



# 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/Cm<sup>2</sup>. 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 <sup>2</sup> , 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

<b>Housing (wetted part)</b>	
mm H <sub>2</sub> 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
<b>B4</b>	Pressure Switch in Type 400 weatherproof enclosure to meet IP:66 as per IS:13947 (Part 1) 1993.
<b>B7</b>	Pressure Switch in Type 700 flameproof enclosure to meet to gas Gr.IIA, IIB & IIC as per IS:2148:2004.
<i>Ambient operating limit (-)30°C to 65°C for all switches</i>	

## ORDERING MATRIX Contd.,

<b>B</b>		<b>SWITCH TYPE</b>			
<b>Code</b>		<b>Type</b>	<b>Electrical Rating</b>		
1 SPDT	2 SPDT		<b>AC</b>		<b>DC</b>
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 mmH <sub>2</sub> O and 5.0 to 50 mmH <sub>2</sub> O only.					
N.R. - Not Recommended; N.A. - Not Available; (R) - Resistive Load (I) - Inductive Load					

<b>C</b>		<b>SEAL TYPE AND ADJUSTABLE RANGE</b>					
----------	--	---------------------------------------	--	--	--	--	--

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

### NOTES :

1. Order option "XHX" for MWP of 4.5 Kg/Cm<sup>2</sup>.
2. For ranges 2.5 to 25 mmH<sub>2</sub>O and 5 to 50 mmH<sub>2</sub>O (Ranges W1 & W2) only type 10 microswitch is available. No other micro switch type is possible.
3. **MWP (Kg / Cm<sup>2</sup>) :**  
110 for 316 SS  
230 for Viton  
530 for Buna-N & Teflon
4. Other diaphragm material like 316LSS, Monel can be provided on request in certain ranges. Consult Sales for details.
5. "CSD" Chemical seal available in Kg/Cm<sup>2</sup> ranges only. Consult Sales for details.
6. 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. Diffl.)		
Maximum Deadband										Min	Max.		
<b>Low Pressure Range</b>		<b>mmH<sub>2</sub>O</b>											
W1	2.5 to 25 mmH <sub>2</sub> O	2	6	N.A.				N.A.				N.A.	
W2	5 to 50 mmH <sub>2</sub> O	3	7	N.A.				N.A.				N.A.	
W3	12.5 to 250 mmH <sub>2</sub> O	N.A.	13	26	51	72	21	35	81	114	9	38	
W4	37.5 to 750 mmH <sub>2</sub> O		16	32	64	89	26	40	102	142	11	51	
W5	75 to 1500 mmH <sub>2</sub> O		33	66	89	127	54	85	142	203	22	64	
W6	125 to 2500 mmH <sub>2</sub> O		41	82	140	196	64	105	224	305	27	102	
W7	187.5 to 3750 mmH <sub>2</sub> O		64	128	216	305	102	160	330	483	43	165	
C1	±375 mmH <sub>2</sub> O		19	38	64	89	31	50	102	142	11	51	
C2	± 750 mmH <sub>2</sub> O		15	30	64	89	26	40	102	142	11	51	
<b>Vacuum Range</b>		<b>mm Hg</b>											
V1	(-760 mmHg)	N.A.	18	36	76	107	31	45	122	173	12	56	
<b>Compound Range</b>		<b>mm Hg / Kg/Cm<sup>2</sup></b>											
C3	(-760 mmHg)	N.A.	25	50	76	107	41	65	122	170	19	64	
	1 Kg/Cm <sup>2</sup>		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 <sup>2</sup>		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 <sup>2</sup>		0.11	0.22	0.35	0.50	0.17	0.3	0.56	0.81	0.1	0.28	
<b>Pressure Range</b>			<b>Kg / Cm<sup>2</sup></b>										
P1	0.1 to 1 Kg/Cm <sup>2</sup>	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 <sup>2</sup>		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 <sup>2</sup>		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 <sup>2</sup>		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 <sup>2</sup>		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 <sup>2</sup>		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 <sup>2</sup>		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 <sup>2</sup>		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 <sup>2</sup>		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 <sup>2</sup>		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 <sup>2</sup>		4.2	8.4	16.5	23.2	6.8	10.5	26.5	37.0	2.6	11.3	

### Notes :

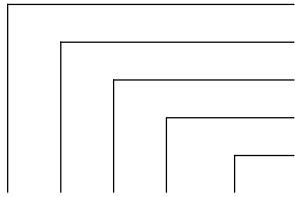
1. Deadbands for optional diaphragms :  
 Multiply Buna-N value by: 1.4 for Viton  
   1.2 for Teflon and  
   1.7 for 316SS and Monel.
2. Switches may generally be set between 5% and 90% of nominal range on falling pressure.
3. The set and reset points must fall within the adjustable range.
4. N.A. – 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 <sub>2</sub> 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 <sub>2</sub> 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 :



- Enclosure Code ..... Refer Table 'A' – Enclosure
- Switch Code ..... Refer Table 'B' – Switch Type
- Seal Type ..... Refer Table 'C' – Seal (Diaphragm) material
- Range Code ..... Refer Table 'C' – Adjustable Range
- Options & Accessories ..... Refer Table 'D' – Options & Accessories

**B4 20 B P2 XNH**

**Example :** B4 20 B P2 XNH

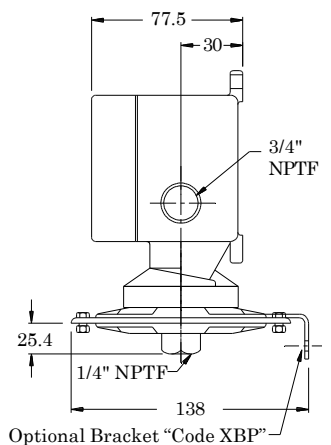
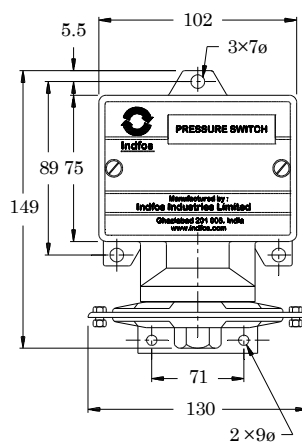
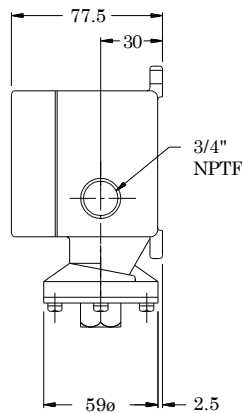
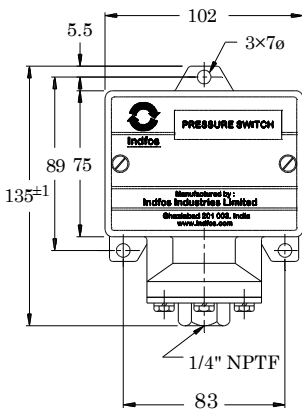
- B4** Type 400 Weatherproof Enclosure
- 20** SPDT 15A 250V AC
- B** Buna N diaphragm
- P2** 0.2 to 2.0 Kg / Cm<sup>2</sup>
- XNH** SS Tag Plate

# MOUNTING DIMENSIONS

## Type 400 — Weatherproof Enclosure

**Kg / Cm<sup>2</sup> Range**

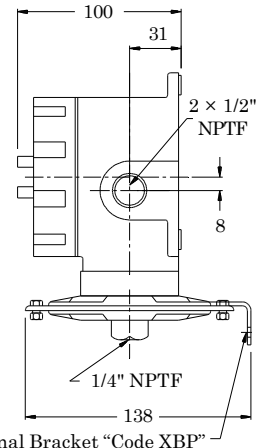
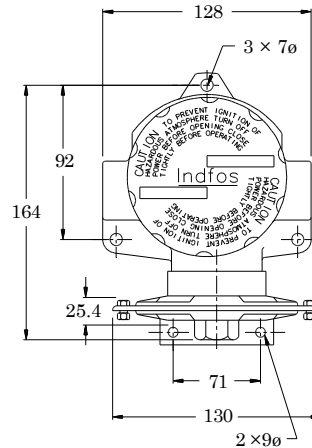
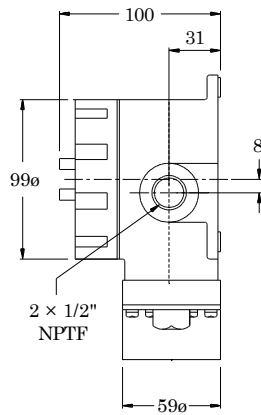
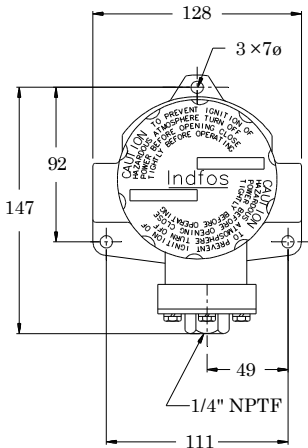
**mmH<sub>2</sub>O Range**



## Type 700 — Flameproof Enclosure

**Kg / Cm<sup>2</sup> Range**

**mmH<sub>2</sub>O Range**



All dimensions are in mm

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



# Indfos Industries Limited

Regd. Off : 2749, Street No.13, Ranjith Nagar, New Delhi 110 008

web-site : [www.indfos.com](http://www.indfos.com)

### WORKS

- B20, Industrial Area, Site 3, Meerut Road, Ghaziabad (UP) 201 003  
Ph : 0120-2712016 / 2712134 Fax : 0120-2712023 E-mail : sales@indfos.com
- 86, Thirupurkumaran Street, Athipet, Ambattur, Chennai 600 058

SALES	E-MAIL	PHONE	FAX
Chennai	chennai@indfos.com	044-2435 3407	044-2431 1760
Coimbatore		9486191368	
Delhi	delhi@indfos.com	011-2589 7296	011-4500 9460
Kolkata	kolkata@indfos.com	033-2486 6761	033-2486 6761
Mumbai	mumbai@indfos.com	022-2565 6936	022-2569 1237



#0510 B-Series-Rev.1-2\*