

## Differential pressure gauge – switch Model 106D

Switzer data sheet DPG-106D

### Applications

- Monitoring and control of pumps
- Filter monitoring
- Level measurement in closed tanks

### Special features

- Differential pressure measuring range from 0 ... 25 bar
- Diaphragm sensor
- Weatherproof
- High working pressure
- 270 deg pointer travel
- High-low switching
- Dual scale for flow monitoring



Differential pressure gauge, model 106D

106D Differential pressure gauge are diaphragm operated to ensure reliable indication of pressure difference between two inputs.

High and low pressures are applied on either side of a diaphragm. The resultant deflection is transferred to the gauge case through a unique motion – transfer mechanism and a SS movement. The diaphragm displacement is kept minimum to achieve high

repeatability. The pointer movement and dial are fitted in a weatherproof SS case. Snubbers are part of the process connections, which protect the instrument from process pressure fluctuations.

High and low switching for alarm can be provided with adjustable cam mechanism to actuate one or two microswitches. The diaphragm is protected fully from over pressure through a seal valve assembly.

## Standard version

### Case

304 SS

### Dial nominal size in mm

150

### Dial

Aluminium, white, black lettering

### Scale

Linear, square root or both

### Window material

Toughened safety float glass

### Accuracy class (includes linearity)

Range	Standard		Optional	
	Indicator without switch	Indicator with switch	Indicator without switch	Indicator with switch
Low	± 1 %	± 1.5 %	N/A	N/A
High	± 1.5 %	± 2 %	± 1 %	± 1.5 %

### Scale ranges

0 ... 25 mbar to 0 ... 400 mbar (measuring cell dia 148)

0 ... 0.6 bar to 0 ... 25 bar (measuring cell dia 88)

### Maximum working pressure

- 60 Bar (standard)

### Over range protection

Through built-in seal valve

### Permissible ambient temperature

-20 ... +70°C

### Permissible medium temperature

- 120°C with Buna-N sealing
- 205°C with Viton sealing
- 150°C with EPDM sealing

For higher temperatures use adequate length of impulse piping.

### Temperature effect

When the temperature of the measuring system deviates from the reference temperature 30 deg C; maximum ±0.5% / 10K of full scale value

### Ingress protection

IP66 per IEC 60529 category-2

### Zero adjustment

Via micrometer pointer

### Process element

SS 316 Ti diaphragm for low ranges

Inconel-718 diaphragm for high ranges

### Sealings (wetted)

Buna-N

### Measuring cell

316 SS

### Movement

Stainless steel (non-wetted)

### Process entries

Sides (standard)

### Process connection

1/4" NPTF Std (through snubber)

### Drain and vent

Standard

### Mounting

- Flush panel (standard)

### Alarm switching (optional)

Snap acting SPDT microswitch

### No. of switches

- One (for high or low)
- Two (one for high and one for low)
- DPDT action with two switches (either high or low)

### Switch rating

- 5A, AC 250 V
- 3A, DC 24 V

### Switch setting

Adj. between 10% and 90% of FSR

### Switching differential

- Fixed within 8% of FSR for 1 switch
- Fixed within 12% of FSR for 2 switches

### High-low gap (min.)

15% of FSR between two switches

### Electrical connection

DIN 43650 plug

### Calibration

Calibration is as per ANSI/ASME B40.1 Clause 6.2.3

## Range table

### Low ranges

Range code	Range in mbar	Range code	Range in mmWC
M13	0 ... 25	W12	0 ... 250
M14	0 ... 40	W15	0 ... 400
M16	0 ... 60	W83	0 ... 600
M18	0 ... 100	W21	0 ... 1000
M22	0 ... 160	W24	0 ... 1600
M24	0 ... 250	W26	0 ... 2500
M28	0 ... 400	W30	0 ... 4000
M56	-12.5 ... 12.5	W47	-125 ... 125

### High ranges

Range code	Range in bar	Range code	Range in Kg/Cm <sup>2</sup>
B81	0 ... 0.6	K20	0 ... 0.6
B04	0 ... 1.0	K23	0 ... 1.0
B77	0 ... 1.25	K63	0 ... 1.25
B05	0 ... 1.6	K24	0 ... 1.6
B06	0 ... 2	K26	0 ... 2
B07	0 ... 2.5	K27	0 ... 2.5
B08	0 ... 3.5	K28	0 ... 3.5
B56	0 ... 4	K29	0 ... 4
B09	0 ... 5	K59	0 ... 5
B57	0 ... 6	K30	0 ... 6
B78	0 ... 8	K64	0 ... 8
B11	0 ... 10	K32	0 ... 10
B79	0 ... 12	K65	0 ... 12
B58	0 ... 16	K35	0 ... 16
B12	0 ... 20	K36	0 ... 20
B59	0 ... 25	K37	0 ... 25
B03	-0.5 ... 0.5	K07	-0.5 ... 0.5
B86	-1.0 ... 1.0	K06	-1.0 ... 1.0
B87	-2.0 ... 2.0	K05	-2.0 ... 2.0

## Ordering matrix

Differential pressure gauge	106D									
<b>Scale ranges</b>										
Refer range table		□								
<b>Standard accuracy class</b>										
<b>Indicator without switch</b>										
± 1% span for low ranges and ±1.5% span for high ranges									E	
<b>Indicator with switch</b>										
± 1.5% span for low ranges and ±2% span for high ranges									F	
<b>Option – accuracy class for high ranges</b>										
± 1% span without switch									G	
± 1.5% span with switching									H	
<b>Sealing</b>										
Buna – N									B	
Viton®									V	
EPDM									E	
<b>Process entries</b>										
Sides (standard)									1	
Bottom (optional)									2	
<b>Process connection</b>										
1/4" NPTF standard through snubber									S1	
1/2" NPTF through snubber									S2	
Others through adaptor									S3	
<b>Switching</b>										
None									0	
One SPDT microswitch - for high or low									1	
Two SPDT microswitches - one for high and one for low									2	
DPDT action with two switches either for high or low									3	
<b>Mounting</b>										
Panel mounting (standard only with 304 SS stud and nut)									P	
Suitable for pipe mounting with brackets, 'U' bolt and nuts									2	
Wall mounting									W	
Universal mounting									U	
<b>Mounting material</b>										
Mild steel									C	
304 SS									4	
316 SS									2	
<b>Options *</b>										
Liquid filled dial (Glycerine) **									L	
Degreasing for oxygen service									SO	
Ammonia service									SA	
Blow-out-disc (not available for liquid filled dials)									S8	
Maximum working pressure 110 bar									S5	
Dual entry through DIN connector									N	
Single entry through 1/2" NPTF external terminal box									AE	
Dual entry through 1/2" NPTF external terminal box									NE	

\* If more than one option is required specify L, SO, ... etc.

\*\* Gauges with liquid filled dials:

Switching facility can be provided through an externally mounted differential pressure switch only

■ Diaphragm seals are not available.

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# Dimensions in mm

FIG.1 : 0 ... 600 mbar to 0 ... 25 bar ranges

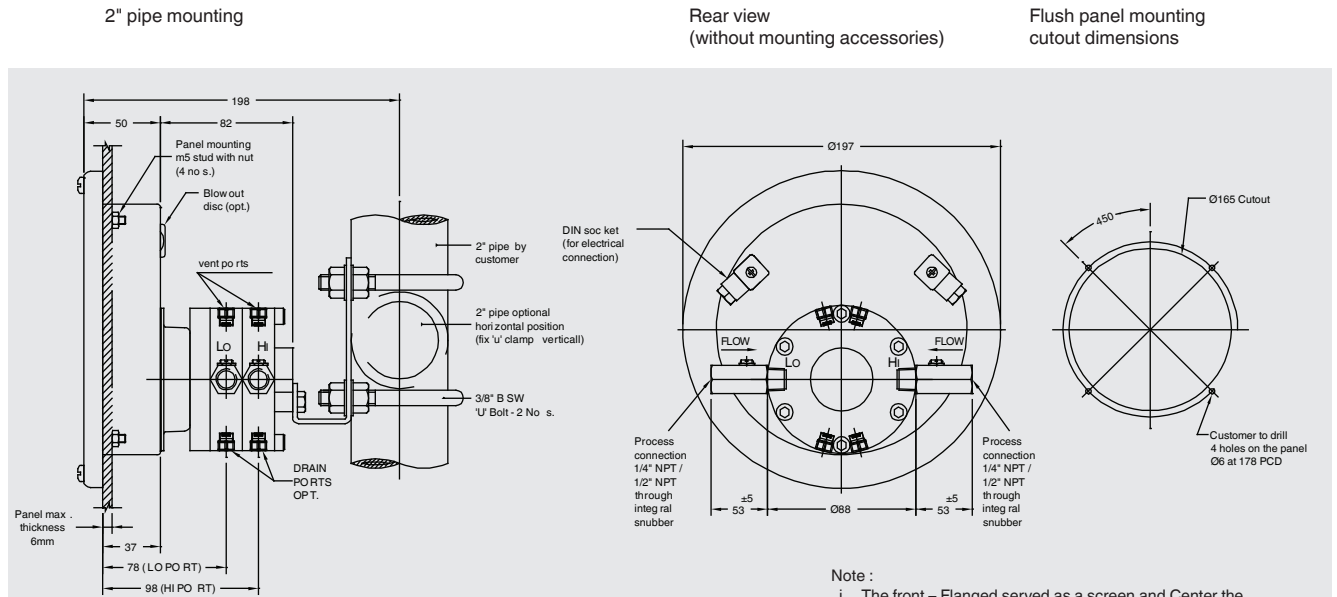
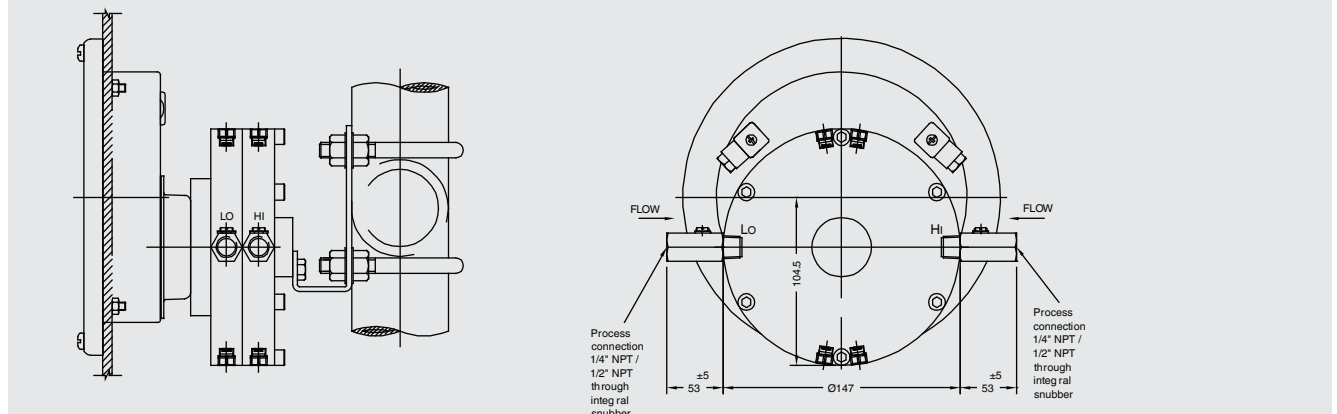


FIG.2: 0 ... 25 mbar to 0 ... 400 mbar ranges



- Note :
- The front – Flanged served as a screen and Center the instrument in the panel
  - The fitting and therefore the weight of the instrument have to do via the pressure connection.

## Ordering information

Scale ranges / Accuracy class / Sealing / Process entries / Process connection / Switching / Mounting / Mounting material / Options

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