

Differential Pressure switch series D4 and D7

General purpose or Ex-proof according UL or ATEX

(EEx d or EEx ia)

Accuracy: ±1 %



Features

- Ambient temperature up to 60 °C for EEx applications
- Ex II 2 GD or Ex 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

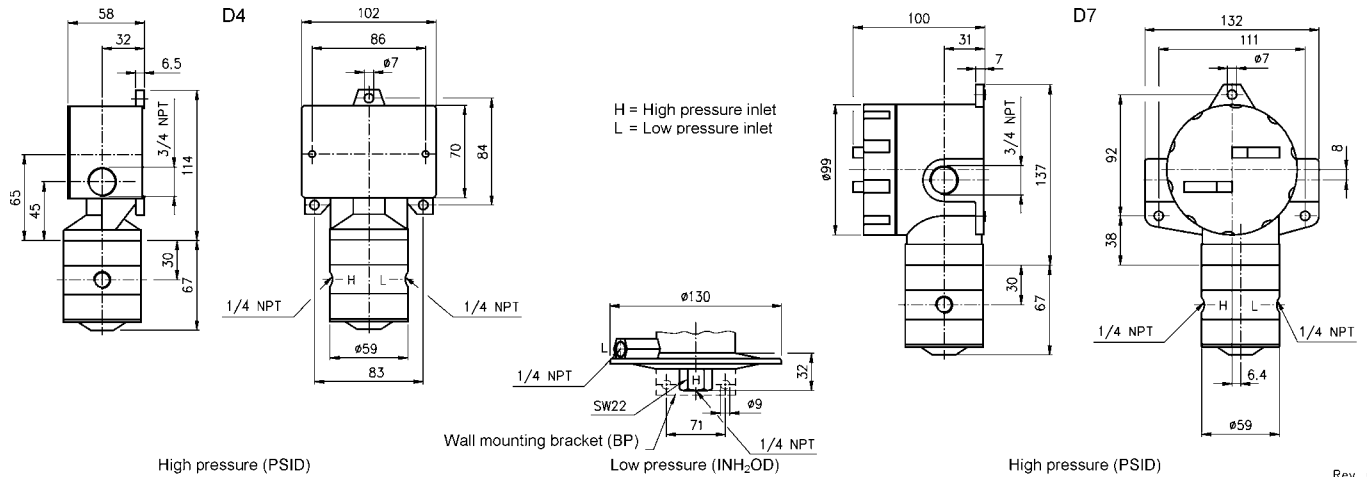
Food and beverage industry

Pulp and paper industry



Technical specification	D4 series	D7 series	
Construction	Weatherproof	Ex-proof according UL CSA on request	Ex-proof according CENELEC (ATEX) EN 50 0-14, -18, -20
Switch functions	One setpoint, single pole double throw (SPDT) or 2 times SPDT (2SPDT)		
Adjustable range	From 15 % to 100 % F.S., below 15 % consult factory		
Deadband	From 0,5 % to 15 % F.S., depending on material, range and microswitch		
Measuring principle	Diaphragm-piston-cylinder-system		
Range [mbar]	75 150 250 375	14 28 42	
Limits (pressure ranges)	mbar	1 to 6 bar	7 to 14 bar 28 bar 42 bar
Max. static pressure [bar]		35	69 69 138
Proof pressure [bar]		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	Standard Nickel plated brass, optional stainless steel 316 (1.4401) or Monel For mbar ranges steel epoxy coated standard, stainless steel on request		
Diaphragm	Buna N, Viton (max. 42 bar), Teflon, stainless steel 316 (1.4401) (stainless steel only from 1 to 6 bar)		
Housing	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)		
Ex-proof		Class 1 Div. 1 Gr. B, C and D Class 2 Div. 1 Gr. E, F and G	EEx d IIC T6 Sira 02 ATEX 1391
Intrinsically safe			EEx ia IIC T4 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	-25 ... 60 °C	-25 ... 65 °C	-20 ... 60 °C
Medium temperature	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.)		
Storage temperature	-40 ... 60 °C		
Effect	max. 0,4 % / 10 K ref. 20 °C		
Protection according UL	NEMA 4, 4X and 13		NEMA 7 and 9
Protection according EN 60 529/IEC 529	IP54, optional IP66		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]



Order information

Switch element	Material actuator seal	Range	Engineering unit	Protection	Process connection	Electrical connection	Options		
SPDT	(B) Buna N ¹⁾	30	INH2OD	(IP) Standard	(25) ¼ NPT female	(=) Standard	(NH) Tagging wired		
(20) Narrow deadband ¹⁾ (15 A 250/480 VAC, 0,4A 120VDC)	(V) Viton ²⁾	60	PSID	D4 IP54	(06) ½ NPT male ¹⁾	(M20) ¾ NPT to M20x1,5 female reducing bushing	(FS) Factory adjusted setpoint		
(21) Ammonia service (5A 250 VAC, 6 A 30 VDC)	(T) Teflon ¹⁾	100		D7 IP66					
(22) Hermetically sealed (5 A 250 VAC)	(S) 316 (1.4401) ³⁾	150		(IP65) IP66 (for D4)					
(23) Heavy duty AC (22 A 250 VAC)		(UL) UL approval D4 NEMA 4 D7 NEMA 7 & 9		(07) ½ NPT female ¹⁾				(6B) Oxygen cleaned (not for Buna N diaphragm; in. H ₂ O ranges only with option TA)	
(24) General purpose ¹⁾ (15 A 250 VAC, 6 A 30 VDC)		(CEN3) ATEX EEx d with cable gland EEx d PG13,5 (only for D7)		(15) G ½ B male ¹⁾					
(26) Sealed environment proof ¹⁾ (15 A 250 VAC, 0,4A 120VDC)		(CEN4) ATEX EEx d ¾ NPT thread female (only for D7)		(16) M20x1,5 male ¹⁾					(K3) Terminal block (standard for D7 with 2xSPDT, not for D4)
(27) High temp. (max. 150 °C) (15 A 250 VAC)		(CEN6) ATEX EEx ia ¾ NPT thread female (only for D7)							
(31) Low level (gold) contacts (1 A 125 VAC, 500mA 28VDC)		(CEN7) ATEX EEx ia with cable gland EEx d PG13,5 (only for D7)		(KV2) Plastic cable gland IP65, PG11					(TM) 2" pipe mounting bracket
(32) Hermetically sealed general purpose (11 A 250 VAC, 5 A 28 VDC)				(KV3) Plastic cable gland IP65, PG13,5					
(42) Hermetically sealed, gold contacts (1 A 125 VAC)				(KV4) Plastic cable gland IP65, PG16					(UD) 316 (1.4401) pressure connection for psid ranges
(50) Variable deadband (15 A 250 VAC)		(KV52) Plastic cable gland PG13,5	(BP) Wall mounting bracket for in. H ₂ OD ranges						
2xSPDT			(HS) High static pressure 100 bar (only for ranges 15 and 30 psid and diaphragm Buna N or Viton)						
(61) see code (20)	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					(MD) Metric ranges		
(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⁾ 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