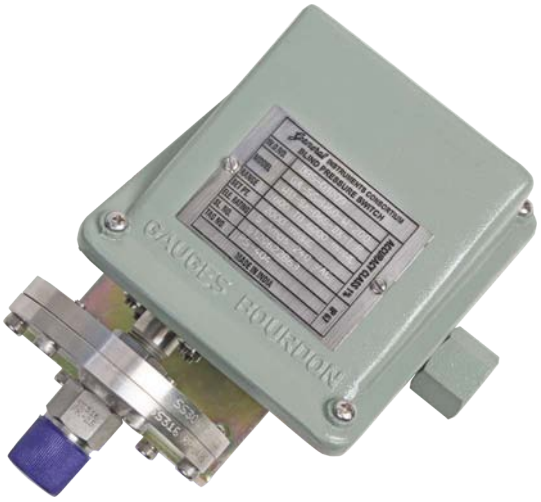
General®

AN ISO 9001:2008 COMPANY

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…

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

Under Technical Collaboration with M/s. Gauges Bourdon, U.K.

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, U.K.

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 2148-2004 (IEC-60079:2001) & Weatherproof to IP 66 as per IS-12063:1987 (IEC-60529), approved by CMRI/CCOE/PESO

4. Flameproof Enclosure, Atex approved, Ⓔx II 2G/D Ex d IIC T6, Ex tD A21 IP 66 T85°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

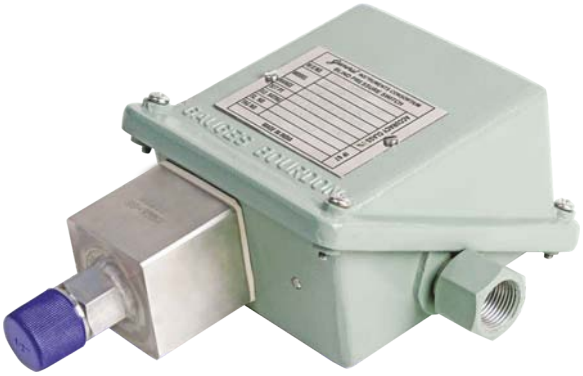
DESCRIPTION	CODE
Blind Pressure Switch with Fixed Switching Differential	GF
Blind Pressure Switch with Adjustable Switching Differential	GA
Blind Differential Pressure Switch with Fixed Switching Differential	DF
Blind Differential Pressure Switch with Adjustable Switching Differential	DA

Table - II : Type of Sensor

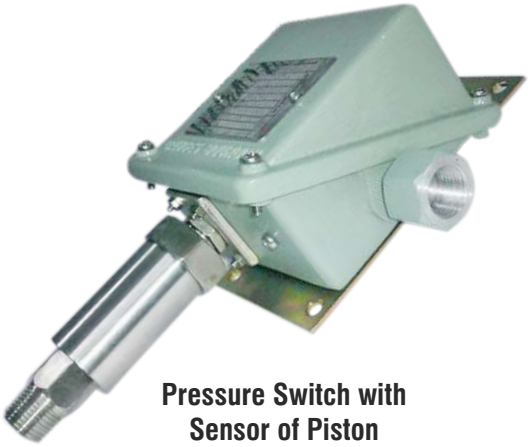
DESCRIPTION	CODE
Pressure Switch Sensor of Bellow	SB
Pressure Switch Sensor of Piston	SP
Pressure Switch Sensor of Diaphragm	SS
Differential Pressure Switch Sensor of Diaphragm	DS

Blind Pressure & Diff. Pressure Switches

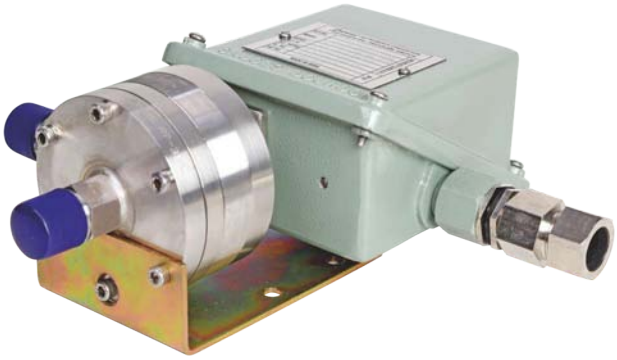
Pressure Switch with
Sensor of Diaphragm



Pressure Switch
with Sensor of Bellow



Pressure Switch with
Sensor of Piston



Differential Pressure Switch
with Sensor of Diaphragm

Under Technical Collaboration with M/s. Gauges Bourdon, U.K.

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 2148-2004 (IEC-60079:2001) & Weatherproof to IP 66 in accordance with IS-12063:1987 (IEC-60529), approved by CMRI/CCOE/PESO	**FA**
Flameproof Die Cast Aluminum epoxy powder coated Enclosure, Atex approved, Ex II 2G/D Ex d IIC T6, Ex tD A21 IP 66 T85°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

Under Technical Collaboration with M/s. Gauges Bourdon, U.K.

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

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

Under Technical Collaboration with M/s. Gauges Bourdon, U.K.

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

SIZE	CODE	TYPE	CODE	FORM	CODE
1/4" 3/8" 1/2" 3/4" 1"	06 10 15 20 25	NPT BSP BSPT PF GAS NPS	NT BP BT PF GS NS	MALE FEMALE	M F
M18 x 1.5p M20 x 1.5p M24 x 1.5p M27 x 1.5p	18 20 24 27	Metric	M	MALE FEMALE	M F
For any other Connection, mention Code - XX					

e.g, 1/2" NPT(MALE), Code: 15NTM
e.g, M20x1.5p (FEMALE), Code: 20MF

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	B
2" Pipe mounting bracket	P
External Pressure Setting, with Reference Scale	E
NACE compliance for Wetted Parts	N
Diaphragm Seal (Chemical seal) *	U*
Accessories**	X**
No accessory	**L**

* Model Code for Diaphragm Seal to be mentioned separately (Refer Page 18 to 22)
** Model Code for Accessories to be mentioned separately (Refer Page 23 to 31)

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)

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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

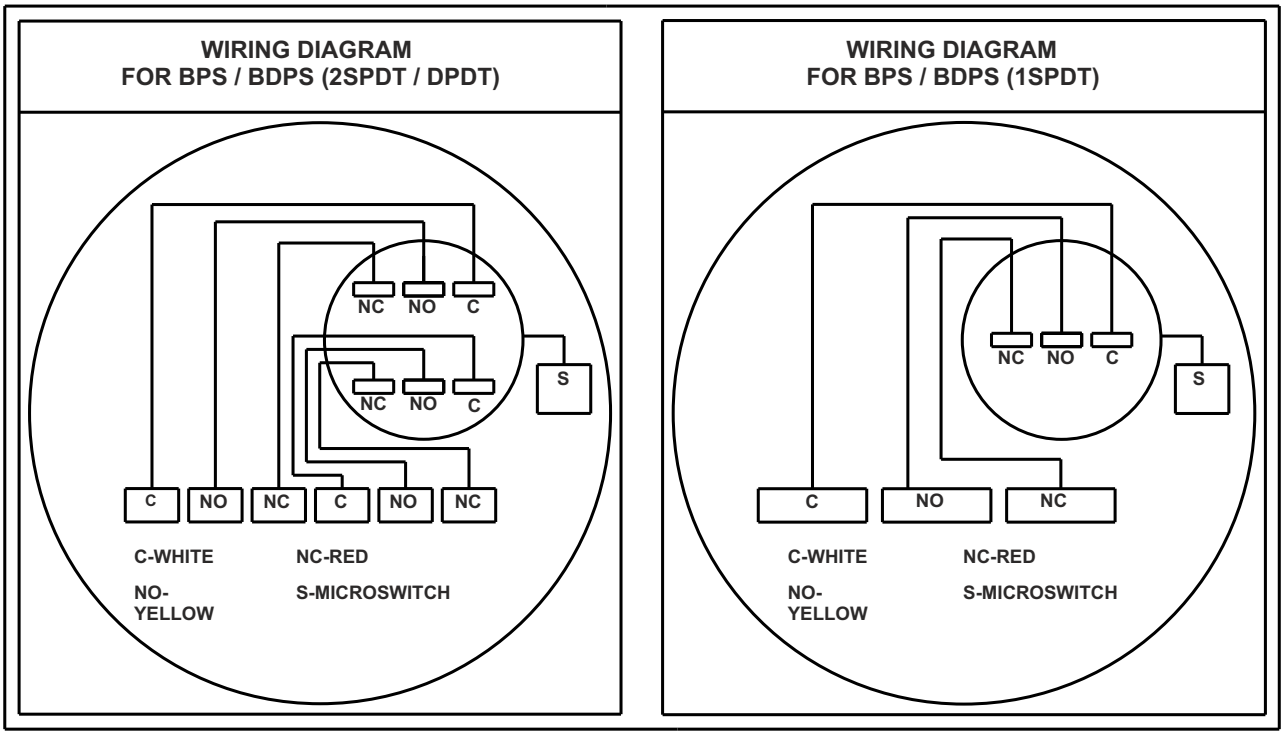
RANGE CODE	RANGE	UNIT	Micro Switch Code					
			100	101	102/103	104	105/106	108/109/110
PW16	160 to 1600	mmWC	---	---	250 to 480	230 to 400	250 to 480	320 to 500
PW20	200 to 2000	mmWC	---	---	350 to 600	330 to 500	350 to 600	350 to 650
PW25	250 to 2500	mmWC	---	---	400 to 750	375 to 625	400 to 750	400 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, U.K.

Wiring Diagram



Under Technical Collaboration with M/s. Gauges Bourdon, U.K.

NABL

National Accreditation Board for Testing and Calibration Laboratories

Department of Science & Technology, India

CERTIFICATE OF ACCREDITATION

GAUGES BOURDON (INDIA) PVT. LTD.

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

4, 5, 6 Jawahar Co-op. Industrial Estate, Kamothe

in the discipline of

MECHANICAL CALIBRATION

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number C-0512

Issue Date 11/12/2012

Valid Until 10/12/2014

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.

Signed for and on behalf of NABL

Srikanth. R
Convenor

Anil Relia
Director

Dr T. Ramasami
Chairman

Zenith

assessors of quality
|evaluate|assess|certify|

Zenith Quality Assessors Pvt. Ltd.
Management System Certificate

Certificate No. QMS/91/R/1413-2

This is to certify that

GAUGES BOURDON (INDIA) PVT. LTD.
(Manufacturing Unit of General Instruments Consortium)

at

Unit-2 : Plot No. 144, Jawahar Co-op. Industrial Estate, Kamothe, Panvel–410209, Dist. Raigad, Maharashtra, India.

has been found to conform to Management System Standard:

ISO 9001:2008

This certificate is valid for the following products/service ranges:

Manufacture and Supply of Pressure Gauges, Diaphragm Seals, Differential Pressure Gauges, Capsule Gauges, Absolute Pressure Gauges, Pressure and Differential Pressure Switches, Manifold Valves, Snubbers, Gauge Savers and Other Accessories.

Initial Certification: 29 August, 2011
Valid until: 28 August, 2014
Modified on: 6 January, 2012, 15 May, 2012, 29 May, 2012
(Replaces the withdrawn Certificate No. QMS/91/R/1413 issued on 15 May, 2012)

Management Representative
Zenith Quality Assessors Pvt. Ltd.

ZQA

ASCB(E)
UK

ISO 9001:2008

Certificate of Registration

This certificate has been awarded to

Gauge Bourdon India Pvt. Ltd.

Unit 1- Plot No. 4, 5, 6, Jawahar Co-Op. Industrial Estate, Kamothe, Panvel, Navi Mumbai, Maharashtra, 410209, India, Unit 2- Plot No. 144, Jawahar Co-Op. Industrial Estate, Kamothe, Panvel, Navi Mumbai, Maharashtra, India, 410209, India

in recognition of the organization's Environmental Management System which complies with

ISO 14001:2004

The scope of activities covered by this certificate is defined below

Please refer to the Appendix

Certificate Number: 57081/A/0001/UK/En
Issue No: 1
Date of Issue: (Original) 15 April 2013
Expiry Date: 14 April 2016
Date of Issue: 15 April 2013

Issued by:

On behalf of the Schemes Manager

IAF

ISO 14001:2004

Certificate of Registration

This certificate has been awarded to

Gauge Bourdon India Pvt. Ltd.

Unit 1- Plot No. 4, 5, 6, Jawahar Co-Op. Industrial Estate, Kamothe, Panvel, Navi Mumbai, Maharashtra, 410209, India, Unit 2- Plot No. 144, Jawahar Co-Op. Industrial Estate, Kamothe, Panvel, Navi Mumbai, Maharashtra, India, 410209, India

in recognition of the organization's Health and Safety Management System which complies with

OHSAS 18001:2007

The scope of activities covered by this certificate is defined below

Please refer to the Appendix

Certificate Number: 57081/B/0001/UK/En
Issue No: 1
Date of Issue: (Original) 15 April 2013
Expiry Date: 14 April 2016
Date of Issue: 15 April 2013

Issued by:

On behalf of the Schemes Manager

OHSAS 18001: 2007

DET NORSKE VERITAS

PRODUCT QUALITY ASSURANCE NOTIFICATION

[2] EQUIPMENT OR PROTECTED SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC

[3] Notification Number: DNV-2009-OSL-ATEX-463086Q

[4] Equipment or Protective Systems or components as listed: Flameproof enclosures

(The EC-Type Examination Certificates based on this notification are listed by the notified body)

[5] Applicant - Manufacturer or Authorized Representative in the Community: Gauges Bourdon (India)Pvt Limited Plot No:4,5,6, Jawahar Co.Op.Industrial Estate, Kamothe, New Panvel, Dist: Raigad, Maharastra - India

[6] Manufacturer: Gauges Bourdon (India) Pvt Limited

[7] DNV, notified body number 0575 for Annex VII in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, notifies to the applicant that the actual manufacturer has a product quality assurance system which complies to Annex VII of the Directive.

[8] This notification is based on audit report: 2009-3020

This notification can be withdrawn if the manufacturer no longer satisfies the requirements of Annex VII

Results of periodical re-assessment of the manufacturing process is a part of this notification.

[9] This notification is valid until 2011-10-08 and can be withdrawn if the manufacturer does not satisfy the production quality re-assessment.

[10] According to article 10[1] of the Directive 94/9/EC the CE marking shall be followed by the identification number 0575 identifying the notified body involved in the production control stage (Annex VII)

Høvik, 2009-01-20
for Det Norske Veritas Certification AS

Marianne Sperren
Certification Manager

Håkon S. Håkonsen
Technical Reviewer

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Atex Certificate

TSU

TECHNICKÝ SKÚŠOBNÝ ÚSTAV PIEŠŤANY, š. p.
Krajinská cesta 2929/9
921 01 Piešťany, Slovak republic

CERTIFICATE

of conformity with the requirements of the Pressure Equipment Directive 97/23/EC

No. 131299006

This is certify that the system full quality assurance of:

GAUGES BOURDON (I) PVT.LTD.
(Manufacturing Unit of General Instruments Consortium)

at

Plot No. 4, 5, 6,144 Jawahar Co-op. Industrial Estate,
Kamothe, Panvel - 410 209, Navi Mumbai, Maharashtra, India

has been assessed by TSU Piešťany, š.p. against the requirements of Annex III

Module H

of the Pressure Equipment Directive 97/23/EC and conforms to the requirements for design, manufacture and control of products shown below:

Pressure Gauges, Differential Pressure Gauges, Pressure Switches, Differential Pressure Switches, Level Switches, Thermo Wells, Level Gauges

(specification on the other side)

Audit Report No. CE/91/A/1413-1 of December, 21.2012
Certificate issued: February, 26.2013

Ing. Janka LEVICKÁ
Head of Product Certification Body

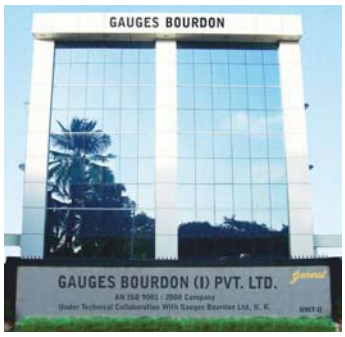
CE Certificate

Some of the Approvals

Our Pressure & Differential Pressure Switches are successfully used by most of the Engineering Consultants/ Process Plants

- Gujarat Alkalies and Chemicals
- Bongaigoan Refinery
- Hindustan Petroleum Corpn Ltd
- Gujarat State Petroleum Co
- Bharat Petroleum Corpn Ltd
- Reliance Industries
- ONGC-Mangalore Refinery & Petrochemicals
- Gujarat Fluorochemicals Ltd
- Indian Oil Corporation Ltd
- Oswal Agro Chemicals
- Parli Thermal Power
- J K Tyre and industries
- JSW steel
- Kanoria Chemicals
- Farabi Petrochemicals
- Hindustan Zinc
- LANCO
- Adity Birla
- NALCO
- Dresser Rand
- Ingersol Rand
- SAIL, Durgapur
- Coromandel Fertliser
- Malaysia Power
- Jubilant Organosys
- EIL
- UHDE
- AKERSOLUTIONS
- NTPC
- BHEL
- IFFCO
- MAHAGENCO
- MAZGAON DOCK
- HONEYWELL
- ABB
- SIEMENS
- L&T
- WIPRO
- HINDUSTAN UNILIVER
- PUNJ LLOYD
- COLGATE PAMOLIVE
- BASF
- AVANT GARDE
- TATA PROJECTS

This catalogue is only indicative; hence all technical details may not be appearing in this.
Any other specification not appearing in this catalogue also can be provided, for which you may contact our HO.



State-of-the-art Manufacturing Plant at Navi Mumbai - Unit I & Unit II
(Under technical collaboration with M/s. Gauges Bourdon, U.K.)

For Pressure / Differential Pressure Gauges / Switches, Level Instruments, Valves, Fittings, Accessories, Temperature Gauges / Switches & Thermowells

HEAD OFFICE:

General® INSTRUMENTS CONSORTIUM

194/195, Gopi Tank Road, Mahim, Mumbai - 400 016.
Tel.: 022 24454387, 24449177 Fax: 022 24463507
www.general-gauges.com

MFG. PLANT:

Gauges Bourdon (India) Pvt. Ltd.

(Under technical collaboration with M/s. Gauges Bourdon, U.K.)

Unit II: Plot No: 144, Jawahar Co-op Industrial Estate, Kamothe, Panvel - 410 209, Dist. Raigad, Maharashtra
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