



DIFFERENTIAL PRESSURE SWITCHES D-SERIES



- **STURDY, ROBUST AND PRECISE**
- **HIGH STATIC PRESSURE**
- **WIDE PRESSURE RANGES**
- **CHOICE OF DIAPHRAGM MATERIAL**

D-Series Differential Pressure Switches are designed for low or high differential pressure ranges from 12.5 to 250 mm H₂O to 4.2 to 42 Kg/Cm² (Table 'C'). The low range differential pressure switches are diaphragm actuated where process pressure acts on both sides of a diaphragm and ensures true response. The high range Differential pressure switch consists of two identical calibrated pistons which are sealed from the process by diaphragms.

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	12.5 ~ 250 mm H ₂ O to 4.2 ~ 42 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	D4 : 3/4" NPTF Std. 1/2" NPTF optional D7 : 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 DIFFERENTIAL PRESSURE SWITCH - TYPE D4



FLAMEPROOF DIFFERENTIAL PRESSURE SWITCH - TYPE D7



ORDERING MATRIX

A	ENCLOSURE
Code	Description
D4	Differential Pressure Switch in Type 400 weatherproof enclosure to meet IP:66 as per IS:13947 (Part I) 1993.
D7	Differential Pressure Switch 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
20	61	Low Differential	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.

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					Max. Working Pressure
		Seal Code	B	V	T	S (I)	
		Material	Buna-N	Viton	Teflon	316 SS	
		Max. Temp.	65°C	150°C	150°C	150°C	
Low Pressure							
L1	12.5 to 250 mmH ₂ O	✓	✓	✓	✓	3800 mmH ₂ O (3)	
L2	75 to 750 mmH ₂ O	✓	✓	✓	✓		
L3	150 to 1500 mmH ₂ O	✓	✓	✓	✓		
L4	250 to 2500 mmH ₂ O	✓	✓	✓	✓		
L5	375 to 3750 mmH ₂ O	✓	✓	✓	✓		
High Pressure							
H1	0.1 to 1 Kg/Cm ²	✓	✓	✓	✓	33 Kg/Cm ²	
H2	0.2 to 2 Kg/Cm ²	✓	✓	✓	✓		
H3	0.4 to 4 Kg/Cm ²	✓	✓	✓	✓		
H4	0.6 to 6 Kg/Cm ²	✓	✓	✓	✓		
H5	0.7 to 7 Kg/Cm ²	✓	✓	✓	N.A.	65 Kg/Cm ²	
H6	1.4 to 14 Kg/Cm ²	✓	✓	✓	N.A.		
H7	2.8 to 28 Kg/Cm ²	✓	✓	✓	N.A.		
H8	4.2 to 42 Kg/Cm ²	✓	✓	✓	N.A.	130 Kg/Cm ²	

NOTES :

- 316 SS diaphragm is available for
 - * Ranges L1 to L5 (12.5-250 to 375-3750 mmH₂O) with Viton gasket.
 - * Ranges H1 to H4 (0.1-1.0 to 0.6-6.0 Kg / Cm²)
- Buna-N, Viton & Teflon diaphragms are available in all ranges.
- Order option "XHX" for MWP of 2.8 Kg/Cm² for ranges L1 to L5 (12.5-250 to 375-3750 mmH₂O)
- Proof pressure is 1.5 times of the MWP.
- "CSD" Chemical seal available in Kg/Cm² ranges only. Consult Sales for details.
- Other diaphragm material like 316LSS, Monel can be provided on request in certain ranges. Consult Sales for details.

D OPTIONS / ACCESSORIES

Code	Description	Code	Description
CSD	Chemical Seal	XCJ	Nickel Plated Brass flameproof Gr.IIA / IIB / IIC Cable gland
XHX	High Static Pressure for mmH ₂ O ranges only	XCL	304 SS flameproof Gr.IIA / IIB / IIC Cable gland
XJL	1/2" NPT Aluminium Cable Entry adaptor for weatherproof enclosure only	XPC	Plug in Connector 7 or 9 PIN
XJM	1/2" NPT 304 SS Cable Entry adaptor for weatherproof enclosure only	XSN	Snubber
XBP	Wall Mounting Bracket (for mmH ₂ O ranges)	X6B	Oxygen Cleaning
XTM	2" Pipe Mounting Brackets with bolts & Nuts	XSP	304 SS Cable Entry Plug
XNH	304 SS Tag Plate	XIS	Range Indicating Scale
XSC	SS Adaptor for Process Connection	X3GC	3 Way Gauge Cock
XCG	Nickel Plated Brass Weatherproof Cable gland	X3VM	3 Valve Manifold
XCI	304 SS Weatherproof Cable gland	X5VM	5 Valve Manifold
		X2NV	2 Way Needle Valve

Differential Pressure Switches Deadband Chart for D4 / D7 Switches with BUNA-N Diaphragm

Range Code	Range	Microswitches									
		1 SPDT				2 SPDT				1 SPDT	
		20	26	24, 31	32,42	61	62	64, 70	68,71	50 (Adj. Diff.)	
		Maximum Deadband								Min	Max.
Low Pressure Range		mmH₂O									
L1	12.5 to 250 mmH ₂ O	13	26	51	72	21	33	81	114	9	38
L2	75 to 750 mmH ₂ O	15	30	64	89	25	38	102	142	11	51
L3	150 to 1500 mmH ₂ O	33	66	89	127	53	83	142	203	23	64
L4	250 to 2500 mmH ₂ O	41	82	140	196	64	103	224	305	27	102
L5	375 to 3750 mmH ₂ O	64	128	216	305	102	160	330	483	46	165
Pressure Range		Kg / Cm²									
H1	0.1 to 1 Kg/Cm ²	0.07	0.15	0.35	0.5	0.11	0.18	0.6	0.8	0.05	0.25
H2	0.2 to 2 Kg/Cm ²	0.14	0.3	0.35	0.5	0.25	0.35	0.6	0.8	0.11	0.25
H3	0.4 to 4 Kg/Cm ²	0.3	0.6	0.4	0.60	0.45	0.2	0.7	0.92	0.21	0.32
H4	0.6 to 6 Kg/Cm ²	0.5	1.0	1.0	1.45	0.82	1.3	2.2	3.0	0.4	0.76
H5	0.7 to 7 Kg/Cm ²	0.7	1.4	1.4	2.0	1.0	1.8	2.3	3.0	0.5	1.0
H6	1.4 to 14 Kg/Cm ²	1.0	2.2	2.8	3.9	1.7	2.8	4.5	6.3	0.7	1.8
H7	2.8 to 28 Kg/Cm ²	1.4	2.8	4.2	6.0	2.3	3.5	6.8	9.4	1.0	2.8
H8	4.2 to 42 Kg/Cm ²	2.8	5.6	10.6	14.8	4.5	7.0	17.0	24.0	2.0	8.0

Notes :

- Deadbands for optional diaphragms for :
 Multiply Buna-N value by: 1.4 for Viton
 1.2 for Teflon and
 1.7 for 316SS and Monel.
- Switches may generally be set between 15% and 100% of nominal range on increasing pressure and 5% and 90% of nominal range on falling pressure.
- The set and reset points must fall within the adjustable range.

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

D4 20 B H3 XCG

Example : D4 20 B H3 XCG

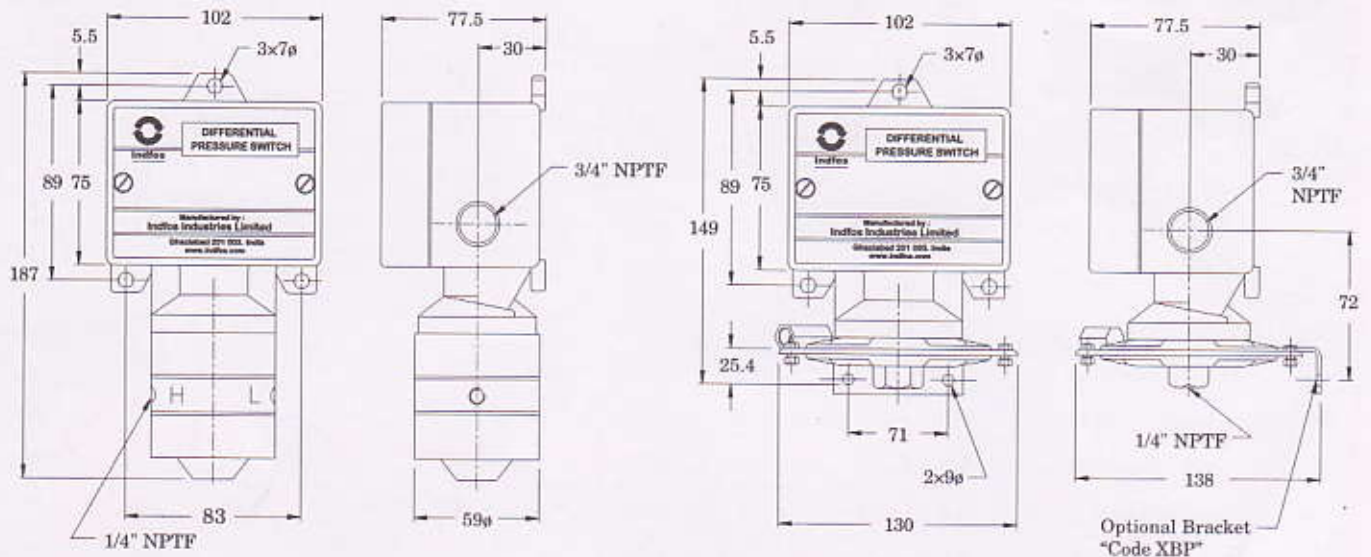
D4	Type 400 Weatherproof Enclosure
20	SPDT 15A 250V AC
B	Buna N diaphragm
H3	0.4 to 4.0 Kg / Cm ²
XCG	Nickel Plated Brass Weatherproof Cable gland

MOUNTING DIMENSIONS

Type 400 — Weatherproof Enclosure

Kg / Cm² Range

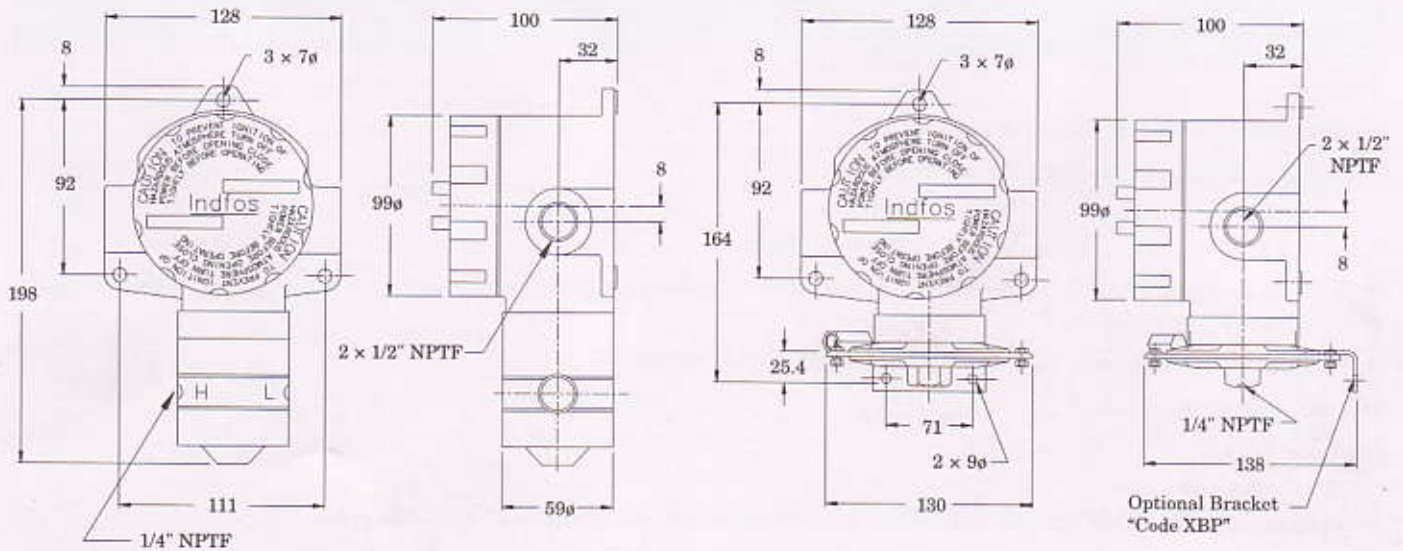
mmH₂O Range



Type 700 — Flameproof Enclosure

Kg / Cm² Range

mmH₂O Range



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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