

GENERAL has been designing & manufacturing reliable, high quality diaphragm type blind pressure switches to suit to most of the industrial applications for accurate control of the process equipments. Rigorous and continuous tests are conducted for design and quality conformance.

BLIND PRESSURE SWITCH

Application Area: Safety, Alarming & Tripping of following systems

- Compressors, Pumps
- Turbines, Generators
- Boilers, etc...
- Fluid Power/Hydraulics
- High/Low Limit level staging functions.

BLIND DIFFERENTIAL PRESSURE SWITCH

Application Area: Loss of pressure due to choking

- Across Filters
- Across Blowers
- Across Orifice Plates, Nozzle & Venturi
- Across water steam interface in boilers etc...









Specifications

Standard Repeat Accuracy Scale Accuracy Static pressure	BS-6134:1991 +/- 0.5% FSR +/- 3% FSR Generally Static pressure provided 150% FSR, on request maximum Static pressure of 100Kg / cm ² can be offered for screwed type process connection, shift of +/-2% in set point will be observed after pressure falls from Static pressure. For Flanged type connection maximum Static pressure can be 150% FSR or as per Flange rating whichever is higher.
Ambient Temp	(-)20°C to 70°C
Process Temp	(-)20°C to 170°C for SS wetted parts with Teflon Seal
Set Point	Adjustable from 20 to 80% for better performance.
High Voltage Strength	Withstands 0.5 KV between open contact for 1 Sec & 2 KV between terminals and earth for one minute.
Insulation Resistance	>10 M Ohms at 500VDC
Intrinsic Safety	Switches are classified as Simple Electrical Apparatus as per BS-5345 and suitable to be used in intrinsically safe equipments/systems without certification.
Mounting	Surface mounting /Pipe/Field.
Enclosure	Weatherproof IP67 / Flameproof IIA, IIB, IIC

Notes:

- 1. Gr.IIA & IIB T6 as per IS 2148-2004 (IEC-60079:2001) & W/p to IP 66 as per IS12063-1987 (equivalent to NEC CL.1,Gr.C & D.)
- 2. Gr.IIC,T6 as per IS 2148-2004(IEC-60079:2001) & W/p to IP66 as per IS12063-1987 (equivalent to NEC CL.1, DIV.1, Gr.A & B.)
- 3. Weatherproof enclosure is effective only if all entries and joint faces are properly sealed. Flameproof enclosure is weatherproof only if cover 'O' ring is retained in position and proper flameproof cable gland is used. It is recommended to procure cable glands along with flameproof instruments to avoid neglect of it while installation.
- 4. Accuracy & repeatability are one and the same for all blind differential pressure switches. A shift of $\pm 2\%$ may be observed in set point when pressure falls from full static pressure. Settings will also shift with varying temperature.
- 5. The instrument is calibrated in the mounting position depicted in the drawing. Hence mounting in any other direction will cause a minor range shift, especially in low and compound ranges.



- 6. A pressure switch is a switching device and not a measuring instrument even though it has a scale to assist setting. For this reason, Test Certificates will not contain individual ON-OFF switching values at different scale readings. Maximum differential obtained alone will be declared, besides other specifications.
- 7. Switching differentials furnished are nominal maximum values under test conditions at mid-scale and will vary with range settings and operating conditions.
- 8. On & off setting should not exceed the upper or lower range of the span.
- 9. Ambient temperature range: All models are suitable for operating within a range of ambient temperature from (–) 20°C to (+) 70°C provided the process fluid does not freeze within this range. Below 0°C, precautions should be taken in humid atmospheres to prevent frost formation inside the instrument from jamming the mechanism. Occasional excursions beyond this range are possible but accuracy might be impaired. The microswitch is the limiting factor which should never exceed the limits (–) 25°C to (+) 80°C.
- 10. Fluid Temperature: A pressure switch connected to the main pipe is not subjected to the flow and therefore is not fully exposed to the fluid temperature. Use of adequate length of impulse piping will greatly reduce excessive heating of the sensing element. For e.g., connection of 7.5 cm of 12 mm dia impulse piping will reduce water temperature of 100°C to 65°C at an ambient temperature of 50°C.
- Ensure that impulse pipe work applies no stress on sensing element housing and use spanners to hold pressure port / housing when connections are made.
- 12. Select the range of the instrument such that the set value lies between 35 to 65% of the FSR.
- 13. Scale Markings are for guidance only. Set the correct set value against precision master gauge.



Features and Benefits

Complete Product Line	Standard models and customized specials cover pressure range from 760 mm Hg VAC to 350 kg/cm ² .
Robust Construction	Rugged, high-cycle rate tolerance, long life, not critical to vibration, high overrange and proof pressures, excellent corrosion resistance to hostile environments.
Instrument Quality	High resolution of Set Points, high repeatability, narrow dead band, negligible temperature effect.
Wetted Parts	Wide selection materials, process connection configurations and sizes. Optional "fire-safe" pressure sensor.
Snap-Action	Wide selection UL Listed and CSA Certified switching elements for AC
Electrical Switching	and DC service. Optional "hermetically sealed" capsule for hazardous and hostile environments.
Field Adjustable	Self-locking adjustment, no special tools required. No-charge factory calibration.
Cost Effective	Simple and fast installation without special tools, long service life, no required periodic service or spare parts.
Built-In Quality	Rigid quality standards maintained from raw material to finished product.
Service	Factory sales engineers and area SOR representatives provide effective and prompt worldwide service.
Delivery	Routine shipments 7 to 10 working days. Emergency shipments via same day air.



Ordering Code (How to order)



NOTE : Specifications are subject to change without prior notice due to continuous product development.

Model Selection Guide

Please select one code from each of the following tables to complete the model selection

Table I : Model

DESCRIPTION	CODE
Blind pressure switch with fixed switching differential	GF
Blind pressure switch with adjustable switching differential	GA
Blind differential pressure switch with fixed switching differential	DF
Blind differential pressure switch with adjustable switching differential	DA

Table II : Series

DESCRIPTION	COD
Pressure switch Metal diaphragm	SS
Differential pressure switch Metal diaphragm	DS
Pressure switch Rubber diaphragm	SR
Differential pressure switch Rubber diaphragm	DR



Die-cast Aluminium,

Blind Pressure Switch (Weatherproof)

Die-cast Aluminium, Weatherproof to IP-66 (IS:13947)



Blind Differential Pressure Switch (Weatherproof)



Table III : Ranges

RANGE	Availability	COD	Dimensional Details of Sensor System		
			BPS L x D	BDPS L x D	
-0.9 to 0 kg/cm2 -0.9 to 1.5 kg/cm2 -0.5 to 0.5 kg/cm2 -200 to +200 mm WC -400 to +400 mmWC -800 to 0 mmWC	In SS series In SS series In SS series In all series In all series In all series	VP9 C15 CP5 C02 C04 C08	60 x 60 60 x 60 60 x 60 105 x 50 105 x 50 105 x 50	90 x 60 90 x 60 90 x 60 110 x 65 110 x 65 110 x 65	
20 to 200 mmWC 40 to 400 mmWC 50 to 500 mmWC 100 to 1000 mmWC 600 to 6000 mmWC 0.05 to 0.16 kg/cm2 0.08 to 0.4 kg/cm2	In all series In all series In all series In all series In all series In all series In all series	W02 W04 W05 W10 W60 P16 0P4	105 x 40 105 x 40 105 x 40 90 x 40 65 x 40 90 x 40 65 x 40	110 x 55 110 x 55	
0.2 to 1 kg/cm2 0.2 to 2 kg/cm2 0.4 to 4 kg/cm2 0.6 to 6 kg/cm2 1.0 to 10 kg/cm2	In all series In all series In all series In all series In SS series	001 002 004 006 010	60 x 40 60 x 40 60 x 40 60 x 40 60 x 40 60 x 40	80 x 55 80 x 55 80 x 55 80 x 55 80 x 55 80 x 55	
1.5 to 15 kg/cm2 2.0 to 20 kg/cm2 2.0 to 25 kg/cm2 4.0 to 40 kg/cm2 6.0 to 60 kg/cm2 10 to 100 kg/cm2 10 to 160 kg/cm2 20 to 200 kg/cm2 25 to 250 kg/cm2	In SS series In SS series	015 020 025 040 060 100 160 200 250 350	60 x 40 45 x 40 45 x 40 35 x 40		

NOTE : For other ranges please contact to factory

Table IV : Type of Enclosure

DESCRIPTION	CODE
Weather proof with die-cast Aluminium with epoxy powder coated conforming to IP-67 protection in accordance with IS:13947 Part I, 1993	W
Flame proof & weather proof with die cast Aluminium with epoxy powder coating conforming to IP-66 protection – suitable to gas group I, IIA, IIB (NEC Cl. 1, Div 1, Gr C & D), as per IS 2148-2004 (IEC-60079:2001) & W/p to IP 66 as per IS12063-1987 (equivalent to NEC CL.1, Gr.C & D).	F
Flame proof & weather proof with die cast Aluminium with epoxy powder coating conforming to IP-66 protection – suitable to gas group IIC (NEC Cl. 1, Div 1, Gr B, C & D), as per IS 2148-2004 (IEC-60079:2001) & W/p to IP 66 as per IS12063-1987 (equivalent to NEC CL.1, Gr.C & D).	С



Table V : Type of Micro Switch

DESCRIPTION	CODE	AVAILABILITY	A.C.RATING		D.C.RATING	
		IN MODELS		Volt	Curren	t In du ativa
1 SPDT general purpose	100	GE/GD	54 250VAC	- 220	0.25Δ	
1-51 DT general porpose	100	01700	5/(-2004/10	110	0.50A	0.03/
				24	5 0A	3.00A
2-SPDT general purpose	200	GE/GD	5A-250VAC	220	0.25A	0.03A
2 of 2 i general perpese	200	01,00	0,1200,110	110	0.50A	0.07A
				24	5.0A	3.00A
1-SPDT-low switching	101	GF/GD/GA/DA	15A-250 VAC	220	0.2A	0.03A
differential				110	0.4A	0.03A
				24	2.0A	1.00A
2-SPDT-low switching	201	GF/GD/GA/DA	15A-250VAC	220	0.2A	0.03A
differential				110	0.4A	0.03A
				24	2.0A	1.00A
1-SPDT-General Purpose	102	GF/GD/GA/DA	5A-250VAC	220	0.25A	0.1A
				110	0.5A	0.2A
				24	8A	7A
2-SPDT-General Purpose	202	GF/GD/GA/DA	5A-250VAC	220	0.25A	0.1A
				110	0.5A	0.2A
				24	8A	7A
SPDT-General Purpose	103	GF/GD/GA/DA	15A-250VAC	220	0.25A	0.1A
				110	0.5A	0.2A
			154.0500/40	24	8A	/A
2-SPD1-General Purpose	203	GF/GD/GA/DA	15A-250VAC	220	0.25A	0.1A
				110	0.5A	0.2A
1 SPDT Variation	104		104 250 VAC	24		/A 0.024
1-SFD1- very low	104	GF/GD	10A-250 VAC	110	0.2A	0.03A
switching differential				24	2 04	1 004
2-SPDT- Very low	204	GE/GD	10A-250 VAC	220	0.2A	0.034
switching differential	201	01700	10/(200 //(0	110	0.4A	0.03A
stillering anotorinal				24	2.0A	1.00A
SPDT-Gold Contact	105	GF/GD/GA/DA	1A-250VAC	N/A	21073	
2-SPDT-Gold Contact	205	GF/GD/GA/DA	1A-250VAC	N/A		
SPDT-General Purpose	106	GF/GD/GA/DA	10A-250VAC	30	6A	6A
2-SPDT-General Purpose	206	GF/GD/GA/DA	10A-250VAC	30	6A	6A
1-DPDT.	107	GF/GD/GA/DA	10A-250 VAC	250	0.2A	0.01A
				125	0.3A	0.02A
				24	6.0A	1.00A
1-SPDT environmentally	108	GF/GD	5A-250VAC		Consult Factory	
sealed						
2-SPDT environmentally	208	GF/GD	5A-250VAC		Consult Factory	
sealed						
Any special requirement	XXX	N/A	N/A		N/A	

NOTE : For 2nos SPDT version +/-2% FSR variation can be observed between two micro switch change overs.



Table VI : Type of Electrical Entry

Please specify entry/gland as per the code given below. **SCCG** : Single compression cable gland **DCCG** : Double compression cable gland.

DESCRIPTION	W/P	CODE FLP(IIA/IIB)	FLP(IIC)
SCCG WSS	_	_	_
3/8"BSPF	W1S	F11	C11
³ / ₄ " ETF W11	FIS	C1S	0
1/2" BSPF	W12	F12	C12
1/2" NPTF	W13	F13	C13
³ /4" BSPF	W14	F14	C14
³ /4" NTPF	W15	F15	C15
³ / ₄ "ET DCCG Brass	WGA	FGA	CGA
3/4"ET DCCG SS	WGB	FGB	CGB
1/2"BSP DCCG Brass	WGC	FGC	CGC
1/2"BSP DCCG SS	WGD	FGD	CGD
1/2"NPT DCCG Brass	WGE	FGE	CGE
1/2"NPT DCCG SS	WGF	FGF	CGF
³ / ₄ "NPT DCCG Brass	WGG	FGG	CGG
3/4"NPT DCCG SS	WGH	FGH	CGH
3/4"BSP DCCG Brass	WGI	FGI	CGI
3/4"BSP DCCG SS	WGJ	FGJ	CGJ
4 Pin Connector*	4PC	-	-
7 Pin connector*	7PC	-	-

 a) On request SCCG-shall be provided for weather proof housing : use CODE as "WSS"

- b) For "double entry" please insert number "2" in middle position of the code. (e.g- CODE X2X)
- c) For "double entry" but one entry plugged insert letter "P" in middle position (e.g-CODE XPX).
- d) For flameproof enclosure entry is directly provided on the housing.
- e) Specify "99X" for any special requirement.
- f) *For 4 & 7 pin connector option please replace P by R for 47 Kohms resistor (Between two contacts).
- g) *For 4 & 7 pin connector option replace C by G for gold contacts.

Table VII : Sensor System (Diaphragm & Wetted Parts)

SS316L diaphragm with SS304 wetted parts & teflon sealSSI. Range code VP9, C18SS316L diaphragm with SS316 wetted parts & teflon sealSXCP5 wetted parts othe than SS304, SS316, SS316L are possible w Chemical seal.SXNeoprene diaphragm and Aluminium wetted parts with nitrile sealNASS316L are possible w Chemical seal.Silicone diaphragm and Aluminium wetted parts with teflon sealSA2 Range code CO2.CC	DESCRIPTION	CODE NOTE :	
EPDM diaphragm and Aluminium wetted parts with teflon sealEAViton diaphragm and Aluminium wetted parts with teflon sealVAMonel diaphragm with Monel wetted parts & teflon seal.MMHastelloy diaphragm with Hastelloy wetted parts & teflon seal.HHAny other special construction (Please specify complete details separately)XX	SS316L diaphragm with SS304 wetted parts & teflon seal SS316L diaphragm with SS316 wetted parts & teflon seal Neoprene diaphragm and Aluminium wetted parts with nitrile seal Silicone diaphragm and Aluminium wetted parts with teflon seal EPDM diaphragm and Aluminium wetted parts with teflon seal Viton diaphragm and Aluminium wetted parts with teflon seal Monel diaphragm with Monel wetted parts & teflon seal. Hastelloy diaphragm with Hastelloy wetted parts & teflon seal.	SS1. Range code VP9, C15 & CP5 wetted parts other than SS304, SS316, SS316L are possible with Chemical seal.SA2. Range code CO2,CO4, CO8, are possible with SS304, SS316, SS316L, Alu only.MM3. Wetted Parts can be prov confirming to NACEXXMR 01, 75 as antipade	ı vec

Table VIII : Type of Process Connection Required

XOA-AIU	MINUM X4S-SS30	04 X6S-SS316		
SIZE	BSP(F)	BSP(M)	NPT(F)	NPT(M)
1/4" 1/2"	10A 14S 16S 50A 54S 56S	20A 24S 26S	30A 34S 36S 70A 74S 76S	40A 44S 46S 80A 84S 86S
1/2	30/1 343 303	00/ 043 003	70/(743703	00/ 043 003

Special Mention 99X for selection other than the above

 $\frac{1}{4}$ " BSP (F) is standard. Any other connections will be provided with suitable adaptors.



Table IX : Calibration / Units

DESCRIPTION	CODE
Calibration in increasing pressure in kg/cm2	IK
Calibration in decreasing pressure in kg/cm2	DK
Calibration in increasing pressure in bar	IB
Calibration in decreasing pressure in bar	DB

For any other pressure units please specify IX - for increasing and DX - for decreasing

Table X : Accessories

ТҮРЕ	CODE
Snubber	S
Syphon	Y
Manifold	М
Chemical seal	С
SS Tag plate	Т
Surface Mounting bracket	В
2" Pipe mounting bracket	Р
Any other	Х
No accessory	0





Switching Differential Chart : Direct Pressure Switch, Fixed Differential

RANGE	AVAILABILITY IN SERIES	100	101	Micro 102	Switch (103	CODE 104	105	106
-0.9 to 0 kg/cm2 -0.9 to 1.5 kg/cm2 -0.5 to 0.5 kg/cm2 -200 to +200 mmWC -400 to +400 mmWC -800 to 0 mmWC	SS SS SS, SR SS, SR SS, SR SS, SR	0.20 0.20 0.20 90 150 200	0.10 0.10 0.10 100 100 150	0.40 0.40 - - -	0.40 0.40 0.40 - -	0.06 0.06 100 100 100	0.40 0.40 - - -	0.40 0.40 0.40 - -
20 to 200 mmWC 40 to 400 mmWC 50 to 500 mmWC 100 to 1000 mmWC 0.05 to 0.16 kg/cm2 0.08 to 0.4 kg/cm2 60 to 600 mBar	SS, SR SS, SR SS, SR SS, SR SS, SR SS, SR SS, SR	100 100 120 0.015 0.045 50	60 100 100 0.015 0.025 30	- - - 0.06 0.06 70	- - - 0.06 0.06 70	50 50 80 0.012 0.010 15	- - - 0.06 0.06 70	- - - 0.06 0.06 70
0.2 to 1 kg/cm2 0.2 to 2 kg/cm2 0.4 to 4 kg/cm2 0.6 to 6 kg/cm2 1.0 to 10 kg/cm2 1.5 to 15 kg/cm2 2.0 to 20 kg/cm2 2.0 to 25 kg/cm2 4.0 to 40 kg/cm2 10 to 100 kg/cm2 10 to 100 kg/cm2 20 to 200 kg/cm2 20 to 200 kg/cm2 25 to 250 kg/cm2 35 to 350 kg/cm2	SS, SR SS SS SS SS SS SS SS SS SS SS SS SS S	0.15 0.20 0.40 0.50 0.70 1.00 2.00 3.00 3.00 5.00 7.00 8.00 9.00 10.0 15.0	0.080 0.10 0.30 0.40 0.60 0.80 1.20 1.50 1.50 3.00 4.00 5.00 6.00 7.00 12.00	0.30 0.40 0.50 0.60 2.00 3.00 4.00 4.00 7.00 8.00 9.00 11.00 12.00 20.00	0.30 0.40 0.50 0.60 2.00 3.00 4.00 4.00 7.00 8.00 9.00 11.00 12.00 20.00	0.05 0.05 0.10 0.20 0.40 0.60 1.00 1.50 1.50 2.00 3.00 4.00 5.00 6.00	0.30 0.40 0.50 0.60 0.80 2.00 3.00 4.00 4.00 7.00 8.00 9.00 11.00 12.00	0.30 0.40 0.50 0.60 2.00 3.00 4.00 4.00 7.00 8.00 9.00 11.00 12.00

NOTE :

1. Switching differential for 2SPDT & flameproof is 1.5 times that of 1SPDT

2. Switching differentials are nominal maximum values at mid-point and change along the set points



Switching Differential Chart : Direct Pressure Switch, Adjustable Differential

RANGE	AVAILABILITY IN SERIES	101	106		
-0.9 to 0 kg/cm2 -0.9 to 1.5 kg/cm2 -0.5 to 0.5 kg/cm2 -200 to +200 mmWC -400 to +400 mmWC -800 to 0 mmWC	SS SS SS, SR SS, SR SS, SR SS, SR	0.1-0.4 0.1-0.4 0.1-0.4 100-200 100-300 200-500	0.4-0.8 0.4-0.8 0.4-0.8 - -	0.4-0.8 0.4-0.8 0.4-0.8 - -	0.4-0.8 0.4-0.8 0.4-0.8 - -
20 to 200 mmWC 40 to 400 mmWC 50 to 500 mmWC 100 to 1000 mmWC 0.05 to 0.16 kg/cm2 0.08 to 0.4 kg/cm2 60 to 600 mBar	SS, SR SS, SR SS, SR SS, SR SS, SR SS, SR SS, SR	60-100 100-300 100-300 100-500 0.02-0.06 0.05-0.06 30-60	- - - 0.08-0.2 90-300	- - - - 0.08-0.2 90-300	- - - - 0.08-0.2 90-300
0.2 to 1 kg/cm2 0.2 to 2 kg/cm2 0.4 to 4 kg/cm2 0.6 to 6 kg/cm2 1.0 to 10 kg/cm2 1.5 to 15 kg/cm2 2.0 to 20 kg/cm2 2.0 to 25 kg/cm2 4.0 to 40 kg/cm2 10 to 100 kg/cm2 10 to 160 kg/cm2 20 to 200 kg/cm2 25 to 250 kg/cm2	SS, SR SS SS SS SS SS SS SS SS SS SS SS SS S	0.08-0.30 0.1-0.3 0.3-1 0.4-2 0.6-2 0.8-3 1.2-5 1.5-6 1.5-6 3-6 4-8 5-8 6-10 7-10	0.3-0.6 0.4-1 0.5-2 0.6-3 1-5 2-8 3-12 4-12 5-25 7-30 8-50 10-80 12-100 50-150	0.3-0.6 0.4-1 0.5-2 0.6-3 1-5 2-8 3-12 4-12 5-25 7-30 8-50 10-80 12-100 50-150	0.3-0.6 0.4-1 0.5-2 0.6-3 1-5 2-8 3-12 4-12 5-25 7-30 8-50 10-80 12-100 50-150



Switching Differential Chart : Differential Pressure Switch, Fixed Differential

RANGE	AVAILABILITY IN SERIES	100	101	Micro 102	Switch (103	CODE 104	105	106
-0.9 to 0 kg/cm2 -0.9 to 1.5 kg/cm2 -0.5 to 0.5 kg/cm2 -200 to +200 mmWC -400 to +400 mmWC -800 to 0 mmWC	DS DS DS, DR DS, DR DS, DR DS, DR	0.20 0.20 0.20 90 150 200	0.10 0.10 0.10 100 100 150	0.40 0.40 0.40 - -	0.40 0.40 0.40 - -	0.06 0.06 100 100 100	0.40 0.40 0.40 - -	0.40 0.40 0.40 - -
20 to 200 mmWC 40 to 400 mmWC 50 to 500 mmWC 100 to 1000 mmWC	DS, DR DS, DR DS, DR DS, DR	100 100 100 120	60 100 100 100	- - -	- - -	50 50 50 80	- - -	- - -
0.05 to 0.16 kg/cm2 0.08 to 0.4 kg/cm2 60 to 600 mBar 0.2 to 1 kg/cm2 0.2 to 2 kg/cm2 0.4 to 4 kg/cm2 0.6 to 6 kg/cm2 1.0 to 10 kg/cm2	DS, DR DS, DR DS, DR DS, DR DS DS DS DS DS	0.015 0.045 50 0.15 0.20 0.40 0.50 0.70	0.015 0.025 30 0.080 0.10 0.30 0.40 0.60	0.06 0.06 70 0.30 0.40 0.50 0.60 0.80	0.06 0.06 70 0.30 0.40 0.50 0.60 0.80	0.012 0.010 15 0.05 0.05 0.10 0.20 0.40	0.06 0.06 70 0.30 0.40 0.50 0.60 0.80	0.06 0.06 70 0.30 0.40 0.50 0.60 0.80

Switching Differential Chart : Differential Pressure Switch, Adjustable Differential

RANGE	AVAILABILITY IN SERIES	Micro Switch CODE 101 102 103 104				
-0.9 to 0 kg/cm2 -0.9 to 1.5 kg/cm2 -0.5 to 0.5 kg/cm2 -200 to +200 mmWC -400 to +400 mmWC -800 to 0 mmWC 20 to 200 mmWC 40 to 400 mmWC 50 to 500 mmWC	DS DS DS, DR DS, DR DS, DR DS, DR DS, DR DS, DR	0.1-0.4 0.1-0.4 100-200 100-300 200-500 60-100 100-300 100-300	0.4-0.8 0.4-0.8 0.4-0.8 - - - - - -	0.4-0.8 0.4-0.8 0.4-0.8 - - - -	0.4-0.8 0.4-0.8 0.4-0.8 - - - - -	
0.05 to 0.16 kg/cm2 0.08 to 0.4 kg/cm2 60 to 600 mBar	DS, DR DS, DR DS, DR DS, DR	0.02-0.06 0.05-0.06 30-60	- - 0.08-0.2 90-300	- 0.08-0.2 90-300	- - 0.08-0.2 90-300	
0.2 to 1 kg/cm2 0.2 to 2 kg/cm2 0.4 to 4 kg/cm2 0.6 to 6 kg/cm2 1.0 to 10 kg/cm2	DS, DR DS DS DS DS	0.08-0.30 0.1-0.3 0.3-1 0.4-2 0.6-2	0.3-0.6 0.4-1 0.5-2 0.6-3 1-5	0.3-0.6 0.4-1 0.5-2 0.6-3 1-5	0.3-0.6 0.4-1 0.5-2 0.6-3 1-5	