

PBG - Robust Liquid Filled - Equipment and Industrial Gauges

For heavy duty service where vibration or pulsation of medium would cause excessive wear on a dry gauge or where corrosive ambient conditions prevail. Specific application examples are hydraulic equipment, mining equipment and irrigation equipment.

Case

Case: 304 stainless steel
 Bezel: 304 stainless steel
 Window: extruded acrylic sheet
 Seal: neoprene
 Dampening fluid: glycerine (options available)

Configurations

A B D E F U V

Nominal Sizes

mm 63 100
 Imp 2 1/2" 4"

Internals

Socket: brass
 Bourdon tube: bronze
 Movement: brass
 Dial: aluminium, white with black numerals
 Pointer: aluminium, black anodised

Connections

1/8" + 1/4" (BSP - NPT - BSPT) Options 3/8" + 1/2"
 (bottom and lower-back)

Options

Polished case and bezel; Stainless steel wetted parts; Centre-back connection - brass only

Maximum Range

60 MPa



Accuracy

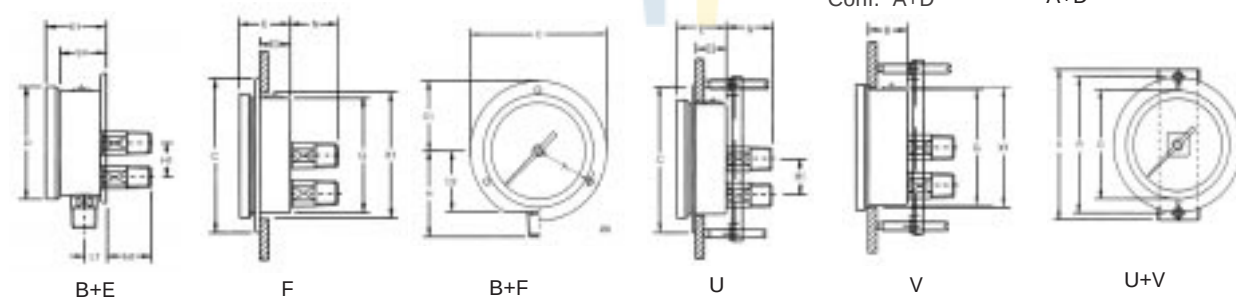
1,6% FSD

Temperature Range

Ambient temperature -25°C to +60°C

Note: minimum temperature should not be less or equal to the freezing point of the process fluid

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Nominal size

Dimensions (X is panel cut-out diameter)

	A	B	C	C1	C2	D	E	E1	E3	E4	G	H	H1	L	L1	N	N1	O	R	S	X1
Metric																					
Imperial																					
63mm	37,00	22,00	85,00	42,50	36,50	69,00	29,00	33,00	22,00	25,50	62,00	60,00	16,50	9,00	13,00	27,00	23,00	3,50	68,00	77,00	63,50
2 1/2"	1,48	0,87	3,35	1,67	1,44	2,72	1,14	1,30	0,87	1,01	2,44	2,36	0,65	0,35	0,51	1,06	0,91	0,14	2,68	3,03	2,50
100mm	58,00	22,00	133,00	66,50	56,00	108,50	29,00	34,00	22,00	24,00	99,50	77,50		9,00	13,00	23,50	23,00	5,00	110,00	122,00	101,00
4"	2,28	0,87	5,24	2,62	2,20	4,27	1,14	1,34	0,87	0,95	3,92	3,05		0,35	0,51	0,93	0,91	0,20	4,33	4,80	3,98

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PBB - Stainless Steel Case and Bezel

This gauge is ideally suited to most industrial applications where high accuracy and durability is required.

Gauges are available with either brass/bronze internals, all stainless steel internals, or Monel Bourdon tube and socket with stainless steel movement.

All gauges are retro-fillable and totally repairable. A number of optional accessories are available either as factory fitted or retro-fitted.

(Conforming to military specification) the high impact movement protects against entanglement of the hairspring in the pinion and segment - the most common cause of gauge failure.

Case

Polished 304 stainless steel

Bezel

Polished 304 stainless steel

Blow-Out Disc

Top blow out (compensating optional)

Configuration

A B D E F U V

Mountings

Direct, surface or panel mounting



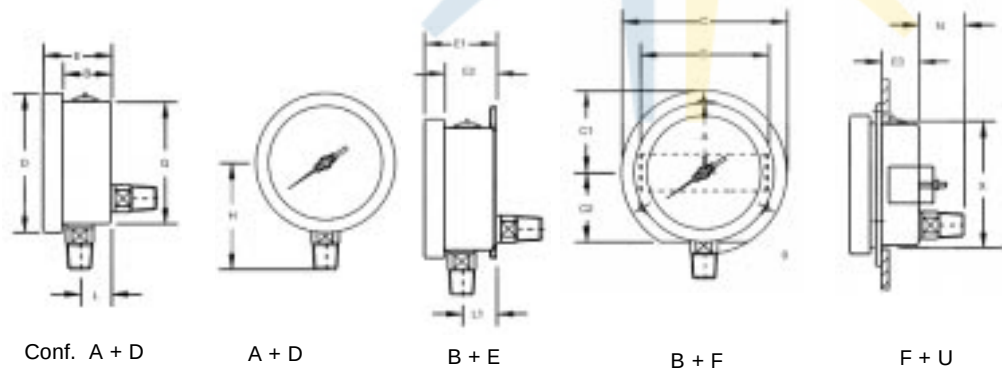
Nominal Sizes

mm	63	100	150
Imp	2 1/2"	4"	6"

Nett Mass

	63mm	100mm	150mm
Dry	155g	556g	850g
Glycerine filled	230g	816g	1 750g

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Nominal size	Dimensions (X is panel cut-out diameter)																		
Metric	A	B	C	C1	C2	D	E	E1	E2	E3	G	H	S	L	L1	N	O	X	
Imperial																			
63mm	37,50	22,70	85,00	42,50	36,00	69,60	32,50	35,70	27,20	22,00	62,00	60,00	66,50	9,00	13,00	27,00	3,50	63,50	
2 1/2"	1,48	0,89	3,35	1,67	1,42	2,74	1,28	1,41	1,07	0,87	2,44	2,36	2,62	0,35	0,51	1,06	0,14	2,50	
100mm	57,50	39,00	133,00	66,50	56,50	112,60	55,00	57,50	41,70	29,70	99,00	86,00	106,00	18,70	21,90	38,00	4,80	101,00	
4"	2,26	1,54	5,24	2,62	2,22	4,43	2,17	2,26	1,64	1,17	3,90	3,39	4,17	0,74	0,86	1,49	0,19	3,98	
150mm	84,00	29,00	196,00	98,00	86,00	155,00	56,00	59,00	32,00	28,00	140,00	108,00	146,00	17,00	18,00	38,00	5,80	142,00	
6"	3,30	1,14	7,72	3,85	3,38	6,10	2,20	2,32	1,26	1,10	5,51	4,25	5,75	0,67	0,71	1,49	0,23	5,60	

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Process Gauges

Liquid Fillable Process Gauges with Brass, Stainless Steel or Monel Wetted Parts

PBB - stainless steel case and bezel

PBZ - colour coded case and bezel

PBX - colour coded, solid front safety pattern case

Features Common to all Control Instruments Process Gauges

Window

Acrylic as standard (safety glass optional)

Seal

Nitrile (natural rubber for silicon fills)

Dampening Fluid

Glycerine, silicon or halocarbon (for oxidising services)

Socket and Bourdon Tube

Code:	SS	BB	MM
Socket:	316L	brass	Monel 400
Bourdon tube:	316Ti	bronze	K-Monel

Movement

Code:	SS / MM	BB
	300 series stainless steel	brass/ nickel silver
	high impact movement	high impact movement

Dial

Dished aluminium, black lettering on white background

Pointer

Black aluminium, micrometer adjustable

Connections

1/4" + 3/8" + 1/2" (NPT - BSP)
Other connections available on request

Maximum Range

Vacuum through 100 MPa
Higher ranges available on request

Snubbing

Snubbing / throttle screws available in brass and stainless steel

Accuracy

100mm & 150mm	0,5% FSD (SABS 1062)
	1,0% FSD (25 MPa upward)
63mm	1% FSD

Temperature Range

Ambient temperature -25°C to +60°C.
Note: minimum temperature should not be less or equal to the freezing point of the process fluid. Higher temperatures can be accommodated with heat reducing devices.

Approvals

SABS 1062 (1985) for 100mm and 150mm.



SABS 1062 -
1985



NLA



SABS: ISO
9001 QUALITY
SYSTEMS

Feature Highlights

0,5% accuracy

Adjustable micrometer pointer as standard

Calibration without removal of dial / pointer / back plate

All bushed high impact movement (100mm & 150mm)

Field liquid fillable

Limited 3 year warranty on materials and workmanship

Threaded for retro-fit snubber / throttle screw

Fully repairable

Retro-fit electrical contacts

SABS 1062 (1985) for 100mm and 150mm

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Corrosion Chart

The medium being measured must be compatible with the wetted parts of the pressure gauge. To use the chart below, locate the medium whose pressure is to be measured and select a pressure element from the available materials.

This is a simplified chart and assumes the medium temperature is below 100°C except for media with a “*” which must be below 50°C. Throttling devices and/or a liquid filled gauge should be used in applications with pulsation or vibration.

These recommendations are only a guide, as service life is dependent on temperature, concentrations, catalysts that may be added, or other conditions beyond our control. Consult factory for specific applications and for any services not listed.

Media application	Bourdon tube or bellows material				
	brass or bronze	steel	AISI 316 stainless steel	Monel	diaphragm seals**
acetone *	•		•	•	
acetic acid <40%			•		
acetic anhydride					•
acetylene (dry)		•	•		
acrolein 100%					•
air	•	•	•	•	
alcohol, ethyl	•		•	•	
alum, chloride >10%					•
alum, sulphate 10-50%			•		
ammonia gas (dry)		•	•		
ammonium chloride <40%					•
ammonium nitrate <50%			•		
ammonium sulphate <60%					•
aniline >99%			•		
argon	•	•	•	•	
beer			•		•
benzidine >99%					•
benzene <50%			•	•	
benzoic acid <70%			•		
boric acid <25%			•		
bromine (dry)					•
butane	•	•	•	•	
butyric acid <10%			•		
calcium chloride <80%					•
calcium hydroxide <50%					•
carbon dioxide	•	•	•	•	
carbon monoxide >99%	•	•	•		
chlorine (dry)					•
chlorine (moist)*					•
chloroform (dry)			•	•	
chromic acid					•
citric acid 10-50%			•		
corn oil			•		
crude oil (sour)				•	
crude oil (sweet)			•	•	
ethyl acetate	•	•	•	•	
ethylene oxide >99%	•	•	•	•	
ferric chloride <40%					•
ferric sulfate <10%*			•		
ferrous chloride <30%					•
ferrous sulfate <50%					•
fluorine gas (dry)			•	•	
formaldehyde <95%			•	•	
formic acid*					•
freons		•	•		
furfural <10%					•
gasoline			•		
glycerine >99%	•	•	•	•	
hydrobromic acid					•

Media application	Bourdon tube or bellows material				
	brass or bronze	steel	AISI 316 stainless steel	Monel	diaphragm seals**
hydrochloric acid					•
hydrofluoric acid				•	•
hydrofluosilic acid					•
hydrogen (2)	•		•		
hydrogen peroxide <50%			•		
kerosene	•	•	•	•	
lactic acid <70%*			•		
magnesium chloride <40%					•
mercuric chloride <60%					•
mercury >99%		•	•		
milk			•		•
naphtha >99%	•	•	•	•	
naphthalene >99%			•		
nickel chloride >99%					•
nitric acid <95%*			•		
nitrogen	•	•	•	•	
oleic acid	•		•		
oxalic acid*					•
oxygen (gas) (1)	•		•	•	
pamitic acid >99%*			•		
phosphoric acid <80%*			•		
picric acid <10%			•		
propane (dry)		•	•	•	
sea water (flowing)				•	
silver nitrate <70%					•
sodium bicarbonate <20%			•	•	
sodium bisulfate <30%					•
sodium carbonate <40%				•	
sodium chromate <60%	•	•	•	•	
sodium cyanide*		•	•		
sodium hydroxide <40%*			•	•	
sodium hypochlorite <25%*					•
sodium phosphate, tri<60%		•	•	•	
sodium silicate		•	•	•	
sodium sulphide <50%					•
stannous chloride <10%			•		
steam (use siphon)	•	•	•	•	
stearic acid			•	•	
sulphur dioxide (dry)>99%					•
sulphur trioxide (dry)>99%					•
sulphurous acid					•
tannic acid <80%*	•	•	•	•	
tartaric acid <50%			•	•	
tin chloride (ous) <10%			•		
toluene >99%	•	•	•	•	
turpentine >98%	•	•	•	•	
water	•		•	•	
whiskey			•		
zinc chloride <25%*					•
zinc sulphate <40%					•

Notes

(1) bronze, Monel and AISI 316 stainless steel are acceptable for oxygen service, provided the gauge has been cleaned for oxygen service and is free from oil.

(2) over 6 000 kPa (1 000 psi) - entire system must be AISI 316 stainless steel.

*below 50°C

**any standard bourdon tube or bellows material may be used in conjunction with a diaphragm seal (with bellows use a Vitron diaphragm) but the gauge selection should take into consideration the corrosive external environment in which it is to operate. For diaphragm requirements, please contact your nearest sales office or the factory.