Differential pressure gauge
Model 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

Description

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.

Specifications

Basic information	
Case	304 SS
Dial nominal size	150 mm
Dial	Aluminium, white, black lettering
Scale	Linear, square root or both
Window material	Toughened safety float glass

Accuracy class (includes linearity)	
Low range	■ ±1% for indicator without switch ■ ±1.5% for indicator with switch For glycerine and compound range ±2%.
High range	■ ±1.5% for indicator without switch (standard) ■ ±2% for indicator with switch (standard) ■ ±1% for indicator without switch ■ ±1.5% for indicator with switch For glycerine and compound range ±3%.

Output signal	
Scale ranges	■ Low range: 0 ... 25 mbar to 0 ... 400 mbar ■ High range: 0 ... 0.6 bar to 0 ... 25 bar
Maximum working pressure	60 Bar (standard)
Over range protection	130% of FSR through built-in seal valve
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
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)
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 (Inductive)
Switch setting	Adjustable between 10% and 90% of FSR
Switching differential	■ Fixed within 8% of FSR for one switch ■ Fixed within 12% of FSR for two switches
Electrical connection	DIN 43650 plug
Calibration	Calibration as per ANSI / ASME B40.1 Clause 6.2.3

Process connection	
Connection type	■ Sides (standard) ■ Bottom
Thread size	1/4" NPT(F) per ASME B1.20.1 standard (through snubber)
Drain and vent	Possible for side entry only

Operating condition	
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.
Mounting	Flush panel (standard)
Ingress protection	IP66 per IEC 60529 category-2

Range table

Low ranges

Range code	Range in mbar	Range code	Range in mmWC
M013	0 ... 25	W012	0 ... 250
M014	0 ... 40	W015	0 ... 400
M016	0 ... 60	W083	0 ... 600
M018	0 ... 100	W021	0 ... 1000
M022	0 ... 160	W024	0 ... 1600
M024	0 ... 250	W026	0 ... 2500
M028	0 ... 400	W030	0 ... 4000
M056	–12.5 ... 12.5	W047	–125 ... 125
		W008	–500 ... 500

High ranges

Range code	Range in bar	Range code	Range in Kg/Cm²
B081	0 ... 0.6	K020	0 ... 0.6
B004	0 ... 1.0	K023	0 ... 1.0
B077	0 ... 1.25	K063	0 ... 1.25
B005	0 ... 1.6	K024	0 ... 1.6
B006	0 ... 2	K026	0 ... 2
B007	0 ... 2.5	K027	0 ... 2.5
B008	0 ... 3.5	K028	0 ... 3.5
B056	0 ... 4	K029	0 ... 4
B009	0 ... 5	K059	0 ... 5
B057	0 ... 6	K030	0 ... 6
B078	0 ... 8	K064	0 ... 8
B011	0 ... 10	K032	0 ... 10
B079	0 ... 12	K065	0 ... 12
B058	0 ... 16	K035	0 ... 16
B012	0 ... 20	K036	0 ... 20
B059	0 ... 25	K037	0 ... 25
B003	– 0.5 ... 0.5	K007	– 0.5 ... 0.5
B086	– 1.0 ... 1.0	K006	– 1.0 ... 1.0
B087	– 2.0 ... 2.0	K005	– 2.0 ... 2.0

Certificate (option)

NACE Compliance per MR0175, MR0103 (for wetted parts only)

Ordering matrix

Differential pressure gauge	**106D**													
Scale ranges														
Refer range table	□													
Accuracy class														
± 1% span for low / high ranges without switch		**0E**												
± 1.5% span for low / high ranges with switch		**0F**												
± 1.5% span for high ranges without switch		**0F**												
± 2% span for low ranges with glycerine filled		**0F**												
± 2% span for high ranges with switch		**0D**												
± 3% span for high ranges with glycerine filled		**0D**												
Sealing														
Buna – N			**OB**											
Viton®			**OV**											
EPDM			**OE**											
Process entries														
Sides				**1**										
Bottom				**2**										
Process connection														
1/4" NPT(F) per ASME B1.20.1 standard through snubber					**S1**									
1/2" NPT(F) per ASME B1.20.1 through snubber					**S2**									
Others through adaptor					**S3**									
1/2" NPT(M) per ASME B1.20.1 through snubber					**54**									
Switching														
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**								
Mounting														
Front panel mounting (304 SS stud with nut as standard)							**P**							
Wall mounting							**W**							
Universal mounting							**U**							
Suitable for pipe mounting with brackets, 'U' bolt and nuts							**2**							
Mounting material (not applicable for panel mounting)														
Mild steel								**C**						
316 SS								**2**						
Liquid filling														
None									**0**					
Glycerine									**L**					
Type of service														
General service										**ZZ**				
Degreasing for oxygen service										**SO**				
Ammonia service										**SA**				
Nuclear service										**SN**				
Pressure relief														
Without blow-out-disc											**ZZ**			
Blow-out-disc (not available for liquid filled dials)											**S8**			
Maximum working pressure														
60 bar												**ZZ**		
110 bar												**S5**		
Electrical entry														
Without switch														**ZZ**
Single entry through DIN connector														**0**
Dual entry through DIN connector														**N0**
Single entry through 1/2" NPT(F) per ASME B1.20.1 external terminal box														**AE**
Dual entry through 1/2" NPT(F) per ASME B1.20.1 external terminal box														**NE**

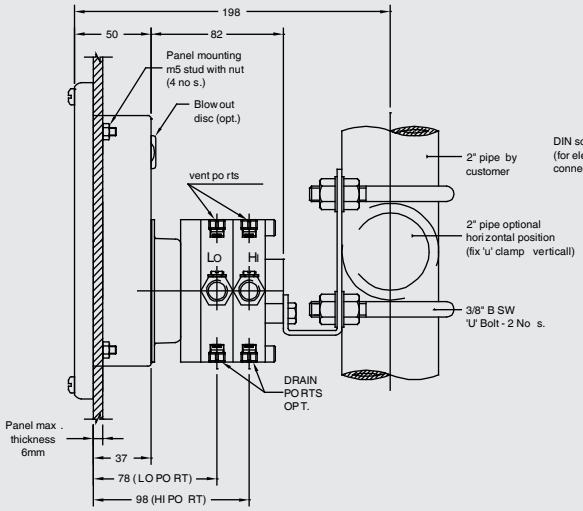
■ Diaphragm seal available for 0.6 ... 2.5 bar with accuracy 3%. Maximum working pressure limited to flange rating.

Viton® is a registered trademark of DuPont Dow Elastomers

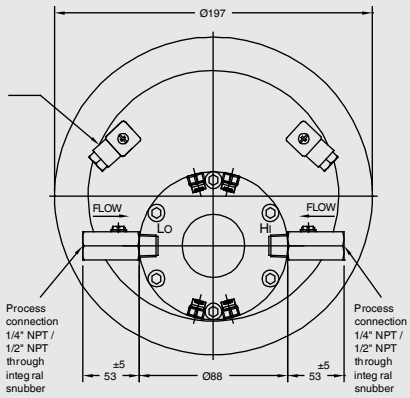
Dimensions in mm

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

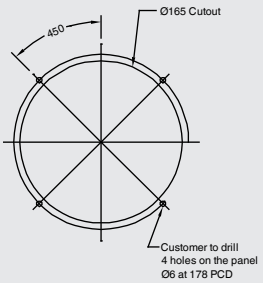
2" pipe mounting



Rear view
(without mounting accessories)



Flush panel mounting
cutout dimensions

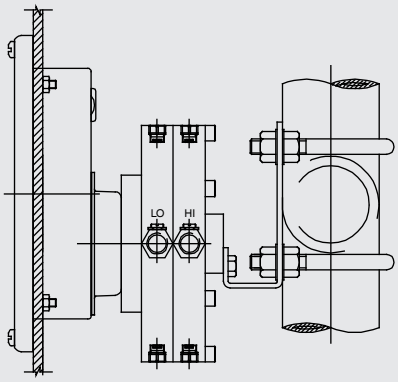


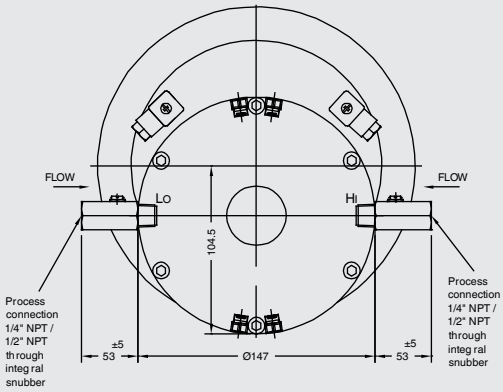
Note :

i. The front – Flanged served as a screen and Center the instrument in the panel

ii. The fitting and therefore the weight of the instrument have to do via the pressure connection.

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





Ordering information

Model / Scale ranges / Accuracy class / Sealing / Process entries / Process connection / Switching / Mounting / Mounting material / Liquid filling / Type of service / Pressure relief / Maximum working pressure / Electrical entry

WIKA Instruments India Pvt. Ltd.
128 SIDCO North Phase
Ambattur Industrial Estate, Chennai 600 098
Tel. +91 44 2625 2017 / 2018 / 9840919318
switch.sales@wika.com
www.wika.co.in