



PRESSURE SWITCHES B-SERIES



- **STURDY, ROBUST AND PRECISE**
- **HIGH STATIC PRESSURE**
- **VACUUM, PRESSURE & COMPOUND RANGES**
- **CHOICE OF DIAPHRAGM MATERIAL**

B-Series Pressure / Vacuum Switches are designed for high proof pressures to handle pressure from vacuum to 210 Kg/Cm². B-Series switches use a **diaphragm sealed piston actuator**. As the pressure on the calibrated piston increases, the adjusted spring force is over-come and the snap action switch is actuated. The piston is sealed from the process by a diaphragm (Actuator Seal). Choice of diaphragm materials offers compatibility with virtually any medium.

The rugged diaphragm sealed piston actuator provides setpoint repeatability of $\pm 0.5\%$. The enclosure is die-cast Aluminium and is available in weatherproof and flameproof versions (Table 'A'). A wide variety of SPDT (Single) and 2 x SPDT (Dual) snap action switches are available to meet many electrical load requirements (Table 'B').

Applications include : Pumps, Compressors, Heat Exchangers, Boilers, Marine Equipment, Lube Systems, Filters, Degreasers, Evaporators, Heat Recovery System, Ground Support Equipments, Textile Machinery, Heating & Air Conditioning Systems, Food Processing, Heat Tracing, Fire Fighting, Bottling, Bulk Conveying, Packing & Filling, Furnace, Blowers and Air Dryers, etc.,

GENERAL SPECIFICATION

Ranges	(-1 ~ 0 to 0 ~ 210 Kg/Cm ² , various split-up ranges
Deadband	Fixed or Narrow adjustable deadband
No. of Microswitches	1 or 2 SPDT (Form C)
Repeatability	$\pm 0.5\%$ FSR
Sensor	Diaphragm sealed piston actuator
Actuator Seal	Buna N, Viton®, Teflon®, 316SS diaphragm

Material of Pressure

Housing (wetted part)

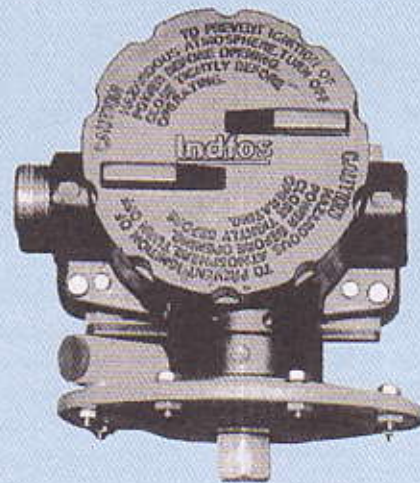
mm H ₂ O Ranges	304 SS Std. for Buna-N, Viton, Teflon Sensor; 316 SS optional
	316 SS Std. for Stainless Steel Sensor
Other Ranges	316 SS Std. for all Sensors
Process Connection	1/4" NPTF - Standard Others through adaptors
Electrical Connection	B4 : 3/4" NPTF Std. 1/2" NPTF optional B7 : 1/2" NPTF Std.
Conformity	Generally to BS 6134 : 1991

* Viton® is a registered trademark of DuPont Dow Elastomers
Teflon® is a registered trademark of E.I. DuPont de Nemours and Company

WEATHERPROOF PRESSURE SWITCH - TYPE B4



FLAMEPROOF PRESSURE SWITCH - TYPE B7



ORDERING MATRIX

A	ENCLOSURE
Code	Description
B4	Pressure Switch in Type 400 weatherproof enclosure to meet IP:66 as per IS:13947 (Part I) 1993.
B7	Pressure Switch in Type 700 flameproof enclosure to meet to gas Gr.IIA, IIB & IIC as per IS:2148:2004.

Ambient operating limit (-30°C to 65°C for all switches

ORDERING MATRIX Contd.,

B SWITCH TYPE				
Code		Type	Electrical Rating	
1 SPDT	2 SPDT		AC	DC
10 *	N.A.	Low Force for Low ranges	10A 125 / 250 / 480V 1/8 HP 125V; 1/4 HP 250V	N.R.
20	61	Low Differential (Narrow)	15A 125 / 250V / 480V	N.R.
24	64	General Purpose	15A 125 / 250 / 480V	0.4A 125V; 0.2A 250V; 6A 30V (R)
26	62	Sealed Environment Proof	5A 125 / 250V	3A(R) / 2A(I) 24V
31	70	Gold Plated Contacts	1A 125V	0.5A(R) / 0.25A(I) 24V
32S	68S	Hermetically Sealed Inert Gas filled Silver alloy contact	5A125 / 250V	5A(R) / 3A(I) 24V
42S	71S	Hermetically Sealed Inert Gas filled Gold alloy contact	N.R.	1A(R) / 0.5A(I) 24V
50	N.A.	Variable Deadband (Narrow band)	15A 125 / 250V	N.A.

* Available in pressure ranges of 2.5 to 25 mmH₂O and 5.0 to 50 mmH₂O only.

N.R. - Not Recommended; N.A. - Not Available; (R) - Resistive Load (I) - Inductive Load

C SEAL TYPE AND ADJUSTABLE RANGE

Range Code	Range	Seal (Diaphragm) Type				MWP Kg/Cm ²	
		Seal Code	B	V	T		S
		Material	Buna-N	Viton	Teflon		316 SS
		Max. Temp.	65°C	150°C	150°C		150°C
Vacuum							
V1	(-) 1 to 0 Kg/Cm ²	✓	✓	✓	N.A.	10.5	
Compound							
C1	± 375 mmH ₂ O	✓	✓	✓	✓	1.0 (1)	
C2	± 760 mmH ₂ O	✓	✓	✓	✓	1.0 (1)	
C3	± 1 Kg/Cm ²	✓	✓	✓	N.A.	10.5	
C4	(-)1 to (+)2 Kg/Cm ²	✓	✓	✓	N.A.	10.5	
C5	(-)1 to (+) 4 Kg/Cm ²	✓	✓	✓	N.A.	10.5	
Water Column							
W1	2.5 to 25 mmH ₂ O	✓	✓	✓	N.A.	1.0 (1,2)	
W2	5 to 50 mmH ₂ O	✓	✓	✓	N.A.	1.0 (1,2)	
W3	12.5 to 250 mmH ₂ O	✓	✓	✓	✓	1.0 (1)	
W4	37.5 to 750 mmH ₂ O	✓	✓	✓	✓	1.0 (1)	
W5	75 to 1500 mmH ₂ O	✓	✓	✓	✓	1.0 (1)	
W6	125 to 2500 mmH ₂ O	✓	✓	✓	✓	1.0 (1)	
W7	187.5 to 3750 mmH ₂ O	✓	✓	✓	✓	1.0 (1)	
Pressure							
P1	0.1 to 1 Kg/Cm ²	✓	✓	✓	✓	22	
P2	0.2 to 2 Kg/Cm ²	✓	✓	✓	✓	22	
P3	0.2 to 4 Kg/Cm ²	✓	✓	✓	✓	22	
P4	0.35 to 7 Kg/Cm ²	✓	✓	✓	✓	40	
P5	0.7 to 14 Kg/Cm ²	✓	✓	✓	✓	40	
P6	1.4 to 28 Kg/Cm ²	✓	✓	✓	✓	110	
P7	2.1 to 42 Kg/Cm ²	✓	✓	✓	✓	110	
P8	3.5 to 70 Kg/Cm ²	✓	✓	✓	✓	Note 3	
P9	5.5 to 110 Kg/Cm ²	✓	✓	✓	✓		
P10	7 to 140 Kg/Cm ²	✓	✓	✓	N.A.		
P11	10.5 to 210 Kg/Cm ²	✓	✓	✓	N.A.		

NOTES :

- Order option "XHX" for MWP of 4.5 Kg/Cm².
- For ranges 2.5 to 25 mmH₂O and 5 to 50 mmH₂O (Ranges W1 & W2) only type 10 microswitch is available. No other micro switch type is possible.
- MWP (Kg / Cm²) :
110 for 316 SS
230 for Viton
530 for Buna-N & Teflon
- Other diaphragm material like 316LSS, Monel can be provided on request in certain ranges. Consult Sales for details.
- "CSD" Chemical seal available in Kg/Cm² ranges only. Consult Sales for details.
- Proof pressure is 1.5 times the Maximum Working Pressure (MWP)

Pressure Switches Deadband Chart for B4 / B7 Switches with BUNA-N Diaphragm

Range Code	Range	Microswitch Code											
		1 SPDT					2 SPDT				1 SPDT		
		10	20	26	24,31	32,42	61	62	64,70	68,71	50 (Adj. Diff.)		
Maximum Deadband										Min	Max.		
Low Pressure Range		mmH₂O											
W1	2.5 to 25 mmH ₂ O	2	6	N.A.				N.A.				N.A.	
W2	5 to 50 mmH ₂ O	3	7	N.A.				N.A.				N.A.	
W3	12.5 to 250 mmH ₂ O	N.A.	13	26	51	72	21	35	81	114	9	38	
W4	37.5 to 750 mmH ₂ O		16	32	64	89	26	40	102	142	11	51	
W5	75 to 1500 mmH ₂ O		33	66	89	127	54	85	142	203	22	64	
W6	125 to 2500 mmH ₂ O		41	82	140	196	64	105	224	305	27	102	
W7	187.5 to 3750 mmH ₂ O		64	128	216	305	102	160	330	483	43	165	
C1	±375 mmH ₂ O		19	38	64	89	31	50	102	142	11	51	
C2	± 750 mmH ₂ O		15	30	64	89	26	40	102	142	11	51	
Vacuum Range		mm Hg											
V1	(-)/760 mmHg	N.A.	18	36	76	107	31	45	122	173	12	56	
Compound Range		mm Hg / Kg/Cm²											
C3	(-)/760 mmHg	N.A.	25	50	76	107	41	65	122	170	19	64	
	1 Kg/Cm ²		0.05	0.10	0.11	0.15	0.08	0.15	0.17	0.25	0.04	0.07	
C4	(-)/760 mmHg		38	76	153	213	61	100	244	330	30	114	
	2 Kg/Cm ²		0.06	0.12	0.15	0.20	0.10	0.15	0.23	0.32	0.05	0.11	
C5	(-)/760 mmHg		76	152	229	305	122	200	356	483	63	178	
	4 Kg/Cm ²		0.11	0.22	0.35	0.50	0.17	0.3	0.56	0.81	0.1	0.28	
Pressure Range			Kg / Cm²										
P1	0.1 to 1 Kg/Cm ²	N.A.	0.02	0.04	0.11	0.15	0.04	0.05	0.17	0.25	0.01	0.07	
P2	0.2 to 2 Kg/Cm ²		0.04	0.08	0.11	0.15	0.06	0.10	0.17	0.25	0.02	0.07	
P3	0.2 to 4 Kg/Cm ²		0.07	0.14	0.25	0.35	0.11	0.20	0.39	0.56	0.05	0.18	
P4	0.35 to 7 Kg/Cm ²		0.12	0.24	0.35	0.5	0.20	0.30	0.71	0.8	0.08	0.25	
P5	0.7 to 14 Kg/Cm ²		0.21	0.42	0.92	1.28	0.34	0.55	1.48	2.0	0.14	0.65	
P6	1.4 to 28 Kg/Cm ²		0.5	1.0	1.7	2.4	0.8	1.25	2.7	3.8	0.4	1.1	
P7	2.1 to 42 Kg/Cm ²		0.8	1.6	2.1	3.00	1.2	2.0	3.4	5.0	0.5	1.4	
P8	3.5 to 70 Kg/Cm ²		2.1	4.2	7.8	11.0	3.4	5.50	12.4	17.6	1.3	4.9	
P9	5.5 to 110 Kg/Cm ²		3.2	6.4	12.0	16.0	5.0	8.0	19.2	27.2	2.0	6.0	
P10	7 to 140 Kg/Cm ²		3.2	6.4	12.0	16.0	5.0	8.0	19.2	27.2	2.0	6.0	
P11	10.5 to 210 Kg/Cm ²		4.2	8.4	16.5	23.2	6.8	10.5	26.5	37.0	2.6	11.3	

Notes :

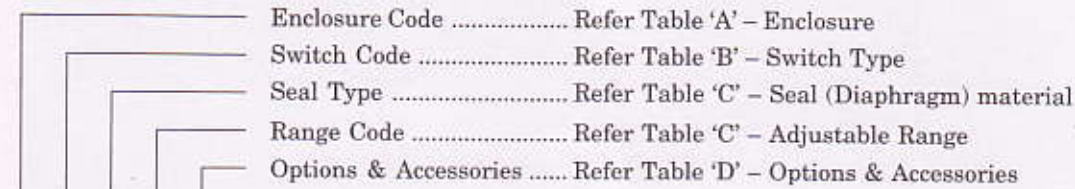
1. Deadbands for optional diaphragms :
 Multiply Buna-N value by: 1.4 for Viton
 1.2 for Teflon and
 1.7 for 316SS and Monel.
2. Switches may generally be set between 5% and 90% of nominal range on falling pressure.
3. The set and reset points must fall within the adjustable range.
4. N.A. - Not available

D OPTIONS / ACCESSORIES

Code	Description	Code	Description
CSD	Chemical Seal	XCL	304 SS flameproof Gr.IIA / IIB / IIC Cable gland
XHX	High Static Pressure for mmH ₂ O ranges only	XPC	Plug in Connector 7 or 9 PIN
XJL	1/2" NPT Aluminium Cable Entry adaptor for weatherproof enclosure only	XSN	Snubber
XJM	1/2" NPT 304 SS Cable Entry adaptor for weatherproof enclosure only	XSY	304 / 316 SS Syphon
XBP	Wall Mounting Bracket (for mmH ₂ O ranges)	XGS	Gauge Saver
XTM	2" Pipe Mounting Brackets with bolts & Nuts	X6B	Oxygen Cleaning
XNH	304 SS Tag Plate	XSP	304 SS Cable Entry Plug
XSC	SS Adaptor for Process Connection	XIS	Range Indicating Scale
XCG	Nickel Plated Brass Weatherproof Cable gland	X2GC	2 Way Gauge Cock
XCI	304 SS Weatherproof Cable gland	X3GC	3 Way Gauge Cock
XCJ	Nickel Plated Brass flameproof Gr.IIA / IIB / Gr.IIC Cable gland	X2VM	2 Valve Manifold
		X2NV	2 Way Needle Valve

ORDERING

How to order : Select the desired features in the form shown below to arrive at Model Number :



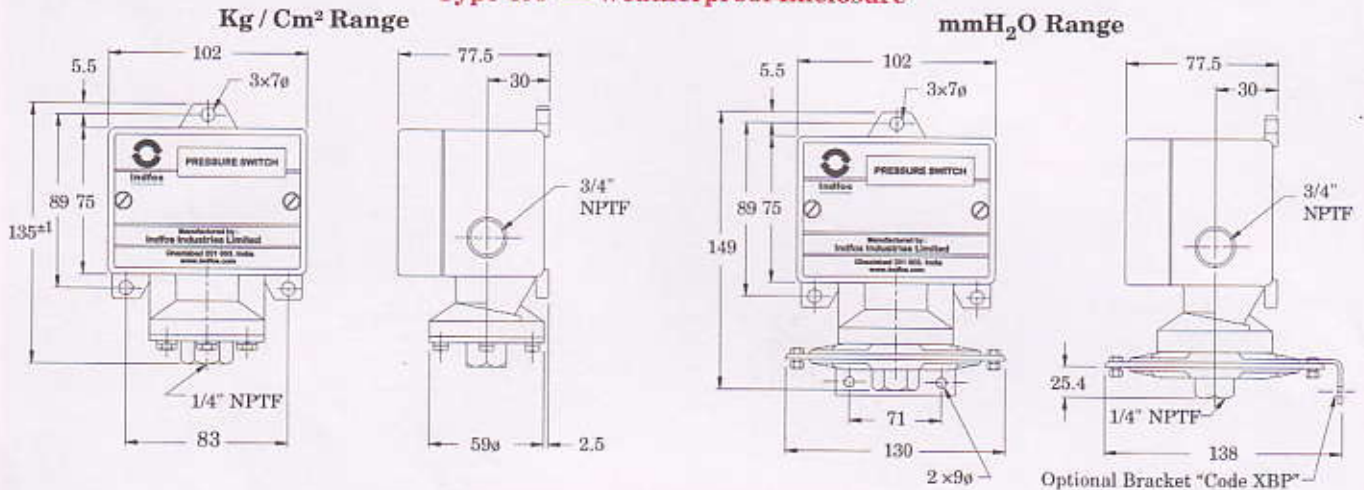
B4 20 B P2 XNH

Example : B4 20 B P2 XNH

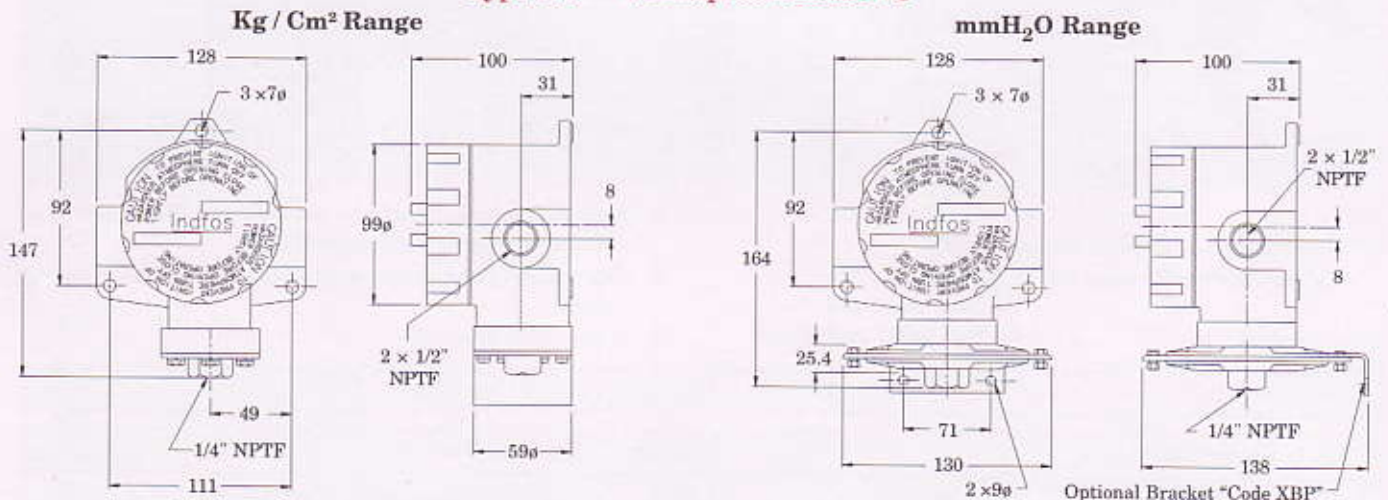
B4 Type 400 Weatherproof Enclosure
20 SPDT 15A 250V AC
B Buna N diaphragm
P2 0.2 to 2.0 Kg / Cm²
XNH SS Tag Plate

MOUNTING DIMENSIONS

Type 400 — Weatherproof Enclosure



Type 700 — Flameproof Enclosure



All dimensions are in mm

This is not a contractual document. Prior notification of changes in specifications is impracticable due to continuous improvement



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WORKS

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2. 86, Thirupurkumaran Street, Athipet, Ambattur, Chennai 600 058

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Kolkata	kolkata@indfos.com	033-2486 6761	033-2486 6761
Mumbai	mumbai@indfos.com	022-2565 6936	022-2569 1237