 to 1500	500 to 1800	600 to 1900
001K/B	0.1 to 1	kg/cm^2 / Bar	---	---	0.12 to 0.30	0.10 to 0.25	0.12 to 0.30	0.20 to 0.32
002K/B	0.2 to 2	kg/cm^2 / Bar	---	---	0.25 to 0.60	0.20 to 0.60	0.25 to 0.60	0.30 to 0.65
003K/B	0.3 to 3	kg/cm^2 / Bar	---	---	0.35 to 0.90	0.30 to 0.75	0.35 to 0.90	0.40 to 1.00
004K/B	0.4 to 4	kg/cm^2 / Bar	---	---	0.50 to 1.20	0.40 to 1.00	0.50 to 1.20	0.60 to 1.25
005K/B	0.5 to 5	kg/cm^2 / Bar	---	---	0.60 to 1.50	0.50 to 1.25	0.60 to 1.50	0.70 to 1.60
006K/B	0.6 to 6	kg/cm^2 / Bar	---	---	0.70 to 1.80	0.60 to 1.50	0.70 to 1.80	0.80 to 1.90
007K/B	0.7 to 7	kg/cm^2 / Bar	---	---	0.80 to 2.10	0.70 to 1.75	0.80 to 2.10	1.00 to 2.25
010K/B	1 to 10	kg/cm^2 / Bar	---	---	1.35 to 3.00	1.00 to 2.50	1.35 to 3.00	1.50 to 3.25

NOTE :

1. Above values are applicable for 1SPDT Microswitch. For Switching differential of 2SPDT, multiply above values with 1.5
2. Switching differentials are nominal maximum values at mid-point and change along the set points
3. Microswitch Code 204 is not available with Adjustable Differential
4. For switching Differential Value in mBar, please consider equivalent Range in mmWC, which will be 10 times the Range in mBar (e.g, for Range of 16 to 160 mBar consider the Range of 160 to 1600 mmWC). Take the Switching Differential value in mmWC and divide the same by 10, to get switching differential value in mBar (e.g. If the Switching differential value in the above Table is 150 mmWC, equivalent value in mBar shall be 15)

Under Technical Collaboration with M/s. Gauges Bourdon, France

Chemical / Diaphragm Seal Unit

Model : CSU

Features

What is a Diaphragm Seal?

A diaphragm seal is a device in which a flexible membrane (diaphragm) seals and isolates the measuring instrument from the process medium. The instrument side of the diaphragm is filled with appropriate fluid. The pressure exerted by the process fluid on the Diaphragm is hydraulically transmitted through the seal fluid to the pressure sensing element. Diaphragm seal protects the pressure sensor from the harmful and hazardous effect the process fluid.

Where Diaphragm Seal is essential?

- Corrosive process fluid
- Highly viscous process fluid
- Process fluid having sediments or solid particles
- Process fluid having tendency to solidify, freeze or crystallize at lower temperatures which may block the sensing element.
- Hazardous process fluid

Specifications

The generally offered MOC is as follows :

Non wetted parts: CS, SS304, SS316
Diaphragm : SS316, SS316L, PTFE, SS PTFE coated, Titanium, Hastelloy B, Hastelloy C, Nickel, Monel, Tantalum
Wetted Parts : SS316, SS304L, SS316L, SS PTFE coated / lined/ block, Hastelloy B, C.
Filling Fluids : Silicone Oil, DC-200 (-45°C to 205°C)
DC-704 (0 to 315°C)
DC-705 (20 to 350°C, Short term exposure up to 400°C)
DC-710 (5 to 345°C)
Fluorolube Oil (-40°C to 150°C)
Glycerine (5 to 80°C)
Halocarbon Oil (-40°C to 235°C)
Food Grade Vegetable Oil (5 to 182°C)

Optional Feature:
- Capillary for Remote mounting of the Pressure Instrument
- Flushing Ring (Spacer Ring) for purging / cleaning the area below the diaphragm without removing the Seal from the process line.
- Stud / Nut & Gasket, for assembling the Diaphragm Seal with Process Flange.

Different types of Diaphragm Seal offered:

1) Sandwich Type with Threaded Process Connection
2) Sandwich Type with Flanged Process Connection
3) Flush Type with Flanged Process Connection

Above are the most commonly used Diaphragm Seals. Special designs like Pan Cake, In-line (Flow through type) with Flanged / Weld-In Connection, Extended Diaphragm Seal etc can be provided as per customer requirement

Note :
Proper selection of diaphragm seal (Type & Material) is important after reviewing the application. Purchaser must confirm the suitability of the MOC suggested.

10/17 REV.: 00

Sandwich Type Diaphragm Seal

Model : CSU

Features

Sandwich type Diaphragm Seals are the most commonly used Diaphragm Seals. The Diaphragm is sandwiched between Top Chamber & Bottom Chamber / Flange. These are available Threaded as well as Flanged process Connection. For low Pressure Range & Smaller Flange Sizes, "I" section type Diaphragm Seals are used.

Optionally, Flushing connection of 1⁄4" NPT(F) or 1⁄2" NPT(F) can be provided which enables the user to flush out / clean the area below the diaphragm without removing the Seal from the process line. For Threaded Process Connection and Flange Connection with "I" section, Flushing connection shall be directly provided on the Bottom Chamber. For bigger Flange sizes, separate Flushing Rings (Spacer Rings) are usually provided.

Optional Feature

- **Capillary** for Remote mounting of the Pressure Instrument
- **Integral Flushing Connection or Flushing Ring (Spacer Ring)** for purging / cleaning the area below the diaphragm without removing the Seal from the process line.
- **Stud / Nut & Gasket** (for Flanged Connection only), for assembling the Diaphragm Seal with Process Flange.

Ordering Information

SANDWICH DIAPHRAGM SEAL (Threaded or Flanged)

MODEL: CSU- ☐☐☐☐☐☐☐

CONNECTION TYPE

SDT	Sandwich type, Threaded Conn.
SDF	Sandwich type, Flanged Conn.

TOP CHAMBER

CST	CS
S4S	SS304
S6S	SS316
S6L	SS316L
XXX	Other (Please Specify)

DIAPHRAGM

S4S	SS 304	**HCC**	Hastelloy C
S4L	SS 304L	**TTM**	Titanium
S6S	SS 316	**TAN**	Tantalum
S6L	SS 316L	**N20**	Nickel 200
321	SS 321	**MN4**	Monel 400
S6P	SS 316+PTFE	**800**	Incoloy 800
6LP	SS 316L+PTFE	**SIL**	Silver
S6G	SS 316+Gold Plated	**GLD**	Gold
6LG	SS 316L+Gold Plated	**XXX**	Other (Please Specify)
HCB	Hastelloy B		

BOTTOM CHAMBER / FLANGE

S4S	SS 304	**HCC**	Hastelloy C
S4L	SS 304L	**TTM**	Titanium
S6S	SS 316	**N20**	Nickel 200
S6L	SS 316L	**MN4**	Monel 400
321	SS 321	**800**	Incoloy 800
S6P	SS 316+PTFE	**XXX**	Other (Please Specify)
6LP	SS 316L+PTFE		
HCB	Hastelloy B		

OPTION

4AR(*)	SS316 Capillary, SS304 Armoured
4PV(*)	SS316 Capillary, SS304 Armoured+PVC Covered
6AR(*)	SS316 Capillary, SS316 Armoured
6PV(*)	SS316 Capillary, SS316 Armoured+PVC Covered
CLT	Cooling Tower
FC4	Integral Flushing Connection, 1/4" NPT(F)
FC2	Integral Flushing Connection, 1/2" NPT(F)
FR4(**)	Flushing Ring, 1/4" NPT(F)
FR2(**)	Flushing Ring, 1/2" NPT(F)
GSK	Gasket
STN	Stud & Nuts
L	Nil
XXX	Other (Please specify)

* Specify the length of Capillary in Meters.
** Specify Ring material (Refer Bottom Chamber / Flange table)

FILLING FLUID

DC1	DC-710
DC2	Silicone Oil (DC-200)
DC4	DC-704
DC5	DC-705
FLU	Fluorolube
GLY	Glycerine
HLC	Halocarbon
VGO	Food grade oil
XXX	Other (Please specify)

PROCESS CONNECTION

THREADED

Conn	Code	Size	Code	Type	Code	MALE / FEMALE	Code
Thread	**T**	1/4"	**06**	NPS	**NS**	Male	M
		3/8"	**10**	NPT	**NT**	Female	F
		1/2"	**15**	BSP	**BP**		
		3/4"	**20**	BSPT	**BT**		
		1"	**25**	JIS-PF	**PF**		
		M20	**M20**	JIS-PT	**PT**		
				Gas	**GS**		
				R	**RR**		
				Rp	**RP**		
				Pitch 1.5	**C**		

e.g. For 1/2"NPT(M), Code: **T15NTM** For M20x1.5 (F), Code: **TM20CF**

PROCESS CONNECTION

FLANGED

Conn	Code	Size	Code	Rating#	Code	Facing	Code
Flange	**F**	1/2"	**15**	150	**A**	RF	RF
		3/4"	**20**	300	**B**	FF	FF
		1"	**25**	600	**C**	RTJ	RJ
		1-1/2'	**40**	900	**D**	ST	ST
		2"	**50**	1500	**E**	SG	SG
		3"	**80**	2500	**F**	LT	LT
						LG	LG
						SMF	SM
						SFF	SF
						LMF	LM
						LFF	LF

e.g. For 40 NB 300# RF flange, Model Code: **F40BRF**

Sample model Code: CSU-SDF-S4S-S6S-S6S-F20ARF-DC2-4AR(3)

Under Technical Collaboration with M/s. Gauges Bourdon, France

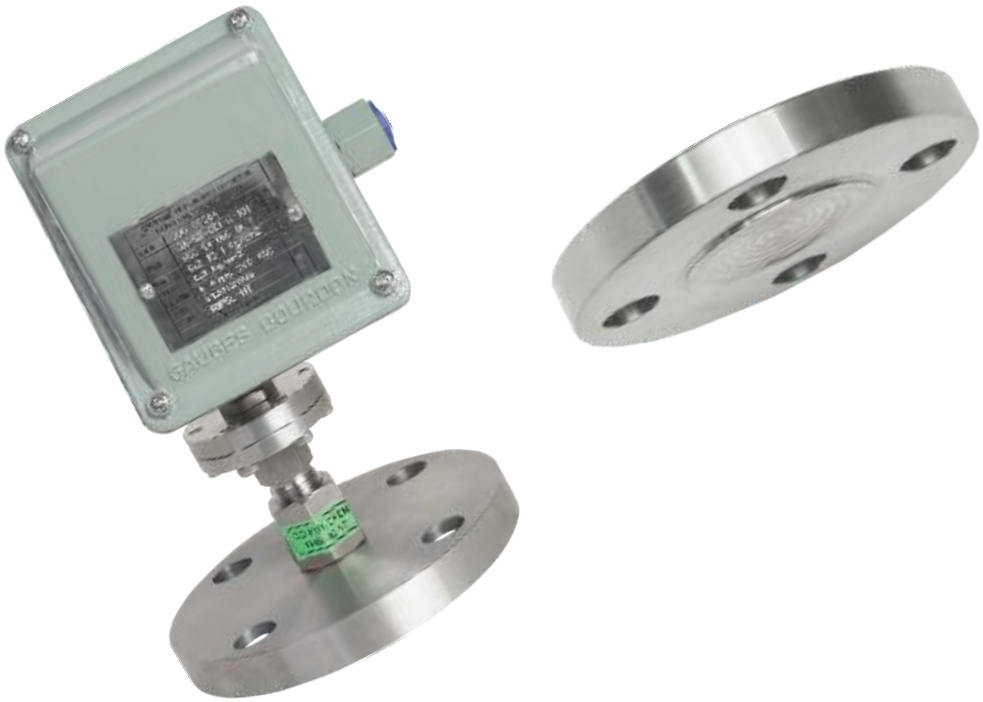
Flush Diaphragm Seal

Model : CSU

Features

Process fluids which are highly viscous or containing solid particles could plug or clog the Diaphragm Seal cavity on the process side of the diaphragm. In order to overcome this difficulty, Flush Diaphragm Seal are used. In this design, since the Diaphragm is directly welded on the Flange Face, there are no cavities or hidden ports where the process fluid can enter and clog the system.

Optionally, Flushing Ring (Spacer Ring) with 1/4" NPT(F) or 1/2" NPT(F) connection can be provided as per the requirement. Flushing Connection enables the user to purge / flush out / clean the area below the diaphragm without removing the Seal from the process line.



Optional Feature

- **Capillary** for Remote mounting of the Pressure Instrument
- **Flushing Ring (Spacer Ring)** for purging / cleaning the area below the diaphragm without removing the Seal from the process line.
- **Stud / Nut & Gasket** (for Flanged Connection only), for assembling the Diaphragm Seal with Process Flange.

Ordering Information

FLUSH DIAPHRAGM SEAL (Flange)

MODEL: CSU- [ ] [ ] [ ] [ ] [ ] [ ]

CONNECTION TYPE

FDF	Flush Diaphragm, Flanged Conn.

FLANGE (Non-wetted part)

CST	CS
S4S	SS 304
S4L	SS 304L
S6S	SS 316
S6L	SS 316L
321	SS 321
TTM	Titanium
XXX	Other (Please Specify)

DIAPHRAGM (wetted part)

S4S	SS 304	**HCB**	Hastelloy B
S4L	SS 304L	**HCC**	Hastelloy C
S6S	SS 316	**TAN**	Tantalum
S6L	SS 316L	**N20**	Nickel 200
S6T	SS 316Ti	**MN4**	Monel 400
321	SS 321	**XXX**	Other (Please Specify)
TTM	Titanium#		

PROCESS CONNECTION

FLANGED							
CONN	**CODE**	**SIZE**	**CODE**	**RATING**	**CODE**	**FACING**	**CODE**
Flange	**F**	1"	**25**	150	**A**	RF	**RF**
		1-1/2"	**40**	300	**B**	RTJ	**RJ**
		2"	**50**	600	**C**		
		3"	**80**	900	**D**		
		4"	**10**	1500	**E**		
				2500	**F**		

e.g. For 100 NB 150# RF flange, Model Code: **F10ARF**

For Titanium Diaphragm, Flange also shall be Titanium only

OPTION

4AR(*)	SS 316 Capillary, SS 304 Armoured
4PV(*)	SS 316 Capillary, SS 304 Armoured+PVC Covered
6AR(*)	SS 316 Capillary, SS 316 Armoured
6PV(*)	SS 316 Capillary, SS 316 Armoured+PVC Covered
CLT	Cooling Tower
FR4(**)	Flushing Ring, 1/4" NPT(F)
FR2(**)	Flushing Ring, 1/2" NPT(F)
GSK	Gasket
STN	Stud & Nuts
L	Nil
XXX	Other (Please specify)

* Specify the length of Capillary in Meters.
** Specify Ring material (Refer Diaphragm table)

FILLING FLUID

DC1	DC-710
DC2	Silicone Oil (DC-200)
DC4	DC-704
DC5	DC-705
FLU	Fluorolube
GLY	Glycerine
HLC	Halocarbon
VGO	Food grade oil
XXX	Other (Please specify)

Minimum Span of Range

Flange Size	Min Span of Range (RF flange)	Min Span of Range (RTJ flange)
1" NB	6 kg/cm2.g	N.A.
1-1/2" NB	2.5 kg/cm2.g	60 kg/cm2.g
2" NB	1 kg/cm2.g	2.5 kg/cm2.g
3" NB	1 kg/cm2.g	2.5 kg/cm2.g

Sample model Code: CSU-FDF-CST-S6L-F40BRF-DC4-FR2(S6L)

Wiring Diagram