

# Capsule Low Pressure Gauge

Measuring Instrument  
**ISO 9000**  
 HAWK GAUGE CO.,LTD

## Options

Front Flange Case **ZF**

Back Flange Case **ZB**

316SS Case **Z3**

**ZU** Stainless Steel U-Clamp Bracket

Disc Blow Out Back **ZD**

**ZC** Certificate of Accuracy (Factory)

**ZE** Certificate of Accuracy (TAF)

**ZI** Certificate of Accuracy (NIST)

**ZN** NACE-MR0175-2002 Heat Treatment

**ZX** Cleaned for Oxygen Service (Use No Oil)

**ZT** Tempered Safety Glass Lens

Stop Pin at 6 O'clock **OM**

**ZL** Laminated Safety Glass Lens

Stop Pin **OP**

**ZP** Polycarbonate Lens

**OD** 3 O'clock Connection

**OF** 12 O'clock Connection

**OE** 9 O'clock Connection

**07** Green Set Hand (Window)

**06** Red Set Hand (Window)

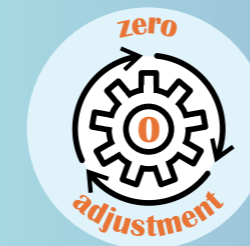
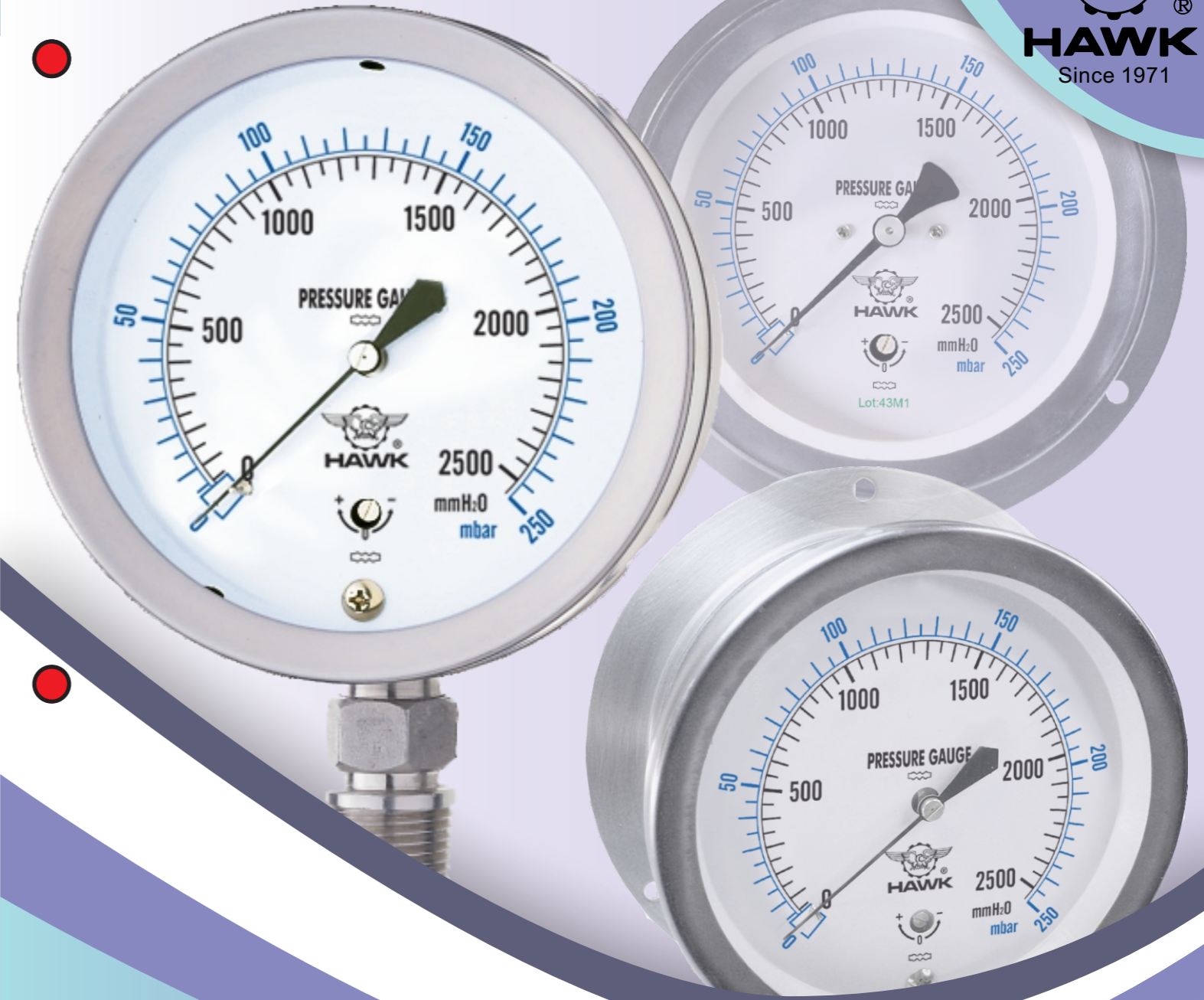
**0A** Red Set Hand (Dial)

**04** Green Set Hand (Dial)

**ZV** Rubber Cover

**ZY** Stainless Steel Tag Plate

Brochure No:  
**MKBP1D01A1**



# CAPSULE Low Pressure Gauge

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## Introduction

## Features

The capsule system pressure gauge is designed to measure the low pressure from 6inH<sub>2</sub>O to 15PSI. The operation is based on the principle of deformation of an elastic and circular-shaped capsule chamber. This capsule element consists two circular-shaped and convoluted membranes which are soldered or welded tight around their circumference. The capsule chamber expands by subjecting to pressure. This expansion is converted into the rotary motion of the pointer by an amplifying movement. This smooth motion let the users read the pointer indicating of the scale easily.

### Process Media

The capsule element pressure gauges are particularly suitable for gaseous media and relatively low pressures. HAWK supplies beryllium copper/bronze or 316 stainless steel capsule elements for your differential applications. All stainless steel pressure gauges with capsule measuring systems are manufactured by using high quality stainless steel which can resist the corrosive and aggressive gases.

### Environment

HAWK supplies various selections of the case materials including black steel, phenolic, black painted aluminum and polished stainless steel. The ambient atmosphere in which the gauge is to be installed will have a direct on the use, serve life, and accuracy of the gauge. Some airborne particles may be corrosive to damage. This atmosphere may attack the inner and outer parts and then damage its pressure system.

### Dial Size

HAWK supplies varied gauge dial sizes including 2½"(63mm), 3"(75mm), 3½"(90mm), 4"(100mm), 4½"(115mm) and 6"(150mm). Selecting proper dial size will let users read easily and correctly.

### Temperature

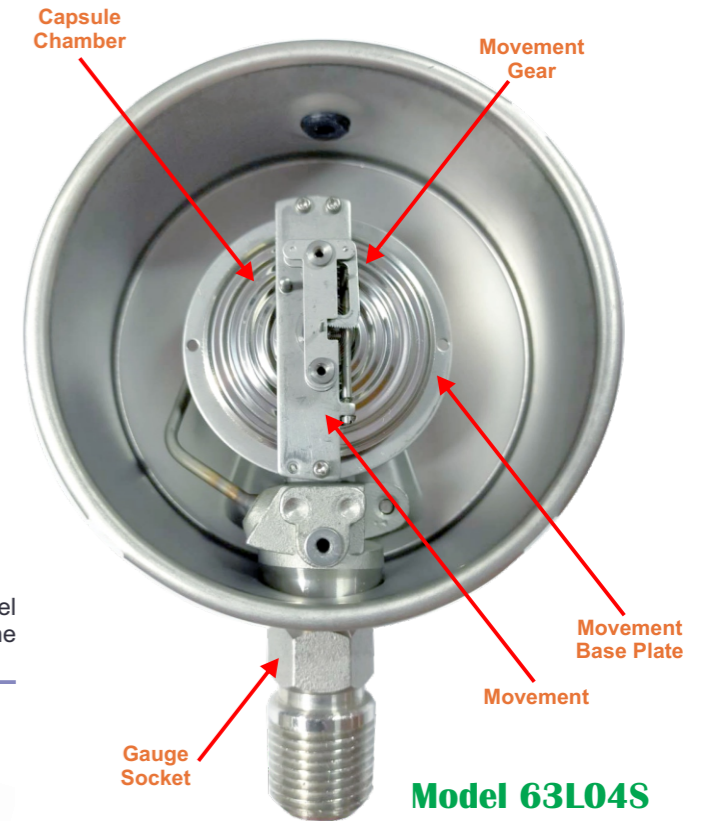
Temperature need be considered when selecting a pressure gauge. The copper capsule chamber can be used for the media max 60°C. SS316 capsule chamber construction can withstand the continuous ambient temperatures as high as 212°F(100°C). Accuracy of measurement will be effected by the ambient temperature. This inaccuracy may be as much as 0.3% for 50°F(10°C) temperature change. Please consult the factory for the wider temperatures applications.

### Range

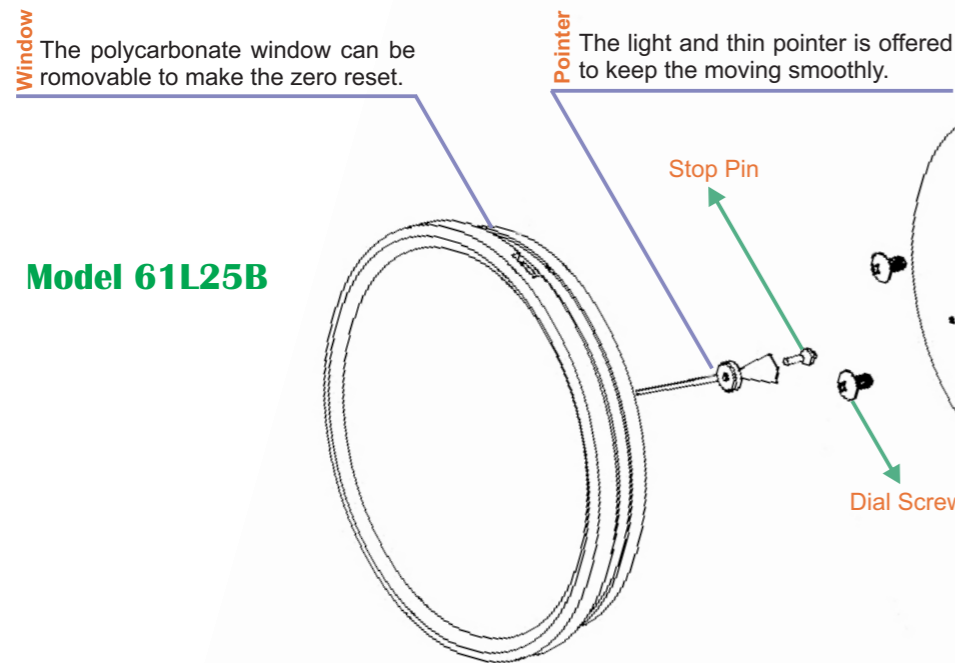
HAWK supplies a wide selection of range from 6 inH<sub>2</sub>O to 15 PSI including vacuum and compound range. The appropriate operating pressure range falls in the middle half (25% to 75% of full scales). All HAWK capsule low pressure gauges are with over-range protection up to 130% of full scale value. Special design for high over-pressure (5 times) protection on request.

### Case and Ring

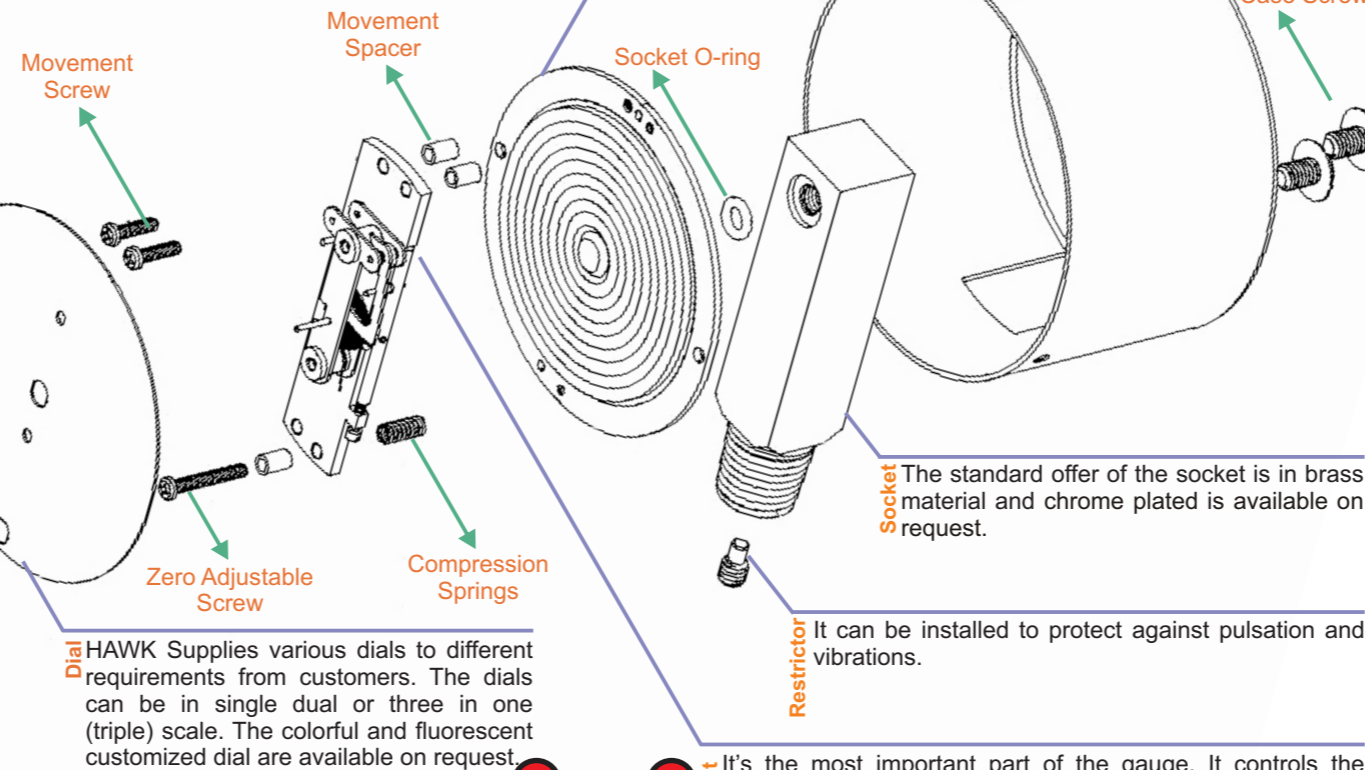
HAWK supplies various selections of the case style including phenol, aluminum, stainless steel and steel with black enamel. The ring styles are available in thread, hinged, bayonet, crimped, and push-in types.



Model 63L04S



Model 61L25B



**Capsule Chamber** The capsule chamber is the sensing element which is the heart of the gauge.

**Case** The steel case is with black enamel or chrome plated which offer the best price and performance ratio.

**Socket** The standard offer of the socket is in brass material and chrome plated is available on request.

**Restrictor** It can be installed to protect against pulsation and vibrations.

**Movement** It's the most important part of the gauge. It controls the moving of the pointer. The movements provide improved stability and smoothness. Max and min pressure stop can be offered to protect against damage caused by sudden vacuum and over pressure.

### Accuracy

Selecting a gauge with sufficient accuracy to satisfy your requirements. Temperature change will reduce the accuracy of the gauges, check the individual specifications for available accuracy.

### Connections

HAWK pressure gauge are available in wide variety of connections. NPT threads are the standard configurations, BSP and JIS are available. If you have a requirement for a connection not listed, please contact with our offices/agents/distributors.

### Mounting

The gauge can be selected in stem, flush or surface mounting for the different installation requirements from the users. The surface mounting is usually in flange style. For the flush mounting, HAWK offers the U-clamp and flange for choice.

### Typical Applications

- Petro-chemical and chemical industry
- Oil & gas
- Heating Ventilating
- Suction regulators and respirators
- Medical and pharmaceutical industry
- Vacuum ovens/Vacuum pumps
- Air conditioning filtration
- Industrial OEM equipments
- Burner and gas combustion service
- Waste water treatment
- Gas detector/Measurement
- Low pressure pneumatic systems

# Capsule Low Pressure Gauge

P-1D

## Specifications

## Dimensions



Series	61	62	63	66	67	69
Accuracy	±3-2-3%	±2-1-2%	±2-1-2%	±2-1-2%	±2-1-2%	±3-2-3%
Socket to Case Seal	Non	O-Ring	O-Ring	O-Ring	Non	Non
Case Material	Steel with black enamel	Stainless Steel 304	Stainless Steel 304	Phenol	Aluminum	Steel
Dial Size (Code)	63mm(25)	63mm(25), 75mm(03), 100mm(04)	63mm(25), 100mm(04), 150mm(06)	115mm(45)	115mm(45), 150mm(06)	63mm(25), 75mm(03), 100mm(04)
Dial Material	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Ring Style	Non	Crimped Ring	Bayonet Ring	Threaded Ring	Hinged Ring	Non
Ring Material	Non	Stainless Steel 304	Stainless Steel 304	Nelon 66	Aluminum	Non
Capsule Element	Beryllium Copper or Bronze	Beryllium Copper or Bronze, 316 Stainless Steel	Beryllium Copper or Bronze, 316 Stainless Steel	Beryllium Copper or Bronze, 316 Stainless Steel	Beryllium Copper or Bronze, 316 Stainless Steel	Beryllium Copper or Bronze
Socket Material	Brass	Brass or 316SS	Brass or 316SS	Brass or 316SS	Brass or 316SS	Brass
Connecting Size	1/8", 1/4"NPT standard	1/8", 1/4", 3/8", 1/2"NPT standard	1/4", 3/8", 1/2"NPT standard	1/4", 3/8", 1/2"NPT standard	1/4", 3/8", 1/2"NPT standard	1/8", 1/4", 3/8"NPT standard
Mounting	Stem mounting	Stem, Panel (U-clamp) mounting, Panel flushing mounting	Stem, Panel (U-clamp) mounting, Panel flushing mounting, Surface	Stem, Surface, Flushing mounting	Flushing panel mounting	Flushing panel mounting
Movement	Brass	Stainless Steel or Brass	Stainless Steel or Brass	Stainless Steel or Brass	Stainless Steel or Brass	Brass
Range	6 inH <sub>2</sub> O to 15 PSI	6 inH <sub>2</sub> O to 15 PSI	6 inH <sub>2</sub> O to 15 PSI	6 inH <sub>2</sub> O to 15 PSI	6 inH <sub>2</sub> O to 15 PSI	6 inH <sub>2</sub> O to 15 PSI
Pointer	Aluminum with black finish	Aluminum with black finish	Aluminum with black finish	Aluminum with black finish	Aluminum with black finish	Aluminum with black finish
Window	Polycarbonate	Polycarbonate	Temperature Safety Glass	Temperature Safety Glass	Plain Glass	Polycarbonate
Weatherproof	IP43	IP54/IP65	IP54/IP65	IP54/IP65	IP43	IP43
Safety Style	Pressure Relief Open	Pressure Relief Open/Top	Pressure Relief Open/Top	Pressure Relief Open/Back	Pressure Relief Open	Pressure Relief Open

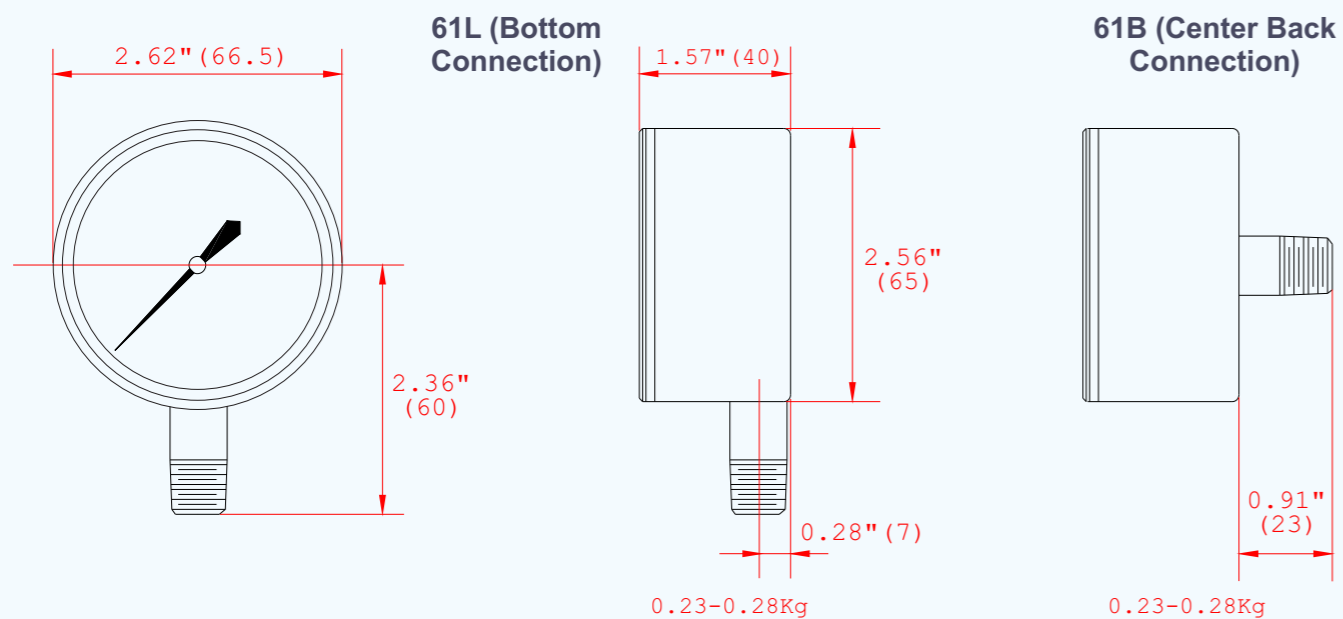
# Capsule Low Pressure Gauge

P-1D

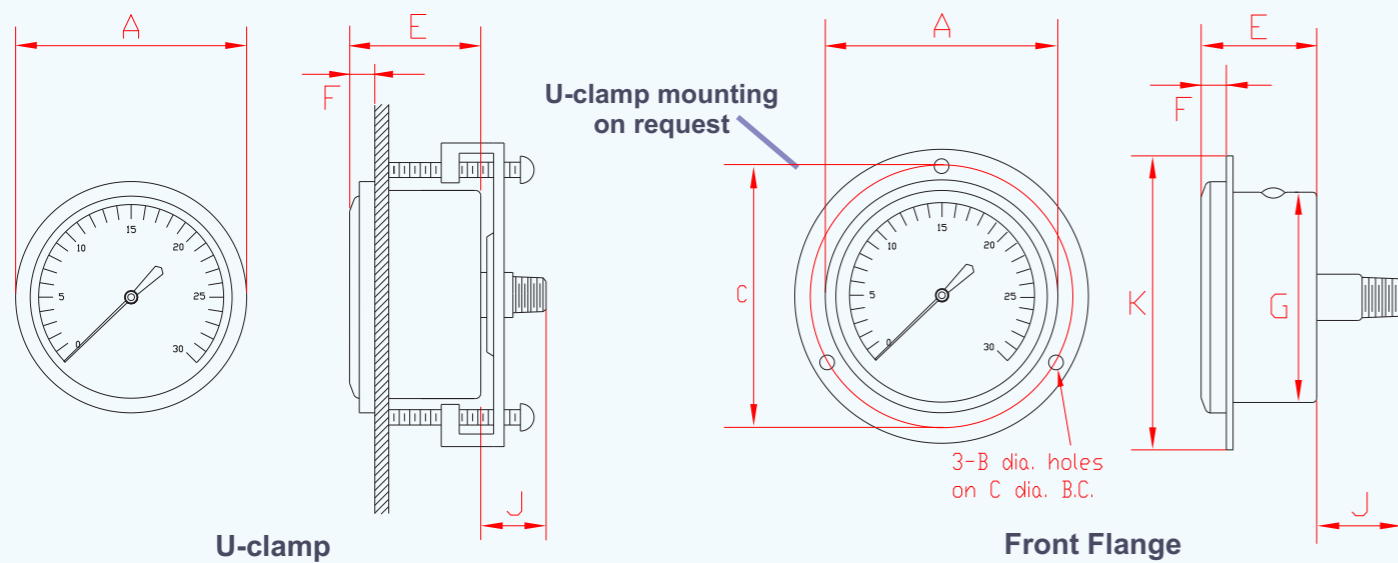
## Specifications

## Dimensions

### Model 61

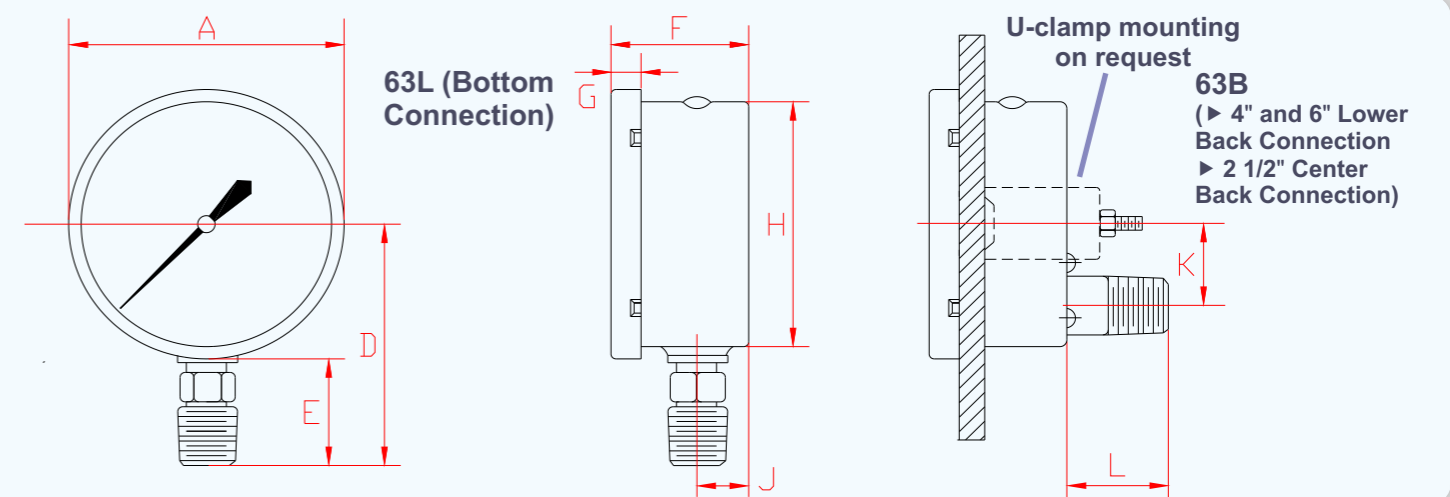


### Model 62



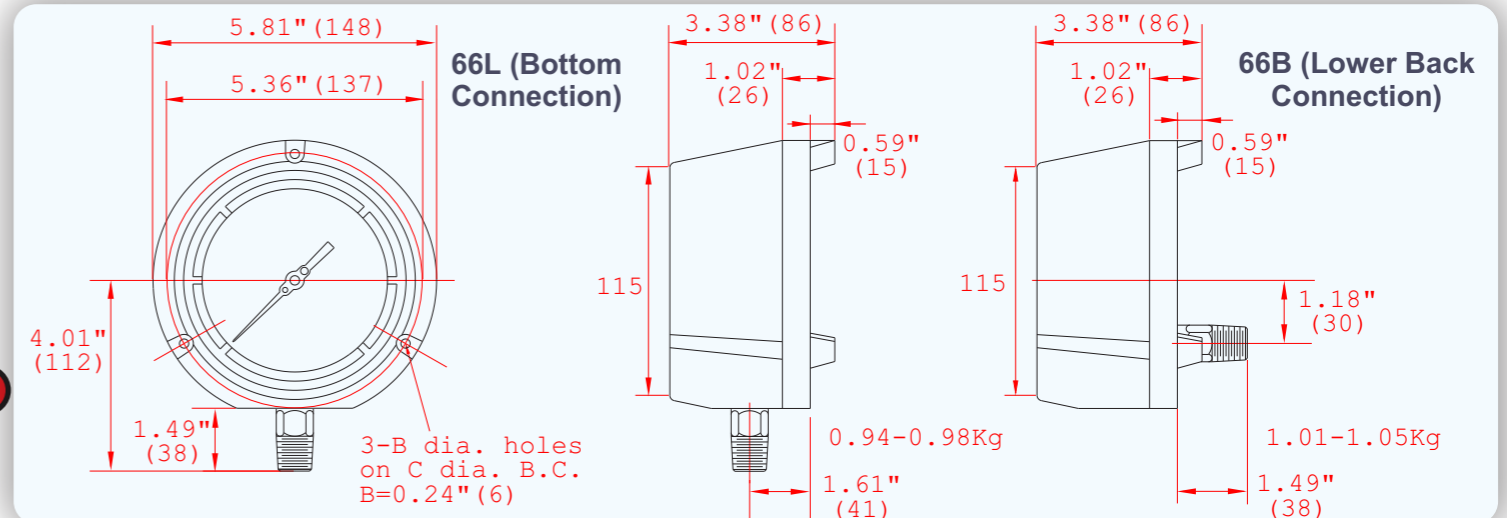
Dimensions, in. (mm)	Type No	Dial Size	A	B	C	D	E	F	G	I	J	K	L	Weight
	62B	2.5"	2.68" (68)	0.16" (4)	2.67" (80)		0.35" (8)	1.50" (38)	2.56" (65)		0.91" (23)	3.46" (88)		0.34-0.40Kg
	62B	3"	3.43" (87)	0.20" (5)	3.64" (92.5)		0.32" (8)	1.34" (34)	3.15" (80)		0.91" (23)	4.13" (105)		0.40-0.48Kg
	62B	4"	4.21" (107)	0.20" (5)	4.73" (120)		0.32" (8)	1.34" (34)	3.94" (100)		0.91" (23)	5.12" (130)		0.60-0.60Kg

### Model 63



Dimensions, in. (mm)	Type No	Dial Size	A	B	C	D	E	F	G	H	J	K	L	Weight
	63L	2.5"	2.68" (68)			2.36" (60)	1.24" (26)	1.89" (48)	0.39" (10)	2.44" (62)	0.32" (8)			0.31-0.36Kg
	63B	2.5"	4.68" (68)					1.30" (33)	0.39" (10)	2.44" (62)			0.91" (23)	0.31-0.36Kg
	63L	4"	4.33" (110)			4.41" (112)	1.49" (38)	1.89" (48)	0.47" (12)	3.94" (100)	0.79" (20)			0.49-0.55Kg
	63B	4"	4.33" (110)					1.89" (48)	0.47" (12)	3.94" (100)		1.18" (30)	1.26" (32)	0.58-0.64Kg
	63L	6"	6.23" (160)			4.72" (120)	1.58" (40)	1.97" (50)	0.51" (13)	5.91" (150)	0.79" (20)			1.02-1.12Kg
	63B	6"	6.23" (160)					1.97" (50)	0.51" (13)	5.91" (150)		1.26" (32)	1.26" (32)	1.12-1.20Kg

### Model 66



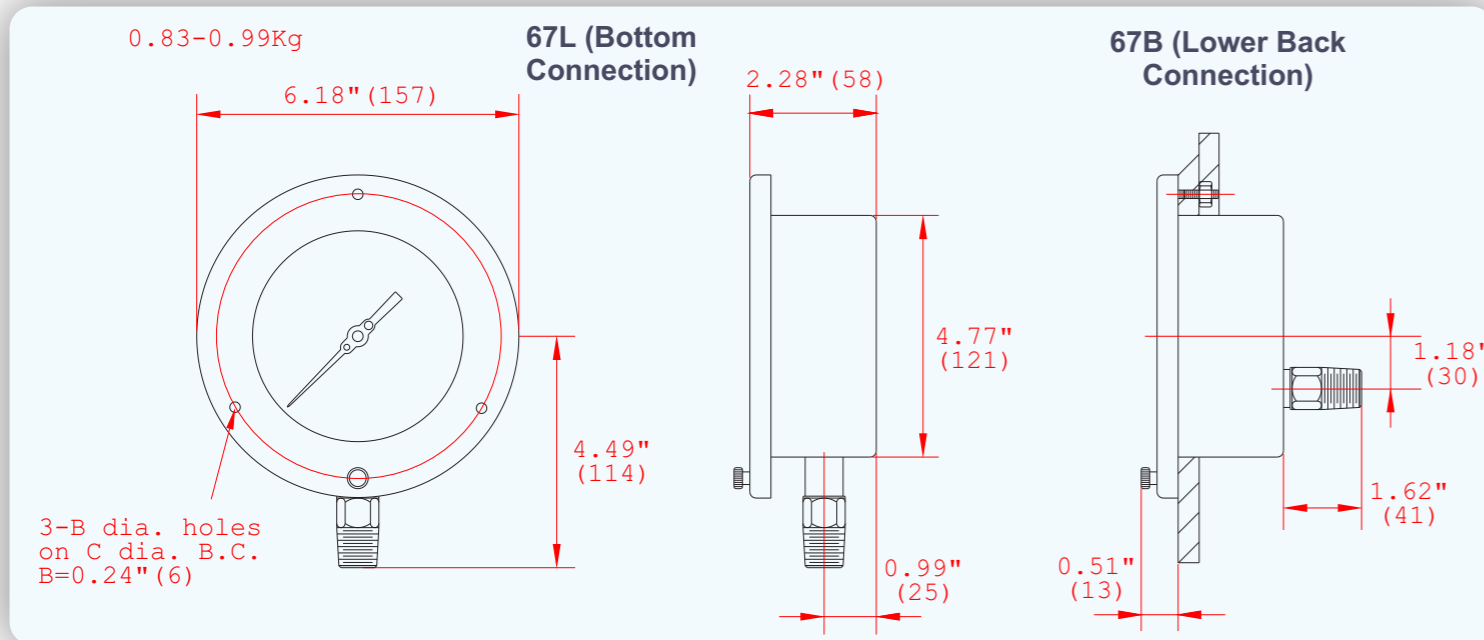
# Capsule Low Pressure Gauge

P-1D

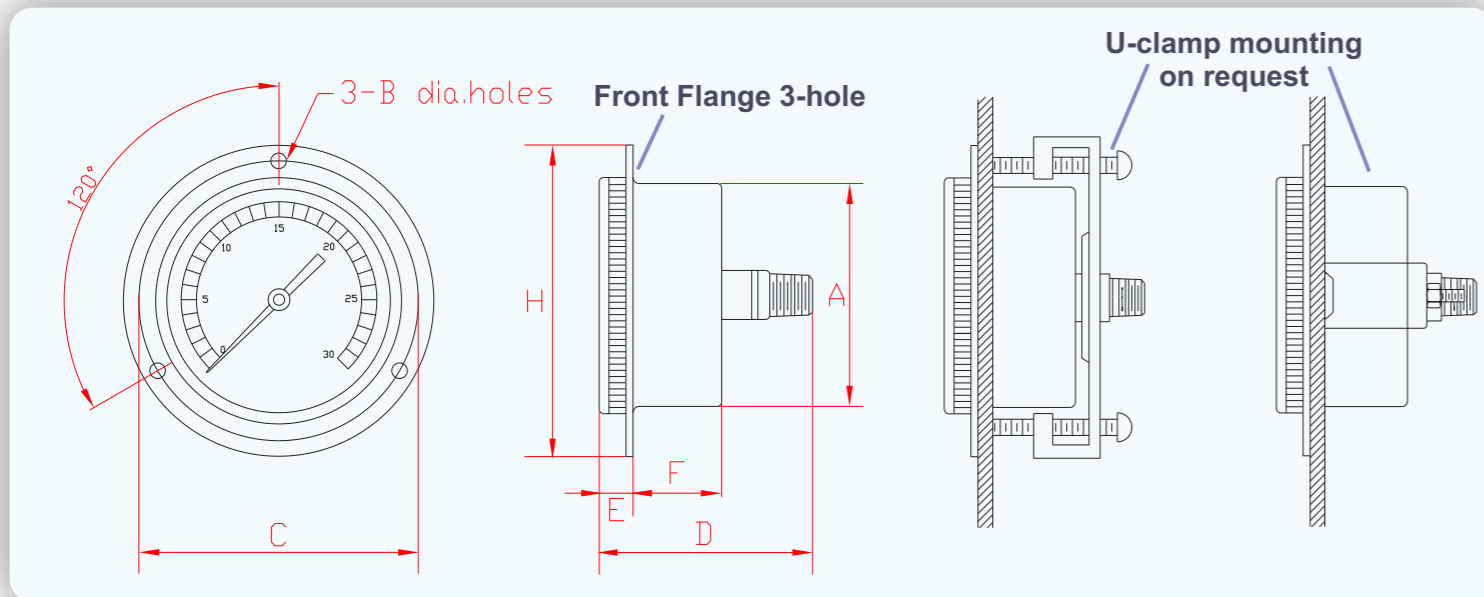
## Specifications

## Order Information

### Model 67



### Model 69



Dimensions, in.(mm)

Type No	Dial Size	A	B	C	D	E	F	G	H	J	K	L	Weight
69B	2.5"	2.60" (68)	0.19" (5)	3.07" (78)	2.21" (56)	0.28" (7)	0.98" (25)		3.35" (85)				0.18-0.23Kg
69B	3"	3.11" (79)	0.19" (5)	3.70" (94)	2.52" (64)	0.35" (9)	1.10" (28)		4.09" (104)				0.30-0.37Kg
69B	4"	4.06" (103)	0.19" (5)	4.58" (116)	2.52" (64)	0.35" (9)	1.10" (28)		5.04" (128)				0.39-0.46Kg

Example:

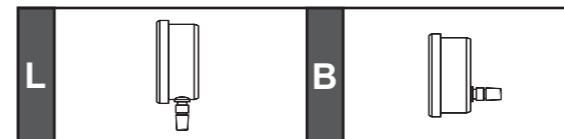
Model Type Dial Wetted Parts Process Connection Pressure Range Option  
 P - 1D 61 L 04 S M 2 Q 3 0 H - Z L

#### Model

61-Steel Case 66-Phenol Case  
 62-SS Crimped Case 67-Aluminum Case  
 63-SS Bayonet Case 69-Steel Case

#### Type

L-Lower (Bottom) Connection  
 B-Lower Back Connection



#### Dial

25-2 1/2" (63mm) 04-4" (100mm) 06-6" (150mm)  
 03-3" (75mm) 45-4 1/2" (115mm)

#### Wetted Parts

S-316SS B-Brass

#### Process Connection

M-Male F-Female

2-1/2"NPT D-G1/2 A-R1/2 7-7/16"UNF  
 4-1/4"NPT H-G3/8 G-R3/8 9-9/16"UNF  
 3-3/8"NPT E-G1/4 B-R1/4 K-M14\*1.0  
 8-1/8"NPT

#### Pressure Range

Please refer to the range table (From Page 10 to 11), and write down the code you need.

#### Option

Please refer to the accessories/options (Page 12), and write down the code you need.



# Capsule Low Pressure Gauge

## Range Tables

## Range Tables

- The other scales and ranges not listed are available in request.
- Not all listed ranges and scales are in stock, consult your distributors for the detailed information.

**Code** **Range**

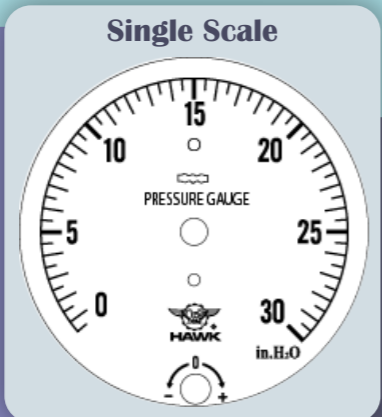
### VACUUM RANGES

Mbar	BVH -16 BVJ -25 BVL -40 BVO -100 BVR -200	BVT -300 BVU -400 BVV -500 BVW -600 BVX -1000
Kpa	KVE -1.6 KVG -2.5 KVJ -4 KVK -5 KVL -6	KVN -10 KVP -20 KVT -40 KVV -60 KVX -100
mmH2O	HVE -160 HVF -200 HVJ -400 HVM -600 HVO -1000 HVR -2000 HVV -4000 HVW -5000 HVX -6000 HVZ -10000	JVE -10 JVF -15 JVJ -20 JVI -30 JVM -60 JVO -100 JVP -150 JVQ -200

### VACUUM RANGES

mbar & mmH2O	QVH -16 QVI -20 QVL -40 QVN -60 QVO -100	QVR -200 QVS -250 QVU -400 QVW -600 QVX -1000
oz./in2. & inH2O	FVR -6 FVR1 -9 FVS -12 FVT -20 FVU -30 FVU1 -35 FVV -60 FVW -100 FVX -160 FVY -250	

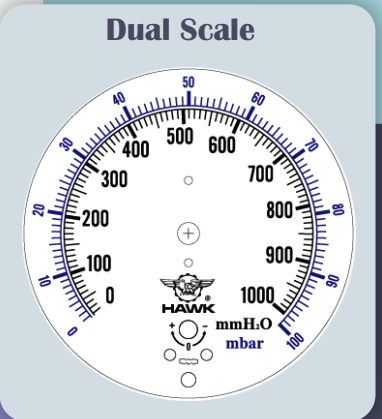
### Single Scale



### COMPOUND RANGES

Mbar	BCQ -6/10 BCS -10/10 BCW -20/20 BOA -30/30 BOC -50/50 BOE -80/80 BOF -100/100 BOJ -200/200 BOM -300/300 BOP -500/500	Kpa	KCQ -1.25/1.25 KCR -1.5/1.5 KCU -2/2 KOB -5/5 KOD -8/8 KOI -16/25 KOK -20/20 KOM -25/40 KON -30/30 KOP -50/50
mmH2O	HCN -60/100 HCP -100/100 HCT -200/200 HCV -250/400 HCY -500/500 HOA -800/800 HOB -1000/1000 HOF -2000/2000 HOI -3000/3000 HOJ -5000/5000	inH2O	JCL -5/5 JCM -10/10 JCN -15/15 JCO -20/20 JCP -30/30 JCQ -50/50 JCQA -60/60 JCR -100/100 JCS -150/150 JCT -200/200

### Dual Scale



### COMPOUND RANGES

mbar & mmH2O	Q22 16 Q23 20 Q26 40 Q28 60 Q30 100 Q32 200 Q33 250 Q35 400 Q37 600 Q39 1000	oz./in2. & inH2O	F27 6 F271 9 F28 12 F29 20 F30 30 F31 60 F32 100 F33 160 F34 250
mbar & mmH2O	QCP -5/5 QCS -10/10 QCU -12.5/12.5 QCW -20/20 QOD -50/50 QOG -100/100 QOI -125/125 QOK -200/200 QON -300/300 QOQ -500/500		



### ► Ultra Low Pressure Range (in 6" gauge only)

### PRESSURE RANGES

Mbar	B12 1.6 B13 2 B14 2.5 B17 5 B20 10	Pa	A14 160 A15 200 A19 400 A20 500 A21 600	Kpa	K4 0.16 K5 0.2 K9 0.4 K11 0.6 K13 1
mmH2O	H3 16 H4 20 H8 40 H10 60 H12 100	inH2O	J5 1 J6 1.5 J7 2 J8 2.5 J10 4		

### VACUUM RANGES

Mbar	BV8 -1.6 BV9 -2 BVC -4 BVE -6 BVF -10	Pa	AVE -160 AVF -200 AVJ -400 AVK -500 AVM -600	Kpa	KV4 -0.16 KVV5 -0.2 K9 -0.4 KVB -0.6 KVD -1
mmH2O	HV3 -16 HV4 -20 HV8 -40 HVA -60 HVC -100	inH2O	JV5 -1 JV6 -1.5 JV7 -2 JV8 -2.5 JVA -4		

### COMPOUND RANGES

Mbar	BCH -1/1 BCI -1/1.6 BCJ -1.25/1.25 BCN -3/3 BCP -5/5	Pa	ACR -125/125 ACT -200/200 ACU -250/250 ACW -300/300	Kpa	KCD -0.08/0.08 KCE -0.1/0.1 KCI -0.2/0.2 KCK -0.3/0.3 KCM -0.5/0.5
mmH2O	HCB -6/10 HCD -10/10 HCH -20/20 HCK -30/30 HCM -50/50	inH2O	JCE -0.5/0.5 JCF -1/1 JCH -2/2		

### Dual Pressure Ranges

Bar & kPa & PSI	ZV1 -1 ZCA -1/0.6 ZCB -1/1 ZCC -1/1.5 ZCD -1/2 ZCE -1/2.5 ZCF -1/3 ZCG -1/4 ZCH -1/5 ZCI -1/6 ZCJ -1/7 ZCK -1/9 ZCL -1/10 ZCM -1/11	ZCO -1/14 ZCP -1/15 ZCR -1/19 ZCS -1/20 ZCT -1/24 Z11 0.6 Z12 1 Z13 1.6 Z14 2 Z15 2.5 Z16 3 Z18 4 Z19 5 Z20 6	Z21 7 Z22 10 Z23 11 Z24 14 Z26 16 Z28 20 Z29 25 Z30 28 Z31 30 Z33 40 Z34 50 Z35 60 Z36 70 Z39 100	Z39A 110 Z40 140 Z42 160 Z43 200 Z44 250 Z44A 280 Z45 300 Z47 400 Z48 500 Z49 600 Z50 700 Z52 1000
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