

WINTERS



We're There.



OIL AND GAS CATALOGUE



Thank You for Choosing Winters

We're There in...

CUSTOMER SERVICE

Winters Instruments leads the industry in providing fast and efficient customer service. Full stocking warehouses enable same day shipping of all inventoried items.



QUALITY

An ISO 9001 corporation, Winters adheres to many approvals and standards, such as CE, CSA, UL, CRN, NACE, 3A, and more. We stand by the quality of our product.



COMMITMENT

Competitive prices, quality products and the utmost in service - your satisfaction is guaranteed!



CUSTOM PRODUCTS

Quick turnaround for all special and custom requests is a distinct Winters advantage. Whether it is a custom dial, unique connection or special range, Winters will fulfill your requirements.



EXPERIENCE

Winters has been manufacturing pressure and temperature instrumentation for diverse markets since 1953 and serves all markets globally.



DISTRIBUTION

Our international network of distributors in over 90 countries means you receive Winters' instrumentation solutions for every application quickly and easily.



Continuous product improvements may result in specifications being changed without notice. For updated information please call Winters.

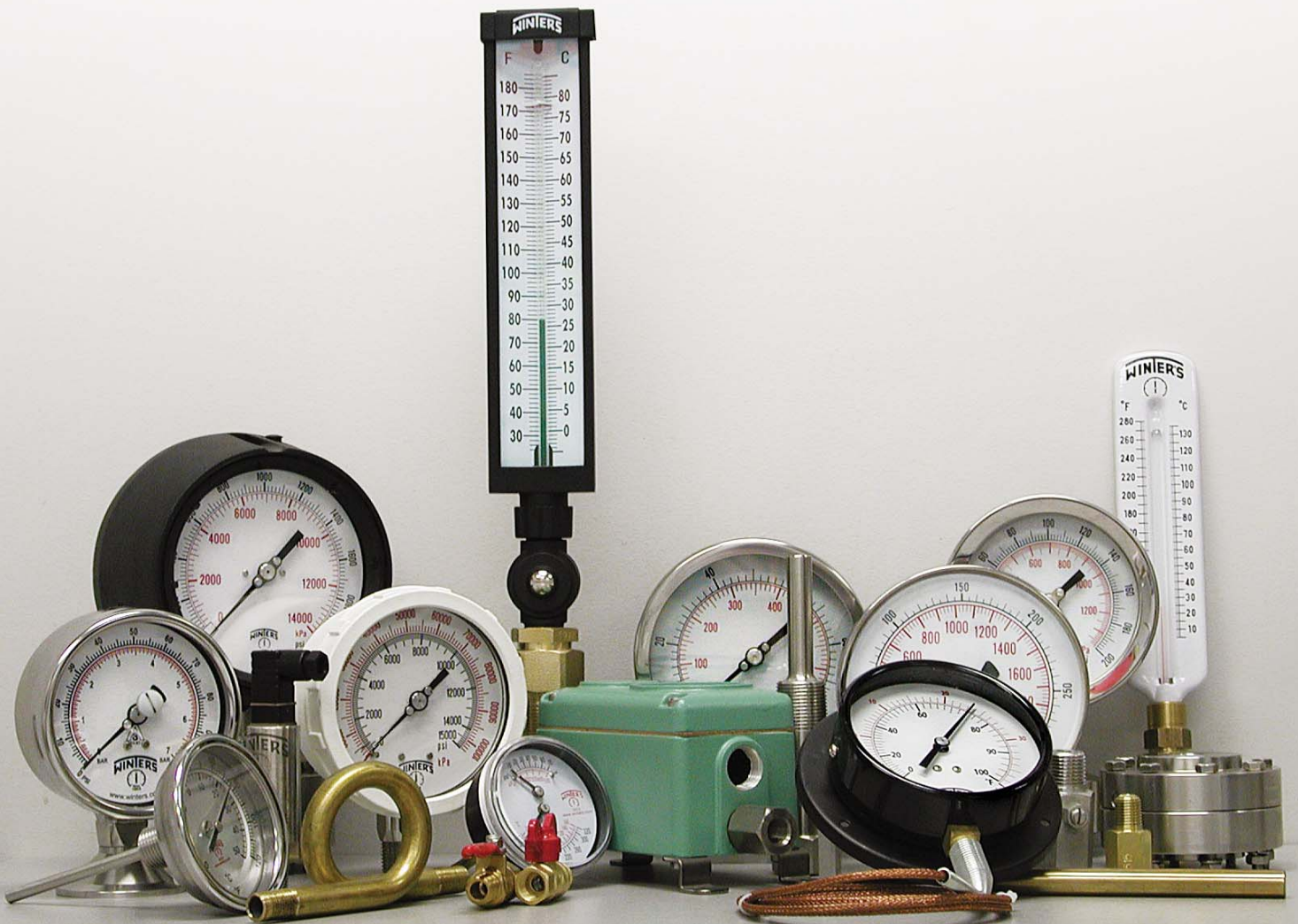




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Specified, Installed and Trusted - We're There

Oil & Gas

Devon Energy	Canada
Devon (Jackfish)	Canada
Saudi Aramco	Saudi Arabia
Shell Oil (Motiva)	USA
Suncor Energy	Canada
Suncor (Millennium)	Canada

Aerospace & Transport

Air Canada	Canada
Canadian National Railway	Canada
US Air Force	USA

Automotive

Chrysler	Canada
General Motors (Paint Plant)	Canada
Hainan Automobile Group	China
Honda	Canada
Nissan	USA
Toyota	USA/Canada

Food & Beverage / Pharmaceutical

Catalent Pharma Solutions	USA
Coca-Cola	Puerto Rico
Heinz	Canada
Kellogg's	Canada

Government

Department of Defence	Canada
US Coast Guard	USA
US Defense Department	USA
US Navy	USA

HVAC

American University of Beirut	Lebanon
BCE Place	Canada
Burj Khalifa	UAE
Palm Jumairah	UAE
Pearl Qatar	Qatar
Princess Noura University	Saudi Arabia

Industrial

DuPont	USA
Jordan Bomite Plant	Jordan

Mining

Diavik Diamond Mine	Canada
Peñaquito Polymetallic Mine	Mexico
Teck Cominco	Canada

Petrochemical

Fushun Petrochemical Company	China
Irving Oil Refinery	Canada
Nanjing DSM Petrochemical	China
Sinopec	China

Power Generation

Dayawan Nuclear Power Plant	China
Georgia Power	USA
Jebel Ali Power Station	UAE
Ontario Hydro	Canada
Ras Abu Fontas Power and Desalination	Qatar
Takoradi Thermal Power Station	Ghana
Wasit Power Station	UAE
Williams Energy Refinery	Canada

Pulp & Paper

Harmack & Neucel	Canada
Irving Paper	Canada
Tembec	Canada

Water / Waste Water Treatment

Ashbridges Bay	Canada
Capital Region	Canada
Chelmsford, MA Water Treatment Plant	USA
Dallas Water Treatment Plant	USA
Hartford Dist. Water Pollution Control Facility	USA
SEWA Sarjah	UAE

5-Year Warranty

A 5-year warranty applies to all instrumentation and instrumentation accessories.



Winters Instruments' products are warranted for a stated period of time (see above) after date of purchase against manufacturing and materials defects. Any product which is found by Winters to be defective will be replaced at Winters' discretion. Winters' product warranty does not cover product defects resulting from improper product selection, misuse or misapplication except as specifically set forth in this warranty. Winters Instruments makes no representation or Warranty of any kind, whether expressed or implied, to Purchaser or any other person with respect to any of the products. Without limiting the generality of the preceding sentence, winters instruments disclaims the implied Warranties of merchantability and fitness for a particular purpose. Any liability from Winters to Purchaser or any other person or entity pursuant to this Warranty, whether for a claim in tort, for breach of contract or otherwise, shall not exceed the purchase price of the Product giving rise to such liability. Winters shall in no event have any liability to Purchaser or any other person or entity for any consequential, indirect, punitive or special damages (including, without limitation, lost profits) pursuant to this Warranty or pursuant to its sale of the Products, even if the possibility of such damages could have been foreseen by Winters Instruments.

Winters Platinum Service



An expedited service that moves orders to the front of the line.

Both manufacturing and service orders will be expedited through our system. Orders manufactured in North America will be completed within **48 hours** and non-North American manufactured orders will be completed within **two weeks**.

Platinum Service applies to most products. Contact Winters or a Winters distributor for more details.

Winters Platinum Service is available for new and existing orders. All Platinum Service orders must be approved by a Winters representative prior to a purchase order being issued (as order size and parts availability may preclude an order from Platinum Service). Purchase orders issued more than 3 weeks after original quote may no longer qualify for Platinum Service. Changes made to Platinum Service orders already placed may void the service. If a Platinum Service order is not shipped in the time quoted the premium fee may be waived by Winters. Freight is not included.



Repairs

Features:

- Full repair service for pressure & temperature instruments and diaphragm seals
- Non-Winters products can also be repaired

Applications:

- Where cost savings justify repairing rather than replacing

How to order:

Please contact our customer service department for your repair order code. Send in your product (freight prepaid) to your nearest Winters location. A written estimate will be faxed or emailed to you before any work is done.

Test Certificates

Features:

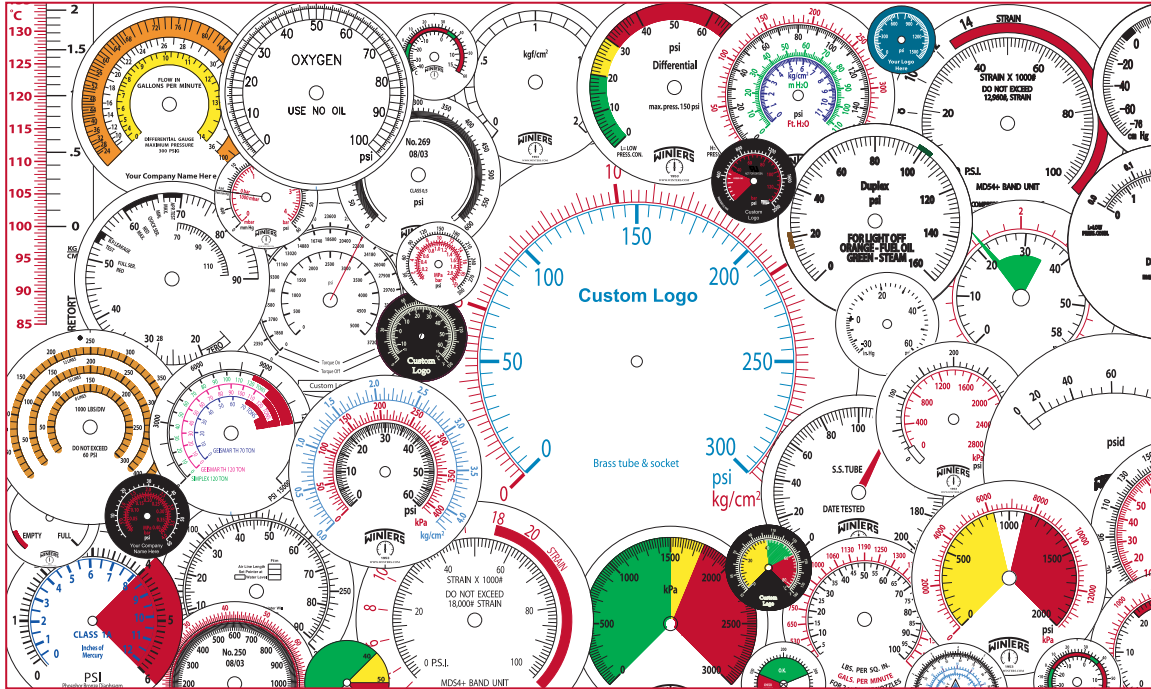
- Winters will certify the accuracy of a pressure gauge, thermometer or pressure switch with a National Standards Council test certificate
- Certificates are traceable to the National Institute of Standards and Technology (NIST)
- Certificates may be registered online for renewal reminders

Applications:

- Where a formal test certificate is required
- For certification with the ISO 9000 process

How to order:

Please contact our customer service department for your order code.



Customize Your Instrumentation

- Available for all makes and models of pressure and temperature instrumentation
- All colours are available
- All dials are custom manufactured to meet your specifications
- Available on new or repaired instruments
- Available for dry or liquid-filled instruments
- Emergency same-day custom dial manufacturing is available

Applicable to OEM Requirements

- Where easy-to-read, highly visible warning zones are required
- Non-standard custom measurement scales
- Replacement of damaged or outdated dials
- For time-sensitive dial requirements

Available Options:

- Colour safety zones
- Warning identification
- Tons on Ram scales
- Feet of Water scales
- Bar scales
- Kg/cm² scales
- Receiver gauge scales
- mm of H₂O scales
- Custom logos

More available. Please call us with your requirements.

WinBRIGHT Dials (Available on PFP, PFP-ZR, PPC, PPC-ZR Series Gauges):

- WBYG option for the reflective, fluorescent yellow-green dial
- WBY option for the reflective, fluorescent yellow dial
- WBFY option for the fluorescent yellow dial
- WBO option for the reflective orange dial
- WBW option for the reflective white dial
- WBG option for the glow-in-the-dark white dial

Quick Tips:

- Review our pressure gauge, thermometer and diaphragm seal selection guides
- Take a moment to review and learn how to read our order code matrix
- If options are available and required, attach the option suffix code to the end of the product order code
- If a scale change is required (i.e. change from standard offering to bar scale), attach the scale code to the end of the product order code

Order Code Matrix (for standard, in stock products):

Each product series has an order code matrix listed after the product specifications. Locate the column of order codes that lists your desired dial size, connection size, connection location and wetted material. Then follow that column downward until it intersects with the row of your choice.

Example:

Order Codes

Connection	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)	1/2" Bottom
Socket, Tube	Brass		SS		Brass		SS
30" Hg Vac/kPa	PPC5080	PPC5280	PPC5040	PPC5340	-	-	PPC5060
30"/0/15 psi/kPa	PPC5120	PPC5220	PPC5130	PPC5330	-	-	PPC5140
30"/0/30 psi/kPa	PPC5121	PPC5221	PPC5131	PPC5331	-	-	PPC5141
30"/0/60 psi/kPa	PPC5122	PPC5222	PPC5132	PPC5332	-	-	PPC5142
30"/0/100 psi/kPa	PPC5123	PPC5223	PPC5133	PPC5333	-	-	PPC5143
30"/0/160 psi/kPa	PPC5124	PPC5224	PPC5134	PPC5334	-	-	PPC5144
30"/0/200 psi/kPa	PPC5125	PPC5225	PPC5135	PPC5335	-	-	PPC5145
30"/0/300 psi/kPa	PPC5126	PPC5226	PPC5136	PPC5336	-	-	PPC5146
0/15 psi/kPa	PPC5000	PPC5200	PPC5100	PPC5300	-	-	PPC5000
0/30 psi/kPa	PPC5001	PPC5201	PPC5101	PPC5301	-	-	PPC5001

Scale Codes

R1 = psi
R2 = kPa
R3 = kg/cm ²
R4 = cm of H ₂ O
R5 = ft of H ₂ O
R6 = in of Hg
R7 = mm of Hg
R8 = in of H ₂ O
R9 = oz/in ²
R10 = atmosphere
R11 = bar
R12 = mbar
R13 = MPa
R14 = mH ₂ O
R15 = mmH ₂ O
R16 = Pa

If a scale change is required (i.e. change from standard offering to bar scale), attach the scale code to the end of the product order code

Options

Some options include:

Maximum Indicating Pointer	Stainless Steel Tag
Front Flange	Safety Glass
Back Flange	Capillary
U-Clamp	Thermowell Cap and Chain
Red Hand Setpoint	StabiliZR™ Movement
Rubber Boot	Filling

More options available. See individual catalogue pages or call us with your requirements.

Catalogue Page	Series	Dial Size							Ranges (Pressure)				Case Material					Wetted Parts			Connection Size			Connection Location			Accuracy				RoHS compliant													
		1.5" & under	2"	2.5"	3.5"	4"	4.5"	6"	30" Hg Vac	Compound	15" H ₂ O - 200" H ₂ O	15" H ₂ O Vac - 200" H ₂ O Vac	15 - 300 psi	400 - 600 psi	1,000 - 5,000 psi	6,000 - 20,000 psi	Steel	Plastic	Phenolic	Stainless Steel	Fluid-fillable Case	Brass	Aluminum	Aluminum	Brass	Stainless Steel	1/8" NPT	1/4" NPT	1/2" NPT	Bottom Mount		Centre Back	Lower Back	In Line	5% of full scale value	3-2.3% (Grade B)	2.5% of full scale value	2% of full scale value	1.5% of full scale value	1% (Grade 1A)	0.5% and better (2A - 4A)			
66	DPG Digital Pressure Gauge		X					X	X		X	X	X	X		X									X		X		X											X	X			
27	PBC Forged Brass Case Gauge		X					X	X		X	X	X	X						X	X			X		X	X	X	X												X	X		
54	PDT Differential Gauge						X	X				X	X									X		X	X																X			
56	PDX Duplex Gauge						X	X				X	X									X		X	X		X														X			
67	PEC Premium Stainless Steel Gauge with Electrical Contacts						X		X			X	X	X	X				X					X				X	X												X			
58	PDF Resistance-free Differential Gauge						X		X	X	X											X	X			X												X						
30	PFM Premium Stainless Steel Liquid Filled Gauge		X	X			X	X	X			X	X	X	X				X	X				X	X		X	X	X	X										X	X	X		
36	PFM Premium Stainless Steel Liquid Filled Gauge for Panel Mounting		X				X	X				X	X	X	X				X	X				X			X													X		X		
18	PFM-ZR Premium Stainless Steel StabilizR™ Gauge		X	X			X	X	X			X	X	X	X				X					X			X	X	X	X										X	X	X		
38	PFQ Stainless Steel Liquid Filled Gauge	X	X	X			X	X				X	X	X	X				X	X				X	X	X	X	X	X										X			X		
69	PLP Low Pressure Gauge		X	X			X	X		X	X					X			X		X			X	X		X	X	X						X									
47	PN2 NACE Gauge - MR0175-2002			X			X	X	X			X	X	X	X				X	X				X	X		X	X	X												X		X	
22	PN2-ZR NACE StabilizR™ Gauge - MR0175-2002			X			X	X				X	X	X	X				X					X				X	X												X		X	
11	PPC Process Gauge						X	X				X	X	X	X				X	X				X	X		X	X	X													X	X	
24	PPC-ZR StabilizR™ Process Gauge						X	X				X	X	X	X				X					X	X		X	X	X												X	X		
62	PPD Piston (High Static Pressure Differential)		X	X			X					X							X			X		X	X		X	X	X										X					
13	PRC Receiver Gauge						X					X							X					X	X		X	X														X		
63	PRD Rolling Diaphragm (High Static Pressure Differential)		X									X							X					X			X																X	
49	PSC Safety Case Gauge			X	X		X	X	X			X	X	X					X	X				X	X		X	X														X	X	X
64	PSD Small Convuluted Diaphragm (High Static Pressure Differential)		X	X			X					X							X			X		X	X		X	X	X														X	
14	PSG Schaeffer Gauge			X			X		X			X							X					X				X														X		
51	PTG Test Gauge		X	X			X	X				X	X	X	X				X					X			X	X	X														X	
16	PTR Tamper Resistant Process Gauge						X					X	X	X					X					X				X	X													X		
65	PVD Convuluted Diaphragm (High Static Pressure Differential)		X	X			X												X					X	X		X	X	X													X		
53	PXT Xmas Tree Gauge						X					X	X						X					X			X	X	X													X		

Note: When selecting a pressure gauge, always refer to ASME B40.100 (2013)



1. Optional Hinged Case
2. Optional Flush Mounting Ring



Note: RoHS applies to SS and Monel® internals only

Description & Features:

- Solid phenolic front and polypropylene pressure relief back safety case
- Field liquid-fillable (bottom connection only)
- ±0.5% accuracy
- Stainless steel full rotary movement for longer life
- Micrometer adjustable pointer for ease in calibration
- Under and overload stops
- 316L stainless steel, brass, Monel® wetted parts
- Restricted orifice standard on dual scale (optional on single scale)
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- Ideally suited for process, chemical, petroleum and power industries
- Suitable for non-clogging corrosive media
- Used where operator safety is a requirement
- Processes where pulsation and vibration exist (with liquid filling)

Specifications	Stainless Steel Internals	Brass Internals
Dial	4.5" (115mm) white aluminum with black and red markings	4.5" (115mm) white aluminum with black and red markings
Case	Black phenolic with pressure relief back, solid front, integral back flange	Black phenolic with pressure relief back, solid front, integral back flange
Solid Wall	Phenolic	Phenolic
Pressure Relief Back	Polypropylene	Polypropylene
Window	Polycarbonate	Polycarbonate
Ring	Phenolic	Phenolic
Pointer	Aluminum, anodized black, micrometer adjustable	Aluminum, anodized black, micrometer adjustable
Socket	316L SS	OT 58 brass
Connection	1/4" NPT or 1/2" NPT standard, bottom or back	1/4" NPT or 1/2" NPT standard, bottom or back
Bourdon Tube	316L SS, drawn seamless	Phosphor bronze
Movement	304 SS with under and overload stops	304 SS with under and overload stops
Gasket Materials	Silicone (FKM option)	Silicone (FKM option)
Welding	TIG	Silver alloy
Over-pressure Limit	25% for pressures below 1,500 psi (10,341 kPa), 15% for pressures 1,500 psi to 8,700 psi (10,341 kPa to 59,984 kPa), 10% for pressures above 8,700 psi (59,984 kPa)	25% for pressures below 1,500 psi (10,341 kPa), 15% for pressures 1,500 psi to 8,700 psi (10,341 kPa to 59,984 kPa), 10% for pressures above 8,700 psi (59,984 kPa)
Working Pressure	Maximum 75% of full scale value	Maximum 75% of full scale value
Ambient Temperature	Dry: -40°F to 250°F (-40°C to 120°C) Glycerin Filled: -4°F to 150°F (-20°C to 65°C)	Dry: -40°F to 250°F (-40°C to 120°C) Glycerin Filled: -4°F to 150°F (-20°C to 65°C)
Process Temperature	-40°F to 250°F (-40°C to 120°C)	-40°F to 150°F (-40°C to 65°C)
Accuracy	±0.5% ANSI/ASME Grade 2A	±0.5% ANSI/ASME Grade 2A
Enclosure Rating	IP65	IP65
Warning (brass internals only)	N/A	WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

Monel® is a registered trademark of Inco Alloys International

Single Scale Order Codes (products in bold are normally stock in North America)

Connection	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)
Socket, Tube	SS			
30" Hg Vac	PPC5040R1	PPC5340R1	PPC5060R1	PPC5460R1
30"/0/15 psi	PPC5130R1	PPC5330R1	PPC5140R1	PPC5440R1
30"/0/30 psi	PPC5131R1	PPC5331R1	PPC5141R1	PPC5441R1
30"/0/60 psi	PPC5132R1	PPC5332R1	PPC5142R1	PPC5442R1
30"/0/100 psi	PPC5133R1	PPC5333R1	PPC5143R1	PPC5443R1
30"/0/160 psi	PPC5134R1	PPC5334R1	PPC5144R1	PPC5444R1
30"/0/200 psi	PPC5135R1	PPC5335R1	PPC5145R1	PPC5445R1
30"/0/300 psi	PPC5136R1	PPC5336R1	PPC5146R1	PPC5446R1
0/15 psi	PPC5041R1	PPC5341R1	PPC5061R1	PPC5461R1
0/30 psi	PPC5042R1	PPC5342R1	PPC5062R1	PPC5462R1
0/60 psi	PPC5043R1	PPC5343R1	PPC5063R1	PPC5463R1
0/100 psi	PPC5044R1	PPC5344R1	PPC5064R1	PPC5464R1
0/160 psi	PPC5045R1	PPC5345R1	PPC5065R1	PPC5465R1
0/200 psi	PPC5046R1	PPC5346R1	PPC5066R1	PPC5466R1
0/300 psi	PPC5047R1	PPC5347R1	PPC5067R1	PPC5467R1
0/400 psi	PPC5048R1	PPC5348R1	PPC5068R1	PPC5468R1
0/600 psi	PPC5049R1	PPC5349R1	PPC5069R1	PPC5469R1
0/800 psi	PPC5058R1	PPC5358R1	PPC5078R1	PPC5478R1
0/1,000 psi	PPC5050R1	PPC5350R1	PPC5070R1	PPC5470R1
0/1,500 psi	PPC5051R1	PPC5351R1	PPC5071R1	PPC5471R1
0/2,000 psi	PPC5052R1	PPC5352R1	PPC5072R1	PPC5472R1
0/3,000 psi	PPC5053R1	PPC5353R1	PPC5073R1	PPC5473R1
0/5,000 psi	PPC5054R1	PPC5354R1	PPC5074R1	PPC5474R1
0/6,000 psi	PPC5199R1		PPC5178R1	
0/10,000 psi	PPC5055R1	PPC5355R1	PPC5075R1	PPC5475R1
0/15,000 psi	PPC5056R1	PPC5356R1	PPC5076R1	PPC5476R1
0/20,000 psi	PPC5057R1	PPC5357R1	PPC5077R1	PPC5477R1

Note: Restrictor screws are not standard on single scale gauges

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.

Option suffix:

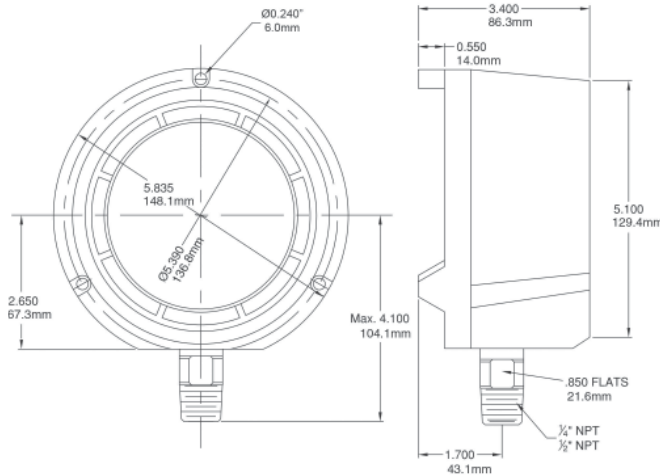
- FMR = Flush mounting ring
- G = Glycerin (bottom connection only)
- HCSF = Solid front hinged case (back connection only)
- MAXI45 = 4.5" (115mm) Maxi pointer
- MS = Monel® tube and socket
- REST = Restrictor Screw (psi only)
- SG-45 = Safety glass
- SF45 = Silicone fill (bottom connection only)

For WinBRIGHT dial options refer to Custom Dials

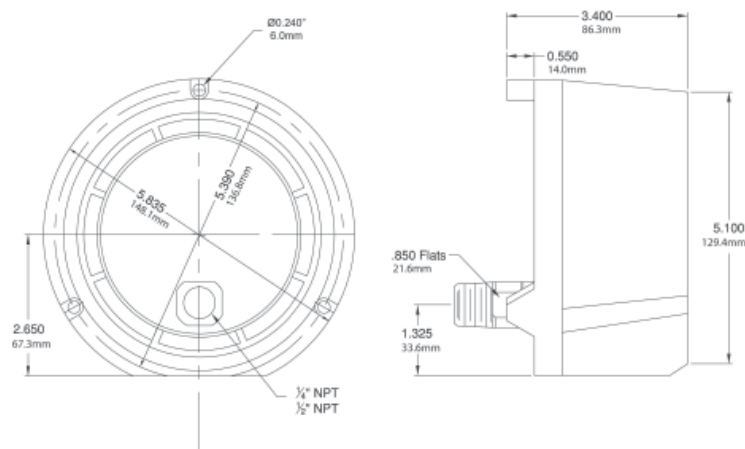
Dual Scale Order Codes (products in bold are normally stock in North America)

Connection	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)	1/2" Bottom	1/2" Back (LB)
Socket, Tube	Brass		SS		Brass		SS	
30" Hg Vac/kPa	PPC5080	PPC5280	PPC5040	PPC5340	-	-	PPC5060	PPC5460
30"/0/15 psi/kPa	PPC5120	PPC5220	PPC5130	PPC5330	-	-	PPC5140	PPC5440
30"/0/30 psi/kPa	PPC5121	PPC5221	PPC5131	PPC5331	-	-	PPC5141	PPC5441
30"/0/60 psi/kPa	PPC5122	PPC5222	PPC5132	PPC5332	-	-	PPC5142	PPC5442
30"/0/100 psi/kPa	PPC5123	PPC5223	PPC5133	PPC5333	-	-	PPC5143	PPC5443
30"/0/160 psi/kPa	PPC5124	PPC5224	PPC5134	PPC5334	-	-	PPC5144	PPC5444
30"/0/200 psi/kPa	PPC5125	PPC5225	PPC5135	PPC5335	-	-	PPC5145	PPC5445
30"/0/300 psi/kPa	PPC5126	PPC5226	PPC5136	PPC5336	-	-	PPC5146	PPC5446
0/15 psi/kPa	PPC5081	PPC5281	PPC5041	PPC5341	-	-	PPC5061	PPC5461
0/30 psi/kPa	PPC5082	PPC5282	PPC5042	PPC5342	-	-	PPC5062	PPC5462
0/60 psi/kPa	PPC5083	PPC5283	PPC5043	PPC5343	-	-	PPC5063	PPC5463
0/100 psi/kPa	PPC5084	PPC5284	PPC5044	PPC5344	-	-	PPC5064	PPC5464
0/160 psi/kPa	PPC5085	PPC5285	PPC5045	PPC5345	-	-	PPC5065	PPC5465
0/200 psi/kPa	PPC5086	PPC5286	PPC5046	PPC5346	-	-	PPC5066	PPC5466
0/300 psi/kPa	PPC5087	PPC5287	PPC5047	PPC5347	-	-	PPC5067	PPC5467
0/400 psi/kPa	PPC5088	PPC5288	PPC5048	PPC5348	-	-	PPC5068	PPC5468
0/600 psi/kPa	PPC5089	PPC5289	PPC5049	PPC5349	-	-	PPC5069	PPC5469
0/800 psi/kPa	PPC5099	PPC5299	PPC5058	PPC5358	PPC5188	PPC5198	PPC5078	PPC5478
0/1,000 psi/kPa	PPC5098	PPC5298	PPC5050	PPC5350	PPC5090	PPC5290	PPC5070	PPC5470
0/1,500 psi/kPa	-	-	PPC5051	PPC5351	PPC5091	PPC5291	PPC5071	PPC5471
0/2,000 psi/kPa	-	-	PPC5052	PPC5352	PPC5092	PPC5292	PPC5072	PPC5472
0/3,000 psi/kPa	-	-	PPC5053	PPC5353	PPC5093	PPC5293	PPC5073	PPC5473
0/5,000 psi/kPa	-	-	PPC5054	PPC5354	PPC5094	PPC5294	PPC5074	PPC5474
0/6,000 psi/kPa	PPC5199	-	PPC5158	-	PPC5398	-	PPC5178	-
0/10,000 psi/kPa	-	-	PPC5055	PPC5355	PPC5095	PPC5295	PPC5075	PPC5475
0/15,000 psi/kPa	-	-	PPC5056	PPC5356	PPC5096	PPC5296	PPC5076	PPC5476
0/20,000 psi/kPa	-	-	PPC5057	PPC5357	PPC5097	PPC5297	PPC5077	PPC5477

4.5" Bottom Connection



4.5" Back Connection



PRC Receiver Gauge



Description & Features:

- High quality gauge designed to work with a pneumatic transmitter or controller
- 3-15 psi with a variety of receiver ranges
- 316 stainless steel or brass wetted parts
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- Works in conjunction with valves and transmitters to indicate changes in pressure, temperature, flow, level, or other measured proportional variables

Order Codes

Connection	1/4" Bottom	1/4" Back	1/4" Bottom	1/4" Back
Socket, Tube	Brass		SS	
3/15 psi/0-100%	PRC5081REC	PRC5281REC	PRC5041REC	PRC5341REC
3/27 psi/0-100%	PRC5082REC	PRC5283REC	PRC5042REC	PRC5342REC



Description & Features:

- A combination pressure gauge and diaphragm seal forming one unique instrument that measures low pressures where protection from the process media is required
- Bottom connection only
- All stainless steel construction
- A variety of materials available
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- Used for low pressure corrosive media where diaphragm seal protection is needed
- Processes where low or high temperature will affect seal fill fluid

Specifications

Dial	4" (100mm), 6" (150mm) white aluminum with black markings
Case	304 SS
Upper Flange	SS (neck and base movements)
Lower Flange	316L SS bottom connection
Lens	Acrylic
Connection	1/2" NPTM bottom (female optional)
Diaphragm Element	316 SS, 316 SSI PTFE lined, or Tantalum
Movement	All SS - Push rod / connecting link and segment
Pointer	Adjustable pointer - aluminum
Wetted Parts	316 SS
Ambient Temperature	-13°F to 150°F (-25°C to 65°C)
Process Temperature	212°F (100°C) Maximum
Accuracy	±1.5% of full scale value
Enclosure Rating	IP54

Single Scale Order Codes

Dial Size	4" (100mm)	6" (150mm)
Connection	1/2" Bottom	
0/10" water/oz	PSG40105R1	PSG60105R1
0/30" water/oz	PSG40305R1	PSG60305R1
0/60" water/oz	PSG40605R1	PSG60605R1
0/100" water/oz	PSG401005R1	PSG601005R1
0/160" water/oz	PSG401605R1	PSG601605R1
0/200" water/oz	PSG402005R1	PSG602005R1
0/300" water/oz	PSG403005R1	PSG603005R1
0/10 psi	PSG4105R1	PSG6105R1
0/15 psi	PSG4155R1	PSG6155R1
0/30 psi	PSG4305R1	PSG6305R1
0/60 psi	PSG4605R1	PSG6605R1
0/100 psi	PSG41005R1	PSG41005TR1
0/160 psi	PSG41605R1	-
0/200 psi	PSG42005R1	PSG42005TR1
0/300 psi	PSG43005R1	PSG43005TR1

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code: i.e. PSG41005TR1-SG-4 for SAFETY GLASS.**

Option suffix:

SG-4 = 4" (100mm) Safety glass lens
 SG-6 = 6" (150mm) Safety glass lens
 T = Tantalum diaphragm

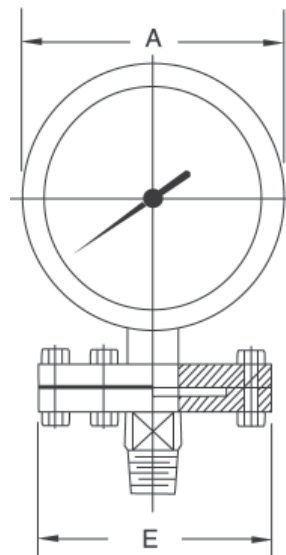
Dual Scale Order Codes

Dial Size	4" (100mm)		6" (150mm)
Connection	1/2" Bottom		
0/10" water/oz	PSG40105	-	PSG60105
0/30" water/oz	PSG40305	-	PSG60305
0/60" water/oz	PSG40605	-	PSG60605
0/100" water/oz	PSG401005	-	PSG601005
0/160" water/oz	PSG401605	-	PSG601605
0/200" water/oz	PSG402005	-	PSG602005
0/300" water/oz	PSG403005	-	PSG603005
0/10 psi/kPa	PSG4105	-	PSG6105
0/15 psi/kPa	PSG4155	-	PSG6155
0/30 psi/kPa	PSG4305	-	PSG6305
0/60 psi/kPa	PSG4605	-	PSG6605
0/100 psi/kPa	PSG41005	PSG41005T	PSG61005
0/160 psi/kPa	PSG41605	-	PSG61605
0/200 psi/kPa	PSG42005	PSG42005T	PSG62005
0/300 psi/kPa	PSG43005	PSG43005T	PSG63005

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code: i.e. PSG41005T-SG-4 for SAFETY GLASS.**

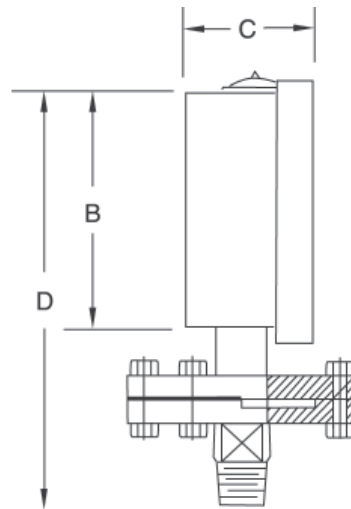
Option suffix:

SG-4 = 4" (100mm) Safety glass lens
 SG-6 = 6" (150mm) Safety glass lens
 T = Tantalum Diaphragm



For pressure ranges greater than 0-10 psi/kPa

Case Dia.	Flange Dia.	A	B	C	D	E
4" 100 mm	4" 100 mm	4.43" 112	3.90" 99	2.16" 55	6.99" 177	3.86" 98
6" 150 mm	4" 100 mm	6.10" 155	5.51" 140	2.20" 56	6.99" 177	3.86" 98



For pressure ranges less than and equal to 10 psi/kPa

Case Dia.	Flange Dia.	A	B	C	D	E
4" 100 mm	6" 150 mm	4.43" 112	3.90" 99	2.16" 55	6.99" 177	6.10" 155
6" 150 mm	6" 150 mm	6.10" 155	5.51" 140	2.20" 56	6.99" 177	6.10" 155



Description & Features:

- Solid front, pressure relief back, welded to a 316L stainless steel one-piece diaphragm seal body
- 316L stainless steel diaphragm for use on most corrosive media
- Permanently enclosed silicone filled system
- Field-fillable gauge
- Orifice restrictor available for severe pulsation
- Pin stop at 6 o'clock available
- ASME B40.100 compliant
- CRN registered
- 5 year warranty on gauge and seal

Applications:

- Process industry where tamper-resistant gauge/seal is required to protect against maintenance errors in the field
- Suited for installations in process, oil and gas, petrochemical and chemical industries
- Tamper resistant construction controls leaks and protects against field errors

Specifications - Gauge

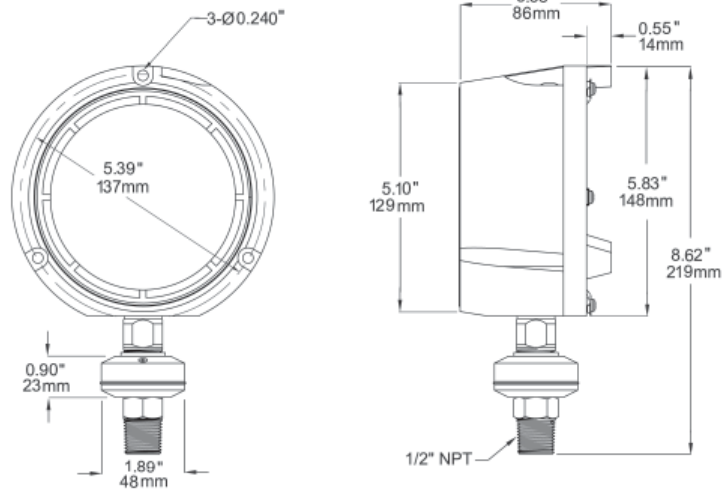
Dial	4.5" (115mm) white aluminum with black and red markings
Case	Black phenolic with pressure relief back, solid front, integral back flange
Solid Wall	Phenolic
Pressure Relief Back	Polypropylene
Window	Polycarbonate
Ring	Phenolic
Pointer	Aluminum, anodized black, micrometer adjustable
Socket	316L SS
Bourdon Tube	316L SS, drawn seamless
Movement	304 SS with protective under and overload stops
Gasket Materials	Silicone (FKM option)
Welding	TIG
Over-pressure Limit	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures 1,451 psi to 5,000 psi (9,998 kPa to 34,474 kPa)
Working Pressure	Maximum 75% of full scale value
Ambient Temperature	Dry: -40°F to 250°F (-40°C to 120°C)
Process Temperature	Silicone Filled: -49°F to 302°F (-45°C to 150°C)
Accuracy	±1% ANSI/ASME Grade A
Enclosure Rating	IP65

Specifications - Seal

Housing	AISI 316 SS
Diaphragm	AISI 316L SS, welded
Minimum Operating Pressure	15 psi (103 kPa)
Maximum Operating Pressure	2,500 psi to 5,000 psi (17,237 kPa to 34,474 kPa)
Process Connection	1/2" NPTM
System Fill	Silicone oil KF96 50CS

Order Codes

Connection	1/2" Bottom
Socket, Tube	SS
0/15 psi	PTR5061R1
0/30 psi	PTR5062R1
0/60 psi	PTR5063R1
0/100 psi	PTR5064R1
0/160 psi	PTR5065R1
0/200 psi	PTR5066R1
0/300 psi	PTR5067R1
0/400 psi	PTR5068R1
0/600 psi	PTR5069R1
0/1,000 psi	PTR5070R1
0/1,500 psi	PTR5071R1
0/2,000 psi	PTR5072R1
0/3,000 psi	PTR5073R1
0/5,000 psi	PTR5074R1

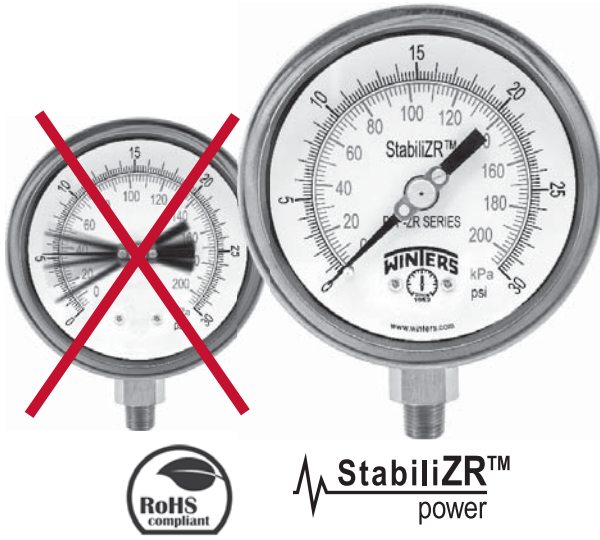


Other ranges and connection sizes (3/4" NPTM, 1" NPTM, 1/2" NPTF) available upon request. Other fills available. Pin stop at 6 o'clock position available. **For options, attach suffix to end of order code: i.e. PTR5070-SF45 for SILICONE-FILLED GAUGE CASE.**

Option suffix:

G = Glycerin-filled gauge case
 RS = Orifice restrictor for severe pulsation
 SF45 = Silicone-filled gauge case
 SG-45 = Safety glass

TAG = Stainless steel tagging
 TC = NIST test certificate of calibration
 ZR = StabilizR™ movement



Description & Features:

- StabilizR™ dampened movement minimizes effects of pulsation and vibration as effectively as liquid filled gauges
- Restrictor screw standard on dual scale (optional on single scale)
- Stainless steel case
- Under and overload stops (4" and 6")
- Back, bottom or panel mounted
- 316L SS wetted parts
- ASME B40.100 compliant (EN837-1 available)
- CRN registered
- 5 year warranty

Applications:

- Outdoor and severe ambient and process conditions
- Use where harmful vibration and pulsation are present
- Hydraulic equipment, oil field equipment, pumps, compressors and process industries

Specifications

Dial	2.5" (63mm), 4" (100mm), 6" (150mm) white aluminum with black and red markings
Case	AISI 304 SS (dry)
Lens	Polycarbonate
Ring	AISI 304 SS bayonet
Socket	316L SS
Connection	2.5" (63mm): 1/4" NPT 4" (100mm), 6" (150mm): 1/4", 1/2" NPT
Bourdon Tube	316L SS
Movement	304 SS, (under and overload stops 4" and 6") and StabilizR™ dampened movement (silicone in sealed chamber)
Pointer	2.5" (63mm): Aluminum, anodized black 4" (100mm), 6" (150mm): Aluminum, anodized black, micrometer adjustable
Welding	Laser welded socket to case
Over-pressure Limit	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures over 1,450 psi (9,998 kPa)
Lens Ring Gasket	Buna N
Ambient Temperature	-40°F to 250°F (-40°C to 120°C)
Process Temperature	-40°F to 250°F (-40°C to 120°C)
Working Pressure	Maximum 75% of full scale value
Accuracy	2.5" (63mm): ±1.5% of full scale value 4" (100mm), 6" (150mm): ±1% ANSI/ASME Grade 1A
Enclosure Rating	NEMA 4X/IP66, EN60529-1 (IEC529-1)

Single Scale Order Codes (products in bold are normally stock in North America) (products in italics are normally available in 3-5 days)

Dial Size	2.5" (63mm)		4" (100mm)				6" (150mm)	
	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)	1/4" Bottom	1/2" Bottom
30" Hg Vac	PFP820ZRR1	PFP840ZRR1	PFP640ZRR1	PFP1090ZRR1	PFP655ZRR1	-	PFP1078ZRR1	PFP2326ZRR1
30"/0/15 psi	PFP860ZRR1	PFP870ZRR1	PFP1036ZRR1	PFP1244ZRR1	PFP1044ZRR1	-	PFP1079ZRR1	PFP2327ZRR1
30"/0/30 psi	PFP861ZRR1	PFP871ZRR1	PFP1037ZRR1	PFP1245ZRR1	PFP1045ZRR1	-	PFP1052ZRR1	PFP2328ZRR1
30"/0/60 psi	PFP862ZRR1	PFP872ZRR1	PFP1038ZRR1	PFP1246ZRR1	PFP1046ZRR1	-	PFP1053ZRR1	PFP2329ZRR1
30"/0/100 psi	PFP863ZRR1	PFP873ZRR1	PFP1039ZRR1	PFP1247ZRR1	PFP1047ZRR1	-	PFP1054ZRR1	PFP2330ZRR1
30"/0/150 psi	PFP864ZRR1	PFP874ZRR1	PFP1040ZRR1	PFP1248ZRR1	PFP1048ZRR1	-	PFP1055ZRR1	PFP2331ZRR1
30"/0/200 psi	PFP866ZRR1	PFP876ZRR1	PFP1042ZRR1	PFP1249ZRR1	PFP1050ZRR1	-	PFP1057ZRR1	PFP2332ZRR1
30"/0/300 psi	PFP867ZRR1	PFP877ZRR1	PFP1043ZRR1	PFP1250ZRR1	PFP1051ZRR1	-	PFP1058ZRR1	PFP2333ZRR1
0/15 psi	PFP821ZRR1	PFP921ZRR1	PFP641ZRR1	PFP1091ZRR1	PFP656ZRR1	-	PFP1059ZRR1	PFP2334ZRR1
0/30 psi	PFP822ZRR1	PFP922ZRR1	PFP642ZRR1	PFP1092ZRR1	PFP657ZRR1	-	PFP1060ZRR1	PFP2335ZRR1
0/60 psi	PFP823ZRR1	PFP923ZRR1	PFP643ZRR1	PFP1093ZRR1	PFP658ZRR1	-	PFP1061ZRR1	PFP2336ZRR1
0/100 psi	PFP824ZRR1	PFP924ZRR1	PFP644ZRR1	PFP1094ZRR1	<i>PFP659ZRR1</i>	-	PFP1062ZRR1	PFP2337ZRR1
0/160 psi	PFP825ZRR1	PFP925ZRR1	<i>PFP645ZRR1</i>	PFP1095ZRR1	<i>PFP660ZRR1</i>	-	PFP1063ZRR1	PFP2338ZRR1
0/200 psi	PFP826ZRR1	PFP926ZRR1	PFP646ZRR1	PFP1096ZRR1	<i>PFP661ZRR1</i>	-	PFP1064ZRR1	PFP2339ZRR1
0/300 psi	PFP827ZRR1	PFP927ZRR1	PFP647ZRR1	PFP1097ZRR1	<i>PFP662ZRR1</i>	-	PFP1065ZRR1	PFP2340ZRR1
0/400 psi	PFP880ZRR1	PFP881ZRR1	PFP650ZRR1	PFP1251ZRR1	PFP666ZRR1	-	PFP1077ZRR1	PFP2341ZRR1
0/600 psi	PFP828ZRR1	PFP928ZRR1	PFP648ZRR1	PFP1098ZRR1	<i>PFP663ZRR1</i>	-	PFP1066ZRR1	PFP2342ZRR1
0/1,000 psi	PFP829ZRR1	PFP929ZRR1	PFP649ZRR1	PFP1099ZRR1	<i>PFP664ZRR1</i>	-	PFP1067ZRR1	PFP1080ZRR1
0/1,500 psi	PFP834ZRR1	PFP934ZRR1	-	PFP1252ZRR1	PFP665ZRR1	PFP1190ZRR1	PFP1068ZRR1	PFP1081ZRR1
0/2,000 psi	PFP830ZRR1	PFP930ZRR1	-	PFP1253ZRR1	PFP667ZRR1	PFP1191ZRR1	PFP1069ZRR1	PFP1082ZRR1
0/3,000 psi	PFP831ZRR1	PFP931ZRR1	-	PFP1254ZRR1	PFP668ZRR1	PFP1192ZRR1	PFP1070ZRR1	PFP1083ZRR1
0/5,000 psi	PFP832ZRR1	PFP852ZRR1	-	PFP1255ZRR1	PFP669ZRR1	PFP1193ZRR1	PFP1072ZRR1	PFP1085ZRR1
0/6,000 psi	PFP836ZRR1	PFP851ZRR1	-	PFP1259ZRR1	PFP675ZRR1	PFP1197ZRR1	-	PFP1089ZRR1
0/10,000 psi	PFP833ZRR1	PFP853ZRR1	-	PFP1256ZRR1	PFP670ZRR1	PFP1194ZRR1	PFP1073ZRR1	PFP1086ZRR1
0/15,000 psi	PFP835ZRR1	PFP855ZRR1	-	PFP1257ZRR1	PFP671ZRR1	PFP1195ZRR1	PFP1074ZRR1	PFP1087ZRR1
0/20,000 psi	PFP837ZRR1	-	-	PFP1258ZRR1	PFP672ZRR1	PFP1196ZRR1	PFP1075ZRR1	PFP1088ZRR1

Note: Restrictor screws are not standard on single scale gauges

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code: i.e. PFP660ZRR1-4FF for FRONT FLANGE.**

Option suffix:

25BF = 2.5" (63mm) Back flange	6SS = 6" (150mm) SS case
25BOOT = 2.5" (63mm) Black rubber boot	EN = EN837-1 compliant
25FF = 2.5" (63mm) Front flange	MAXI25 = 2.5" (63mm) Maximum adjustable pointer
25SS = 2.5" (63mm) 316 SS case	MAXI4 = 4" (100mm) Maximum adjustable pointer
25UC = 2.5" (63mm) U-Clamp	RSP4 = 4" (100mm) Red set pointer
4BF = 4" (100mm) Back flange	RSP6 = 6" (150mm) Red set pointer
4FF = 4" (100mm) Front flange	SG25 = 2.5" (63mm) Safety glass lens
4SS = 4" (100mm) SS case	SG-4 = 4" (100mm) Safety glass lens
4UC-P = 4" (100mm) U-Clamp premium	SG-6 = 6" (150mm) Safety glass lens
6BF = 6" (150mm) Back flange	

For WinBRIGHT dial options refer to Custom Dials

Dual Scale Order Codes (products in bold are normally stock in North America)
(products in italics are normally available in 3 - 5 days)

Dial Size	2.5" (63mm)		4" (100mm)				6" (150mm)	
	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)	1/4" Bottom	1/2" Bottom
30" Hg Vac/kPa	PFP820ZR	PFP840ZR	PFP640ZR	PFP1090ZR	PFP655ZR	PFP2308ZR	PFP1078ZR	PFP2326ZR
30"/0/15 psi/kPa	PFP860ZR	PFP870ZR	PFP1036ZR	PFP1244ZR	PFP1044ZR	PFP2309ZR	PFP1079ZR	PFP2327ZR
30"/0/30 psi/kPa	PFP861ZR	PFP871ZR	PFP1037ZR	PFP1245ZR	PFP1045ZR	PFP2310ZR	PFP1052ZR	PFP2328ZR
30"/0/60 psi/kPa	PFP862ZR	PFP872ZR	<i>PFP1038ZR</i>	PFP1246ZR	PFP1046ZR	PFP2311ZR	PFP1053ZR	PFP2329ZR
30"/0/100 psi/kPa	PFP863ZR	PFP873ZR	PFP1039ZR	PFP1247ZR	PFP1047ZR	PFP2312ZR	PFP1054ZR	PFP2330ZR
30"/0/150 psi/kPa	PFP864ZR	PFP874ZR	PFP1040ZR	PFP1248ZR	PFP1048ZR	PFP2313ZR	PFP1055ZR	PFP2331ZR
30"/0/200 psi/kPa	PFP866ZR	PFP876ZR	PFP1042ZR	PFP1249ZR	PFP1050ZR	PFP2314ZR	PFP1057ZR	PFP2332ZR
30"/0/300 psi/kPa	PFP867ZR	PFP877ZR	PFP1043ZR	PFP1250ZR	PFP1051ZR	PFP2315ZR	PFP1058ZR	PFP2333ZR
0/15 psi/kPa	PFP821ZR	PFP921ZR	PFP641ZR	PFP1091ZR	PFP656ZR	PFP2316ZR	PFP1059ZR	PFP2334ZR
0/30 psi/kPa	PFP822ZR	PFP922ZR	<i>PFP642ZR</i>	PFP1092ZR	PFP657ZR	PFP2317ZR	PFP1060ZR	PFP2335ZR
0/60 psi/kPa	PFP823ZR	PFP923ZR	PFP643ZR	PFP1093ZR	<i>PFP658ZR</i>	PFP2318ZR	PFP1061ZR	PFP2336ZR
0/100 psi/kPa	PFP824ZR	PFP924ZR	PFP644ZR	PFP1094ZR	<i>PFP659ZR</i>	PFP2319ZR	PFP1062ZR	PFP2337ZR
0/160 psi/kPa	PFP825ZR	PFP925ZR	PFP645ZR	PFP1095ZR	<i>PFP660ZR</i>	PFP2320ZR	PFP1063ZR	PFP2338ZR
0/200 psi/kPa	PFP826ZR	PFP926ZR	PFP646ZR	PFP1096ZR	<i>PFP661ZR</i>	PFP2321ZR	PFP1064ZR	PFP2339ZR
0/300 psi/kPa	PFP827ZR	PFP927ZR	PFP647ZR	PFP1097ZR	<i>PFP662ZR</i>	PFP2322ZR	PFP1065ZR	PFP2340ZR
0/400 psi/kPa	PFP880ZR	PFP881ZR	<i>PFP650ZR</i>	PFP1251ZR	<i>PFP666ZR</i>	PFP2323ZR	PFP1077ZR	PFP2341ZR
0/600 psi/kPa	PFP828ZR	PFP928ZR	PFP648ZR	PFP1098ZR	<i>PFP663ZR</i>	PFP2324ZR	PFP1066ZR	PFP2342ZR
0/1,000 psi/kPa	PFP829ZR	PFP929ZR	PFP649ZR	PFP1099ZR	<i>PFP664ZR</i>	PFP2325ZR	PFP1067ZR	PFP1080ZR
0/1,500 psi/kPa	PFP834ZR	PFP934ZR	PFP2301ZR	PFP1252ZR	<i>PFP665ZR</i>	PFP1190ZR	PFP1068ZR	PFP1081ZR
0/2,000 psi/kPa	PFP830ZR	PFP930ZR	PFP2302ZR	PFP1253ZR	<i>PFP667ZR</i>	PFP1191ZR	PFP1069ZR	PFP1082ZR
0/3,000 psi/kPa	PFP831ZR	PFP931ZR	PFP2303ZR	PFP1254ZR	<i>PFP668ZR</i>	PFP1192ZR	PFP1070ZR	PFP1083ZR
0/5,000 psi/kPa	PFP832ZR	PFP852ZR	PFP2304ZR	PFP1255ZR	<i>PFP669ZR</i>	PFP1193ZR	PFP1072ZR	PFP1085ZR
0/6,000 psi/kPa	PFP836ZR	PFP851ZR	PFP2305ZR	PFP1259ZR	PFP675ZR	PFP1197ZR	-	PFP1089ZR
0/10,000 psi/kPa	PFP833ZR	PFP853ZR	PFP2306ZR	PFP1256ZR	PFP670ZR	PFP1194ZR	PFP1073ZR	PFP1086ZR
0/15,000 psi/kPa	PFP835ZR	PFP855ZR	PFP2307ZR	PFP1257ZR	PFP671ZR	PFP1195ZR	PFP1074ZR	PFP1087ZR
0/20,000 psi/kPa	PFP837ZR	-	-	PFP1258ZR	<i>PFP672ZR</i>	PFP1196ZR	PFP1075ZR	PFP1088ZR

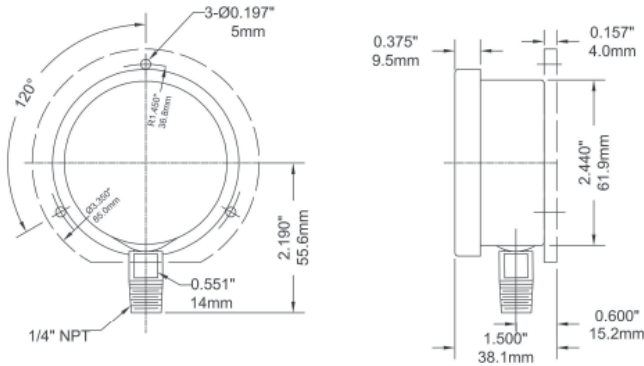
Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code: i.e. PFP660ZR-4FF for FRONT FLANGE.**

Option suffix:

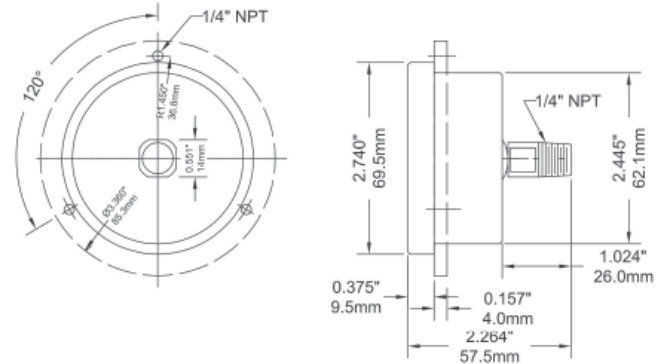
- | | |
|--|---|
| 25BF = 2.5" (63mm) Back flange | 6SS = 6" (150mm) SS case |
| 25BOOT = 2.5" (63mm) Black rubber boot | EN = EN837-1 compliant |
| 25FF = 2.5" (63mm) Front flange | MAXI25 = 2.5" (63mm) Maximum adjustable pointer |
| 25SS = 2.5" (63mm) 316 SS case | MAXI4 = 4" (100mm) Maximum adjustable pointer |
| 25UC = 2.5" (63mm) U-Clamp | RSP4 = 4" (100mm) Red set pointer |
| 4BF = 4" (100mm) Back flange | RSP6 = 6" (150mm) Red set pointer |
| 4FF = 4" (100mm) Front flange | SG25 = 2.5" (63mm) Safety glass lens |
| 4SS = 4" (100mm) SS case | SG-4 = 4" (100mm) Safety glass lens |
| 4UC-P = 4" (100mm) U-Clamp premium | SG-6 = 6" (150mm) Safety glass lens |
| 6BF = 6" (150mm) Back flange | |

For Win**BRIGHT** dial options refer to Custom Dials

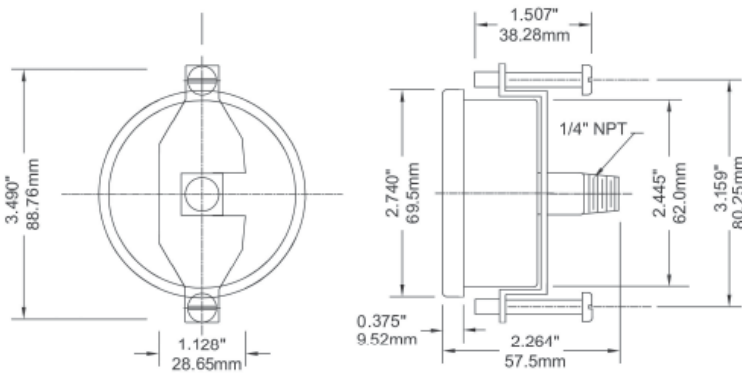
2.5" Bottom Connection with Back Flange



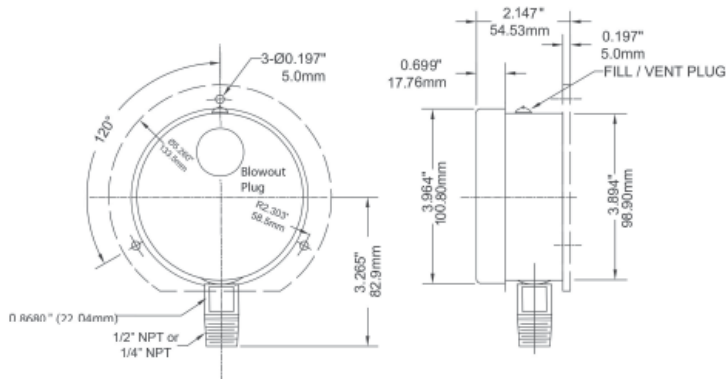
2.5" Back Connection with Front Flange



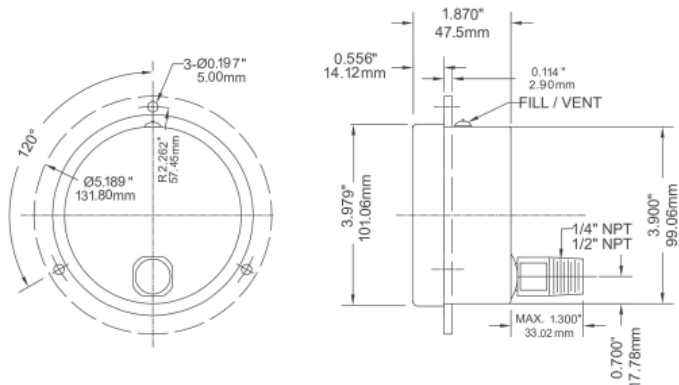
2.5" Back Connection with U-Clamp

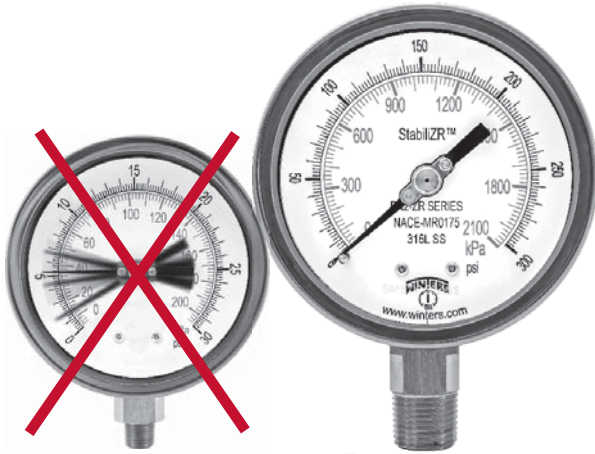


4" Bottom Connection with Back Flange



4" Lower Back Connection with Front Flange





Description & Features:

- Designed for sour gas applications requiring NACE Standards MR0175-2002 (NACE Standards MR0103-2003 available)
- StabiliZR™ dampened movement minimizes effects of pulsation and vibration as effectively as liquid filled gauges
- Blow out back plug
- Under and overload stops
- Wetted parts meet hardness requirements
- ASME B40.100 compliant (EN837-1 available)
- CRN registered
- 5 year warranty

Applications:

- Sour gas applications requiring gauges that meet NACE International Standards

Specifications

Dial	4" (100mm) aluminum with black and red markings
Case	304 SS (dry)
Lens	Laminated safety glass
Ring	304 SS, bayonet
Socket	316L SS
Connection	1/2" NPT bottom
Bourdon Tube	316L SS
Movement	304 SS with under and overload stops and StabiliZR™ dampened movement (silicone in sealed chamber)
Pointer	Aluminum, anodized black, micrometer adjustable
Over-Pressure Limit	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures over 1,450 psi (9,998 kPa)
Ambient/Process Temperature	-40°F to 250°F (-40°C to 120°C)
Accuracy	±1% ANSI/ASME Grade 1A
Enclosure Rating	IP66

Order Codes

Dial Size	4" (100mm)
Connection	1/2" Bottom
30" Hg Vac/kPa	PN2655ZR
30"/0/15 psi/kPa	PN21044ZR
30"/0/30 psi/kPa	PN21045ZR
30"/0/60 psi/kPa	PN21046ZR
30"/0/100 psi/kPa	PN21047ZR
30"/0/150 psi/kPa	PN21048ZR
30"/0/200 psi/kPa	PN21050ZR
30"/0/300 psi/kPa	PN21051ZR
0/15 psi/kPa	PN2656ZR
0/30 psi/kPa	PN2657ZR
0/60 psi/kPa	PN2658ZR
0/100 psi/kPa	PN2659ZR
0/160 psi/kPa	PN2660ZR
0/200 psi/kPa	PN2661ZR
0/300 psi/kPa	PN2662ZR
0/400 psi/kPa	PN2666ZR
0/600 psi/kPa	PN2663ZR
0/1,000 psi/kPa	PN2664ZR
0/1,500 psi/kPa	PN2665ZR
0/2,000 psi/kPa	PN2667ZR
0/3,000 psi/kPa	PN2668ZR
0/5,000 psi/kPa	PN2669ZR
0/6,000 psi/kPa	PN2675ZR
0/10,000 psi/kPa	PN2670ZR
0/15,000 psi/kPa	PN2671ZR
0/20,000 psi/kPa	PN2672ZR

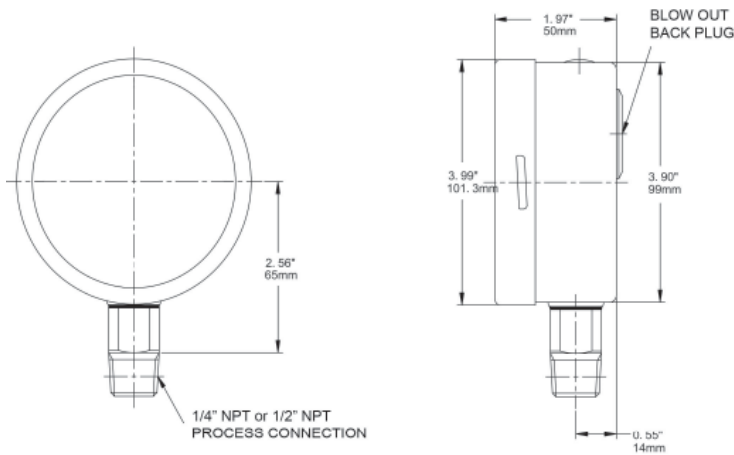
Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.
For options, attach suffix to end of order code: i.e. PN2664ZR-4BF for BACK FLANGE.

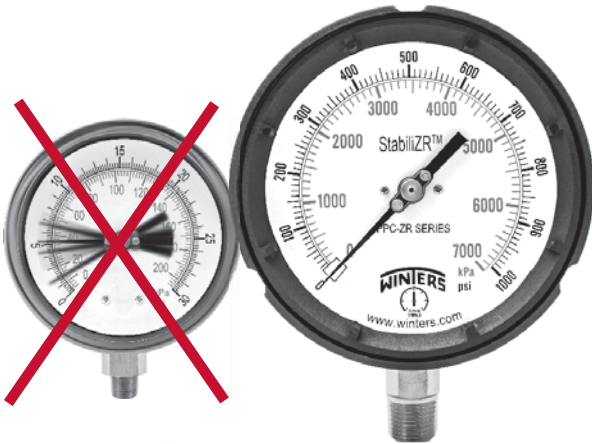
Option suffix:

4BF = 4" (100mm) Back flange
 4NSS = 4" (100mm) SS case
 4UC-P = 4" (100mm) U-Clamp premium

EN = EN837-1 compliant
 REST = Restrictor screw

4" Bottom Connection






Note: RoHS applies to SS and Monel® internals only

Description & Features:

- StabiliZR™ dampened movement minimizes effects of pulsation and vibration as effectively as liquid filled gauges
- Solid phenolic front and polypropylene pressure relief back safety case
- ±0.5% accuracy
- Stainless steel full rotary movement
- Micrometer adjustable pointer for ease in calibration
- Under and overload stops
- 316L stainless steel or brass wetted parts standard
- Restricted orifice standard on dual scale (optional on single scale)
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- Ideally suited for process, chemical, petroleum and power industries
- Suitable for non-clogging corrosive media
- Used where operator safety is a requirement
- Processes where pulsation and vibration exist

Specifications	Stainless Steel Internals	Brass Internals
Dial	4.5" (115mm) aluminum with black and red markings	4.5" (115mm) white aluminum with black and red markings
Case	Black phenolic with pressure relief back, solid front, integral back flange	Black phenolic with pressure relief back, solid front, integral back flange
Solid Wall	Phenolic	Phenolic
Pressure Relief Back	Polypropylene	Polypropylene
Window	Polycarbonate	Polycarbonate
Ring	Phenolic	Phenolic
Pointer	Aluminum, anodized black, micrometer adjustable	Aluminum, anodized black, micrometer adjustable
Socket	316L SS	OT 58 brass
Connection	1/4" or 1/2" NPT standard, bottom or back	1/4" NPT or 1/2" NPT standard, bottom or back
Bourdon Tube	316L SS, drawn seamless	Phosphor bronze
Movement	304 SS with under and overload stops and StabiliZR™ dampened movement (silicone in sealed chamber)	304 SS with under and overload stops and StabiliZR™ dampened movement (silicone in sealed chamber)
Gasket Materials	Silicone (FKM option)	Silicone (FKM option)
Welding	TIG	Silver alloy
Over-pressure Limit	25% for pressures below 1,500 psi (10,341 kPa), 15% for pressures 1,500 to 8,700 psi (10,341 kPa to 59,984 kPa), 10% for pressures above 8,700 psi (59,984 kPa)	25% for pressures below 1,500 psi (10,341 kPa), 15% for pressures 1,500 to 8,700 psi (10,341 kPa to 59,984 kPa), 10% for pressures above 8,700 psi (59,984 kPa)
Working Pressure	Maximum 75% of full scale value	Maximum 75% of full scale value
Ambient Temperature	-40°F to 250°F (-40°C to 120°C)	-40°F to 250°F (-40°C to 120°C)
Process Temperature	-40°F to 250°F (-40°C to 120°C)	-40°F to 150°F (-40°C to 65°C)
Accuracy	±0.5% ANSI/ASME Grade 2A	±0.5% ANSI/ASME Grade 2A
Enclosure Rating	IP65	IP65
Warning (brass internals only)	N/A	 WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

Single Scale Order Codes (products in bold are normally stock in North America) (products in italics are normally available in 3-5 days)

Connection	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)
Socket, Tube	Brass		SS			
30" Hg Vac	PPC5080ZRR1	PPC5280ZRR1	PPC5040ZRR1	PPC5340ZRR1	PPC5060ZRR1	PPC5460ZRR1
30"/0/15 psi	PPC5120ZRR1	PPC5220ZRR1	PPC5130ZRR1	PPC5330ZRR1	PPC5140ZRR1	PPC5440ZRR1
30"/0/30 psi	PPC5121ZRR1	PPC5221ZRR1	PPC5131ZRR1	PPC5331ZRR1	PPC5141ZRR1	PPC5441ZRR1
30"/0/60 psi	PPC5122ZRR1	PPC5222ZRR1	PPC5132ZRR1	PPC5332ZRR1	PPC5142ZRR1	PPC5442ZRR1
30"/0/100 psi	PPC5123ZRR1	PPC5223ZRR1	PPC5133ZRR1	PPC5333ZRR1	PPC5143ZRR1	PPC5443ZRR1
30"/0/160 psi	PPC5124ZRR1	PPC5224ZRR1	PPC5134ZRR1	PPC5334ZRR1	PPC5144ZRR1	PPC5444ZRR1
30"/0/200 psi	PPC5125ZRR1	PPC5225ZRR1	PPC5135ZRR1	PPC5335ZRR1	PPC5145ZRR1	PPC5445ZRR1
30"/0/300 psi	PPC5126ZRR1	PPC5226ZRR1	PPC5136ZRR1	PPC5336ZRR1	PPC5146ZRR1	PPC5446ZRR1
0/15 psi	PPC5081ZRR1	PPC5281ZRR1	PPC5041ZRR1	PPC5341ZRR1	PPC5061ZRR1	PPC5461ZRR1
0/30 psi	PPC5082ZRR1	PPC5282ZRR1	PPC5042ZRR1	PPC5342ZRR1	<i>PPC5062ZRR1</i>	PPC5462ZRR1
0/60 psi	PPC5083ZRR1	PPC5283ZRR1	<i>PPC5043ZRR1</i>	PPC5343ZRR1	PPC5063ZRR1	PPC5463ZRR1
0/100 psi	PPC5084ZRR1	PPC5284ZRR1	<i>PPC5044ZRR1</i>	PPC5344ZRR1	PPC5064ZRR1	PPC5464ZRR1
0/160 psi	PPC5085ZRR1	PPC5285ZRR1	<i>PPC5045ZRR1</i>	PPC5345ZRR1	<i>PPC5065ZRR1</i>	PPC5465ZRR1
0/200 psi	PPC5086ZRR1	PPC5286ZRR1	PPC5046ZRR1	PPC5346ZRR1	PPC5066ZRR1	PPC5466ZRR1
0/300 psi	PPC5087ZRR1	PPC5287ZRR1	PPC5047ZRR1	PPC5347ZRR1	PPC5067ZRR1	PPC5467ZRR1
0/400 psi	PPC5088ZRR1	PPC5288ZRR1	PPC5048ZRR1	PPC5348ZRR1	PPC5068ZRR1	PPC5468ZRR1
0/600 psi	PPC5089ZRR1	PPC5289ZRR1	PPC5049ZRR1	PPC5349ZRR1	PPC5069ZRR1	PPC5469ZRR1
0/800 psi	-	-	PPC5058ZRR1	PPC5358ZRR1	PPC5078ZRR1	PPC5478ZRR1
0/1,000 psi	PPC5098ZRR1	PPC5298ZRR1	PPC5050ZRR1	PPC5350ZRR1	PPC5070ZRR1	PPC5470ZRR1
Connection	1/2" Bottom	1/2" Back (LB)	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)
0/1,000 psi	PPC5188ZRR1	PPC5290ZRR1	PPC5050ZRR1	PPC5350ZRR1	PPC5070ZRR1	PPC5470ZRR1
0/1,500 psi	PPC5091ZRR1	PPC5291ZRR1	PPC5051ZRR1	PPC5351ZRR1	PPC5071ZRR1	PPC5471ZRR1
0/2,000 psi	PPC5092ZRR1	PPC5292ZRR1	PPC5052ZRR1	PPC5352ZRR1	PPC5072ZRR1	PPC5472ZRR1
0/3,000 psi	PPC5093ZRR1	PPC5293ZRR1	PPC5053ZRR1	PPC5353ZRR1	<i>PPC5073ZRR1</i>	PPC5473ZRR1
0/5,000 psi	PPC5094ZRR1	PPC5294ZRR1	PPC5054ZRR1	PPC5354ZRR1	PPC5074ZRR1	PPC5474ZRR1
0/10,000 psi	PPC5095ZRR1	PPC5295ZRR1	PPC5055ZRR1	PPC5355ZRR1	PPC5075ZRR1	PPC5475ZRR1
0/15,000 psi	PPC5096ZRR1	PPC5296ZRR1	PPC5056ZRR1	PPC5356ZRR1	PPC5076ZRR1	PPC5476ZRR1
0/20,000 psi	PPC5097ZRR1	PPC5297ZRR1	PPC5057ZRR1	PPC5357ZRR1	PPC5077ZRR1	PPC5477ZRR1

Note: Restrictor screws are not standard on single scale gauges

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. 1/2" NPT brass available on ranges below 1,000 psi.

For options, attach suffix to end of order code: i.e. PPC5284ZRR1-FMR for FLUSH MOUNTED RING.

Option suffix:

CS = Carbon steel socket/stainless steel tube

FMR = Flush mounted ring

HCSF = 4.5" (115mm) Solid front hinged case (back connection only)

MAXI45 = 4.5" (115mm) Maxi pointer

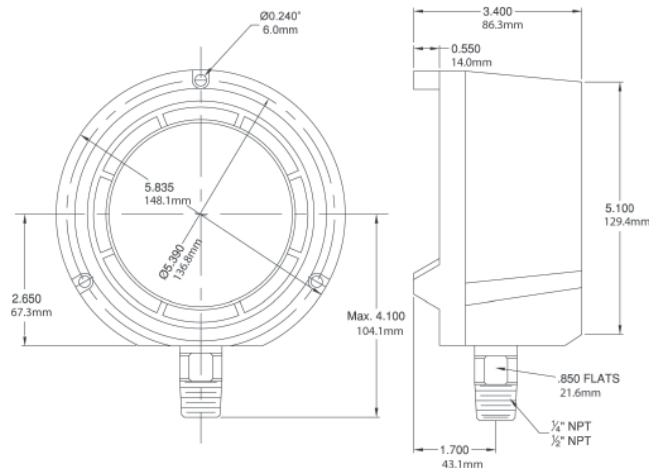
MS = Monel® tube and socket

SG-45 = 4.5" (115mm) Safety glass

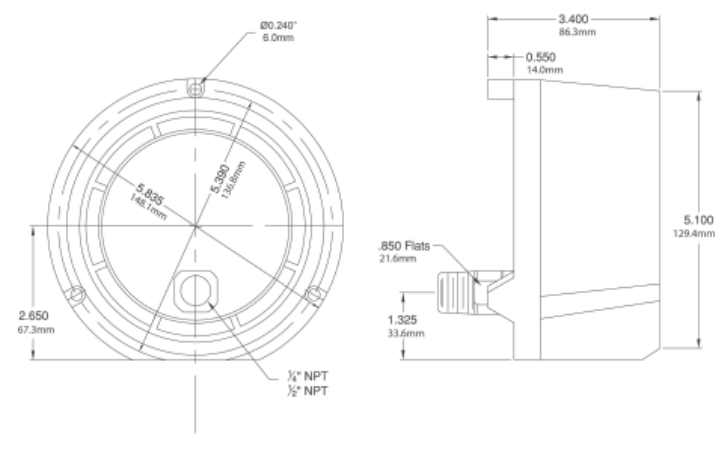
REST = Restrictor screw

For WinBRIGHT dial options refer to Custom Dials

4.5" Bottom Connection



4.5" Back Connection



Dual Scale Order Codes (products in bold are normally stock in North America)
(products in italics are normally available in 3 - 5 days)

Connection	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)
Socket, Tube	Brass		SS			
30" Hg Vac/kPa	PPC5080ZR	PPC5280ZR	PPC5040ZR	PPC5340ZR	PPC5060ZR	PPC5460ZR
30"/0/15 psi/kPa	PPC5120ZR	PPC5220ZR	PPC5130ZR	PPC5330ZR	PPC5140ZR	PPC5440ZR
30"/0/30 psi/kPa	PPC5121ZR	PPC5221ZR	PPC5131ZR	PPC5331ZR	PPC5141ZR	PPC5441ZR
30"/0/60 psi/kPa	PPC5122ZR	PPC5222ZR	PPC5132ZR	PPC5332ZR	PPC5142ZR	PPC5442ZR
30"/0/100 psi/kPa	PPC5123ZR	PPC5223ZR	PPC5133ZR	PPC5333ZR	PPC5143ZR	PPC5443ZR
30"/0/160 psi/kPa	PPC5124ZR	PPC5224ZR	PPC5134ZR	PPC5334ZR	PPC5144ZR	PPC5444ZR
30"/0/200 psi/kPa	PPC5125ZR	PPC5225ZR	PPC5135ZR	PPC5335ZR	PPC5145ZR	PPC5445ZR
30"/0/300 psi/kPa	PPC5126ZR	PPC5226ZR	PPC5136ZR	PPC5336ZR	PPC5146ZR	PPC5446ZR
0/15 psi/kPa	<i>PPC5081ZR</i>	PPC5281ZR	PPC5041ZR	PPC5341ZR	PPC5061ZR	PPC5461ZR
0/30 psi/kPa	<i>PPC5082ZR</i>	PPC5282ZR	<i>PPC5042ZR</i>	PPC5342ZR	PPC5062ZR	PPC5462ZR
0/60 psi/kPa	<i>PPC5083ZR</i>	PPC5283ZR	<i>PPC5043ZR</i>	PPC5343ZR	PPC5063ZR	PPC5463ZR
0/100 psi/kPa	<i>PPC5084ZR</i>	PPC5284ZR	<i>PPC5044ZR</i>	PPC5344ZR	PPC5064ZR	PPC5464ZR
0/160 psi/kPa	<i>PPC5085ZR</i>	PPC5285ZR	<i>PPC5045ZR</i>	PPC5345ZR	PPC5065ZR	PPC5465ZR
0/200 psi/kPa	<i>PPC5086ZR</i>	PPC5286ZR	<i>PPC5046ZR</i>	PPC5346ZR	<i>PPC5066ZR</i>	PPC5466ZR
0/300 psi/kPa	<i>PPC5087ZR</i>	PPC5287ZR	<i>PPC5047ZR</i>	PPC5347ZR	<i>PPC5067ZR</i>	PPC5467ZR
0/400 psi/kPa	<i>PPC5088ZR</i>	PPC5288ZR	PPC5048ZR	PPC5348ZR	<i>PPC5068ZR</i>	PPC5468ZR
0/600 psi/kPa	<i>PPC5089ZR</i>	PPC5289ZR	PPC5049ZR	PPC5349ZR	<i>PPC5069ZR</i>	PPC5469ZR
0/800 psi/kPa	PPC5099ZR	PPC5299ZR	PPC5058ZR	PPC5358ZR	PPC5078ZR	PPC5478ZR
0/1,000 psi/kPa	PPC5098ZR	PPC5298ZR	PPC5050ZR	PPC5350ZR	<i>PPC5070ZR</i>	PPC5470ZR
Connection	1/2"	1/2"	1/4"	1/4"	1/2"	1/2"
0/800 psi/kPa	PPC5188ZR	PPC5198ZR	PPC5058ZR	PPC5358ZR	PPC5078ZR	PPC5478ZR
0/1,000 psi/kPa	PPC5090ZR	PPC5290ZR	PPC5050ZR	PPC5350ZR	<i>PPC5070ZR</i>	PPC5470ZR
0/1,500 psi/kPa	PPC5091ZR	PPC5291ZR	PPC5051ZR	PPC5351ZR	<i>PPC5071ZR</i>	PPC5471ZR
0/2,000 psi/kPa	PPC5092ZR	PPC5292ZR	PPC5052ZR	PPC5352ZR	<i>PPC5072ZR</i>	PPC5472ZR
0/3,000 psi/kPa	PPC5093ZR	PPC5293ZR	PPC5053ZR	PPC5353ZR	<i>PPC5073ZR</i>	PPC5473ZR
0/5,000 psi/kPa	PPC5094ZR	PPC5294ZR	PPC5054ZR	PPC5354ZR	<i>PPC5074ZR</i>	PPC5474ZR
0/10,000 psi/kPa	PPC5095ZR	PPC5295ZR	PPC5055ZR	PPC5355ZR	<i>PPC5075ZR</i>	PPC5475ZR
0/15,000 psi/kPa	PPC5096ZR	PPC5296ZR	PPC5056ZR	PPC5356ZR	PPC5076ZR	PPC5476ZR
0/20,000 psi/kPa	PPC5097ZR	PPC5297ZR	PPC5057ZR	PPC5357ZR	PPC5077ZR	PPC5477ZR

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. 1/2" NPT brass available on ranges below 1,000 psi/kPa. **For options, attach suffix to end of order code: i.e. PPC5284ZR-FMR for FLUSH MOUNTED RING.**

Option suffix:

CS = Carbon steel socket/stainless steel tube
 FMR = Flush mounted ring
 HCSF = 4.5" (115mm) Solid front hinged case (back connection only)

MAXI45 = 4.5" (115mm) Maxi pointer
 MS = Monel® tube and socket
 SG-45 = 4.5" (115mm) Safety glass

For WinBRIGHT dial options refer to Custom Dials




Description & Features:

- One piece forged brass case designed for severe service conditions
- Easy-to-read single or dual scale dial
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- High vibration industrial installations including hydraulic and fracking systems

Specifications	
Dial	2.5" (63mm), 4" (100mm)
Case	Forged brass, rugged 2.5": Liquid filled case standard, 4": dry case standard
Lens	Polycarbonate
Ring	2.5" (63mm): Gold-coloured ABS, 4" (100mm): polished brass
Socket	Brass
Pointer	Aluminum, anodized black
Connection	2.5"(63mm): 1/4" NPT bottom or back, 4" (100mm): 1/4" or 1/2" NPT bottom
Wetted Parts	Brass
Ambient/Process Temperature	-40°F to 150°F (-40°C to 65°C)
Accuracy	2.5" (63mm): ±1.5% of full scale, 4" (100mm): ±1% ANSI/ASME Grade 1A
Enclosure Rating	IP65
Warning	 WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

Single Scale Order Codes

Dial Size Connection	2.5" (63mm)		4" (100mm)	
	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/2" Bottom
30" Hg Vac	PBC801R1	PBC900R1	PBC700R1	PBC1234R1
30"/0/15 psi	PBC790R1	PBC890R1	PBC701R1	PBC1235R1
30"/0/30 psi	PBC798R1	PBC898R1	PBC702R1	PBC1236R1
30"/0/60 psi	PBC799R1	PBC899R1	PBC703R1	PBC1237R1
30"/0/100 psi	PBC791R1	PBC891R1	PBC704R1	PBC1238R1
30"/0/150 psi	PBC792R1	PBC892R1	PBC705R1	PBC1239R1
30"/0/200 psi	PBC794R1	PBC894R1	PBC706R1	PBC1240R1
30"/0/300 psi	PBC795R1	PBC895R1	PBC707R1	PBC1241R1
0/15 psi	PBC800R1	PBC901R1	PBC708R1	PBC1242R1
0/30 psi	PBC802R1	PBC902R1	PBC709R1	PBC1243R1
0/60 psi	PBC803R1	PBC903R1	PBC710R1	PBC1244R1
0/100 psi	PBC804R1	PBC904R1	PBC711R1	PBC1245R1
0/160 psi	PBC805R1	PBC905R1	PBC712R1	PBC1246R1
0/200 psi	PBC806R1	PBC906R1	PBC713R1	PBC1247R1
0/300 psi	PBC807R1	PBC907R1	PBC714R1	PBC1248R1
0/400 psi	PBC817R1	PBC917R1	PBC715R1	PBC1249R1
0/600 psi	PBC808R1	PBC908R1	PBC716R1	PBC1250R1
0/1,000 psi	PBC809R1	PBC909R1	PBC724R1	PBC717R1
0/1,500 psi	PBC816R1	PBC914R1	PBC725R1	PBC718R1
0/2,000 psi	PBC810R1	PBC910R1	PBC726R1	PBC719R1
0/3,000 psi	PBC811R1	PBC911R1	PBC727R1	PBC720R1
0/5,000 psi	PBC812R1	PBC912R1	PBC728R1	PBC721R1
0/6,000 psi	PBC814R1	PBC915R1	PBC024R1	PBC784R1
0/10,000 psi	PBC813R1	PBC913R1	PBC729R1	PBC722R1

Dual Scale Order Codes

Dial Size Connection	2.5" (63mm)		4" (100mm)	
	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/2" Bottom
30" Hg Vac/kPa	PBC801	PBC900	PBC700	PBC1234
30"/0/15 psi/kPa	PBC790	PBC890	PBC701	PBC1235
30"/0/30 psi/kPa	PBC798	PBC898	PBC702	PBC1236
30"/0/60 psi/kPa	PBC799	PBC899	PBC703	PBC1237
30"/0/100 psi/kPa	PBC791	PBC891	PBC704	PBC1238
30"/0/150 psi/kPa	PBC792	PBC892	PBC705	PBC1239
30"/0/200 psi/kPa	PBC794	PBC894	PBC706	PBC1240
30"/0/300 psi/kPa	PBC795	PBC895	PBC707	PBC1241
0/15 psi/kPa	PBC800	PBC901	PBC708	PBC1242
0/30 psi/kPa	PBC802	PBC902	PBC709	PBC1243
0/60 psi/kPa	PBC803	PBC903	PBC710	PBC1244
0/100 psi/kPa	PBC804	PBC904	PBC711	PBC1245
0/160 psi/kPa	PBC805	PBC905	PBC712	PBC1246
0/200 psi/kPa	PBC806	PBC906	PBC713	PBC1247
0/300 psi/kPa	PBC807	PBC907	PBC714	PBC1248
0/400 psi/kPa	PBC817	PBC917	PBC715	PBC1249
0/600 psi/kPa	PBC808	PBC908	PBC716	PBC1250
0/1,000 psi/kPa	PBC809	PBC909	PBC724	PBC717
0/1,500 psi/kPa	PBC816	PBC914	PBC725	PBC718
0/2,000 psi/kPa	PBC810	PBC910	PBC726	PBC719
0/3,000 psi/kPa	PBC811	PBC911	PBC727	PBC720
0/5,000 psi/kPa	PBC812	PBC912	PBC728	PBC721
0/6,000 psi/kPa	PBC814	PBC915	PBC024	PBC784
0/10,000 psi/kPa	PBC813	PBC913	PBC729	PBC722

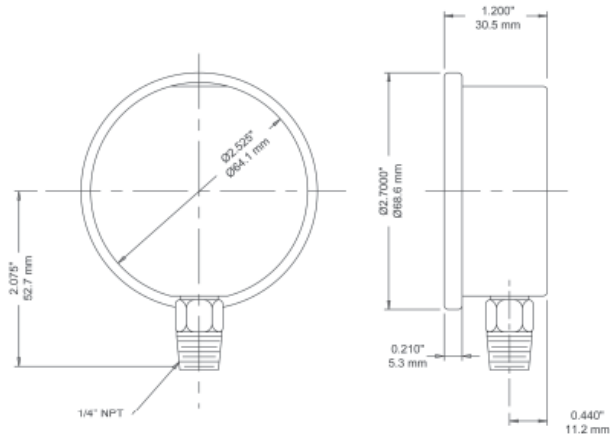
Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code:**

i.e. PBC805-REST for RESTRICTOR SCREW.

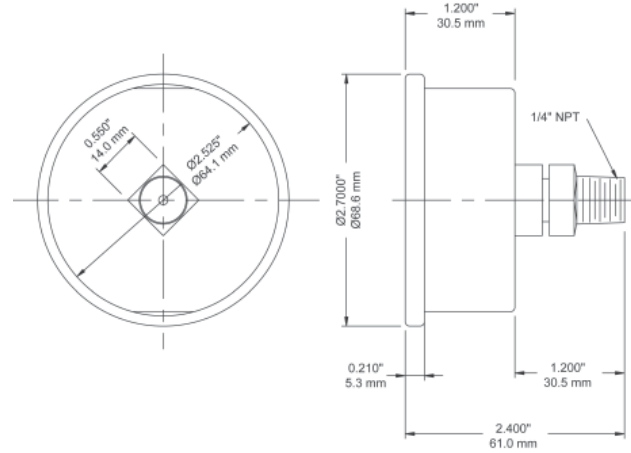
Option suffix:

- 25DRY = Supply 2.5" (63mm) gauge dry
- G = Glycerin filled case
- REST = Restrictor screw

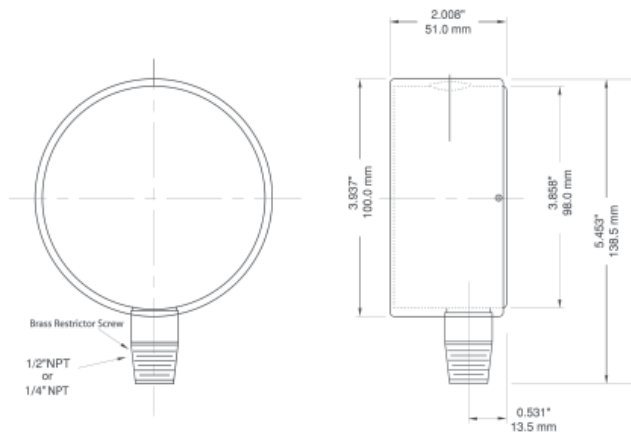
2.5" Bottom Connection

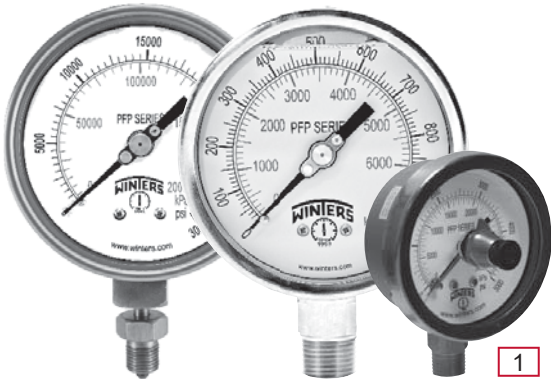


2.5" Back Connection



4" Bottom Connection





1. Maximum Indicating Pointer



Note: RoHS applies to SS internals only

Description & Features:

- Liquid filled stainless steel case protects against vibration and pulsation
- Bayonet ring
- Highly accurate
- Back, bottom, or panel mounted
- Under and overload stops
- Ventable plug on 2.5" to 4.5" stainless steel and 4.5" brass bottom mount and 4" stainless steel back mount
- Stainless steel or brass wetted parts
- Restrictor screw standard on dual scale (optional on single scale)
- Dry case available
- ASME B40.100 compliant (EN837-1 available)
- CRN registered
- 5 year warranty

Applications:

- Outdoor and severe ambient and process conditions
- Use where harmful vibration and pulsation are present
- Hydraulic equipment, oil field equipment, pumps, compressors and process industries

Specifications	Stainless Steel Internals	Brass Internals
Dial	2.5" (63mm), 4" (100mm), 4.5" (115mm), 6" (150mm) white aluminum with black and red markings	4" (100mm), 4.5" (115mm) white aluminum with black and red markings
Case	AISI 304 SS	AISI 304 SS
Lens	Polycarbonate, High pressure BSP(G) and HP: Tempered safety glass	Polycarbonate
Ring	AISI 304 SS	AISI 304 SS
Socket	316L SS, 2.5" (63mm) to 4.5" (115mm): Welded one-piece socket	OT 58 brass
Connection	1/4" NPT or 1/2" NPT standard, High Pressure: 1/2" BSP(G) or 9/16" autoclave or 1/4" autoclave with 9/16" gland/collar	1/4" NPT or 1/2" NPT standard
Bourdon Tube	316L SS, drawn seamless	Phosphor bronze
Movement	304 SS (under and overload stops 4" to 6")	OT 59 brass (under and overload stops 4")
Pointer	2.5" (63mm): Aluminum, anodized black, 4" (100mm), 4.5" (115mm), 6" (150mm): Aluminum, anodized black, micrometer adjustable	4" (100mm), 4.5" (115mm): Aluminum, anodized black
Welding	Laser welded socket to case	Silver alloy
Fill Liquid	Glycerin	Glycerin
Over-pressure Limit	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures over 1,450 psi (9,998 kPa)	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures over 1,450 psi (9,998 kPa)
Socket Gasket	2.5" (63mm), 4" (100mm), 4.5" (115mm): Welded (no gasket) 6" (150mm): Buna N for one-piece external socket seal, (silicone rubber option)	Buna N for two-piece internal socket seal
Fill Plug	Buna N (silicone rubber option)	Buna N (silicone rubber option)
Lens Ring Gasket	Buna N (silicone rubber option)	Buna N (silicone rubber option)
Working Pressure	Maximum 75% of full scale value	Maximum 75% of full scale value
Ambient Temperature	Dry: -40°F to 250°F (-40°C to 120°C) Glycerin Filled: -4°F to 150°F (-20°C to 65°C)	Dry: -40°F to 200°F (-40°C to 93°C) Glycerin Filled: -4°F to 150°F (-20°C to 65°C)
Process Temperature	-40°F to 250°F (-40°C to 120°C)	-40°F to 200°F (-40°C to 93°C)
Accuracy	2.5" (63mm): ±1.5% of full scale value 4" (100mm), 4.5" (115mm), 6" (150mm): ±1% ANSI/ASME Grade 1A	4" (100mm), 4.5" (115mm): ±1% ANSI/ASME Grade 1A
Enclosure Rating	NEMA 4X/IP66, EN60529-1 (IEC529-1)	NEMA 4X/IP66, EN60529-1 (IEC529-1)
Warning (brass internals only)	N/A	⚠ WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

Single Scale Order Codes (products in bold are normally stock in North America)

Dial Size	2.5" (63mm)		4" (100mm)			
	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)
Connection	SS					
Movement, Socket, Tube	SS					
30" Hg Vac	PFP820R1	PFP840R1	PFP640R1	PFP1090R1	PFP655R1	-
30"/0/15 psi	PFP860R1	PFP870R1	PFP1036R1	PFP1244R1	PFP1044R1	-
30"/0/30 psi	PFP861R1	PFP871R1	PFP1037R1	PFP1245R1	PFP1045R1	-
30"/0/60 psi	PFP862R1	PFP872R1	PFP1038R1	PFP1246R1	PFP1046R1	-
30"/0/100 psi	PFP863R1	PFP873R1	PFP1039R1	PFP1247R1	PFP1047R1	-
30"/0/150 psi	PFP864R1	PFP874R1	PFP1040R1	PFP1248R1	PFP1048R1	-
30"/0/200 psi	PFP866R1	PFP876R1	PFP1042R1	PFP1249R1	PFP1050R1	-
30"/0/300 psi	PFP867R1	PFP877R1	PFP1043R1	PFP1250R1	PFP1051R1	-
0/15 psi	PFP821R1	PFP921R1	PFP641R1	PFP1091R1	PFP656R1	-
0/30 psi	PFP822R1	PFP922R1	PFP642R1	PFP1092R1	PFP657R1	-
0/60 psi	PFP823R1	PFP923R1	PFP643R1	PFP1093R1	PFP658R1	-
0/100 psi	PFP824R1	PFP924R1	PFP644R1	PFP1094R1	PFP659R1	-
0/160 psi	PFP825R1	PFP925R1	PFP645R1	PFP1095R1	PFP660R1	-
0/200 psi	PFP826R1	PFP926R1	PFP646R1	PFP1096R1	PFP661R1	-
0/300 psi	PFP827R1	PFP927R1	PFP647R1	PFP1097R1	PFP662R1	-
0/400 psi	PFP880R1	PFP881R1	PFP650R1	PFP1251R1	PFP666R1	-
0/600 psi	PFP828R1	PFP928R1	PFP648R1	PFP1098R1	PFP663R1	-
0/1,000 psi	PFP829R1	PFP929R1	PFP649R1	PFP1099R1	PFP664R1	-
0/1,500 psi	PFP834R1	PFP934R1	-	PFP1252R1	PFP665R1	PFP1190R1
0/2,000 psi	PFP830R1	PFP930R1	-	PFP1253R1	PFP667R1	PFP1191R1
0/3,000 psi	PFP831R1	PFP931R1	-	PFP1254R1	PFP668R1	PFP1192R1
0/5,000 psi	PFP832R1	PFP852R1	-	PFP1255R1	PFP669R1	PFP1193R1
0/6,000 psi	PFP836R1	PFP851R1	-	PFP1259R1	PFP675R1	PFP1197R1
0/10,000 psi	PFP833R1	PFP853R1	-	PFP1256R1	PFP670R1	PFP1194R1
0/15,000 psi	PFP835R1	PFP855R1	-	PFP1257R1	PFP671R1	PFP1195R1
0/20,000 psi	PFP837R1	-	-	PFP1258R1	PFP672R1	PFP1196R1

Other ranges and connection sizes available upon request. 316 SS case and mountable bezel available upon request. For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code: i.e. PFP929R1-25UC for U-CLAMP.**

Option suffix:

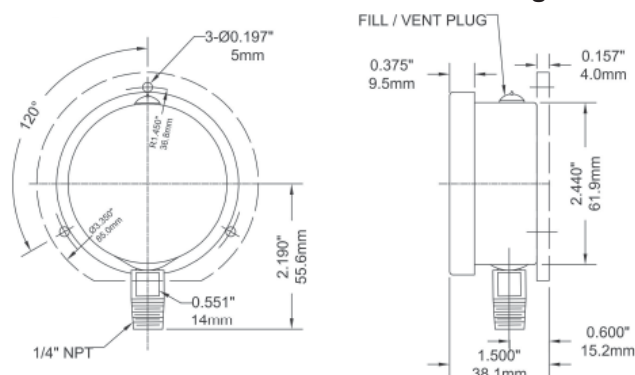
25BF = 2.5" (63mm) Back flange
 25BOOT = 2.5" (63mm) black rubber boot
 25DRY = Supply 2.5" (63mm) gauge dry
 25FF = 2.5" (63mm) Front flange
 25SS = 2.5" (63mm) 316 SS case
 25UC = 2.5" (63mm) U-Clamp
 4BF = 4" (100mm) Back flange

4FF = 4" (100mm) Front flange
 4SS = 4" (100mm) SS case
 4UC-P = 4" (100mm) U-Clamp premium
 DRY = Supply gauge dry
 EN = EN837-1 compliant
 MAXI25 = 2.5" (63mm) Maxi pointer
 MAXI4 = 4" (100mm) Maxi pointer

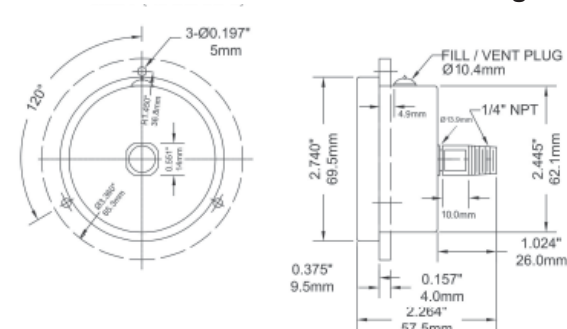
REST = Restrictor screw
 RSP4 = 4" (100mm) Red set pointer
 SF25 = 2.5" (63mm) Silicone filled
 SF4 = 4" (100mm) Silicone filled
 SG-25 = 2.5" (63mm) Safety glass lens
 SG-4 = 4" (100mm) Safety glass lens

For WinBRIGHT dial options refer to Custom Dials

2.5" Bottom Connection with Back Flange



2.5" Back Connection with Front Flange



Dual Scale Order Codes (products in bold are normally stock in North America)

Dial Size	2.5" (63mm)				4" (100mm)					
Connection	1/4"	1/4" Back	1/4"	1/4" Back	1/4"	1/4" Back	1/2"	1/2" Back	1/2"	1/2" Back
	Bottom	(CB)	Bottom	(LB)	Bottom	(LB)	Bottom	(LB)	Bottom	(LB)
Movement, Socket, Tube	SS		Brass		SS		Brass		SS	
30" Hg Vac/kPa	PFP820	PFP840	PFP600	PFP1000	PFP640	PFP1090	PFP2284	-	PFP655	PFP2308
30"/0/15 psi/kPa	PFP860	PFP870	PFP1020	PFP1028	PFP1036	PFP1244	PFP2285	-	PFP1044	PFP2309
30"/0/30 psi/kPa	PFP861	PFP871	PFP1021	PFP1029	PFP1037	PFP1245	PFP2286	-	PFP1045	PFP2310
30"/0/60 psi/kPa	PFP862	PFP872	PFP1022	PFP1030	PFP1038	PFP1246	PFP2287	-	PFP1046	PFP2311
30"/0/100 psi/kPa	PFP863	PFP873	PFP1023	PFP1031	PFP1039	PFP1247	PFP2288	-	PFP1047	PFP2312
30"/0/150 psi/kPa	PFP864	PFP874	PFP1024	PFP1032	PFP1040	PFP1248	PFP2289	-	PFP1048	PFP2313
30"/0/200 psi/kPa	PFP866	PFP876	PFP1026	PFP1034	PFP1042	PFP1249	PFP2290	-	PFP1050	PFP2314
30"/0/300 psi/kPa	PFP867	PFP877	PFP1027	PFP1035	PFP1043	PFP1250	PFP2291	-	PFP1051	PFP2315
0/15 psi/kPa	PFP821	PFP921	PFP601	PFP1001	PFP641	PFP1091	PFP2292	-	PFP656	PFP2316
0/30 psi/kPa	PFP822	PFP922	PFP602	PFP1002	PFP642	PFP1092	PFP2293	-	PFP657	PFP2317
0/60 psi/kPa	PFP823	PFP923	PFP603	PFP1003	PFP643	PFP1093	PFP2294	-	PFP658	PFP2318
0/100 psi/kPa	PFP824	PFP924	PFP604	PFP1004	PFP644	PFP1094	PFP2295	-	PFP659	PFP2319
0/160 psi/kPa	PFP825	PFP925	PFP605	PFP1005	PFP645	PFP1095	PFP2296	-	PFP660	PFP2320
0/200 psi/kPa	PFP826	PFP926	PFP606	PFP1006	PFP646	PFP1096	PFP2297	-	PFP661	PFP2321
0/300 psi/kPa	PFP827	PFP927	PFP607	PFP1007	PFP647	PFP1097	PFP2298	-	PFP662	PFP2322
0/400 psi/kPa	PFP880	PFP881	PFP610	PFP1016	PFP650	PFP1251	PFP2299	-	PFP666	PFP2323
0/600 psi/kPa	PFP828	PFP928	PFP608	PFP1008	PFP648	PFP1098	PFP2300	-	PFP663	PFP2324
0/1,000 psi/kPa	PFP829	PFP929	PFP609	-	PFP649	PFP1099	PFP624	PFP1009	PFP664	PFP2325
0/1,500 psi/kPa	PFP834	PFP934	-	-	PFP2301	PFP1252	PFP625	PFP1010	PFP665	PFP1190
0/2,000 psi/kPa	PFP830	PFP930	-	-	PFP2302	PFP1253	PFP626	PFP1011	PFP667	PFP1191
0/3,000 psi/kPa	PFP831	PFP931	-	-	PFP2303	PFP1254	PFP627	PFP1012	PFP668	PFP1192
0/5,000 psi/kPa	PFP832	PFP852	-	-	PFP2304	PFP1255	PFP628	PFP1013	PFP669	PFP1193
0/6,000 psi/kPa	PFP836	PFP851	-	-	PFP2305	PFP1259	PFP631	PFP1015	PFP675	PFP1197
0/10,000 psi/kPa	PFP833	PFP853	-	-	PFP2306	PFP1256	PFP629	PFP1014	PFP670	PFP1194
0/15,000 psi/kPa	PFP835	PFP855	-	-	PFP2307	PFP1257	PFP630	PFP1018	PFP671	PFP1195
0/20,000 psi/kPa	PFP837	-	-	-	-	PFP1258	PFP639	PFP1019	PFP672	PFP1196

Other ranges and connection sizes available upon request. 316 SS case and mountable bezel available upon request. For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code: i.e. PFP929-25UC for U-CLAMP.**

Option suffix:

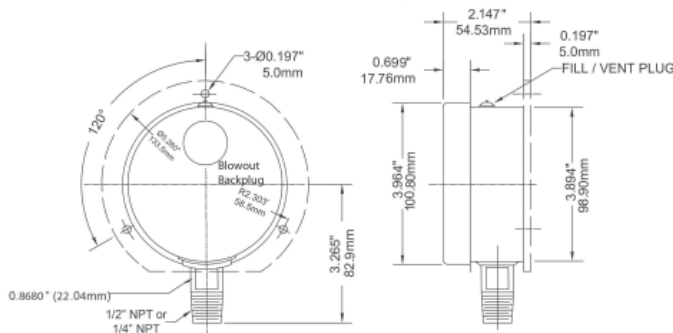
25BF = 2.5" (63mm) Back flange
 25BOOT = 2.5" (63mm) black rubber boot
 25DRY = Supply 2.5" (63mm) gauge dry
 25FF = 2.5" (63mm) Front flange
 25SS = 2.5" (63mm) 316 SS case
 25UC = 2.5" (63mm) U-Clamp
 4BF = 4" (100mm) Back flange

4FF = 4" (100mm) Front flange
 4SS = 4" (100mm) SS case
 4UC-P = 4" (100mm) U-Clamp premium
 DRY = Supply gauge dry
 EN = EN837-1 compliant
 MAXI25 = 2.5" (63mm) Maxi pointer
 MAXI4 = 4" (100mm) Maxi pointer

RSP4 = 4" (100mm) Red set pointer
 SF25 = 2.5" (63mm) Silicone filled
 SF4 = 4" (100mm) Silicone filled
 SG-25 = 2.5" (63mm) Safety glass lens
 SG-4 = 4" (100mm) Safety glass lens

For WinBRIGHT dial options refer to Custom Dials

4" Bottom Connection with Back Flange



High Pressure Order Codes

Dial Size	4" (100mm)			
Connection	1/2" BSP(G) Bottom	1/2" BSP(G) Back (LB)	9/16" HP Bottom	1/4" HP Autoclave w/9/16" gland and collar Bottom
Movement, Socket, Tube	SS			
0/20,000 psi/kPa	-	-	PFP9601	PFP9621
0/25,000 psi/kPa	PFP9602T1	PFP9652T1	PFP9602	PFP9622
0/30,000 psi/kPa	PFP9603T1	PFP9653T1	PFP9603	PFP9623
0/35,000 psi/kPa	PFP9604T1	PFP9654T1	PFP9604	PFP9624
0/40,000 psi/kPa	PFP9605T1	PFP9655T1	PFP9605	PFP9625

Other ranges and connection sizes available upon request. 316 SS case and mountable bezel available upon request. For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code: i.e. PFP9652T1-4UC-P for U-CLAMP.**

Option suffix:

4BF = 4" (100mm) Back flange

4FF = 4" (100mm) Front flange

4SS = 4" (100mm) SS case

4UC-P = 4" (100mm) U-Clamp premium

DRY = Supply gauge dry

EN = EN837-1 compliant

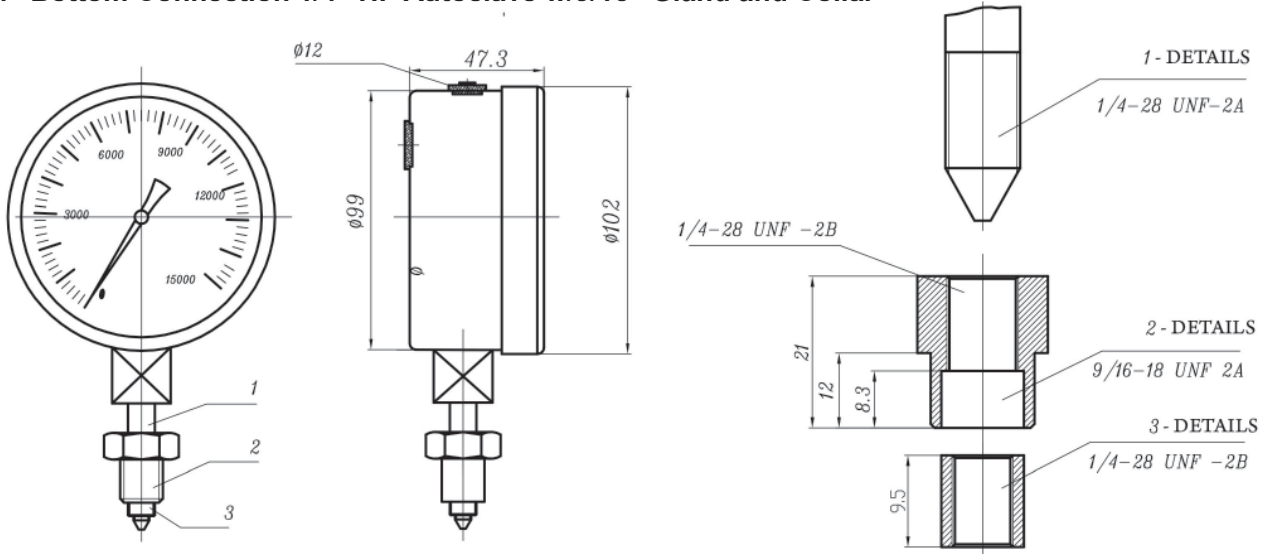
RSP4 = 4" (100mm) Red set pointer

SF4 = 4" (100mm) Silicone filled

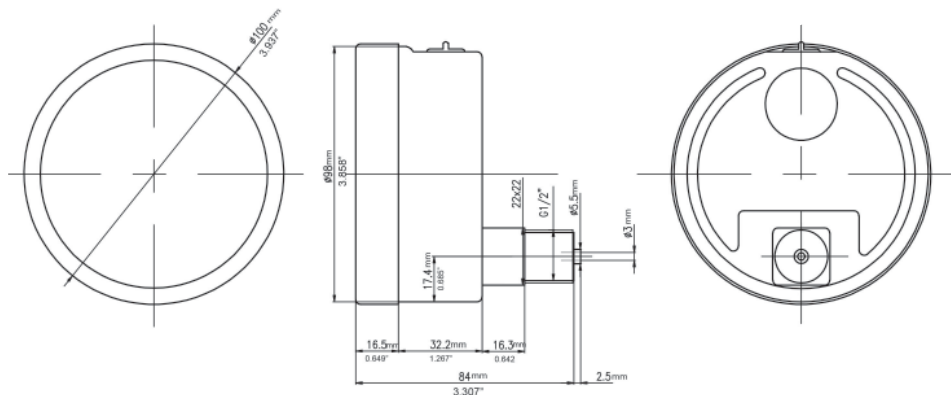
SG-4 = 4" (100mm) Safety glass lens

For WinBRIGHT dial options refer to Custom Dials

4" Bottom Connection 1/4" HP Autoclave w/9/16" Gland and Collar



4" Back Connection HP 1/2" BSP(G)



Dual Scale Order Codes

Dial Size	4.5" (115mm)							
Connection	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)
Movement, Socket, Tube	Brass				SS			
30" Hg Vac/kPa	PFP500	PFP1300	PFP550	PFP1350	PFP700	PFP400	PFP750	PFP450
30"/0/15 psi/kPa	PFP501	PFP1301	PFP551	PFP1351	PFP701	PFP401	PFP751	PFP451
30"/0/30 psi/kPa	PFP502	PFP1302	PFP552	PFP1352	PFP702	PFP402	PFP752	PFP452
30"/0/60 psi/kPa	PFP503	PFP1303	PFP553	PFP1353	PFP703	PFP403	PFP753	PFP453
30"/0/100 psi/kPa	PFP504	PFP1304	PFP554	PFP1354	PFP704	PFP404	PFP754	PFP454
30"/0/150 psi/kPa	PFP505	PFP1305	PFP555	PFP1355	PFP705	PFP405	PFP755	PFP455
30"/0/200 psi/kPa	PFP506	PFP1306	PFP556	PFP1356	PFP706	PFP406	PFP756	PFP456
30"/0/300 psi/kPa	PFP507	PFP1307	PFP557	PFP1357	PFP707	PFP407	PFP757	PFP457
0/15 psi/kPa	PFP508	PFP1308	PFP558	PFP1358	PFP708	PFP408	PFP758	PFP458
0/30 psi/kPa	PFP509	PFP1309	PFP559	PFP1359	PFP709	PFP409	PFP759	PFP459
0/60 psi/kPa	PFP510	PFP1310	PFP560	PFP1360	PFP710	PFP410	PFP760	PFP460
0/100 psi/kPa	PFP511	PFP1311	PFP561	PFP1361	PFP711	PFP411	PFP761	PFP461
0/160 psi/kPa	PFP512	PFP1312	PFP562	PFP1362	PFP712	PFP412	PFP762	PFP462
0/200 psi/kPa	PFP513	PFP1313	PFP563	PFP1363	PFP713	PFP413	PFP763	PFP463
0/300 psi/kPa	PFP514	PFP1314	PFP564	PFP1364	PFP714	PFP414	PFP764	PFP464
0/400 psi/kPa	PFP515	PFP1315	PFP565	PFP1365	PFP715	PFP415	PFP765	PFP465
0/600 psi/kPa	PFP516	PFP1316	PFP566	PFP1366	PFP716	PFP416	PFP766	PFP466
0/1,000 psi/kPa	PFP517	PFP1317	PFP567	PFP1367	PFP717	PFP417	PFP767	PFP467
0/1,500 psi/kPa	PFP518	PFP1318	PFP568	PFP1368	PFP718	PFP418	PFP768	PFP468
0/2,000 psi/kPa	PFP519	PFP1319	PFP569	PFP1369	PFP719	PFP419	PFP769	PFP469
0/3,000 psi/kPa	PFP520	PFP1320	PFP570	PFP1370	PFP720	PFP420	PFP770	PFP470
0/5,000 psi/kPa	PFP521	PFP1321	PFP571	PFP1371	PFP721	PFP421	PFP771	PFP471
0/6,000 psi/kPa	PFP522	PFP1322	PFP572	PFP1372	PFP722	PFP422	PFP772	PFP472
0/10,000 psi/kPa	PFP523	PFP1323	PFP573	PFP1373	PFP723	PFP423	PFP773	PFP473
0/15,000 psi/kPa	PFP524	PFP1324	PFP574	PFP1374	PFP724	PFP424	PFP774	PFP474
0/20,000 psi/kPa	PFP525	PFP1325	PFP575	PFP1375	PFP725	PFP425	PFP775	PFP475

Other ranges and connection sizes available upon request. 316 SS case and mountable bezel available upon request.

For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code:**

i.e. PFP1311-DRY for DRY GAUGE.

Option suffix:

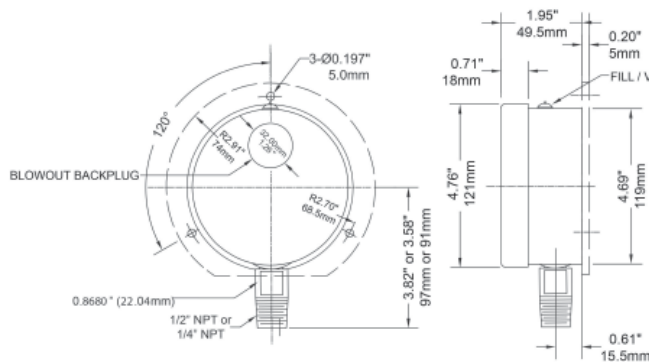
DRY = Supply gauge dry

SF45 = 4.5" (115mm) Silicone filled

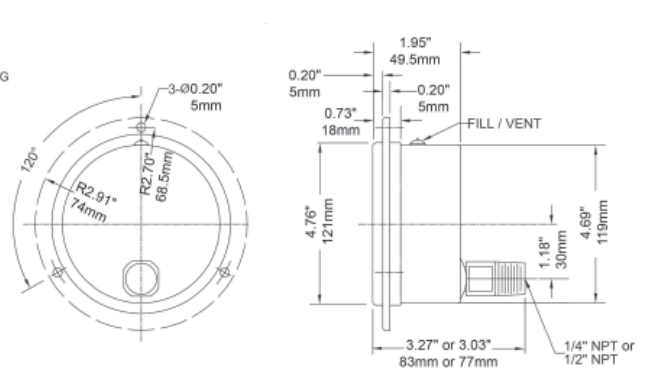
EN = EN837-1 compliant

SG-45 = 4.5" (115mm) Safety glass lens

4.5" Bottom Connection with Back Flange



4.5" Back Connection with Front Flange



Dual Scale Order Codes

Dial Size	6" (150mm)			
Connection	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)
Movement, Socket, Tube	SS			
30" Hg Vac/kPa	PFP1078	PFP1168	PFP2326	-
30"/0/15 psi/kPa	PFP1079	-	PFP2327	-
30"/0/30 psi/kPa	PFP1052	-	PFP2328	-
30"/0/60 psi/kPa	PFP1053	-	PFP2329	-
30"/0/100 psi/kPa	PFP1054	-	PFP2330	-
30"/0/150 psi/kPa	PFP1055	-	PFP2331	-
30"/0/200 psi/kPa	PFP1057	-	PFP2332	-
30"/0/300 psi/kPa	PFP1058	-	PFP2333	-
0/15 psi/kPa	PFP1059	PFP1159	PFP2334	-
0/30 psi/kPa	PFP1060	PFP1160	PFP2335	-
0/60 psi/kPa	PFP1061	PFP1161	PFP2336	-
0/100 psi/kPa	PFP1062	PFP1162	PFP2337	-
0/160 psi/kPa	PFP1063	PFP1163	PFP2338	-
0/200 psi/kPa	PFP1064	PFP1164	PFP2339	-
0/300 psi/kPa	PFP1065	PFP1165	PFP2340	-
0/400 psi/kPa	PFP1077	-	PFP2341	-
0/600 psi/kPa	PFP1066	PFP1166	PFP2342	-
0/1,000 psi/kPa	PFP1067	PFP1167	PFP1080	-
0/1,500 psi/kPa	PFP1068	-	PFP1081	PFP1169
0/2,000 psi/kPa	PFP1069	-	PFP1082	PFP1170
0/3,000 psi/kPa	PFP1070	-	PFP1083	PFP1171
0/4,000 psi/kPa	-	-	PFP1084	-
0/5,000 psi/kPa	PFP1072	-	PFP1085	PFP1172
0/6,000 psi/kPa	-	-	PFP1089	PFP1176
0/10,000 psi/kPa	PFP1073	-	PFP1086	PFP1173
0/15,000 psi/kPa	PFP1074	-	PFP1087	PFP1174
0/20,000 psi/kPa	PFP1075	-	PFP1088	PFP1175

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code:**

i.e. PFP1064-SC for SAFETY CASE

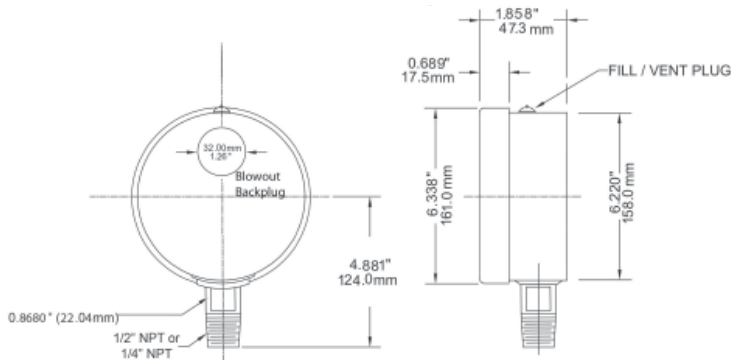
Option suffix:

6BF = 6" (150mm) Back flange
 6FF = 6" (150mm) Front flange
 6SS = 6" (150mm) SS case
 6UC = 6" (150mm) U-Clamp
 DRY = Supply gauge dry

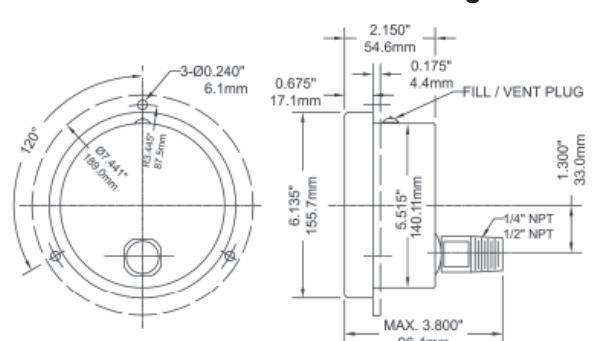
EN = EN837-1 compliant
 RSP6 = 6" (150mm) Red set pointer
 SC = 6" (150mm) Safety case
 SF6 = 6" (150mm) Silicone fill
 SG-6 = 6" (150mm) Safety glass lens

For WinBRIGHT dial options refer to Custom Dials

6" Bottom Connection



6" Back Connection with Front Flange





Description & Features:

- Liquid filled stainless steel case protects against extreme vibration and pulsation
- Lower back mount with front flange for panel mounting
- Bayonet ring
- Dual and single scale available (psi/kPa & psi only)
- Stainless steel wetted parts
- Restricted orifice standard on dual scale (optional on single scale)
- Safety glass
- ASME B40.100 compliant (EN837-1 available)
- CRN registered
- 5 year warranty

Applications:

- Outdoor and severe ambient and process conditions
- Use where harmful vibration and pulsation are present
- Panel builders in hydraulic equipment, oil field equipment, pumps, compressors and process industries

Specifications	
Dial	2.5" (63mm) white aluminum with black and red markings
Case	AISI 304 SS
Lens	Safety glass
Ring	AISI 304 SS
Socket	316L SS welded one-piece socket
Connection	1/4" NPT
Bourdon Tube	316L SS, drawn seamless
Movement	304 SS
Pointer	Aluminum, anodized black
Welding	Laser welded socket to case
Fill Liquid	Glycerin
Over-pressure Limit	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures over 1,450 psi (9,998 kPa)
Fill Plug	Buna N (silicone rubber option)
Lens Ring Gasket	Buna N (silicone rubber option)
Working Pressure	Maximum 75% of full scale value
Ambient Temperature	Dry: -40°F to 250°F (-40°C to 120°C) Glycerin Filled: -4°F to 150°F (-20°C to 65°C)
Process Temperature	-40°F to 250°F (-40°C to 120°C)
Accuracy	±1.5% of full scale value
Enclosure Rating	NEMA 4X/IP66, EN60529-1 (IEC529-1)

Single Scale Order Codes (products in bold are normally stock in North America)

Dial Size	2.5" (63mm)
Connection	1/4" Back (LBM)
Movement, Socket, Tube	SS
30" Hg Vac	PFP3772R1
30"/0/15 psi	PFP3773R1
30"/0/30 psi	PFP3774R1
30"/0/60 psi	PFP3775R1
30"/0/100 psi	PFP3776R1
30"/0/150 psi	PFP3777R1
30"/0/200 psi	PFP3778R1
30"/0/300 psi	PFP3779R1
0/15 psi	PFP3780R1
0/30 psi	PFP3781R1
0/60 psi	PFP3782R1
0/100 psi	PFP3783R1
0/160 psi	PFP3784R1
0/200 psi	PFP3785R1
0/300 psi	PFP3786R1
0/400 psi	PFP3787R1
0/600 psi	PFP3788R1
0/1,000 psi	PFP3789R1
0/1,500 psi	PFP3790R1
0/2,000 psi	PFP3791R1
0/3,000 psi	PFP3792R1
0/5,000 psi	PFP3793R1
0/6,000 psi	PFP3794R1
0/7,500 psi	PFP3795R1
0/10,000 psi	PFP3796R1
0/15,000 psi	PFP3797R1
0/20,000 psi	PFP3798R1

Dual Scale Order Codes

Dial Size	2.5" (63mm)
Connection	1/4" Back (LBM)
Movement, Socket, Tube	SS
30" Hg Vac/kPa	PFP3772
30"/0/15 psi/kPa	PFP3773
30"/0/30 psi/kPa	PFP3774
30"/0/60 psi/kPa	PFP3775
30"/0/100 psi/kPa	PFP3776
30"/0/150 psi/kPa	PFP3777
30"/0/200 psi/kPa	PFP3778
30"/0/300 psi/kPa	PFP3779
0/15 psi/kPa	PFP3780
0/30 psi/kPa	PFP3781
0/60 psi/kPa	PFP3782
0/100 psi/kPa	PFP3783
0/160 psi/kPa	PFP3784
0/200 psi/kPa	PFP3785
0/300 psi/kPa	PFP3786
0/400 psi/kPa	PFP3787
0/600 psi/kPa	PFP3788
0/1,000 psi/kPa	PFP3789
0/1,500 psi/kPa	PFP3790
0/2,000 psi/kPa	PFP3791
0/3,000 psi/kPa	PFP3792
0/5,000 psi/kPa	PFP3793
0/6,000 psi/kPa	PFP3794
0/7,500 psi/kPa	PFP3795
0/10,000 psi/kPa	PFP3796
0/15,000 psi/kPa	PFP3797
0/20,000 psi/kPa	PFP3798

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.

Option suffix:

25DRY = Supply 2.5" (63mm) gauge dry

25SS = 2.5" (63mm) 316 SS case

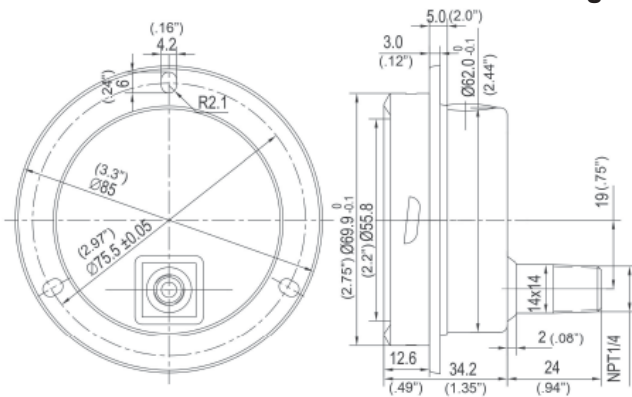
MAXI25 = 2.5" (63mm) Maxi Pointer

EN = EN837-1 compliant

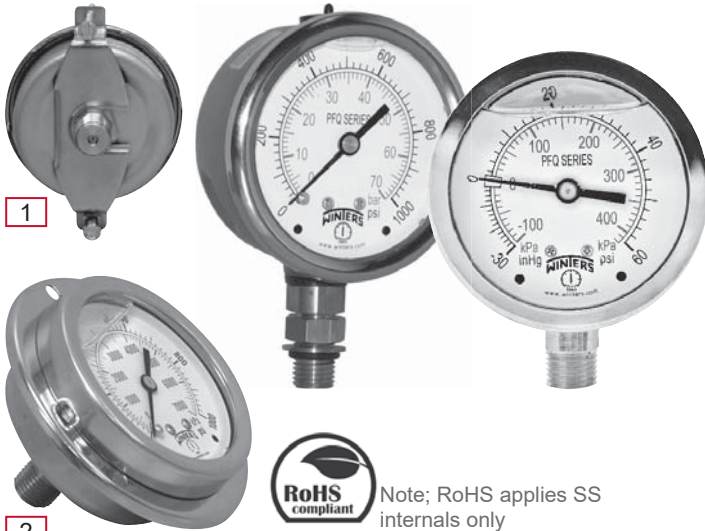
REST = Restrictor screw (psi only)

SF25 = 2.5" (63mm) Silicone filled

2.5" Lower Back Connection with Front Flange



Dimensions in mm (inches)



1

2

- 1. Optional U-Clamp
- 2. Optional Front Flange



Note; RoHS applies SS internals only

Description & Features:

- Pulsation resistant, liquid filled stainless steel case
- Glycerin filled standard
- Brass or stainless steel internals
- Restricted orifice standard on dual scale
- Ventable plug on 2.5" (63mm) and 4" (100mm) bottom mount (excluding SAE connection)
- Crimp-On bezel
- Single (psi) or dual scale (psi/kPa)/(psi/bar) available
- Optional U-Clamps and front flanges
- Dry case available
- ASME B40.100 compliant (EN837-1 available on 2" (50mm) dial and up)
- CRN registered
- 5 year warranty

Applications:

- Ideal for pumps, compressors, hydraulic presses, machinery, pneumatic equipment and motors in harsh environments
- Use where harmful vibration and pulsation are present

Specifications	Stainless Steel Internals	Brass Internals
Dial	1.5" (40mm), 2" (50mm), 2.5" (63mm), 4" (100mm), white aluminum with black and red markings	1.5" (40mm), 2" (50mm), 2.5" (63mm), 4" (100mm), white aluminum with black and red markings
Case	AISI 304 SS	AISI 304 SS
Lens	Polycarbonate	Polycarbonate
Ring	AISI 304 SS, Crimp-On	AISI 304 SS, Crimp-On
Socket	AISI 316 SS with restrictor screw (dual scale only)	OT 58 brass with restricted orifice (dual scale only)
Connection	1/8", 1/4" or 1/2" NPT	1/8", 1/4" or 1/2" NPT or 7/16-20 SAE standard with restricted orifice
Fill Liquid	Glycerin	Glycerin
Bourdon Tube	1.5" (40mm), 2" (50mm): SS C or coil shaped 2.5" (63mm), 4" (100mm): AISI 316 SS C or coil shaped	Phosphor bronze C or coil shaped
Movement	SS	OT 59 brass
Pointer	Aluminum, anodized black	Aluminum, anodized black
Welding	TIG	Silver alloy
Over-pressure Limit	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures over 1,450 psi (9,998 kPa)	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures over 1,450 psi (9,998 kPa)
Socket Gasket	Buna N for two-piece internal socket seal	Buna N for two-piece internal socket seal
Fill Plug	Buna N	Buna N
Lens Ring Gasket	Silicone rubber	Silicone rubber
Working Pressure	Maximum 75% of full scale value	Maximum 75% of full scale value
Ambient/Process Temperature	Dry: -40°F to 200°F (-40°C to 93°C) Glycerin Filled: -4°F to 150°F (-20°C to 65°C)	Dry: -40°F to 200°F (-40°C to 93°C) Glycerin Filled: -4°F to 150°F (-20°C to 65°C)
Accuracy	1.5" (40mm), 2" (50mm): ±2.5% of full scale value 2.5" (63mm), 4" (100mm): ±1.5% of full scale value	1.5" (40mm), 2" (50mm): ±2.5% of full scale value 2.5" (63mm), 4" (100mm): ±1.5% of full scale value
Enclosure Rating	IP65	IP65
Warning (brass internals only)	N/A	WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

Dual Scale Order Codes (products in bold are normally stock in North America)

Dial Size	1.5" (40mm)			
	1/8" Bottom	1/8" Back (CB)	1/8" Bottom	1/8" Back (CB)
Movement, Socket, Tube	Brass		SS	
30" Hg Vac/kPa	-	-	PFQ1200	PFQ1220
0/15 psi/kPa	-	-	PFQ1201	PFQ1221
0/30 psi/kPa	PFQ1102	PFQ1122	PFQ1202	PFQ1222
0/60 psi/kPa	PFQ1103	PFQ1123	PFQ1203	PFQ1223
0/100 psi/kPa	PFQ1104	PFQ1124	PFQ1204	PFQ1224
0/160 psi/kPa	PFQ1105	PFQ1125	PFQ1205	PFQ1225
0/200 psi/kPa	PFQ1106	PFQ1126	PFQ1206	PFQ1226
0/300 psi/kPa	PFQ1107	PFQ1127	PFQ1207	PFQ1227
0/600 psi/kPa	PFQ1108	PFQ1128	PFQ1208	PFQ1228
0/1,000 psi/kPa	PFQ1109	PFQ1129	PFQ1209	PFQ1229
0/1,500 psi/kPa	PFQ1110	PFQ1130	PFQ1210	PFQ1230
0/2,000 psi/kPa	PFQ1111	PFQ1131	PFQ1211	PFQ1231
0/3,000 psi/kPa	PFQ1112	PFQ1132	PFQ1212	PFQ1232
0/5,000 psi/kPa	PFQ1113	PFQ1133	PFQ1213	PFQ1233

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. 1.5" (40mm) gauges are available dry (non-liquid filled) only on a special order basis. **For options, attach suffix to end of order code: i.e. PFQ1102-15DRY for DRY CASE**

Option suffix:

15DRY = Supply 1.5" (40mm) gauge dry

15FF = 1.5" (40mm) Front flange

15UC = 1.5" (40mm) U-Clamp

Single Scale Order Codes (products in bold are normally stock in North America)

Dial Size	2" (50mm)							
	1/8" Bottom		1/8" Back (CB)		1/4" Bottom		1/4" Back (CB)	
Movement, Socket, Tube	Brass				SS			
30" Hg Vac	PFQ2400R1	PFQ2426R1	PFQ2248R1	PFQ2309R1	PFQ2452R1	PFQ2478R1	PFQ2247R1	PFQ2246R1
30"/0/15 psi	PFQ2401R1	PFQ2427R1	PFQ2295R1	PFQ2310R1	PFQ2453R1	PFQ2479R1	PFQ2271R1	PFQ2282R1
30"/0/30 psi	PFQ2402R1	PFQ2428R1	PFQ2241R1	PFQ2311R1	PFQ2454R1	PFQ2480R1	PFQ2272R1	PFQ2283R1
30"/0/60 psi	PFQ2403R1	PFQ2429R1	PFQ2296R1	PFQ2312R1	PFQ2455R1	PFQ2481R1	PFQ2273R1	PFQ2242R1
30"/0/100 psi	PFQ2404R1	PFQ2430R1	PFQ2297R1	PFQ2313R1	PFQ2456R1	PFQ2482R1	PFQ2274R1	PFQ2284R1
30"/0/160 psi	PFQ2405R1	PFQ2431R1	PFQ2298R1	PFQ2314R1	PFQ2457R1	PFQ2483R1	PFQ2275R1	PFQ2285R1
30"/0/200 psi	PFQ2406R1	PFQ2432R1	PFQ2299R1	PFQ2315R1	PFQ2458R1	PFQ2484R1	PFQ2276R1	PFQ2286R1
30"/0/300 psi	PFQ2407R1	PFQ2433R1	PFQ2300R1	PFQ2316R1	PFQ2459R1	PFQ2485R1	PFQ2277R1	PFQ2287R1
0/15 psi	PFQ2408R1	PFQ2434R1	PFQ2218R1	PFQ2217R1	PFQ2460R1	PFQ2486R1	PFQ2215R1	PFQ2214R1
0/30 psi	PFQ2409R1	PFQ2435R1	PFQ2253R1	PFQ2252R1	PFQ2461R1	PFQ2487R1	PFQ2250R1	PFQ2249R1
0/60 psi	PFQ2410R1	PFQ2436R1	PFQ2270R1	PFQ2269R1	PFQ2462R1	PFQ2488R1	PFQ2266R1	PFQ2265R1
0/100 psi	PFQ2411R1	PFQ2437R1	PFQ2209R1	PFQ2208R1	PFQ2463R1	PFQ2489R1	PFQ2205R1	PFQ2204R1
0/160 psi	PFQ2412R1	PFQ2438R1	PFQ2206R1	PFQ2207R1	PFQ2464R1	PFQ2490R1	PFQ2220R1	PFQ2219R1
0/200 psi	PFQ2413R1	PFQ2439R1	PFQ2301R1	PFQ2951R1	PFQ2465R1	PFQ2491R1	PFQ2267R1	PFQ2268R1
0/300 psi	PFQ2414R1	PFQ2440R1	PFQ2245R1	PFQ2318R1	PFQ2466R1	PFQ2492R1	PFQ2244R1	PFQ2243R1
0/400 psi	PFQ2415R1	PFQ2441R1	PFQ2302R1	PFQ2319R1	PFQ2467R1	PFQ2493R1	PFQ2254R1	PFQ2288R1
0/600 psi	PFQ2416R1	PFQ2442R1	PFQ2264R1	PFQ2320R1	PFQ2468R1	PFQ2494R1	PFQ2278R1	PFQ2289R1
0/1,000 psi	PFQ2417R1	PFQ2443R1	PFQ2203R1	PFQ2321R1	PFQ2469R1	PFQ2495R1	PFQ2202R1	PFQ2201R1
0/1,500 psi	PFQ2418R1	PFQ2444R1	PFQ2213R1	PFQ2322R1	PFQ2470R1	PFQ2496R1	PFQ2212R1	PFQ2211R1
0/2,000 psi	PFQ2419R1	PFQ2445R1	PFQ2304R1	PFQ2323R1	PFQ2471R1	PFQ2497R1	PFQ2279R1	PFQ2290R1
0/3,000 psi	PFQ2420R1	PFQ2446R1	PFQ2305R1	PFQ2324R1	PFQ2472R1	PFQ2498R1	PFQ2280R1	PFQ2291R1
0/5,000 psi	PFQ2421R1	PFQ2447R1	PFQ2258R1	PFQ2257R1	PFQ2473R1	PFQ2499R1	PFQ2256R1	PFQ2255R1
0/6,000 psi	PFQ2422R1	PFQ2448R1	PFQ2262R1	PFQ2261R1	PFQ2474R1	PFQ2500R1	PFQ2260R1	PFQ2259R1
0/7,500 psi	PFQ2423R1	PFQ2449R1	PFQ2306R1	PFQ2325R1	PFQ2475R1	PFQ2501R1	PFQ2281R1	PFQ2292R1
0/10,000 psi	PFQ2424R1	PFQ2450R1	PFQ2307R1	PFQ2326R1	PFQ2476R1	PFQ2502R1	PFQ2200R1	PFQ2293R1
0/15,000 psi	PFQ2425R1	PFQ2451R1	PFQ2308R1	PFQ2327R1	PFQ2477R1	PFQ2503R1	PFQ2210R1	PFQ2294R1

Dial Size	2.5" (63mm)			
	1/4" Bottom		1/4" Back (CB)	
Movement, Socket, Tube	Brass		SS	
30" Hg Vac	PFQ801R1	PFQ900R1	PFQ106R1	PFQ147R1
30"/0/15 psi	PFQ790R1	PFQ890R1	PFQ107R1	PFQ148R1
30"/0/30 psi	PFQ798R1	PFQ898R1	PFQ108R1	PFQ149R1
30"/0/60 psi	PFQ799R1	PFQ899R1	PFQ109R1	PFQ151R1
30"/0/100 psi	PFQ791R1	PFQ891R1	PFQ110R1	PFQ156R1
30"/0/160 psi	PFQ792R1	PFQ892R1	PFQ111R1	PFQ157R1
30"/0/200 psi	PFQ794R1	PFQ894R1	PFQ112R1	PFQ158R1
30"/0/300 psi	PFQ795R1	PFQ895R1	PFQ113R1	PFQ159R1
0/15 psi	PFQ800R1	PFQ901R1	PFQ118R1	PFQ162R1
0/30 psi	PFQ802R1	PFQ902R1	PFQ119R1	PFQ163R1
0/60 psi	PFQ803R1	PFQ903R1	PFQ120R1	PFQ164R1
0/100 psi	PFQ804R1	PFQ904R1	PFQ121R1	PFQ169R1
0/160 psi	PFQ805R1	PFQ905R1	PFQ122R1	PFQ170R1
0/200 psi	PFQ806R1	PFQ906R1	PFQ123R1	PFQ171R1
0/300 psi	PFQ807R1	PFQ907R1	PFQ124R1	PFQ175R1
0/400 psi	PFQ817R1	PFQ917R1	PFQ125R1	PFQ177R1
0/600 psi	PFQ808R1	PFQ908R1	PFQ126R1	PFQ178R1
0/1,000 psi	PFQ809R1	PFQ909R1	PFQ127R1	PFQ179R1
0/1,500 psi	PFQ816R1	PFQ914R1	PFQ128R1	PFQ180R1
0/2,000 psi	PFQ810R1	PFQ910R1	PFQ129R1	PFQ181R1
0/3,000 psi	PFQ811R1	PFQ911R1	PFQ137R1	PFQ182R1
0/4,000 psi	PFQ819R1	PFQ919R1	-	-
0/5,000 psi	PFQ812R1	PFQ912R1	PFQ138R1	PFQ183R1
0/6,000 psi	PFQ814R1	PFQ915R1	PFQ139R1	PFQ184R1
0/7,500 psi	PFQ818R1	PFQ918R1	PFQ144R1	PFQ186R1
0/10,000 psi	PFQ813R1	PFQ913R1	PFQ145R1	PFQ190R1
0/15,000 psi	-	-	PFQ146R1	PFQ191R1

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. Front flange for 2" (50mm) gauge is available. **For options, attach suffix to end of order code: i.e. PFQ2414R1-20DRY for DRY CASE**

Option suffix:

- 20DRY = Supply 2" (50mm) gauge dry
- 25BF = 2.5" (63mm) Back flange
- 25DRY = Supply 2.5" (63mm) gauge dry
- 25FF = 2.5" (63mm) Front flange
- 2UC = 2" (50mm) U-Clamp
- 25UC = 2.5" (63mm) U-Clamp
- EN = EN837-1 compliant
- REST = Restrictor screw
- SF25 = 2.5" (63mm) Silicone filled

Dual Scale Order Codes (products in bold are normally stock in North America)

Dial Size	2" (50mm)							
	1/8" Bottom	1/8" Back (CB)	1/8" Bottom	1/8" Back (CB)	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (CB)
Movement, Socket, Tube	Brass		SS		Brass		SS	
30" Hg Vac/kPa	PFQ2400	PFQ2426	PFQ2248	PFQ2309	PFQ2452	PFQ2478	PFQ2247	PFQ2246
30"/0/15 psi/kPa	PFQ2401	PFQ2427	PFQ2295	PFQ2310	PFQ2453	PFQ2479	PFQ2271	PFQ2282
30"/0/30 psi/kPa	PFQ2402	PFQ2428	PFQ2241	PFQ2311	PFQ2454	PFQ2480	PFQ2272	PFQ2283
30"/0/60 psi/kPa	PFQ2403	PFQ2429	PFQ2296	PFQ2312	PFQ2455	PFQ2481	PFQ2273	PFQ2242
30"/0/100 psi/kPa	PFQ2404	PFQ2430	PFQ2297	PFQ2313	PFQ2456	PFQ2482	PFQ2274	PFQ2284
30"/0/150 psi/kPa	PFQ2405	PFQ2431	PFQ2298	PFQ2314	PFQ2457	PFQ2483	PFQ2275	PFQ2285
30"/0/200 psi/kPa	PFQ2406	PFQ2432	PFQ2299	PFQ2315	PFQ2458	PFQ2484	PFQ2276	PFQ2286
30"/0/300 psi/kPa	PFQ2407	PFQ2433	PFQ2300	PFQ2316	PFQ2459	PFQ2485	PFQ2277	PFQ2287
0/15 psi/kPa	PFQ2408	PFQ2434	PFQ2218	PFQ2217	PFQ2460	PFQ2486	PFQ2215	PFQ2214
0/30 psi/kPa	PFQ2409	PFQ2435	PFQ2253	PFQ2252	PFQ2461	PFQ2487	PFQ2250	PFQ2249
0/60 psi/kPa	PFQ2410	PFQ2436	PFQ2270	PFQ2269	PFQ2462	PFQ2488	PFQ2266	PFQ2265
0/100 psi/kPa	PFQ2411	PFQ2437	PFQ2209	PFQ2208	PFQ2463	PFQ2489	PFQ2205	PFQ2204
0/160 psi/kPa	PFQ2412	PFQ2438	PFQ2206	PFQ2207	PFQ2464	PFQ2490	PFQ2220	PFQ2219
0/200 psi/kPa	PFQ2413	PFQ2439	PFQ2301	PFQ2951	PFQ2465	PFQ2491	PFQ2267	PFQ2268
0/300 psi/kPa	PFQ2414	PFQ2440	PFQ2245	PFQ2318	PFQ2466	PFQ2492	PFQ2244	PFQ2243
0/400 psi/kPa	PFQ2415	PFQ2441	PFQ2302	PFQ2319	PFQ2467	PFQ2493	PFQ2254	PFQ2288
0/600 psi/kPa	PFQ2416	PFQ2442	PFQ2264	PFQ2320	PFQ2468	PFQ2494	PFQ2278	PFQ2289
0/1,000 psi/kPa	PFQ2417	PFQ2443	PFQ2203	PFQ2321	PFQ2469	PFQ2495	PFQ2202	PFQ2201
0/1,500 psi/kPa	PFQ2418	PFQ2444	PFQ2213	PFQ2322	PFQ2470	PFQ2496	PFQ2212	PFQ2211
0/2,000 psi/kPa	PFQ2419	PFQ2445	PFQ2304	PFQ2323	PFQ2471	PFQ2497	PFQ2279	PFQ2290
0/3,000 psi/kPa	PFQ2420	PFQ2446	PFQ2305	PFQ2324	PFQ2472	PFQ2498	PFQ2280	PFQ2291
0/5,000 psi/kPa	PFQ2421	PFQ2447	PFQ2258	PFQ2257	PFQ2473	PFQ2499	PFQ2256	PFQ2255
0/6,000 psi/kPa	PFQ2422	PFQ2448	PFQ2262	PFQ2261	PFQ2474	PFQ2500	PFQ2260	PFQ2259
0/7,500 psi/kPa	PFQ2423	PFQ2449	PFQ2306	PFQ2325	PFQ2475	PFQ2501	PFQ2281	PFQ2292
0/10,000 psi/kPa	PFQ2424	PFQ2450	PFQ2307	PFQ2326	PFQ2476	PFQ2502	PFQ2200	PFQ2293
0/15,000 psi/kPa	PFQ2425	PFQ2451	PFQ2308	PFQ2327	PFQ2477	PFQ2503	PFQ2210	PFQ2294

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. Front flange for 2" (50mm) gauge is available. **For options, attach suffix to end of order code: i.e. PFQ2218R1-20DRY for DRY CASE**

Option suffix:

- 2FF = 2" (50mm) Front flange
- 2UC = 2" (50mm) U-Clamp
- 20DRY = Supply 2" gauge dry
- EN = EN837-1 compliant

Dual Scale Order Codes (products in bold are normally stock in North America)

Dial Size	2.5" (63mm)			
	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (CB)
Movement, Socket, Tube	Brass		SS	
30" Hg Vac/kPa	PFQ801	PFQ900	PFQ106	PFQ147
30"/0/15 psi/kPa	PFQ790	PFQ890	PFQ107	PFQ148
30"/0/30 psi/kPa	PFQ798	PFQ898	PFQ108	PFQ149
30"/0/60 psi/kPa	PFQ799	PFQ899	PFQ109	PFQ151
30"/0/100 psi/kPa	PFQ791	PFQ891	PFQ110	PFQ156
30"/0/150 psi/kPa	PFQ792	PFQ892	PFQ111	PFQ157
30"/0/200 psi/kPa	PFQ794	PFQ894	PFQ112	PFQ158
30"/0/300 psi/kPa	PFQ795	PFQ895	PFQ113	PFQ159
0/15 psi/kPa	PFQ800	PFQ901	PFQ118	PFQ162
0/30 psi/kPa	PFQ802	PFQ902	PFQ119	PFQ163
0/60 psi/kPa	PFQ803	PFQ903	PFQ120	PFQ164
0/100 psi/kPa	PFQ804	PFQ904	PFQ121	PFQ169
0/160 psi/kPa	PFQ805	PFQ905	PFQ122	PFQ170
0/200 psi/kPa	PFQ806	PFQ906	PFQ123	PFQ171
0/300 psi/kPa	PFQ807	PFQ907	PFQ124	PFQ175
0/400 psi/kPa	PFQ817	PFQ917	PFQ125	PFQ177
0/600 psi/kPa	PFQ808	PFQ908	PFQ126	PFQ178
0/1,000 psi/kPa	PFQ809	PFQ909	PFQ127	PFQ179
0/1,500 psi/kPa	PFQ816	PFQ914	PFQ128	PFQ180
0/2,000 psi/kPa	PFQ810	PFQ910	PFQ129	PFQ181
0/3,000 psi/kPa	PFQ811	PFQ911	PFQ137	PFQ182
0/4,000 psi/kPa	PFQ819	PFQ919	PFQ130	-
0/5,000 psi/kPa	PFQ812	PFQ912	PFQ138	PFQ183
0/6,000 psi/kPa	PFQ814	PFQ915	PFQ139	PFQ184
0/7,500 psi/kPa	PFQ818	PFQ918	PFQ144	PFQ186
0/10,000 psi/kPa	PFQ813	PFQ913	PFQ145	PFQ190
0/15,000 psi/kPa	-	-	PFQ146	PFQ191

Dial Size	2.5" (63mm)	
	1/4" Bottom	1/4" Back (CB)
Movement, Socket, Tube	Brass	
30" Hg Vac/bar	PFQ801R1R11	PFQ900R1R11
30"/0/15 psi/bar	PFQ790R1R11	PFQ890R1R11
30"/0/30 psi/bar	PFQ798R1R11	PFQ898R1R11
30"/0/60 psi/bar	PFQ799R1R11	PFQ899R1R11
30"/0/100 psi/bar	PFQ791R1R11	PFQ891R1R11
30"/0/160 psi/bar	PFQ792R1R11	PFQ892R1R11
30"/0/200 psi/bar	PFQ794R1R11	PFQ894R1R11
30"/0/300 psi/bar	PFQ795R1R11	PFQ895R1R11
0/15 psi/bar	PFQ800R1R11	PFQ901R1R11
0/30 psi/bar	PFQ802R1R11	PFQ902R1R11
0/60 psi/bar	PFQ803R1R11	PFQ903R1R11
0/100 psi/bar	PFQ804R1R11	PFQ904R1R11
0/160 psi/bar	PFQ805R1R11	PFQ905R1R11
0/200 psi/bar	PFQ806R1R11	PFQ906R1R11
0/300 psi/bar	PFQ807R1R11	PFQ907R1R11
0/400 psi/bar	PFQ817R1R11	PFQ917R1R11
0/600 psi/bar	PFQ808R1R11	PFQ908R1R11
0/1,000 psi/bar	PFQ809R1R11	PFQ909R1R11
0/1,500 psi/bar	PFQ816R1R11	PFQ914R1R11
0/2,000 psi/bar	PFQ810R1R11	PFQ910R1R11
0/3,000 psi/bar	PFQ811R1R11	PFQ911R1R11
0/4,000 psi/bar	PFQ819R1R11	PFQ919R1R11
0/5,000 psi/bar	PFQ812R1R11	PFQ912R1R11
0/6,000 psi/bar	PFQ814R1R11	PFQ915R1R11
0/7,500 psi/bar	PFQ818R1R11	PFQ918R1R11
0/10,000 psi/bar	PFQ813R1R11	PFQ913R1R11

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.

For options, attach suffix to end of order code: i.e. PFQ801-25DRY for DRY CASE

Option suffix:

- 25BF = 2.5" (63mm) Back flange
- 25DRY = Supply 2.5" (63mm) gauge dry
- 25FF = 2.5" (63mm) Front flange
- 25UC = 2.5" (63mm) U-Clamp
- EN = EN837-1 compliant
- SF25 = 2.5" (63mm) Silicone filled

**Dual Scale Order Codes
(products in bold are normally
stock in North America)**

Dial Size	2.5" (63mm)
Connection	7/16" -20 SAE Bottom
Movement, Socket, Tube	Brass
30" Hg Vac/bar	PFQ3643
30"/0/15 psi/bar	PFQ3644
30"/0/30 psi/bar	PFQ3645
30"/0/60 psi/bar	PFQ3646
30"/0/100 psi/bar	PFQ3647
30"/0/150 psi/bar	PFQ3648
30"/0/200 psi/bar	PFQ3649
30"/0/300 psi/bar	PFQ3650
0/15 psi/bar	PFQ3651
0/30 psi/bar	PFQ3652
0/60 psi/bar	PFQ3653
0/100 psi/bar	PFQ3654
0/160 psi/bar	PFQ3655
0/200 psi/bar	PFQ3656
0/300 psi/bar	PFQ3657
0/400 psi/bar	PFQ3658
0/600 psi/bar	PFQ3659
0/1,000 psi/bar	PFQ3660
0/1,500 psi/bar	PFQ3661
0/2,000 psi/bar	PFQ3662
0/3,000 psi/bar	PFQ3663
0/5,000 psi/bar	PFQ3664
0/6,000 psi/bar	PFQ3665
0/7,500 psi/bar	PFQ3666
0/10,000 psi/bar	PFQ3667
0/15,000 psi/bar	PFQ3668

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.

For options, attach suffix to end of order code: i.e. PFQ3651-25DRY for DRY CASE

Option suffix:

25BF = 2.5" (63mm) Back flange
 25DRY = Supply 2.5" (63mm) gauge dry
 25FF = 2.5" (63mm) Front flange

25UC = 2.5" (63mm) U-Clamp
 EN = EN837-1 compliant
 SF25 = 2.5" (63mm) Silicone filled

Single Scale Order Codes (products in bold are normally stock in North America)

Dial Size	4" (100mm)							
	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (CB)	1/2" Bottom	1/2" Back (CB)	1/2" Bottom	1/2" Back (CB)
Movement, Socket, Tube	Brass		SS		Brass		SS	
30" Hg Vac	PFQ700R1	PFQ730R1	PFQ760R1	PFQ1260R1	PFQ1234R1	PFQ1285R1	PFQ1535R1	PFQ1559R1
30"/0/15 psi	PFQ701R1	PFQ731R1	PFQ761R1	PFQ1261R1	PFQ1235R1	PFQ1286R1	PFQ1536R1	PFQ1560R1
30"/0/30 psi	PFQ702R1	PFQ732R1	PFQ762R1	PFQ1262R1	PFQ1236R1	PFQ1287R1	PFQ1537R1	PFQ1561R1
30"/0/60 psi	PFQ703R1	PFQ733R1	PFQ763R1	PFQ1263R1	PFQ1237R1	PFQ1288R1	PFQ1538R1	PFQ1562R1
30"/0/100 psi	PFQ704R1	PFQ734R1	PFQ764R1	PFQ1264R1	PFQ1238R1	PFQ1289R1	PFQ1539R1	PFQ1563R1
30"/0/160 psi	PFQ705R1	PFQ735R1	PFQ765R1	PFQ1265R1	PFQ1239R1	PFQ1290R1	PFQ1540R1	PFQ1564R1
30"/0/200 psi	PFQ706R1	PFQ736R1	PFQ766R1	PFQ1266R1	PFQ1240R1	PFQ1291R1	PFQ1541R1	PFQ1565R1
30"/0/300 psi	PFQ707R1	PFQ737R1	PFQ767R1	PFQ1267R1	PFQ1241R1	PFQ1292R1	PFQ1542R1	PFQ1566R1
0/15 psi	PFQ708R1	PFQ738R1	PFQ768R1	PFQ1268R1	PFQ1242R1	PFQ1293R1	PFQ1543R1	PFQ1567R1
0/30 psi	PFQ709R1	PFQ739R1	PFQ769R1	PFQ1269R1	PFQ1243R1	PFQ1294R1	PFQ1544R1	PFQ1568R1
0/60 psi	PFQ710R1	PFQ740R1	PFQ770R1	PFQ1270R1	PFQ1244R1	PFQ1295R1	PFQ1545R1	PFQ1569R1
0/100 psi	PFQ711R1	PFQ741R1	PFQ771R1	PFQ1271R1	PFQ1245R1	PFQ1296R1	PFQ1546R1	PFQ1570R1
0/160 psi	PFQ712R1	PFQ742R1	PFQ772R1	PFQ1272R1	PFQ1246R1	PFQ1298R1	PFQ1547R1	PFQ1571R1
0/200 psi	PFQ713R1	PFQ743R1	PFQ773R1	PFQ1273R1	PFQ1247R1	PFQ1524R1	PFQ1548R1	PFQ1572R1
0/300 psi	PFQ714R1	PFQ744R1	PFQ774R1	PFQ1274R1	PFQ1248R1	PFQ1525R1	PFQ1549R1	PFQ1573R1
0/400 psi	PFQ715R1	PFQ745R1	PFQ775R1	PFQ1275R1	PFQ1249R1	PFQ1526R1	PFQ1550R1	PFQ1574R1
0/600 psi	PFQ716R1	PFQ746R1	PFQ776R1	PFQ1276R1	PFQ1250R1	PFQ1527R1	PFQ1551R1	PFQ1575R1
0/1,000 psi	PFQ724R1	PFQ192R1	PFQ1528R1	PFQ1552R1	PFQ717R1	PFQ747R1	PFQ777R1	PFQ1277R1
0/1,500 psi	PFQ725R1	PFQ241R1	PFQ1529R1	PFQ1553R1	PFQ718R1	PFQ748R1	PFQ778R1	PFQ1278R1
0/2,000 psi	PFQ726R1	PFQ242R1	PFQ1530R1	PFQ1554R1	PFQ719R1	PFQ749R1	PFQ779R1	PFQ1279R1
0/3,000 psi	PFQ727R1	PFQ243R1	PFQ1531R1	PFQ1555R1	PFQ720R1	PFQ750R1	PFQ780R1	PFQ1280R1
0/5,000 psi	PFQ728R1	PFQ244R1	PFQ1532R1	PFQ1556R1	PFQ721R1	PFQ751R1	PFQ781R1	PFQ1281R1
0/6,000 psi	PFQ346R1	PFQ246R1	-	-	PFQ784R1	PFQ785R1	PFQ789R1	PFQ1284R1
0/7,500 psi	PFQ347R1	PFQ247R1	-	-	PFQ786R1	PFQ886R1	-	-
0/10,000 psi	PFQ729R1	PFQ360R1	PFQ1533R1	PFQ1557R1	PFQ722R1	PFQ752R1	PFQ782R1	PFQ1282R1
0/15,000 psi	PFQ261R1	PFQ361R1	PFQ1534R1	PFQ1558R1	PFQ723R1	PFQ753R1	PFQ783R1	PFQ1283R1

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.

For options, attach suffix to end of order code: i.e. PFQ728-DRY for DRY CASE

Option suffix:

4BF = 4" (100mm) Back flange

4FF = 4" (100mm) Front flange

4UC-P = 4" (100mm) U-Clamp (for SS movement)

4UC-Q = 4" (100mm) U-Clamp (for brass movement)

DRY = Supply gauge dry

EN = EN837-1 compliant

REST = Restrictor screw

SF4 = 4" (100mm) Silicone filled

Dual Scale Order Codes (products in bold are normally stock in North America)

Dial Size	4" (100mm)							
	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (CB)	1/2" Bottom	1/2" Back (CB)	1/2" Bottom	1/2" Back (CB)
Movement, Socket, Tube	Brass		SS		Brass		SS	
30" Hg Vac/kPa	PFQ700	PFQ730	PFQ760	PFQ1260	PFQ1234	PFQ1285	PFQ1535	PFQ1559
30"/0/15 psi/kPa	PFQ701	PFQ731	PFQ761	PFQ1261	PFQ1235	PFQ1286	PFQ1536	PFQ1560
30"/0/30 psi/kPa	PFQ702	PFQ732	PFQ762	PFQ1262	PFQ1236	PFQ1287	PFQ1537	PFQ1561
30"/0/60 psi/kPa	PFQ703	PFQ733	PFQ763	PFQ1263	PFQ1237	PFQ1288	PFQ1538	PFQ1562
30"/0/100 psi/kPa	PFQ704	PFQ734	PFQ764	PFQ1264	PFQ1238	PFQ1289	PFQ1539	PFQ1563
30"/0/150 psi/kPa	PFQ705	PFQ735	PFQ765	PFQ1265	PFQ1239	PFQ1290	PFQ1540	PFQ1564
30"/0/200 psi/kPa	PFQ706	PFQ736	PFQ766	PFQ1266	PFQ1240	PFQ1291	PFQ1541	PFQ1565
30"/0/300 psi/kPa	PFQ707	PFQ737	PFQ767	PFQ1267	PFQ1241	PFQ1292	PFQ1542	PFQ1566
0/15 psi/kPa	PFQ708	PFQ738	PFQ768	PFQ1268	PFQ1242	PFQ1293	PFQ1543	PFQ1567
0/30 psi/kPa	PFQ709	PFQ739	PFQ769	PFQ1269	PFQ1243	PFQ1294	PFQ1544	PFQ1568
0/60 psi/kPa	PFQ710	PFQ740	PFQ770	PFQ1270	PFQ1244	PFQ1295	PFQ1545	PFQ1569
0/100 psi/kPa	PFQ711	PFQ741	PFQ771	PFQ1271	PFQ1245	PFQ1296	PFQ1546	PFQ1570
0/160 psi/kPa	PFQ712	PFQ742	PFQ772	PFQ1272	PFQ1246	PFQ1298	PFQ1547	PFQ1571
0/200 psi/kPa	PFQ713	PFQ743	PFQ773	PFQ1273	PFQ1247	PFQ1524	PFQ1548	PFQ1572
0/300 psi/kPa	PFQ714	PFQ744	PFQ774	PFQ1274	PFQ1248	PFQ1525	PFQ1549	PFQ1573
0/400 psi/kPa	PFQ715	PFQ745	PFQ775	PFQ1275	PFQ1249	PFQ1526	PFQ1550	PFQ1574
0/600 psi/kPa	PFQ716	PFQ746	PFQ776	PFQ1276	PFQ1250	PFQ1527	PFQ1551	PFQ1575
0/1,000 psi/kPa	PFQ724	PFQ192	PFQ1528	PFQ1552	PFQ717	PFQ747	PFQ777	PFQ1277
0/1,500 psi/kPa	PFQ725	PFQ241	PFQ1529	PFQ1553	PFQ718	PFQ748	PFQ778	PFQ1278
0/2,000 psi/kPa	PFQ726	PFQ242	PFQ1530	PFQ1554	PFQ719	PFQ749	PFQ779	PFQ1279
0/3,000 psi/kPa	PFQ727	PFQ243	PFQ1531	PFQ1555	PFQ720	PFQ750	PFQ780	PFQ1280
0/5,000 psi/kPa	PFQ728	PFQ244	PFQ1532	PFQ1556	PFQ721	PFQ751	PFQ781	PFQ1281
0/6,000 psi/kPa	PFQ346	PFQ246	-	-	PFQ784	PFQ785	PFQ789	PFQ1284
0/7,500 psi/kPa	PFQ347	PFQ247	-	-	-	-	-	-
0/10,000 psi/kPa	PFQ729	PFQ360	PFQ1533	PFQ1557	PFQ722	PFQ752	PFQ782	PFQ1282
0/15,000 psi/kPa	PFQ261	PFQ361	PFQ1534	PFQ1558	PFQ723	PFQ753	PFQ783	PFQ1283

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.

For options, attach suffix to end of order code: i.e. PFQ721-DRY for DRY CASE

Option suffix:

4BF = 4" (100mm) Back flange

4FF = 4" (100mm) Front flange

4UC-P = 4" (100mm) U-Clamp (for SS movement)

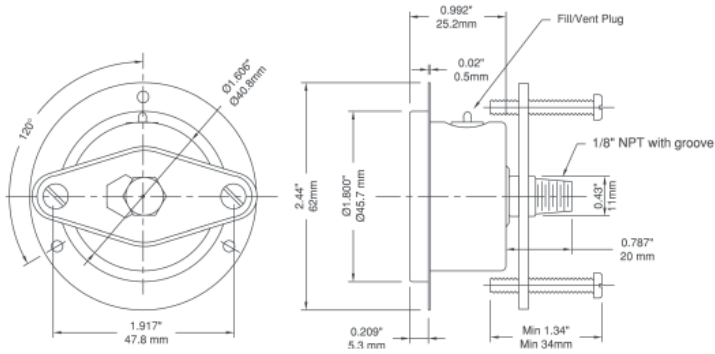
4UC-Q = 4" (100mm) U-Clamp (for brass movement)

DRY = Supply gauge dry

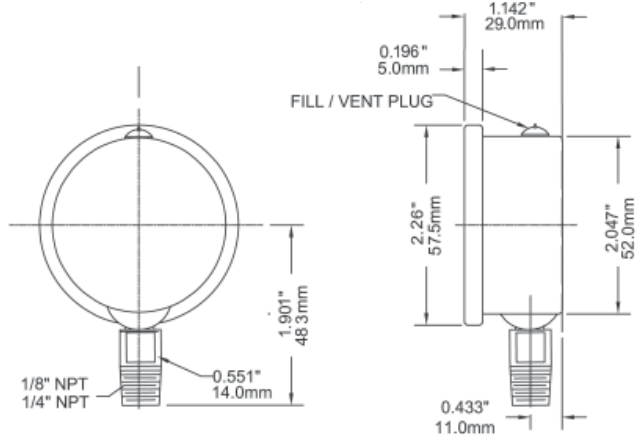
EN = EN837-1 compliant

SF4 = 4" (100mm) Silicone filled

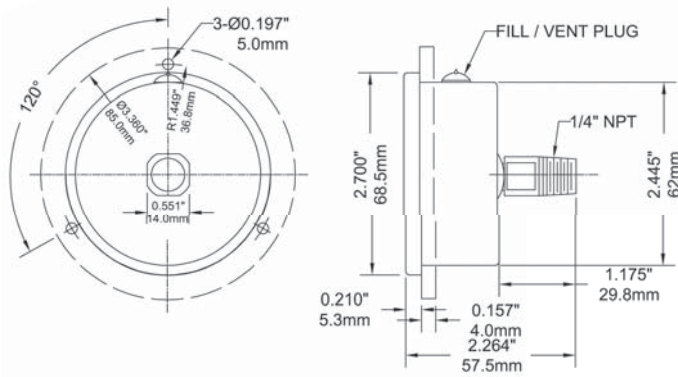
1.5" Back Connection with Front Flange and U-Clamp



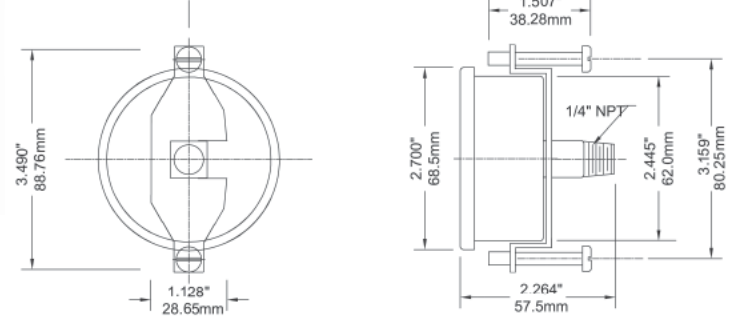
2" Bottom Connection



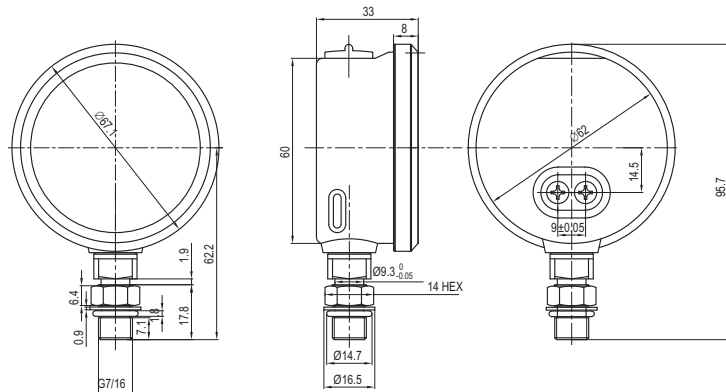
2.5" Back Connection with Front Flange



2.5" Back Connection with U-Clamp

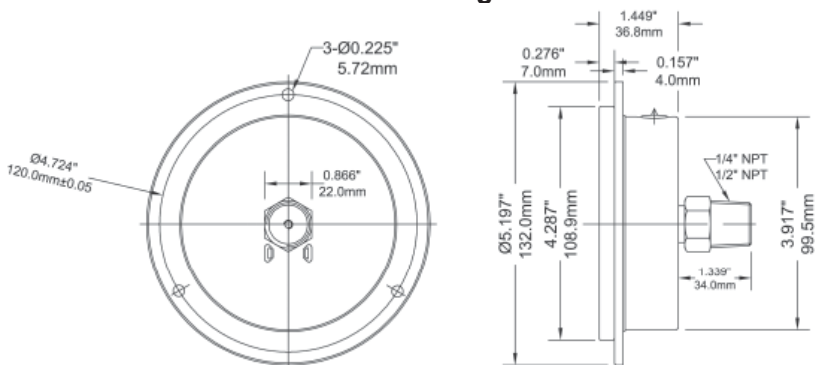


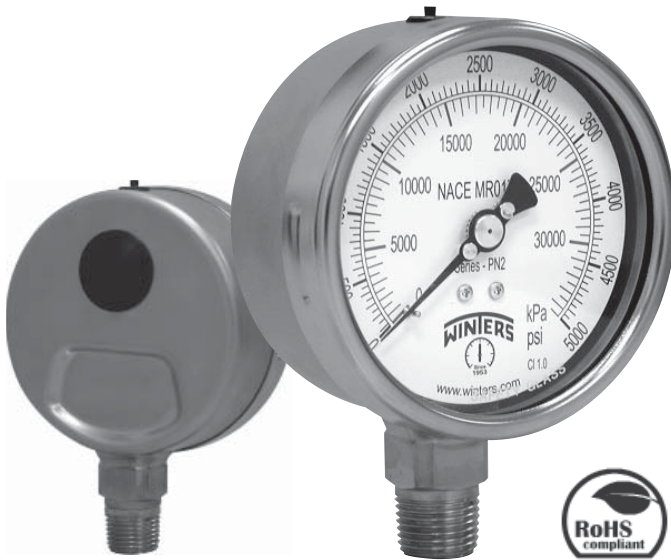
2.5" Bottom Connection SAE



Dimensions in mm

4" Back Connection with Front Flange





Description & Features:

- Designed for sour gas applications requiring NACE Standards MR0175-2002 (NACE Standards MR0103-2003 available)
- Glycerin filled case
- Blow out back plug
- Under and overload stops
- Wetted parts meet all hardness requirements
- ASME B40.100 compliant (EN837-1 available)
- CRN registered
- 5 year warranty

Applications:

- Sour gas applications requiring gauges that meet NACE International Standards

Specifications

Dial	4" (100mm) and 6" (150mm) aluminum with black and red markings
Case	304 SS
Lens	Laminated safety glass
Ring	304 SS, bayonet
Socket	316L SS
Connection	1/4" or 1/2" NPT, bottom or back
Bourdon Tube	316L SS
Movement	304 SS with under and overload stops
Pointer	Aluminum, anodized black, micrometer adjustable
Fill Liquid	Glycerin
Over-pressure Limit	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures over 1,450 psi (9,998 kPa)
Ambient/Process Temperature	Dry: -40°F to 250°F (-40°C to 120°C) Glycerin Filled: -4°F to 150°F (-20°C to 65°C)
Accuracy	±1% ANSI/ASME Grade 1A
Enclosure Rating	IP66

Order Codes (products in bold are normally stock in North America)

Dial Size	4" (100mm)				6" (150mm)	
	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)	1/2" Bottom	1/2" Back (LB)
30" Hg Vac/kPa	PN2640N	PN21090N	PN2655N	-	PN21100N	-
30"/0/15 psi/kPa	PN21036N	-	PN21044N	-	PN21101N	-
30"/0/30 psi/kPa	PN21037N	-	PN21045N	-	PN21102N	-
30"/0/60 psi/kPa	PN21038N	-	PN21046N	-	PN21103N	-
30"/0/100 psi/kPa	PN21039N	-	PN21047N	-	PN21104N	-
30"/0/150 psi/kPa	PN21040N	-	PN21048N	-	PN21105N	-
30"/0/200 psi/kPa	PN21042N	-	PN21050N	-	PN21106N	-
30"/0/300 psi/kPa	PN21043N	-	PN21051N	-	PN21107N	-
0/15 psi/kPa	PN2641N	PN21091N	PN2656N	-	PN21108N	-
0/30 psi/kPa	PN2642N	PN21092N	PN2657N	-	PN21109N	-
0/60 psi/kPa	PN2643N	PN21093N	PN2658N	-	PN21110N	-
0/100 psi/kPa	PN2644N	PN21094N	PN2659N	-	PN21111N	-
0/160 psi/kPa	PN2645N	PN21095N	PN2660N	-	PN21112N	-
0/200 psi/kPa	PN2646N	PN21096N	PN2661N	-	PN21113N	-
0/300 psi/kPa	PN2647N	PN21097N	PN2662N	-	PN21114N	-
0/400 psi/kPa	PN2650N	PN2150N	PN2666N	-	PN21115N	-
0/600 psi/kPa	PN2648N	PN21098N	PN2663N	-	PN21116N	-
0/1,000 psi/kPa	PN2649N	PN21099N	PN2664N	-	PN21117N	PN21217N
0/1,500 psi/kPa	-	-	PN2665N	PN21190N	PN21118N	PN21218N
0/2,000 psi/kPa	-	-	PN2667N	PN21191N	PN21119N	PN21219N
0/3,000 psi/kPa	-	-	PN2668N	PN21192N	PN21120N	PN21220N
0/4,000 psi/kPa	-	-	PN2701N	PN2702N	PN21121N	PN21221N
0/5,000 psi/kPa	-	-	PN2669N	PN21193N	PN21122N	PN21222N
0/6,000 psi/kPa	-	-	PN2675N	PN2175N	PN21123N	PN21223N
0/10,000 psi/kPa	-	-	PN2670N	PN21194N	PN21124N	PN21224N
0/15,000 psi/kPa	-	-	PN2671N	PN21195N	PN21125N	PN21225N
0/20,000 psi/kPa	-	-	PN2672N	PN21196N	PN21126N	PN21226N

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.

For options, attach suffix to end of order code: i.e. PN22657N-DRY for DRY CASE

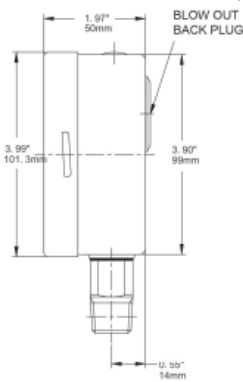
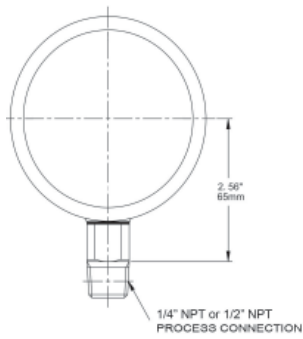
Option suffix:

- 4BF = 4" (100mm) Back flange
- 4FF = 4" (100mm) Front flange
- 4NSS = 4" (100mm) SS case
- 4UC-P = 4" (100mm) U-Clamp premium

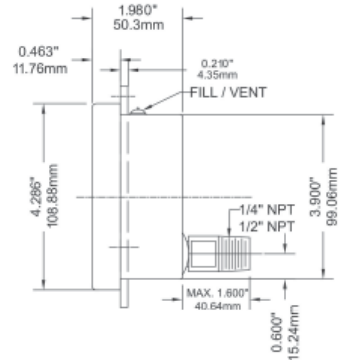
- 6BF = 6" (150mm) Back flange
- 6FF = 6" (150mm) Front flange
- 6NSS = 6" (150mm) SS case
- 6UC-P = 6" (150mm) U-Clamp premium

- DRY = Supply gauge dry
- EN = EN837-1 compliant
- REST = Restrictor screw

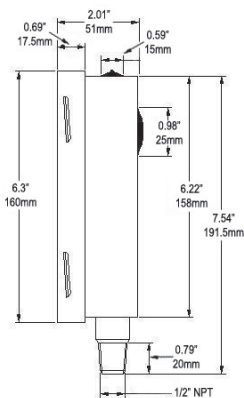
4" Bottom Connection

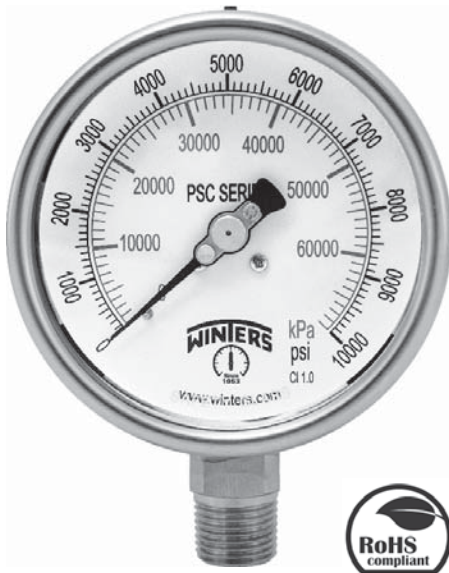


4" Back Connection



6" Bottom Connection





Description & Features:

- Solid front blowout back for the ultimate in gauge safety
- Full rotary movement and micrometer pointer for ease in calibration
- Overload stop
- Stainless steel case, socket and internals
- Safety glass lens
- Restricted orifice standard
- ASME B40.100 compliant (EN837-1 available)
- CRN registered
- 5 year warranty

Applications:

- Used where operator safety is a must
- Outdoor and severe ambient and process conditions
- Use where harmful vibration and pulsation are present (with liquid filling)
- Oil and gas, petrochemical, mining and power installations

Specifications

Dial	4" (100mm), 4.5" (115mm), 6" (150mm), white aluminum with black and red markings
Case	304 SS case with blowout back
Lens	4" (100mm), 6" (150mm): Laminated safety glass 4.5" (115mm): Tempered safety glass
Ring	SS bayonet
Socket	316L SS
Connection	1/4" or 1/2" NPT bottom
Bourdon Tube	316L SS
Movement	304 SS overload stop
Pointer	Aluminum, anodized black, micrometer adjustable
Over-pressure Limit	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures over 1,450 psi (9,998 kPa)
Working Pressure	Maximum 75% of full scale value
Ambient Temperature	Dry: -40°F to 250°F (-40°C to 120°C) Glycerin Filled: -4°F to 150°F (-20°C to 65°C)
Process Temperature	-40°F to 250°F (-40°C to 120°C)
Accuracy	4" (100mm), 6" (150mm): ±1% ANSI/ASME Grade 1A 4.5" (115mm): ±0.5% ANSI/ASME Grade 2A
Enclosure Rating	4" (100mm), 6" (150mm): IP67 per EN60529-1 (IEC529-1) 4.5" (115mm): IP65 per EN60529-1 (IEC529-1)

Order Codes

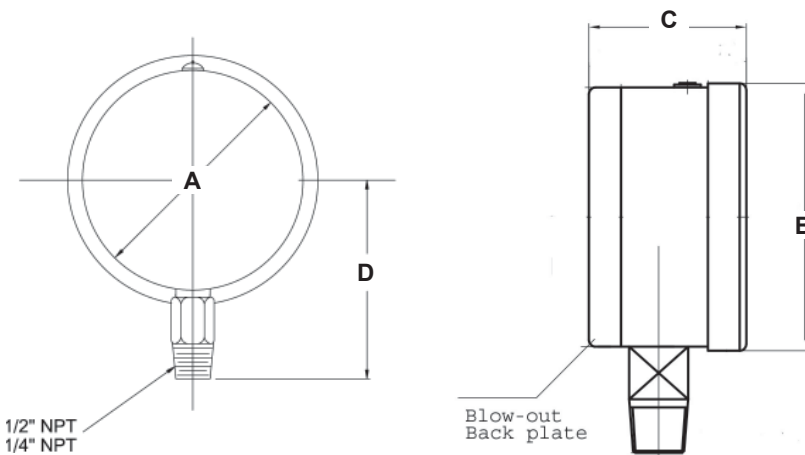
Dial Size	4" (100mm)		4.5" (115mm)		6" (150mm)	
Connection	1/4" Bottom	1/2" Bottom	1/4" Bottom	1/2" Bottom	1/4" Bottom	1/2" Bottom
30" Hg Vac/kPa	PSC248	PSC4870	PSC281	PSC4888	PSC283	PSC4906
30"/0/15 psi/kPa	PSC249	PSC4871	PSC282	PSC4889	PSC284	PSC4907
30"/0/30 psi/kPa	PSC257	PSC4872	PSC358	PSC4890	PSC285	PSC4908
30"/0/60 psi/kPa	PSC258	PSC4873	PSC359	PSC4891	PSC286	PSC4909
30"/0/100 psi/kPa	PSC259	PSC4874	PSC362	PSC4892	PSC287	PSC4910
30"/0/150 psi/kPa	PSC260	PSC4875	PSC363	PSC4893	PSC289	PSC4911
30"/0/200 psi/kPa	PSC261	PSC4876	PSC364	PSC4894	PSC296	PSC4912
30"/0/300 psi/kPa	PSC262	PSC4877	PSC365	PSC4895	PSC297	PSC4913
0/15 psi/kPa	PSC263	PSC4878	PSC366	PSC4896	PSC298	PSC4914
0/30 psi/kPa	PSC264	PSC4879	PSC367	PSC4897	PSC299	PSC4915
0/60 psi/kPa	PSC265	PSC4880	PSC368	PSC4898	PSC307	PSC4916
0/100 psi/kPa	PSC266	PSC4881	PSC369	PSC4899	PSC308	PSC4917
0/160 psi/kPa	PSC267	PSC4882	PSC370	PSC4900	PSC309	PSC4918
0/200 psi/kPa	PSC268	PSC4883	PSC371	PSC4901	PSC317	PSC4919
0/300 psi/kPa	PSC269	PSC4884	PSC372	PSC4902	PSC318	PSC4920
0/400 psi/kPa	PSC272	PSC4885	PSC373	PSC4903	PSC335	PSC4921
0/600 psi/kPa	PSC273	PSC4886	PSC374	PSC4904	PSC336	PSC4922
0/1,000 psi/kPa	-	PSC274	-	PSC375	-	PSC337
0/1,500 psi/kPa	-	PSC275	-	PSC376	-	PSC338
0/2,000 psi/kPa	-	PSC276	-	PSC377	-	PSC339
0/3,000 psi/kPa	-	PSC277	-	PSC378	-	PSC347
0/5,000 psi/kPa	-	PSC278	-	PSC379	-	PSC348
0/10,000 psi/kPa	-	PSC498	-	PSC380	-	PSC502
0/15,000 psi/kPa	-	PSC499	-	PSC381	-	PSC504
0/20,000 psi/kPa	-	PSC4887	-	PSC4905	-	PSC4923

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.

For options, attach suffix to end of order code: i.e. PSC374-R1 for SINGLE SCALE PSI

Option suffix:

4CSS = 4" (100mm) 316 SS case EN = EN837-1 compliant
 45CSS = 4.5" (115mm) 316 SS case G = Glycerin filled
 6CSS = 6" (150mm) 316 SS case R1 = Single scale psi



Dial	A	B	C	D
4" (100mm)	4.1" (105mm)	4.67" (119mm)	2.44" (62mm)	3.80" (96.5mm)
4.5" (115mm)	4.38" (111.3mm)	5.04" (128mm)	2.38" (60.5mm)	4.173" (106mm)
6" (150mm)	5.69" (144.6mm)	6.34" (161mm)	2.74" (69.5mm)	4.843" (123mm)



Optional Case

Description & Features:

- Highly accurate: $\pm 0.25\%$ for 6" (150mm), $\pm 0.50\%$ for 4" (100mm) complete with calibration certificate traceable to NIST standards
- Mirrored anti-parallax dial
- Knife-edge pointer
- Protective carrying and storage case available
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- Designed to be used where accuracy and repeatability are of prime importance
- Used in laboratories and instrument testing facilities

Specifications	Stainless Steel	Brass
Dial	6" (150mm) white aluminum with black markings and mirror band for precise instrument readings	4" (100mm) white aluminum with black markings and mirror band for precise instrument readings
Case	AISI 304 SS	AISI 304 SS
Lens	Polycarbonate	Polycarbonate
Ring	AISI 304 SS	AISI 304 SS
Socket	316 SS	Brass
Connection	1/4" NPT or 1/2" NPT standard, bottom	1/4" NPT or 1/2" NPT standard, bottom
Bourdon Tube	316 SS	Phosphor bronze
Movement	AISI 304 SS temperature compensated	Brass
Pointer	Aluminum, anodized black, micrometer adjustable, knife-edge	Aluminum, anodized black, micrometer adjustable, knife-edge
Welding	Silver alloy (TIG for 316 SS wetted parts)	Silver alloy (TIG for 316 SS wetted parts)
Over-pressure Limit	30% of full scale value	30% of full scale value
Working Pressure	Maximum 75% of full scale value	Maximum 75% of full scale value
Calibration Conditions	68°F ($\pm 5.4^\circ\text{F}$), 20°C ($\pm 3^\circ\text{C}$) for ambient and process temperatures at atmospheric pressure	68°F ($\pm 5.4^\circ\text{F}$), 20°C ($\pm 3^\circ\text{C}$) for ambient and process temperatures at atmospheric pressure
Ambient/Process Temperature	-4°F to 150°F (-20°C to 65°C)	-4°F to 150°F (-20°C to 65°C)
Accuracy	6" (150mm): $\pm 0.25\%$ ANSI/ASME Grade 3A	4" (100mm): $\pm 0.5\%$ ANSI/ASME Grade 2A
Enclosure Rating	IP65	IP65
Warning (brass internals only)	N/A	<p>⚠ WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.</p>

Order Codes

Dial Size	4" (100mm)		6" (150mm)	
Tube	Phosphor Bronze		316 SS	
Movement	Brass		304 SS temperature compensated	
Connection	1/4" Bottom	1/2" Bottom	1/4" Bottom	1/2" Bottom
30" Hg Vac	PTG3999	-	PTG1999	PTG2055
0/15 psi	PTG4000	-	PTG2000	PTG2056
0/30 psi	PTG4001	-	PTG2001	PTG2057
0/60 psi	PTG4002	-	PTG2002	PTG2058
0/100 psi	PTG4003	-	PTG2003	PTG2059
0/160 psi	PTG4004	-	PTG2004	PTG2060
0/200 psi	PTG4005	-	PTG2005	PTG2061
0/300 psi	PTG4006	-	PTG2006	PTG2062
0/400 psi	PTG4007	-	PTG2007	PTG2063
0/600 psi	PTG4008	-	PTG2008	PTG2064
0/1,000 psi	-	PTG4009	PTG2016	PTG2009
0/1,500 psi	-	PTG4010	PTG2017	PTG2010
0/2,000 psi	-	PTG4011	PTG2018	PTG2011
0/3,000 psi	-	PTG4012	PTG2019	PTG2012
0/5,000 psi	-	PTG4013	PTG2053	PTG2013
0/10,000 psi	-	PTG4014	PTG2054	PTG2014

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.

For options, attach suffix to end of order code: i.e. PTG2006-B for BACK CONNECTION

Option suffix:

4BF = 4" (100mm) Back flange

4FF = 4" (100mm) Front flange

4UC-P = 4" (100mm) U-Clamp premium

6BF = 6" (150mm) Back flange

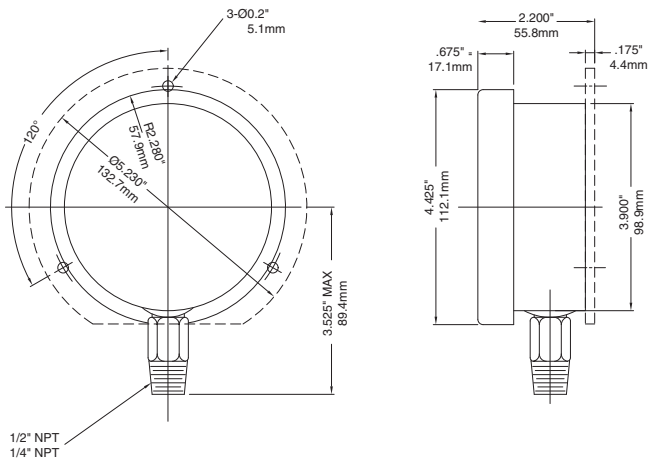
6FF = 6" (150mm) Front flange

B = Back connection

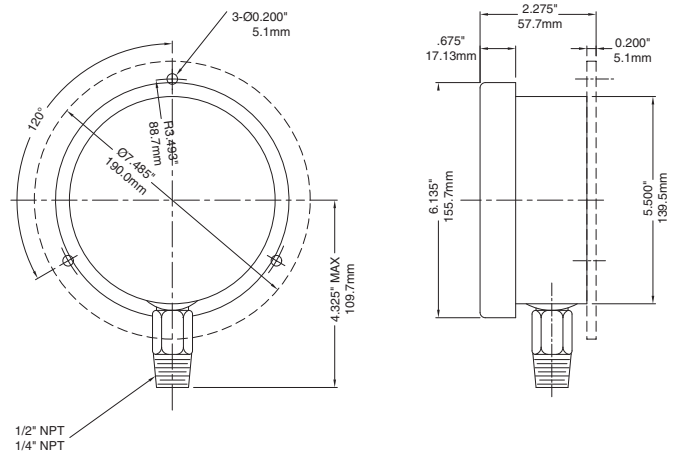
TG4 = 4" (100mm) Test gauge case

TG6 = 6" (150mm) Test gauge case

4" Bottom Connection with Back Flange



6" Bottom Connection with Back Flange





Description & Features:

- High quality, heavy duty gauge ideal for corrosive environments
- Stainless steel liquid filled gauge (dry optional)
- 1/2" NPT bottom
- Stainless steel wetted parts
- Heavy duty movement and Bourdon Tube
- Restrictor screw standard
- ASME B40.100 compliant
- 5 year warranty

Applications:

- Outdoor and severe ambient and process conditions
- Use where harmful vibration and pulsation are present
- Hydraulic equipment, oil field equipment, pumps, compressors and process industries

Specifications

Dial	4" (100mm) white aluminum with black markings
Case	AISI 304 SS
Lens	Safety glass standard; acrylic optional
Ring	AISI 304 SS
Socket	Welded, 316L SS
Connection	1/2" NPT standard, 1/4" NPT available
Bourdon Tube	316L SS, seamless drawn
Movement	304 SS with under and overload stops
Pointer	Aluminum, anodized black, micrometer adjustable
Welding	TIG
Fill Liquid	Glycerin
Over-pressure Limit	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures over 1,450 psi (9,998 kPa)
Gasket Material	EPDM
Working Pressure	Maximum 75% of full scale value
Ambient/Process Temperature	Dry: -40°F to 200°F (-40°C to 93°C) Glycerin Filled: -4°F to 150°F (-20°C to 65°C)
Accuracy	±1% ANSI/ASME Grade 1A
Enclosure Rating	IP66 per EN60529-1 (IEC529-1)

Order Codes

Range	Code
0/1,000 psi	PXT1134
0/1,500 psi	PXT1135
0/2,000 psi	PXT1136
0/3,000 psi	PXT1137
0/5,000 psi	PXT1138
0/10,000 psi	PXT1139
0/15,000 psi	PXT1140
0/20,000 psi	PXT1141

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. 1/4" NPT connection available upon request. **For options, attach suffix to end of order code: i.e. PXT1137-G for GLYCERIN FILL**

Option suffix:

G = Glycerin filled
SG-4 = 4" (100mm) Safety glass lens
SF4 = 4" (100mm) Silicone filled
ZR = StabiliZR™ movement



Description & Features:

- Brass or stainless steel wetted parts
- Both conventional and balanced scale available
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- Single pointer to show difference from two pressure sources
- Typically used to measure pressure drops across a filter, pump or other equipment

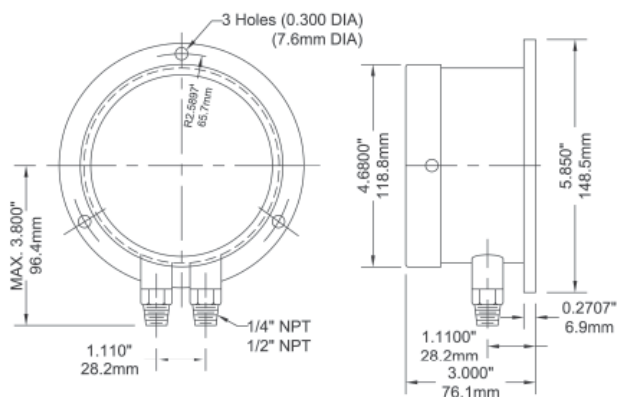
Specifications	Stainless Steel	Brass
Dial	4.5" (115mm), 6" (150mm) white aluminum with black markings	4.5" (115mm), 6" (150mm) white aluminum with black markings
Case	Aluminum, painted black	Aluminum, painted black
Front Flange	SS	SS
Back Flange	Black steel	Black steel
Lens	Glass	Glass
Ring	4.5" (115mm): SS 6" (150mm): Aluminum	4.5" (115mm): SS 6" (150mm): Aluminum
Socket	316 SS	Brass
Connections	1/4" NPT standard	1/4" NPT standard
Scale	PSID only	PSID only
Bourdon Tubes	AISI 316 SS, independent, matched	Phosphor bronze, independent, matched
Movement	Brass	Brass
Pointer	Aluminum (micrometer)	Aluminum (micrometer)
Welding	TIG argonarc	Tin/copper alloy
Over-pressure Limit	30% of full scale value	30% of full scale value
Working Pressure	Maximum 75% of full scale value	Maximum 75% of full scale value
Ambient/Process Temperature	-40°F to 150°F (-40°C to 65°C)	-40°F to 150°F (-40°C to 65°C)
Accuracy	±1% ANSI/ASME Grade 1A	±1% ANSI/ASME Grade 1A
Warning (brass internals only)	N/A	⚠ WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

Order Codes (products in italics are normally available in 3 - 5 days)

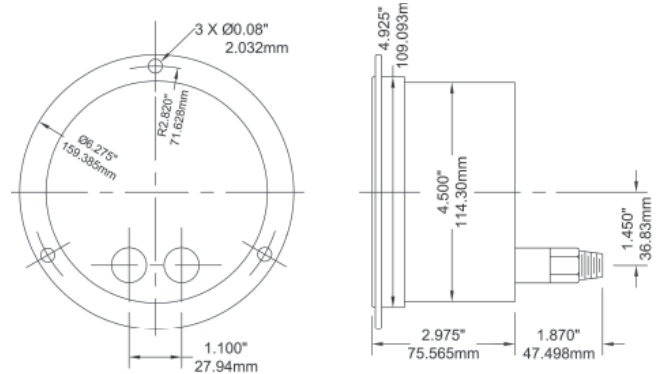
Dial Size	Max. Static Pressure	4.5" (115mm)				6" (150mm)			
Connection		1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)
Socket, Tube		Brass		SS		Brass		SS	
0/15 psi	22 psi	<i>PDT8051</i>	<i>PDT8051B</i>	<i>PDT8061</i>	<i>PDT8061B</i>	<i>PDT8071</i>	<i>PDT8071B</i>	<i>PDT8081</i>	<i>PDT8081B</i>
0/30 psi	45 psi	<i>PDT8052</i>	<i>PDT8052B</i>	<i>PDT8062</i>	<i>PDT8062B</i>	<i>PDT8072</i>	<i>PDT8072B</i>	<i>PDT8082</i>	<i>PDT8082B</i>
0/60 psi	90 psi	<i>PDT8053</i>	<i>PDT8053B</i>	<i>PDT8063</i>	<i>PDT8063B</i>	<i>PDT8073</i>	<i>PDT8073B</i>	<i>PDT8083</i>	<i>PDT8083B</i>
0/100 psi	150 psi	<i>PDT8054</i>	<i>PDT8054B</i>	<i>PDT8064</i>	<i>PDT8064B</i>	<i>PDT8074</i>	<i>PDT8074B</i>	<i>PDT8084</i>	<i>PDT8084B</i>
0/160 psi	240 psi	<i>PDT8055</i>	<i>PDT8055B</i>	<i>PDT8065</i>	<i>PDT8065B</i>	<i>PDT8075</i>	<i>PDT8075B</i>	<i>PDT8085</i>	<i>PDT8085B</i>
0/200 psi	300 psi	<i>PDT8056</i>	<i>PDT8056B</i>	<i>PDT8066</i>	<i>PDT8066B</i>	<i>PDT8076</i>	<i>PDT8076B</i>	<i>PDT8086</i>	<i>PDT8086B</i>
0/300 psi	450 psi	<i>PDT8057</i>	<i>PDT8057B</i>	<i>PDT8067</i>	<i>PDT8067B</i>	<i>PDT8077</i>	<i>PDT8077B</i>	<i>PDT8087</i>	<i>PDT8087B</i>
0/600 psi	900 psi	<i>PDT8058</i>	<i>PDT8058B</i>	<i>PDT8068</i>	<i>PDT8068B</i>	<i>PDT8078</i>	<i>PDT8078B</i>	<i>PDT8088</i>	<i>PDT8088B</i>

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. Bi-directional or zero positioned at 12 o'clock on dial is available. Low Differential Pressure/High Static Pressure configurations are also available.

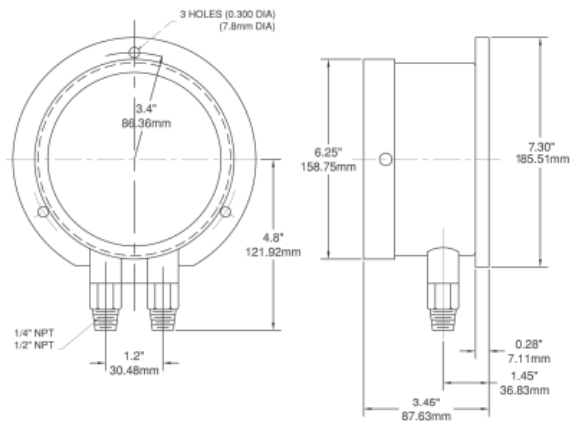
4.5" Bottom Connection



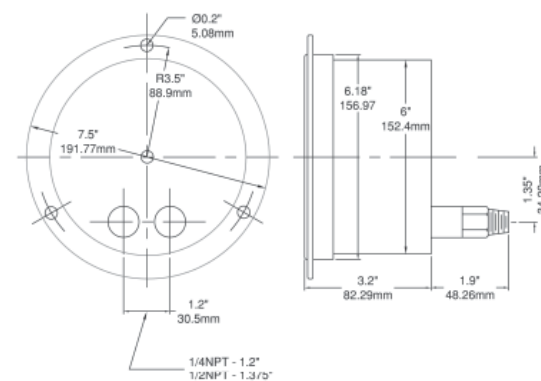
4.5" Back Connection



6" Bottom Connection



6" Back Connection





Description & Features:

- Heavy duty, highly accurate, aluminum case
- Brass and stainless steel wetted parts available
- Two separate bourdon tubes and pointers
- One red and one black pointer
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- Comparing two separate process pressures on the same gauge
- Utilized on pump and filter installations

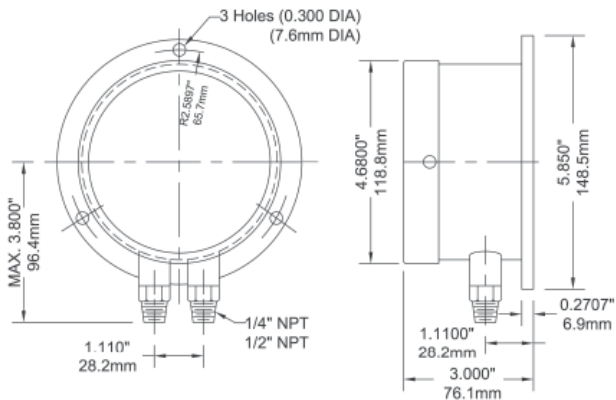
Specifications	Stainless Steel	Brass
Dial	4.5" (115mm), 6" (150mm) white aluminum with black markings	4.5" (115mm), 6" (150mm) white aluminum with black markings
Case	Aluminum, painted black	Aluminum, painted black
Front Flange	SS	SS
Back Flange	Black steel	Black steel
Lens	Glass	Glass
Ring	4.5" (115mm): SS 6" (150mm): Aluminum	4.5" (115mm): SS 6" (150mm): Aluminum
Socket	316 SS	Brass
Connections	1/4" NPT standard	1/4" NPT standard
Scale	PSI only	PSI only
Bourdon Tubes	AISI 316 SS, independent, matched	Phosphor bronze, independent, matched
Movement	Brass	Brass
Pointer	Aluminum, micrometer	Aluminum, micrometer
Welding	TIG argonarc	Tin/copper alloy
Over-pressure Limit	30% of full scale value	30% of full scale value
Working Pressure	Maximum 75% of full scale value	Maximum 75% of full scale value
Ambient/Process Temperature	-40°F to 150°F (-40°C to 65°C)	-40°F to 150°F (-40°C to 65°C)
Accuracy	±1% ANSI/ASME Grade 1A	±1% ANSI/ASME Grade 1A
Warning (brass internals only)	N/A	⚠ WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

Order Codes (products in italics are normally available in 3 - 5 days)

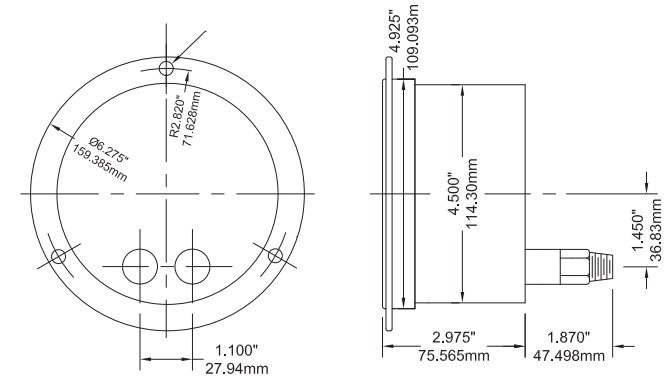
Dial Size	4.5" (115mm)				6" (150mm)			
Connection	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)
Socket, Tube	Brass		SS		Brass		SS	
0/15 psi	<i>PDX8011</i>	<i>PDX8011B</i>	<i>PDX8021</i>	<i>PDX8021B</i>	<i>PDX8091</i>	<i>PDX8091B</i>	<i>PDX8101</i>	<i>PDX8101B</i>
0/30 psi	<i>PDX8012</i>	<i>PDX8012B</i>	<i>PDX8022</i>	<i>PDX8022B</i>	<i>PDX8092</i>	<i>PDX8092B</i>	<i>PDX8102</i>	<i>PDX8102B</i>
0/60 psi	<i>PDX8013</i>	<i>PDX8013B</i>	<i>PDX8023</i>	<i>PDX8023B</i>	<i>PDX8093</i>	<i>PDX8093B</i>	<i>PDX8103</i>	<i>PDX8103B</i>
0/100 psi	<i>PDX8014</i>	<i>PDX8014B</i>	<i>PDX8024</i>	<i>PDX8024B</i>	<i>PDX8094</i>	<i>PDX8094B</i>	<i>PDX8104</i>	<i>PDX8104B</i>
0/160 psi	<i>PDX8015</i>	<i>PDX8015B</i>	<i>PDX8025</i>	<i>PDX8025B</i>	<i>PDX8095</i>	<i>PDX8095B</i>	<i>PDX8105</i>	<i>PDX8105B</i>
0/200 psi	<i>PDX8016</i>	<i>PDX8016B</i>	<i>PDX8026</i>	<i>PDX8026B</i>	<i>PDX8096</i>	<i>PDX8096B</i>	<i>PDX8106</i>	<i>PDX8106B</i>
0/300 psi	<i>PDX8017</i>	<i>PDX8017B</i>	<i>PDX8027</i>	<i>PDX8027B</i>	<i>PDX8097</i>	<i>PDX8097B</i>	<i>PDX8107</i>	<i>PDX8107B</i>
0/600 psi	<i>PDX8018</i>	<i>PDX8018B</i>	<i>PDX8028</i>	<i>PDX8028B</i>	<i>PDX8098</i>	<i>PDX8098B</i>	<i>PDX8109</i>	<i>PDX8109B</i>

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.

4.5" Bottom Connection



4.5" Back Connection






Description & Features:

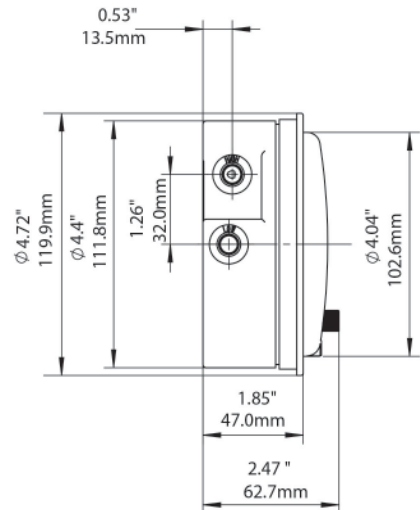
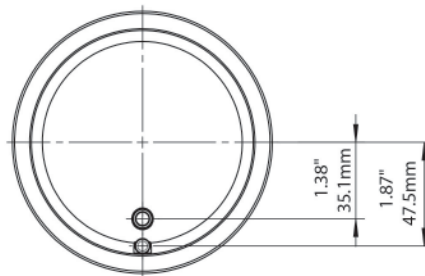
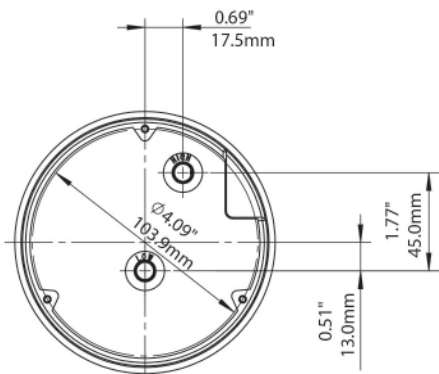
- Resistance-free differential gauge for all air and non-corrosive gas installations
- Industrial grade die-cast aluminum case
- Extreme temperature tolerance with o-ring seal
- Easily accessible re-zero adjustment screw
- 2% full scale accuracy*
- 3 mounting adapters with screws included, other mounting accessories also available
- 5 year warranty

Applications:

- Low pressure and differential monitoring for air and non-combustible gases including filters, blowers, vacuums, air handlers and clean rooms

Specifications

Dial	4" (100mm), white aluminum with black markings
Case	Die-cast black aluminum
Lens	Polycarbonate
Ring	Threaded die-cast black aluminum
Connection	1/8" NPTF high & low pressure taps, side & back
Movement	Resistance-free and magnetic
Pointer	Aluminum, anodized black
Over-pressure Limit	Maximum pressure of 14.5 psi / 100 kPa
Ambient/Process Temperature	-40°F to 140°F (-40°C to 60°C) 14°F to 140°F (-10°C to 60°C)
Accuracy	±2% of full scale value*
Enclosure Rating	IP67
Warning	 WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .



Note: PFD to only be mounted in a vertical position.

* Unless otherwise noted.

**“H2O Order Codes
(products in bold are normally stock in North America)**

Dial Size	4" (100mm)
Connection	1/8" Side & Back
Case Material	Aluminum
-0.25/0/0.25 "H2O	PFD40100
-0.5/0/0.5 "H2O	PFD40101
-1/0/1 "H2O	PFD40102
-2/0/2 "H2O	PFD40103
-5/0/5 "H2O	PFD40104
-10/0/10 "H2O	PFD40105
-15/0/15 "H2O	PFD40106
0/0.25 "H2O	PFD40010
0/0.5 "H2O	PFD40011
0/1 "H2O	PFD40012
0/2 "H2O	PFD40013
0/3 "H2O	PFD40014
0/4 "H2O	PFD40015
0/5 "H2O	PFD40016
0/6 "H2O	PFD40017
0/8 "H2O	PFD40018
0/10 "H2O	PFD40019
0/12 "H2O	PFD40020
0/15 "H2O	PFD40021
0/20 "H2O	PFD40022
0/25 "H2O	PFD40023
0/30 "H2O	PFD40024
0/40 "H2O	PFD40025
0/50 "H2O	PFD40026
0/60 "H2O	PFD40027
0/80 "H2O	PFD40028
0/100 "H2O	PFD40029
0/120 "H2O	PFD40030
0/150 "H2O	PFD40031

Note: Max. pressure rating is 14.5 psi

mmH2O Order Codes

Dial Size	4" (100mm)
Connection	1/8" Side & Back
Case Material	Aluminum
-3/0/3 mmH2O	PFD40350▲
-5/0/5 mmH2O	PFD40351
-10/0/10 mmH2O	PFD40352
0/6 mmH2O	PFD40300▲
0/10 mmH2O	PFD40301
0/15 mmH2O	PFD40302
0/20 mmH2O	PFD40303
0/25 mmH2O	PFD40304
0/30 mmH2O	PFD40305
0/50 mmH2O	PFD40306
0/80 mmH2O	PFD40307
0/100 mmH2O	PFD40308
0/125 mmH2O	PFD40309
0/150 mmH2O	PFD40310
0/200 mmH2O	PFD40311
0/250 mmH2O	PFD40312
0/300 mmH2O	PFD40313

kPa Order Codes

Dial Size	4" (100mm)
Connection	1/8" Side & Back
Case Material	Aluminum
0/0.5 kPa	PFD40500
0/1 kPa	PFD40501
0/1.5 kPa	PFD40502
0/2 kPa	PFD40503
0/2.5 kPa	PFD40504
0/3 kPa	PFD40505
0/4 kPa	PFD40506
0/5 kPa	PFD40507
0/6 kPa	PFD40508
0/8 kPa	PFD40509
0/10 kPa	PFD40510
0/15 kPa	PFD40511
0/20 kPa	PFD40512
0/25 kPa	PFD40513
0/30 kPa	PFD40514

PSI Order Codes

Dial Size	4" (100mm)
Connection	1/8" Side & Back
Case Material	Aluminum
0/1 psi	PFD40150
0/2 psi	PFD40151
0/3 psi	PFD40152
0/4 psi	PFD40153
0/5 psi	PFD40154

PA Order Codes

Dial Size	4" (100mm)
Connection	1/8" Side & Back
Case Material	Aluminum
-50/0/50 PA	PFD40200▲
-60/0/60 PA	PFD40201▲
-100/0/100 PA	PFD40202
-125/0/125 PA	PFD40403
-150/0/150 PA	PFD40404
-200/0/200 PA	PFD40405
-250/0/250 PA	PFD40406
-300/0/300 PA	PFD40407
-500/0/500 PA	PFD40408
0/50 PA	PFD40210
0/60 PA	PFD40211
0/100 PA	PFD40212
0/125 PA	PFD40213
0/150 PA	PFD40214
0/200 PA	PFD40215
0/250 PA	PFD40216
0/300 PA	PFD40217
0/500 PA	PFD40218
0/750 PA	PFD40219
0/1,000 PA	PFD40220



RSP - Setpoint indicator

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.

For options, attach suffix to end of order code: i.e. PFD40031-RSP for SETPOINT INDICATOR. Contact Winters for additional options

Option suffix:

RSP = Setpoint indicator

- ±3% of full scale value accuracy
- ▲ ±4% of full scale value accuracy

Options Order Codes

Description	Code
Hanging Bracket	PFD1001
Surface Mounting Bracket	PFD1002
3-Way Valve	PFD1003
Flush Mounting Bracket	PFD1004
Air Filter Kit	PFD1005
2" Pipe Mounting Kit	PFD1006
Flange for Panel Mounting	PFD1007
Square Flush Mount Kit	PFD1008




Description & Features:

- Versatile high static low differential pressure gauges
- Four types of sensing elements for a large variety of ranges
- Switches available for actuation
- ASME B40.100 compliant
- 5 year warranty

Applications:

- Used for filtration systems, low pressure gas installations and for leak detection in low pressure, high static systems

Specifications	Piston Gauge (PPD)	Rolling Diaphragm Gauge (PRD)	Small Convoluted Diaphragm Gauge (PSD)	Convoluted Diaphragm Gauge (PVD)
Dial	2.5" (63mm), 3.5" (90mm), 4.5" (115mm)	2.5" (63mm)	2.5" (63mm), 3.5" (90mm), 4.5" (115mm)	3.5" (90mm), 4.5" (115mm)
Case	Aluminum or engineered plastic	Engineered plastic	Aluminum or engineered plastic	Aluminum or engineered plastic
Lens	Shatter resistant acrylic (standard), safety glass (optional)	Shatter resistant acrylic (standard), safety glass (optional)	Shatter resistant acrylic (standard), safety glass (optional)	Shatter resistant acrylic (standard), safety glass (optional)
Line Connection Locations	In-line, back or bottom	In-line (only)	In-line, back, dual top & bottom or bottom	Dual top & bottom
Connections	1/4" NPTF (standard), 1/2" NPTF, 7/16"-20 SAE	1/4" NPTF (only)	1/4" NPTF (standard), 1/2" NPTF, 7/16"-20 SAE	Dual 1/4" NPTF
Wetted Parts Materials	SS piston with ceramic magnet (standard), Aluminum, Bronze or Monel® piston (optional)	SS parts with Buna N seals	SS parts with Buna N seals	SS parts with Buna N seals (standard), Hastelloy® C parts with Buna N seals (optional)
Body Material	SS, aluminum, bronze or Monel®	SS, aluminum or acetal	SS, aluminum or brass	SS, aluminum, brass, engineered plastic or Hastelloy® C
Internals/Movement	Magnetic coupling using piston & spring	Magnetic coupling with rolling diaphragm sensor	Magnetic coupling with convoluted diaphragm sensor	Magnetic coupling with convoluted diaphragm sensor
Migration of Media	Marginal	Zero	Zero	Zero
Seal	Buna N (standard), PTFE, FKM, neoprene	Buna N (standard), FKM	Buna N (standard), FKM, silicone, neoprene	Buna N (standard), FKM, silicone, neoprene
Standard Differential Ranges	0-5 thru 110 psid (0.4-8 bar)	0-5 thru 50 psid (0.4-3 bar)	0-25 thru 100 psid (1.5-7 bar)	0-5 thru 400" H ₂ O (12.4 mbar-1 bar)
Maximum System Pressure	Aluminum: 3,000 psi (200 bar) Bronze, Monel®: 5,000 psi (350 bar) SS: 6,000 psi (400 bar)	Aluminum, SS: 1,000 psi (70 bar) Acetal: 500 psi (35 bar)	Aluminum, SS: 3,000 psi (200 bar) Brass: 1,500 psi (100 bar)	Aluminum, brass, SS: 500 psi (35 bar) Engineered plastic: 300 psi (20 bar) Hastelloy® C: 500 psi (35 bar)
Ambient Temperature	-40°F to 200°F (-40°C to 93°C)	-40°F to 200°F (-40°C to 93°C)	-40°F to 200°F (-40°C to 93°C)	-40°F to 200°F (-40°C to 93°C)
Accuracy	±2% of full scale value	±5% of full scale value	±2% of full scale value	0-5 thru 9.9" H ₂ O: ±5% of full scale 0-10 thru 400" H ₂ O: ±2% of full scale
Warning (brass internals only)	N/A	N/A	 WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .	

Hastelloy® is a registered trademark of Haynes International, Inc.
Monel® is a registered trademark of Inco Alloys International

Piston Type (PPD)

- Most suitable for general purpose applications including filters, pumps and chillers. Uses a piston as a sensor to separate high & low pressure in response to pressure differentiation.
- Standard Differential Range: 0/5 thru 110 psid (0.4/8 bar)
- Maximum System Pressure Aluminum: 3,000 psi (200 bar)
- Maximum System Pressure Bronze, Monel[®]: 3,000 psi (200 bar)
- Maximum System Pressure SS: 6,000 psi (400 bar)
- Accuracy $\pm 2\%$ full scale ascending

Rolling Diaphragm Gauge (PRD)

- Operates on rolling diaphragm as a sensor, which assures complete separation of the high and low pressure ports. Suitable for use on dissimilar fluids, wet gas and process fluids with particulates present. Used in high line pressure and differential pressure ranges up to 50 psid.
- Standard Differential Range: 0/5 thru 50 psid (0.4/3 bar)
- Maximum System Pressure Aluminum, SS: 1,000 psi (70 bar)
- Maximum System Pressure Acetal: 500 psi (35 bar)
- Accuracy $\pm 5\%$ full scale ascending

Small Convoluted Diaphragm Gauge (PSD)

- Operates on a convoluted diaphragm as a sensor which separates high and low pressure ports. Ideally suited for use on dissimilar fluids and wet gas or fluids with high concentration of particles. Suitable for use with a diaphragm/chemical seal.
- Standard Differential Range: 0/25 thru 100 psid (1.5/7 bar)
- Maximum System Pressure Aluminum, SS: 3,000 psi (200 bar)
- Maximum System Pressure Brass: 1,500 psi (100 bar)
- Accuracy $\pm 2\%$ full scale ascending

Convoluted Diaphragm Gauge (PVD)

- Operates on a convoluted diaphragm sensor for low range flow, liquid and vacuum applications. Used in tank level, horizontal or vertical flow applications, filtering of very low pressure gases.
- Standard Differential Range: 0/5 thru 400" H₂O (12.4 mbar/1 bar)
- Maximum System Pressure Aluminum, brass, SS: 500 psi (35 bar)
- Maximum System Pressure Engineered plastic: 300 psi (20 bar)
- Maximum System Pressure Hastelloy[®] C: 500 psi (35 bar)
- Accuracy 0/5 thru 9.9" H₂O $\pm 5\%$, 0/10 thru 400" H₂O $\pm 2\%$

Note: Technical drawings are available upon request

Rolling Diaphragm Gauge (High Static Pressure Differential)

PRD

Series Number (for custom, non-standard product)

	P	R	D										
SERIES													
TYPE					A								
					P								
					S								
					Z								
DIAL SIZE					A								
					Z								
SEAL													
CONNECTION													
OPTIONS													
SWITCH													
ELECTRICAL													

Differential

Convuluted Diaphragm Gauge (High Static Pressure Differential)

PVD

Series Number (for custom, non-standard product)

	P	V	D	-		-		-		-		-		-		-					
SERIES TYPE	Stainless Steel internal metal parts (Max system pressure 300 psi) glass reinforced engineered plastic body, two x 1/4" carbon steel compression fittings				P	C															
	Aluminum body, stainless Steel internal metal parts (Max system pressure 500 psi) dual 1/4" NPTF connections top & bottom				A	C															
	Brass body, stainless Steel internal metal parts (Max system pressure 500 psi) dual 1/4" NPTF connections top & bottom				B	C															
	Stainless steel body, stainless Steel internal metal parts (Max system pressure 500 psi) dual 1/4" NPTF connections top & bottom				S	C															
	Hastelloy-C body, Hastelloy-C internal metal parts (Max system pressure 500 psi) dual 1/4" NPTF connections top & bottom (+/- 5% ascending accuracy)				H	C															
DIAL SIZE	4.5" Round dial, plastic case						C														
	3.5" Round dial, anodized aluminum case						E														
	4.5" Round dial, anodized aluminum case						G														
	Special						Z														
SEAL	Buna-N (standard)								0												
	FKM 0/20"H2O to 0/400"H2O								1												
	Silicone 0/5"H2O to 0/100"H2O								2												
	Neoprene 0/5"H2O to 0/100"H2O								3												
	Ethylene Propylene 0/20"H2O to 0/400"H2O								5												
	Special								Z												
CONNECTION	1/4" carbon steel compression tube fittings (2) for above model P or 1/4" NPTF (4) for above models A, B or S								0												
	1/4" stainless steel compression tube fittings (2)								1												
	1/4" NPTF brass adapters (2) for above model P only								2												
	1/4" NPTF stainless steel adapters (2) for above model P only								3												
	Special								Z												
OPTIONS	No additional options required (standard)																	O			
	Drain & bleed plugs, stainless steel (2), above model P only																	B			
	Drain & bleed in NEMA 4X enclosure																	D			
	Pipe mounting kit, carbon steel																	F			
	Pipe mounting kit, stainless steel																	G			
	Hastelloy-C internal wetted metal parts and fittings, poly body only																	H			
	1/2" NPTF stainless steel adapters (2), available on above models A, B & S only																	K			
	Maxi-pointer																	M			
	NACE (for sour gas applications, not available in Bronze case)																	N			
	CRN (Canadian Registration Number, aluminum or SS body only)																	O			
	Safety glass (4.5" aluminum case only)																	S			
	Oxygen cleaning																	T			
	Stainless steel tag with SS wire																	U			
	Stainless steel tag with SS screw																	V			
	Wall mount kit (not available with Switches)																	W			
	Special																	Z			
SWITCH	No electrical options required (standard)																		O		
	1 Reed switch with condulet enclosure																	H			
	2 Reed switches with condulet enclosure																	I			
	1 Reed switch with condulet enclosure and plug-in connector (DIN 43650)																	J			
	2 Reed switches with condulet enclosure and plug-in connector (DIN 43650)																	K			
	1 switch in NEMA 4X plastic enclosure																	L			
	2 switches in NEMA 4X plastic enclosure																	M			
	Special																	Z			
ELECTRICAL	No electrical options required (standard)																		O		
	SPDT 3W, 0.25A 125VAC / VDC, adjustable range 10-90%																		A		
	Special																	Z			
	Minimum differential range 0/5"H2O (example) - Maximum differential range 0/400"H2O - Maximum system pressure 300psi or 500psi																				0 0 5 "H2O

Differential



Description & Features:

- Simple 2 button operation
- Reset to zero feature
- Backlight turns on when on/off button is pressed
- Option for display to remain continuously on
- Continuous peak pressure indication option
- 316L welded diaphragm seal
- Rubber boot is standard
- ASME B40.100 compliant
- ±1% accuracy (±0.5% optional for gauges up to 10,000 psi)
- 5 year warranty

Applications:

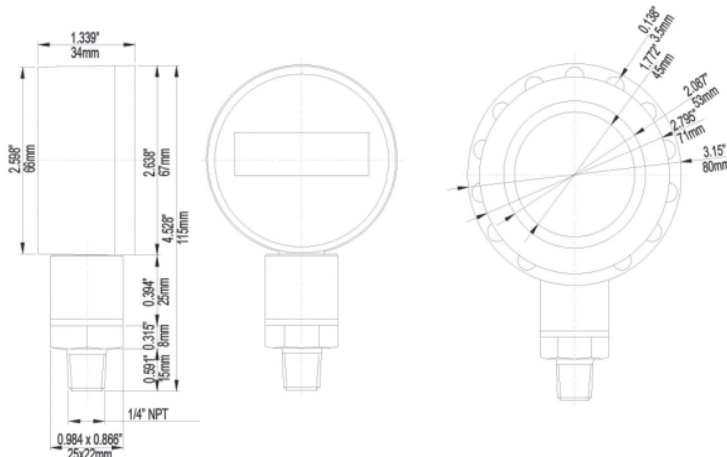
- Ideal for commercial and industrial application in both test measurement and general purpose installations

Specifications

Case Size	2.5" (63mm)
Case Material	ABS
Rubber Boot	Silicone rubber
LCD Display	2" x 3/4" (48mm x 16mm)
Connection	1/4" NPT 304SS
Sensor	316L welded, Piezo
Operating Life	1 million cycles
Power Supply	2 x AAA battery (1.5V)
Battery Life	2 yrs (auto shut-off mode)
Power Mode	Auto or manual shut-off
Display Digits	4 digits to 5,000 psi 5 digits for 10,000 psi and 15,000 psi
Pressure Unit Selection	psi, mH ₂ O, mmHg, mbar, kPa ranges ≤ 100 psi psi, bar, kgf/cm ² , MPa, atm ranges ≥ 160 psi
Response Time	≤ 3 Hz display refresh rate
Proof / Burst Pressure	200% / 300% FS
Operating / Storage Temperature	14°F to 122°F (-10°C to 50°C) -4°F to 167°F (-20°C to 75°C)
Accuracy	±1% (±0.5% optional for gauges up to 10,000 psi)
Enclosure Rating	IP60

Order Codes (products in bold are normally stock in North America)

Dial Size	2.5" (63mm)
Connection	1/4" Bottom
Socket	SS
-15 psi Vac	DPG210
-15/0/15 psi	DPG203
-15/0/30 psi	DPG204
-15/0/60 psi	DPG205
-15/0/100 psi	DPG206
-15/0/150 psi	DPG207
-15/0/200 psi	DPG208
-15/0/300 psi	DPG209
0/15 psi	DPG211
0/30 psi	DPG212
0/60 psi	DPG213
0/100 psi	DPG214
0/160 psi	DPG215
0/200 psi	DPG216
0/300 psi	DPG217
0/600 psi	DPG218
0/1,000 psi	DPG219
0/1,500 psi	DPG220
0/2,000 psi	DPG221
0/3,000 psi	DPG222
0/5,000 psi	DPG223
0/10,000 psi	DPG224
0/15,000 psi	DPG225



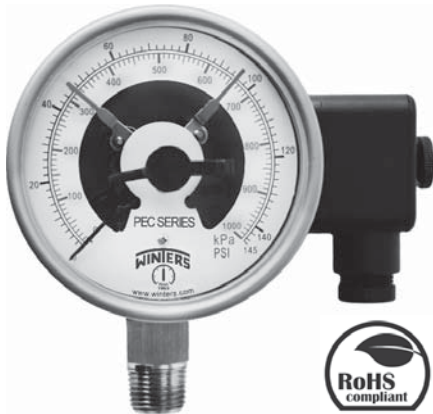
Without Rubber Boot

With Rubber Boot

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code: i.e. DPG2245 for ±0.5% Accuracy.**

Option suffix:

5 = ±0.5% Accuracy (available on gauges up to 10,000 psi)



Description & Features:

- 4" dial
- Silicone fillable stainless steel gauge
- Independently adjustable electrical contacts
- Bottom connection
- Restricted orifice standard
- $\pm 1\%$ accuracy
- Electrical contacts rated up to 1 amp at 220-380 Vac
- Contact settings adjustable with fitted key (included)
- ASME B40.100 compliant (EN837-1 available)
- CRN registered
- 5 year warranty

Applications:

- Commercial and industrial applications where electrical switching is required with local indication
- Pump and compressor controls
- Hydraulic and pneumatic industries

Specifications

Specifications	
Case Size	4" (100mm)
Case	304 SS
Lens	Polycarbonate
Socket	304 SS
Connection	1/2" NPT (other connection sizes available)
Bourdon Tube	316 SS
Movement	304 SS
Pointer	Aluminum, painted black
Welding	Laser welded case to socket
Over-pressure Limit	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures over 1,450 psi (9,998 kPa)
Fill Plug	Buna N (silicone rubber option)
Lens Ring Gasket	Silicone rubber
Working Pressure	Maximum 75% of full scale value
Ambient/Process Temperature	Dry: -40°F to 160°F (-40°C to 70°C) Filled: -40°F to 160°F (-40°C to 70°C)
Accuracy	1%
Enclosure Rating	IP65
Electrical Connection	Plastic connection box with terminal block (Hirschmann-type)
Contact Rating	0.7 - 1 amp; 220 - 380 Vac (snap action contact)
No. of Contacts	1 or 2 SPST, independently adjustable 2 - contact of high (upper limit) and/or low (lower limit)

Order Codes

Dial Size	4" (100mm)
Connection	1/2" Bottom
30" Hg Vac/kPa	PEC0200
0/15 psi/kPa	PEC0201
0/30 psi/kPa	PEC0202
0/60 psi/kPa	PEC0203
0/100 psi/kPa	PEC0204
0/160 psi/kPa	PEC0205
0/200 psi/kPa	PEC0206
0/300 psi/kPa	PEC0207
0/400 psi/kPa	PEC0208
0/600 psi/kPa	PEC0209
0/1,000 psi/kPa	PEC0210
0/1,500 psi/kPa	PEC0211
0/2,000 psi/kPa	PEC0212
0/3,000 psi/kPa	PEC0213
0/5,000 psi/kPa	PEC0214
0/6,000 psi/kPa	PEC0215
0/10,000 psi/kPa	PEC0216

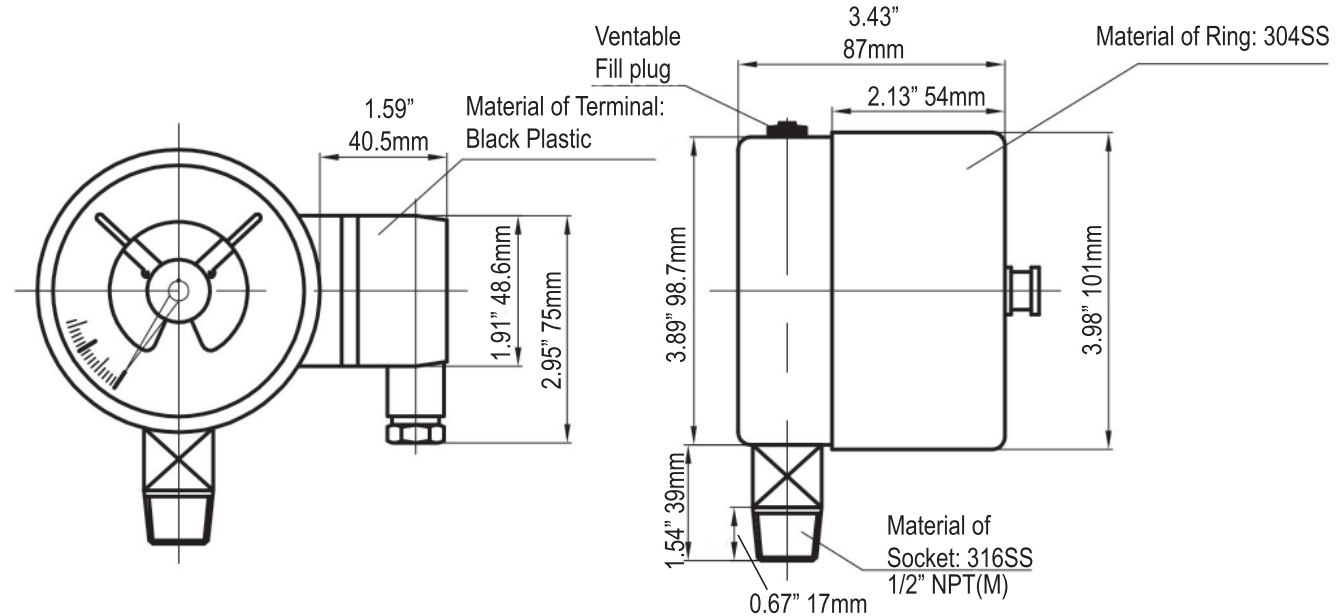
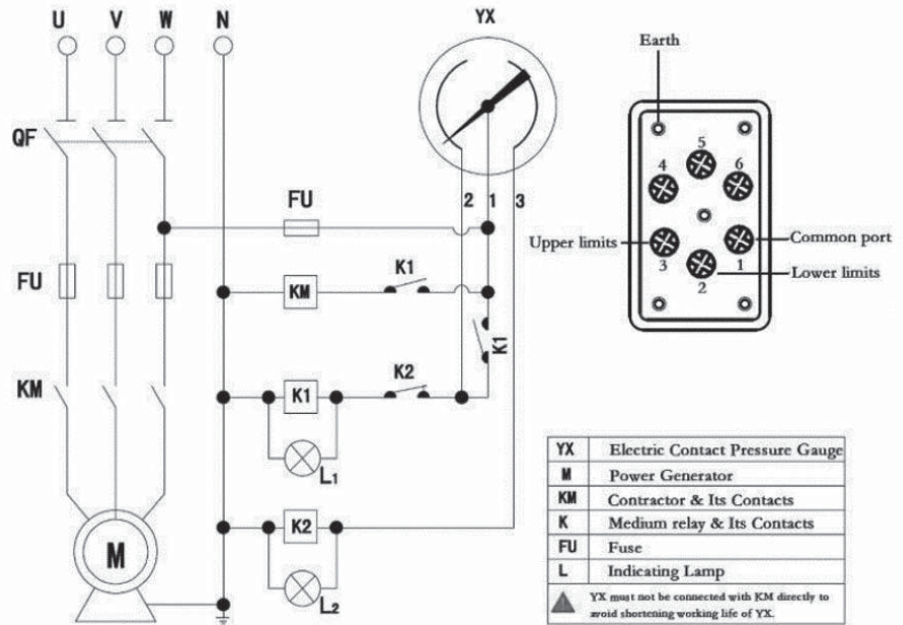
Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.

For options, attach suffix to end of order code: i.e. PEC0210-SG-4 for SAFETY GLASS LENS

Option suffix:

EN = EN837-1 compliant
 SF4 = 4" (100mm) Silicone filled
 SG-4 = 4" (100mm) Safety glass lens

Wiring Diagram






1. Bottom Connection
2. Back Connection

Description & Features:

- Highly accurate reading of low pressures
- Brass or stainless steel wetted parts
- Ranges from 15" H₂O/oz to 10 psi
- Over-pressure protection on some models (OP)
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- Suitable for measuring gaseous media both corrosive and non-corrosive
- Used to measure natural gas pressure as well as air flow indication and leak detection
- Vacuum pumps, air compressors, air filters, gas burners, vacuum ovens, suction regulators and respirators

Specifications	Stainless Steel Internals	Brass Internals
Dial	2.5" (63mm), 4" (100mm), 4.5" (115mm) and 6" (150mm), white aluminum with black and red markings	2.5" (63mm), 4" (100mm), 4.5" (115mm) and 6" (150mm), white aluminum with black and red markings
Case	2.5" (63mm), 4" (100mm): AISI 304 SS 4.5" (115mm), 6" (150mm): Aluminum, painted black	2.5" (63mm), 4" (100mm): Steel, painted black 4.5" (115mm), 6" (150mm): Cast aluminum, painted black
Lens	2.5" (63mm): Polycarbonate 4" (100mm): Styrene-acrylonitrile resin 4.5" (115mm), 6" (150mm): Glass	2.5" (63mm), 4" (100mm): Polycarbonate 4.5" (115mm), 6" (150mm): Glass
Ring	2.5" (63mm), 4" (100mm): No ring 4.5" (115mm), 6" (150mm): Aluminum	2.5" (63mm): No ring 4" (100mm): Steel 4.5" (115mm), 6" (150mm): Aluminum
Socket	AISI 316 SS	Brass
Connection	1/4" NPT standard	1/4" NPT standard
Diaphragm Element	AISI 316 SS	Phosphor bronze
Movement	AISI 316 SS	2.5" (63mm): Engineering plastic upper and lower plate with brass pinion and sector; 4" (100mm), 4.5" (115mm), 6" (150mm): Brass
Pointer	Aluminum, anodized black	Aluminum, anodized black
Welding	TIG	Solder/brazed
Working Pressure	75% of full scale value	60% of full scale value (fluctuating) 75% of full scale value (static)
Over-pressure Limit	30% of full scale value	30% of full scale value, up to 200% with over-pressure protection (OP) option
Ambient/Process Temperature	-40°F to 150°F (-40°C to 65°C)	-40°F to 150°F (-40°C to 65°C)
Accuracy	±1.6% of full scale	±3-2-3% ANSI/ASME Grade B
Enclosure Rating	IP52	IP52
Warning (brass internals only)	N/A	 WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

Order Codes (products in bold are normally stock in North America)

Dial Size	2.5" (63mm)				4" (100mm)				4.5" (115mm)			
Case Material	Steel		SS		Steel		SS		Aluminum			
Connection	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Bottom	1/4" Back (CB)	1/4" Back (CB)	1/4" Bottom	1/4" Bottom	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (CB)
Capsule, Movement, Socket	Brass		SS		Brass		SS		Brass		SS	
0/15" water/vac	PLP300V	PLP340V	PLP350V	PLP310V	PLP4230V	PLP4240V	PLP4200V	PLP4250V	PLP4290V	PLP4260V	PLP4300V	
0/32" water/vac	PLP301V	PLP341V	PLP351V	PLP311V	PLP4231V	PLP4241V	PLP4201V	PLP4251V	PLP4291V	PLP4261V	PLP4301V	
0/55" water/vac	PLP302V	PLP342V	PLP352V	PLP312V	PLP4232V	PLP4242V	PLP4202V	PLP4252V	PLP4292V	PLP4262V	PLP4302V	
0/100" water/vac	PLP304V	PLP343V	PLP353V	PLP313V	PLP4233V	PLP4243V	PLP4203V	PLP4253V	PLP4293V	PLP4263V	PLP4303V	
0/200" water/vac	PLP303V	-	PLP356V	-	-	-	-	-	-	-	-	
0/15" water/oz	PLP300	PLP340	PLP350	PLP310	PLP4230	PLP4240	PLP4200	PLP4250	PLP4290	PLP4260	PLP4300	
0/32" water/oz	PLP301	PLP341	PLP351	PLP311	PLP4231	PLP4241	PLP4201	PLP4251	PLP4291	PLP4261	PLP4301	
0/55" water/oz	PLP302	PLP342	PLP352	PLP312	PLP4232	PLP4242	PLP4202	PLP4252	PLP4292	PLP4262	PLP4302	
0/100" water/oz	PLP304	PLP343	PLP353	PLP313	PLP4233	PLP4243	PLP4203	PLP4253	PLP4293	PLP4263	PLP4303	
0/200" water/oz	PLP303	PLP346	PLP356	PLP316	PLP4236	PLP4246	PLP4206	PLP4256	PLP4296	PLP4266	PLP4306	
0/5 psi/kPa	PLP305	PLP344	PLP354	PLP314	PLP4234	PLP4244	PLP4204	PLP4254	PLP4294	PLP4264	PLP4304	
0/10 psi/kPa	PLP306	PLP345	PLP355	PLP315	PLP4235	PLP4245	PLP4205	PLP4255	PLP4295	PLP4265	PLP4305	

Dial Size	6" (150mm)			
Case Material	Aluminum			
Connection	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (CB)
Capsule, Movement, Socket	Brass		SS	
0/15" water/vac	PLP4310V	-	PLP4320V	-
0/32" water/vac	PLP4311V	-	PLP4321V	-
0/55" water/vac	PLP4312V	-	PLP4322V	-
0/100" water/vac	PLP4313V	-	PLP4323V	-
0/200" water/vac	-	-	-	-
0/15" water/oz	PLP4310	-	PLP4320	PLP4360
0/32" water/oz	PLP4311	PLP4351	PLP4321	PLP4361
0/55" water/oz	PLP4312	-	PLP4322	-
0/100" water/oz	PLP4313	PLP4353	PLP4323	PLP4363
0/200" water/oz	PLP4316	-	PLP4326	-
0/5 psi/kPa	PLP4314	PLP4354	PLP4324	PLP4364
0/10 psi/kPa	PLP4315	PLP4355	PLP4325	PLP4365

Dial Size	2.5" (63mm)
Case Material	Steel
Connection	1/4" Bottom
Capsule, Movement, Socket	Brass w/Over-pressure protection
0/5 psi/kPa	PLP305OP
0/8 psi/kPa	PLP307OP
0/10 psi/kPa	PLP306OP

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code: i.e. PLP340-UC for U-CLAMP**

Option suffix:

3Y = 4" (100mm) PBT Enclosure

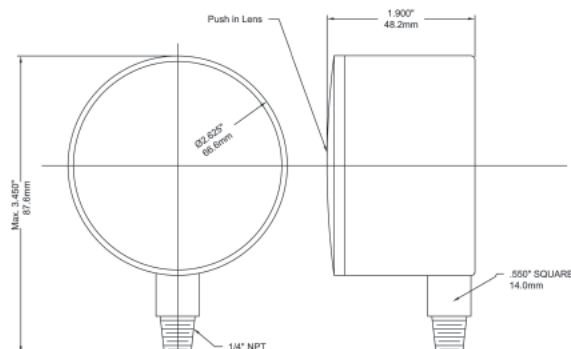
LPBF = Back flange (all sizes except 2.5" (63mm))

LPFF = 4.5" (115mm) Front flange

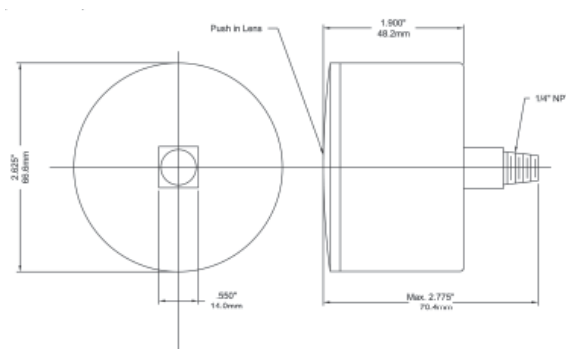
LPFF6 = 6" (150mm) Front flange

UC = 2.5" (63mm) U-clamp

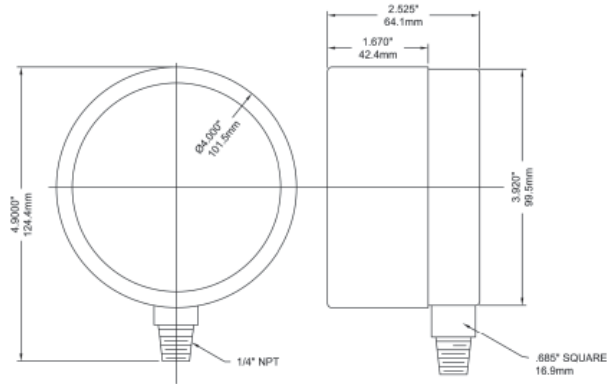
2.5" Bottom Connection Brass



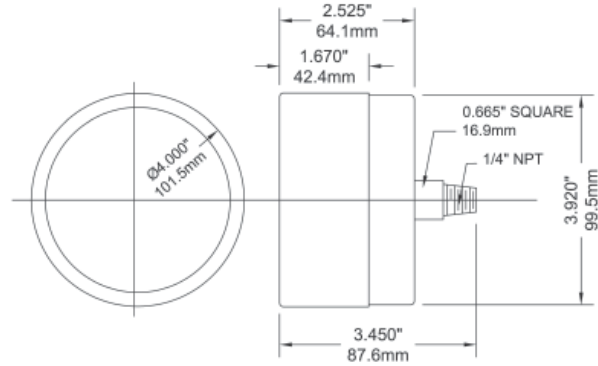
2.5" Back Connection Brass



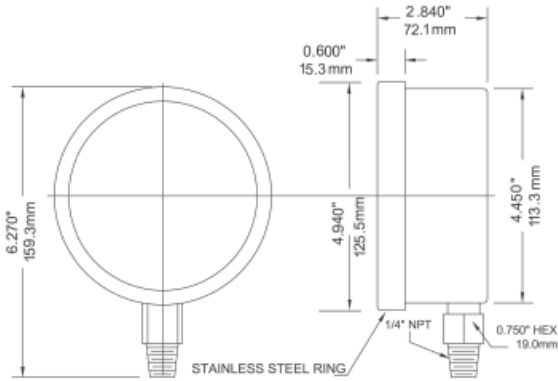
4" Bottom Connection Brass



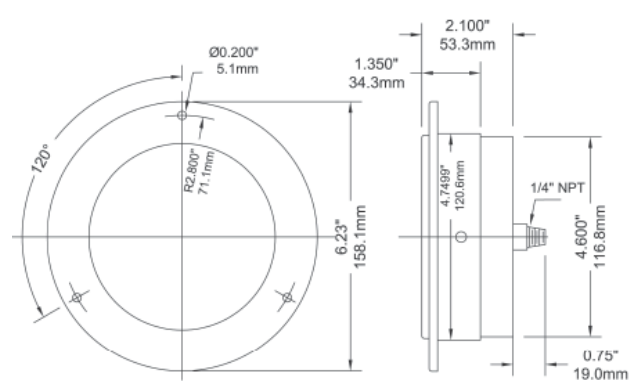
4" Back Connection Brass



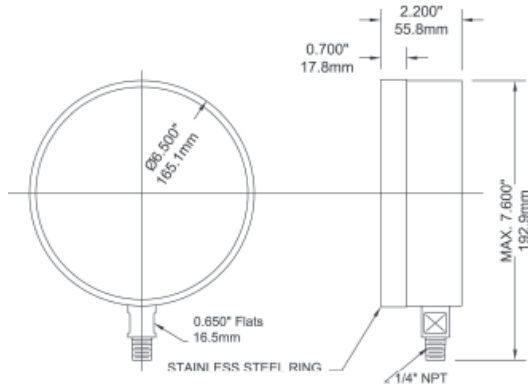
4.5" Bottom Connection Stainless Steel



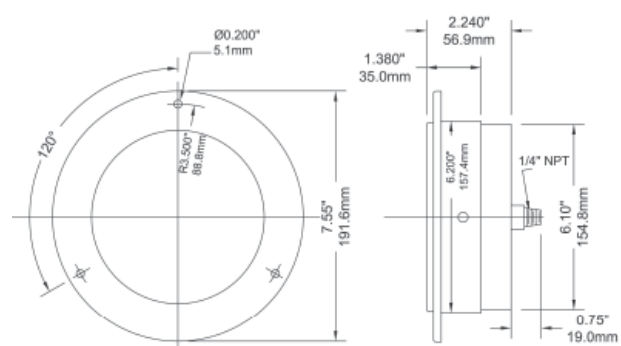
4.5" Back Connection Stainless Steel with Front Flange



6" Bottom Connection Stainless Steel



6" Back Connection Stainless Steel with Front Flange





Description & Features:

- Developed for use in general industry and OEM applications, where versatility and economy are requirements
- Compact stainless steel construction with ceramic sensor
- Available ranges include in/Hg up to 5,000 psi
- Wide range of mechanical and electrical connections
- $\pm 0.5\%$ accuracy
- NEMA 4X / IP65 and IP67
- CE, CSA and RoHS compliant
- Approved for outdoor use
- Customizable
- 5 year warranty

Applications:

- Suitable for all process and automation control, hydraulics and pneumatic sensing, pump and compressor monitoring, refrigeration and HVAC

Specifications

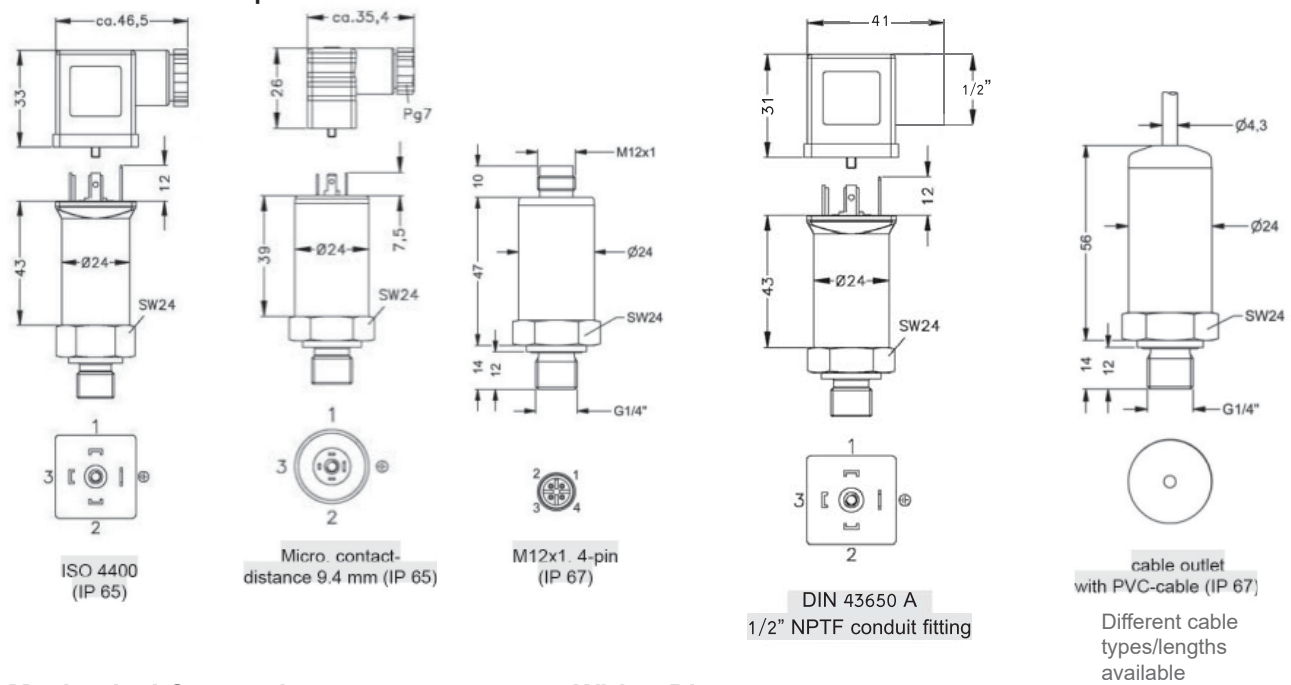
Output Signal	Standard 2-wire: 4-20 mA / $V_s = 8-32$ Vdc Optional 3-wire: 0-10 V / $V_s = 14-30$ Vdc Optional 3-wire ratiometric: $V_{sig} = 0.5-4.5 V_s / V_s = 5 \pm 0.5$ Vdc
Accuracy	$\pm 0.5\%$ FSO
Permissible Load	2-wire: $R_{max} = [(V_s - V_{s \text{ min}}) / 0.02]$ Ohm 3-wire: $R_{min} = 10$ kOhm
Influence Effects	Supply: 0.05% FSO / 10 V Load: 0.05% FSO / kOhm
Response Time	2-wire: <10 ms 3-wire: <3 ms
Measuring Rate	1 kHz
Thermal Error	< $\pm 0.5\%$ FSO / 10K
Permissible Temperatures	Medium: -13°F to 257°F (-25°C to 125°C) Electronics environment: -13°F to 185°F (-25°C to 85°C) Storage: -40°F to 185°F (-40°C to 85°C)
Short-circuit Protection	Permanent 3-wire ratiometric: None
Reverse Polarity Protection	No damage. No function.
Electromagnetic Protection	Emission and immunity according to EN 61326
Stability	Vibration: 10 g, 25 Hz to 2 kHz according to DIN EN 60068-2-6 Shock: 500 g / 1 ms according to DIN EN 60068-2-27
Pollution Degree	4, electrical equipment for outdoor use
Pressure Port / Housing	304 SS
Wetted Parts	Seals: FKM Diaphragm: Ceramic Al_2O_3 96%
Weight	120 g
Current Consumption	2-wire: 25 mA max 3-wire voltage: 5 mA (short-circuit current 20 mA) 3-wire ratiometric: 1.5 mA
Long-term Stability	< $\pm 0.3\%$ FSO/yr at reference conditions
Operation Life	>100 x 10 ⁶ cycles
CE Conformity	EMC directive: 2004/108/EC Pressure equipment directive: 97/23/EC (module A). Valid for devices with max permissible overpressure > 3,000 psi

Order Codes (products in bold are normally stock in North America)

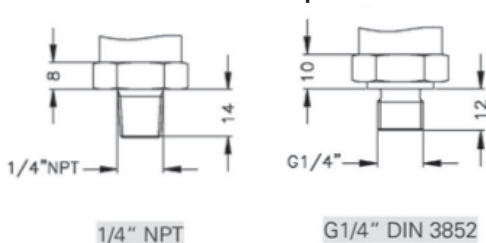
Range	Over-pressure	Burst Pressure	Code
30" Hg Vac	15 psi	44 psi	LE330VC
0/15 psi	15 psi	44 psi	LE315
0/25 psi	58 psi	102 psi	LE325
0/50 psi	58 psi	102 psi	LE350
0/60 psi	145 psi	218 psi	LE360
0/100 psi	145 psi	218 psi	LE3100
0/150 psi	290 psi	508 psi	LE3150
0/200 psi	580 psi	1,015 psi	LE3200
0/300 psi	580 psi	1,015 psi	LE3300
0/500 psi	1,450 psi	2,176 psi	LE3500
0/1,000 psi	1,450 psi	2,176 psi	LE31000
0/2,000 psi	2,901 psi	3,626 psi	LE32000
0/3,000 psi	5,802 psi	6,527 psi	LE33000
0/5,000 psi	5,802 psi	6,527 psi	LE35000

Note: Other connections available upon request

Electrical Connection

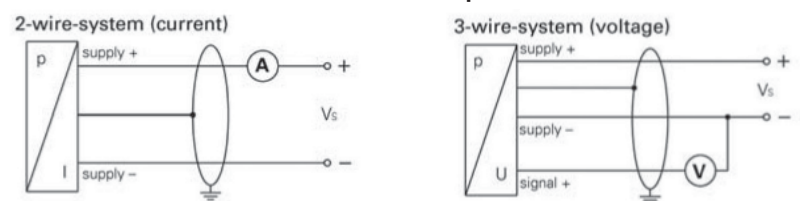


Mechanical Connection



Note: Measurements are in mm

Wiring Diagram



Pin Configuration				
Electrical Connection	ISO 4400	Micro (contact distance 9.4mm)	M12x1 (4 pin), plastic	Cable Colours (DIN 47100)
Supply+	1	1	1	White
Supply-	2	2	2	Brown
Signal+ (for 3-wire)	3	3	3	Green
Shield	Ground pin	Ground pin	4	Green/yellow



Description & Features:

- Universal transmitter with a high level of accuracy and stability
- Designed especially for aggressive media
- Rugged stainless steel construction with ceramic sensor
- Available ranges include in/Hg up to 8,700 psi
- Wide range of mechanical and electrical connections
- 0.5% FSO accuracy
- NEMA 4X and 6P / IP65, IP67 and IP68
- CE, CSA and RoHS compliant
- Approved for outdoor use
- Customizable
- 5 year warranty

Applications:

- Appropriate for environmental monitoring, machine tool and presses, test equipment and many other applications

Specifications

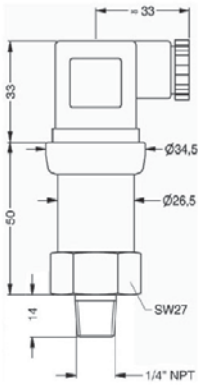
Output Signal	Standard 2-wire: 4-20 mA / Vs = 8-32 Vdc I.S. protection: Vs = 14-28 Vdc Optional 3-wire: 0-20 mA / Vs = 14-30 Vdc 0-10 V / Vs = 14-30 Vdc
Accuracy	±0.5% FSO IEC 60770
Permissible Load	Current 2-wire: Rmax = [(Vs - Vs min) / 0.02] Ohm Current 3-wire: Rmax = 500 Ohm Voltage 3-wire: Rmin = 10 kOhm
Influence Effects	Supply: 0.05% FSO / 10 V Load: 0.05% FSO / kOhm
Response Time	≤10 ms
Thermal Error	≤±0.2% FSO / 10K In compensated range: -13°F to 185°F (-25°C to 85°C)
Permissible Temperatures	Medium: -40°F to 257°F (-40°C to 125°C) Electronics environment: -40°F to 185°F (-40°C to 85°C) Storage: -40°F to 212°F (-40°C to 100°C)
Short-circuit Protection	Permanent
Reverse Polarity Protection	No damage. No function.
Electromagnetic Protection	Emission and immunity according to EN 61326
Stability	Vibration: 10 g RMS (25 to 2,000 Hz) Shock: 500 g / 1 ms
Pollution Degree	4, electrical equipment for outdoor use
Housing	316L SS
Pressure Port	316L SS
Wetted Parts	Seals: P _N < 1,450 psi: FKM70. Others available. P _N > 1,450 psi: FKM90. Others available. Diaphragm: Ceramic Al ₂ O ₃ 96%

Order Codes

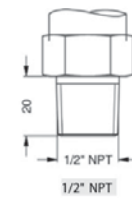
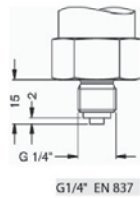
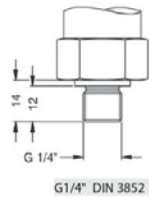
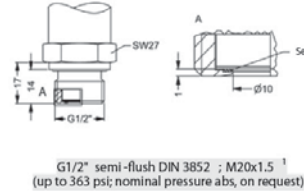
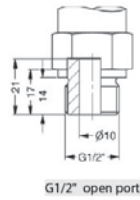
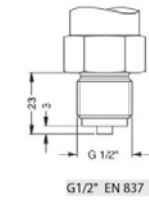
Range	Over-pressure	Burst Pressure	Code
30" Hg Vac	58 psi	102 psi	LIM428
0/15 psi	29 psi	58 psi	LIM429
0/20 psi	58 psi	73 psi	LIM435
0/35 psi	58 psi	73 psi	LIM445
0/60 psi	145 psi	174 psi	LIM447
0/85 psi	145 psi	174 psi	LIM448
0/145 psi	290 psi	363 psi	LIM449
0/230 psi	580 psi	725 psi	LIM450
0/360 psi	580 psi	725 psi	LIM451
0/580 psi	1,450 psi	1,740 psi	LIM452
0/870 psi	1,450 psi	1,740 psi	LIM453
0/1,500 psi	2,901 psi	3,626 psi	LIM454
0/2,300 psi	5,802 psi	7,252 psi	LIM455
0/3,600 psi	5,802 psi	7,252 psi	LIM456
0/5,800 psi	8,702 psi	9,427 psi	LIM457
0/8,700 psi	11,603 psi	12,763 psi	LIM458

Mechanical Connection

Standard

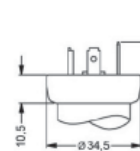


Optional



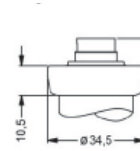
Electrical Connection

Standard

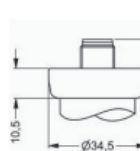


ISO 4400
(IP 65)

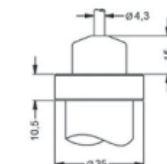
Optional



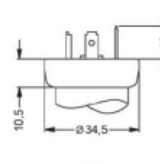
Binder Series 723 5-pin
(IP 67)



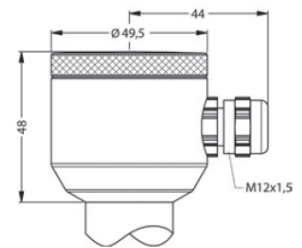
M12x1 4-pin
(IP 67)



cable outlet with PVC cable
(IP 67)²



DIN 43650 A
1/2" NPTF conduit fitting



compact field housing
(IP 67)

Pin Configuration

Electrical Connection		ISO 4400	Binder 723 (5-pin)	M12x1 (4-pin)	Field Housing	Cable Colours (DIN 47100)
2-wire system	Supply +	1	3	1	IN +	White
	Supply -	2	4	2	IN -	Brown
	Ground	Ground pin	5	4	⏏	Yellow/green (shield)
3-wire system	Supply +	1	3	1	IN +	White
	Supply -	2	4	2	IN -	Brown
	Signal +	3	1	3	OUT +	Green
	Ground	Ground pin	5	4	⏏	Yellow/green (shield)

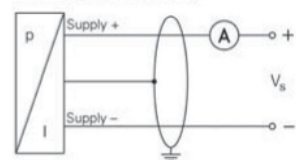
Note: Measurements are in mm

- ¹ Possible for nominal pressure ranges ≤ 360 psi
- ² Standard: 2m PVC cable without ventilation tube.
Optional: Cable with ventilation tube

Wiring Diagram

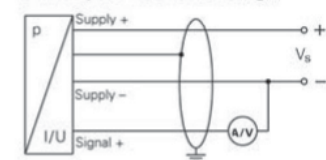
Standard

2-wire-system (current)



Optional

3-wire-system (current / voltage)





Description & Features:

- Approved for intrinsically-safe applications in Class 1/Div. 1 hazardous areas
- Rugged stainless steel construction with ceramic sensor
- Available ranges include in/Hg up to 8,700 psi
- Wide range of mechanical and electrical connections
- 0.5% FSO accuracy
- NEMA 4X and 6P / IP65, IP67 and IP68
- Approved for outdoor use
- Customizable
- 5 year warranty

Applications:

- Appropriate for all hazardous areas where an intrinsically safe rating is required, including oil & gas and chemical installations



Specifications	
Output Signal	Standard 2-wire: 4-20 mA / Vs = 8-32 Vdc I.S. protection: Vs = 14-28 Vdc Optional 3-wire: 0-20 mA / Vs = 14-30 Vdc 0-10 V / Vs = 14-30 Vdc
Accuracy	±0.5% FSO IEC 60770
Permissible Load	Current 2-wire: Rmax = [(Vs - Vs min) / 0.02] Ohm Current 3-wire: Rmax = 500 Ohm Voltage 3-wire: Rmin = 10 kOhm
Influence Effects	Supply: 0.05% FSO / 10 V Load: 0.05% FSO / kOhm
Response Time	≤10 ms
Thermal Error	≤±0.2% FSO / 10K In compensated range: -13°F to 185°F (-25°C to 85°C)
Permissible Temperatures	Medium: -40°F to 257°F (-40°C to 125°C) Electronics environment: -13°F to 185°F (-25°C to 85°C) Storage: -40°F to 212°F (-40°C to 100°C)
Short-circuit Protection	Permanent
Reverse Polarity Protection	No damage. No function.
Electromagnetic Protection	Emission and immunity according to EN 61326
I.S. Protection	Class 1, Div. 1, Groups A, B, C & D
Stability	Vibration: 10 g RMS (25 to 2,000 Hz) Shock: 500 g / 1 ms
Pollution Degree	4, electrical equipment for outdoor use
Housing	316L SS
Pressure Port	316L SS
Wetted Parts	Seals: P _N < 1,450 psi: FKM70. Others available. P _N > 1,450 psi: FKM90. Others available. Diaphragm: Ceramic Al ₂ O ₃ 96%

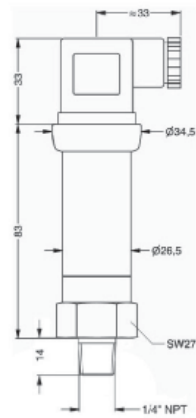
Weight	140 g
Current Consumption	Current: 25 mA max Voltage: 7 mA max
Operating Life	>100 x 10 ⁶ cycles
Connecting Cables	Cable capacitance: Signal line/shield and signal line/signal line: 160 pF/m Cable inductance: Signal line/shield and signal line/signal line: 1 µH/m

Order Codes

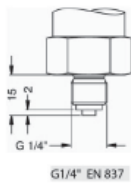
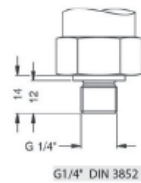
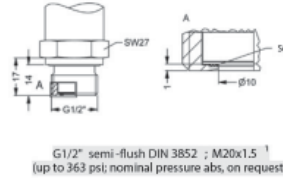
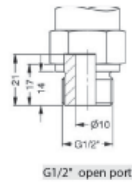
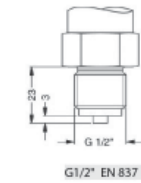
Range	Over-pressure	Burst Pressure	Code
30" Hg Vac	58 psi	102 psi	LIS382
0/15 psi	29 psi	58 psi	LIS383
0/20 psi	58 psi	73 psi	LIS384
0/35 psi	58 psi	73 psi	LIS385
0/60 psi	145 psi	174 psi	LIS386
0/85 psi	145 psi	174 psi	LIS387
0/145 psi	290 psi	363 psi	LIS388
0/230 psi	580 psi	725 psi	LIS389
0/360 psi	580 psi	725 psi	LIS390
0/580 psi	1,450 psi	1,740 psi	LIS391
0/870 psi	1,450 psi	1,740 psi	LIS392
0/1,500 psi	2,901 psi	3,626 psi	LIS393
0/2,300 psi	5,802 psi	7,252 psi	LIS394
0/3,600 psi	5,802 psi	7,252 psi	LIS395
0/5,800 psi	8,702 psi	9,427 psi	LIS396
0/8,700 psi	11,603 psi	12,763 psi	LIS397

Note: Intrinsically safe approval only applies to 4-20mA output signal

Mechanical Connection Standard

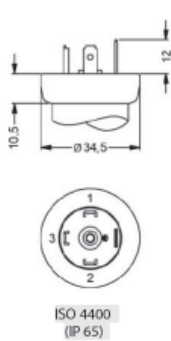


Optional

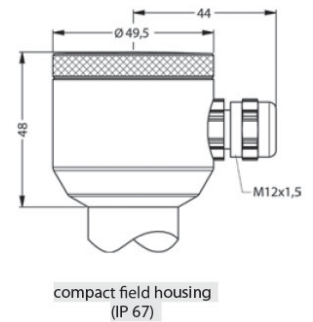
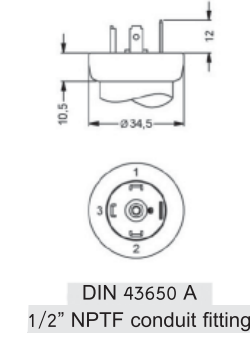
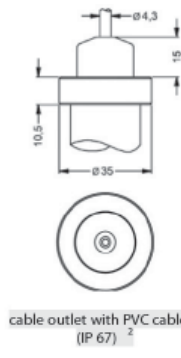
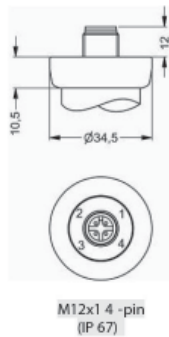
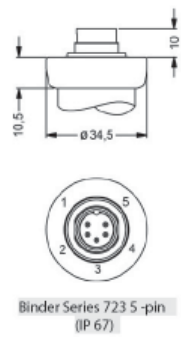


Electrical Connection Standard

Standard



Optional



Pin Configuration

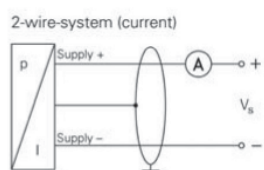
Electrical Connection	ISO 4400	Binder 723 (5-pin)	M12x1 (4-pin)	Field Housing	Cable Colours (DIN 47100)
2-wire system	Supply +	1	3	1	White
	Supply -	2	4	2	Brown
Ground	Ground pin	5	4	⏏	Yellow/green (shield)
3-wire system	Supply +	1	3	1	White
	Supply -	2	4	2	Brown
	Signal +	3	1	3	Green
Ground	Ground pin	5	4	⏏	Yellow/green (shield)

Note: Measurements are in mm

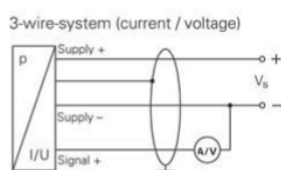
- ¹ Possible for nominal pressure ranges ≤ 360 psi
- ² Standard: 2m PVC cable without ventilation tube. Optional: Cable with ventilation tube

Wiring Diagram Standard

Standard



Optional





Description & Features:

- Developed for use in heavy duty industrial applications
- Compact stainless steel construction with welded stainless steel sensor
- Available ranges up to 8,700 psi
- Wide range of mechanical and electrical connections
- ±0.5% accuracy
- NEMA 4X / IP65 and IP67
- CE and RoHS compliant
- Customizable
- 5 year warranty

Applications:

- Suitable for heavy duty process and automation control including mobile hydraulics and presses

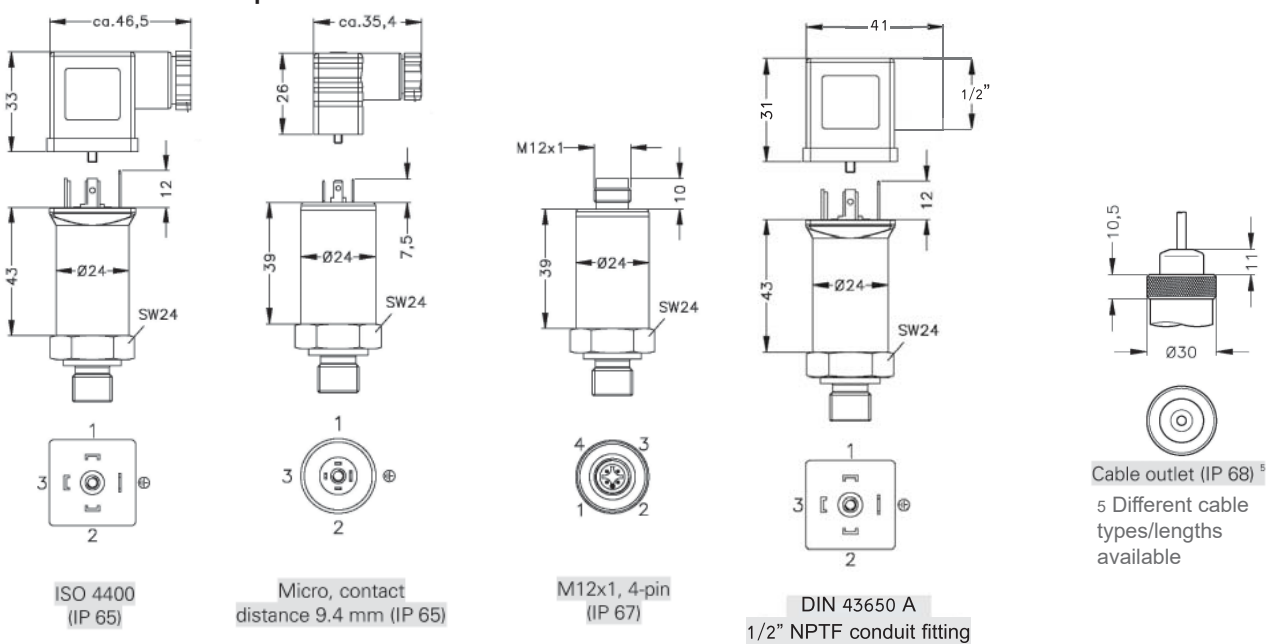
Specifications

Output Signal	Standard 2-wire: 4-20 mA / Vs = 8-32 Vdc Optional 3-wire: 0-10 V / Vs = 14-30 Vdc Optional 3-wire ratiometric: Vsig = 0.5-4.5 Vs / Vs = 5 ± 0.5 Vdc
Accuracy	±0.5% FSO
Permissible Load	2-wire: Rmax = [(Vs - Vs min) / 0.02] Ohm 3-wire: Rmin = 10 kOhm
Influence Effects	Supply: 0.05% FSO / 10 V Load: 0.05% FSO / kOhm
Response Time	2-wire: ≤10 ms 3-wire: ≤3 ms
Measuring Rate	1 kHz
Thermal Error	<±0.3% FSO / 10K, Compensated range 32°F to 158°F (0°C to 70°C)
Permissible Temperatures	Medium: -40°F to 257°F (-40°C to 125°C) Electronics environment: -40°F to 185°F (-40°C to 85°C) Storage: -40°F to 185°F (-40°C to 85°C)
Short-circuit Protection	Permanent 3-wire ratiometric: None
Reverse Polarity Protection	No damage. No function.
Electromagnetic Protection	Emission and immunity according to EN 61326
Stability	Vibration: 20 g, 25 Hz to 2 kHz according to DIN EN 60068-2-6 Shock: 500 g / 1 ms according to DIN EN 60068-2-27
Pressure Port	316Ti SS
Pressure Port Connection	1/4" NPT (others available upon request)
Housing	304 SS
Diaphragm	17-4PH SS, welded
Weight	120 g
Current Consumption	2-wire: 25 mA max 3-wire voltage: 5 mA (short-circuit current 20 mA) 3-wire ratiometric: 3 mA
Long-term Stability	<±0.3% FSO/yr at reference conditions
Operating Life	>100 x 10 ⁶ cycles
CE Conformity	EMC directive: 2004/108/EC Pressure equipment directive: 97/23/EC (module A). Valid for devices with max permissible overpressure > 3,000 psi

Order Codes

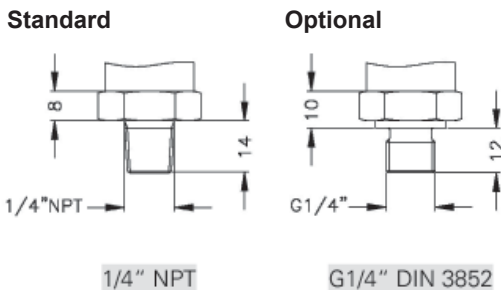
Range	Over-pressure	Burst Pressure	Code
0/100 psi	203 psi	406 psi	LMH0100
0/145 psi	508 psi	1,015 psi	LMH0145
0/230 psi	508 psi	1,015 psi	LMH0230
0/360 psi	1,015 psi	2,030 psi	LMH0360
0/580 psi	2,030 psi	4,060 psi	LMH0580
0/870 psi	2,030 psi	4,060 psi	LMH0870
0/1,500 psi	5,075 psi	10,150 psi	LMH1500
0/2,300 psi	5,075 psi	10,150 psi	LMH2300
0/3,600 psi	10,150 psi	20,305 psi	LMH3600
0/5,800 psi	17,405 psi	21,755 psi	LMH5800
0/8,700 psi	17,405 psi	21,755 psi	LMH8700

Electrical Connection



Note: Other connections available upon request

Mechanical Connection

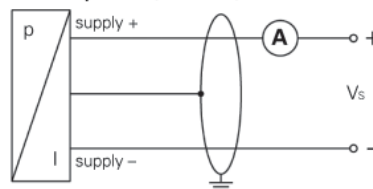


Note: Measurements are in mm

Wiring Diagram

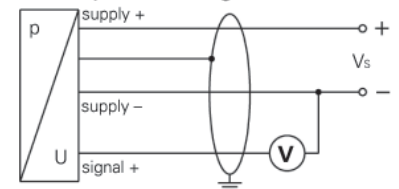
Standard

2-wire-system (current)



Optional

3-wire-system (voltage)



Pin Configuration

Electrical Connection	ISO 4400	Micro (contact distance 9.4mm)	M12x1 (4 pin), plastic	Cable Colours (DIN 47100)
Supply+	1	1	1	White
Supply-	2	2	2	Brown
Signal+ (for 3-wire)	3	3	3	Green
Shield	Ground pin	Ground pin	4	Green/yellow



Description & Features:

- Extremely robust and stable long-term
- Shock and vibration resistant
- $\pm 0.5\%$ FSO accuracy
- 15,000 psi nominal pressure range
- Permissible overpressure up to 22,500 psi
- Standard 80% shunt calibration
- Eight gauge sensor design
- 1 year warranty

Applications:

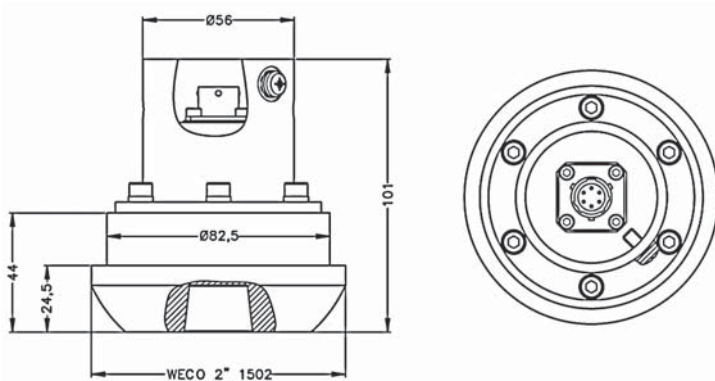
- Designed to be used with WECO® 1502 style union fittings for high pressure/harsh oil well environments like fracturing, cementing, acidizing and mud pressure management

Specifications

Electrical Output Signal	2-wire: 4-20 mA / $V_s=10-30$ Vdc
Electrical Connection	MIL-/ Bendix 6-pin
Housing	316L SS
Pressure Port/Diaphragm	316L SS
Normal Operating Temperature Range	-40°F to 257°F (-40°C to 125°C)
Compensated Temperature Range	23°F to 140°F (-5°C to 60°C)
Temperature Effect on Zero/Span	Less than $\pm 2\%$ FSO / 100K
Accuracy	$\pm 0.5\%$ FSO
Stability	Shock: 500 g / 1 msec
Enclosure Rating	IP67

Order Codes

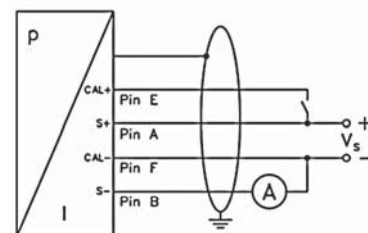
Range	Permissible Over-pressure	Code
15,000 psi	22,500 psi	LOH425



Note: Measurements are in mm.

WECO® is a registered trademark of FMC Technologies

Wiring Diagram





1. Low Range
2. High Range

Description & Features:

- Designed to measure the differential pressures of liquids and gases between two ports
- Compact, efficient design available in Low or High psi ranges that facilitates installation in tight spaces
- Low Range housing is constructed of stainless steel and aluminum
- High Range housing is made from a 316-grade stainless steel ideally suited for an industrial environment
- Fast response sensor and signal conditioned electronic circuitry provide quick and accurate readings
- Unique isolation system responds to pressure changes approximately 20 times faster than conventional transmitters with ranges below 100 psi (Low Range model)
- CE approval is standard on all models
- NEMA 4 approval is standard on the Low Range model
- 5 year warranty

Applications:

- To measure pressure drops across filters
- Pumps and compressors, flow measurements of gases and liquids, liquid level measurement of pressurized vessels

Specifications	Low Range	High Range
Electrical Output	4-20 mA, 2 wire 0-5 Vdc or 0-10 Vdc	4-20 mA, 2 wire (other options available)
Electrical Connection	Barrier strip terminal block with conduit enclosure and 0.875 dia. conduit opening	DIN 43650 with mate
Excitation Voltage	9-30 Vdc	8-38 Vdc
Wetted Parts / Connection	17-4PH SS with FKM O-ring, 1/4"-18 NPTF	316L SS, 1/4" NPTF 300 series SS, 17-4PH SS with FKM O-ring
Housing	304 SS, cast aluminum	316L SS
Proof Pressure	Refer to pressure range chart on next page	Refer to pressure range chart on next page (20X full scale optional)
Burst Pressure	Refer to pressure range chart on next page	Refer to pressure range chart on next page
Normal Operating Temperature Range	0°F to 175°F (-17°C to 79°C)	-40°F to 200°F (-40°C to 93°C)
Compensated Temperature Range	30°F to 150°F (0°C to 65°C)	0°F to 170°F (-18°C to 76°C)
Ambient Temperature Effect on Zero / Span	±2% of full scale/100°F (37.7°C)	≤ ±1.5% FSO over compensated range
Response Time	30-50 ms	<50 ms
Long Term Stability	±0.5% FSO/yr	≤±0.25% FSO/yr
Weight	14.4 oz. (408 g)	13 oz. (368 g)
Accuracy	±0.25% FSO	±0.25% FSO
Enclosure Rating	IP65	IP65

LTD Low Range					
Uni-directional			Bi-directional		
Gauge psid	Proof Pressure psi	Burst Pressure psi	Gauge psid	Proof Pressure psi	Burst Pressure psi
0/1	2.5	20	0/±0.5	1.25	20
0/2	5	40	0/ ±1	2.5	40
0/5	12.5	100	0/±2.5	6.25	100
0/10	25	100	0/±5	12.5	100
0/25	62.5	250	0/±10	25	200
0/50	125	250	0/±25	62.5	250
0/100	250	250	0/±50	125	250

LTD High Range		
Gauge psid	Proof Pressure psi	Burst Pressure psi
0/50	100	750
0/100	200	1,000
0/200	500	2,000
0/500	1,000	3,000
0/1,000	2,000	5,000
0/3,000	4,500	7,500
0/5,000	7,500	10,000

Order Codes

Low Range Uni-directional	
Range	Code
0/1 (27.7in/H ₂ O)	LTDU1
0/2 (55.4in/H ₂ O)	LTDU2
0/5 (138.4in/H ₂ O)	LTDU5
0/10 (276.8in/H ₂ O)	LTDU10
0/25 psi	LTDU25
0/50 psi	LTDU50
0/100 psi	LTDU100

Low Range Bi-directional	
Range	Code
±0/0.5 (13in/H ₂ O)	LTDB0.5
±0/1 (27.7in/H ₂ O)	LTDB1
±0/2.5 (69in/H ₂ O)	LTDB2.5
±0/5 (138.4in/H ₂ O)	LTDB5
±0/10 (276.8in/H ₂ O)	LTDB10
±0/25 psi	LTDB25
±0/50 psi	LTDB50

High Range	
Range	Code
0/150 psid	LTD150
0/200 psid	LTD200
0/300 psid	LTD300
0/500 psid	LTD500
0/1,000 psid	LTD1000
0/3,000 psid	LTD3000
0/5,000 psid	LTD5000

Option suffix:

4WCABLE = 4 wire shielded data cable (per ft.)

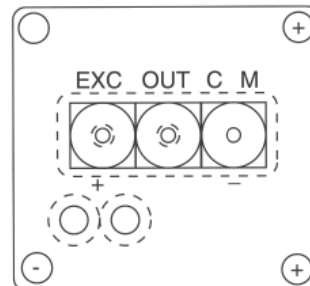
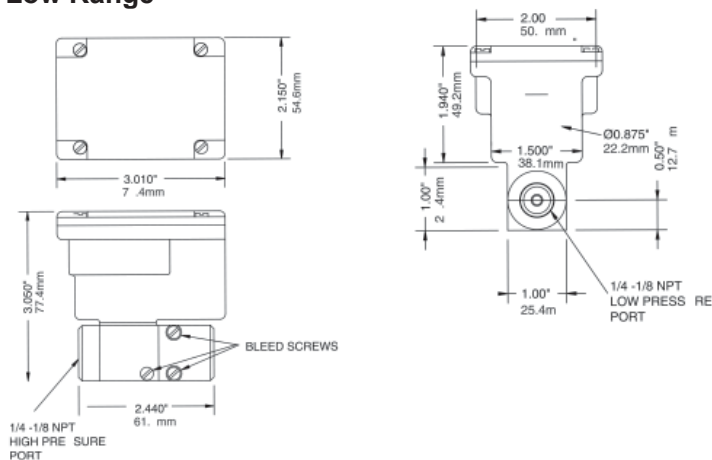
Other ranges (e.g. bar, etc.) available upon request

Other outputs and options available upon request

Definitions:

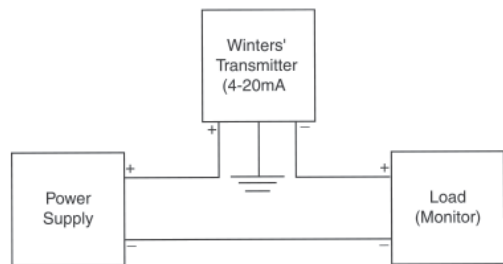
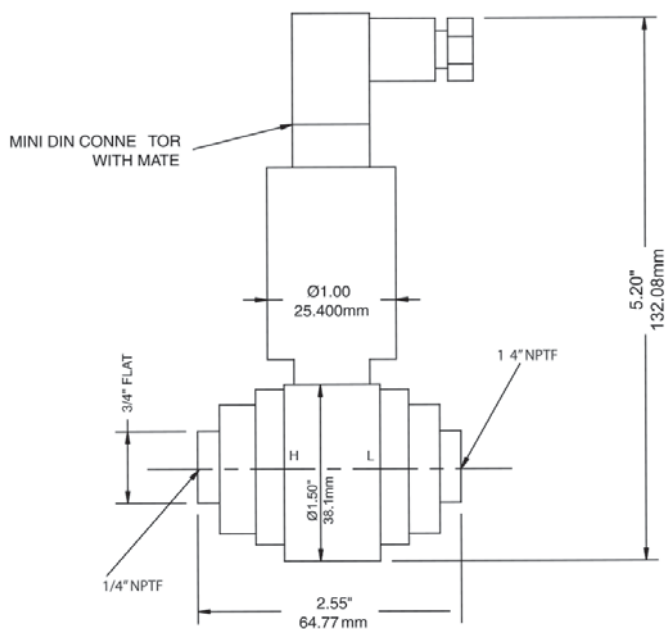
- Uni-directional = The instrument is calibrated with a 4 mA output at 0 psid and 20 mA output at full scale (i.e. For 0-10 psid range: 4 mA = 0 psid and 20 mA = 10 psid)
- Bi-directional = The instrument is calibrated with a 12 mA output at 0 psid/zero centre (i.e. For 0-10 psid range: 4 mA = -5 psid, 12 mA = 0 psid and 20 mA = +5 psid)

Low Range



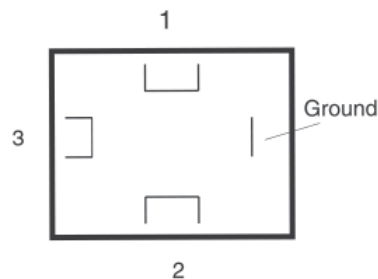
- For voltage output, use COM, OUT and EXC terminals
- For current (4-20 mA) output, use + and - terminals

High Range



Hirschmann® is a registered trademark of Hirschmann Laborgeräte GmbH & Co.

Hirschmann® Mini-Din Pin Out:



4-20mA output Supply Power: 8-38 Vdc			
Mini-Din Connection			
Pin	Colour Code	V	mA
1	N/A	+Excitation	+Excitation/Signal
2	N/A	-Excitation/Signal	-Excitation/Signal
3	N/A	+ Signal	NC
Grnd	N/A	Gnd	Gnd
Wire Lead Connection			
Wiring	Colour Code	V	mA
1	Red	+Excitation	+Excitation/Signal
1	Black	-Excitation/Signal	-Excitation/Signal
1	Green	+ Signal	NC
Grnd	Shield/White	Gnd	Gnd

Current Output Units

- Low Range (current output) transducers are true 2-wire, 4-20 mA current output devices
- Deliver rated current into any external load of 0-1000 ohms
- 4-20 mA current output units are designed to have current flow in one direction only. Please observe polarity
- An electrical cable shield should be connected to the system's loop circuit ground to improve electrical noise rejection

MIN Supply Voltage: $9 + 0.02 \times (\text{Resistance of receiver plus line})$

MAX Supply Voltage: $30 + 0.004 \times (\text{Resistance of receiver plus line})$

**Description & Features:**

- Unique flush stainless steel diaphragm eliminates any cavity that could form a build-up
- 316-grade thick diaphragm provides higher overpressure and spike protection
- Available ranges include vacuum up to 5,800 psi
- Wide range of mechanical and electrical connections
- Cooling tower option for increased temperature tolerance
- Optional FDA-approved food-compatible oil
- $\pm 0.50\%$ accuracy
- NEMA 4X and NEMA 6P / IP65 and IP67
- Customizable
- 5 year warranty

Applications:

- Best utilized in conjunction with viscous fluids or media which may clog a standard process connection, e.g. chemical & process engineering, food industry and pulp & paper and mining

Specifications	
Output Signal	Standard 2-wire: 4-20 mA / $V_s = 8-32$ Vdc Optional 3-wire: 0-20 mA / $V_s = 14-30$ Vdc 0-10 V / $V_s = 14-30$ Vdc
Accuracy	$\pm 0.50\%$ FSO
Permissible Load	Current 2-wire: $R_{max} = [(V_s - V_{s \text{ min}}) / 0.02]$ Ohm Current 3-wire: $R_{max} = 500$ Ohm Voltage 3-wire: $R_{min} = 10$ kOhm
Influence Effects	Supply: 0.05% FSO / 10 V Load: 0.05% FSO / kOhm
Long-term Stability	$\leq \pm 0.3\%$ FSO/yr at reference conditions
Response Time	2-wire: ≤ 10 ms 3-wire: ≤ 3 ms
Thermal Error¹	$\leq \pm 0.2\%$ FSO / 10K In compensated range: -4°F to 185°F (-20°C to 85°C)
Permissible Temperatures²	Medium: -40°F to 257°F (-40°C to 125°C) silicon oil 14°F to 257°F (-10°C to 125°C) food grade oil Electronics environment: -40°F to 185°F (-40°C to 85°C) Storage: -40°F to 212°F (-40°C to 100°C)
Permissible Temperature for Cooling Element 572°F (300°C)	Silicon oil overpressure: -40°F to 572°F (-40°C to 300°C) Silicon oil vacuum: -40°F to 302°F (-40°C to 150°C) Food grade oil overpressure: 14°F to 482°F (-10°C to 250°C) Food grade oil vacuum: 14°F to 302°F (-10°C to 150°C)
Short-circuit Protection	Permanent
Reverse Polarity Protection	No damage. No function.
Electromagnetic Compatibility	Emission and immunity according to EN 61326
Stability	Vibration: 20 g RMS (25 to 2,000 Hz) Shock: 500 g / 1 ms
Filling Fluids	Standard: Silicon oil Optional FDA approved: Mobil SHL Cibus 32, Category Code: H1; NSF reg no. 141500, others available
Housing	316L SS
Pressure Port	316L SS
Wetted Parts	Seals: FKM, others available
Current Consumption	Current: 25 mA max Voltage: 7 mA max

Weight	200 g min
Operating Life	$> 100 \times 10^6$ cycles
Connecting Cables	Cable capacitance: Signal line/shield and signal line/signal line: 160 pF/m Cable inductance: Signal line/shield and signal line/signal line: 1 $\mu\text{H}/\text{m}$
Enclosure Rating	NEMA 4X and NEMA 6P / IP65 and IP67
CE Conformity	EMC directive: 2004/108/EC

Order Codes

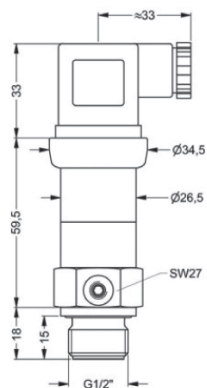
Range	Over-pressure	Burst Pressure	Code
30" Hg Vac	73 psi	109 psi	LTF30VC
0/15 psi	73 psi	109 psi	LTF0015
0/20 psi	145 psi	218 psi	LTF0020
0/35 psi	145 psi	218 psi	LTF0035
0/60 psi	254 psi	363 psi	LTF0060
0/85 psi	508 psi	725 psi	LTF0085
0/145 psi	508 psi	725 psi	LTF0145
0/230 psi	1,160 psi	1,740 psi	LTF0230
0/360 psi	1,160 psi	1,740 psi	LTF0360
0/580 psi	1,523 psi	3,046 psi	LTF0580
0/870 psi	1,450 psi	1,740 psi	LTF0870
0/1,500 psi	2,901 psi	3,626 psi	LTF1500
0/2,300 psi	5,802 psi	7,252 psi	LTF2300
0/3,600 psi	5,802 psi	7,252 psi	LTF3600
0/5,800 psi	8,702 psi	9,427 psi	LTF5800

¹ An optional cooling element can influence thermal effects for offset and span depending on installation position and filling conditions

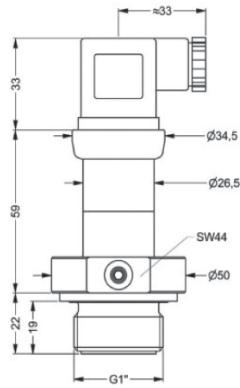
² Max temperature of the medium for overpressure > 0 psi: 302°F (150°C) for 60mins with max environmental temp of 122°F (50°C)

Mechanical Connection Standard

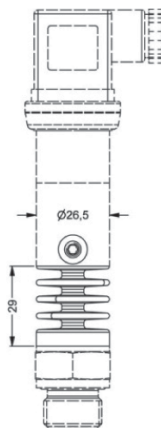
Optional



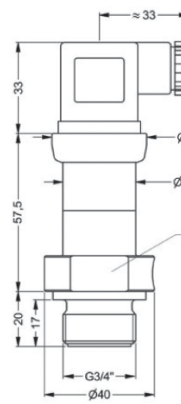
G1/2" flush DIN 3852



G1" flush DIN 3852



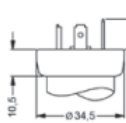
cooling element
300 °C



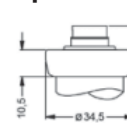
G3/4" flush DIN 3852

Electrical Connection Standard

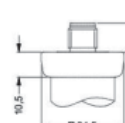
Optional



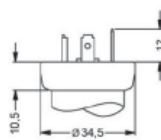
ISO 4400
(IP 65)



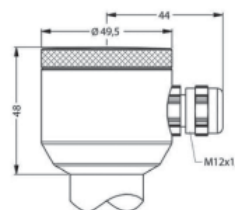
Binder Series 723 5-pin
(IP 67)



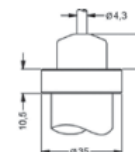
M12x1 4-pin
(IP 67)



DIN 43650 A
1/2" NPTF conduit fitting



compact field housing
(IP 67)



cable outlet with PVC cable
(IP 67)

Pin Configuration

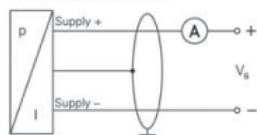
Electrical Connection	ISO 4400	Binder 723 (5-pin)	M12x1 (4-pin)	Field Housing	Cable Colours (DIN 47100)
Supply+	1	3	1	IN+	White
Supply-	2	4	2	IN-	Brown
Signal+ (for 3-wire)	3	1	3	OUT+	Green
Shield	Ground pin	5	4		Yellow/green

Note: Measurements are in mm

1 Standard: 2m PVC cable without ventilation tube

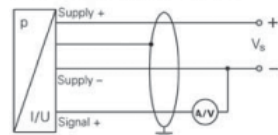
Wiring Diagram Standard

2-wire-system (current)



Optional

3-wire-system (current / voltage)





Description & Features:

- Vac to 10,000 psi pressure range
- Explosion proof enclosure
- Rugged stainless steel construction with diffused silicone sensor
- Built in high pressure snubber (2,000 psi and above)
- NEMA 4X, 7 and 9
- $\pm 0.25\%$ accuracy
- cULus approved for hazardous locations
- Single seal ANSI compliant up to 6,000 psi
- CRN registered
- 5 year warranty

Applications:

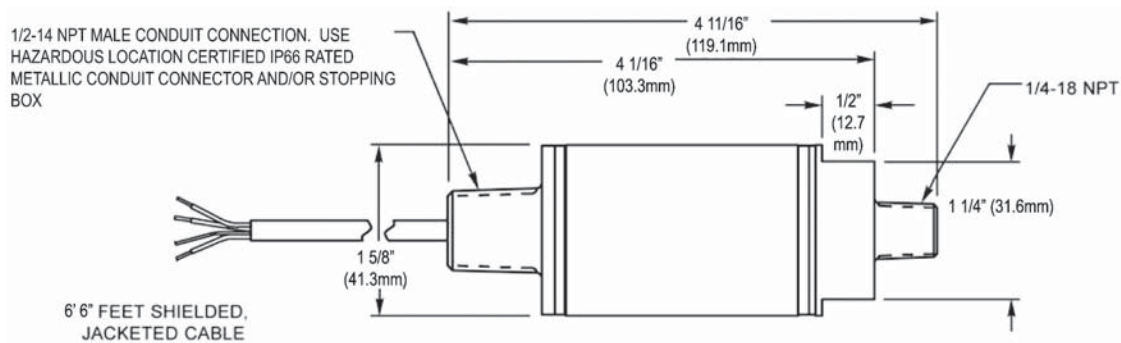
- Suitable for a variety of hazardous applications where the added security of an explosion proof enclosure is required including petrochemical plants, pipelines, fuel transfer systems and power plants
- Also appropriate for oil & gas, mining and water treatment industries

Specifications

Output Signal	Standard 2-wire: 4-20 mA / Vs = 12-28 Vdc Optional 3-wire: 0.5-5.5 Vdc / Vs = 9-28 Vdc 3-wire: 1-11 Vdc / Vs = 14-28 Vdc
Accuracy	$\pm 0.25\%$ BFSL / $\pm 0.5\%$ for vacuum only
Temperature Ranges	Operating: -40°F to 160°F (-40°C to 71°C) Compensating: 30°F to 160°F (-1°C to 71°C) Storage: -40°F to 185°F (-40°C to 85°C)
Temperature Shift	0.0125% per $^{\circ}\text{F}$ over compensated range 75°F (24°C) reference
Vibration	15 g / 10 to 2,000 Hz (MIL-STD-202)
Shock	50 g / 11 ms (MIL-STD-202, M213, Cond. G)
Pressure Connection	1/4" NPTM, 1/2" NPTM optional
Housing	304 SS
Wetted Parts	316 SS diaphragm and 17-4PH SS process connection
Proof Pressure	2 x rated pressure or 13,000 psi max
Current Supply	3 mA maximum (no load)
Protection	EMI, ESD and RFI, reverse polarity protected
Approval	cULus approved as telemetering equipment for use in hazardous locations (UL File E146589, WYMV, WYMV7) as follows: Class I, Div. 1, Groups A, B, C & D Class II, Div. 1, Groups E, F & G CRN registered
Weight	7.4 oz. (210 grams): $\leq 1,000$ psi 9.9 oz. (281 grams): $\geq 2,000$ psi

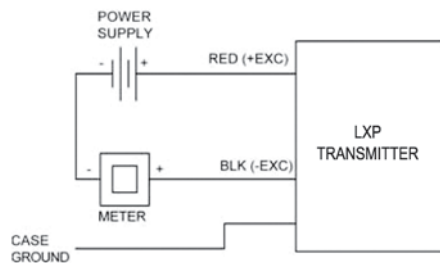
Order Codes

Range	Proof Pressure	Process Connection	
		1/4"	1/2"
30" Hg Vac	30 psi	LXPSV1N4	LXPSV1N2
30"/0/15 psi	30 psi	LXPSV2N4	LXPSV2N2
30"/0/30 psi	60 psi	LXPSV3N4	LXPSV3N2
30"/0/60 psi	120 psi	LXPSV4N4	LXPSV4N2
30"/0/100 psi	200 psi	LXPSV5N4	LXPSV5N2
30"/0/150 psi	300 psi	LXPSV6N4	LXPSV6N2
30"/0/200 psi	400 psi	LXPSV7N4	LXPSV7N2
30"/0/300 psi	600 psi	LXPSV8N4	LXPSV8N2
0/15 psi	30 psi	LXPS15N4	LXPS15N2
0/30 psi	60 psi	LXPS30N4	LXPS30N2
0/60 psi	120 psi	LXPS60N4	LXPS60N2
0/100 psi	200 psi	LXPS1HN4	LXPS1HN2
0/150 psi	300 psi	LXPS2HN4	LXPS2HN2
0/200 psi	400 psi	LXPS3HN4	LXPS3HN2
0/300 psi	600 psi	LXPS4HN4	LXPS4HN2
0/500 psi	1,000 psi	LXPS5HN4	LXPS5HN2
0/600 psi	1,200 psi	LXPS6HN4	LXPS6HN2
0/1,000 psi	2,000 psi	LXPS1TN4	LXPS1TN2
0/1,500 psi	3,000 psi	LXPS2TN4	LXPS2TN2
0/2,000 psi	4,000 psi	LXPS3TN4	LXPS3TN2
0/3,000 psi	6,000 psi	LXPS4TN4	LXPS4TN2
0/4,000 psi	8,000 psi	LXPS5TN4	LXPS5TN2
0/5,000 psi	10,000 psi	LXPS6TN4	LXPS6TN2
0/6,000 psi	12,000 psi	LXPS7TN4	LXPS7TN2
0/7,500 psi	13,000 psi	LXPS8TN4	LXPS8TN2
0/10,000 psi	13,000 psi	LXPS9TN4	LXPS9TN2

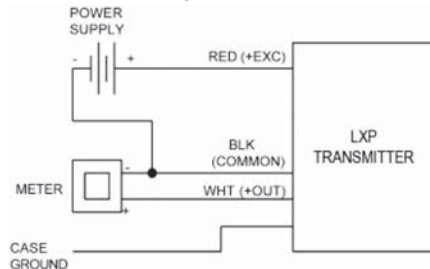


Wiring Diagram

Standard (Current)



Optional (Voltage)



Cable Leads

Cable Colours:	2-wire (current):	3-wire (voltage):
Red	+Excitation	+Excitation
White	-	+Output
Black	-Excitation	Common
Drain	Case Ground	Case Ground

Series Number (how to order)

	L	X	P															
SERIES																		
OUTPUT																		
4...20 mA / 2-wire (standard)																		
0.5...5.5 VDC / 3-wire																		
1...11 VDC / 3-wire																		
PRESSURE RANGE - PSI (BAR)																		
30" Hg (-1/0)																		
30" HG/0/15 (-1/0/1)																		
30" HG/0/30 (-1/0/2)																		
30" HG/0/60 (-1/0/4)																		
30" HG/0/100 (-1/0/6)																		
30" HG/0/150 (-1/0/10)																		
30" HG/0/200 (-1/0/14)																		
30" HG/0/300 (-1/0/20)																		
15																		
30																		
60																		
100																		
150																		
200																		
300																		
500																		
600																		
1000																		
1500																		
2000																		
3000																		
4000																		
5000																		
6000																		
7500																		
10000																		
Special Range																		
PRESSURE																		
Gauge (standard)																		
Absolute (<300 PSI ONLY)																		
ACCURACY																		
0.25% (standard)																		
ELECTRICAL CONNECTION																		
6'6" (2m) Factory Sealed Cable Leads																		
Jacketed / Shielded Cable (standard)																		
MECHANICAL CONNECTION																		
1/4" NPT (standard)																		
1/2" NPT																		
G1/4"																		
7/16-20 UNF-2B Female																		
7/16-20 UNF-2B Male SAE																		
SEAL																		
Welded (standard)																		
PRESSURE PORT																		
17-4 PH																		
DIAPHRAGM																		
316 Stainless Steel																		
SPECIAL																		
Standard																		
Calibrated in PSI																		
Calibrated in BAR																		
Additional Length of Leads (in Inches)																		



Description & Features:

- Piston-type pressure switch
- Vac to 500 psi pressure range
- SPDT switch
- Fixed or adjustable deadband
- Simple set point adjustment
- Anodized aluminum construction with Buna N wetted parts
- ±2% of the adjustable range accuracy
- NEMA 4, IP65 enclosure rating (NEMA 4X optional)
- UL and CSA approved
- CRN registered
- 5 year warranty

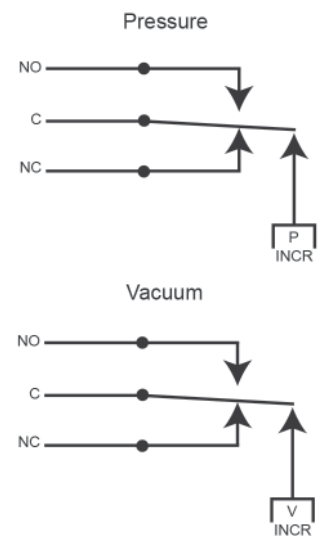
Applications:

- Suitable for pump and compressor monitoring, HVAC systems and general industrial applications

Specifications

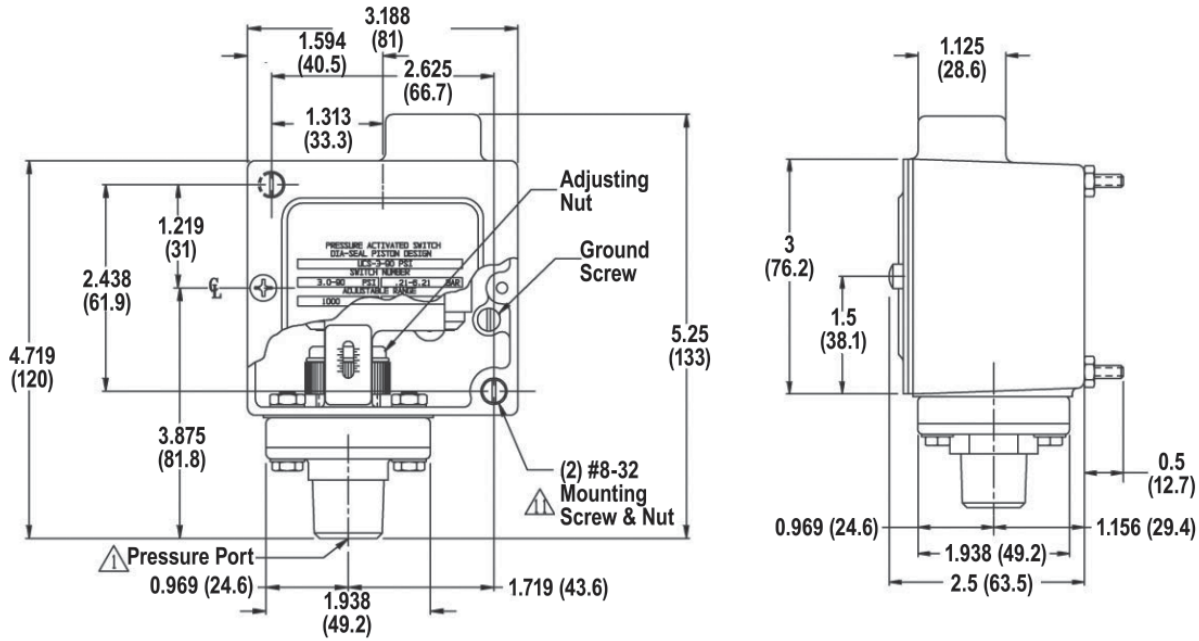
Housing Material	Anodized aluminum
Accuracy	±2% of the adjustable range
Pressure Connection	1/4" NPTF
Electrical Connection	1/2" NPTF conduit connection with screw terminals
Wetted Parts	Aluminum and Buna N (PTFE O-ring or FKM diaphragm optional)
Set Point Adjustment	Self locking adjustment nut
Deadband	Fixed or adjustable
Contact Rating	10 amps @ 125/250 Vac 3 amps @ 480 Vac
No. of Contacts	One, SPDT
Ambient/Process Temperature	-20°F to 165°F (-29°C to 74°C)
Enclosure Rating	NEMA 4, IP65 (NEMA 4X optional)
Approvals	UL and CSA approved, CRN compliant
Weight	1.5 lbs (680 grams)

Wiring Schematic



Order Codes

Adjustable Range psi (bar)		Approximate Deadband (Actuation value) psi (bar)	Proof Pressure psi (bar)	NEMA 4 Code	NEMA 4X Code
Min	Max				
0.5" Hg	30" Hg	0.3-2.5" Hg	30 (2)	2WPSH030VF	2WPSH030VFFX
0.5 (0.03)	15 (1)	0.1-1.2 (0.01-0.08)	1,000 (69)	2WPSH0015F	2WPSH0015FFX
3 (0.2)	90 (6)	0.5-8 (0.03-0.5)	1,000 (69)	2WPSH0090F	2WPSH0090FFX
10 (0.7)	250 (17)	1-20 (0.07-1.3)	1,000 (69)	2WPSH0250F	2WPSH0250FFX
25 (1.7)	500 (34)	4-28 (0.3-1.9)	1,000 (69)	2WPSH0500F	2WPSH0500FFX
1" Hg	30" Hg	Contact Winters for Values	30 (2)	2WPSH030VA	2WPSH030VAFX
1 (0.07)	15 (1)		1,000 (69)	2WPSH0015A	2WPSH0015AFX
6 (0.4)	90 (6)		1,000 (69)	2WPSH0090A	2WPSH0090AFX
15 (1)	250 (17)		1,000 (69)	2WPSH0250A	2WPSH0250AFX
35 (2.4)	500 (34)		1,000 (69)	2WPSH0500A	2WPSH0500AFX



Series Number (how to order)

SERIES

SWITCH

- 10 amps @ 125/250 VAC; 3 amps @ 480 VAC (standard)
- 15 amps @ 125/250/480 VAC; 0.05 amps @ 125 VDC; 0.03 amps @ 250 VDC ADJUSTABLE DEADBAND
- 10 amps @ 125/250/480 VAC; 2 amps @ 600 VAC; 0.4 amps @ 125 VDC; 0.2 amps @ 250 VDC MANUAL RESET (NON UL)
- 1 amp @ 125 VAC; gold contact

PRESSURE RANGES PSI (BAR)

Adjustable Range psi (bar)		Deadband (Actuation Value based on closed contact)
Min	Max	
0.5" Hg	30" Hg	0.3-2.5" Hg
0.5 (0.03)	15 (1)	
3 (0.2)	90 (6)	
10 (0.7)	250 (17)	
25 (1.7)	500 (34)	
1" Hg	30" Hg	Contact Winters for Values
1 (0.07)	15 (1)	
6 (0.4)	90 (6)	
15 (1)	250 (17)	
35 (2.4)	500 (34)	
Special Range		

Fixed Deadband

0.5" Hg	30" Hg	0.3-2.5" Hg
0.5 (0.03)	15 (1)	
3 (0.2)	90 (6)	
10 (0.7)	250 (17)	
25 (1.7)	500 (34)	

Adjustable Deadband

1" Hg	30" Hg	Contact Winters for Values
1 (0.07)	15 (1)	
6 (0.4)	90 (6)	
15 (1)	250 (17)	
35 (2.4)	500 (34)	

PRESSURE CONNECTION

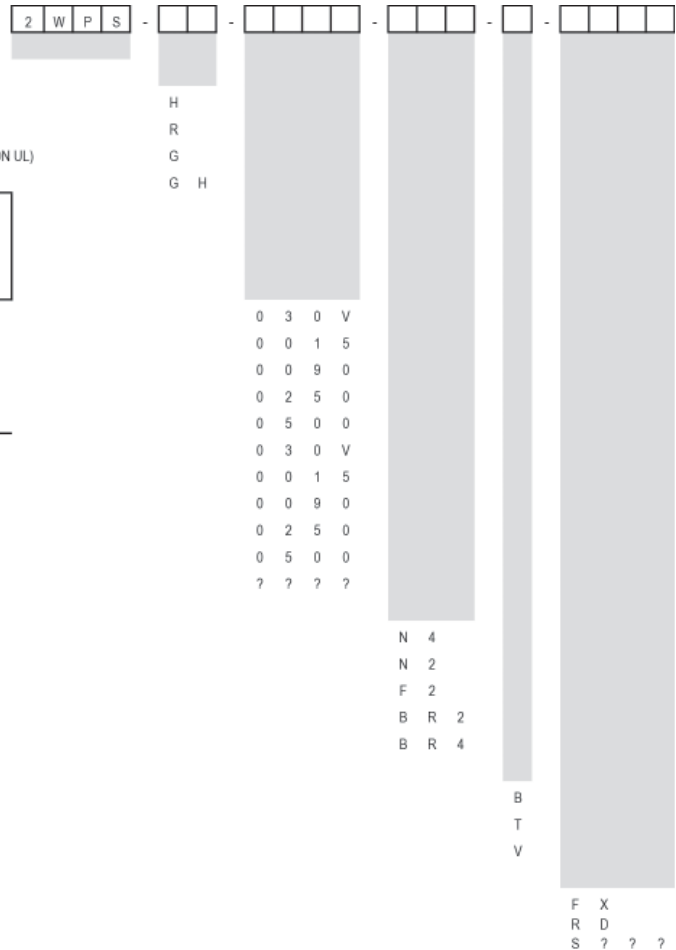
- 1/4" NPT Female (standard)
- 1/8" int & 1/2" ext NPT
- Nickel plated fitting
- Brass fitting 1/8" int & 1/2" ext NPT
- Brass fitting 1/4" NPT

WETTED PARTS

- Buna-N
- PTFE
- FKM diaphragm

OPTIONS

- NEMA 4X enclosure
- Manual reset (must select class G limit switch)
- Factory preset (consult factory)





Description & Features:

- Bellows actuated “frictionless” switching mechanism
- 15 to 5,000 psi pressure range
- One or two SPDT switch
- Adjustable deadband available
- Cast aluminum construction with stainless steel wetted parts
- NEMA 4X, 12 & 13 enclosure rating
- UL recognized
- 5 year warranty

Applications:

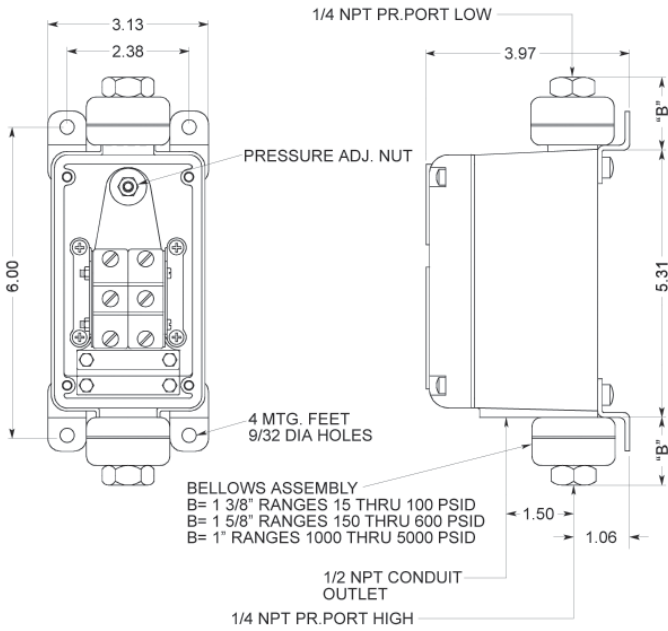
- Pumping stations, remote locations, ideal for High-Low level control (requiring dual elements)

Specifications

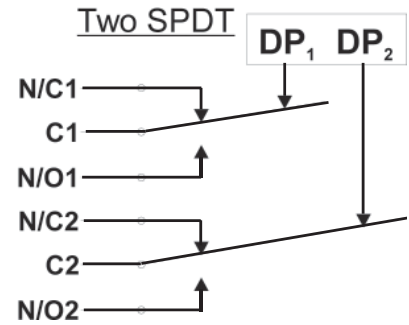
Housing Material	Cast aluminum
Sensitivity	±0.5% of range (for one SPDT switch)
Pressure Connection	1/4" NPTF
Electrical Connection	1/2" NPTF conduit connection
Wetted Parts	SS
Set Point Adjustment	Screw type, field adjustable
Deadband	Fixed (adjustable option available)
Contact Rating	15 amps @ 125/250/480 Vac
No. of Contacts	One or two SPDT
Ambient Temperature	-40°F to 180°F (-40°C to 82°C)
Enclosure Rating	NEMA 4X, 12 & 13, hermetically sealed switch option available
Approvals	UL recognized (switch only)
Weight	Approx. 3 lbs (1.36 kg)

Order Codes

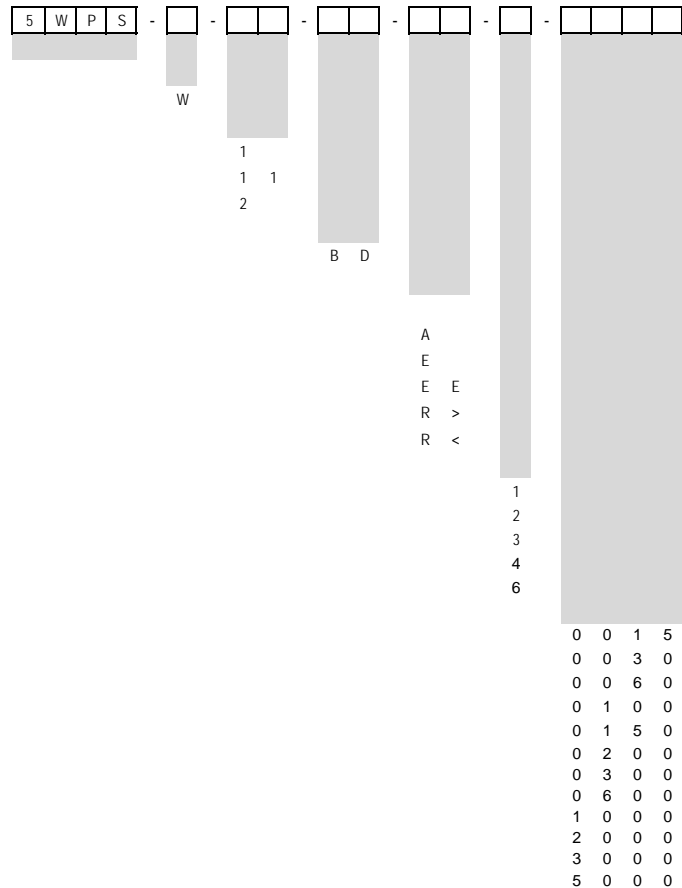
Range psi (bar)	Max. Deadband psi (bar)	Max. Working Pressure psi (bar)	NEMA 4X Code
0/15 (0/1)	0.7 (0.05)	300 (21)	5WPS0015AFX
0/30 (0/2)	0.7 (0.05)	300 (21)	5WPS0030AFX
0/60 (0/4)	0.8 (0.06)	300 (21)	5WPS0060AFX
0/100 (0/7)	1.0 (0.07)	300 (21)	5WPS0100AFX
0/150 (0/10)	4.0 (0.28)	1,500 (104)	5WPS0150AFX
0/200 (0/14)	4.0 (0.28)	1,500 (104)	5WPS0200AFX
0/300 (0/21)	4.0 (0.28)	1,500 (104)	5WPS0300AFX
0/600 (0/41)	5.0 (0.35)	1,500 (104)	5WPS0600AFX
0/1,000 (0/69)	12.0 (0.83)	3,000 (207)	5WPS1000AFX
0/2,000 (0/138)	15.0 (1.04)	3,000 (207)	5WPS2000AFX
0/3,000 (0/207)	37.0 (2.55)	7,000 (483)	5WPS3000AFX
0/5,000 (0/345)	45.0 (3.10)	7,000 (483)	5WPS5000AFX



Wiring Diagram



Series Number (how to order)



- SERIES**
- HOUSING**
Watertight NEMA 4X, 12 & 13
- SWITCH**
One SPDT
Two tandem switches operate in parallel DPDT
Two SPDT independent adjustment
- SENSING ELEMENT**
Bellows actuated differential pressure
- OPTIONS**
No options (blank)
Adjustable deadband (adj. 10% - 50% of range)
External pressure adjustment
Two external pressure adjustment
Manual reset, switch on increase pressure
Manual reset, switch on decrease pressure
- CONTACT RATING**
Low deadband 15 amps @ 125/250/480 VAC
Standard deadband 15 amps @ 125/250/480 VAC, 0.5 amp @ 125 VDC
High DC rated (magnetic blowout) 10 amps @ 125 VDC, 3 amps @ 250 VDC
Hermetically sealed switch 1 amp @ 125 VAC, 25 amps res., 10 amps ind., 5 amp motor, 3 amp lamp @ 28 VDC
Gold contact 1 amp @ 125 VAC
- PRESSURE RANGES PSI (BAR)**
0-15 PSI (0-1)
0-30 PSI (0-2)
0-60 PSI (0-4)
0-100 PSI (0-7)
0-150 PSI (0-10)
0-200 PSI (0-14)
0-300 PSI (0-21)
0-600 PSI (0-41)
0-1,000 PSI (0-69)
0-2,000 PSI (0-138)
0-3,000 PSI (0-207)
0-5,000 PSI (0-345)



Description & Features:

- Vac to 10,000 psi pressure range
- Explosion proof SPDT or DPDT switch
- Stainless steel with FKM and PTFE wetted parts
- ANSI dual seal design
- Dia-seal/piston sensor
- Safe to adjust during operation
- Lockable setpoint wheel to avoid shifting during operation
- ±2% of full scale accuracy
- NEMA 4X, 7 & 9 enclosure rating
- UL and CSA approved for hazardous locations
- Designed for sour gas applications requiring NACE standards MR0175-2009
- CRN registered (up to 3,000 psi models)
- 5 year warranty

Applications:

- Suitable for hazardous locations including safety panels and with pump and gas compressors, turbines and other oil & gas applications
- Appropriate for oil & gas, power plants, chemical facilities and water treatment
- Designed for hazardous locations where an explosion proof switch is required

Specifications

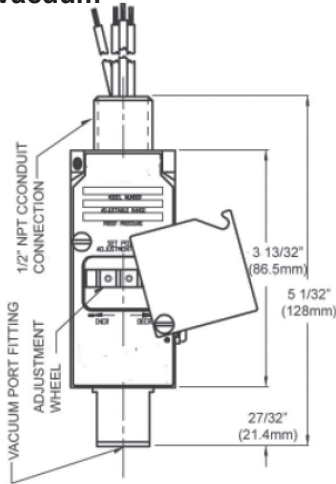
Housing Material	316 SS
Port Material	316 SS
Accuracy	±2% of full scale
Pressure Connection	1/4" NPTF (1/2" NPTF optional)
Electrical Connection	1/2" NPTM, 18 AWG, 18" (300 mm) free leads
Wetted Parts	Vacuum and low pressure - seals: FKM diaphragm High pressure - piston: SS with PTFE backup ring and FKM o-ring
Set Point Adjustment	Internal adjustment wheel with built in locking set-screws (#6) ¹
Deadband	Fixed
Contact Rating	11 amps @ 125/250 Vac 5 amps @ 30 Vdc
No. of Contacts	SPDT (DPDT optional)
Vibration	10 g 10-500 Hz, MIL-STD-202F
Shock	50 g 11 ms, MIL-S-901C
EMI/RFI Protection	EN55011
Ambient Temperature	-40°F to 104°F (-40°C to 40°C) (140°F (60°C) maximum temperature for 9WPSH models)
Enclosure Rating	NEMA 4X, 7 & 9
Approvals	UL & CSA approved for use in hazardous locations Class I, Div. 1, Groups A, B, C & D; Class II, Div. 1, Groups E, F & G (Group A, UL only) CRN registered (up to 3,000 psi model) ANSI Dual Seal Compliant NACE MR0175-2009
Typical Life	2.5 million cycles
Weight	1.85 lbs (839 grams)

¹ Need to loosen set screw (#6) at all times when resetting adjustment.

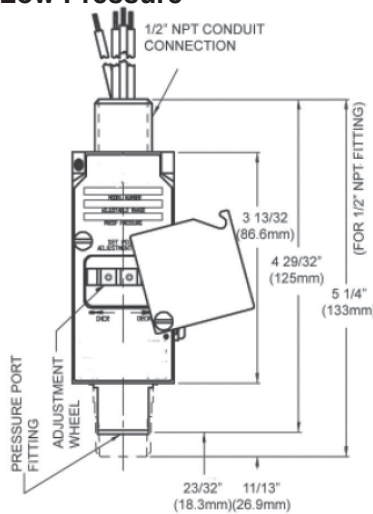
Order Codes

Adjustable Range psi (bar)		Approximate Deadband (Actuation value) psi (bar)	Proof Pressure psi (bar)	Code 1/4" NPT	Code 1/2" NPT
Min	Max				
1" Hg	30" Hg	4-9" Hg	30" Hg	9WPSV01N4	9WPSV01N2
2 (0.1)	15 (1)	1-3 (.07-.2)	1,000 (69)	9WPSL02N4	9WPSL02N2
5 (0.3)	150 (10.3)	2-25 (0.1-1.7)	1,000 (69)	9WPSL03N4	9WPSL03N2
25 (1.7)	300 (20.6)	7-40 (0.5-2.8)	1,000 (69)	9WPSL04N4	9WPSL04N2
50 (3.4)	500 (34.5)	15-60 (1-4.1)	1,000 (69)	9WPSL05N4	9WPSL05N2
100 (6.9)	750 (51.7)	50-150 (3.4-10.3)	15,000 (1,034)	9WPSH06N4	9WPSH06N2
150 (10.3)	1,000 (69)	70-200 (4.7-13.8)	15,000 (1,034)	9WPSH07N4	9WPSH07N2
400 (27.6)	3,000 (207)	100-400 (6.9-27.6)	15,000 (1,034)	9WPSH08N4	9WPSH08N2
700 (48.2)	5,000 (345)	140-600 (9.6-41.4)	15,000 (1,034)	9WPSH09N4	9WPSH09N2
1,000 (69)	7,500 (517)	140-800 (9.6-55.2)	15,000 (1,034)	9WPSH10N4	9WPSH10N2
150 (10.3)	3,000 (207)	50-1,000 (3.4-68.9)	15,000 (1,034)	9WPSH11N4	9WPSH11N2
5,000 (344.8)	10,000 (689.7)	200-2,000 (13.8-137.9)	15,000 (1,034)	9WPSH12N4	9WPSH12N2

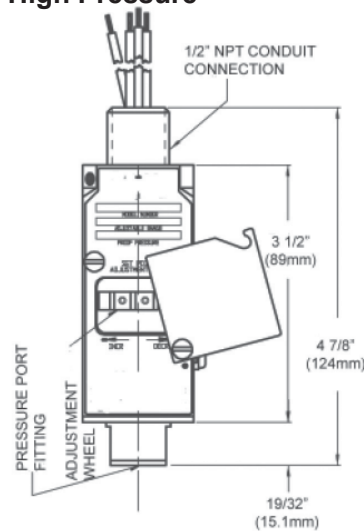
Vacuum



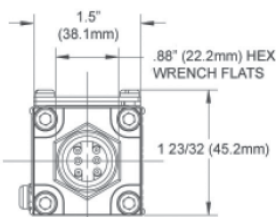
Low Pressure



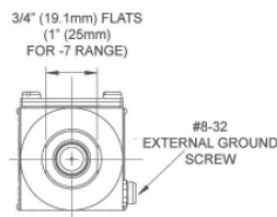
High Pressure



Top View



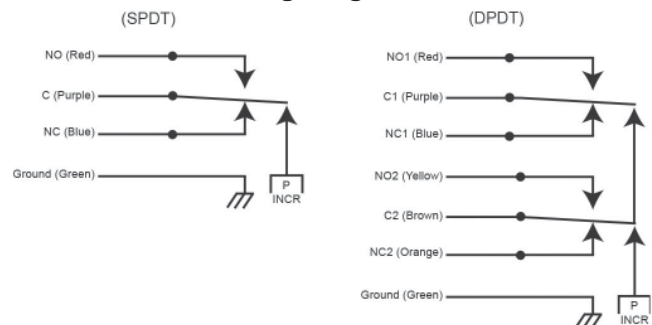
Bottom View



Wiring Code

Lead	Pressure		Vacuum	
	Circuit #1	Circuit #2	Circuit #1	Circuit #2
Normally Open	Red	Yellow	Blue	Orange
Common	Purple	Brown	Purple	Brown
Normally Closed	Blue	Orange	Red	Yellow
Ground	Green		Green	

Wiring Diagram



Series Number (how to order)

SERIES

PRESSURE RANGES PSI (BAR)

	Adjustable Range psi (bar)		Deadband (Actuation Value based on closed contact)
	Min	Max	
Vacuum Pressure Switch (1"-30" Hg)	1" Hg	30" Hg	4-9" Hg
Low Pressure Switch (2-500 psi)	2 (0.1)	15 (1)	1-3 (0.07-0.2)
	5 (0.3)	150 (10.3)	2-25 (0.1-1.7)
	25 (1.7)	300 (20.6)	7-40 (0.5-2.8)
	50 (3.4)	500 (34.5)	15-60 (1.4-1)
High Pressure Switch (100-10,000 psi)	100 (6.9)	750 (51.7)	50-150 (3.4-10.3)
	150 (10.3)	1,000 (69)	70-200 (4.7-13.8)
	400 (27.6)	3,000 (207)	100-400 (6.7-27.6)
	700 (48.2)	5,000 (345)	140-600 (9.6-41.4)
	1,000 (69)	7,500 (517)	140-800 (9.6-55.2)
	150 (10.3)	3,000 (207)	50-1,000 (3.4-68.9)
	5,000 (344.8)	10,000 (689.7)	200-2,000 (13.8-137.9)
Special Range			



SWITCH

SPDT Switch, 11 amps @ 125 / 250 VAC; 5 amps @ 30 VDC (standard)

DPDT Switch, 11 amps @ 125 / 250 VAC, 5 amps @ 30 VDC

SPDT gold contact switch, 1 amp @ 125 VAC

DPDT gold contact switch, 1 amp @ 125 VAC

WETTED PARTS

Viton Diaphragm & O-Rings (standard)

Buna-N Diaphragm & O-Rings

EPR Diaphragm & O-Rings (no UL or CSA)

MECHANICAL CONNECTION

1/4" NPT Female (standard)

1/2" NPT Female

7/16-20 SAE Female

HOUSING

316 Stainless Steel (standard)

OPTIONS

Extra Wire Length (in Inches)

Special

Process Media and Material Compatibility: Since the wetted parts of the diaphragm seal assembly, which consist of the lower housing and diaphragm element itself, as well as any gaskets, will come in contact with the process, it is imperative to ensure the proper material is selected. The material selected must be compatible with all the various chemicals the seal may come in contact with while in service.

Temperature (Process & Ambient): Each diaphragm seal assembly is filled with an amount of fill fluid at ambient temperature. The increase of process or media temperature can cause the fill fluid to expand, creating a larger volume and pressure build up in the assembly.

Pressure Instrument: The diaphragm seal chosen must have the ability to provide enough volumetric displacement to drive the instrument through it's full range. A rule of thumb is as follows: The lower the pressure, the more displacement is needed. The larger the gauge, the more displacement is needed. The smaller the diaphragm, the less displacement it can provide.

Process Connection and Orientation: The most common connections for diaphragm seals are threaded from 1/4" to 1" NPT and flanged. Be sure to specify both the flange size and rating when selecting a flanged seal.

Pressure Range: As stated above the diaphragm selected must be able to handle the pressure range to be sensed. The lower the pressure, the larger the diaphragm element must be to ensure sensitivity and proper displacement.

Response Time: Response time to sudden changes in process pressure can be effected by many things, such as size of the diaphragm, viscosity of the fill fluid, ambient and process temperatures and the use of capillary for remote mounted gauges.

Fill Fluid: Fill fluid selection is critical to the performance of the diaphragm seal assembly. Process and ambient temperatures, pressure and compatibility with the process media must be considered. Inert fills such as Halocarbon®, Fluorolube® and Krytox® must be specified when oxidizers are present.

Catalogue Page	Series	Instrument Connection								Process Connection								Wetted Parts Material								Pressure Range						RoHS compliant
		1/4" NPT	1/2" NPT	1/2" NPT Male	1/4" NPT	1/2" NPT	3/4" NPT	≥1" NPT	RF Flange	Buna	Hastelloy® C	Monel®	PVC	Stainless Steel	Tantalum	PTFE	FKM	Other	0-1,000 psi	30-1,300 psi	50-2,000 psi	30-2,500 psi	0-2,500 psi	30-2,500 psi	1,000-6,000 psi							
97	D15 Threaded Flush Mount Seal	X					X							X												X	X					
98	D30 Heavy Duty Seal	X			X									X												X	X					
99	D40 Medium Duty Seal	X	X		X	X								X					X								X					
100	D44 Flanged Seal (PTFE)	X	X					X							X				X													
102	D44 Flanged Seal All Welded	X	X					X		X	X	X	X	X	X	X	X					X										
104	D46 Flanged Flush Mount Seal	X	X					X						X					X													
105	D70 2-Piece Industrial Seal	X	X		X	X	X	X		X	X	X		X		X					X					X						
107	D71 NACE 2-Piece Seal	X	X		X	X		X		X	X				X	X								X								

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 Halocarbon® is a registered trademark of Halocarbon Products Corporation
 Fluorolube® is a registered trademark of Gabriel Performance Products, LLC.
 Krytox® is a registered trademark of DuPont Corporation

Monel® is a registered trademark of Inco Alloys International
 Tri-Clamp® is a registered trademark of Tri-Clover

Note: When selecting a diaphragm seal, always refer to ASME B40.100 (2013)

50 to 5,800 psi (345 to 40,000 kPa)



Description & Features:

- Constructed with a welded diaphragm placed at the end of the male NPT connection, eliminating the normal diaphragm chamber where solidification of the process media may render the seal inoperable
- Rugged and suitable for the most severe process applications
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- Suitable for any process where freezing or solidification of the pressure media is a concern

Specifications	
Housing	AISI 316 SS
Diaphragm	AISI 316L SS, welded
Minimum Operating Pressure	50 psi (345 kPa)
Maximum Operating Pressure	5,800 psi (40,000 kPa)
Gauge Connection	1/4" NPTF
Process Connection	3/4" NPTM
Process Temperature	-20°F to 360°F (-29°C to 182°C)

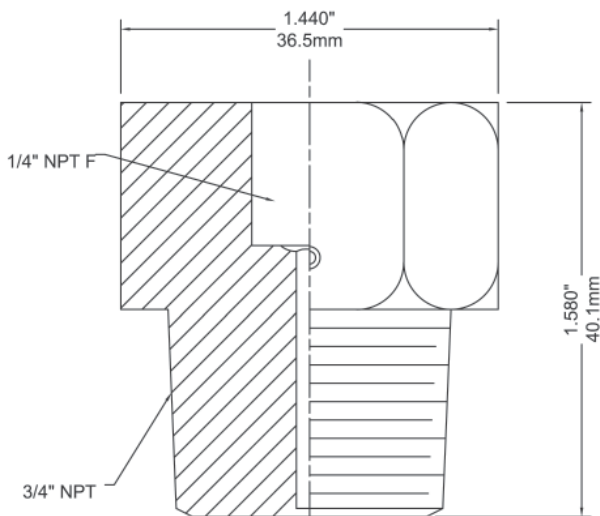
Order Codes

1/4" NPTF x 3/4" NPTM

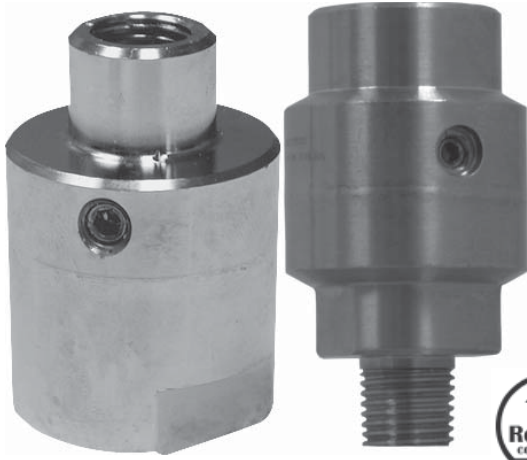
D15992

Option suffix for above order code only:

SF-D = Silicone fill (seal only)



1,000 to 6,000 psi (6,900 to 41,300 kPa)



Description & Features:

- Compact, lightweight and economical
- Constructed of AISI 316 stainless steel and is welded together into a one piece unit
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- Offers protection for pressure instruments (gauges and transmitters) from corrosive, contaminated or viscous media
- Ideally suited for applications where space limitations exist

Specifications

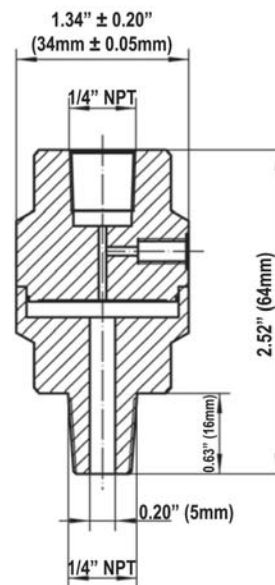
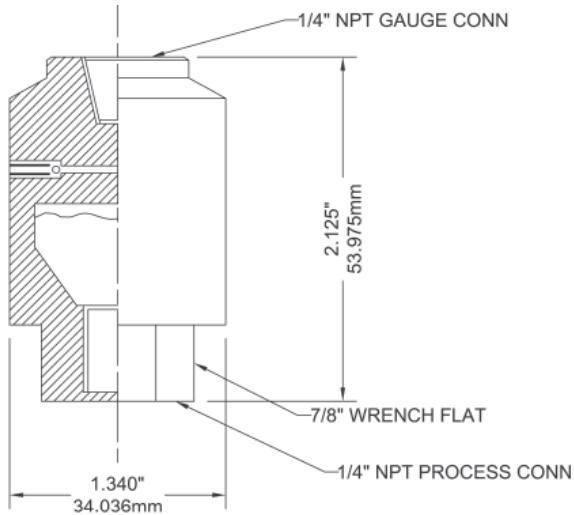
Housing	AISI 316 SS
Diaphragm	AISI 316L SS, welded
Minimum Operating Pressure	1,000 psi (6,900 kPa)
Maximum Operating Pressure	6,000 psi (41,300 kPa)
Gauge Connection	1/4" NPTF
Process Connection	1/4" NPTF or NPTM
Process Temperature	-49°F to 302°F (-45°C to 150°C)

Order Codes

1/4" NPTF x 1/4" NPTF	1/4" NPTF x 1/4" NPTM
D30975	D30976

Option suffix for above order codes only:

SF-D = Silicone fill (seal only)



30 to 1,000 psi (200 to 6,900 kPa)



Description & Features:

- Compact (one piece), lightweight and economical
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- Ideally suited for applications where space limitations exist
- Primarily utilized to protect gauges and transmitters from corrosive media
- Utilized in many OEM applications

Specifications

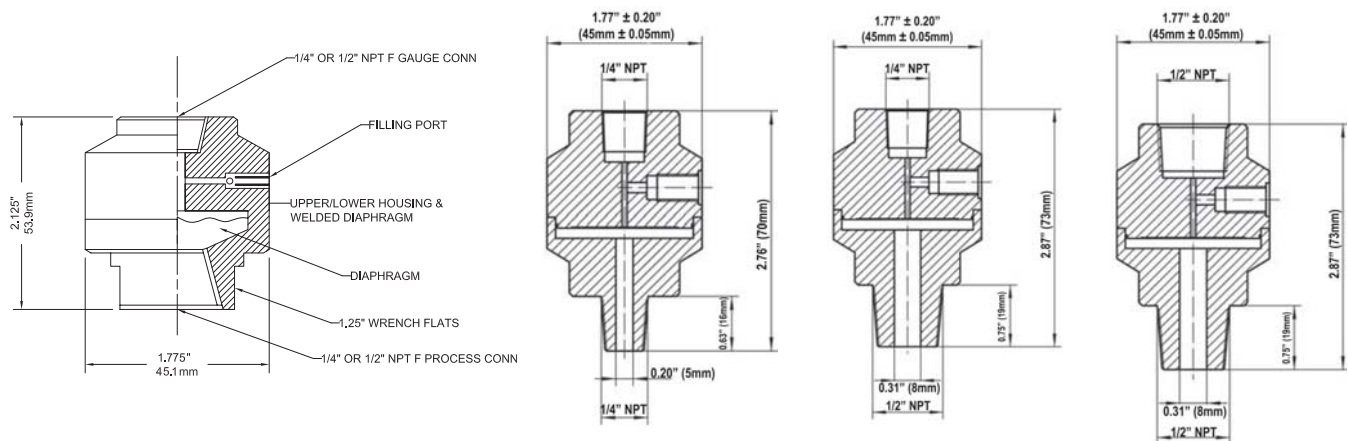
Housing	AISI 316 SS
Diaphragm	AISI 316L SS, welded
Minimum Operating Pressure	30 psi (200 kPa)
Maximum Operating Pressure	1,000 psi (6,900 kPa)
Gauge Connection	1/4", 1/2" NPTF
Process Connection	1/4", 1/2" NPTF or NPTM
Process Temperature	-49°F to 302°F (-45°C to 150°C)

Order Codes (products in bold are normally stock in North America)

Connection	1/4" x 1/4" NPT	1/4" x 1/2" NPT	1/2" x 1/2" NPT
F x F	D40973	D40972	D40974
F x M	D40975	D40976	D40977

Option suffix for above order codes only:

SF-D = Silicone fill (seal only)



Vac to 1,000 psi (0 to 6,900 kPa)



Description & Features:

- “Continuous use” seals - backing plate will prevent diaphragm from rupturing if pressure sensing instrument fails. Pressure will be held until instrument is replaced
- Various sizes and housing materials available
- ASME B40.100 compliant
- 5 year warranty

Applications:

- Used in industrial applications such as oil refineries, pulp and paper mills and chemical plants

Specifications

Housing	316 SS, Monel®, Hastelloy® B & C, titanium, tantalum, PVC, carbon steel, PTFE, acetal, other (nickel plated carbon steel or SS upper housing standard)
Diaphragm	PTFE for increased compatibility, sensitivity and versatility
Construction	Two piece construction
Connection	1/4", 1/2" NPTF gauge connections standard (other NPTF gauge connections available) 1" (25mm), 1.5" (40mm) and 2" (50mm) pipe size and #150 and #300 pressure rating standard (other configurations available)
Maximum Temperature Limit	400°F (204°C)

Order Codes

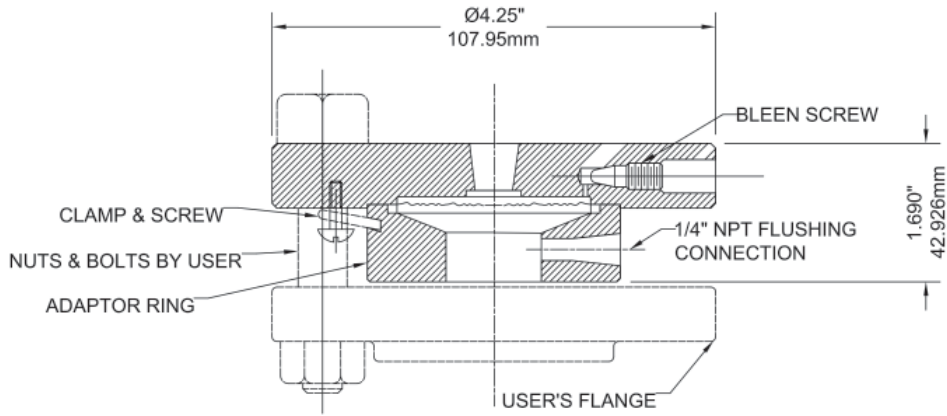
Type*	Instrument Connection	Diaphragm Material	Lower Housing Wetted Parts	Upper Housing Non-Wetted Parts	
				Carbon Steel	Stainless Steel
1" - 150#RF				Code	
PTFE Diaphragm	1/4" NPTF	PTFE	316 SS - PTFE lined	D44003	D44004
	1/2" NPTF			D44001	D44002
1" - 300#RF					
PTFE Diaphragm	1/4" NPTF	PTFE	316 SS - PTFE lined	D44007	D44008
	1/2" NPTF			D44005	D44006
1.5" - 150#RF					
PTFE Diaphragm	1/4" NPTF	PTFE	316 SS - PTFE lined	D44011	D44012
	1/2" NPTF			D44009	D44010
1.5" - 300#RF					
PTFE Diaphragm	1/4" NPTF	PTFE	316 SS - PTFE lined	D44015	D44016
	1/2" NPTF			D44013	D44014
2" - 150#RF					
PTFE Diaphragm	1/4" NPTF	PTFE	316 SS - PTFE lined	D44019	D44020
	1/2" NPTF			D44017	D44018
2" - 300#RF					
PTFE Diaphragm	1/4" NPTF	PTFE	316 SS - PTFE lined	D44023	D44024
	1/2" NPTF			D44021	D44022

*Replaceable diaphragms available

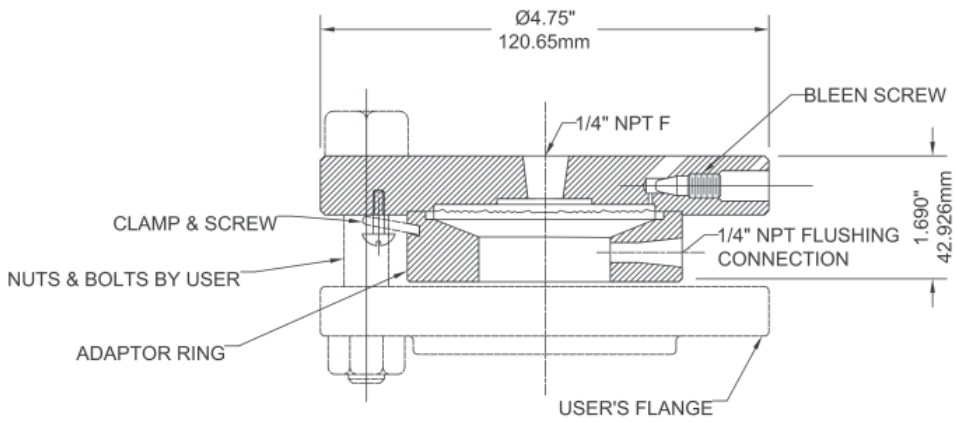
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150# RF C/W OPTIONAL FLUSHING PORT



300# RF C/W OPTIONAL FLUSHING PORT



30 to 2,500 psi (200 to 17,250 kPa)



Description & Features:

- “Continuous use” seals - backing plate will prevent diaphragm from rupturing if pressure sensing instrument fails. Pressure will be held until instrument is replaced
- Various sizes and housing materials available
- ASME B40.100 compliant
- 5 year warranty

Applications:

- Used in industrial applications such as oil refineries, pulp and paper mills and chemical plants

Specifications

Housing	316 SS, Monel®, Hastelloy® B & C, titanium, tantalum, PVC, carbon steel, PTFE, acetal, other (nickel plated carbon steel or SS upper housing standard)
Construction	Two piece construction
Connection	1/4", 1/2" NPTF gauge connections standard (other NPTF gauge connections available) 1" (25mm), 1.5" (40mm) and 2" (50mm) pipe size and #150 and #300 pressure rating standard (other configurations available)
Maximum Temperature Limit	450°F (232°C) PTFE lined: 400°F (204°C) (higher temperature limits available)
Other	Cleanout type for easy cleaning and calibrating. Saddle diaphragm seals available upon request. Flushing connections available

Order Codes

Type*	Instrument Connection	Diaphragm Material	Lower Housing Wetted Parts	Upper Housing Non-Wetted Parts	
				Carbon Steel	Stainless Steel
1" - 150#RF				Code	
Welded Diaphragm	1/4" NPTF	316 SS	316 SS	D441150SS25CS	D441150SS25SS
		Tantalum	316 SS - PTFE lined	D441150UL25CS	D441150UL25SS
		Hastelloy® C	Monel®	D441150HM25CS	D441150HM25SS
		Hastelloy® C	Hastelloy® C	D441150HH25CS	D441150HH25SS
	1/2" NPTF	316 SS	316 SS	D441150SS5CS	D441150SS5SS
		Tantalum	316 SS - PTFE lined	D441150UL5CS	D441150UL5SS
		Hastelloy® C	Monel®	D441150HM5CS	D441150HM5SS
		Hastelloy® C	Hastelloy® C	D441150HH5CS	D441150HH5SS
1" - 300#RF				Code	
Welded Diaphragm	1/4" NPTF	316 SS	316 SS	D441300SS25CS	D441300SS25SS
		Tantalum	316 SS - PTFE lined	D441300UL25CS	D441300UL25SS
		Hastelloy® C	Monel®	D441300HM25CS	D441300HM25SS
		Hastelloy® C	Hastelloy® C	D441300HH25CS	D441300HH25SS
	1/2" NPTF	316 SS	316 SS	D441300SS5CS	D441300SS5SS
		Tantalum	316 SS - PTFE lined	D441300UL5CS	D441300UL5SS
		Hastelloy® C	Monel®	D441300HM5CS	D441300HM5SS
		Hastelloy® C	Hastelloy® C	D441300HH5CS	D441300HH5SS

*Replaceable and PTFE diaphragms available

Other materials, pipe size and pressure ratings available upon request

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Order Codes

Type*	Instrument Connection	Diaphragm Material	Lower Housing Wetted Parts	Upper Housing Non-Wetted Parts	
				Carbon Steel	Stainless Steel
1.5" - 150#RF				Code	
Welded Diaphragm	1/4" NPTF	316 SS	316 SS	D4415150SS25CS	D4415150SS25SS
		Tantalum	316 SS - PTFE lined	D4415150UL25CS	D4415150UL25SS
		Hastelloy® C	Monel®	D4415150HM25CS	D4415150HM25SS
		Hastelloy® C	Hastelloy® C	D4415150HH25CS	D4415150HH25SS
	1/2" NPTF	316 SS	316 SS	D4415150SS5CS	D4415150SS5SS
		Tantalum	316 SS - PTFE lined	D4415150UL5CS	D4415150UL5SS
		Hastelloy® C	Monel®	D4415150HM5CS	D4415150HM5SS
		Hastelloy® C	Hastelloy® C	D4415150HH5CS	D4415150HH5SS
1.5" - 300#RF					
Welded Diaphragm	1/4" NPTF	316 SS	316 SS	D4415300SS25CS	D4415300SS25SS
		Tantalum	316 SS - PTFE lined	D4415300UL25CS	D4415300UL25SS
		Hastelloy® C	Monel®	D4415300HM25CS	D4415300HM25SS
		Hastelloy® C	Hastelloy® C	D4415300HH25CS	D4415300HH25SS
	1/2" NPTF	316 SS	316 SS	D4415300SS5CS	D4415300SS5SS
		Tantalum	316 SS - PTFE lined	D4415300UL5CS	D4415300UL5SS
		Hastelloy® C	Monel®	D4415300HM5CS	D4415300HM5SS
		Hastelloy® C	Hastelloy® C	D4415300HH5CS	D4415300HH5SS
2" - 150#RF					
Welded Diaphragm	1/4" NPTF	316 SS	316 SS	D442150SS25CS	D442150SS25SS
		Tantalum	316 SS - PTFE lined	D442150UL25CS	D442150UL25SS
		Hastelloy® C	Monel®	D442150HM25CS	D442150HM25SS
		Hastelloy® C	Hastelloy® C	D442150HH25CS	D442150HH25SS
	1/2" NPTF	316 SS	316 SS	D442150SS5CS	D442150SS5SS
		Tantalum	316 SS - PTFE lined	D442150UL5CS	D442150UL5SS
		Hastelloy® C	Monel®	D442150HM5CS	D442150HM5SS
		Hastelloy® C	Hastelloy® C	D442150HH5CS	D442150HH5SS
2" - 300#RF					
Welded Diaphragm	1/4" NPTF	316 SS	316 SS	D442300SS25CS	D442300SS25SS
		Tantalum	316 SS - PTFE lined	D442300UL25CS	D442300UL25SS
		Hastelloy® C	Monel®	D442300HM25CS	D442300HM25SS
		Hastelloy® C	Hastelloy® C	D442300HH25CS	D442300HH25SS
	1/2" NPTF	316 SS	316 SS	D442300SS5CS	D442300SS5SS
		Tantalum	316 SS - PTFE lined	D442300UL5CS	D442300UL5SS
		Hastelloy® C	Monel®	D442300HM5CS	D442300HM5SS
		Hastelloy® C	Hastelloy® C	D442300HH5CS	D442300HH5SS

*Replaceable and PTFE diaphragms available

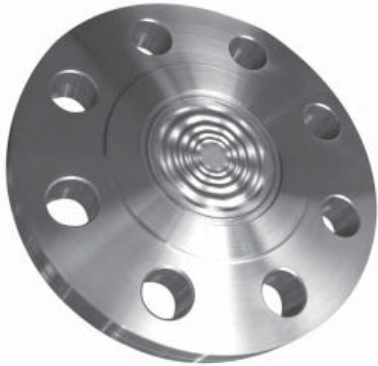
Other fill fluids (seal only), materials, pipe size and pressure ratings available upon request.

For technical drawings, refer to D44 PTFE.

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30 to 1,300 psi (207 to 8,970 kPa)



Description & Features:

- One-piece design - no internal gaskets or o-rings
- Diaphragm is flush to the gasket sealing surface so no internal cavities for media buildup
- Various sizes available
- ASME B40.100 compliant
- 5 year warranty

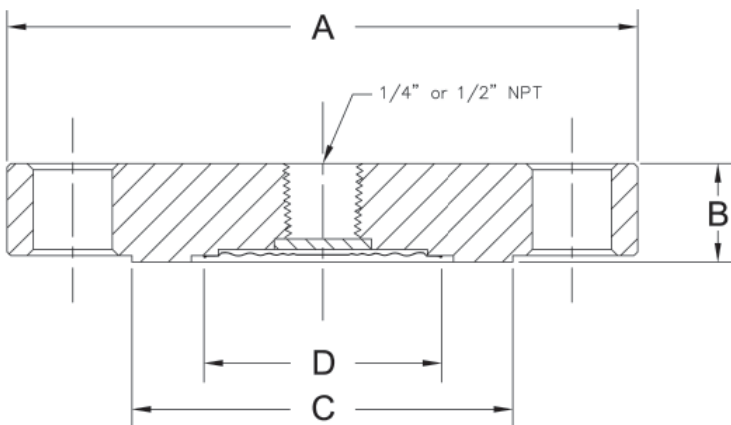
Applications:

- Oil refineries, pulp and paper mills, chemical plants
- Where media buildup is a concern

Specifications	
Housing	316 SS
Diaphragm	316L SS bonded to housing
Construction	One piece construction
Connection	1/4", 1/2" NPTF gauge connections standard 1.5" (40mm), 2" (50mm) and 3" (75mm) pipe size
Maximum Temperature Limit	450°F (232°C)

Order Codes

Type	Instrument Connection	Code
2" - 150#RF	1/4" NPTF	D462548
	1/2" NPTF	D462549
2" - 300#RF	1/4" NPTF	D462550
	1/2" NPTF	D462551
2" - 600#RF	1/4" NPTF	D462552
	1/2" NPTF	D462553
3" - 150#RF	1/4" NPTF	D462554
	1/2" NPTF	D462555
3" - 300#RF	1/4" NPTF	D462556
	1/2" NPTF	D462557
3" - 600#RF	1/4" NPTF	D462558
	1/2" NPTF	D462559



Pipe Size	Rating	A	B	C	D
2"	150#	6"	0.88"	3.6"	2.2"
	300#	6.5"	0.88"		
	600#		1.25"		
3"	150#	7.5"	0.94"	5"	2.2" or 3"
	300#	8.2"	1.12"		
	600#		1.5"		

Other sizes available upon request

30 to 2,500 psi (207 to 17,250 kPa)



Description & Features:

- Two piece construction and designed to withstand even the most severe process applications
- “Continuous use” seals - backing plate will prevent diaphragm from rupturing if pressure sensing instrument fails. Pressure will be held until instrument is replaced
- Diaphragm is separable for servicing and is available with a 1/8” NPT or 1/4” NPT flushing connection for removing any material which may clog the process connection
- Standard diaphragm is constructed of AISI 316L stainless steel and welded to the upper chamber of the seal for pressures 30 psi (200 kPa) and above; optional FKM diaphragm available for ranges from 30” Hg Vacuum (-100 kPa) up to 100 psi (690 kPa). Other diaphragms available
- FKM diaphragm is highly recommended for applications less than 10 psi
- ASME B40.100 compliant
- CRN registered (all 316 SS only)
- 5 year warranty

Applications:

- Where the process fluid is corrosive or viscous and would clog instrument internals/solidify within the pressure gauge, switch or transmitter

Specifications	
Housing	316L SS, Monel®, Hastelloy® C
Diaphragm	316L SS, Monel®, Hastelloy® C, FKM
Construction	Two piece construction
Gasket Material	Buna N (FKM, PTFE optional)
Connection	Bottom: 1/4”, 1/2”, 3/4” and 1” NPTF Top: 1/4” and 1/2” NPTF
Process Temperature	-22°F to 212°F (-30°C to 100°C)
Other	Flushing connection available. Other materials such as PTFE, PVC, carbon steel, Alloy 20, Hastelloy® B, titanium, tantalum, etc. are available upon request

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Order Codes (products in bold are normally stock in North America)

Lower Housing (Bottom)	
316L SS, 1/4" NPTF	D70954
316L SS, 1/2" NPTF	D70956
316L SS, 1/2" NPTF with flushing	D70957
316L SS, 3/4" NPTF	D70963
316L SS, 3/4" NPTF with flushing	D70959
316L SS, 1" NPTF	D70964
316L SS, 1" NPTF with flushing	D70965
316L SS, 1/4" NPTF FKM	D70954V
316L SS, 1/2" NPTF FKM	D70956V
316L SS, 1/2" NPTF with flushing, FKM	D70957V
316L SS, 3/4" NPTF with flushing, FKM	D70959V
316L SS, 3/4" NPTF FKM	D70963V
316L SS, 1" NPTF FKM	D70964V
316L SS, 1" NPTF with flushing, FKM	D70965V
Monel [®] , 1/4" NPTF	D70954M
Monel [®] , 1/2" NPTF	D70956M
Monel [®] , 1/2" NPTF with flushing	D70957M
Monel [®] , 3/4" NPTF with flushing	D70959M
Monel [®] , 3/4" NPTF	D70963M
Monel [®] , 1" NPTF	D70964M
Monel [®] , 1" NPTF with flushing	D70965M
Hastelloy [®] C, 1/4" NPTF	D70954HASC
Hastelloy [®] C, 1/2" NPTF	D70956HASC
Hastelloy [®] C, 1/2" NPTF with flushing	D70957HASC
Hastelloy [®] C, 3/4" NPTF with flushing	D70959HASC
Hastelloy [®] C, 3/4" NPTF	D70963HASC
Hastelloy [®] C, 1" NPTF	D70964HASC
Hastelloy [®] C, 1" NPTF with flushing	D70965HASC

Upper Housing (Top)	
316L SS, 1/4" NPTF 316L SS diaphragm	D70950
316L SS, 1/4" NPTF Monel [®] diaphragm	D70950M
316L SS, 1/4" NPTF Hastelloy [®] C diaphragm	D70950HASC
316L SS, 1/4" NPTF FKM diaphragm	D70951
316L SS, 1/2" NPTF 316L SS diaphragm	D70952
316L SS, 1/2" NPTF Monel [®] diaphragm	D70952M
316L SS, 1/2" NPTF Hastelloy [®] C diaphragm	D70952HASC
316L SS, 1/2" NPTF FKM diaphragm	D70953

Option suffix for above order code only:

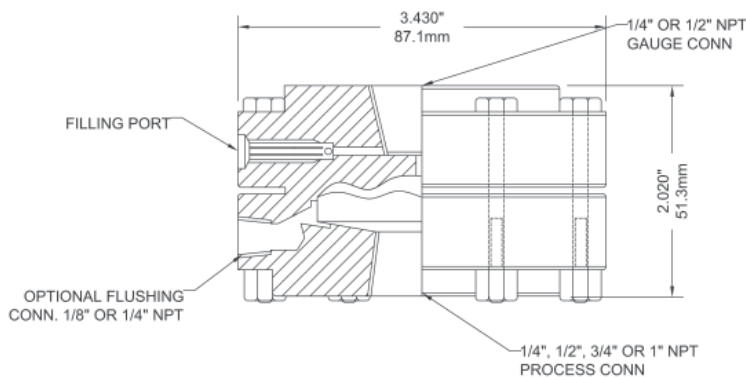
SF-D = Silicone fill (seal only)

FL-D = Fluorolube fill (seal only)

Other fill fluids (seal only) available upon request

Note: Both upper and lower housing must be specified

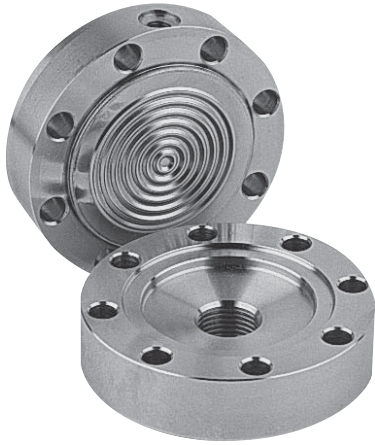
Example: D70950 - D70956



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30 to 2,500 psi (207 to 17,250 kPa)



Description & Features:

- Can be used on applications requiring a NACE compliant MR0103-2003 diaphragm seal
- ASME B40.100 compliant
- 5 year warranty

Applications:

- Sour gas applications requiring instrumentation that meet NACE International Standards

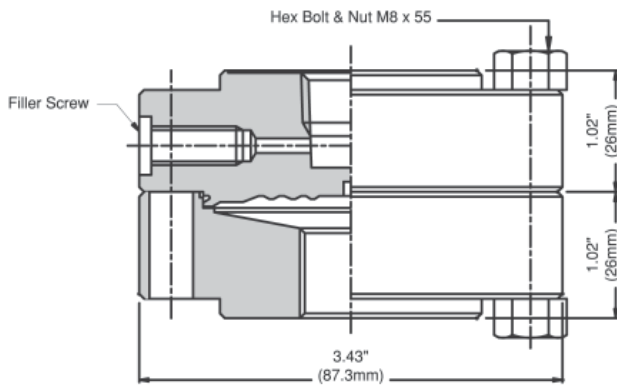
Specifications	
Housing	Hastelloy® C
Diaphragm	Hastelloy® C, welded
Construction	Two piece construction
Gasket Material	Buna N (FKM, PTFE optional)
Connection	Top: 1/4" and 1/2" NPTF Bottom: 1/4", 1/2", 3/4" and 1" NPTF
Process Temperature	-22°F to 212°F (-30°C to 100°C)
Other	Flushing connections available. Other materials available upon request.

Order Codes

Upper Housing (Top)	
Hast. C, 1/4" NPTF conn., Hastelloy® C diaphragm	D71966HASC75
Hast. C, 1/2" NPTF conn., Hastelloy® C diaphragm	D71967HASC75
Lower Housing (Bottom)	
Hastelloy® C, 1/4" NPTF	D71954HASC75
Hastelloy® C, 1/2" NPTF	D71956HASC75
Hastelloy® C, 1/2" NPTF with flushing	D71957HASC75
Hastelloy® C, 3/4" NPTF	D71963HASC75
Hastelloy® C, 3/4" NPTF with flushing	D71959HASC75
Hastelloy® C, 1" NPTF	D71964HASC75
Hastelloy® C, 1" NPTF with flushing	D71965HASC75

Option suffix for above order code only:

- SF-D = Silicone fill (seal only)
- FL-D = Fluorolube fill (seal only)
- Other fill fluids (seal only) available upon request



Hastelloy® is a registered trademark of Haynes International, Inc.

30 to 2,500 psi (207 to 17,250 kPa)



Description & Features:

- Can be used on applications requiring a NACE compliant MR0175-2003 diaphragm seal
- ASME B40.100 compliant
- 5 year warranty

Applications:

- Sour gas applications requiring instrumentation that meet NACE International Standards

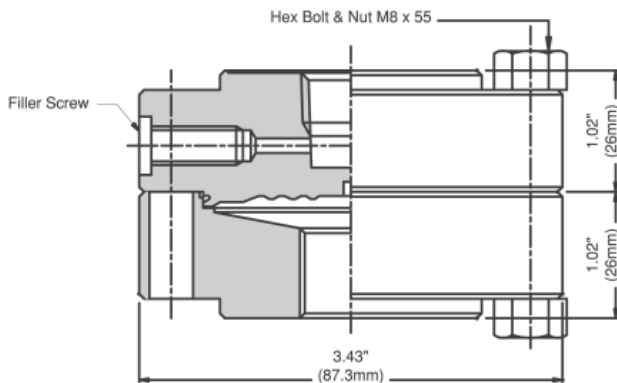
Specifications	
Housing	316 SS
Diaphragm	Monel®, welded
Construction	Two piece construction
Gasket Material	Buna N (FKM, PTFE optional)
Connection	Top: 1/4" and 1/2" NPTF Bottom: 1/4", 1/2", 3/4" and 1" NPTF
Process Temperature	-22°F to 212°F (-30°C to 100°C)
Other	Flushing connections available. Other materials available upon request.

Order Codes

Upper Housing (Top)	
316 SS, 1/4" NPTF Monel® diaphragm	D7195003
316 SS, 1/2" NPTF Monel® diaphragm	D7195203
Lower Housing (Bottom)	
316 SS, 1/4" NPTF	D7195403
316 SS, 1/2" NPTF	D7195603
316 SS, 1/2" NPTF with flushing	D7195703
316 SS, 3/4" NPTF	D7196303
316 SS, 3/4" NPTF with flushing	D7195903
316 SS, 1" NPTF	D7196403
316 SS, 1" NPTF with flushing	D7196503

Option suffix for above order code only:

SF-D = Silicone fill (seal only)
 FL-D = Fluorolube fill (seal only)
 Other fill fluids (seal only) available upon request



Monel® is a registered trademark of Inco Alloys International



Description & Features:

- Excellent flow regulation and leak tight
- The one-piece body construction (no welding) provides strength, safety and corrosion resistance
- “Slow opening” prevents sudden pressure surge and instrument damage
- Materials include carbon steel, carbon steel NACE, stainless steel, stainless steel NACE
- Available in Hard Seat (6,000 and 10,000 psi)
- ASME B1.20.1 compliant
- CRN registered
- 5 year warranty

Applications:

- Highly reliable throttle and block valve for gas or liquid service in severe duty oil and gas installations including refineries and processing plants as well as water treatment plants, power plants and hydraulic applications

Straight Body Order Codes (products in bold are normally stock in North America)

NPT Connection	Material	Max. Pressure	Code
1/4" Female x 1/4" Female	Carbon Steel	6,000 psi	NVA5020
1/4" Female x 1/4" Male		10,000 psi	NVA6020
1/4" Male x 1/4" Female		6,000 psi	NVA5000
1/4" Female x 3/8" Female		10,000 psi	NVA6000
3/8" Female x 3/8" Female		6,000 psi	NVA5024
3/8" Female x 3/8" Male		10,000 psi	NVA6024
3/8" Male x 3/8" Female		6,000 psi	NVA5004
3/8" Female x 1/2" Female		10,000 psi	NVA6004
1/2" Female x 1/2" Female		6,000 psi	NVA5021
1/2" Female x 1/2" Male		10,000 psi	NVA6021
1/2" Male x 1/2" Female		6,000 psi	NVA5001
1/2" Female x 3/4" Female		10,000 psi	NVA6001
3/4" Female x 1/2" Female		6,000 psi	NVA5022
3/4" Male x 1/2" Female		10,000 psi	NVA6022
1/2" Female x 3/4" Male		6,000 psi	NVA5002
1/2" Female x 1/2" Female		10,000 psi	NVA6002
3/4" Female x 3/4" Female		6,000 psi	NVA5025
3/4" Female x 3/4" Male		10,000 psi	NVA6025
3/4" Male x 3/4" Female		6,000 psi	NVA5005
3/4" Female x 1" Female		10,000 psi	NVA6005
1" Female x 1" Female		6,000 psi	NVA5023
1" Female x 1" Male		10,000 psi	NVA6023
1" Male x 1" Female		6,000 psi	NVA5003
1" Female x 1/4" Female		10,000 psi	NVA6003
1/4" Female x 1/4" Female	Stainless Steel	6,000 psi	NVA2020
1/4" Female x 1/4" Male		10,000 psi	NVA3020
1/4" Male x 1/4" Female		6,000 psi	NVA2000
1/4" Female x 3/8" Female		10,000 psi	NVA3000
3/8" Female x 3/8" Female		6,000 psi	NVA2024
3/8" Female x 3/8" Male		10,000 psi	NVA3024
3/8" Male x 3/8" Female		6,000 psi	NVA2004
3/8" Female x 1/2" Female		10,000 psi	NVA3004
1/2" Female x 1/2" Female		6,000 psi	NVA2021
1/2" Female x 1/2" Male		10,000 psi	NVA3021
1/2" Male x 1/2" Female		6,000 psi	NVA2001
1/2" Female x 3/4" Female		10,000 psi	NVA3001
3/4" Female x 1/2" Female		6,000 psi	NVA2022
3/4" Male x 1/2" Female		10,000 psi	NVA3022
1/2" Female x 3/4" Male		6,000 psi	NVA2002
1/2" Female x 3/4" Female		10,000 psi	NVA3002
3/4" Female x 3/4" Female		6,000 psi	NVA2025
3/4" Female x 3/4" Male		10,000 psi	NVA3025
3/4" Male x 3/4" Female		6,000 psi	NVA2005
3/4" Female x 1" Female		10,000 psi	NVA3005
1" Female x 1" Female		6,000 psi	NVA2023
1" Female x 1" Male		10,000 psi	NVA3023
1" Male x 1" Female		6,000 psi	NVA2003
1" Female x 1" Female		10,000 psi	NVA3003

Straight Body NACE Order Codes

NPT Connection	Material	Max. Pressure	Code
1/4" Female x 1/4" Female	Carbon Steel (NACE Tip)	6,000 psi	NVA5020N
1/4" Female x 1/4" Male		10,000 psi	NVA6020N
1/4" Male x 1/4" Female		6,000 psi	NVA5000N
1/4" Female x 3/8" Female		10,000 psi	NVA6000N
3/8" Female x 3/8" Female		6,000 psi	NVA5024N
3/8" Female x 3/8" Male		10,000 psi	NVA6024N
3/8" Male x 3/8" Female		6,000 psi	NVA5004N
3/8" Female x 1/2" Female		10,000 psi	NVA6004N
1/2" Female x 1/2" Female		6,000 psi	NVA5021N
1/2" Female x 1/2" Male		10,000 psi	NVA6021N
1/2" Male x 1/2" Female		6,000 psi	NVA5001N
1/2" Female x 3/4" Female		10,000 psi	NVA6001N
3/4" Female x 1/2" Female		6,000 psi	NVA5022N
3/4" Male x 1/2" Female		10,000 psi	NVA6022N
1/2" Female x 3/4" Male		6,000 psi	NVA5002N
1/2" Female x 1/2" Female		10,000 psi	NVA6002N
3/4" Female x 3/4" Female		6,000 psi	NVA5025N
3/4" Female x 3/4" Male		10,000 psi	NVA6025N
3/4" Male x 3/4" Female		6,000 psi	NVA5005N
3/4" Female x 1" Female		10,000 psi	NVA6005N
1" Female x 1" Female		6,000 psi	NVA5023N
1" Female x 1" Male		10,000 psi	NVA6023N
1" Male x 1" Female		6,000 psi	NVA5003N
1" Female x 1/4" Female		10,000 psi	NVA6003N
1/4" Female x 1/4" Female	Stainless Steel NACE	6,000 psi	NVA2020N
1/4" Female x 1/4" Male		10,000 psi	NVA3020N
1/4" Male x 1/4" Female		6,000 psi	NVA2000N
1/4" Female x 3/8" Female		10,000 psi	NVA3000N
3/8" Female x 3/8" Female		6,000 psi	NVA2024N
3/8" Female x 3/8" Male		10,000 psi	NVA3024N
3/8" Male x 3/8" Female		6,000 psi	NVA2004N
3/8" Female x 1/2" Female		10,000 psi	NVA3004N
1/2" Female x 1/2" Female		6,000 psi	NVA2021N
1/2" Female x 1/2" Male		10,000 psi	NVA3021N
1/2" Male x 1/2" Female		6,000 psi	NVA2001N
1/2" Female x 3/4" Female		10,000 psi	NVA3001N
3/4" Female x 1/2" Female		6,000 psi	NVA2022N
3/4" Male x 1/2" Female		10,000 psi	NVA3022N
1/2" Female x 3/4" Male		6,000 psi	NVA2002N
1/2" Female x 3/4" Female		10,000 psi	NVA3002N
3/4" Female x 3/4" Female		6,000 psi	NVA2025N
3/4" Female x 3/4" Male		10,000 psi	NVA3025N
3/4" Male x 3/4" Female		6,000 psi	NVA2005N
3/4" Female x 1" Female		10,000 psi	NVA3005N
1" Female x 1" Female		6,000 psi	NVA2023N
1" Female x 1" Male		10,000 psi	NVA3023N
1" Male x 1" Female		6,000 psi	NVA2003N
1" Female x 1" Female		10,000 psi	NVA3003N

Option suffix:

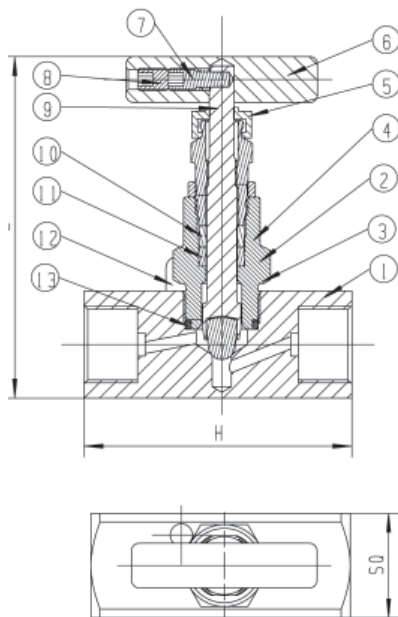
CPM = Carbon steel panel mount kit

SPM = Stainless steel panel mount kit

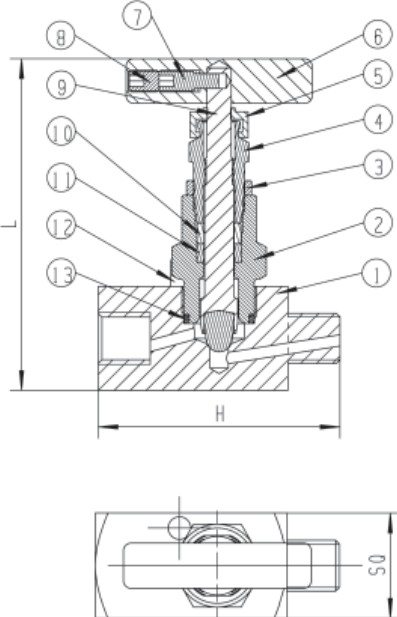
Material

Description	Component Number	Carbon Steel	Carbon Steel NACE	Stainless Steel	Stainless Steel NACE
Body	1	Carbon Steel	Carbon Steel	316 SS	316 SS NACE
Bonnet	2	Carbon Steel	Carbon Steel	316 SS	316 SS NACE
Adapter Locknut	3	Carbon Steel	Carbon Steel	304 SS	304 SS
Adapter	4	316 SS	316 SS NACE	316 SS	316 SS NACE
Dustcap	5	Nylon	Nylon	Nylon	Nylon
Handle	6	Carbon Steel	Carbon Steel	304 SS	304 SS
Screw	7	304 SS	304 SS	304 SS	304 SS
Fastening Screw	8	304 SS	304 SS	304 SS	304 SS
Needle / Needle Tip	9	316 SS	316 SS NACE	316 SS	316 SS NACE
Gland Washer	10	Carbon Steel	Carbon Steel	304 SS	304 SS
Gland Packing	11	PTFE/Graphite	PTFE/Graphite	PTFE/Graphite	PTFE/Graphite
Dwell Pin	12	Carbon Steel	Carbon Steel	304 SS	304 SS
Gland Packing	13	PTFE/Graphite	PTFE/Graphite	PTFE/Graphite	PTFE/Graphite

Female x Female



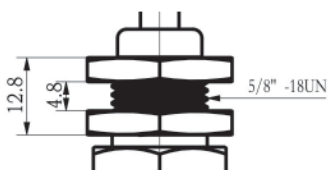
Male x Female



Dimensions

Size	H	L	SQ
1/4" Female x 1/4" Female	2.56" (65mm)	3.50" (89mm)	1.10" (28mm)
1/4" Male x 1/4" Female	2.56" (65mm)	3.50" (89mm)	1.10" (28mm)
3/8" Female x 3/8" Female	2.56" (65mm)	3.50" (89mm)	1.10" (28mm)
3/8" Male x 3/8" Female	2.56" (65mm)	3.50" (89mm)	1.10" (28mm)
1/2" Female x 1/2" Female	2.76" (70mm)	3.50" (89mm)	1.10" (28mm)
1/2" Male x 1/2" Female	2.76" (70mm)	3.50" (89mm)	1.10" (28mm)
3/4" Female x 1/2" Female	2.83" (72mm)	3.66" (93mm)	1.26" (32mm)
3/4" Male x 1/2" Female	2.83" (72mm)	3.50" (89mm)	1.10" (28mm)
3/4" Female x 3/4" Female	2.83" (72mm)	3.66" (93mm)	1.26" (32mm)
3/4" Male x 3/4" Female	2.83" (72mm)	3.66" (93mm)	1.26" (32mm)
1" Female x 1" Female	3.23" (82mm)	3.98" (101mm)	1.58" (40mm)
1" Male x 1" Female	3.23" (82mm)	3.98" (101mm)	1.58" (40mm)

Panel Mont Kit (CPM/SPM)





Description & Features:

- Excellent flow regulation and leak tight
- The one-piece body construction (no welding) provides strength, safety and corrosion resistance
- “Slow opening” prevents sudden pressure surge and instrument damage
- Material includes stainless steel and stainless steel NACE
- Available in Hard Seat (6,000 and 10,000 psi)
- ASME B1.20.1 compliant
- CRN registered
- 5 year warranty

Applications:

- Ideally suited for severe duty oil and gas installations including refineries and processing plants as well as water treatment plants, power plants and hydraulic applications

Angle Body Order Codes (products in bold are normally stock in North America)

NPT Connection	Material	Max. Pressure	Code
1/4" Female x 1/4" Female	Stainless Steel	6,000 psi	NVA8020
		10,000 psi	NVA9020
1/4" Male x 1/4" Female		6,000 psi	NVA8000
		10,000 psi	NVA9000
3/8" Female x 3/8" Female		6,000 psi	NVA8024
		10,000 psi	NVA9024
3/8" Male x 3/8" Female		6,000 psi	NVA8004
		10,000 psi	NVA9004
1/2" Female x 1/2" Female		6,000 psi	NVA8021
		10,000 psi	NVA9021
1/2" Male x 1/2" Female		6,000 psi	NVA8001
		10,000 psi	NVA9001
3/4" Female x 1/2" Female		6,000 psi	NVA8022
		10,000 psi	NVA9022
3/4" Male x 1/2" Female		6,000 psi	NVA8002
		10,000 psi	NVA9002
3/4" Female x 3/4" Female		6,000 psi	NVA8025
		10,000 psi	NVA9025
3/4" Male x 3/4" Female		6,000 psi	NVA8005
		10,000 psi	NVA9005
1" Female x 1" Female	6,000 psi	NVA8023	
	10,000 psi	NVA9023	
1" Male x 1" Female	6,000 psi	NVA8003	
	10,000 psi	NVA9003	

Angle Body NACE Order Codes

NPT Connection	Material	Max. Pressure	Code
1/4" Female x 1/4" Female	Stainless Steel NACE	6,000 psi	NVA8020N
		10,000 psi	NVA9020N
1/4" Male x 1/4" Female		6,000 psi	NVA8000N
		10,000 psi	NVA9000N
3/8" Female x 3/8" Female		6,000 psi	NVA8024N
		10,000 psi	NVA9024N
3/8" Male x 3/8" Female		6,000 psi	NVA8004N
		10,000 psi	NVA9004N
1/2" Female x 1/2" Female		6,000 psi	NVA8021N
		10,000 psi	NVA9021N
1/2" Male x 1/2" Female		6,000 psi	NVA8001N
		10,000 psi	NVA9001N
3/4" Female x 1/2" Female		6,000 psi	NVA8022N
		10,000 psi	NVA9022N
3/4" Male x 1/2" Female		6,000 psi	NVA8002N
		10,000 psi	NVA9002N
3/4" Female x 3/4" Female		6,000 psi	NVA8025N
		10,000 psi	NVA9025N
3/4" Male x 3/4" Female		6,000 psi	NVA8005N
		10,000 psi	NVA9005N
1" Female x 1" Female	6,000 psi	NVA8023N	
	10,000 psi	NVA9023N	
1" Male x 1" Female	6,000 psi	NVA8003N	
	10,000 psi	NVA9003N	

Option suffix:

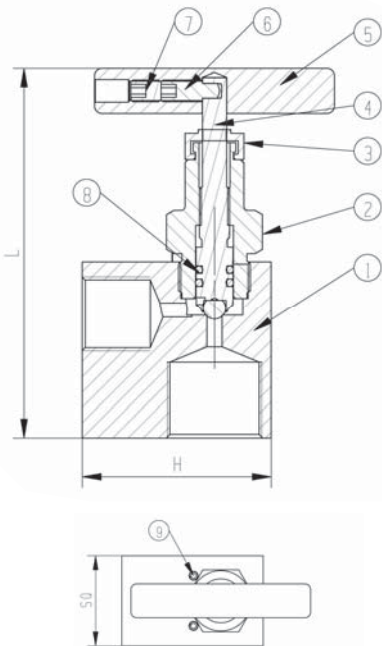
CPM = Carbon steel panel mount kit

SPM = Stainless steel panel mount kit

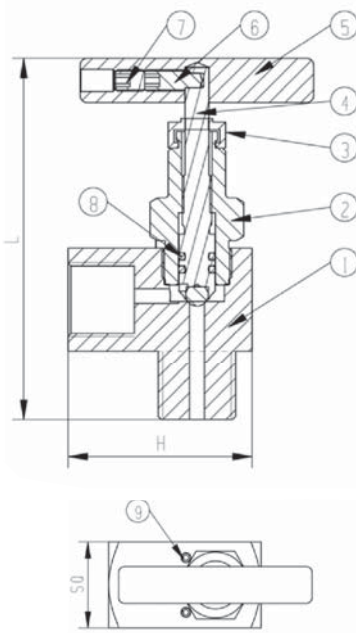
Material

Description	Component Number	Stainless Steel	Stainless Steel NACE
Body	1	316 SS	316 SS NACE
Bonnet	2	316 SS	316 SS NACE
Dustcap	3	Nylon	Nylon
Needle / Needle Tip	4	316 SS	316 SS NACE
Handle	5	304 SS	304 SS
Screw	6	304 SS	304 SS
Fastening Screws	7	304 SS	304 SS
O-ring	8	FKM	FKM
Dwell Pin	9	304 SS	304 SS

Female x Female



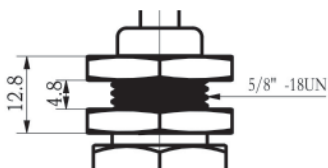
Male x Female



Dimensions

Size	H	L	SQ
1/4" Female x 1/4" Female	1.81" (46mm)	3.66" (93mm)	1.10" (28mm)
1/4" Male x 1/4" Female	1.77" (45mm)	3.58" (91mm)	1.10" (28mm)
3/8" Female x 3/8" Female	1.81" (46mm)	3.66" (93mm)	1.10" (28mm)
3/8" Male x 3/8" Female	1.77" (45mm)	3.82" (97mm)	1.10" (28mm)
1/2" Female x 1/2" Female	1.97" (50mm)	3.82" (97mm)	1.10" (28mm)
1/2" Male x 1/2" Female	1.97" (50mm)	3.82" (97mm)	1.10" (28mm)
3/4" Female x 1/2" Female	1.97" (50mm)	3.82" (97mm)	1.26" (32mm)
3/4" Male x 1/2" Female	1.97" (50mm)	3.86" (98mm)	1.10" (28mm)
3/4" Female x 3/4" Female	1.97" (50mm)	3.82" (97mm)	1.26" (32mm)
3/4" Male x 3/4" Female	1.97" (50mm)	3.86" (98mm)	1.26" (32mm)
1" Female x 1" Female	2.48" (63mm)	4.41" (112mm)	1.58" (40mm)
1" Male x 1" Female	2.48" (63mm)	4.41" (112mm)	1.58" (40mm)

Panel Mont Kit (CPM/SPM)





Description & Features:

- Excellent flow regulation and leak tight
- The one-piece body construction (no welding) provides strength, safety and corrosion resistance
- "Slow opening" prevents sudden pressure surge and instrument damage
- Materials include carbon steel and stainless steel
- Available in Soft Seat (6,000 psi, Delrin seat)
- ASME B1.20.1 compliant
- CRN registered
- 5 year warranty

Applications:

- Ideally suited for severe duty oil and gas installations including refineries and processing plants, water treatment plants, power plants and hydraulic applications

Straight Body Order Codes (products in bold are normally stock in North America)

NPT Connection	Material	Code
1/4" Female x 1/4" Female	Carbon Steel	NVA4020
1/4" Male x 1/4" Female		NVA4000
3/8" Female x 3/8" Female		NVA4024
3/8" Male x 3/8" Female		NVA4004
1/2" Female x 1/2" Female		NVA4021
1/2" Male x 1/2" Female		NVA4001
3/4" Female x 1/2" Female		NVA4022
3/4" Male x 1/2" Female		NVA4002
3/4" Female x 3/4" Female		NVA4025
3/4" Male x 3/4" Female		NVA4005
1" Female x 1" Female		NVA4023
1" Male x 1" Female		NVA4003
1/4" Female x 1/4" Female		Stainless Steel
1/4" Male x 1/4" Female	NVA1000	
3/8" Female x 3/8" Female	NVA1024	
3/8" Male x 3/8" Female	NVA1004	
1/2" Female x 1/2" Female	NVA1021	
1/2" Male x 1/2" Female	NVA1001	
3/4" Female x 1/2" Female	NVA1022	
3/4" Male x 1/2" Female	NVA1002	
3/4" Female x 3/4" Female	NVA1025	
3/4" Male x 3/4" Female	NVA1005	
1" Female x 1" Female	NVA1023	
1" Male x 1" Female	NVA1003	

Dimensions

Size	H	L	SQ
1/4" Female x 1/4" Female	2.56" (65mm)	2.65" (67mm)	1.10" (28mm)
1/4" Male x 1/4" Female	2.56" (65mm)	2.65" (67mm)	1.10" (28mm)
3/8" Female x 3/8" Female	2.56" (65mm)	2.65" (67mm)	1.10" (28mm)
3/8" Male x 3/8" Female	2.56" (65mm)	2.65" (67mm)	1.10" (28mm)
1/2" Female x 1/2" Female	2.76" (70mm)	2.65" (67mm)	1.10" (28mm)
1/2" Male x 1/2" Female	2.76" (70mm)	2.65" (67mm)	1.10" (28mm)
3/4" Female x 1/2" Female	2.84" (72mm)	2.80" (71mm)	1.26" (32mm)
3/4" Male x 1/2" Female	2.84" (72mm)	2.65" (67mm)	1.10" (28mm)
3/4" Female x 3/4" Female	2.84" (72mm)	2.80" (71mm)	1.26" (32mm)
3/4" Male x 3/4" Female	2.84" (72mm)	2.80" (71mm)	1.26" (32mm)
1" Female x 1" Female	3.23" (82mm)	3.12" (79mm)	1.58" (40mm)
1" Male x 1" Female	3.23" (82mm)	3.12" (79mm)	1.58" (40mm)

Option suffix:

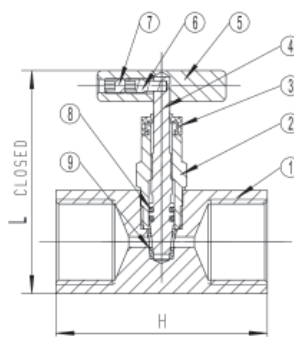
CPM = Carbon steel panel mount kit

SPM = Stainless steel panel mount kit

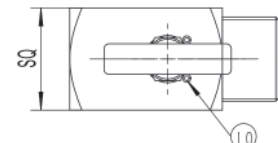
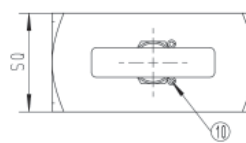
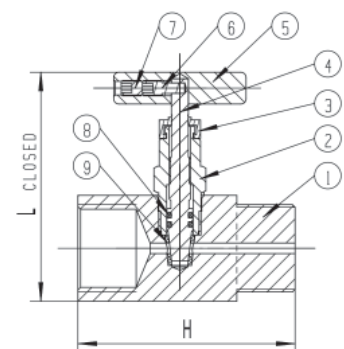
Material

Description	Component Number	Carbon Steel	Stainless Steel
Body	1	Carbon Steel	316 SS
Bonnet	2	Carbon Steel	316 SS
Dustcap	3	Nylon	Nylon
Needle / Needle Tip	4	316 SS	316 SS
Handle	5	Carbon Steel	304 SS
Screw	6	304 SS	304 SS
Fastening Screw	7	304 SS	304 SS
O-ring	8	FKM	FKM
Seat	9	Delrin	Delrin
Slotted Spring Pin	10	304 SS	304 SS

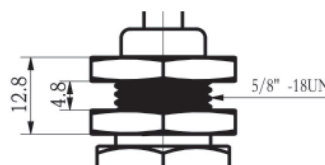
Female x Female

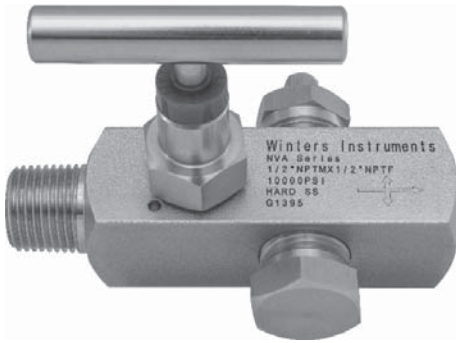


Male x Female



Panel Mount Kit (CPM/SPM)





Description & Features:

- Multiport design reduces the number of gauge and other instrument connections to permanent piping installations, decreasing possible leak paths
- Optional bleed plugs further allow pressure to be bled off without disturbing the permanent piping installation
- 10,000 psi pressure rating @ 200°F
- All stems are 316 stainless steel
- CRN registered
- 5 year warranty

Applications:

- Ideally suited for severe duty oil and gas installations including refineries and processing plants as well as water treatment plants, power plants and hydraulic applications

Multiport Order Codes

NPT Connection	Material	Seat	Max. Pressure	Code
1/2" Male x 1/2" Female	Carbon Steel	Soft Seat	6,000 psi	NVA4201
3/4" Male x 1/2" Female				NVA4202
1/2" Male x 1/2" Female	Stainless Steel			NVA1201
3/4" Male x 1/2" Female				NVA1202
1/2" Male x 1/2" Female	Carbon Steel	Hard Seat	10,000 psi	NVA6201
3/4" Male x 1/2" Female				NVA6202
1/2" Male x 1/2" Female	Stainless Steel			NVA3201
3/4" Male x 1/2" Female				NVA3202

Multiport NACE Order Codes

NPT Connection	Material	Seat	Max. Pressure	Code
1/2" Male x 1/2" Female	Stainless Steel	Hard Seat	10,000 psi	NVA3201N
3/4" Male x 1/2" Female	Steel NACE			NVA3202N

Multiport Optional Bleed Screw and Plug Order Codes

Plug or Screw	Carbon Steel	Stainless Steel	Stainless Steel NACE
M8 Bleed Screw	NVAPLUG02	NVAPLUG01	NVAPLUG01N
1/2" NPT Plug	NVAPLUG06	NVAPLUG05	NVAPLUG05N
1/2" NPT Plug w/Bleed Screw	NVAPLUG08	NVAPLUG07	NVAPLUG07N

Note: Bleed screw and plugs not included

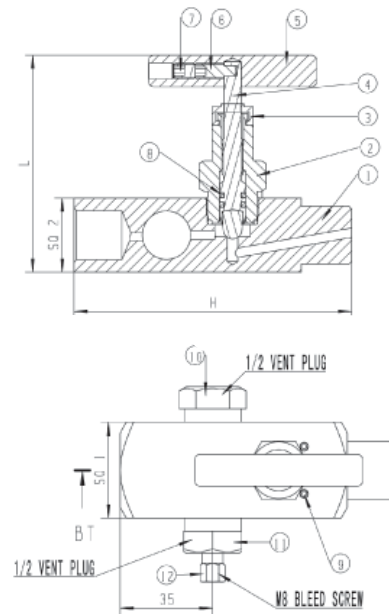
Hard Seat Material

Description	Component Number	Carbon Steel Hard Seat	Stainless Steel Hard Seat	Stainless Steel NACE Hard Seat
Body	1	Carbon Steel	316 SS	316 SS NACE
Bonnet	2	Carbon Steel	316 SS	316 SS NACE
Dustcap	3	Nylon	Nylon	Nylon
Needle / Needle Tip	4	316 SS	316 SS	316 SS NACE
Handle	5	Carbon Steel	304 SS	304 SS
Screw	6	304 SS	304 SS	304 SS
Fastening Screw	7	304 SS	304 SS	304 SS
O-ring	8	FKM	FKM	FKM
Dwell Pin	9	304 SS	304 SS	304 SS
Vent Plug	10	Carbon Steel	316 SS	316 SS NACE
Bleed Screw	11	Carbon Steel	316 SS	316 SS NACE
Vent Plug	12	Carbon Steel	316 SS	316 SS NACE

Hard Seat Dimensions

Size	H	L	SQ1	SQ2
1/2" Male x 1/2" Female	4.13 (105mm)	3.2 (81mm)	1.42 (36mm)	1.10 (28mm)
3/4" Male x 1/2" Female	4.29 (109mm)	3.2 (81mm)	1.42 (36mm)	1.10 (28mm)

Male x Female



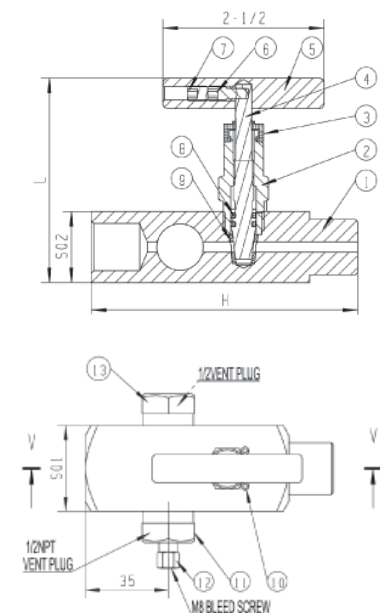
Soft Seat Material

Description	Component Number	Carbon Steel Soft Seat	Stainless Steel Soft Seat
Body	1	Carbon Steel	316 SS
Bonnet	2	Carbon Steel	316 SS
Dustcap	3	Nylon	Nylon
Needle / Needle Tip	4	316 SS	316 SS
Handle	5	Carbon Steel	304 SS
Screw	6	304 SS	304 SS
Fastening Screw	7	304 SS	304 SS
O-ring	8	FKM	FKM
Seat	9	Delrin	Delrin
Dwell Pin	10	304 SS	304 SS
Vent Plug	11	Carbon Steel	316 SS
Bleed Screw	12	Carbon Steel	316 SS
Vent Plug	13	Carbon Steel	316 SS

Soft Seat Dimensions

Size	H	L	SQ1	SQ2
1/2" Male x 1/2" Female	4.13 (105mm)	3.20" (81mm)	1.42 (36mm)	1.10 (28mm)
3/4" Male x 1/2" Female	4.29 (109mm)	3.20" (81mm)	1.42 (36mm)	1.10 (28mm)

Male x Female





Description & Features:

- Block & bleed design allows pressure to be bled off without disturbing the permanent piping installation, allowing quick and easy removal or replacement of instruments
- Available in Soft Seat (6,000 psi) and Hard Seat (10,000 psi)
- All stems are 316 stainless steel
- CRN registered
- 5 year warranty

Applications:

- Ideally suited for severe duty oil and gas installations including refineries and processing plants as well as water treatment plants, power plants and hydraulic applications where venting of media is required

Single Handle Order Codes

NPT Connection	Material	Seat	Max. Pressure	Code
1/4" Female x 1/4" Female	Carbon Steel	Soft Seat	6,000 psi	BBV4020
1/4" Male x 1/4" Female				BBV4000
1/2" Female x 1/2" Female				BBV4021
1/2" Male x 1/2" Female				BBV4001
1/4" Female x 1/4" Female	Stainless Steel			BBV1020
1/4" Male x 1/4" Female				BBV1000
1/2" Female x 1/2" Female				BBV1021
1/2" Male x 1/2" Female				BBV1001
1/4" Female x 1/4" Female	Carbon Steel	Hard Seat	10,000 psi	BBV6020
1/4" Male x 1/4" Female				BBV6000
1/2" Female x 1/2" Female				BBV6021
1/2" Male x 1/2" Female				BBV6001
1/4" Female x 1/4" Female	Stainless Steel			BBV3020
1/4" Male x 1/4" Female				BBV3000
1/2" Female x 1/2" Female				BBV3021
1/2" Male x 1/2" Female				BBV3001

Single Handle NACE Order Codes

NPT Connection	Material	Seat	Max. Pressure	Code
1/4" Female x 1/4" Female	Stainless Steel NACE	Hard Seat	10,000 psi	BBV3020N
1/4" Male x 1/4" Female				BBV3000N
1/2" Female x 1/2" Female				BBV3021N
1/2" Male x 1/2" Female				BBV3001N

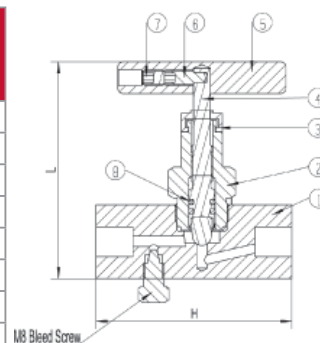
Replacement Bleed Screw Order Codes

Plug or Screw	Carbon Steel	Stainless Steel	Stainless Steel NACE
M8 Bleed Screw	NVAPLUG02	NVAPLUG01	NVAPLUG01N

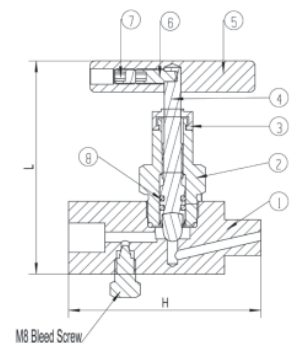
Hard Seat Material

Description	Component Number	Carbon Steel Hard Seat	Stainless Steel Hard Seat	Stainless Steel NACE Hard Seat
Body	1	Carbon Steel	316 SS	316 SS NACE
Bonnet	2	Carbon Steel	316 SS	316 SS NACE
Dustcap	3	Nylon	Nylon	Nylon
Needle / Needle Tip	4	316 SS	316 SS	316 SS NACE
Handle	5	Carbon Steel	304 SS	304 SS
Screw	6	304 SS	304 SS	304 SS
Fastening Screw	7	304 SS	304 SS	304 SS
O-ring	8	FKM	FKM	FKM
Dwell Pin	9	304 SS	304 SS	304 SS
Bleed Screw	10	Carbon Steel	316 SS	316 SS NACE

Female x Female

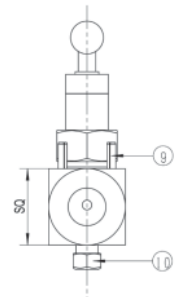
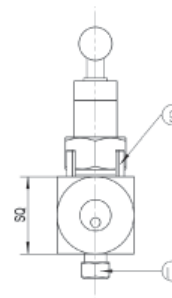


Male x Female



Hard Seat Dimensions

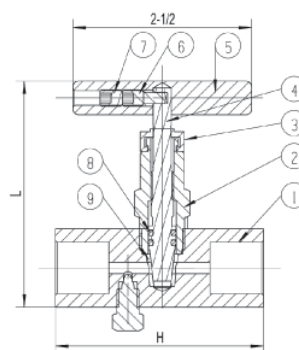
Size	H	L	SQ
1/4" Female x 1/4" Female	2.91" (74mm)	3.25" (83mm)	1.10" (28mm)
1/4" Male x 1/4" Female	2.91" (74mm)	3.25" (83mm)	1.10" (28mm)
1/2" Female x 1/2" Female	2.91" (74mm)	3.25" (83mm)	1.10" (28mm)
1/2" Male x 1/2" Female	2.91" (74mm)	3.25" (83mm)	1.10" (28mm)



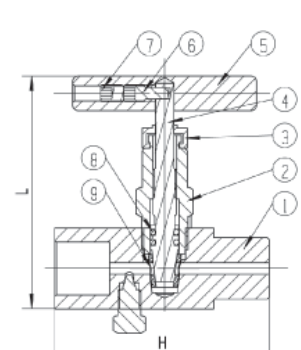
Soft Seat Material

Description	Component Number	Carbon Steel Soft Seat	Stainless Steel Soft Seat
Body	1	Carbon Steel	316 SS
Bonnet	2	Carbon Steel	316 SS
Dustcap	3	Nylon	Nylon
Needle / Needle Tip	4	316 SS	316 SS
Handle	5	Carbon Steel	304 SS
Screw	6	304 SS	304 SS
Fastening Screw	7	304 SS	304 SS
O-ring	8	FKM	FKM
Seat	9	Delrin	Delrin
Dwell Pin	10	304 SS	304 SS
Bleed Screw	11	Carbon Steel	316 SS

Female x Female

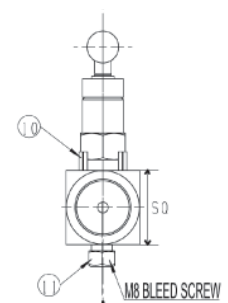
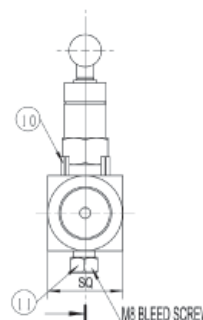


Male x Female



Soft Seat Dimensions

Size	H	L	SQ
1/4" Female x 1/4" Female	2.91" (74mm)	3.20" (81mm)	1.10" (28mm)
1/4" Male x 1/4" Female	2.91" (74mm)	3.20" (81mm)	1.10" (28mm)
1/2" Female x 1/2" Female	2.91" (74mm)	3.20" (81mm)	1.10" (28mm)
1/2" Male x 1/2" Female	2.91" (74mm)	3.20" (81mm)	1.10" (28mm)





Description & Features:

- The one-piece body construction (no welding) provides strength and corrosion resistance
- Block & bleed design allows pressure to be bled off without disturbing the permanent piping installation, allowing quick and easy removal or replacement of instruments
- Available in Soft Seat (6,000 psi) and Hard Seat (10,000 psi)
- All stems are 316 stainless steel
- CRN registered
- 5 year warranty

Applications:

- Ideally suited for severe duty oil and gas installations including refineries and processing plants as well as water treatment plants, power plants and hydraulic applications where controlled venting of media is required

Block & Bleed Two Handle Order Codes

NPT Connection	Material	Seat	Max. Pressure	Code	
1/4" Female x 1/4" Female	Carbon Steel	Soft Seat	6,000 psi	BBV4220	
1/4" Male x 1/4" Female				BBV4200	
1/2" Female x 1/2" Female				BBV4221	
1/2" Male x 1/2" Female				BBV4201	
3/4" Female x 1/2" Female				BBV4251	
3/4" Male x 1/2" Female				BBV4241	
1/4" Female x 1/4" Female	Stainless Steel		Soft Seat	6,000 psi	BBV1220
1/4" Male x 1/4" Female					BBV1200
1/2" Female x 1/2" Female					BBV1221
1/2" Male x 1/2" Female					BBV1201
3/4" Female x 1/2" Female					BBV1251
3/4" Male x 1/2" Female					BBV1241
1/4" Female x 1/4" Female	Carbon Steel	Hard Seat		10,000 psi	BBV6220
1/4" Male x 1/4" Female					BBV6200
1/2" Female x 1/2" Female					BBV6221
1/2" Male x 1/2" Female					BBV6201
3/4" Female x 1/2" Female					BBV6251
3/4" Male x 1/2" Female					BBV6241
3/4" Female x 3/4" Female	BBV6261				
3/4" Male x 3/4" Female	BBV6271				
1/4" Female x 1/4" Female	Stainless Steel		Hard Seat	10,000 psi	BBV3220
1/4" Male x 1/4" Female					BBV3200
1/2" Female x 1/2" Female					BBV3221
1/2" Male x 1/2" Female					BBV3201
3/4" Female x 1/2" Female					BBV3251
3/4" Male x 1/2" Female					BBV3241
3/4" Female x 3/4" Female	BBV3261				
3/4" Male x 3/4" Female	BBV3271				

Block & Bleed Two Handle NACE Order Codes

NPT Connection	Material	Seat	Max. Pressure	Code
1/4" Female x 1/4" Female	Stainless Steel NACE	Hard Seat	10,000 psi	BBV3220N
1/4" Male x 1/4" Female				BBV3200N
1/2" Female x 1/2" Female				BBV3221N
1/2" Male x 1/2" Female				BBV3201N
3/4" Female x 1/2" Female				BBV3251N
3/4" Male x 1/2" Female				BBV3241N

Replacement Bleed Screw and Plug Order Codes

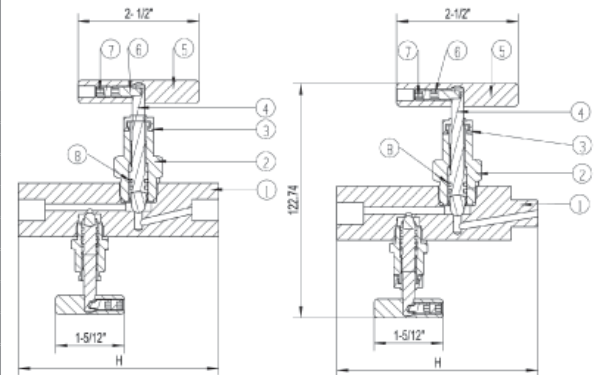
Plug or Screw	Carbon Steel	Stainless Steel	Stainless Steel NACE
M8 Bleed Screw	NVAPLUG02	NVAPLUG01	NVAPLUG01N
1/4" NPT Plug	NVAPLUG04	NVAPLUG03	NVAPLUG03N

Hard Seat Material

Description	Component Number	Carbon Steel Hard Seat	Stainless Steel Hard Seat	Stainless Steel NACE Hard Seat
Body	1	Carbon Steel	316 SS	316 SS NACE
Bonnet	2	Carbon Steel	316 SS	316 SS NACE
Dustcap	3	Nylon	Nylon	Nylon
Needle / Needle Tip	4	316 SS	316 SS	316 SS NACE
Handle	5	Carbon Steel	304 SS	304 SS
Screw	6	304 SS	304 SS	304 SS
Fastening Screw	7	304 SS	304 SS	304 SS
O-rings	8	FKM	FKM	FKM
Dwell Pin	9	304 SS	304 SS	304 SS
Vent Plug	10	Carbon Steel	316 SS	316 SS NACE

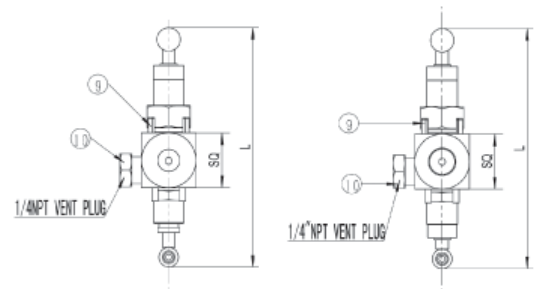
Female x Female

Male x Female



Hard Seat Dimensions

Size	H	L	SQ
1/4" Female x 1/4" Female	4.13" (105mm)	4.83" (123mm)	1.10" (28mm)
1/4" Male x 1/4" Female	4.13" (105mm)	4.83" (123mm)	1.10" (28mm)
1/2" Female x 1/2" Female	4.13" (105mm)	4.83" (123mm)	1.10" (28mm)
1/2" Male x 1/2" Female	4.13" (105mm)	4.83" (123mm)	1.10" (28mm)
3/4" Female x 1/2" Female	4.13" (105mm)	4.99" (127mm)	1.26" (32mm)
3/4" Male x 1/2" Female	4.29" (109mm)	4.83" (123mm)	1.10" (28mm)

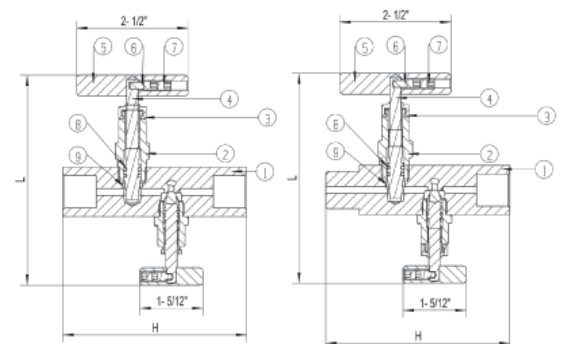


Soft Seat Material

Description	Component Number	Carbon Steel Soft Seat	Stainless Steel Soft Seat
Body	1	Carbon Steel	316 SS
Bonnet	2	Carbon Steel	316 SS
Dustcap	3	Nylon	Nylon
Needle / Needle Tip	4	316 SS	316 SS
Handle	5	Carbon Steel	304 SS
Screw	6	304 SS	304 SS
Fastening Screw	7	304 SS	304 SS
O-rings	8	FKM	FKM
Seat	9	Delrin	Delrin
Dwell Pin	10	304 SS	304 SS
Vent Plug	11	Carbon Steel	316 SS

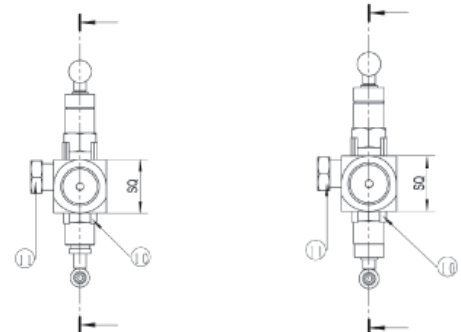
Female x Female

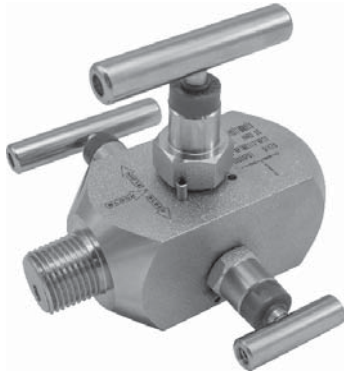
Male x Female



Soft Seat Dimensions

Size	H	L	SQ
1/4" Female x 1/4" Female	4.13" (105mm)	4.72" (120mm)	1.10" (28mm)
1/4" Male x 1/4" Female	4.13" (105mm)	4.72" (120mm)	1.10" (28mm)
1/2" Female x 1/2" Female	4.13" (105mm)	4.72" (120mm)	1.10" (28mm)
1/2" Male x 1/2" Female	4.13" (105mm)	4.72" (120mm)	1.10" (28mm)
3/4" Female x 1/2" Female	4.29" (109mm)	4.88" (124mm)	1.26" (32mm)
3/4" Male x 1/2" Female	4.29" (109mm)	4.68" (119mm)	1.10" (28mm)





Description & Features:

- Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
- Block valve isolates the downstream process fluids, and the bleed valve exhausts upstream fluids enabling instruments to be removed without disturbing the permanent piping installation on the bottom
- The 1/4" NPT vent plug is located 90° to the left and may be removed and replaced with exhaust piping to direct the fluids to a safe location
- Available in Hard Seat (10,000 psi)
- All stems are 316 stainless steel
- CRN registered
- 5 year warranty

Applications:

- Ideally suited for severe duty oil and gas installations including refineries and processing plants as well as water treatment plants, power plants and hydraulic applications where additional safety for shut-down and media venting is required

Double Block & Bleed Order Codes

NPT Connection	Material	Seat	Max. Pressure	Code
1/4" Female x 1/4" Female	Stainless Steel	Hard Seat	10,000 psi	BBV3420
1/4" Male x 1/4" Female				BBV3400
1/2" Female x 1/2" Female				BBV3421
1/2" Male x 1/2" Female				BBV3401
3/4" Female x 1/2" Female				BBV3422
3/4" Male x 1/2" Female				BBV3402

Double Block & Bleed NACE Order Codes

NPT Connection	Material	Seat	Max. Pressure	Code
1/4" Female x 1/4" Female	Stainless Steel NACE	Hard Seat	10,000 psi	BBV3420N
1/4" Male x 1/4" Female				BBV3400N
1/2" Female x 1/2" Female				BBV3421N
1/2" Male x 1/2" Female				BBV3401N
3/4" Female x 1/2" Female				BBV3422N
3/4" Male x 1/2" Female				BBV3402N

Replacement Bleed Screw and Plug Order Codes

Plug or Screw	Stainless Steel	Stainless Steel NACE
M8 Bleed Screw	NVAPLUG01	NVAPLUG01N
1/4" NPT Plug	NVAPLUG03	NVAPLUG03N

Material

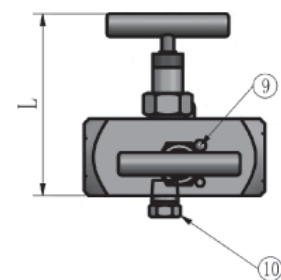
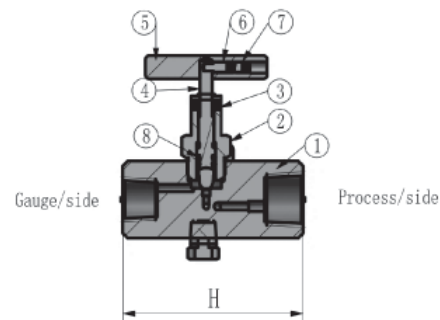
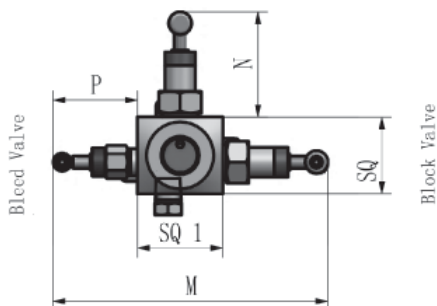
Description	Component Number	Stainless Steel	Stainless Steel NACE
Body	1	316 SS	316 SS NACE
Bonnet	2	316 SS	316 SS NACE
Dust Cap	3	Nylon	Nylon
Needle / Needle Tip	4	316 SS	316 SS NACE
Handle	5	304 SS	304 SS
Screw	6	304 SS	304 SS
Fastening Screw	7	304 SS	304 SS
O-Rings	8	FKM	FKM
Dwell Pin	9	304 SS	304 SS
Plug	10	316 SS	316 SS NACE

Dimensions

Size	H	L	SQ	SQ1	M	N	P
1/4" Female x 1/4" Female	3.70" (94mm)	3.72" (95mm)	1.57" (40mm)	1.75" (44.5mm)	5.50" (140mm)	2.15" (55mm)	1.62" (41mm)
1/4" Male x 1/4" Female	4.00" (102mm)	3.72" (95mm)	1.57" (40mm)	1.75" (44.5mm)	6.10" (155mm)	2.15" (55mm)	1.60" (41mm)
1/2" Female x 1/2" Female	3.70" (94mm)	3.72" (95mm)	1.57" (40mm)	1.75" (44.5mm)	5.50" (140mm)	2.15" (55mm)	1.62" (41mm)
1/2" Male x 1/2" Female	4.00" (102mm)	3.72" (95mm)	1.57" (40mm)	1.75" (44.5mm)	6.10" (155mm)	2.15" (55mm)	1.60" (41mm)
3/4" Female x 1/2" Female	3.70" (94mm)	3.72" (95mm)	1.57" (40mm)	1.75" (44.5mm)	5.50" (140mm)	2.15" (55mm)	1.62" (41mm)
3/4" Male x 1/2" Female	4.00" (102mm)	3.72" (95mm)	1.57" (40mm)	1.75" (44.5mm)	6.10" (155mm)	2.15" (55mm)	1.60" (41mm)

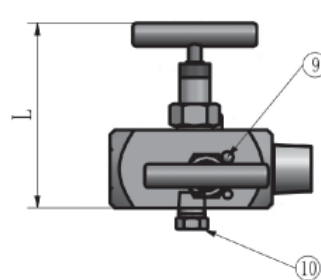
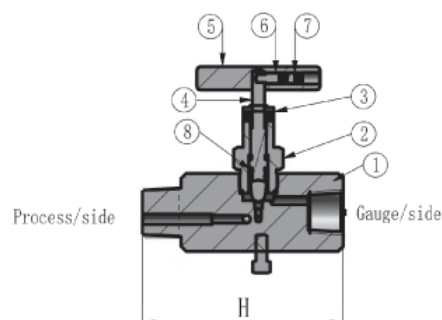
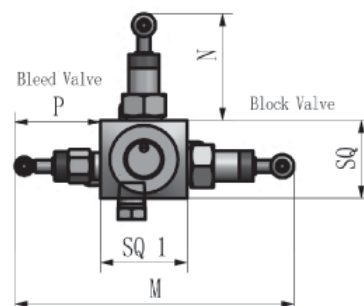
Female x Female

Block Valve



Male x Female

Block Valve





Description & Features:

- A general purpose, versatile 1" (25mm) to 6" (150mm) dial, 304 stainless steel thermometer
- Bi-metallic sensing element for reliable readings
- Back, bottom or adjustable angle connection
- Welded stem length from 2.5" (63mm) and up
- ±1% accuracy
- Anti-parallax dial that reduces operator reading errors (3" (75mm)-6" (150mm))
- Recalibrator screw is standard on all dial sizes
- Use with TBR or TWF thermowells
- ASME B40.200 compliant
- 5 year warranty

Applications:

- Industrial process, heating and air conditioning, ventilation and waste water
- Commercial installations such as barbecues, home brewing systems and cooking devices

Specifications

Dial	1" (25mm), 2" (50mm): Aluminum with black markings, flat dial 3" (75mm), 4" (100mm), 5" (127mm), 6" (150mm): Aluminum with black markings, anti-parallax dial
Case	AISI 304 SS
Stem	AISI 304 SS welded to socket, centre back, bottom or adjustable angle configurations (316 SS optional*) 1" (25mm), 2" (50mm) dial: Centre back connection only
Recalibrator Screw	Standard
Lens	1" (25mm): Polycarbonate Others: Glass standard, hermetically sealed
Ring	AISI 304 SS
Connection	1" (25mm): None 2" (50mm): 1/4" NPT standard 3" (75mm), 4" (100mm), 5" (127mm), 6" (150mm): 1/2" NPT standard
Sensing Element	Bi-metallic coil
Pointer	Aluminum, painted black
Maximum Operating Pressure	125 psi (861 kPa)
Operating Temperature	75% of full scale value (recommended maximum)
Ambient Temperature	-58°F to 248°F (-50°C to 120°C)
Accuracy	±1% of full scale
Enclosure Rating	2" (50mm) to 6" (150mm): IP68

*Contact Winters for 316 SS requirements

Note: The use of a thermowell is recommended to protect the thermometer in corrosive or pressure applications, as well as to maintain a closed system during its removal from the process

Order Codes (products in bold are normally stock in North America)

1" (25mm) Dial, Fixed Centre Back				
Temperature Range	5" Stem Length Code			
-40°F to 160°F	TBM10050B15			
0°F to 250°F	TBM10050B19			
50°F to 500°F&C	TBM10050B11			

2" (50mm) Dial, Fixed Centre Back		
Temperature Range	2.5" Stem Length Code	4" Stem Length Code
-40°F to 120°F&C	TBM20025B2	-
0°F to 200°F&C	TBM20025B6	-
0°F to 240°F&C	-	TBM20040B7
0°F to 250°F&C	TBM20025B8	TBM20040B8
50°F to 300°F&C	TBM20025B9	-
50°F to 400°F&C	TBM20025B10	-
50°F to 500°F&C	TBM20025B11	-

3" (75mm) Dial, Fixed Centre Back				
Temperature Range	2.5" Stem Length Code	4" Stem Length Code	6" Stem Length Code	9" Stem Length Code
-40°F to 120°F&C	TBM30025B2	-	TBM30060B2	-
0°F to 140°F&C	TBM30025B3	-	-	-
-40°F to 160°F&C	TBM30025B4	-	-	-
0°F to 200°F&C	TBM30025B6	TBM30040B6	TBM30060B6	-
20°F to 240°F&C	TBM30025B7	TBM30040B7	TBM30060B7	-
0°F to 250°F	TBM30025B19	TBM30040B19	-	-
0°F to 250°F&C	TBM30025B8	TBM30040B8	TBM30060B8	TBM30090B8
50°F to 300°F&C	TBM30025B9	TBM30040B9	TBM30060B9	TBM30090B9
50°F to 400°F&C	TBM30025B10	TBM30040B10	TBM30060B10	-
50°F to 500°F&C	TBM30025B11	TBM30040B11	TBM30060B11	TBM30090B11
150°F to 750°F&C	-	-	TBM30060B12	TBM30090B12
200°F to 1,000°F&C	-	-	TBM30060B13	-

3" (75mm) Dial, Bottom		
Temperature Range	2.5" Stem Length Code	4" Stem Length Code
0°F to 200°F	TBM31025B17	-
0°F to 200°F&C	TBM31025B6	-
0°F to 250°F&C	TBM31025B8	-
20°F to 240°F&C	TBM31025B7	TBM31040B7
50°F to 500°F&C	-	TBM31040B11

3" (75mm) Dial, Adjustable Angle		
Temperature Range	2.5" Stem Length Code	4" Stem Length Code
0°F to 200°F&C	TBM32025B6	TBM32040B6
0°F to 250°F&C	TBM32025B8	TBM32040B8
50°F to 300°F&C	TBM32025B9	-

5" (127mm) Dial, Fixed Centre Back				
Temperature Range	2.5" Stem Length Code	4" Stem Length Code	6" Stem Length Code	9" Stem Length Code
-40°F to 120°F&C	TBM50025B2	-	TBM50060B2	TBM50090B2
0°F to 140°F&C	TBM50025B3	-	-	-
20°F to 240°F&C	TBM50025B7	-	-	-
0°F to 250°F&C	TBM50025B8	TBM50040B8	-	-
50°F to 300°F&C	TBM50025B9	TBM50040B9	TBM50060B9	-
50°F to 500°F&C	TBM50025B11	-	TBM50060B11	-
150°F to 750°F&C	-	TBM50040B12	TBM50060B12	-

5" (127mm) Dial, Adjustable Angle				
Temperature Range	2.5" Stem Length Code	4" Stem Length Code	6" Stem Length Code	9" Stem Length Code
0°F to 140°F&C	TBM52025B3	TBM52040B3	TBM52060B3	-
-40°F to 160°F&C	-	TBM52060B4	-	-
0°F to 200°F&C	-	TBM52040B6	-	-
20°F to 240°F&C	TBM52025B7	-	-	-
0°F to 250°F&C	TBM52025B8	TBM52040B8	TBM52060B8	TBM52090B8
50°F to 300°F&C	-	TBM52040B9	-	-

Order Codes: To order, specify the code for each dial/stem length and the range: i.e. TBM20025 - B26

Dial Size	Stem Length	Fixed Centre Back	Bottom	Adjustable Angle
1" (25mm) pocket thermometer	5" (127mm)	TBM10050	-	-
2" (50mm) lab thermometer	8" (200mm)	TBM20080	-	-
2" (50mm)	2.5" (63mm)	TBM20025	-	-
	4" (100mm)	TBM20040	-	-
	6" (150mm)	TBM20060	-	-
	9" (230mm)	TBM20090	-	-
	12" (300mm)	TBM20120	-	-
	15" (370mm)	TBM20150	-	-
3" (75mm)	2.5" (63mm)	TBM30025	TBM31025	TBM32025
	4" (100mm)	TBM30040	TBM31040	TBM32040
	6" (150mm)	TBM30060	TBM31060	TBM32060
	9" (230mm)	TBM30090	TBM31090	TBM32090
	12" (300mm)	TBM30120	TBM31120	TBM32120
	15" (370mm)	TBM30150	TBM31150	TBM32150
4" (100mm)	2.5" (63mm)	TBM40025	TBM41025	TBM42025
	4" (100mm)	TBM40040	TBM41040	TBM42040
	6" (150mm)	TBM40060	TBM41060	TBM42060
	9" (230mm)	TBM40090	TBM41090	TBM42090
	12" (300mm)	TBM40120	TBM41120	TBM42120
	15" (370mm)	TBM40150	TBM41150	TBM42150
5" (127mm)	2.5" (63mm)	TBM50025	TBM51025	TBM52025
	4" (100mm)	TBM50040	TBM51040	TBM52040
	6" (150mm)	TBM50060	TBM51060	TBM52060
	9" (230mm)	TBM50090	TBM51090	TBM52090
	12" (300mm)	TBM50120	TBM51120	TBM52120
	15" (370mm)	TBM50150	TBM51150	TBM52150
6" (150mm)	2.5" (63mm)	TBM60025	TBM61025	TBM62025
	4" (100mm)	TBM60040	TBM61040	TBM62040
	6" (150mm)	TBM60060	TBM61060	TBM62060
	9" (230mm)	TBM60090	TBM61090	TBM62090
	12" (300mm)	TBM60120	TBM61120	TBM62120
	15" (370mm)	TBM60150	TBM61150	TBM62150

°F & °C (Dual)	Code	°F only	Code	°C only	Code	°C & °F (Dual)	Code
-100°F to 150°F & -70°C to 70°C	B1	-40°F to 120°F	B14	-80°C to 50°C	B26	-30°C to 70°C & -20°F to 150°F	B75
-40°F to 120°F & -40°C to 50°C	B2	-40°F to 160°F	B15	-50°C to 50°C	B27	0°C to 120°C & 30°F to 250°F	B76
0°F to 140°F & -20°C to 60°C	B3	0°F to 140°F	B16	0°C to 50°C	B28	0°C to 300°C & 30°F to 570°F	B77
-40°F to 160°F & -40°C to 70°C	B4	0°F to 200°F	B17	-50°C to 100°C	B29	0°C to 200°C & 30°F to 400°F	B79
25°F to 125°F & -5°C to 50°C	B5	20°F to 240°F	B18	0°C to 100°C	B30	0°C to 250°C & 30°F to 480°F	B80
0°F to 200°F & -20°C to 90°C	B6	0°F to 250°F	B19	-20°C to 120°C	B31	0°C to 50°C & 30°F to 120°F	B81
20°F to 240°F & -5°C to 115°C	B7	50°F to 300°F	B20	0°C to 150°C	B32	-20°C to 60°C & -4°F to 140°F	B85
0°F to 250°F & -20°C to 120°C	B8	50°F to 400°F	B21	0°C to 200°C	B33	-	-
50°F to 300°F & 10°C to 150°C	B9	50°F to 550°F	B22	0°C to 300°C	B34	-	-
50°F to 400°F & 10°C to 200°C	B10	150°F to 750°F	B23	0°C to 450°C	B35	-	-
50°F to 500°F & 10°C to 260°C	B11	0°F to 800°F	B24	100°C to 550°C	B36	-	-
150°F to 750°F & 70°C to 400°C	B12	200°F to 1,000°F	B25	0°C to 500°C	B39	-	-
200°F to 1,000°F & 100°C to 550°C	B13	14°F to 140°F	B38	-10°C to 60°C	B40	-	-
14°F to 140°F & -10°C to 60°C	B37	-	-	100°C to 400°C	B41	-	-
32°F to 212°F & 0°C to 100°C	B52	-	-	100°C to 540°C	B42	-	-
32°F to 140°F & 0°C to 60°C	B84	-	-	-30°C to 70°C	B45	-	-
-60°F to 300°F & -50°C to 150°C	B86	-	-	20°C to 120°C	B46	-	-
-	-	-	-	-30°C to 170°C	B47	-	-
-	-	-	-	0°C to 120°C	B48	-	-
-	-	-	-	0°C to 400°C	B49	-	-
-	-	-	-	0°C to 250°C	B50	-	-
-	-	-	-	20°C to 60°C	B51	-	-
-	-	-	-	0°C to 60°C	B82	-	-

Other ranges, stem lengths and connection sizes available upon request. For glycerin fill, maximum temperature limit is 300°F (150°C).

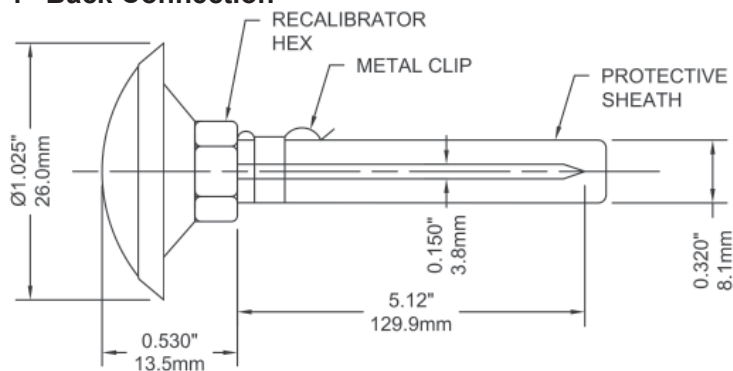
Silicone fill available.

Option suffix for above order code only:

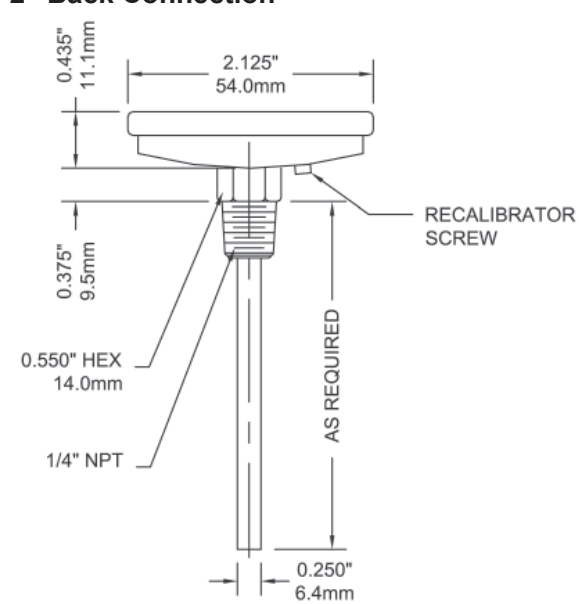
- | | | |
|-----------------------------------|-----------------------------------|---|
| AP3 = 3" (75mm) acrylic lens | BG5 = 5" (127mm) glycerin filling | SCK = Socket conversion kit |
| AP4 = 4" (100mm) acrylic lens | BG6 = 6" (150mm) glycerin filling | SPG3 = 3" (75mm) Shatterproof glass lens |
| AP5 = 5" (127mm) acrylic lens | DUCT = Aluminum duct flange | SPG4 = 4" (100mm) Shatterproof glass lens |
| AP6 = 6" (150mm) acrylic lens | RSP4 = 4" (100mm) Red set pointer | SPG5 = 5" (127mm) Shatterproof glass lens |
| BG3 = 3" (75mm) glycerin filling | RSP5 = 5" (127mm) Red set pointer | SPG6 = 6" (150mm) Shatterproof glass lens |
| BG4 = 4" (100mm) glycerin filling | RSP6 = 6" (150mm) Red set pointer | |

Note: The use of a thermowell is recommended to protect the thermometer from corrosive or damaging environments, as well as to maintain a closed system during its removal from the process

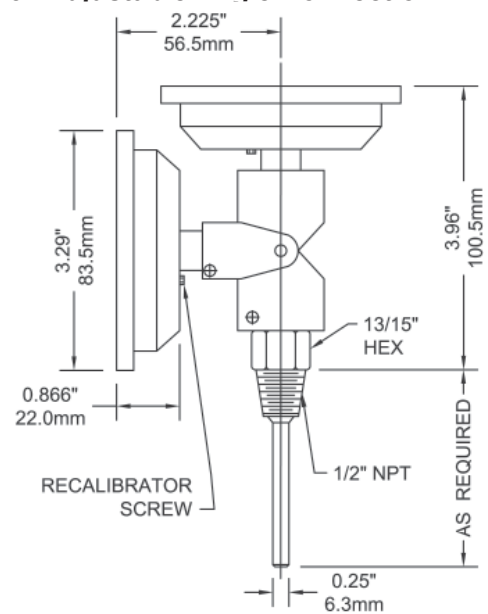
1" Back Connection



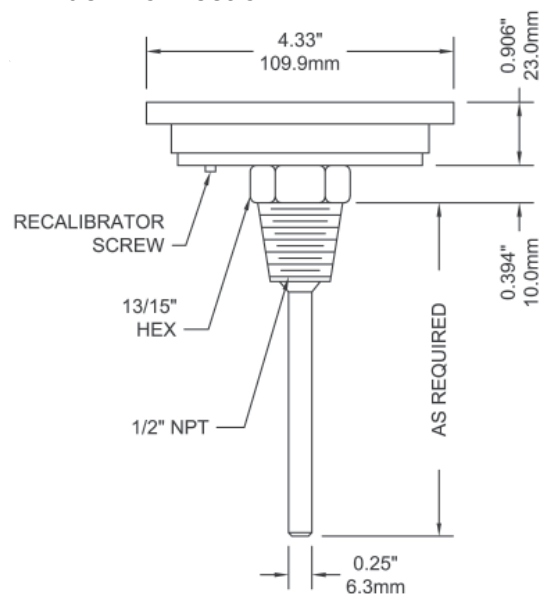
2" Back Connection



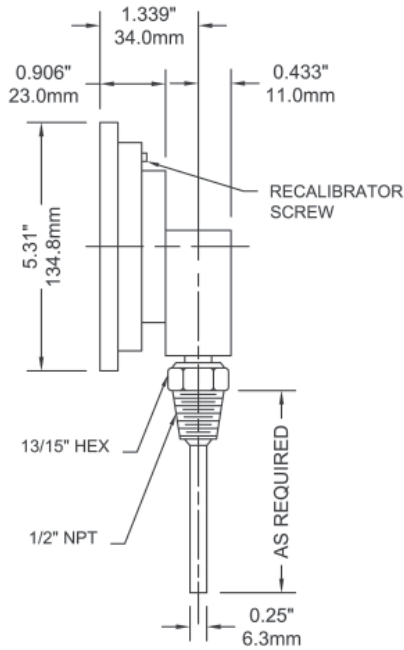
3" Adjustable Angle Connection



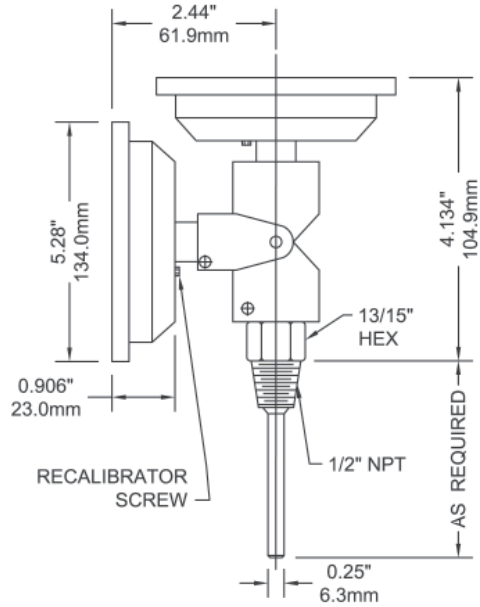
4" Back Connection



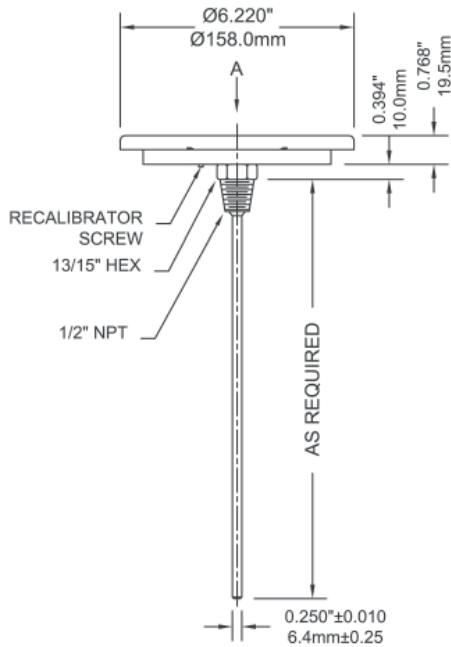
5" Bottom Connection



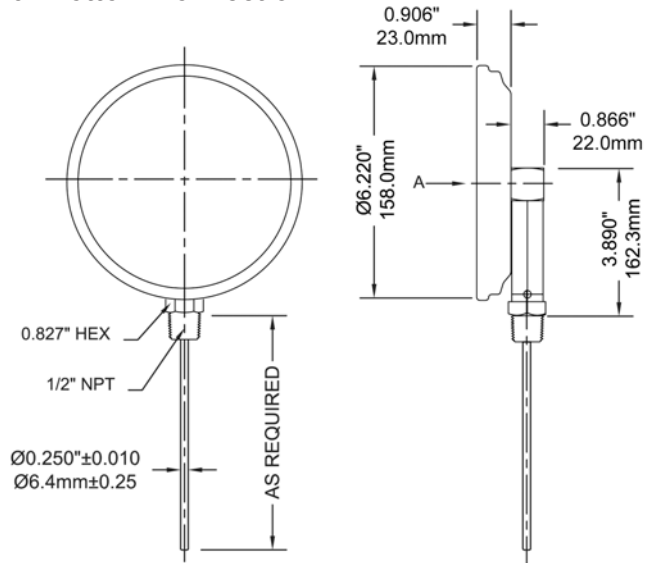
5" Adjustable Angle Connection



6" Back Connection



6" Bottom Connection





Note: RoHS applies only with SS bulb, SS capillary and SS thermowell

Description & Features:

- Versatile, heavy duty gas or vapour thermometer for remote reading
- Many varieties are available from stock; special requests are built to order
- Brass or stainless steel capillary and bulbs
- Plain, sliding union or thermowell connection
- Capillary lengths over 5' available
- 1/2" bulb diameter
- Panel or direct mount
- Gas: $\pm 1\%$ accuracy; Vapour: $\pm 2\%$ accuracy
- ASME B40.200 compliant
- 5 year warranty

Applications:

- For remote temperature sensing of tanks, reservoirs and process lines
- Appropriate for industrial and commercial installations

Specifications	
Dial	2.5" (63mm), 3.5" (90mm), 4" (100mm), 4.5" (115mm), 6" (150mm), 8.5" (215mm)
Case/Ring	2.5" (63mm): 316 SS 3.5" (90mm), 4" (100mm): Steel, painted black Others: Aluminum, painted black
Lens	2.5" (63mm) to 6" (150mm): Glass Others: Polycarbonate
Connection	Plain, Brass or 316 SS sliding union, Brass or 316 SS thermowell
Sensing Fill	Gas or vapour
Movement	Gas: 304 SS Vapour: Brass
Pointer	Aluminum, painted black
Accuracy	Gas: $\pm 1\%$ of full scale value Vapour: $\pm 2\%$ of full scale value
Bulb	6" (150mm), 1/2" diameter standard Custom sizes available
Warning (brass connection only)	⚠ WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

Selection Notes

Gas-filled Systems

- For industrial applications requiring accurate and uniform response over the entire range. Scale is linear
- The capillary should be located in an area that has an ambient temperature of approximately 74°F (23°C). If the temperature around the capillary is significantly higher than 74°F (23°C), the thermometer will show a reading that is higher than actual process temperature. If the capillary ambient temperature is significantly lower than 74°F (23°C), the reading will be lower than the actual process temperature

Vapour-filled Systems

- Have non-linear scales and provide economical but reliable service for most industrial applications
- To ensure accurate readings, the operating temperature should fall in the 2/3 of the scale
- Thermometer may show a temperature offset to actual temperature value when the bulb and thermometer are installed at different elevations. To avoid this, install the bulb and thermometer at the same elevation wherever possible. Offset errors only occur when the thermometer's ambient temperature is higher than the bulb temperature

Capillary Protection

- Is recommended to protect the capillary from physical damage
- Copper braided armour is used in conjunction with brass bulb
- Stainless steel armour shall be used in conjunction with 316 SS bulb

Note: Winters recommends using a stainless steel bulb and capillary for all process temperatures above 500°F (260°C)

Gas-filled Systems - Order Codes (products in bold are normally in stock)

Dial Size	2.5" (63mm)				3.5" (90mm)	
Bulb and Capillary Material	SS					
Capillary Length and Connection	5' Bottom	5' Back	10' Bottom	10' Back	5' Back	10' Back
30°F to 240°F&C	-	-	-	TRR12253100G18	TRR12353050G18	TRR12353100G18
40°F to 220°F&C	TRR11253050G19	TRR12253050G19	TRR11253100G19	TRR12253100G19	TRR12353050G19	TRR12353100G19
80°F to 300°F&C	TRR11253050G20	TRR12253050G20	TRR11253100G20	TRR12253100G20	TRR12353050G20	TRR12353100G20
100°F to 400°F&C	TRR11253050G21	TRR12253050G21	TRR11253100G21	TRR12253100G21	TRR12353050G21	TRR12353100G21
100°F to 500°F&C	TRR11253050G22	-	TRR11253100G22	-	-	-

Dial Size	4" (100mm)			
Bulb and Capillary Material	SS			
Capillary Length and Connection	5' Bottom	5' Back	10' Bottom	10' Back
30°F to 240°F&C	-	TRR12403050G18	-	TRR12403100G18
40°F to 220°F&C	TRR11403050G19	TRR12403050G19	TRR11403100G19	TRR12403100G19
80°F to 300°F&C	TRR11403050G20	TRR12403050G20	TRR11403100G20	TRR12403100G20
100°F to 400°F&C	TRR11403050G21	TRR12403050G21	TRR11403100G21	TRR12403100G21
100°F to 500°F&C	TRR11403050G22	-	TRR11403100G22	-

Dial Size	4.5" (115mm)			
Bulb and Capillary Material	SS			
Capillary Length and Connection	5' Bottom	5' Back	10' Bottom	10' Back
30°F to 240°F&C	-	TRR12453050G18	-	TRR12453100G18
40°F to 220°F&C	TRR11453050G19	TRR12453050G19	TRR11453100G19	TRR12453100G19
80°F to 300°F&C	TRR11453050G20	TRR12453050G20	TRR11453100G20	TRR12453100G20
100°F to 400°F&C	TRR11453050G21	TRR12453050G21	TRR11453100G21	TRR12453100G21
100°F to 500°F&C	TRR11453050G22	-	TRR11453100G22	-

Gas-filled Systems - Order Codes (products in bold are normally in stock)

Dial Size	6" (150mm)			
Bulb and Capillary Material	SS			
Capillary Length and Connection	5' Bottom	5' Back	10' Bottom	10' Back
30°F to 240°F&C	-	TRR12603050G18	-	TRR12603100G18
40°F to 220°F&C	TRR11603050G19	TRR12603050G19	TRR11603100G19	TRR12603100G19
80°F to 300°F&C	TRR11603050G20	TRR12603050G20	TRR11603100G20	TRR12603100G20
100°F to 400°F&C	TRR11603050G21	TRR12603050G21	TRR11603100G21	TRR12603100G21
100°F to 500°F&C	TRR11603050G22	-	TRR11603100G22	-

Vapour-filled Systems - Order Codes (products in bold are normally in stock)

Dial Size	2.5" (63mm)				3.5" (90mm)	
Bulb and Capillary Material	Brass and Copper					
Capillary Length and Connection	5' Bottom	5' Back	10' Bottom	10' Back	5' Back	10' Back
-40°F to 110°F&C	TRR31251050V9	-	-	-	-	-
0°F to 180°F&C	TRR31251050V11	TRR32251050V11	TRR31251100V11	-	TRR32351050V11	TRR32351100V11
20°F to 220°F&C	-	TRR32251050V12	TRR31251100V12	-	TRR32351050V12	-
50°F to 250°F&C	TRR31251050V13	-	TRR31251100V13	TRR32251100V13	-	TRR32351100V13
100°F to 350°F&C	TRR31251050V15	TRR32251050V15	TRR31251100V15	TRR32251100V15	-	TRR32351100V15

Dial Size	4" (100mm)			
Bulb and Capillary Material	Brass and Copper			
Capillary Length and Connection	5' Bottom	5' Back	10' Bottom	10' Back
0°F to 180°F&C	TRR31401050V11	-	TRR31401100V11	TRR32401100V11
20°F to 220°F&C	TRR31401050V12	TRR32401050V12	TRR31401100V12	TRR32401100V12
50°F to 250°F&C	TRR31401050V13	-	-	TRR32401100V13
100°F to 350°F&C	TRR31401050V15	TRR32401050V15	TRR31401100V15	TRR32401100V15

Dial Size	4.5" (115mm)			
Bulb and Capillary Material	Brass and Copper			
Capillary Length and Connection	5' Bottom	5' Back	10' Bottom	10' Back
0°F to 180°F&C	TRR31451050V11	TRR32451050V11	TRR31451100V11	TRR32451100V11
20°F to 220°F&C	TRR31451050V12	TRR32451050V12	TRR31451100V12	TRR32451100V12
50°F to 250°F&C	TRR31451050V13	TRR32451050V13	TRR31451100V13	TRR32451100V13
100°F to 350°F&C	TRR31451050V15	TRR32451050V15	TRR31451100V15	TRR32451100V15

Dial Size	6" (150mm)			
Bulb and Capillary Material	Brass and Copper			
Capillary Length and Connection	5' Bottom	5' Back	10' Bottom	10' Back
0°F to 180°F&C	TRR31601050V11	TRR32601050V11	TRR31601100V11	TRR32601100V11
20°F to 220°F&C	TRR31601050V12	-	TRR31601100V12	TRR32601100V12
50°F to 250°F&C	TRR31601050V13	TRR32601050V13	-	TRR32601100V13
100°F to 350°F&C	TRR31601050V15	TRR32601050V15	-	TRR32601100V15

Built-to-Order Codes

Specify the code for each section and the range:

e.g. TRR3 - 2 - 35 - 1 - 05 - 1 - 50/250°F

(Section I - II - III - IV - V - VI - range)

TRR's are made to order in 4-6 weeks. For stocked TRR's see the previous page

Section	Code	Description Type	Section	Code	Description Bulb and Capillary			
					Bulb Dimensions	Bulb Material	Capillary Material	Capillary Protection
I	TRR1	Gas Remote Reading	IV	1	6" (150mm) OAL, 1/2" OD	Brass	Copper	Copper Dbl Braided
	TRR2	Gas Direct Reading		2	6" (150mm) OAL, 1/2" OD	316 SS	316 SS	None
	TRR3	Vapour Remote Reading		3	6" (150mm) OAL, 1/2" OD	316 SS	316 SS	SS Armour
	TRR4	Vapour Direct Reading	Capillary Length (ft)					
II	Case Type, Connection		V	05	05			
	1	Bottom connection, back flange		10	10			
	2	Back connection, front flange		30	30			
	3	Back connection, back flange		XX	XX			
	4	Vari-angle connection, (Direct reading only)	Connection					
III	Dial Size		VI	0	None			
	25	2.5" (63mm)		1	1/2" NPT brass sliding union			
	35	3.5" (90mm)		2	1/2" NPT SS sliding union			
	Back connection only			3	3/4" NPT brass sliding union			
	40	4" (100mm)		4	3/4" NPT SS sliding union			
	45	4.5" (115mm)		5	1/2" NPT brass thermowell			
	60	6" (150mm)		6	1/2" NPT SS thermowell			
85	8.5" (215mm)	7	3/4" NPT brass thermowell					
			8	3/4" NPT SS thermowell				
			Z	Custom connection				

Ranges	°F only	°F & °C	°C only
Gas Ranges	-40°F to 110°F	-40°F to 110°F & -40°C to 40°C	-40°C to 40°C
	-20°F to 120°F	-20°F to 120°F & -28°C to 48°C	-28°C to 48°C
	30°F to 150°F	30°F to 150°F & 0°C to 65°C	0°C to 65°C
	0°F to 180°F	0°F to 180°F & -20°C to 80°C	-20°C to 80°C
	30°F to 240°F	30°F to 240°F & 0°C to 115°C	0°C to 115°C
	40°F to 220°F	40°F to 220°F & 5°C to 105°C	5°C to 105°C
	80°F to 300°F	80°F to 300°F & 30°C to 150°C	30°C to 150°C
	100°F to 400°F*	100°F to 400°F* & 40°C to 200°C*	40°C to 200°C
	100°F to 500°F*	100°F to 500°F* & 40°C to 260°C*	40°C to 260°C
	0°F to 600°F*	0°F to 600°F* & -20°C to 320°C*	-20°C to 320°C
200°F to 1,000°F*	200°F to 1,000°F* & 90°C to 540°C*	90°C to 540°C	
Vapour Ranges	-40°F to 110°F	-40°F to 110°F & -40°C to 40°C	-40°C to 40°C
	0°F to 100°F	0°F to 100°F & -20°C to 38°C	-20°C to 38°C
	0°F to 180°F	0°F to 180°F & -20°C to 80°C	-20°C to 80°C
	20°F to 220°F	20°F to 220°F & 0°C to 100°C	0°C to 100°C
	50°F to 250°F	50°F to 250°F & 10°C to 120°C	10°C to 120°C
	100°F to 350°F	100°F to 350°F & 40°C to 175°C	40°C to 175°C
	200°F to 450°F	200°F to 450°F & 100°C to 230°C	100°C to 230°C

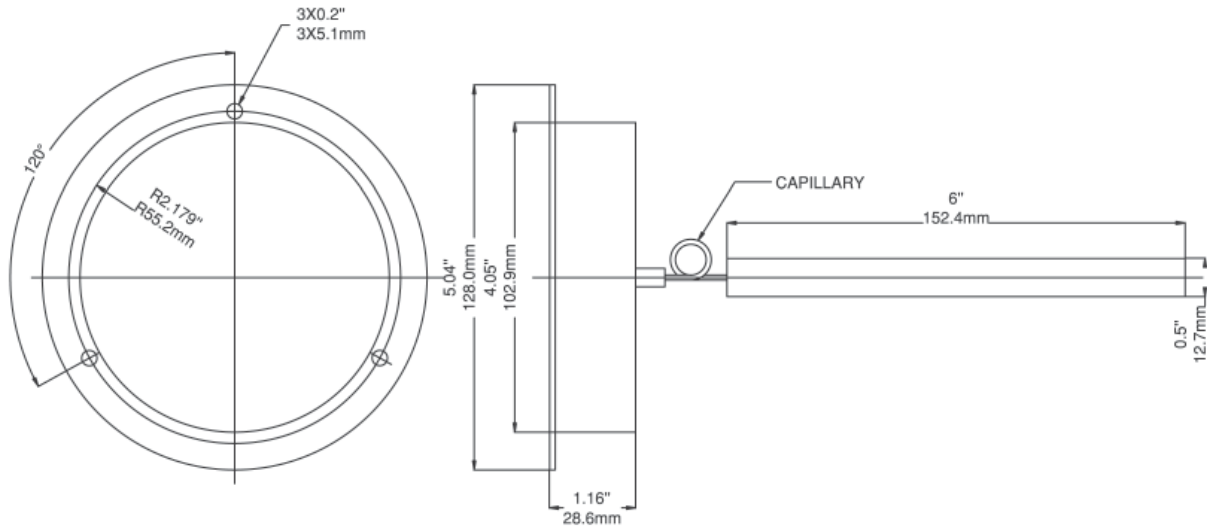
*Ranges require stainless steel capillary and bulb

Please contact us for:

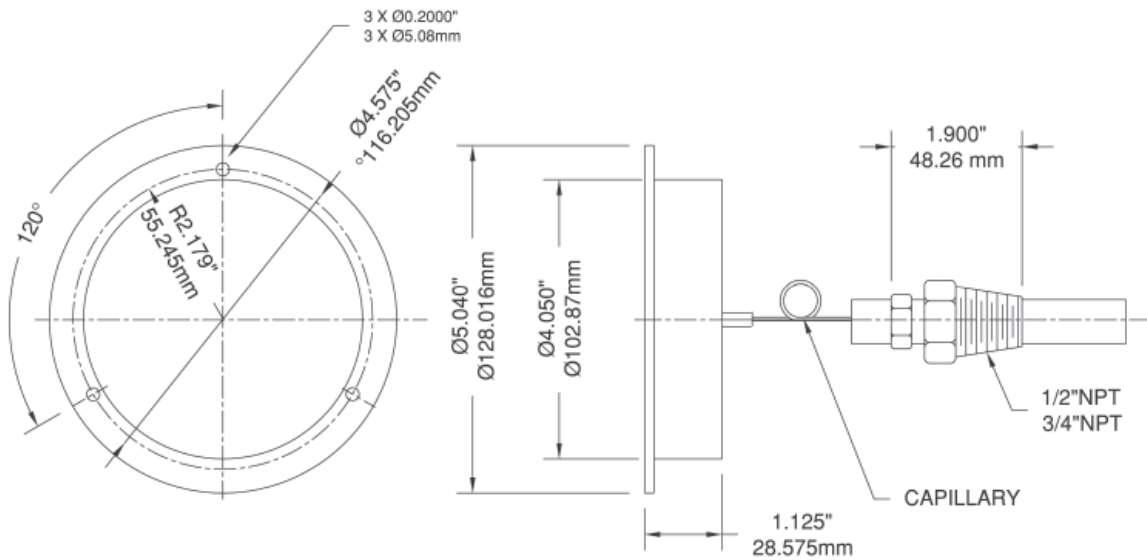
Duct flanges, sliding union, various bulb dimensions, averaging bulb (gas only), other ranges, stainless steel 4" (100mm) and 6" (150mm) cases and capillary available on gas remote/direct reading models

Note: The use of a thermowell is recommended to protect the thermometer in corrosive or pressure applications, as well as to maintain a closed system during its removal from the process.

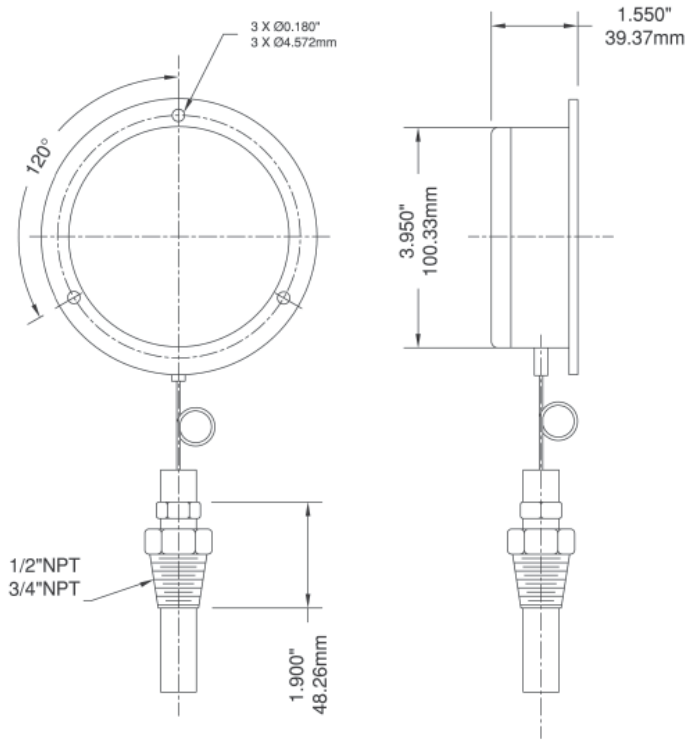
4" Back Connection, Front Flange, Plain Bulb



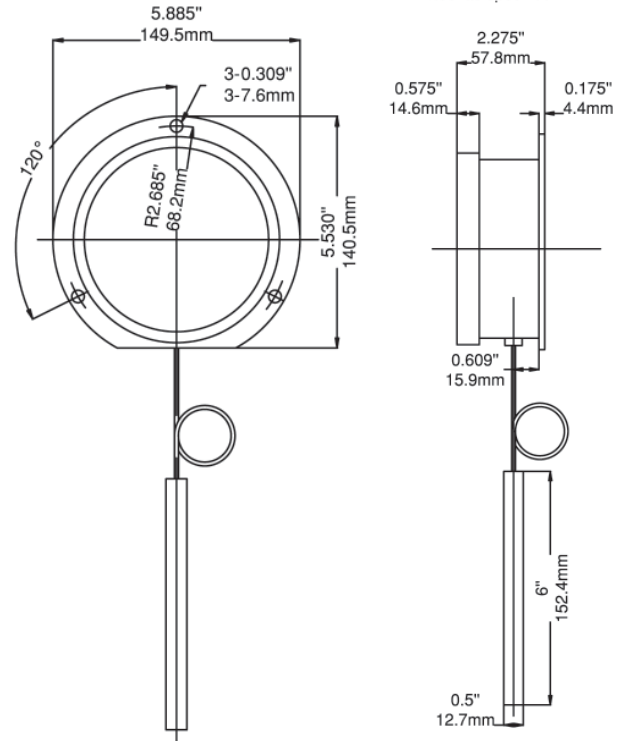
4" Back Connection, Front Flange, Sliding Union



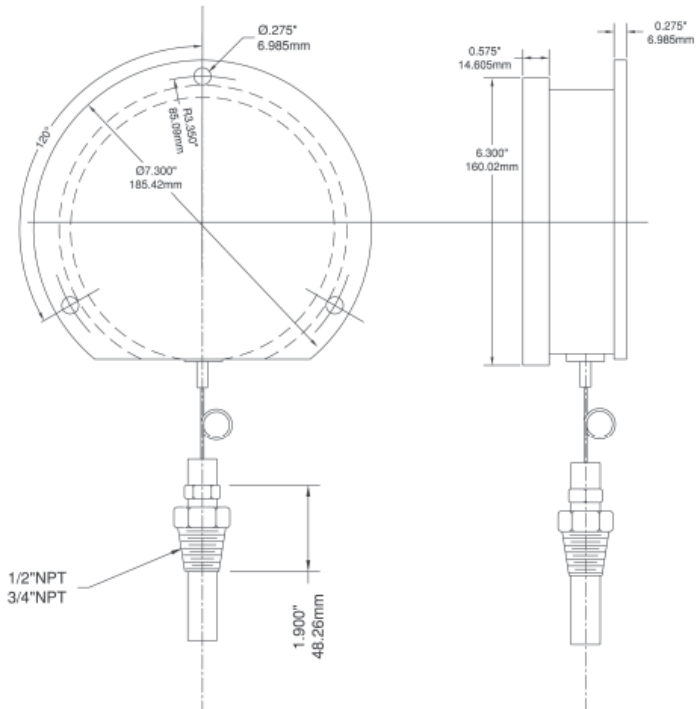
4" Bottom Connection, Back Flange, Sliding Union



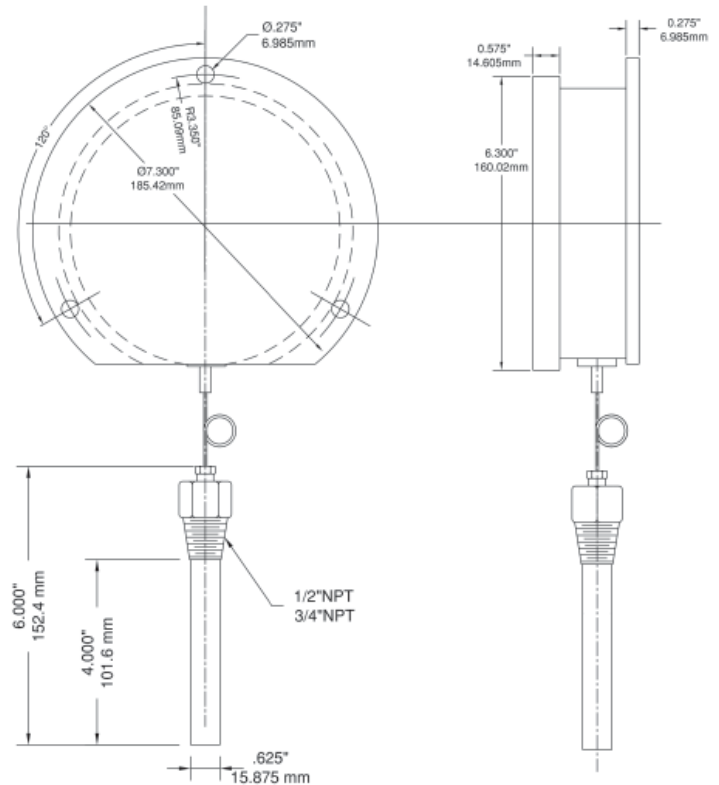
4.5" Bottom Connection, Back Flange, Plain Bulb



6" Bottom Connection, Back Flange, Sliding Union



6" Bottom Connection, Back Flange, Sliding Union





Description & Features:


- Available in a wide range of materials for use on most applications
- Standard “stepped construction” offering is complemented by an array of custom thermowells including: straight, tapered, sanitary and flanged configurations
- CRN registered
- 5 year warranty

Applications:

- Allows for the creation of a “sealed system”, whereby the thermometer can be removed from the application without the need for shutting down or draining the system
- To protect the thermometer from possible exposure to the process media



RoHS applies only to 304 SS and 316 SS thermowells

Specifications	
Thermometer Connection	1/2" NPTF connection standard Other thread sizes are available upon request
Process Connection	3/4", 1/2" or 1" NPT connection standard Other thread sizes are available upon request
Bore	0.260" (6.5mm) bore standard
Construction	Stepped construction standard Tapered construction available upon request
Material	Brass, 304 SS, 316 SS standard Other materials available upon request
Warning (brass thermowells only)	 WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

Material	Pressure - Temperature Rating (PSI)						
	70°F (21°C)	200°F (93°C)	400°F (204°C)	600°F (316°C)	800°F (427°C)	1,000°F (538°C)	1,200°F (649°C)
Brass	5,000	4,200	1,000	-	-	-	-
304 SS	7,000	6,200	5,600	5,400	5,200	4,500	1,650
316 SS	7,000	7,000	6,400	6,200	6,100	5,100	2,500

Note: For process media velocities above 10m/s (30 feet/s) contact Winters

Order Codes (Thermowells without lag. Products in bold are normally stock in North America)

Stem Length A	NPT Connection P	Material	Code	Standard Insertion Length U	Shank Diameter
2.5" (63mm)	1/2"	Brass	TBR2550	1-3/8" (35mm)	1/2" (12.5mm)
		304 SS	TBR2550-1		
		316 SS	TBR2550-2		
	3/4"	Brass	TBR25		
		304 SS	TBR25-1		
		316 SS	TBR25-2		
4" (100mm)	1/2"	Brass	TBR3550	2.5" (63mm)	1/2" (12.5mm)
		304 SS	TBR3550-1		
		316 SS	TBR3550-2		
	3/4"	Brass	TBR35		
		304 SS	TBR35-1		
		316 SS	TBR35-2		
	1"	Brass	TBR35100		
		304 SS	TBR35100-1		
		316 SS	TBR35100-2		
6" (150mm)	1/2"	Brass	TBR650	4.5" (115mm)	5/8" (16mm)
		304 SS	TBR650-1		
		316 SS	TBR650-2		
	3/4"	Brass	TBR6		
		304 SS	TBR6-1		
		316 SS	TBR6-2		
	1"	Brass	TBR6100		
		304 SS	TBR6100-1		
		316 SS	TBR6100-2		
9" (229mm)	1/2"	Brass	TBR950	7.5" (190mm)	5/8" (16mm)
		304 SS	TBR950-1		
		316 SS	TBR950-2		
	3/4"	Brass	TBR9		
		304 SS	TBR9-1		
		316 SS	TBR9-2		
	1"	Brass	TBR9100		
		304 SS	TBR9100-1		
		316 SS	TBR9100-2		
12" (305mm)	1/2"	Brass	TBR1250	10.5" (266mm)	5/8" (16mm)
		304 SS	TBR1250-1		
		316 SS	TBR1250-2		
	3/4"	Brass	TBR12		
		304 SS	TBR12-1		
		316 SS	TBR12-2		
	1"	Brass	TBR12100		
		304 SS	TBR12100-1		
		316 SS	TBR12100-2		
15" (370mm)	3/4"	Brass	TBR15	13" (330mm)	3/4" (19mm)
		304 SS	TBR15-1		
		316 SS	TBR15-2		

Order Codes (Thermowells with lag.)

Stem Length A	NPT Connection P	Material	Code	Standard Insertion Length U	Lag Length T	Shank Diameter
6" (150mm)	1/2"	Brass	TBRN650	2.5" (63mm)	2" (50mm)	1/2" (12.5mm)
		304 SS	TBRN650-1			
		316 SS	TBRN650-2			
	3/4"	Brass	TBRN6			
		304 SS	TBRN6-1			
		316 SS	TBRN6-2			
	1"	Brass	TBRN6100			
		304 SS	TBRN6100-1			
		316 SS	TBRN6100-2			
9" (229mm)	1/2"	Brass	TBRN950	4.5" (115mm)	3" (75mm)	5/8" (16mm)
		304 SS	TBRN950-1			
		316 SS	TBRN950-2			
	3/4"	Brass	TBRN9			
		304 SS	TBRN9-1			
		316 SS	TBRN9-2			
	1"	Brass	TBRN9100			
		304 SS	TBRN9100-1			
		316 SS	TBRN9100-2			
12" (305mm)	1/2"	Brass	TBRN1250	7.5" (190mm)	3" (75mm)	5/8" (16mm)
		304 SS	TBRN1250-1			
		316 SS	TBRN1250-2			
	3/4"	Brass	TBRN12			
		304 SS	TBRN12-1			
		316 SS	TBRN12-2			
	1"	Brass	TBRN1210			
		304 SS	TBRN1210-1			
		316 SS	TBRN1210-2			

Other configurations available. 1/4" NPT thermometer connection available. BSP threads available upon request. Tapered construction available upon request. Other lengths available up to 48" (welded construction only). Other materials such as Monel®, Inconel®, Hastelloy® C and Titanium are available upon request.

Note: Standard well is stepped as shown to 0.5" OD except U=2.5". Straight shank supplied as an option. Specify additional lagging extensions as needed

Option suffix:

SCK = Socket Conversion Kit

W60 = Brass cap and chain (1/2")

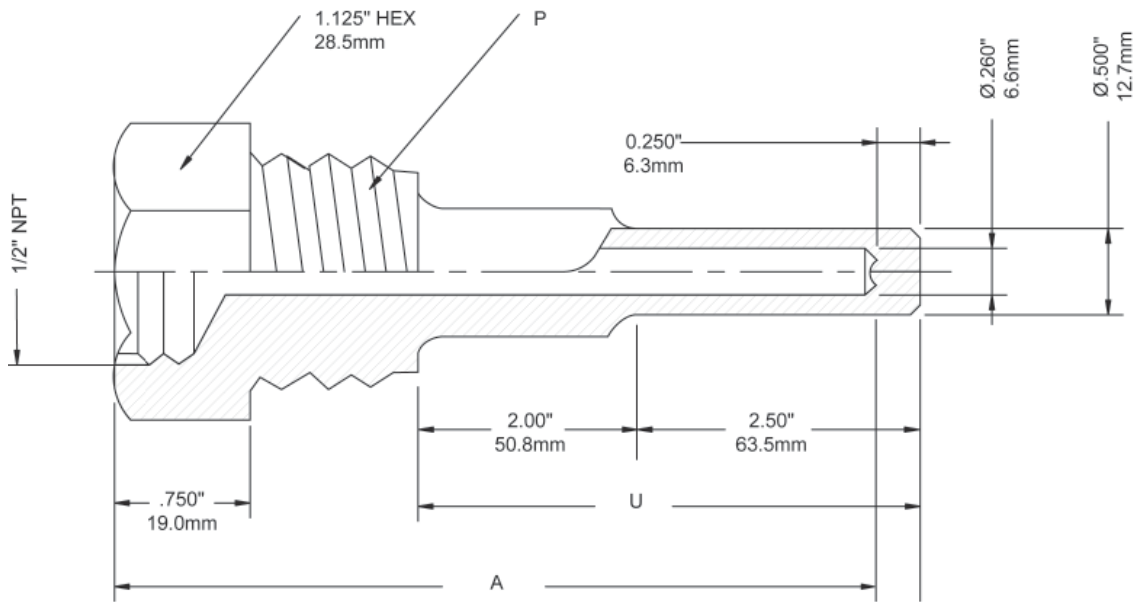
W60-1 = Stainless steel cap and chain (1/2")

Hastelloy® is a registered trademark of Haynes International, Inc.

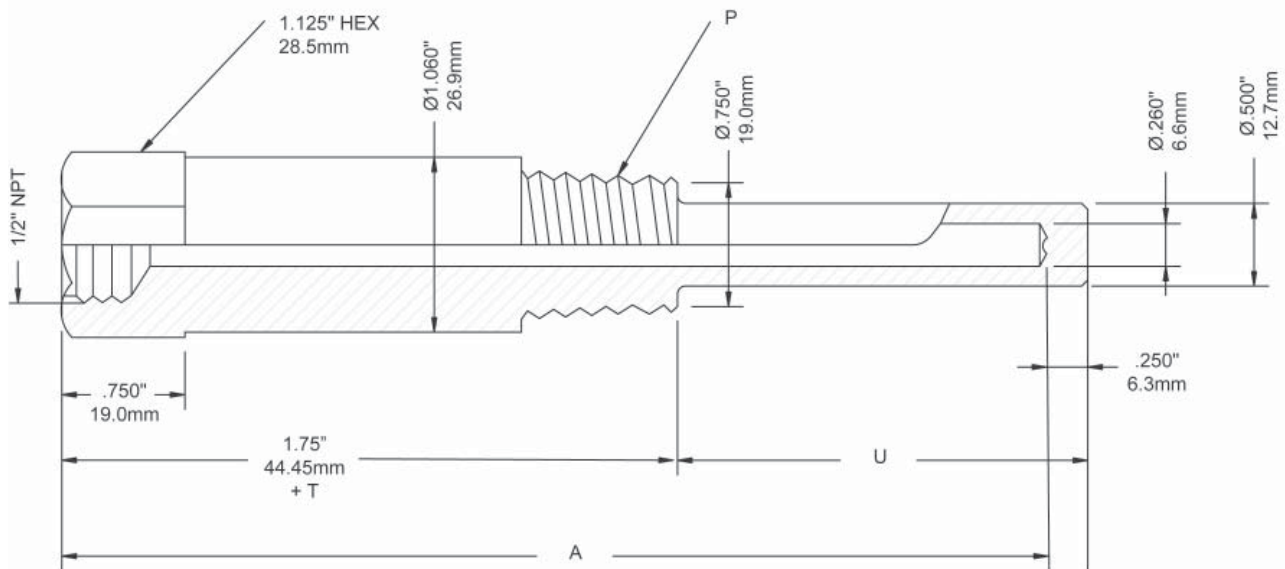
Inconel® is a registered trademark of Special Metals Corporation

Monel® is a registered trademark of Inco Alloys International

Standard Thermowell without lag



Standard Thermowell with lag





Description & Features:

- Designed for use on a closed system
- 5 year warranty

Applications:

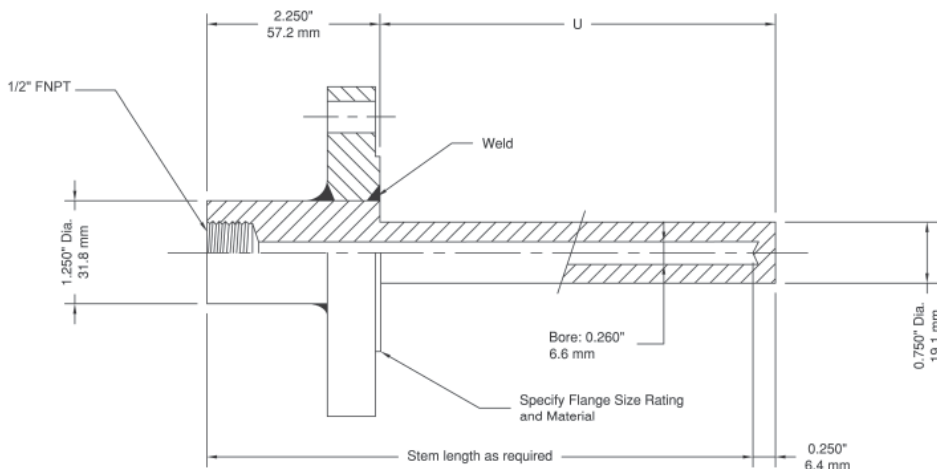
- Isolates temperature sensor from process media

Order Codes

Element Length	U Dimension	Material	Flange Size and Rating		
			150# Code		
			1" (25mm)	1.5" (40mm)	2" (50mm)
4" (100mm) stem	2" (50mm)	304 SS	TWF11504304	TWF151504304	TWF21504304
		316 SS	TWF11504316	TWF151504316	TWF21504316
6" (150mm) stem	4" (100mm)	304 SS	TWF11506304	TWF151506304	TWF21506304
		316 SS	TWF11506316	TWF151506316	TWF21506316
9" (225mm) stem	7" (178mm)	304 SS	TWF11509304	TWF151509304	TWF21509304
		316 SS	TWF11509316	TWF151509316	TWF21509316
12" (300mm) stem	10" (254mm)	304 SS	TWF115012304	TWF1515012304	TWF215012304
		316 SS	TWF115012316	TWF1515012316	TWF215012316
15" (370mm) stem	13" (330mm)	304 SS	TWF115015304	TWF1515015304	TWF215015304
		316 SS	TWF115015316	TWF1515015316	TWF215015316

Element Length	U Dimension	Material	Flange Size and Rating		
			300# Code		
			1" (25mm)	1.5" (40mm)	2" (50mm)
4" (100mm) stem	2" (50mm)	304 SS	TWF13004304	TWF153004304	TWF23004304
		316 SS	TWF13004316	TWF153004316	TWF23004316
6" (150mm) stem	4" (100mm)	304 SS	TWF13006304	TWF153006304	TWF23006304
		316 SS	TWF13006316	TWF153006316	TWF23006316
9" (225mm) stem	7" (178mm)	304 SS	TWF13009304	TWF153009304	TWF23009304
		316 SS	TWF13009316	TWF153009316	TWF23009316
12" (300mm) stem	10" (254mm)	304 SS	TWF130012304	TWF1530012304	TWF230012304
		316 SS	TWF130012316	TWF1530012316	TWF230012316
15" (370mm) stem	13" (330mm)	304 SS	TWF130015304	TWF1530015304	TWF230015304
		316 SS	TWF130015316	TWF1530015316	TWF230015316

Other configurations available.





Description & Features:

- Designed to be welded in place within the system
- Economical
- 5 year warranty

Applications:

- Tanks or feed water system on boilers where no internal threads are available

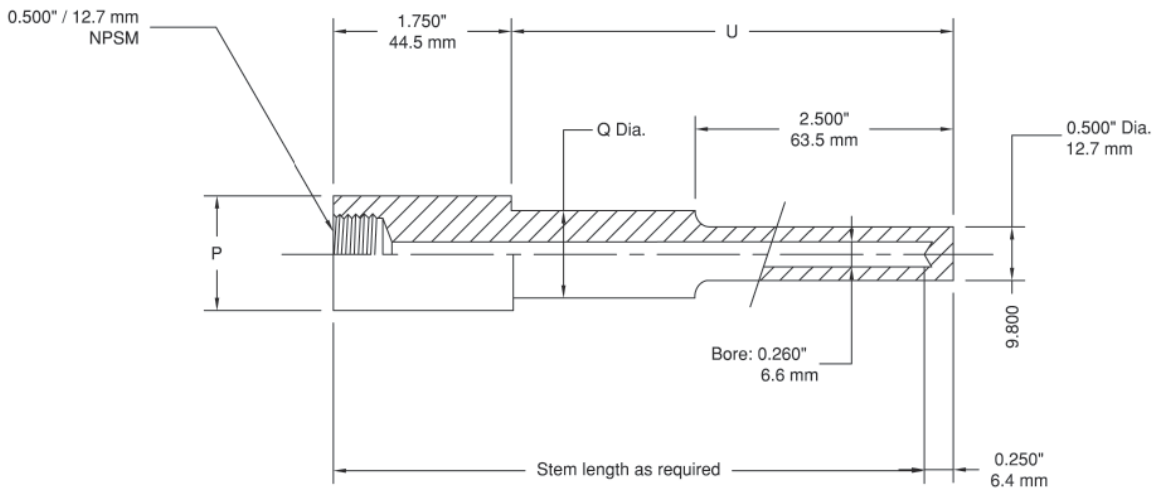
Specifications

Material	304 or 316 SS
Thermometer Connection	1/2" NPT
Bore	0.260" (6.5mm) standard

Order Codes

Stem Length	Pipe Diameter	Dimension P	Dimension Q	Dimension U	Material	Code
4" (100mm)	3/4"	1.05" (27mm)	1/2" (12.5mm)	2.5" (63mm)	304 SS	TWS754304
					316 SS	TWS754316
	1"	1.315" (33mm)	7/8" (22mm)		304 SS	TWS14304
					316 SS	TWS14316
6" (150mm)	3/4"	1.05" (27mm)	3/4" (19mm)	4.5" (115mm)	304 SS	TWS756304
					316 SS	TWS756316
	1"	1.315" (33mm)	7/8" (22mm)		304 SS	TWS16304
					316 SS	TWS16316
9" (230mm)	3/4"	1.05" (27mm)	3/4" (19mm)	7.5" (191mm)	304 SS	TWS759304
					316 SS	TWS759316
	1"	1.315" (33mm)	7/8" (22mm)		304 SS	TWS19304
					316 SS	TWS19316
12" (300mm)	3/4"	1.05" (27mm)	3/4" (19mm)	10.5" (267mm)	304 SS	TWS7512304
					316 SS	TWS7512316
	1"	1.315" (33mm)	7/8" (22mm)		304 SS	TWS112304
					316 SS	TWS112316

Other configurations available.





Description & Features:

- Utilized where a welded thermowell is required
- 5 year warranty

Applications:

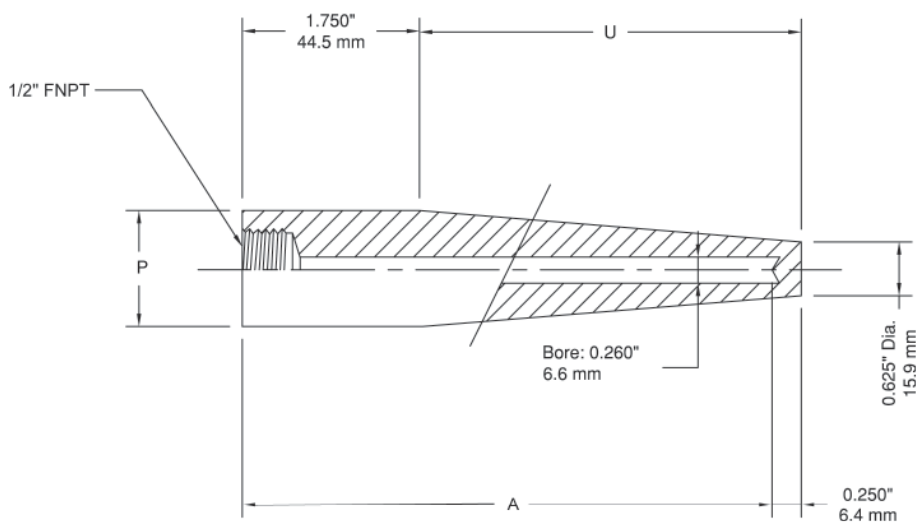
- Where high pressure or high flow of media is present (i.e. pipes)

Specifications	
Material	304 or 316 SS
Thermometer Connection	1/2" NPT
Bore	0.260" (6.5mm) Standard
Other	1.5" Connection pipe size standard

Order Codes

Stem Length A	Pipe Diameter	Dimension P	Dimension U	Material	Code
4" (100mm)	3/4"	1.5" (40mm)	2.5" (63mm)	304 SS	TWW154304
				316 SS	TWW154316
4.5" (115mm)			304 SS	TWW156304	
			316 SS	TWW156316	
7.5" (191mm)			304 SS	TWW159304	
			316 SS	TWW159316	
10.5" (267mm)			304 SS	TWW1512304	
			316 SS	TWW1512316	

Other configurations available. Cap and chain supplied as an option. Thermowells for 1" pipe available. 0.385" bores available.





Note: RoHS only applies to SS adjustable snubber


Description & Features:

- Prolongs the life of pressure instruments by reducing the damaging effects of pulsation
- ASME B40.100 compliant
- CRN registered
- 1 year warranty

Applications:

- Can be utilized to change the amount of restriction
- Pumps, compressors, hydraulic presses or fluid power applications

Specifications

Body	Brass or SS
Connection	1/4" or 1/2" NPTM x NPTF
Temperature Range	-40°F to 248°F (-40°C to 120°C)
Warning (brass internals only)	 WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

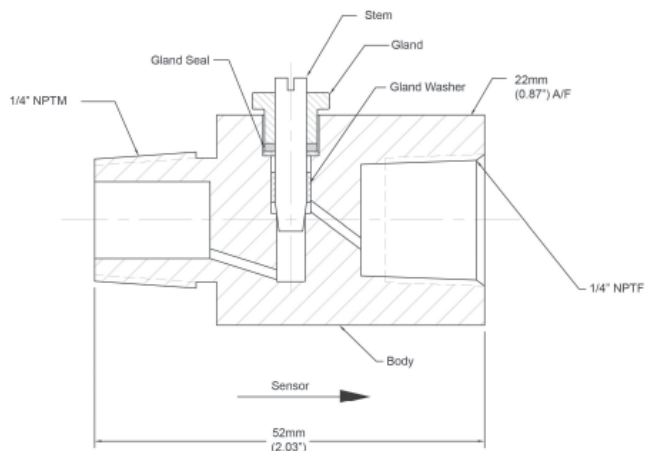
Order Codes

Pressure Rating	Material / NPT Connection	Seal	Code
6,000 psi	Brass 1/4" MxF	PTFE	SAS540
	Brass 1/2" MxF		SAS541
	SS 1/4" MxF		SAS542
10,000 psi	SS 1/2" MxF		SAS543

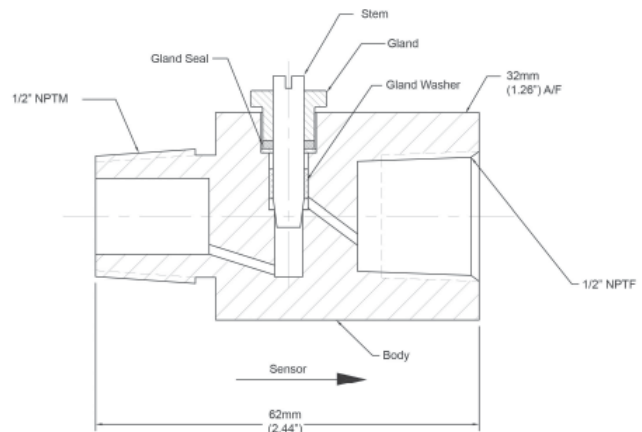
Description	SS	Brass
Gland Seal	PTFE	
Stem	316 SS	
Gland	316 SS	Brass
Gland Washer	316 SS	
Body	316 SS	Brass

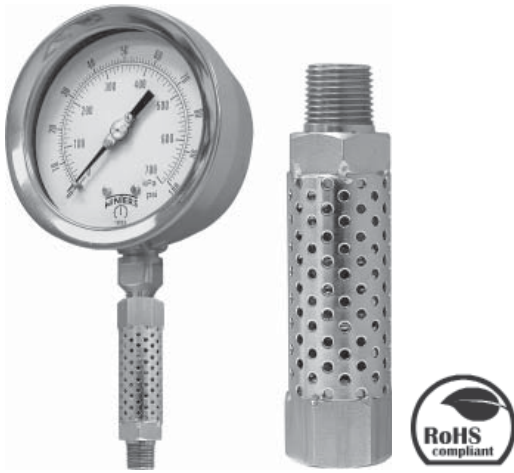
Caution: When adjusting the valve, do not adjust more than two turns from the closed position as leakage will occur.

1/4" NPT



1/2" NPT



**Description & Features:**

- Perforated case c/w spiral tubing protects pressure gauges, switches and transmitters. Used where the process media temperature exceeds the rating of the instrument
- For process media temperatures up to 570°F. Can reduce the media temperature by as much as 500°F*
- CRN registered
- 1 year warranty

Applications:

- Clean (no particulate) media, gases
- When used with a diaphragm seal, the pressure rating of the diaphragm seal must be acknowledged
- Extreme high temperature installations
- Used in oil & gas installations, chemical processing and mining

Note: Pressure gauge sold separately

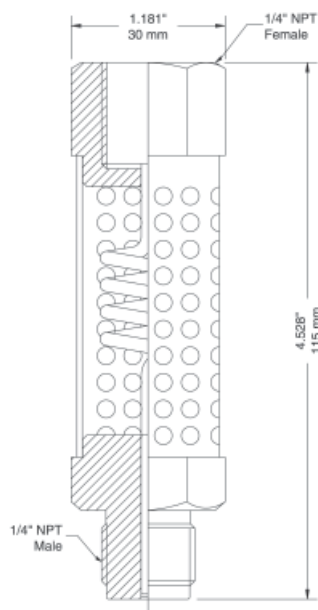
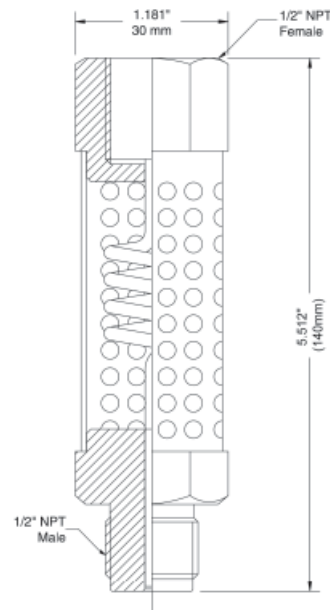
Specifications

Socket	316 L SS
Tube	316 SS
Maximum Operating Pressure	1,500 psi
Maximum Process Temperature	570°F (300°C) or 932°F (500°C)
Connection	1/4" NPTM x 1/4" NPTF 1/2" NPTM x 1/2" NPTF

Order Codes (products in bold are normally stock in North America)

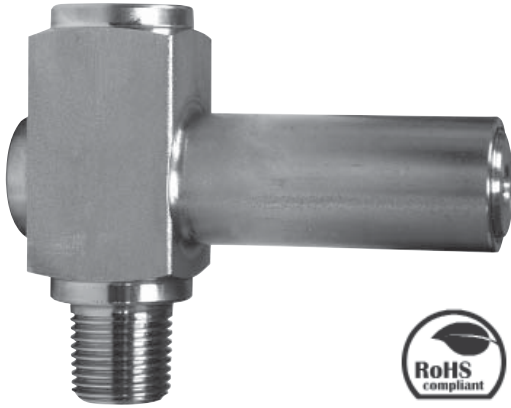
Maximum Process Temperature	1/4" NPTM x 1/4" NPTF	1/2" NPTM x 1/2" NPTF
570°F (300°C)	SCT-400	SCT-500
932°F (500°C)	SCT-600	SCT-700

Other connections available upon request

SCT-400**1/4" NPTM x 1/4" NPTF****SCT-500****1/2" NPTM x 1/2" NPTF**

*Degree of cooling is dependent on ambient conditions

SOP Over Pressure Protector



Description & Features:

- Setpoint adjustments are made by manipulating an external adjusting screw and lock nut
- Automatically shuts off pressure to the instrument once the adjustable preset pressure is exceeded
- CRN registered
- 1 year warranty

Applications:

- Utilized to protect pressure instruments against surges and pulsation
- Available in Bellows and Piston Type

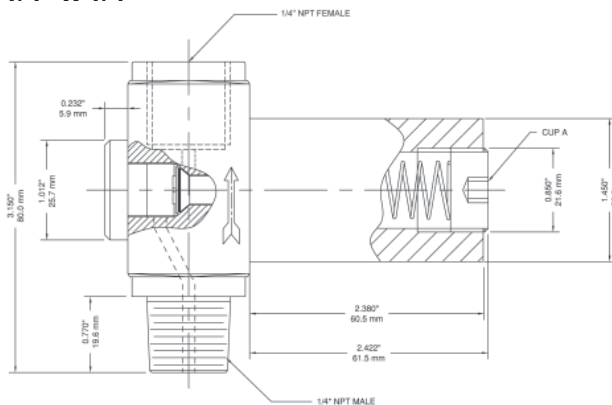
Specifications

Body	Bellows Type: 316 SS Piston Type: 316 SS
Gasket	FKM
Maximum Operating Pressure	10,000 psi
Temperature Rating	-40°F to 248°F (-40°C to 120°C)
Connection	1/4" NPTM x 1/4" NPTF or 1/2" NPTM x 1/2" NPTF

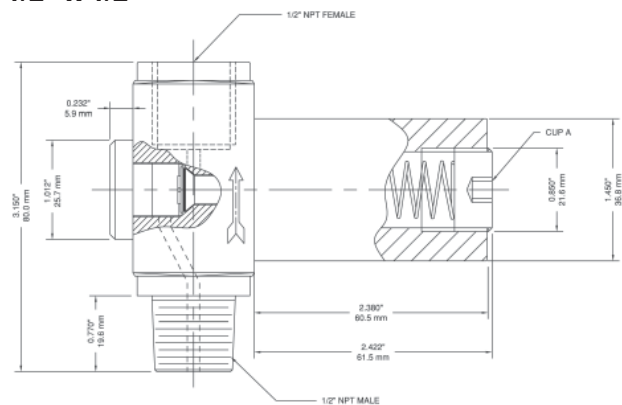
Order Codes

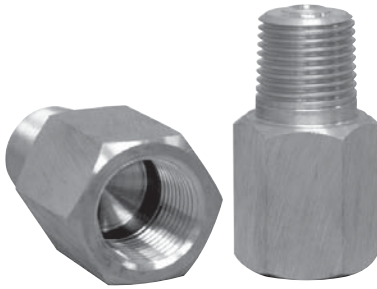
Bellows Type				
Adjustable Pressure Range	Connection NPT			
	1/4" x 1/4"	1/2" x 1/2"	1/4" x 1/4" NACE	1/2" x 1/2" NACE
2.9 to 14.5 psi	SOP32025	SOP32050	SOP32025N	SOP32050N
14.5 to 58 psi	SOP159025	SOP159050	SOP159025N	SOP159050N
58 to 145 psi	SOP9023025	SOP9023050	SOP9023025N	SOP9023050N
Piston Type				
Adjustable Pressure Range	Connection NPT			
	1/4" x 1/4"	1/2" x 1/2"	1/4" x 1/4" NACE	1/2" x 1/2" NACE
145 to 580 psi	SOP14039525	SOP14039550	SOP14039525N	SOP14039550N
580 to 2,330 psi	SOP435116025	SOP435116050	SOP435116025N	SOP435116050N
2,320 to 5,800 psi	SOP1450580025	SOP1450580050	SOP1450580025N	SOP1450580050N

1/4" x 1/4"



1/2" x 1/2"





Description & Features:

- Incorporates a sintered, porous 316 stainless steel snubbing element with a large surface area to ensure long term effectiveness
- Available in the three standard viscosity classifications of heavy oil, water and air
- Brass or stainless steel housings can be specified depending upon pressure media and operating pressure
- ASME B40.100 compliant
- CRN registered
- 1 year warranty

Applications:

- To significantly lessen the damaging effects of pulsation on gauges, transducers, transmitters, manometers and pressure switches
- Lead free version for potable water systems



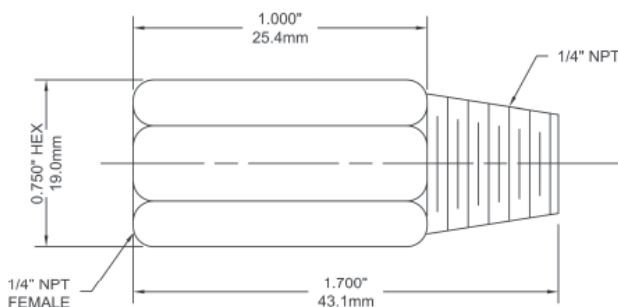
Note: RoHS applies only to 316 SS version.

Specifications	SS	Brass
Operating Temperature	-320°F to 1,500°F (-195°C to 815°C)	-65°F to 650°F (-53°C to 343°C)
Operating Pressure	Maximum 20,000 psi (137,900 kPa)	Maximum 10,000 psi (68,950 kPa)
Burst Pressure	60,000 psi (413,700 kPa)	30,000 psi (206,850 kPa)
Housing	316 SS	Brass
Snubbing Element	Sintered, porous type 316 SS	Sintered, porous type 316 SS
Retainer	300 series SS	300 series SS
Warning (brass internals only)	N/A	WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

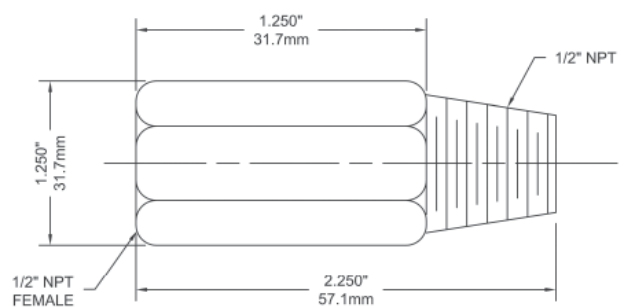
SSN Order Codes (products in bold are normally stock in North America)

Model	Heavy Oil	Water	Air
1/4" Brass	SSN517	SSN515	SSN516
1/4" SS	SSN520	SSN518	SSN519
1/2" Brass	SSN514	SSN512	SSN513
1/2" SS	SSN531	SSN529	SSN530

1/4" Snubber



1/2" Snubber





Note: RoHS applies only to 304 SS and 316 SS syphons


Description & Features:

- On steam service, the syphon will prevent hot steam from entering a pressure gauge, diaphragm seal or transmitter
- Available in brass/steel for non-corrosive applications and stainless steel for corrosive applications
- CRN registered
- 1 year warranty

Applications:

- Recommended for applications involving temperatures above 100°F (37°C)
- Ideal for steam installations

Specifications

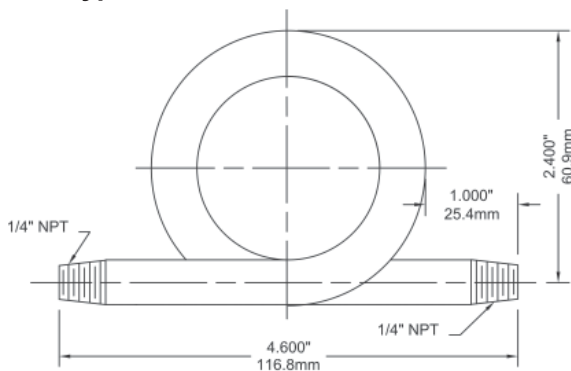
Material	Schedule 40 brass, schedule 40, 80 carbon steel, 304 SS or 316 SS (all types seamless)
Style	180° coil
Connection	1/4" NPTM x 1/4" NPTM or 1/2" NPTM x 1/2" NPTM
Maximum Operating Pressure	Schedule 40: Brass, carbon steel, 304 SS, 316 SS suitable up to 500 psi at 680°F (360°C) Schedule 80: Carbon steel, 304 SS, 316 SS suitable up to 1,650 psi at 630°F (332°C)
Warning (brass syphons only)	 WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov .

Order Codes (products in bold are normally stock in North America)

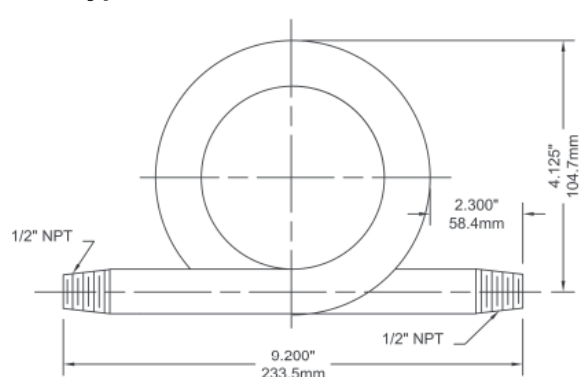
Material	1/4" NPT	1/2" NPT
Schedule 40 Brass	SSP545	SSP559
Schedule 40 Carbon Steel	SSP525	SSP555
Schedule 40 304 SS	SSP535	SSP585
Schedule 40 316 SS	SSP554	SSP557
Schedule 80 Carbon Steel	SSP556	SSP2715
Schedule 80 304 SS	SSP595	SSP2716
Schedule 80 316 SS	-	SSP2719

Note: Schedule 80 316 SS and extra-extra strong schedule available

1/4" Syphon



1/2" Syphon





3A

The objective of the 3A Sanitary Standards Committee is to formulate standards and accepted practices for equipment and systems used to process milk and milk products. Such standards are developed through all levels of sanitarians, equipment manufacturers and equipment users so those standards are acceptable to those involved in the sanitary aspects of dairy and related industries. The 3A Symbol Administrative Council authorizes manufacturers to display the 3A symbol on processing equipment that is in compliance with 3A Sanitary Standards.



CSA

The Canadian Standards Association (CSA) includes Canadian consumers, manufacturers, labour, government, and other regulatory agencies among its actively participating influences. The various groups work together to generate standard requirements (CSA standards) that demonstrate product quality, enhance market acceptability and improve quality and safety control procedures in manufacturing and construction for the Canadian marketplace. The standards generated by CSA are the cornerstones for determining a product's eligibility for certification in hazardous locations in Canada. CSA also performs product evaluation, testing and ongoing inspection to these standards and also to American and European standards through new inter-laboratory agreements.



CE

Having a CE marking is a declaration that Winters' product conforms to a specific Directive adopted by the EEA (European Economic Area), and is a requirement if the product is to be sold into any of the countries in this 18 member group. CE is an abbreviation for the "Conformité Européenne", meaning European Conformance. Unlike dangerous location approvals, CE markings are granted to products that conform to Directives which were developed using IEC and Cenelec standards. The Directives that affect transmitters are the EMC (Electromagnetic Compatibility) and LVD (Low Voltage) Directives. These state that the products must meet specific electromagnetic emission and immunity, as well as electrostatic discharge standards.



RoHS

The Restriction of Hazardous Substances Directive restricts the use of six hazardous materials in the manufacturing of electronic and electrical equipment. These materials are: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ether. Bring "RoHS compliant" is commonly interpreted as bring "lead-free", or having under 0.1% of lead in the material.

ISO

ISO 9001

Winters is an ISO 9001 registered corporation. ISO 9001 requires an organization to demonstrate its ability to consistently provide products that meet customer and regulatory requirements, and enhance customer satisfaction through effective application of the system, including processes for continual improvement of the system and the assurance of conformity.



UL/ULC

Underwriters Laboratories and Underwriters Laboratories of Canada maintain a high commitment to public safety and dedication to exceed customer expectations through continual improvement in the delivery of quality services. The organizations develop and publish standards, classifications and specifications for products having a bearing on fire, accident or property hazards. If a product carries the UL mark, it means that UL found the product meeting UL's safety requirements. These requirements are based primarily on UL's own published Standards for Safety.

NACE

NACE

The National Association of Corrosion Engineers recommends practices such as methods of selection, design, installation, maintenance or operation of material or systems where corrosion is a factor. Some recommended practices focus on details of construction of a corrosion control system, methods of treating the surface of materials to reduce corrosion, requirements for using devices to reduce corrosion, and procedures for increasing the effectiveness, safety and economic benefits of an installation or system.



SIL 2

SIL, or Safety Integrity Level, defines the risk-reduction level or performance in a function. In general, there are four levels of SIL: 4 being the most dependable and 1 providing the least risk protection. SIL levels are determined based on quantitative as well as qualitative factors.

Ingress Protection (IP) Ratings

The **IP** Code indicates the **degree of protection** provided by enclosures for electrical equipment (i.e. IP65 = No dust entry and protected against low pressure jet of water).

The first numeral indicates protection of persons against access to dangerous parts and protection of internal equipment against the ingress of solid foreign objects.

- X Protection unspecified (untested)
- 0 No special protection provided
- 1 Protection of hand against accidental access to dangerous parts, and protection of equipment against objects larger than 50mm
- 2 Protection of fingers against access to dangerous parts, and protection of equipment against objects larger than 12mm
- 3 Protection against objects larger than 2.5mm (e.g. tools, wires)
- 4 Protection against objects larger than 1mm (e.g. line tools, wires)
- 5 Protection against entry of dust in sufficient quantity to interfere with satisfactory operation of equipment
- 6 Complete protection against entry of dust

The second numeral indicates protection of internal equipment against harmful ingress of water.

- X Protection unspecified (untested)
- 0 No special protection provided
- 1 Protection against drops of water falling vertically
- 2 Protection against drops of water falling vertically when the object is tilted by up to 15 degrees from its normal position (in any direction)
- 3 Protection against spraying water at up to 60 degrees from the vertical
- 4 Protection against splashing and spraying water from all practicable directions
- 5 Protection against a low pressure jet of water from all practicable directions
- 6 Protection against heavy seas or a strong jet of water from all practicable directions
- 6D Protection against driving rain at angles down to horizontal
- 7 Protection against immersion
- 8 Protection against submersion (tests subject to agreement, but no less severe than numeral 7)

Pressure Switch Reference

	Hazardous Location Definitions
Class I	Locations in which flammable gases or vapours are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.
Class II	Locations which are hazardous because of the presence of combustible dust.
Class III	Locations which are hazardous because of the presence of easily ignitable fibers or flyings, but in which such fibers or flyings are not likely to be suspended in air in quantities sufficient to produce ignitable mixtures.
Division 1	Locations in which hazardous concentrations in the air exist continuously, intermittently, or periodically under normal operating conditions.
Division 2	Locations in which hazardous materials are handled, processed, or used, but where such materials are normally within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown.
Group A	Atmospheres containing acetylene.
Group B	Atmospheres containing hydrogen, or gases or vapours of equivalent hazard, such as manufactured gas.
Group C	Atmospheres containing ethyl-ether vapours, ethylene, or cyclo-propane.
Group D	Atmospheres containing gasoline, hexane, naphtha, benzene, butane, propane, alcohol, benzol, lacquer solvent vapours, or natural gas.
Group E	Atmospheres containing metal dust, including aluminum, magnesium and their commercial alloys and other metals of similar hazardous characteristics.
Group F	Atmospheres containing carbon black, coal or coke dust.
Group G	Atmospheres containing flour, starch or grain dust.
	Hazardous Location Definitions - International
	The International Electrotechnical Commission (IEC) classifies hazardous locations by Zone and Group. Zone is similar to the term "Division" in that it defines the likelihood of hazard:
Zone 0	An area in which an explosive gas/air mixture is constantly present or present for long periods of time.
Zone 1	An area in which an explosive gas/air mixture is likely to occur during normal operation (Similar to Division 1).
Zone 2	An area in which an explosive/air mixture is not likely to occur but if so, only for short periods of time (Similar to Division 2).

NEMA Enclosure Ratings

Certain Winters products (i.e. pressure transmitters and pressure switches) can be classified per the National Electrical Manufacturer's Association Enclosure (NEMA) classifications. NEMA is a non-profit trade organization composed of manufacturers of electrical power apparatus. NEMA created voluntary standards for electrical enclosures. These classifications describe the environment in which the product can be used due to the protection the enclosure provides. ("Enclosure" includes electrical and mechanical connections and external adjustments). Among others, NEMA classifies enclosures based on the effects of external icing, corrosion and rusting, or contamination from oil and coolants.

Pressure switches, transmitters and other electronic products may also be classified according to the voluntary standards set by NEMA for electrical enclosures.

Type	Seal	Indoor/Outdoor	Description
1	General Purpose	Indoor	Protection against ingress of solid foreign objects (falling dirt)
2	Drip-proof	Indoor	Protection against ingress of solid foreign objects (falling dirt); and protection against ingress of water (dripping and light splashing)
3	Dust-tight/rain-tight	Outdoor	Protection against ingress of solid foreign objects (falling dirt and windblown dust); protection against ingress of water (rain, sleet, snow); and that will be undamaged by the external formation of ice on the enclosure
3R	Dust-tight/rain-tight	Outdoor	Protection against ingress of solid foreign objects (falling dirt); protection against ingress of water (rain, sleet, snow); and that will be undamaged by the external formation of ice on the enclosure
4	Water-tight/dust-tight	Indoor/Outdoor	Protection against ingress of solid foreign objects (falling dirt and windblown dust); protection against ingress of water (rain, sleet, snow, splashing water, and hose directed water); and that will be undamaged by the external formation of ice on the enclosure
4X	Water-tight/dust-tight	Indoor/Outdoor	Protection against ingress of solid foreign objects (windblown dust); protection against the ingress of water (rain, sleet, snow, splashing water, and hose directed water); protection against corrosion; and that will be undamaged by the external formation of ice on the enclosure
5	Dust-tight	Indoor	Protection against ingress of solid foreign objects (falling dirt and settling airborne dust, lint, fibers, and flyings); protection against ingress of water (dripping and light splashing)
6	Water-tight/dust-tight	Indoor/Outdoor	Protection against ingress of solid foreign objects (falling dirt); protection against ingress of water (hose directed water and the entry of water during occasional temporary submersion at a limited depth); and that will be undamaged by the external formation of ice on the enclosure
6P	Water-tight/dust-tight	Indoor/Outdoor	Protection against ingress of solid foreign objects (falling dirt); protection against ingress of water (hose directed water and the entry of water during prolonged submersion at a limited depth); that provides an additional level of protection against corrosion and that will be undamaged by the external formation of ice on the enclosure
7	Explosion proof/Class I Groups A, B, C, D	Indoor Hazardous	Enclosures constructed for indoor use in hazardous (classified) locations classified as Class I, Division 1, Groups A, B, C, or D as defined in NFPA 70
8	Explosion proof/Class I	Indoor/Outdoor	Enclosures constructed for either indoor or outdoor use in hazardous (classified) locations classified as Class I, Division 1, Groups A, B, C, and D as defined in NFPA 70
9	Explosion Proof/Class II Groups E or G	Indoor Hazardous	Enclosures constructed for indoor use in hazardous (classified) locations classified as Class II, Division 1, Groups E, F, or G as defined in NFPA 70
11	Oil-tight/Corrosion	Indoor	Protection from corrosive effects of gases and liquid dripping, seepage and external condensation or corrosive, oil immersion
12	Oil-tight/Dust-tight	Indoor	Protection against ingress of solid foreign objects (falling dirt and circulating dust, lint, fibers, and flyings); protection against ingress of water (dripping and light splashing)
13	Oil-tight/Dust-tight	Indoor	Protection against ingress of solid foreign objects (falling dirt and circulating dust, lint, fibers, and flyings); protection against ingress of water (dripping and light splashing); protection against the spraying, splashing, and seepage of oil and non-corrosive coolants



Winters Approvals / Certifying Agencies

CRN (Canadian Registration Number)

The Canadian Registration Number (CRN) is a number issued by each province/territory in Canada to the design of boilers, pressure vessels or fittings. Industrial instrumentation such as pressure gauges, thermometers and related accessories all fall under this jurisdiction. The CRN identifies that the design has been accepted and registered for use in that province/territory. Please refer to the individual product pages to see if a series is CRN registered.

Prov.	Pressure Gauges	Diaphragm Seals	Thermowells	Mini Ball Valves	Needle Valves	Multiport and Block & Bleed Valves	Cooling Towers, Syphons, Snubbers and Test Plugs	Transmitters/ Switches	Over-pressure Protector
ON	0F6751.5ADD4	0F6751.5ADD4 0F6751.5ADD5	0F6751.5ADD4	0C6751.5R2	0C18567.5	0C19638.5	0F6751.5ADD4	0F17528.5	0F11487.5R1
QC	0F6751.56ADD4	0F6751.56ADD4 0F6751.56ADD5	0F6751.56ADD4	0C6751.56R2	0C18567.5	0C19638.56	0F6751.56ADD4	0F17528.56	0F11487.56REV1
BC	0F6751.51ADD4	0F6751.51ADD4 0F6751.51ADD5	0F6751.51ADD4		0C18567.5	0C019638.51	0F6751.51ADD4	0F17528.51	0F11487.51
AB	0F06751.52	0F06751.52	0F06751.52	0C06751.52	0C18567.52	0C19638.52	0F06751.52	0F17528.52	0F11487.52
MB	0F6751.56ADD4	0F6751.56ADD4 0F6751.56ADD5	0F6751.56ADD4	0C6751.56R2	0C18567.5	Exempt	0F6751.56ADD4	0F17528.54	0F11487.54
SK	0F6751.56ADD4	0F6751.56ADD4 0F6751.56ADD5	0F6751.56ADD4	0C6751.56R2	0C18567.5	0C19638.56	0F6751.56ADD4	0F17528.56	0F11487.56REV1
NB	0F6751.57ADD4	0F6751.57ADD4 0F6751.57ADD5	0F6751.57ADD4	0C6751.57REV2	0C18567.5	0C19638.57	0F6751.57ADD4	0F17528.57	0F11487.57REV1
NS	0F6751.58ADD4	0F6751.58ADD4 0F6751.58ADD5	0F6751.58ADD4	0C6751.58REV2	0C18567.5	0C19638.58	0F6751.58ADD4	0F17528.58	0F11487.58REV1
PE	0F6751.59ADD4	0F6751.59ADD4 0F6751.50ADD5	0F6751.59ADD4	0C6751.59REV2	0C18567.5	0C19638.59	0F6751.59ADD4	0F17528.59	0F11487.59REV1
NL	0F6751.50ADD4	0F6751.50ADD4 0F6751.50ADD5	0F6751.50ADD4	0C6751.50REV2	0C18567.5	0C19638.50	0F6751.50ADD4	0F17528.50	0F11487.50REV1
YT	0F6751.5YADD4	0F6751.5YADD4 0F6751.5YADD5	0F6751.5YADD4	0C6751.5YREV2	0C18567.5Y	0C19638.59870Y	0F6751.5YADD4	0F17528.5Y	0F11487.5YREV1
NT	0F6751.5TADD4	0F6751.5TADD4 0F6751.5TADD5	0F6751.5TADD4	0C6751.5TREV2	0C18567.5T	0C19638.59870T	0F6751.5TADD4	0F17528.5T	0F11487.5TREV1
NU	0F6751.5NADD4	0F6751.5NADD4 0F6751.5NADD5	0F6751.5NADD4	0C6751.5NREV2	0C18567.5N	0C19638.59870N	0F6751.5NADD4	0F17528.5N	0F11487.5NREV1

OTHER APPROVALS/STANDARDS THAT WINTERS ADHERES TO

- ASME B40.1
- CAN. DEPT. OF DEFENSE
- FCI
- NATO
- U.S. SDWA
- U.S. NAVY
- U.S. DEPT. OF DEFENSE
- U.S. COAST GUARD

Notes



Notes

Pressure Conversion Table



Pressure Conversion Table

Dial Scale	psi	kPa	kg/cm ²	cm of H ₂ O	feet of H ₂ O	inches of Hg	mm of Hg	inches of H ₂ O	ounces per square inch	atmosphere	bar	mbar	MPa
psi	1	6.894757	0.070306958	70.306927	2.306723	2.03602	51.71486	27.68068	16	0.0680460	0.06894757	68.9476	0.00689
kPa	0.1450377	1	0.01019716	10.19745	0.3345618	0.29522997	7.500610	4.01472	2.320603	0.009669235	0.01	10	0.001
kg/cm ²	14.223343	98.06694	1	1000.026	32.809312	28.95901	735.5588	393.711806	227.57349	0.967841596	0.98066494	980	0.09806
cm of H ₂ O	0.0142229	0.0980634	0.00099997	1	0.032808	0.0289581	0.7355372	0.3937	0.227566	0.000967814	0.000980634	0.9806	0.000098
feet of H ₂ O	0.433515	2.968961	0.03047912	30.480	1	0.882646	22.4192	12	6.93624	0.02949896	0.02968961	29.689	0.00298
inches of Hg	0.4911542	3.386389	0.0345316	34.53253	1.132957	1	25.4	13.595484	7.85847	0.0334211	0.03386389	33.8639	0.00386
mm of Hg	0.0193368	0.1333225	0.00135951	1.359554	0.0446046	0.039370079	1	0.535255	0.3093888	0.0013157895	0.001333225	1.33322	0.00013
inches of H ₂ O	0.03612628	0.2490819	0.00254219	2.54	0.08333	0.0735539	1.8682683	1	0.578020	0.00245825	0.002490819	2.49089	0.000249
ounces per square inch	0.0625	0.4309223	0.004394308	4.394308	0.14417	0.12725125	3.23218	1.73004	1	0.004252875	0.004309223	4.309	0.0004309
atmosphere	14.6960	101.32535	1.033231	1033.2633	33.8995	29.9213	760	406.794	235.136	1	1.0132535	1013.25	0.1013
bar	14.5038	100	1.019716	1019.7466	33.4833	29.5300	750.0626	401.8596	232.0608	0.986923	1	1000	0.1
mbar	0.0145	0.1	0.001019	1.019	0.03456	0.02953	0.75006	0.40146	0.23206	0.00099	0.001	1	0.0001
MPa	145	1000	10.197	10197.45	334.56	295.299	7500.61	4014.74	2320.603	9.669	10	10000	1

How to use Winters' conversion table:

1. Find the COLUMN with the unit of measure you want to convert from and move down that COLUMN until you find the number "1"
2. Move horizontally within the same ROW to find the Conversion Factor
3. Multiply the Conversion Factor (number in the box) by the amount you are changing from to get the pressure in the scale you are seeking (e.g. 50 bar to be converted to psi scale: 1 bar equals to 14.5038 psi (Conversion Factor), so 50 bar equals to 725.19 psi)

Use Winters' Converter online: www.winters.com/converter.htm

WINTERS INSTRUMENTS

MANUFACTURER OF INDUSTRIAL INSTRUMENTATION



Winters Instruments is a global manufacturer of premium quality pressure and temperature instrumentation, with distribution partners in over 90 countries. Please contact us for your nearest Regional Manager.

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calgary@winters.com

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