

Differential Pressure switch series D4 and D7

General purpose or Ex-proof according UL or ATEX

(Ex d or Ex ia)

Accuracy: ±1 %



Features

- Ambient temperature up to 60 °C for Ex applications
- II 2 GD or II 1 GD
- Class 1 Division 1 Gr. B, C and D according UL
- Protection IP54, IP66 or NEMA 4, 4X, 7, 9 and 13 (UL)
- Wetted parts available in several materials
- High static pressure up to 140 bar

Ranges

75 mbar diff. up to 42 bar diff.

30 in. H₂O up to 600 psid

Applications

Chemical and petrochemical industry

Machine and apparatus construction

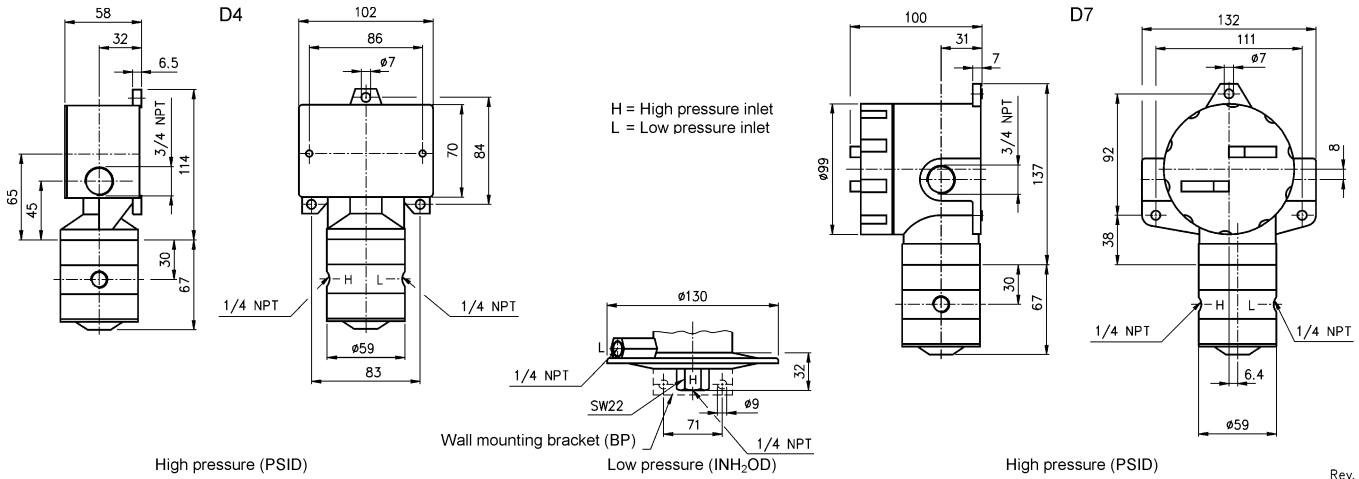
Food and beverage industry

Pulp and paper industry



Technical specification	D4 series	D7 series	
Construction	Weatherproof	Ex-proof according UL CSA on request	Flame proof according EN 60079-0, -1, -31 Intrinsically safe acc. IEC 60079-0 and EN 60079 -11, -26
Switch functions Adjustable range Deadband	One setpoint, single pole double throw (SPDT) or 2 times SPDT (2SPDT) From 15 % to 100 % F.S., below 15 % consult factory From 0,5 % to 15 % F.S., depending on material, range and microswitch		
Measuring principle Range [mbar] [bar]	Diaphragm-piston-cylinder-system 75 150 250 375 1 2 4 6 7 14 28 42		
Limits (pressure ranges) Max. static pressure [bar] Proof pressure [bar]	mbar 1 to 6 bar 7 to 14 bar 28 bar 42 bar 0,37 35 69 69 138 1,5 138 276 551 551		
Pressure type	Optional 100 bar static pressure for the ranges 1 bar and 2 bar (only diaphragm Buna N or Viton) Differential pressure		
Process connection	¼ NPT female (standard), ½ NPT male, ½ NPT female G ½ B male, M20x1,5 (metric connections with adapter), others on request		
Connection location	For mbar ranges lower and side, for bar ranges at the side		
Material Pressure connection Diaphragm Housing	Standard Nickel plated brass, optional stainless steel 316 (1.4401) or Monel For mbar ranges steel epoxy coated standard, stainless steel on request Buna N, Viton (max. 42 bar), Teflon, stainless steel 316 (1.4401) (stainless steel only from 1 to 6 bar) Aluminum, epoxy coated black		
Accuracy	1,0 % F.S.		
Electrical specification			
Microswitch ratings	Up to max. 6 A 30 VDC respectively 22 A 250 VAC (see microswitch table)		
Flameproof and dust ignition protection by enclosure	Class 1 Div. 1 Gr. B, C and D Class 2 Div. 1 Gr. E, F and G	II 2GD Ex d IIC T6 Gb Ex t IIIC T85°C Db IP6X Sira 02 ATEX 1391X	
Intrinsically safe and dust ignition protection by enclosure		II 1 GD Ex ia IIC T4 Ga Ex ia IIIC T135°C Da SIRA 04 ATEX 2081	
Electrical connection	¾ NPT female, optional cable glands, ½ NPT with reducer bushing, M20x1,5, others on request		
General specification			
Permissible Ambient temperature Medium temperature Storage temperature Effect	-25 ... 60 °C Buna N and Teflon -18 ... 65 °C, Viton -7 ... 150 °C, stainless steel -18 ... 150 °C (Medium temperature of ATEX approved switches is restricted due to temperature class.) -40 ... 60 °C Max. 0,4 % / 10 K ref. 20 °C	-25 ... 65 °C	-20 ... 60 °C
Protection according UL Protection according EN 60 529/IEC 529	NEMA 4, 4X and 13 IP54, optional IP66	NEMA 7 and 9 IP66	
CE-mark	Low voltage regulations: EN 61 010-1, EN 60 947-1		
Mounting	Standard stem, wall (BP) or 2" pipe mounting (TM)		
Weight mbar/bar [kg]	1,2/1,6	1,7/2,0	
Accessories, options	Diaphragm seals, valves, adapters, NACE		

General dimensions [mm]



Rev. C

Order information

Switch element	Material actuator seal	Range	Engineering unit	Protection	Process connection	Electrical connection	Options
SPDT (20) Narrow deadband ¹⁾ (15 A 250/480 VAC, 0.4A 120VDC)	(B) Buna N ¹⁾	30	INH2OD	(IP) Standard D4 IP54 D7 IP66	(25) ¼ NPT female	(=) Standard	(NH) Tagging wired
(21) Ammonia service (5A 250 VAC, 6 A 30 VDC)	(V) Viton ²⁾	60 100 150	PSID	(IP65) IP66 (for D4) (UL) UL approval D4 NEMA 4 D7 NEMA 7 & 9 (CEN3) ATEX Ex d with cable gland Ex d PG13,5 (only for D7) (CEN4) ATEX Ex d and Ex t ¾ NPT thread female (only for D7) (CEN6) ATEX Ex ia ¾ NPT thread female (only for D7) (CEN7) ATEX Ex ia with cable gland Ex d PG13,5 (only for D7)	(06) ½ NPT male ¹⁾ (07) ½ NPT female ¹⁾ (15) G ½ B male ¹⁾ (16) M20x1,5 male ¹⁾	(JL) ¾ to ½ NPT female reducing bushing (JM) ¾ NPT to M20x1,5 female reducing bushing (K3) Terminal block (standard for D7 with 2xSPDT, not for D4) Only for protection IP (KV2) Plastic cable gland IP65, PG11 (KV3) Plastic cable gland IP65, PG13,5 (KV4) Plastic cable gland IP65, PG16 (KV52) Plastic cable gland PG13,5	(FS) Factory adjusted setpoint (6B) Oxygen cleaned (not for Buna N diaphragm; in. H ₂ O ranges only with option TA) (TM) 2" pipe mounting bracket (TA) 316 (1.4401) pressure connection for in. H ₂ O ranges (UD) 316 (1.4401) pressure connection for psid ranges (BP) Wall mounting bracket for in. H ₂ O ranges (HS) High static pressure 100 bar (only for ranges 15 and 30 psid and diaphragm Buna N or Viton) (MD) Metric ranges
(22) Hermetically sealed (5 A 250 VAC)	(T) Teflon ¹⁾	15					
(23) Heavy duty AC (22 A 250 VAC)	(S) 316 (1.4401) ³⁾	30 60 90 100 200 400 600					
(24) General purpose ¹⁾ (15 A 250 VAC, 6 A 30 VDC)							
(26) Sealed environment proof ¹⁾ (15 A 250 VAC, 0.4A 120VDC)							
(27) High temp. (max. 150 °C) (15 A 250 VAC)							
(31) Low level (gold) contacts (1 A 125 VAC, 500mA 28VDC)							
(32) Hermetically sealed general purpose (11 A 250 VAC, 5 A 28 VDC)							
(42) Hermetically sealed, gold contacts (1 A 125 VAC)							
(50) Variable deadband (15 A 250 VAC)							
2xSPDT (61) see code (20) (62) see code (26) (63) see code (27) (64) see code (24) (65) see code (21) (67) see code (22) (not D4 series) (68) see code (32) (not D4 series) (70) see code (31) (71) see code (42) (not D4 series)	¹⁾ max. medium temperature -18 ... 65 °C ²⁾ max. medium temperature -7 ... 150 °C ³⁾ max. medium temperature -18 ... 150 °C only ranges from 15 to 90 psid	Note the range can also be specified in mbar or bar					
¹⁾ VDC rating not UL listed					¹⁾ with adapter		

How to order

Type	Switch element	Material actuator seal	Range	Engineering unit	Protection	Process connection	Electrical connection	Option
D7	24	B	10/100	PSID	UL	25	JL	NH