



*We're There.*



## MENA PRODUCT 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*

### **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

### **Oil & Gas**

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

### **Petro-Chemical**

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 pressure gauges, thermometers and transmitters.

## *1-Year Warranty*

A 1-year warranty applies to all diaphragm seals, pressure switches, pressure transmitters, RTDs, thermocouples 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.



## *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.





## 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

Dial Size	3.5" (90mm)		4" (100mm)	4.5" (115mm)		6" (150mm)	
Case Material	Steel			Aluminum		Steel	Aluminum
Connection	Bottom	Centre Back		Bottom	Lower Back	Bottom	Lower Back
30" Hg Vac / -1/0 bar	P1S234R1R11	P1S569R1R11	P1S460R1R11	P1S410R1R11	P1S430R1R11	P1S250R1R11	P1S475R1R11
30"/0/15 psi / -1/1 bar	P1S230R1R11	P1S569R1R11	P1S468R1R11	P1S411R1R11	P1S431R1R11	P1S251CR1R11	P1S475R1R11
30"/0/30 psi / -1/2 bar	P1S230R1R11	P1S569R1R11	P1S469R1R11	P1S412R1R11	P1S432R1R11	P1S251CR1R11	P1S475R1R11
30"/0/60 psi / -1/4 bar	P1S232R1R11	P1S570R1R11	P1S470R1R11	P1S412R1R11	P1S432R1R11	P1S251CR1R11	P1S475R1R11
30"/0/100 psi / -1/7 bar	P1S233R1R11	P1S571R1R11	P1S470R1R11	P1S412R1R11	P1S432R1R11	P1S251CR1R11	P1S475R1R11
30"/0/160 psi / -1/11 bar	P1S229R1R11	P1S571R1R11	P1S470R1R11	P1S412R1R11	P1S432R1R11	P1S251CR1R11	P1S475R1R11
30"/0/200 psi / -1/11 bar	P1S229R1R11	P1S571R1R11	P1S470R1R11	P1S412R1R11	P1S432R1R11	P1S251CR1R11	P1S475R1R11

### Scale Codes

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

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

### Thread Codes

T1 = BSP(G)  
 T2 = BSPT(R)

### Options

Some options include:

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

Primary Scale		Secondary Scale	
Units	Code	Units	Code
psi	P	None	X
mPa	M	psi	P
bar	B	mPa	M
kPa	K	bar	B
mbar	R	kPa	K
mm of H <sub>2</sub> O	H	mbar	R
in of H <sub>2</sub> O	N	mm of H <sub>2</sub> O	H
kg/cm <sup>2</sup>	G	inches of H <sub>2</sub> O	N
mm of Hg	A	kg/cm <sup>2</sup>	G
inches of Hg	Y	mm of Hg	A
cm of Hg	C	inches of Hg	Y
Special	Z	cm of Hg	C
Compound Range		Compound Range	
psi/inches of Hg	P	psi/inches of Hg	P
mPa/mPa	M	mPa/mPa	M
bar/bar	B	bar/bar	B
kg/cm <sup>2</sup> /cm of Hg	L	kg/cm <sup>2</sup> /cm of Hg	L
kg/cm <sup>2</sup> /kg/cm <sup>2</sup>	G	kg/cm <sup>2</sup> /kg/cm <sup>2</sup>	G

Range	Code	Range	Code
-30/0	V 1	0/2.5	0 5
30"/0/15	V 2	0/4.0	0 7
30"/0/30	V 3	0/5.0	0 8
30"/0/60	V 4	0/6.0	0 9
30"/0/100	V 5	0/10	1 0
30"/0/150	V 6	0/15	1 5
30"/0/160	V 7	0/16	1 6
30"/0/200	V 8	0/20	2 0
30"/0/300	V 9	0/25	2 5
-0.1/0	0 A	0/30	3 0
-0.1/0.06	1 A	0/32	3 2
-0.1/0.2	4 A	0/35	3 5
-0.1/0.3	3 A	0/40	4 0
-0.1/0.5	5 A	0/55	5 5
-0.1/0.9	9 A	0/60	6 0
-0.1/1.5	6 A	0/100	1 H
-0.1/2.4	2 A	0/120	7 H
-1/0/1	7 A	0/140	8 H
-1/0/2	8 A	0/160	9 H
-1/0/3	3 C	0/200	2 H
-1/0	0 B	0/250	3 H
-1/0.6	6 B	0/300	0 H
-1/1.5	1 B	0/400	4 H
-1/3	3 B	0/500	5 H
-1/4	4 B	0/600	6 H
-1/5	5 B	0/1,000	1 S
-1/9	9 B	0/1,500	1 F
-1/15	2 B	0/1,600	3 F
-1/24	7 B	0/2,000	2 S
-1/30	8 B	0/2,500	2 F
-100/0	1 D	0/3,000	3 S
-760/0	1 E	0/4,000	4 S
0/0.06	0 0	0/5,000	5 S
0/0.1	0 1	0/6,000	6 S
0/0.16	0 2	0/7,000	7 S
0/0.2	1 4	0/10,000	8 S
0/0.25	0 3	0/15,000	5 F
0/0.4	0 4	0/16,000	6 F
0/0.6	0 6	0/20,000	T S
0/1.0	1 1	0/25,000	T F
0/1.6	1 2	0/40,000	F S
0/2.0	1 3		

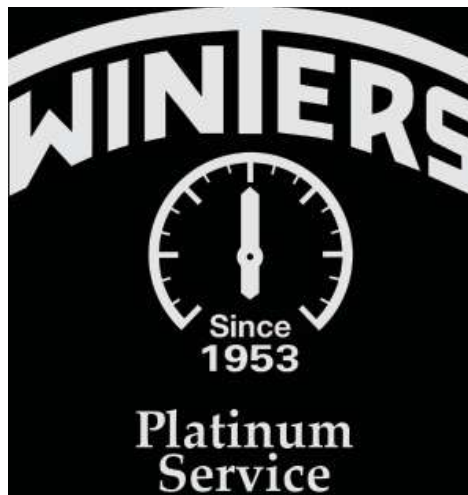
More options available. See individual catalogue pages or call us with your requirements.

## *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.



## WINTERS INSTRUMENTS



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)
- $\pm 0.5\%$  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
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

### Applications:

- Used where operator safety is a must
- Ideally suited for process, chemical and petroleum industries
- Highly corrosive media

Specifications	Stainless Steel Internals	Brass Internals
<b>Dial</b>	4.5" (115mm) white aluminum with black and red markings	4.5" (115mm) white aluminum with black and red markings
<b>Case</b>	Black phenolic with pressure relief back, solid front, integral back flange	Black phenolic with pressure relief back, solid front, integral back flange
<b>Solid Wall</b>	Phenolic	Phenolic
<b>Pressure Relief Back</b>	Polypropylene	Polypropylene
<b>Window</b>	Polycarbonate	Polycarbonate
<b>Ring</b>	Phenolic	Phenolic
<b>Pointer</b>	Aluminum, anodized black, micrometer adjustable	Aluminum, anodized black, micrometer adjustable
<b>Socket</b>	316L SS	OT 58 brass
<b>Connection</b>	1/4" NPT or 1/2" NPT standard, bottom or back (other thread types are available)	1/4" NPT or 1/2" NPT standard, bottom or back (other thread types are available)
<b>Bourdon Tube</b>	316L SS, drawn seamless	Phosphor bronze
<b>Movement</b>	304 SS with under and overload stops	304 SS with under and overload stops
<b>Gasket Materials</b>	Silicone (Viton® option)	Silicone (Viton® option)
<b>Welding</b>	TIG	Silver alloy
<b>Over-pressure Limit</b>	25% for pressures below 1,500 psi/bar, 15% for pressures 1,500 psi/bar to 8,700 psi/bar, 10% for pressures above 8,700 psi/bar	25% for pressures below 1,500 psi/bar, 15% for pressures 1,500 psi/bar to 8,700 psi/bar, 10% for pressures above 8,700 psi/bar
<b>Working Pressure</b>	Maximum 75% of full scale value	Maximum 75% of full scale value
<b>Ambient Temperature</b>	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)
<b>Process Temperature</b>	-40°F to 257°F (-40°C to 125°C)	-40°F to 150°F (-40°C to 65°C)
<b>Accuracy</b>	$\pm 0.5\%$ ANSI/ASME Grade 2A	$\pm 0.5\%$ ANSI/ASME Grade 2A
<b>Enclosure Rating</b>	IP65	IP65

Monel® is a registered trademark of Inco Alloys International  
Viton® is a registered trademark of DuPont Performance Elastomers

## Order Codes

Connection	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)
Socket, Tube	Brass			
30" Hg Vac / -1/0 bar	PPC5080R1R11	PPC5280R1R11	PPC4836R1R11	PPC4853R1R11
30"/0/15 psi / -1/1 bar	PPC5120R1R11	PPC5220R1R11	PPC4837R1R11	PPC4854R1R11
30"/0/30 psi / -1/2 bar	PPC5121R1R11	PPC5221R1R11	PPC4838R1R11	PPC4855R1R11
30"/0/60 psi / -1/4 bar	PPC5122R1R11	PPC5222R1R11	PPC4839R1R11	PPC4856R1R11
30"/0/100 psi / -1/7 bar	PPC5123R1R11	PPC5223R1R11	PPC4840R1R11	PPC4857R1R11
30"/0/160 psi / -1/11 bar	PPC5124R1R11	PPC5224R1R11	PPC4841R1R11	PPC4858R1R11
30"/0/230 psi / -1/16 bar	PPC5127R1R11	PPC5227R1R11	PPC4842R1R11	PPC4859R1R11
30"/0/300 psi / -1/20 bar	PPC5126R1R11	PPC5226R1R11	PPC4843R1R11	PPC4860R1R11
0/15 psi / 0/1 bar	PPC5081R1R11	PPC5281R1R11	PPC4844R1R11	PPC4861R1R11
0/30 psi / 0/2 bar	PPC5082R1R11	PPC5282R1R11	PPC4845R1R11	PPC4862R1R11
0/60 psi / 0/4 bar	PPC5083R1R11	PPC5283R1R11	PPC4846R1R11	PPC4863R1R11
0/100 psi / 0/7 bar	PPC5084R1R11	PPC5284R1R11	PPC4847R1R11	PPC4864R1R11
0/160 psi / 0/11 bar	PPC5085R1R11	PPC5285R1R11	PPC4848R1R11	PPC4865R1R11
0/230 psi / 0/16 bar	PPC5100R1R11	PPC5228R1R11	PPC4849R1R11	PPC4866R1R11
0/300 psi / 0/20 bar	PPC5087R1R11	PPC5287R1R11	PPC4850R1R11	PPC4867R1R11
0/400 psi / 0/28 bar	PPC5088R1R11	PPC5288R1R11	PPC4851R1R11	PPC4868R1R11
0/600 psi / 0/40 bar	PPC5089R1R11	PPC5289R1R11	PPC4852R1R11	PPC4869R1R11
0/800 psi / 0/60 bar	PPC5099R1R11	PPC5299R1R11	PPC5188R1R11	PPC5198R1R11
0/1,000 psi / 0/70 bar	PPC5098R1R11	PPC5298R1R11	PPC5090R1R11	PPC5290R1R11
0/1,500 psi / 0/100 bar	PPC4822R1R11	PPC4829R1R11	PPC5091R1R11	PPC5291R1R11
0/2,000 psi / 0/140 bar	PPC4823R1R11	PPC4830R1R11	PPC5092R1R11	PPC5292R1R11
0/3,000 psi / 0/200 bar	PPC4824R1R11	PPC4831R1R11	PPC5093R1R11	PPC5293R1R11
0/5,000 psi / 0/350 bar	PPC4825R1R11	PPC4832R1R11	PPC5094R1R11	PPC5294R1R11
0/10,000 psi / 0/700 bar	PPC4826R1R11	PPC4833R1R11	PPC5095R1R11	PPC5295R1R11
0/15,000 psi / 0/1,000 bar	PPC4827R1R11	PPC4834R1R11	PPC5096R1R11	PPC5296R1R11
0/20,000 psi / 0/1,400 bar	PPC4828R1R11	PPC4835R1R11	PPC5097R1R11	PPC5297R1R11

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

Connection	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)
Socket, Tube	SS			
30" Hg Vac / -1/0 bar	PPC5040R1R11	PPC5340R1R11	PPC5060R1R11	PPC5460R1R11
30"/0/15 psi / -1/1 bar	PPC5130R1R11	PPC5330R1R11	PPC5140R1R11	PPC5440R1R11
30"/0/30 psi / -1/2 bar	PPC5131R1R11	PPC5331R1R11	PPC5141R1R11	PPC5441R1R11
30"/0/60 psi / -1/4 bar	PPC5132R1R11	PPC5332R1R11	PPC5142R1R11	PPC5442R1R11
30"/0/100 psi / -1/7 bar	PPC5133R1R11	PPC5333R1R11	PPC5143R1R11	PPC5443R1R11
30"/0/160 psi / -1/11 bar	PPC5134R1R11	PPC5334R1R11	PPC5144R1R11	PPC5444R1R11
30"/0/230 psi / -1/16 bar	PPC5137R1R11	PPC5337R1R11	PPC5147R1R11	PPC5447R1R11
30"/0/300 psi / -1/20 bar	PPC5136R1R11	PPC5336R1R11	PPC5146R1R11	PPC5446R1R11
0/15 psi / 0/1 bar	PPC5041R1R11	PPC5341R1R11	PPC5061R1R11	PPC5461R1R11
0/30 psi / 0/2 bar	PPC5042R1R11	PPC5342R1R11	PPC5062R1R11	PPC5462R1R11
0/60 psi / 0/4 bar	PPC5043R1R11	PPC5343R1R11	PPC5063R1R11	PPC5463R1R11
0/100 psi / 0/7 bar	PPC5044R1R11	PPC5344R1R11	PPC5064R1R11	PPC5464R1R11
0/160 psi / 0/11 bar	PPC5045R1R11	PPC5345R1R11	PPC5065R1R11	PPC5465R1R11
0/230 psi / 0/16 bar	PPC5059R1R11	PPC5349R1R11	PPC5079R1R11	PPC5479R1R11
0/300 psi / 0/20 bar	PPC5047R1R11	PPC5347R1R11	PPC5067R1R11	PPC5467R1R11
0/400 psi / 0/28 bar	PPC5048R1R11	PPC5348R1R11	PPC5068R1R11	PPC5468R1R11
0/600 psi / 0/40 bar	PPC5049R1R11	PPC5349R1R11	PPC5069R1R11	PPC5469R1R11
0/800 psi / 0/60 bar	PPC5058R1R11	PPC5358R1R11	PPC5078R1R11	PPC5478R1R11
0/1,000 psi / 0/70 bar	PPC5050R1R11	PPC5350R1R11	PPC5070R1R11	PPC5470R1R11
0/1,500 psi / 0/100 bar	PPC5051R1R11	PPC5351R1R11	PPC5071R1R11	PPC5471R1R11
0/2,000 psi / 0/140 bar	PPC5052R1R11	PPC5352R1R11	PPC5072R1R11	PPC5472R1R11
0/3,000 psi / 0/200 bar	PPC5053R1R11	PPC5353R1R11	PPC5073R1R11	PPC5473R1R11
0/5,000 psi / 0/350 bar	PPC5054R1R11	PPC5354R1R11	PPC5074R1R11	PPC5474R1R11
0/10,000 psi / 0/700 bar	PPC5055R1R11	PPC5355R1R11	PPC5075R1R11	PPC5475R1R11
0/15,000 psi / 0/1,000 bar	PPC5056R1R11	PPC5356R1R11	PPC5076R1R11	PPC5476R1R11
0/20,000 psi / 0/1,400 bar	PPC5057R1R11	PPC5357R1R11	PPC5077R1R11	PPC5477R1R11

## Option suffix:

FMR = Flush mounting ring

G = Glycerin (bottom connection only)

GID = Glow-in-the-dark dial

HCSF = Solid front hinged case (back connection only)

MS = Monel® tube and socket

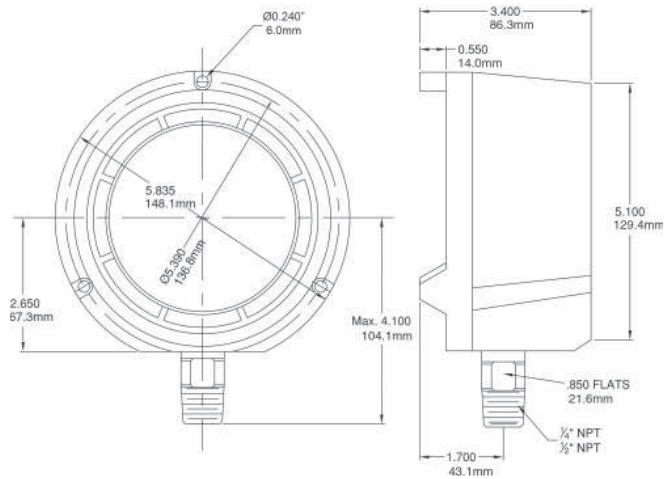
SG-45 = Safety glass

SF45 = Silicone fill (bottom connection only)

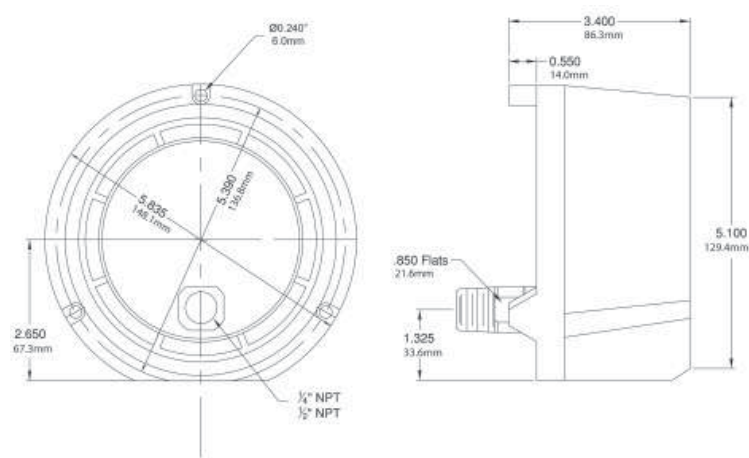
REST = Restrictor Screw (psi only)



## 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:

- Reliable indication of changes in pressure, temperature, flow, level, or other measured 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

**Series Number (for custom, non-standard product)**

	P	P	C	-			-		-		-		-		-		-		-		-			
<b>SERIES</b>																								
<b>DIAL SIZE</b>																								
4.5" (115mm)					4	5																		
<b>CASE MATERIALS</b>																								
Phenolic								F																
<b>WETTED PARTS</b>																								
Brass																								
316SS																								
Monel																								
Special																								
<b>CONFIGURATION</b>																								
Bottom Connection, Back Flange, Surface Mounting																								
Back Connection, Back Flange, Surface Mounting																								
Special																								
<b>CONNECTION SIZE</b>																								
1/4"																								
1/2"																								
<b>THREAD</b>																								
NPT																								
BSP (G)																								
BSPT (R)																								
Special																								
<b>PRIMARY SCALE</b>																								
<b>UNITS - See Page 8</b>																								
<b>RANGE - See Page 8</b>																								
<b>SECONDARY SCALE</b>																								
<b>UNITS - See Page 8</b>																								
<b>OPTIONS</b>																								
Fluorolube Filled																							S	R
Flush Mounting Ring																							S	P
Glycerin Filled																							S	E
Glycerin/Water Filled																							S	F
Halocarbon Filled																							S	Q
Hinged Case																							S	T
Maximum Adjustable Pointer																							S	J
Monel Socket and Tube																							S	W
NACE-MR0175-2002																							S	5
Oxygen Cleaning																							S	L
Silicone Filled																							S	D
Safety Glass																							S	A
Stainless Steel Tag Plate																							S	M
Test Certificate																							S	O
Glycerin Filled + Safety Glass																							D	K
Safety Glass + Hinged Case																							D	J
Safety Glass + Monel Socket and Tube																							D	O
Safety Glass + Maximum Adjustable Pointer																							D	Q
Hinged Case + Monel Socket and Tube																							D	R
Safety Glass + Maximum Adjustable Pointer + Hinged Case																							T	E
No Options																							X	X

**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**

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

**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 / 0/0.7 bar	PSG4105R1R11	PSG6105R1R11
0/15 psi / 0/1 bar	PSG4155R1R11	PSG6155R1R11
0/30 psi / 0/2 bar	PSG4305R1R11	PSG6305R1R11
0/60 psi / 0/4 bar	PSG4605R1R11	PSG6605R1R11
0/100 psi / 0/7 bar	PSG41005R1R11	PSG61005R1R11
0/160 psi / 0/11 bar	PSG41605R1R11	PSG61605R1R11
0/200 psi / 0/14 bar	PSG42005R1R11	PSG62005R1R11
0/300 psi / 0/20 bar	PSG43005R1R11	PSG63005R1R11

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

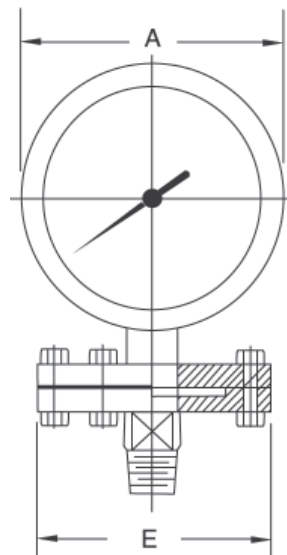
**For options, attach suffix to end of order code: i.e. PSG41005R1R11-SG-4 for SAFETY GLASS.**

**Option suffix:**

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

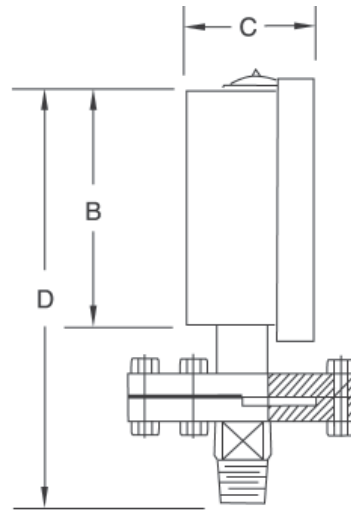
SG-6 = 6" (150mm) Safety glass lens

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, 1 year warranty on seal

## Applications:

- Process industry where tamper-resistant gauge/seal is required to protect against maintenance errors in the field

### 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 (Viton® option)
Welding	TIG
Over-pressure Limit	25% for pressures up to 1,450 psi/bar, 15% for pressures 1,451 psi/bar to 5,000 psi/bar
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

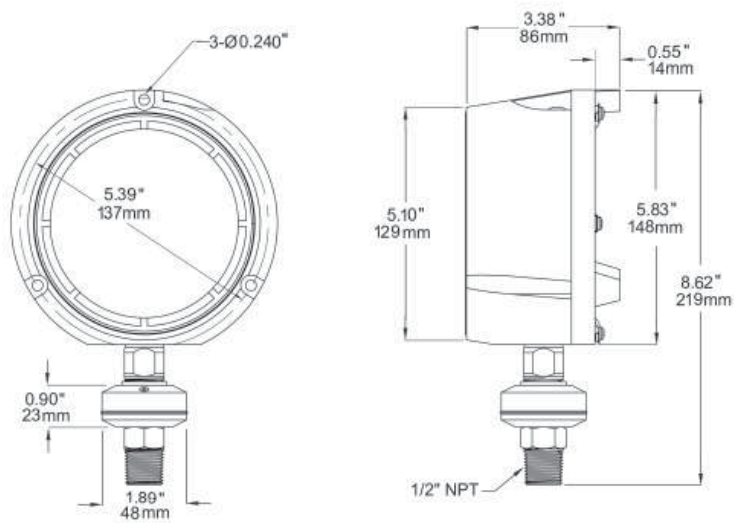
### Specifications - Seal

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

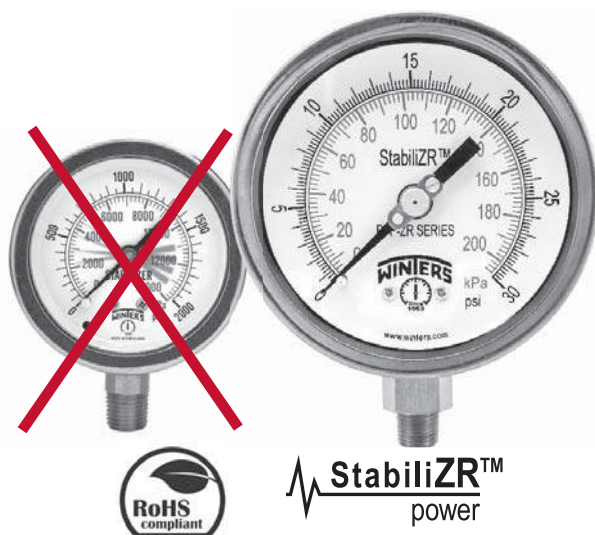
SF45 = Silicone-filled gauge case

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 without liquid filling
- Restrictor screw
- 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:

- Ideally suited for process, chemical and petroleum industry
- Where chemical compatibility and contamination is a concern

## 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 (other thread types are available) 4" (100mm), 6" (150mm): 1/4", 1/2" NPT (other thread types are available)
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 (100 bar), 15% for pressures over 1,450 psi (100 bar)
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)

## Order Codes

Dial Size	2.5" (63mm)		4" (100mm)			
Connection	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)
30" Hg Vac / -1/0 bar	PFP820ZRR1R11	PFP840ZRR1R11	PFP640ZRR1R11	PFP1090ZRR1R11	PFP655ZRR1R11	PFP2308ZRR1R11
30"/0/15 psi / -1/1 bar	PFP860ZRR1R11	PFP870ZRR1R11	PFP1036ZRR1R11	PFP1244ZRR1R11	PFP1044ZRR1R11	PFP2309ZRR1R11
30"/0/30 psi / -1/2 bar	PFP861ZRR1R11	PFP871ZRR1R11	PFP1037ZRR1R11	PFP1245ZRR1R11	PFP1045ZRR1R11	PFP2310ZRR1R11
30"/0/60 psi / -1/4 bar	PFP862ZRR1R11	PFP872ZRR1R11	PFP1038ZRR1R11	PFP1246ZRR1R11	PFP1046ZRR1R11	PFP2311ZRR1R11
30"/0/100 psi / -1/7 bar	PFP863ZRR1R11	PFP873ZRR1R11	PFP1039ZRR1R11	PFP1247ZRR1R11	PFP1047ZRR1R11	PFP2312ZRR1R11
30"/0/150 psi / -1/10 bar	PFP864ZRR1R11	PFP874ZRR1R11	PFP1040ZRR1R11	PFP1248ZRR1R11	PFP1048ZRR1R11	PFP2313ZRR1R11
30"/0/200 psi / -1/14 bar	PFP866ZRR1R11	PFP876ZRR1R11	PFP1042ZRR1R11	PFP1249ZRR1R11	PFP1050ZRR1R11	PFP2314ZRR1R11
30"/0/300 psi / -1/20 bar	PFP867ZRR1R11	PFP877ZRR1R11	PFP1043ZRR1R11	PFP1250ZRR1R11	PFP1051ZRR1R11	PFP2315ZRR1R11
0/15 psi / 0/1 bar	PFP821ZRR1R11	PFP921ZRR1R11	PFP641ZRR1R11	PFP1091ZRR1R11	PFP656ZRR1R11	PFP2316ZRR1R11
0/30 psi / 0/2 bar	PFP822ZRR1R11	PFP922ZRR1R11	PFP642ZRR1R11	PFP1092ZRR1R11	PFP657ZRR1R11	PFP2317ZRR1R11
0/60 psi / 0/4 bar	PFP823ZRR1R11	PFP923ZRR1R11	PFP643ZRR1R11	PFP1093ZRR1R11	PFP658ZRR1R11	PFP2318ZRR1R11
0/100 psi / 0/7 bar	PFP824ZRR1R11	PFP924ZRR1R11	PFP644ZRR1R11	PFP1094ZRR1R11	PFP659ZRR1R11	PFP2319ZRR1R11
0/160 psi / 0/11 bar	PFP825ZRR1R11	PFP925ZRR1R11	PFP645ZRR1R11	PFP1095ZRR1R11	PFP660ZRR1R11	PFP2320ZRR1R11
0/200 psi / 0/14 bar	PFP826ZRR1R11	PFP926ZRR1R11	PFP646ZRR1R11	PFP1096ZRR1R11	PFP661ZRR1R11	PFP2321ZRR1R11
0/300 psi / 0/20 bar	PFP827ZRR1R11	PFP927ZRR1R11	PFP647ZRR1R11	PFP1097ZRR1R11	PFP662ZRR1R11	PFP2322ZRR1R11
0/400 psi / 0/28 bar	PFP880ZRR1R11	PFP881ZRR1R11	PFP650ZRR1R11	PFP1251ZRR1R11	PFP666ZRR1R11	PFP2323ZRR1R11
0/600 psi / 0/40 bar	PFP828ZRR1R11	PFP928ZRR1R11	PFP648ZRR1R11	PFP1098ZRR1R11	PFP663ZRR1R11	PFP2324ZRR1R11
0/1,000 psi / 0/70 bar	PFP829ZRR1R11	PFP929ZRR1R11	PFP649ZRR1R11	PFP1099ZRR1R11	PFP664ZRR1R11	PFP2325ZRR1R11
0/1,500 psi / 0/100 bar	PFP834ZRR1R11	PFP934ZRR1R11	PFP2301ZRR1R11	PFP1252ZRR1R11	PFP665ZRR1R11	PFP1190ZRR1R11
0/2,000 psi / 0/140 bar	PFP830ZRR1R11	PFP930ZRR1R11	PFP2302ZRR1R11	PFP1253ZRR1R11	PFP667ZRR1R11	PFP1191ZRR1R11
0/3,000 psi / 0/200 bar	PFP831ZRR1R11	PFP931ZRR1R11	PFP2303ZRR1R11	PFP1254ZRR1R11	PFP668ZRR1R11	PFP1192ZRR1R11
0/5,000 psi / 0/350 bar	PFP832ZRR1R11	PFP852ZRR1R11	PFP2304ZRR1R11	PFP1255ZRR1R11	PFP669ZRR1R11	PFP1193ZRR1R11
0/6,000 psi / 0/400 bar	PFP836ZRR1R11	PFP851ZRR1R11	PFP2305ZRR1R11	PFP1259ZRR1R11	PFP675ZRR1R11	PFP1197ZRR1R11
0/10,000 psi / 0/700 bar	PFP833ZRR1R11	PFP853ZRR1R11	PFP2306ZRR1R11	PFP1256ZRR1R11	PFP670ZRR1R11	PFP1194ZRR1R11
0/15,000 psi / 0/1,000 bar	PFP835ZRR1R11	PFP855ZRR1R11	PFP2307ZRR1R11	PFP1257ZRR1R11	PFP671ZRR1R11	PFP1195ZRR1R11
0/20,000 psi / 0/1,400 bar	PFP837ZRR1R11	-	-	PFP1258ZRR1R11	PFP672ZRR1R11	PFP1196ZRR1R11

Dial Size	6" (150mm)	
Connection	1/4" Bottom	1/2" Bottom
30" Hg Vac / -1/0 bar	PFP1078ZRR1R11	PFP2326ZRR1R11
30"/0/15 psi / -1/1 bar	PFP1079ZRR1R11	PFP2327ZRR1R11
30"/0/30 psi / -1/2 bar	PFP1052ZRR1R11	PFP2328ZRR1R11
30"/0/60 psi / -1/4 bar	PFP1053ZRR1R11	PFP2329ZRR1R11
30"/0/100 psi / -1/7 bar	PFP1054ZRR1R11	PFP2330ZRR1R11
30"/0/150 psi / -1/10 bar	PFP1055ZRR1R11	PFP2331ZRR1R11
30"/0/200 psi / -1/14 bar	PFP1057ZRR1R11	PFP2332ZRR1R11
30"/0/300 psi / -1/20 bar	PFP1058ZRR1R11	PFP2333ZRR1R11
0/15 psi / 0/1 bar	PFP1059ZRR1R11	PFP2334ZRR1R11
0/30 psi / 0/2 bar	PFP1060ZRR1R11	PFP2335ZRR1R11
0/60 psi / 0/4 bar	PFP1061ZRR1R11	PFP2336ZRR1R11
0/100 psi / 0/7 bar	PFP1062ZRR1R11	PFP2337ZRR1R11
0/160 psi / 0/11 bar	PFP1063ZRR1R11	PFP2338ZRR1R11
0/200 psi / 0/14 bar	PFP1064ZRR1R11	PFP2339ZRR1R11
0/300 psi / 0/20 bar	PFP1065ZRR1R11	PFP2340ZRR1R11
0/400 psi / 0/28 bar	PFP1077ZRR1R11	PFP2341ZRR1R11
0/600 psi / 0/40 bar	PFP1066ZRR1R11	PFP2342ZRR1R11
0/1,000 psi / 0/70 bar	PFP1067ZRR1R11	PFP1080ZRR1R11
0/1,500 psi / 0/100 bar	PFP1068ZRR1R11	PFP1081ZRR1R11
0/2,000 psi / 0/140 bar	PFP1069ZRR1R11	PFP1082ZRR1R11
0/3,000 psi / 0/200 bar	PFP1070ZRR1R11	PFP1083ZRR1R11
0/5,000 psi / 0/350 bar	PFP1072ZRR1R11	PFP1085ZRR1R11
0/6,000 psi / 0/400 bar	-	PFP1089ZRR1R11
0/10,000 psi / 0/700 bar	PFP1073ZRR1R11	PFP1086ZRR1R11
0/15,000 psi / 0/1,000 bar	PFP1074ZRR1R11	PFP1087ZRR1R11
0/20,000 psi / 0/1,400 bar	PFP1075ZRR1R11	PFP1088ZRR1R11

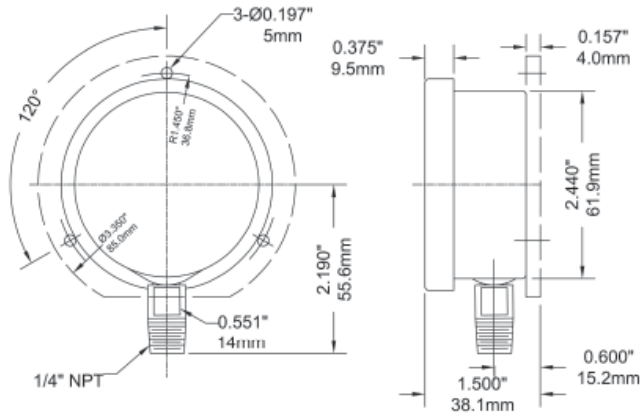
Other ranges, connection sizes and thread types are available upon request. For scale change, refer to How to Order Guide for scale codes.

**For options, attach suffix to end of order code: i.e. PFP660ZRR1R11-4FF for FRONT FLANGE.**

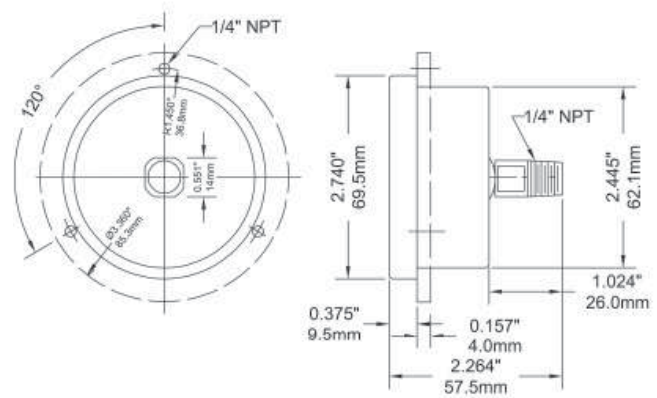
**Option suffix:**

25BF = 2.5" (63mm) Back flange  
 25BOOT = 2.5" (63mm) Black rubber boot  
 25FF = 2.5" (63mm) Front flange  
 25UC = 2.5" (63mm) U-Clamp  
 4BF = 4" (100mm) Back flange  
 4FF = 4" (100mm) Front flange  
 4UC-P = 4" (100mm) U-Clamp premium  
 6BF = 6" (150mm) Back flange  
 EN = EN837-1 compliant  
 GID = Glow-in-the-dark dial  
 MAXI25 = 2.5" (63mm) Maximum adjustable pointer  
 REST = Restrictor screw  
 RSP4 = 4" (100mm) Red set pointer  
 RSP6 = 6" (150mm) Red set pointer  
 SG25 = 2.5" (63mm) Safety glass lens  
 SG-4 = 4" (100mm) Safety glass lens  
 SG-6 = 6" (150mm) Safety glass lens

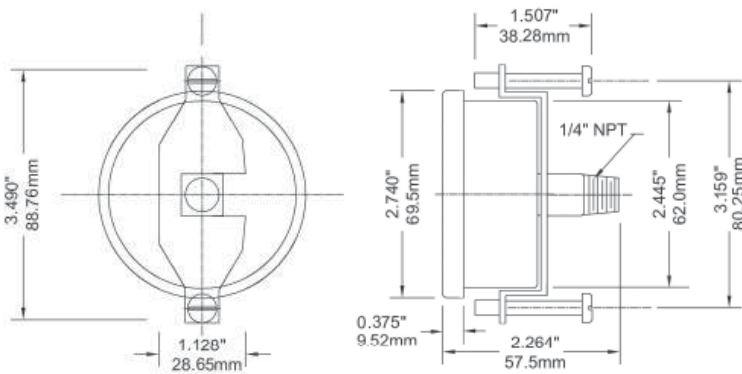
## 2.5" Bottom Connection with Back Flange



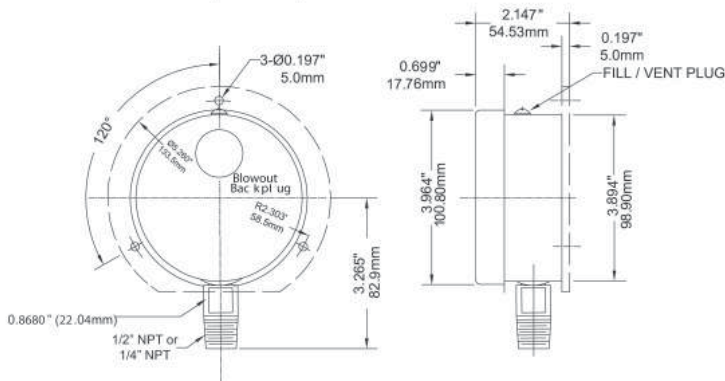
## 2.5" Back Connection with Front Flange



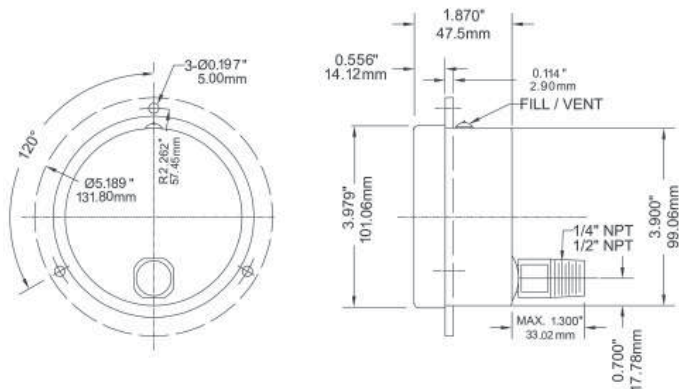
## 2.5" Back Connection with U-Clamp



## 4" Bottom Connection with Back Flange



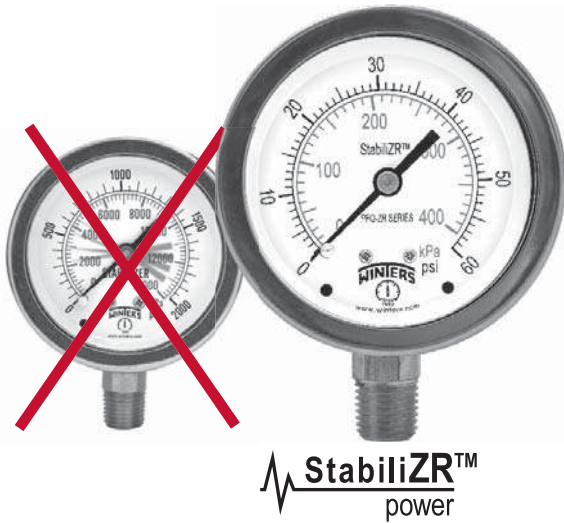
## 4" Lower Back Connection with Front Flange



## Series Number (for custom, non-standard product)

	P	F	P	-			-		-		-		-		-	Z	R	-			-		-		
SERIES																									
DIAL SIZE																									
2.5" (63mm)						2	5																		
4.0" (100mm)						4	0																		
CASE MATERIALS																									
304SS																									
316SS																									
WETTED PARTS																									
316L SS																									
Special																									
CONFIGURATION																									
Bottom Connection, Stem Mounting																									
Bottom Connection, Back Flange, Surface Mounting																									
Bottom Connection, Front Flange, Surface Mounting																									
Back Connection, Stem Mounting																									
Back Connection, Back Flange, Surface Mounting																									
Back Connection, Wide Front Flange, (Drilled) Panel Mounting																									
Back Connection, Wide Front Flange, (Undrilled) Panel Mounting																									
Back Connection, Narrow Front Ring, Panel Mounting (Yoke)																									
Special																									
CONNECTION SIZE																									
1/4"																									
1/2"																									
Special																									
THREAD																									
NPT																									
BSP (G)																									
BSPT (R)																									
M14 x 1.5																									
M20 x 1.5																									
Special																									
PRIMARY SCALE																									
UNITS																									
RANGE																									
SECONDARY SCALE																									
UNITS																									
OPTIONS																									
Black Rubber Boot																								S	Z
Maximum Adjustable Pointer																								S	J
Oxygen Cleaning																								S	L
Safety Glass																								S	A
Stainless Steel Tag Plate																								S	M
Test Certificate																								S	O
No Options																								X	X





## Description & Features:

- StabiliZR™ dampened movement minimizes effects of pulsation and vibration without liquid filling (flutterless pointer)
- Restricted orifice
- Crimp-on bezel
- Brass internals
- Dual scale (psi/kPa)
- U-Clamps and front flanges for panel mounting
- ASME B40.100 compliant (EN837-1 available)
- CRN registered
- 5 year warranty

## Applications:

- Ideal for pumps, compressors, hydraulic presses, machinery and motors that operate in harsh environments

Specifications	
Dial	2.5" (63mm), 4" (100mm) aluminum with red and black markings
Case	304 SS (dry)
Lens	Polycarbonate
Ring	304 SS (crimped on)
Socket	Brass
Connection	1/4" or 1/2" NPT (other thread types are available)
Bourdon Tube	Bronze
Movement	Bronze with StabiliZR™ dampened movement (silicone in sealed chamber)
Pointer	Anodized black aluminum
Over-pressure Limit	25% for pressures up to 1,450 psi (100 bar), 15% for pressures over 1,450 psi (100 bar)
Socket Gasket	Buna N for two-piece internal socket seal
Fill Plug	Buna N
Lens Ring Gasket	Silicone rubber
Working Pressure	75% of full scale value
Ambient/Process Temperature	-40°F to 200°F (-40°C to 93°C)
Accuracy	±1.5% of full scale value
Enclosure Rating	IP65

## Order Codes

Dial Size	2.5" (63mm)		4" (100mm)			
Connection	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (CB)	1/2" Bottom	1/2" Back (CB)
30" Hg Vac / -1/0 bar	PFQ801ZRR1R11	PFQ900ZRR1R11	PFQ700ZRR1R11	PFQ730ZRR1R11	PFQ1234ZRR1R11	PFQ1285ZRR1R11
30"/0/15 psi / -1/1 bar	PFQ790ZRR1R11	PFQ890ZRR1R11	PFQ701ZRR1R11	PFQ731ZRR1R11	PFQ1235ZRR1R11	PFQ1286ZRR1R11
30"/0/30 psi / -1/2 bar	PFQ798ZRR1R11	PFQ898ZRR1R11	PFQ702ZRR1R11	PFQ732ZRR1R11	PFQ1236ZRR1R11	PFQ1287ZRR1R11
30"/0/60 psi / -1/4 bar	PFQ799ZRR1R11	PFQ899ZRR1R11	PFQ703ZRR1R11	PFQ733ZRR1R11	PFQ1237ZRR1R11	PFQ1288ZRR1R11
30"/0/100 psi / -1/7 bar	PFQ791ZRR1R11	PFQ891ZRR1R11	PFQ704ZRR1R11	PFQ734ZRR1R11	PFQ1238ZRR1R11	PFQ1289ZRR1R11
30"/0/150 psi / -1/10 bar	PFQ792ZRR1R11	PFQ892ZRR1R11	PFQ705ZRR1R11	PFQ735ZRR1R11	PFQ1239ZRR1R11	PFQ1290ZRR1R11
30"/0/200 psi / -1/14 bar	PFQ794ZRR1R11	PFQ894ZRR1R11	PFQ706ZRR1R11	PFQ736ZRR1R11	PFQ1240ZRR1R11	PFQ1291ZRR1R11
30"/0/300 psi / -1/20 bar	PFQ795ZRR1R11	PFQ895ZRR1R11	PFQ707ZRR1R11	PFQ737ZRR1R11	PFQ1241ZRR1R11	PFQ1292ZRR1R11
0/15 psi / 0/1 bar	PFQ800ZRR1R11	PFQ901ZRR1R11	PFQ708ZRR1R11	PFQ738ZRR1R11	PFQ1242ZRR1R11	PFQ1293ZRR1R11
0/30 psi / 0/2 bar	PFQ802ZRR1R11	PFQ902ZRR1R11	PFQ709ZRR1R11	PFQ739ZRR1R11	PFQ1243ZRR1R11	PFQ1294ZRR1R11
0/60 psi / 0/4 bar	PFQ803ZRR1R11	PFQ903ZRR1R11	PFQ710ZRR1R11	PFQ740ZRR1R11	PFQ1244ZRR1R11	PFQ1295ZRR1R11
0/100 psi / 0/7 bar	PFQ804ZRR1R11	PFQ904ZRR1R11	PFQ711ZRR1R11	PFQ741ZRR1R11	PFQ1245ZRR1R11	PFQ1296ZRR1R11
0/160 psi / 0/11 bar	PFQ805ZRR1R11	PFQ905ZRR1R11	PFQ712ZRR1R11	PFQ742ZRR1R11	PFQ1246ZRR1R11	PFQ1298ZRR1R11
0/200 psi / 0/14 bar	PFQ806ZRR1R11	PFQ906ZRR1R11	PFQ713ZRR1R11	PFQ743ZRR1R11	PFQ1247ZRR1R11	PFQ1524ZRR1R11
0/300 psi / 0/20 bar	PFQ807ZRR1R11	PFQ907ZRR1R11	PFQ714ZRR1R11	PFQ744ZRR1R11	PFQ1248ZRR1R11	PFQ1525ZRR1R11
0/400 psi / 0/28 bar	PFQ817ZRR1R11	PFQ917ZRR1R11	PFQ715ZRR1R11	PFQ745ZRR1R11	PFQ1249ZRR1R11	PFQ1526ZRR1R11
0/600 psi / 0/40 bar	PFQ808ZRR1R11	PFQ908ZRR1R11	PFQ716ZRR1R11	PFQ746ZRR1R11	PFQ1250ZRR1R11	PFQ1527ZRR1R11
0/1,000 psi / 0/70 bar	PFQ809ZRR1R11	PFQ909ZRR1R11	PFQ724ZRR1R11	PFQ192ZRR1R11	PFQ717ZRR1R11	PFQ747ZRR1R11
0/1,500 psi / 0/100 bar	PFQ816ZRR1R11	PFQ914ZRR1R11	PFQ725ZRR1R11	PFQ241ZRR1R11	PFQ718ZRR1R11	PFQ748ZRR1R11
0/2,000 psi / 0/140 bar	PFQ810ZRR1R11	PFQ910ZRR1R11	PFQ726ZRR1R11	PFQ242ZRR1R11	PFQ719ZRR1R11	PFQ749ZRR1R11
0/3,000 psi / 0/200 bar	PFQ811ZRR1R11	PFQ911ZRR1R11	PFQ727ZRR1R11	PFQ243ZRR1R11	PFQ720ZRR1R11	PFQ750ZRR1R11
0/5,000 psi / 0/350 bar	PFQ812ZRR1R11	PFQ912ZRR1R11	PFQ728ZRR1R11	PFQ244ZRR1R11	PFQ721ZRR1R11	PFQ751ZRR1R11
0/6,000 psi / 0/400 bar	PFQ814ZRR1R11	PFQ915ZRR1R11	PFQ346ZRR1R11	PFQ246ZRR1R11	PFQ784ZRR1R11	PFQ785ZRR1R11
0/7,500 psi / 0/517 bar	PFQ818ZRR1R11	PFQ918ZRR1R11	PFQ347ZRR1R11	PFQ247ZRR1R11	PFQ786ZRR1R11	PFQ886ZRR1R11
0/10,000 psi / 0/700 bar	PFQ813ZRR1R11	PFQ913ZRR1R11	PFQ729ZRR1R11	PFQ360ZRR1R11	PFQ722ZRR1R11	PFQ752ZRR1R11
0/15,000 psi / 0/1,000 bar	-	-	PFQ261ZRR1R11	PFQ361ZRR1R11	PFQ723ZRR1R11	PFQ753ZRR1R11

Note: Restrictor screws are not standard on single scale gauges

Other ranges, connection sizes and thread types are 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. PFQ807ZRR1R11-25BF for BACK FLANGE.**

### Option suffix:

25BF = 2.5" (63mm) Back flange

25BOOT = 2.5" (63mm) Black rubber boot

25FF = 2.5" (63mm) Front flange

25UC = 2.5" (63mm) U-Clamp

4BF = 4" (100mm) Back flange

4FF = 4" (100mm) Front flange

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

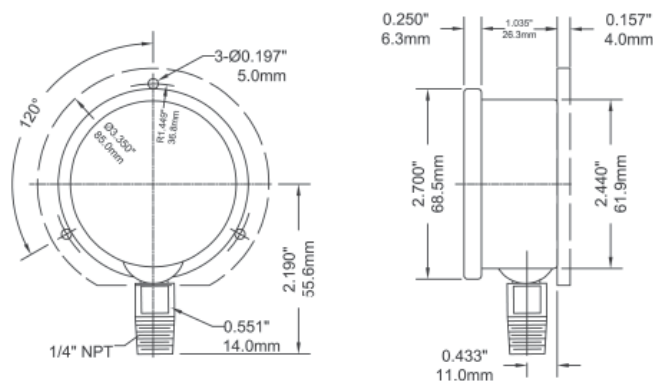
4UC-Q = 4" (100mm) U-Clamp (for brass movement)

EN = EN837-1 compliant

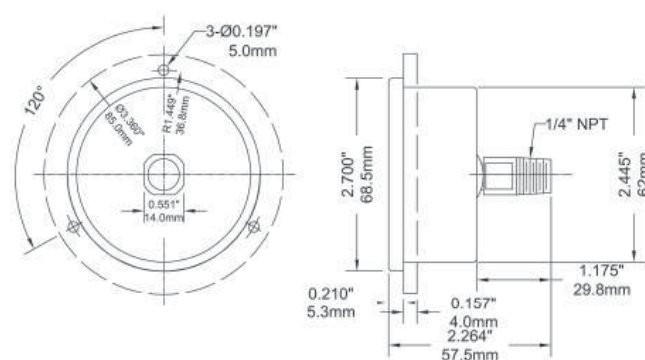
REST = Restrictor screw

SF4 = 4" (100mm) Silicone filled

## 2.5" Bottom Connection with Back Flange



## 2.5" Back Connection with Front Flange



Series Number (for custom, non-standard product)

	P	F	Q	-			-		-		-		-		-	Z	R	-			-		-		
SERIES																									
DIAL SIZE																									
2.5" (63mm)					2	5																			
CASE MATERIALS																									
304SS																									
316SS																									
WETTED PARTS																									
Brass																									
CONFIGURATION																									
Bottom Connection, Stem Mounting																									
Bottom Connection, Back Flange, Surface Mounting																									
Bottom Connection, Front Flange, Surface Mounting																									
Back Connection, Stem Mounting																									
Back Connection, Back Flange, Surface Mounting																									
Back Connection, Wide Front Flange, (Drilled) Panel Mounting																									
Back Connection, Wide Front Flange, (Undrilled) Panel Mounting																									
Back Connection, Narrow Front Ring, Panel Mounting (Yoke)																									
Special																									
CONNECTION SIZE																									
1/4"																									
Special																									
THREAD																									
NPT																									
BSP (G)																									
BSPT (R)																									
M14 x 1.5																									
M20 x 1.5																									
Special																									
PRIMARY SCALE																									
UNITS																									
RANGE																									
SECONDARY SCALE																									
UNITS																									
OPTIONS																									
Black Rubber Boot																								S	Z
Maximum Adjustable Pointer																								S	J
Oxygen Cleaning																								S	L
Safety Glass																								S	A
Stainless Steel Tag Plate																								S	M
Test Certificate																								S	O
No Options																								X	X



**StabiliZR™**  
power

## 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 without liquid filling
- 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
- Processes where pulsation or vibration exist
- Install where liquid filling is not an option

## Specifications

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

## Order Codes

Dial Size Connection	4" (100mm) 1/2" Bottom
30" Hg Vac / -1/0 bar	PN2655ZRR1R11
30"/0/15 psi / -1/1 bar	PN21044ZRR1R11
30"/0/30 psi / -1/2 bar	PN21045ZRR1R11
30"/0/60 psi / -1/4 bar	PN21046ZRR1R11
30"/0/100 psi / -1/7 bar	PN21047ZRR1R11
30"/0/160 psi / -1/11 bar	PN21048ZRR1R11
30"/0/200 psi / -1/14 bar	PN21050ZRR1R11
30"/0/300 psi / -1/20 bar	PN21051ZRR1R11
0/15 psi / 0/1 bar	PN2656ZRR1R11
0/30 psi / 0/2 bar	PN2657ZRR1R11
0/60 psi / 0/4 bar	PN2658ZRR1R11
0/100 psi / 0/7 bar	PN2659ZRR1R11
0/160 psi / 0/11 bar	PN2660ZRR1R11
0/200 psi / 0/14 bar	PN2661ZRR1R11
0/300 psi / 0/20 bar	PN2662ZRR1R11
0/400 psi / 0/28 bar	PN2666ZRR1R11
0/600 psi / 0/40 bar	PN2663ZRR1R11
0/1,000 psi / 0/70 bar	PN2664ZRR1R11
0/1,500 psi / 0/100 bar	PN2665ZRR1R11
0/2,000 psi / 0/140 bar	PN2667ZRR1R11
0/3,000 psi / 0/200 bar	PN2668ZRR1R11
0/5,000 psi / 0/350 bar	PN2669ZRR1R11
0/6,000 psi / 0/400 bar	PN2675ZRR1R11
0/10,000 psi / 0/700 bar	PN2670ZRR1R11
0/15,000 psi / 0/1,000 bar	PN2671ZRR1R11
0/20,000 psi / 0/1,400 bar	PN2672ZRR1R11

Other ranges, connection sizes and thread types are 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. PN2664ZRR1R11-4BF for BACK FLANGE.**

### Option suffix:

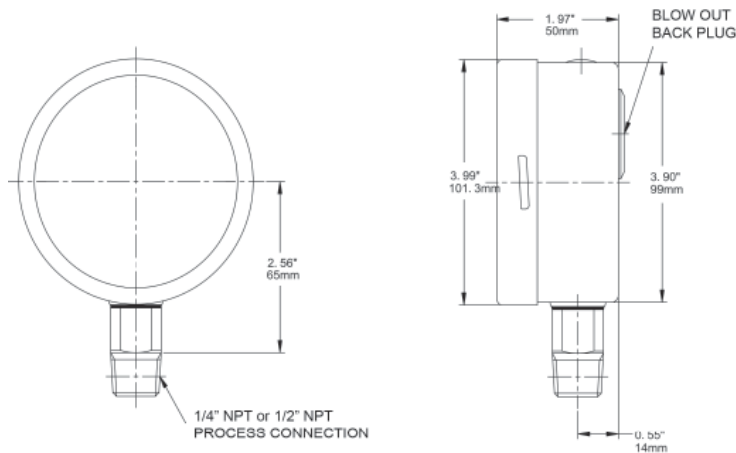
4BF = 4" (100mm) Back flange

EN = EN837-1 compliant

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

REST = Restrictor screw

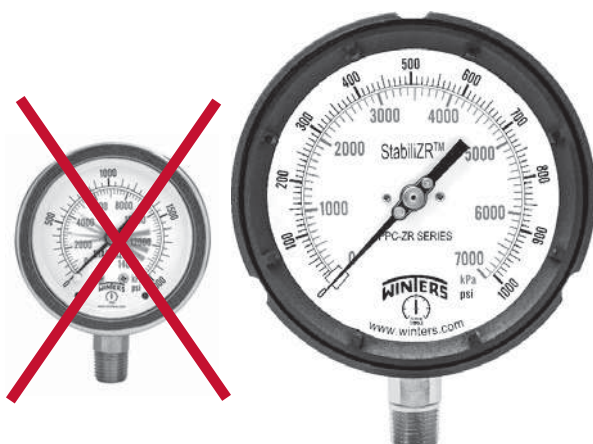
## 4" Bottom Connection



**Series Number (for custom, non-standard product)**

	P	N	2	-			-		-		-		-		Z	R	-		-		-		-		-			
SERIES																												
DIAL SIZE																												
4.0" (100mm)																												
CASE MATERIALS																												
304SS																												
316SS																												
WETTED PARTS																												
316SS																												
CONFIGURATION																												
Bottom Connection, Stem Mounting	A																											
Bottom Connection, Back Flange, Surface Mounting	B																											
Bottom Connection, Front Flange, Surface Mounting	C																											
Back Connection, Stem Mounting	D																											
Back Connection, Back Flange, Surface Mounting	E																											
Back Connection, Wide Front Flange, (Drilled) Panel Mounting	F																											
Back Connection, Narrow Front Ring, Panel Mounting (Yoke)	V																											
Special	Z																											
CONNECTION SIZE																												
3/8"	3																											
1/2"	2																											
Special	Z																											
THREAD																												
NPT	N																											
BSP (G)	B																											
BSPT (R)	T																											
Special	Z																											
<i>PRIMARY SCALE</i>																												
UNITS - See Page 8																												
RANGE - See Page 8																												
<i>SECONDARY SCALE</i>																												
UNITS - See Page 8																												
OPTIONS																												
Maximum Adjustable Pointer	S J																											
Oxygen Cleaning	S L																											
Stainless Steel Tag Plate	S M																											
Test Certificate	S O																											
No Options	X Q																											





Note; RoHS applies to SS and Monel® internals only

**StabiliZR™**  
power

## Description & Features:

- StabiliZR™ dampened movement minimizes effects of pulsation and vibration without liquid filling
- 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
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- Used where operator safety is a must
- Ideally suited for process, chemical and petroleum industry applications where chemical compatibility and contamination is a concern
- 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 (other thread types are available)	1/4" NPT or 1/2" NPT standard, bottom or back (other thread types are available)
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 (Viton® option)	Silicone (Viton® option)
Welding	TIG	Silver alloy
Over-pressure Limit	25% for pressures below 1,500 psi/bar, 15% for pressures 1,500 to 8,700 psi/bar, 10% for pressures above 8,700 psi/bar	25% for pressures below 1,500 psi/bar, 15% for pressures 1,500 to 8,700 psi/bar, 10% for pressures above 8,700 psi/bar
Working Pressure	Maximum 75% of full scale value	Maximum 75% of full scale value
Ambient Temperature	-40°F to 200°F (-40°C to 93°C)	-40°F to 250°F (-40°C to 120°C)
Process Temperature	-40°F to 257°F (-40°C to 125°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

Viton® is a registered trademark of DuPont Performance Elastomers

## Order Codes

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 / -1/0 bar	PPC5080ZRR1R11	PPC5280ZRR1R11	PPC5040ZRR1R11	PPC5340ZRR1R11	PPC5060ZRR1R11	PPC5460ZRR1R11
30"/0/15 psi / -1/1 bar	PPC5120ZRR1R11	PPC5220ZRR1R11	PPC5130ZRR1R11	PPC5330ZRR1R11	PPC5140ZRR1R11	PPC5440ZRR1R11
330"/0/30 psi / -1/2 bar	PPC5121ZRR1R11	PPC5221ZRR1R11	PPC5131ZRR1R11	PPC5331ZRR1R11	PPC5141ZRR1R11	PPC5441ZRR1R11
30"/0/60 psi / -1/4 bar	PPC5122ZRR1R11	PPC5222ZRR1R11	PPC5132ZRR1R11	PPC5332ZRR1R11	PPC5142ZRR1R11	PPC5442ZRR1R11
30"/0/100 psi / -1/7 bar	PPC5123ZRR1R11	PPC5223ZRR1R11	PPC5133ZRR1R11	PPC5333ZRR1R11	PPC5143ZRR1R11	PPC5443ZRR1R11
30"/0/160 psi / -1/11 bar	PPC5124ZRR1R11	PPC5224ZRR1R11	PPC5134ZRR1R11	PPC5334ZRR1R11	PPC5144ZRR1R11	PPC5444ZRR1R11
30"/0/200 psi / -1/14 bar	PPC5125ZRR1R11	PPC5225ZRR1R11	PPC5135ZRR1R11	PPC5335ZRR1R11	PPC5145ZRR1R11	PPC5445ZRR1R11
30"/0/300 psi / -1/20 bar	PPC5126ZRR1R11	PPC5226ZRR1R11	PPC5136ZRR1R11	PPC5336ZRR1R11	PPC5146ZRR1R11	PPC5446ZRR1R11
0/15 psi / 0/1 bar	PPC5081ZRR1R11	PPC5281ZRR1R11	PPC5041ZRR1R11	PPC5341ZRR1R11	PPC5061ZRR1R11	PPC5461ZRR1R11
0/30 psi / 0/2 bar	PPC5082ZRR1R11	PPC5282ZRR1R11	PPC5042ZRR1R11	PPC5342ZRR1R11	PPC5062ZRR1R11	PPC5462ZRR1R11
0/60 psi / 0/4 bar	PPC5083ZRR1R11	PPC5283ZRR1R11	PPC5043ZRR1R11	PPC5343ZRR1R11	PPC5063ZRR1R11	PPC5463ZRR1R11
0/100 psi / 0/7 bar	PPC5084ZRR1R11	PPC5284ZRR1R11	PPC5044ZRR1R11	PPC5344ZRR1R11	PPC5064ZRR1R11	PPC5464ZRR1R11
0/160 psi / 0/11 bar	PPC5085ZRR1R11	PPC5285ZRR1R11	PPC5045ZRR1R11	PPC5345ZRR1R11	PPC5065ZRR1R11	PPC5465ZRR1R11
0/200 psi / 0/14 bar	PPC5086ZRR1R11	PPC5286ZRR1R11	PPC5046ZRR1R11	PPC5346ZRR1R11	PPC5066ZRR1R11	PPC5466ZRR1R11
0/300 psi / 0/20 bar	PPC5087ZRR1R11	PPC5287ZRR1R11	PPC5047ZRR1R11	PPC5347ZRR1R11	PPC5067ZRR1R11	PPC5467ZRR1R11
0/400 psi / 0/28 bar	PPC5088ZRR1R11	PPC5288ZRR1R11	PPC5048ZRR1R11	PPC5348ZRR1R11	PPC5068ZRR1R11	PPC5468ZRR1R11
0/600 psi / 0/40 bar	PPC5089ZRR1R11	PPC5289ZRR1R11	PPC5049ZRR1R11	PPC5349ZRR1R11	PPC5069ZRR1R11	PPC5469ZRR1R11
0/800 psi / 0/60 bar	PPC5099ZRR1R11	PPC5299ZRR1R11	PPC5058ZRR1R11	PPC5358ZRR1R11	PPC5078ZRR1R11	PPC5478ZRR1R11
0/1,000 psi / 0/70 bar	PPC5098ZRR1R11	PPC5298ZRR1R11	PPC5050ZRR1R11	PPC5350ZRR1R11	PPC5070ZRR1R11	PPC5470ZRR1R11
Connection	1/2"	1/2"	1/4"	1/4"	1/2"	1/2"
0/800 psi / 0/60 bar	PPC5188ZRR1R11	PPC5198ZRR1R11	PPC5058ZRR1R11	PPC5358ZRR1R11	PPC5078ZRR1R11	PPC5478ZRR1R11
0/1,000 psi / 0/70 bar	PPC5090ZRR1R11	PPC5290ZRR1R11	PPC5050ZRR1R11	PPC5350ZRR1R11	PPC5070ZRR1R11	PPC5470ZRR1R11
0/1,500 psi / 0/100 bar	PPC5091ZRR1R11	PPC5291ZRR1R11	PPC5051ZRR1R11	PPC5351ZRR1R11	PPC5071ZRR1R11	PPC5471ZRR1R11
0/2,000 psi / 0/140 bar	PPC5092ZRR1R11	PPC5292ZRR1R11	PPC5052ZRR1R11	PPC5352ZRR1R11	PPC5072ZRR1R11	PPC5472ZRR1R11
0/3,000 psi / 0/200 bar	PPC5093ZRR1R11	PPC5293ZRR1R11	PPC5053ZRR1R11	PPC5353ZRR1R11	PPC5073ZRR1R11	PPC5473ZRR1R11
0/5,000 psi / 0/350 bar	PPC5094ZRR1R11	PPC5294ZRR1R11	PPC5054ZRR1R11	PPC5354ZRR1R11	PPC5074ZRR1R11	PPC5474ZRR1R11
0/10,000 psi / 0/700 bar	PPC5095ZRR1R11	PPC5295ZRR1R11	PPC5055ZRR1R11	PPC5355ZRR1R11	PPC5075ZRR1R11	PPC5475ZRR1R11
0/15,000 psi / 0/1,000 bar	PPC5096ZRR1R11	PPC5296ZRR1R11	PPC5056ZRR1R11	PPC5356ZRR1R11	PPC5076ZRR1R11	PPC5476ZRR1R11
0/20,000 psi / 0/1,400 bar	PPC5097ZRR1R11	PPC5297ZRR1R11	PPC5057ZRR1R11	PPC5357ZRR1R11	PPC5077ZRR1R11	PPC5477ZRR1R11

Other ranges, connection sizes and thread types are 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.**

**PPC5284ZRR1R11-FMR for FLUSH MOUNTED RING.**

### Option suffix:

CS = Carbon steel socket/stainless steel tube

FMR = Flush mounted ring

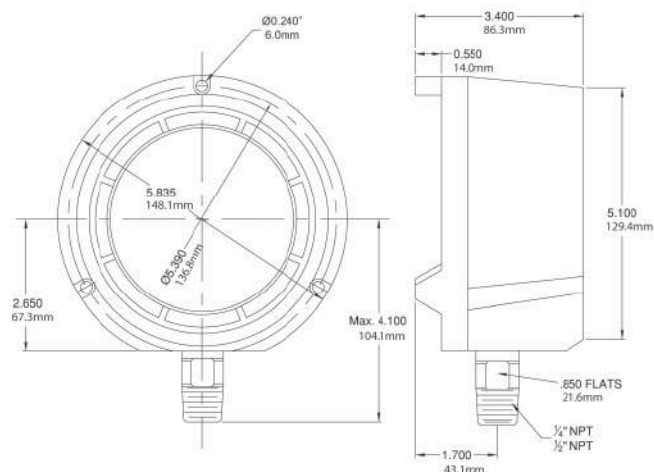
GID = Glow-in-the-dark dial

MS = Monel® tube and socket

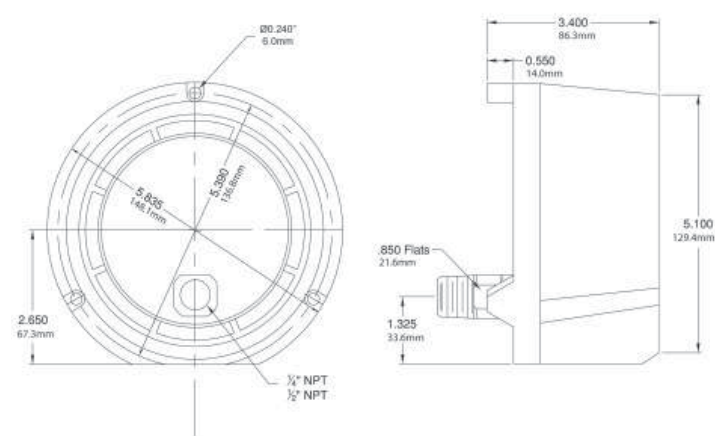
SG-45 = 4.5" (115mm) Safety glass

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

### 4.5" Bottom Connection



### 4.5" Back Connection



## Series Number (for custom, non-standard product)

	P	P	C	-			-		-		-		-		-		-	Z	R	-			-		-			
SERIES																												
DIAL SIZE																												
4.5" (115mm)																												
CASE MATERIALS																												
Phenolic																												
WETTED PARTS																												
Brass																												
316SS																												
Monel																												
Special																												
CONFIGURATION																												
Bottom Connection, Back Flange, Surface Mounting																												
Back Connection, Back Flange, Surface Mounting																												
Special																												
CONNECTION SIZE																												
1/4"																												
1/2"																												
THREAD																												
NPT																												
BSP (G)																												
BSPT (R)																												
Special																												
PRIMARY SCALE																												
UNITS																												
RANGE																												
SECONDARY SCALE																												
UNITS																												
OPTIONS																												
Flush Mounting Ring																												
Hinged Case																												
Maximum Adjustable Pointer																												
Monel Socket and Tube																												
NACE-MR0175-2002																												
Oxygen Cleaning																												
Safety Glass																												
Stainless Steel Tag Plate																												
Test Certificate																												
No Options																												



1

2

1. Optional Front Flange  
2. Optional Back Flange

### Description & Features:

- High quality, commercial grade gauge at an economical price
- $\pm 1\%$  accuracy
- Steel and aluminum cases
- Brass wetted parts
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

### Applications:

- Plumbing and heating

### Specifications

Dial	3.5" (90mm), 4" (100mm), 4.5" (115mm), 6" (150mm) white aluminum with black and red markings
Case	3.5" (90mm), 4" (100mm): Steel painted black 4.5" (115mm): Aluminum 6" (150mm) Bottom: Steel painted black 6" (150mm) Back: Aluminum
Lens	3.5" (90mm), 4.5" (115mm) Bottom connection, 6" (150mm): Glass 4" (100mm), 4.5" (115mm) Back connection: Polycarbonate
Ring	3.5" (90mm), 4" (100mm), 4.5" (115mm) Bottom connection: Polished brass 6" (150mm) Bottom connection: Steel painted black 4.5" (115mm) Back connection, 6" (150mm) back connection: SS, polished
Socket	Brass
Connection	1/4" NPT standard (other thread types are available)
Bourdon Tube	Phosphor bronze
Pointer	Black aluminum
Welding	Silver alloy
Over-pressure Limit	25% of full scale value
Working Pressure	Maximum 75% of full scale value
Ambient/Process Temperature	-40°F to 200°F (-40°C to 93°C)
Accuracy	$\pm 1\%$ ANSI/ASME Grade 1A
Enclosure Rating	IP52

## Order Codes

Dial Size	3.5" (90mm)		4" (100mm)	4.5" (115mm)		6" (150mm)	
Case Material	Steel			Aluminum		Steel	Aluminum
Connection	Bottom	Centre Back		Bottom	Lower Back	Bottom	Lower Back
30" Hg Vac / -1/0 bar	P1S234R1R11	P1S560R1R11	P1S460R1R11	P1S410R1R11	P1S430R1R11	P1S250R1R11	P1S475R1R11
30"/0/15 psi / -1/1 bar	P1S230R1R11	P1S568R1R11	P1S468R1R11	P1S411R1R11	P1S431R1R11	P1S251CR1R11	P1S476R1R11
30"/0/30 psi / -1/2 bar	P1S231R1R11	P1S569R1R11	P1S469R1R11	P1S412R1R11	P1S432R1R11	P1S252CR1R11	P1S477R1R11
30"/0/60 psi / -1/4 bar	P1S232R1R11	P1S570R1R11	P1S470R1R11	P1S413R1R11	P1S433R1R11	P1S259CR1R11	P1S478R1R11
30"/0/100 psi / -1/7 bar	P1S233R1R11	P1S571R1R11	P1S471R1R11	P1S414R1R11	P1S434R1R11	P1S253CR1R11	P1S479R1R11
30"/0/160 psi / -1/11 bar	P1S229R1R11	P1S572R1R11	P1S472R1R11	P1S416R1R11	P1S436R1R11	P1S254CR1R11	P1S480R1R11
30"/0/200 psi / -1/14 bar	-	P1S573R1R11	-	P1S417R1R11	P1S437R1R11	P1S255CR1R11	P1S481R1R11
30"/0/300 psi / -1/20 bar	P1S227R1R11	P1S574R1R11	P1S473R1R11	P1S418R1R11	P1S438R1R11	P1S256CR1R11	P1S482R1R11
0/15 psi / 0/1 bar	P1S228R1R11	P1S561R1R11	P1S461R1R11	P1S419R1R11	P1S439R1R11	-	-
0/30 psi / 0/2 bar	P1S235R1R11	P1S562R1R11	P1S462R1R11	P1S420R1R11	P1S440R1R11	P1S251R1R11	P1S483R1R11
0/60 psi / 0/4 bar	P1S236R1R11	P1S563R1R11	P1S463R1R11	P1S421R1R11	P1S441R1R11	P1S252R1R11	P1S484R1R11
0/100 psi / 0/7 bar	P1S237R1R11	P1S564R1R11	P1S464R1R11	P1S422R1R11	P1S442R1R11	P1S253R1R11	P1S485R1R11
0/160 psi / 0/11 bar	P1S238R1R11	P1S565R1R11	P1S465R1R11	P1S423R1R11	P1S443R1R11	P1S254R1R11	P1S486R1R11
0/200 psi / 0/14 bar	P1S239R1R11	P1S566R1R11	P1S466R1R11	P1S424R1R11	P1S444R1R11	P1S255R1R11	P1S487R1R11
0/300 psi / 0/20 bar	P1S240R1R11	P1S567R1R11	P1S467R1R11	P1S426R1R11	P1S446R1R11	P1S256R1R11	P1S488R1R11
0/600 psi / 0/40 bar	-	-	-	P1S490R1R11	-	-	-
0/1,000 psi / 0/70 bar	-	-	-	P1S491R1R11	-	-	-
0/3,000 psi / 0/200 bar	-	-	-	P1S492R1R11	-	-	-
0/5,000 psi / 0/350 bar	-	-	-	P1S493R1R11	-	-	-

Other ranges, connection sizes and thread types are 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. P1S420R1R11-45QBF for BACK FLANGE.**

## Option suffix:

35QBF = 3.5" (90mm) Back flange

45QBF = 4.5" (115mm) Back flange

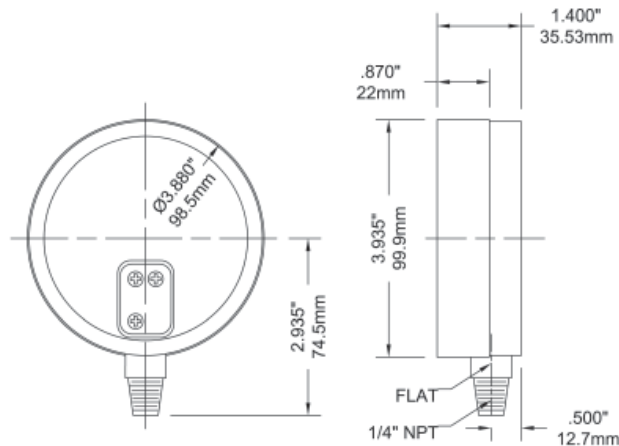
4QBF = 4" (100mm) Back flange

6QBF = 6" (150mm) Back flange

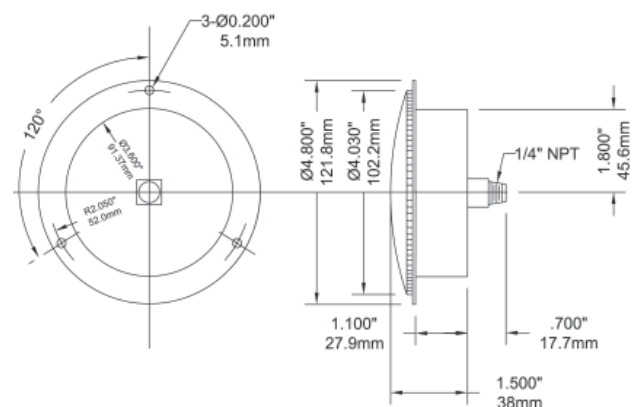
EN = EN837-1 compliant

Note: Syphon recommended for all steam applications

## 3.5" Bottom Connection

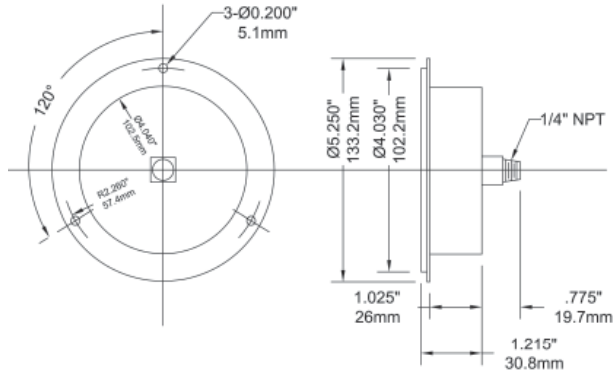


## 3.5" Back Connection

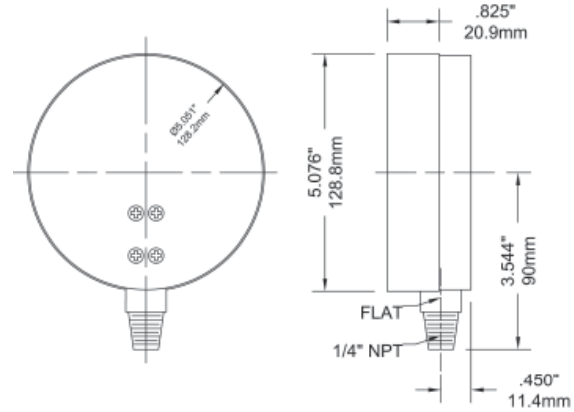


Front flange is a standard integral part of the 3.5" back connection case

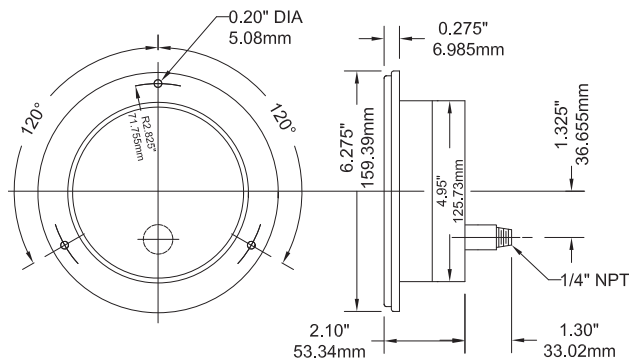
## 4" Centre Back Connection



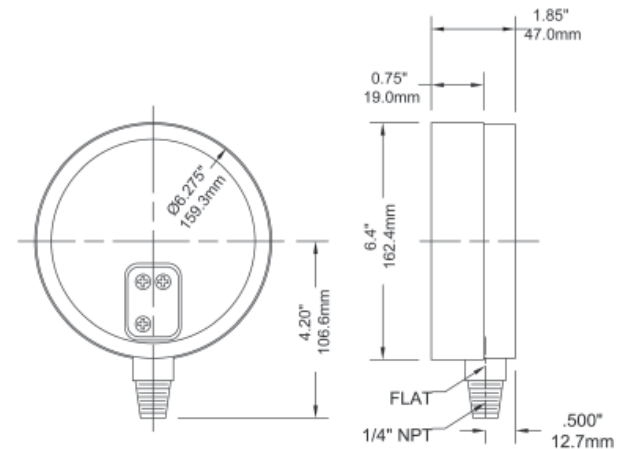
## 4.5" Bottom Connection



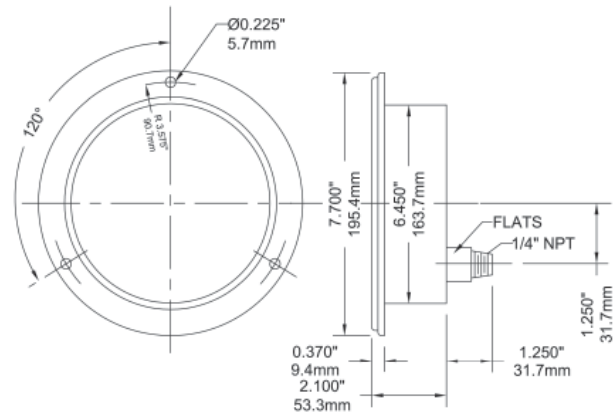
## 4.5" Lower Back Connection



## 6" Bottom Connection



## 6" Back Connection with Front Flange





**Series Number (for custom, non-standard product)**

	P	1	S	-			-		-		-		-		-			-		-			-		
SERIES																									
DIAL SIZE																									
3.5" (90mm)					3	5																			
4.0" (100mm)					4	0																			
4.5" (115mm)					4	5																			
6.0" (150mm)					6	0																			
CASE MATERIALS																									
Aluminum							A																		
Steel Painted Black							Y																		
WETTED PARTS																									
Brass							B																		
CONFIGURATION																									
Bottom Connection, Stem Mounting							A																		
Bottom Connection, Back Flange, Surface Mounting							B																		
Back Connection, Stem Mounting							D																		
Back Connection, Back Flange, Surface Mounting							E																		
Back Connection, Wide Front Flange, (Drilled) Panel Mounting							F																		
Special							Z																		
CONNECTION SIZE																									
1/4"										4															
Special										Z															
THREAD																									
NPT											N														
BSP (G)											B														
BSPT (R)											T														
Special											Z														
PRIMARY SCALE																									
UNITS - See Page 8																									
RANGE - See Page 8																									
SECONDARY SCALE																									
UNITS - See Page 8																									
OPTIONS																									
Maximum Adjustable Pointer (Polycarbonate lens only)																								S	J
Oxygen Cleaning																								S	L
Test Certificate																								S	O
U-Clamp																								S	H
Back Flange + U-Clamp																								D	G
Front Flange + U-Clamp																								D	H
No Options																								X	Q



1. Back Connection with Standard Front Flange  
2. Optional Hinged Case Back Connection

## Description & Features:

- Heavy duty, highly accurate aluminum case gauge
- $\pm 0.5\%$  accuracy
- Brass or stainless steel internals
- Large, easy-to-read dial
- StabilizR™ dampened movement available on 4.5" (115mm) dial size
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- Use on air, steam, oil, fresh water
- Boiler and control room

Specifications	Stainless Steel Internals	Brass Internals
<b>Dial</b>	4.5" (115mm), 6" (150mm), 8.5" (215mm) and 10" (250mm) white aluminum with black and red markings	4.5" (115mm), 6" (150mm), 8.5" (215mm) and 10" (250mm) white aluminum with black and red markings
<b>Case</b>	Aluminum painted black	Aluminum painted black
<b>Front Flange</b>	4.5" (115mm), 6" (150mm): SS, polished 8.5" (215mm), 10" (250mm): Aluminum, painted black	4.5" (115mm), 6" (150mm): SS, polished 8.5" (215mm), 10" (250mm): Aluminum, painted black
<b>Back Flange</b>	4.5" (115mm), 6" (150mm): Steel, painted black (optional) 8.5" (215mm), 10" (250mm): Aluminum, painted black	4.5" (115mm), 6" (150mm): Steel, painted black (optional) 8.5" (215mm), 10" (250mm): Aluminum, painted black
<b>Lens</b>	4.5" (115mm), 6" (150mm): Glass 8.5" (200mm), 10" (250mm): Polycarbonate	4.5" (115mm), 6" (150mm): Glass 8.5" (200mm), 10" (250mm): Polycarbonate
<b>Ring</b>	4.5" (115mm), 6" (150mm): SS, polished 8.5" (215mm), 10" (250mm): Aluminum	4.5" (115mm), 6" (150mm): SS, polished 8.5" (215mm), 10" (250mm): Aluminum
<b>Socket</b>	316L SS	Brass
<b>Connection</b>	1/4" NPT for ranges up to 600 psi (4,137 kPa), 1/2" NPT for ranges over 600 psi (4,137 kPa) (other thread types are available)	1/4" NPT for ranges up to 600 psi (4,137 kPa), 1/2" NPT for ranges over 600 psi (4,137 kPa) (other thread types are available)
<b>Bourdon Tube</b>	316L SS	Phosphor bronze for ranges up to 600 psi (4,137 kPa) 316L SS for ranges over 600 psi (4,137 kPa)
<b>Movement</b>	304 SS	Brass
<b>Pointer</b>	Aluminum, anodized black, micrometer adjustable	Aluminum, anodized black, micrometer adjustable
<b>Welding</b>	316L SS TIG Argonarc	Tin/copper alloy for ranges up to 600 psi (4,137 kPa) Silver alloy for ranges over 600 psi (4,137 kPa)
<b>Over-pressure Limit</b>	30% for pressures up to 600 psi (41 bar), 25% for pressures 601 psi to 1,400 psi (41 bar to 97 bar), 15% for pressures over 1,400 psi (97 bar)	30% for pressures up to 600 psi (41 bar), 25% for pressures 601 psi to 1,400 psi (41 bar to 97 bar), 15% for pressures over 1,400 psi (97 bar)
<b>Working Pressure</b>	Maximum 75% of full scale value	Maximum 75% of full scale value
<b>Ambient/Process Temperature</b>	-40°F to 150°F (-40°C to 65°C)	-40°F to 150°F (-40°C to 65°C)
<b>Accuracy</b>	$\pm 0.5\%$ ANSI/ASME Grade 2A	$\pm 0.5\%$ ANSI/ASME Grade 2A
<b>Enclosure Rating</b>	IP52	IP52

## Order Codes

	Dial Size	4.5" (115mm)			
	Connection	Bottom	Back (LB)	Bottom	Back (LB)
	Movement, Socket, Tube	Brass		SS	
1/4"	30" Hg Vac / -1/0 bar	P3S6000R1R11	P3S6000BR1R11	P3S6025R1R11	P3S6025BR1R11
	30"/0/15 psi / -1/1 bar	P3S6001R1R11	P3S6001BR1R11	P3S6026R1R11	P3S6026BR1R11
	30"/0/30 psi / -1/2 bar	P3S6002R1R11	P3S6002BR1R11	P3S6027R1R11	P3S6027BR1R11
	30"/0/60 psi / -1/4 bar	P3S6003R1R11	P3S6003BR1R11	P3S6028R1R11	P3S6028BR1R11
	30"/0/100 psi / -1/7 bar	P3S6004R1R11	P3S6004BR1R11	P3S6029R1R11	P3S6029BR1R11
	30"/0/160 psi / -1/11 bar	P3S6005R1R11	P3S6005BR1R11	P3S6030R1R11	P3S6030BR1R11
	30"/0/200 psi / -1/14 bar	P3S6006R1R11	P3S6006BR1R11	P3S6031R1R11	P3S6031BR1R11
	30"/0/300 psi / -1/20 bar	P3S6007R1R11	P3S6007BR1R11	P3S6032R1R11	P3S6032BR1R11
	0/15 psi / 0/1 bar	P3S6008R1R11	P3S6008BR1R11	P3S6033R1R11	P3S6033BR1R11
	0/30 psi / 0/2 bar	P3S6009R1R11	P3S6009BR1R11	P3S6034R1R11	P3S6034BR1R11
	0/60 psi / 0/4 bar	P3S6010R1R11	P3S6010BR1R11	P3S6035R1R11	P3S6035BR1R11
	0/100 psi / 0/7 bar	P3S6011R1R11	P3S6011BR1R11	P3S6036R1R11	P3S6036BR1R11
	0/160 psi / 0/11 bar	P3S6012R1R11	P3S6012BR1R11	P3S6037R1R11	P3S6037BR1R11
	0/200 psi / 0/14 bar	P3S6013R1R11	P3S6013BR1R11	P3S6038R1R11	P3S6038BR1R11
	0/300 psi / 0/20 bar	P3S6014R1R11	P3S6014BR1R11	P3S6039R1R11	P3S6039BR1R11
	0/400 psi / 0/28 bar	P3S6015R1R11	P3S6015BR1R11	P3S6040R1R11	P3S6040BR1R11
	0/600 psi / 0/40 bar	P3S6016R1R11	P3S6016BR1R11	P3S6041R1R11	P3S6041BR1R11
	0/1,000 psi / 0/70 bar	P3S6017R1R11	P3S6017BR1R11	P3S6042R1R11	P3S6042BR1R11
	0/1,500 psi / 0/100 bar	P3S6018R1R11	P3S6018BR1R11	P3S6043R1R11	P3S6043BR1R11
	0/2,000 psi / 0/140 bar	P3S6019R1R11	P3S6019BR1R11	P3S6044R1R11	P3S6044BR1R11
1/2"	0/3,000 psi / 0/200 bar	P3S6020R1R11	P3S6020BR1R11	P3S6045R1R11	P3S6045BR1R11
	0/5,000 psi / 0/350 bar	P3S6021R1R11	P3S6021BR1R11	P3S6046R1R11	P3S6046BR1R11
	0/10,000 psi / 0/700 bar	P3S6022R1R11	P3S6022BR1R11	P3S6047R1R11	P3S6047BR1R11
	0/15,000 psi / 0/1,000 bar	P3S6023R1R11	P3S6023BR1R11	P3S6160R1R11	P3S6160BR1R11
	0/20,000 psi / 0/1,400 bar	P3S6024R1R11	P3S6024BR1R11	P3S6161R1R11	P3S6161BR1R11
1/4"					
1/2"					

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

## Option suffix:

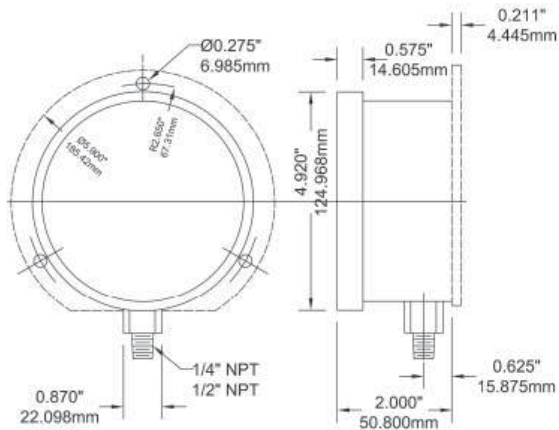
ZR = StabilizR™ movement (4.5" dial only)

## Order Codes

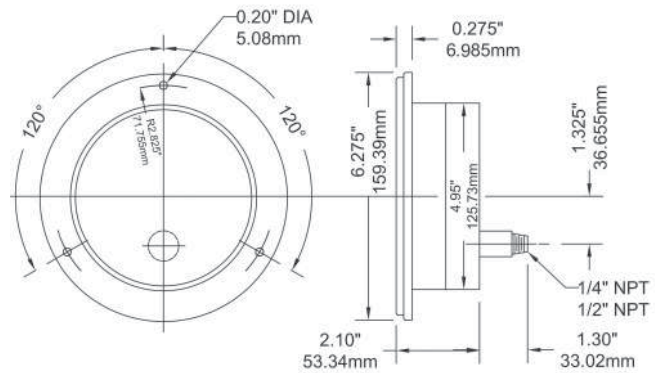
	Dial Size	8.5" (215mm)			
	Connection	Bottom	Back (LB)	Bottom	Back (LB)
	Movement, Socket, Tube	Brass		SS	
1/4"	30" Hg Vac / -1/0 bar	P3S6200R1R11	P3S6200BR1R11	P3S6300R1R11	P3S6300BR1R11
	30"/0/15 psi / -1/1 bar	P3S6201R1R11	P3S6201BR1R11	P3S6301R1R11	P3S6301BR1R11
	30"/0/30 psi / -1/2 bar	P3S6202R1R11	P3S6202BR1R11	P3S6302R1R11	P3S6302BR1R11
	30"/0/60 psi / -1/4 bar	P3S6203R1R11	P3S6203BR1R11	P3S6303R1R11	P3S6303BR1R11
	30"/0/100 psi / -1/7 bar	P3S6204R1R11	P3S6204BR1R11	P3S6304R1R11	P3S6304BR1R11
	30"/0/160 psi / -1/11 bar	P3S6205R1R11	P3S6205BR1R11	P3S6305R1R11	P3S6305BR1R11
	30"/0/200 psi / -1/14 bar	P3S6206R1R11	P3S6206BR1R11	P3S6306R1R11	P3S6306BR1R11
	30"/0/300 psi / -1/20 bar	P3S6207R1R11	P3S6207BR1R11	P3S6307R1R11	P3S6307BR1R11
	0/15 psi / 0/1 bar	P3S6208R1R11	P3S6208BR1R11	P3S6308R1R11	P3S6308BR1R11
	0/30 psi / 0/2 bar	P3S6209R1R11	P3S6209BR1R11	P3S6309R1R11	P3S6309BR1R11
	0/60 psi / 0/4 bar	P3S6210R1R11	P3S6210BR1R11	P3S6310R1R11	P3S6310BR1R11
	0/100 psi / 0/7 bar	P3S6211R1R11	P3S6211BR1R11	P3S6311R1R11	P3S6311BR1R11
	0/160 psi / 0/11 bar	P3S6212R1R11	P3S6212BR1R11	P3S6312R1R11	P3S6312BR1R11
	0/200 psi / 0/14 bar	P3S6213R1R11	P3S6213BR1R11	P3S6313R1R11	P3S6313BR1R11
	0/300 psi / 0/20 bar	P3S6214R1R11	P3S6214BR1R11	P3S6314R1R11	P3S6314BR1R11
	0/400 psi / 0/28 bar	P3S6215R1R11	P3S6215BR1R11	P3S6315R1R11	P3S6315BR1R11
	0/600 psi / 0/40 bar	P3S6216R1R11	P3S6216BR1R11	P3S6316R1R11	P3S6316BR1R11
1/2"	0/1,000 psi / 0/70 bar	P3S6217R1R11	P3S6217BR1R11	P3S6317R1R11	P3S6317BR1R11
	0/1,500 psi / 0/100 bar	P3S6218R1R11	P3S6218BR1R11	P3S6318R1R11	P3S6318BR1R11
	0/2,000 psi / 0/140 bar	P3S6219R1R11	P3S6219BR1R11	P3S6319R1R11	P3S6319BR1R11
	0/3,000 psi / 0/200 bar	P3S6220R1R11	P3S6220BR1R11	P3S6320R1R11	P3S6320BR1R11
	0/5,000 psi / 0/350 bar	P3S6221R1R11	P3S6221BR1R11	P3S6321R1R11	P3S6321BR1R11
	0/10,000 psi / 0/700 bar	P3S6222R1R11	P3S6222BR1R11	P3S6322R1R11	P3S6322BR1R11
	0/15,000 psi / 0/1,000 bar	P3S6223R1R11	P3S6223BR1R11	P3S6323R1R11	P3S6323BR1R11
	0/20,000 psi / 0/1,400 bar	P3S6224R1R11	P3S6224BR1R11	P3S6324R1R11	P3S6324BR1R11
	Dial Size	10" (250mm)			
	Connection	Bottom	Back (LB)	Bottom	Back (LB)
	Movement, Socket, Tube	Brass		SS	
1/4"	30" Hg Vac / -1/0 bar	P3S6400R1R11	P3S6400BR1R11	P3S6500R1R11	P3S6500BR1R11
	30"/0/15 psi / -1/1 bar	P3S6401R1R11	P3S6401BR1R11	P3S6501R1R11	P3S6501BR1R11
	30"/0/30 psi / -1/2 bar	P3S6402R1R11	P3S6402BR1R11	P3S6502R1R11	P3S6502BR1R11
	30"/0/60 psi / -1/4 bar	P3S6403R1R11	P3S6403BR1R11	P3S6503R1R11	P3S6503BR1R11
	30"/0/100 psi / -1/7 bar	P3S6404R1R11	P3S6404BR1R11	P3S6504R1R11	P3S6504BR1R11
	30"/0/160 psi / -1/11 bar	P3S6405R1R11	P3S6405BR1R11	P3S6505R1R11	P3S6505BR1R11
	30"/0/200 psi / -1/14 bar	P3S6406R1R11	P3S6406BR1R11	P3S6506R1R11	P3S6506BR1R11
	30"/0/300 psi / -1/20 bar	P3S6407R1R11	P3S6407BR1R11	P3S6507R1R11	P3S6507BR1R11
	0/15 psi / 0/1 bar	P3S6408R1R11	P3S6408BR1R11	P3S6508R1R11	P3S6508BR1R11
	0/30 psi / 0/2 bar	P3S6409R1R11	P3S6409BR1R11	P3S6509R1R11	P3S6509BR1R11
	0/60 psi / 0/4 bar	P3S6410R1R11	P3S6410BR1R11	P3S6510R1R11	P3S6510BR1R11
	0/100 psi / 0/7 bar	P3S6411R1R11	P3S6411BR1R11	P3S6511R1R11	P3S6511BR1R11
	0/160 psi / 0/11 bar	P3S6412R1R11	P3S6412BR1R11	P3S6512R1R11	P3S6512BR1R11
	0/200 psi / 0/14 bar	P3S6413R1R11	P3S6413BR1R11	P3S6513R1R11	P3S6513BR1R11
	0/300 psi / 0/20 bar	P3S6414R1R11	P3S6414BR1R11	P3S6514R1R11	P3S6514BR1R11
	0/400 psi / 0/28 bar	P3S6415R1R11	P3S6415BR1R11	P3S6515R1R11	P3S6515BR1R11
	0/600 psi / 0/40 bar	P3S6416R1R11	P3S6416BR1R11	P3S6516R1R11	P3S6516BR1R11
1/2"	0/1,000 psi / 0/70 bar	P3S6417R1R11	P3S6417BR1R11	P3S6517R1R11	P3S6517BR1R11
	0/1,500 psi / 0/100 bar	P3S6418R1R11	P3S6418BR1R11	P3S6518R1R11	P3S6518BR1R11
	0/2,000 psi / 0/140 bar	P3S6419R1R11	P3S6419BR1R11	P3S6519R1R11	P3S6519BR1R11
	0/3,000 psi / 0/200 bar	P3S6420R1R11	P3S6420BR1R11	P3S6520R1R11	P3S6520BR1R11
	0/5,000 psi / 0/350 bar	P3S6421R1R11	P3S6421BR1R11	P3S6521R1R11	P3S6521BR1R11
	0/10,000 psi / 0/700 bar	P3S6422R1R11	P3S6422BR1R11	P3S6522R1R11	P3S6522BR1R11
	0/15,000 psi / 0/1,000 bar	P3S6423R1R11	P3S6423BR1R11	P3S6523R1R11	P3S6523BR1R11
	0/20,000 psi / 0/1,400 bar	P3S6424R1R11	P3S6424BR1R11	P3S6524R1R11	P3S6524BR1R11

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

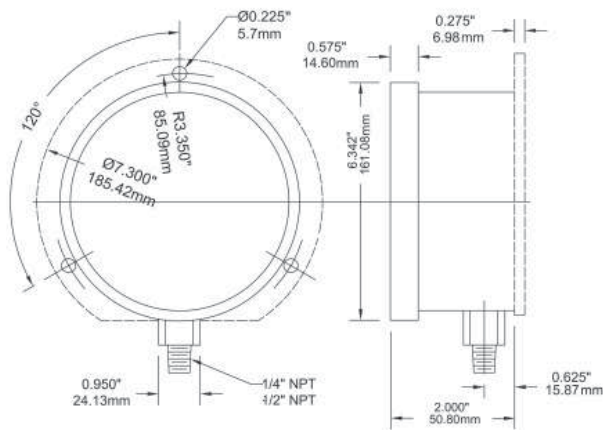
## 4.5" Bottom Connection with Back Flange



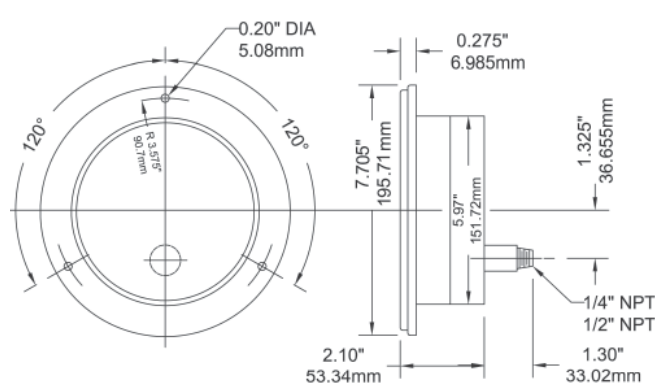
## 4.5" Back Connection with Front Flange



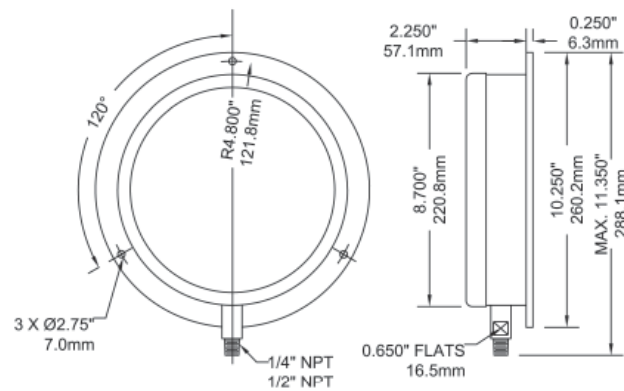
## 6" Bottom Connection with Back Flange



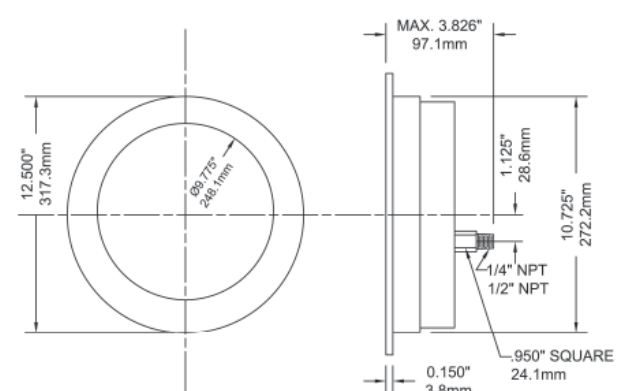
## 6" Back Connection with Front Flange



## 8.5" Bottom Connection with Back Flange



## 10" Back Connection with Front Flange



## Series Number (for custom, non-standard product)

	P	3	S	-			-		-		-		-		-		-		-			-		
<b>SERIES</b>																								
<b>DIAL SIZE</b>																								
4.5" (115mm)					4	5																		
6.0" (150mm)					6	0																		
8.5" (215mm)					8	5																		
10.0" (250mm)					9	0																		
<b>CASE MATERIALS</b>																								
Aluminum								A																
<b>WETTED PARTS</b>																								
Brass																								
316L																								
Special																								
<b>CONFIGURATION</b>																								
Bottom Connection, Stem Mounting																								
Bottom Connection, Back Flange, Surface Mounting																								
Bottom Connection, Front Flange, Surface Mounting																								
Back Connection, Stem Mounting																								
Back Connection, Back Flange, Surface Mounting																								
Back Connection, Wide Front Flange, (Drilled) Panel Mounting																								
Special																								
<b>CONNECTION SIZE</b>																								
1/4"																								
1/2"																								
Special																								
<b>THREAD</b>																								
NPT																								
BSP (G)																								
BSPT (R)																								
Special																								
<b>PRIMARY SCALE</b>																								
<b>UNITS - See Page 8</b>																								
<b>RANGE - See Page 8</b>																								
<b>SECONDARY SCALE</b>																								
<b>UNITS - See Page 8</b>																								
<b>OPTIONS</b>																								
Acrylic lens																							S	V
Blowout Disk																							S	B
Flush Mounting Ring																							S	P
Hinged Case																							S	T
Maximum Adjustable Pointer (Polycarbonate Lens Only)																							S	J
Over and Understops																							S	U
Oxygen Cleaning																							S	L
Safety Glass																							S	A
Solid Front Safety Case with Safety Glass																							S	I
StabliZR™ Movement																							Z	R
Stainless Steel Tag Plate																							S	M
Test Certificate																							S	O
No Options																							X	X





## 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 and hydraulic 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 (other thread types are available)
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

## Order Codes

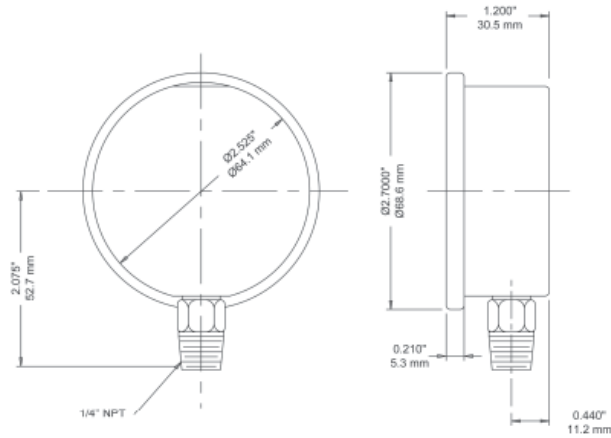
Dial Size	2.5" (63mm)		4" (100mm)	
Connection	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/2" Bottom
30" Hg Vac / -1/0 bar	PBC801R1R11	PBC900R1R11	PBC700R1R11	PBC1234R1R11
30"/0/15 psi / -1/1 bar	PBC790R1R11	PBC890R1R11	PBC701R1R11	PBC1235R1R11
30"/0/30 psi / -1/2 bar	PBC798R1R11	PBC898R1R11	PBC702R1R11	PBC1236R1R11
30"/0/60 psi / -1/4 bar	PBC799R1R11	PBC899R1R11	PBC703R1R11	PBC1237R1R11
30"/0/100 psi / -1/7 bar	PBC791R1R11	PBC891R1R11	PBC704R1R11	PBC1238R1R11
30"/0/160 psi / -1/11 bar	PBC792R1R11	PBC892R1R11	PBC705R1R11	PBC1239R1R11
30"/0/200 psi / -1/14 bar	PBC794R1R11	PBC894R1R11	PBC706R1R11	PBC1240R1R11
30"/0/300 psi / -1/20 bar	PBC795R1R11	PBC895R1R11	PBC707R1R11	PBC1241R1R11
0/15 psi / 0/1 bar	PBC800R1R11	PBC901R1R11	PBC708R1R11	PBC1242R1R11
0/30 psi / 0/2 bar	PBC802R1R11	PBC902R1R11	PBC709R1R11	PBC1243R1R11
0/60 psi / 0/4 bar	PBC803R1R11	PBC903R1R11	PBC710R1R11	PBC1244R1R11
0/100 psi / 0/7 bar	PBC804R1R11	PBC904R1R11	PBC711R1R11	PBC1245R1R11
0/160 psi / 0/11 bar	PBC805R1R11	PBC905R1R11	PBC712R1R11	PBC1246R1R11
0/200 psi / 0/14 bar	PBC806R1R11	PBC906R1R11	PBC713R1R11	PBC1247R1R11
0/300 psi / 0/20 bar	PBC807R1R11	PBC907R1R11	PBC714R1R11	PBC1248R1R11
0/400 psi / 0/28 bar	PBC817R1R11	PBC917R1R11	PBC715R1R11	PBC1249R1R11
0/600 psi / 0/40 bar	PBC808R1R11	PBC908R1R11	PBC716R1R11	PBC1250R1R11
0/1,000 psi / 0/70 bar	PBC809R1R11	PBC909R1R11	PBC724R1R11	PBC717R1R11
0/1,500 psi / 0/100 bar	PBC816R1R11	PBC914R1R11	PBC725R1R11	PBC718R1R11
0/2,000 psi / 0/140 bar	PBC810R1R11	PBC910R1R11	PBC726R1R11	PBC719 R1R11
0/3,000 psi / 0/200 bar	PBC811R1R11	PBC911R1R11	PBC727R1R11	PBC720R1R11
0/5,000 psi / 0/350 bar	PBC812R1R11	PBC912R1R11	PBC728R1R11	PBC721R1R11
0/6,000 psi / 0/400 bar	PBC814R1R11	PBC915R1R11	PBC024R1R11	PBC784R1R11
0/10,000 psi / 0/700 bar	PBC813R1R11	PBC913R1R11	PBC729R1R11	PBC722R1R11

Other ranges, connection sizes and thread types are 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. PBC805R2R22-REST for RESTRICTOR SCREW.**

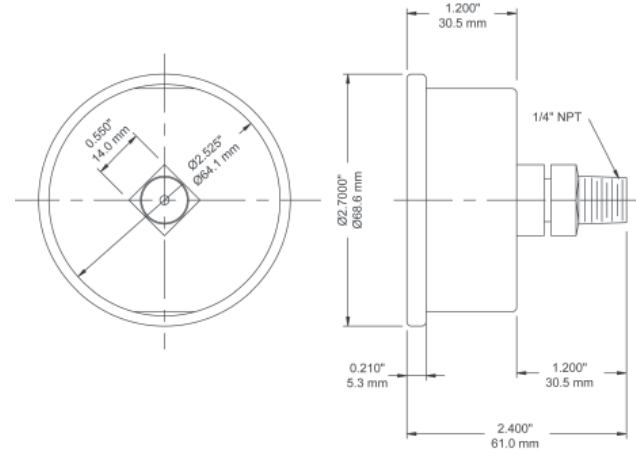
### Option suffix:

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

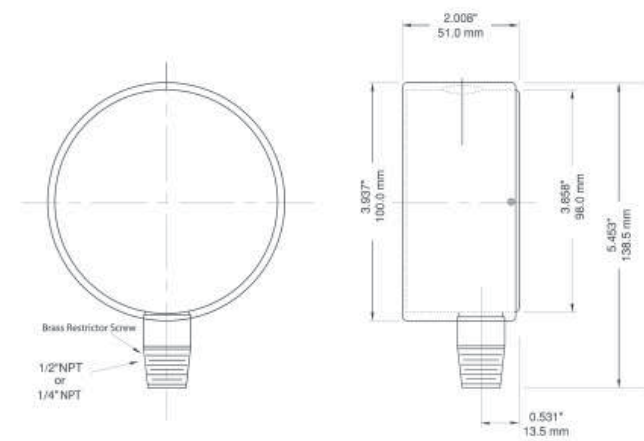
## 2.5" Bottom Connection



## 2.5" Back Connection



## 4" Bottom Connection





## Description & Features:

- Unique pressure instrument utilizing colour coded cases for easy identification of processes
- 4 different colours that are UV resistant and will not fade
- Stainless steel or brass internals, liquid fillable
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- Used for easy identification of process or pressure
- Well suited for use where heavy vibration or pulsation exist
- Used on machinery, process lines, compressors, hydraulics

Specifications	Stainless Steel Internals	Brass Internals
Dial	4" (100mm) white aluminum with black and red markings	4" (100mm) white aluminum with black and red markings
Case	PBT Polybutylene terephthalate - colour coded	PBT Polybutylene terephthalate - colour coded
Lens	Polycarbonate	Polycarbonate
Ring	PBT Polybutylene terephthalate - colour coded	PBT Polybutylene terephthalate - colour coded
Socket	316L SS	OT 58 brass
Connection	1/4" NPT or 1/2" NPT standard (other thread types are available)	1/4" NPT or 1/2" NPT standard (other thread types are available)
Bourdon Tube	316L SS, drawn seamless	Phosphor bronze
Movement	304 SS	Gears are OT 59 brass, plates are AISI 304 SS
Pointer	Aluminum, anodized black	Aluminum, anodized black
Welding	TIG, silver alloy	Tin/copper alloy for pressures up to 600 psi (4,137 kPa), Silver alloy for pressures over 600 psi (4,137 kPa)
Over-pressure Limit	30% for pressures up to 600 psi (41 bar), 15% for pressures over 600 psi (41 bar)	25% for pressures up to 1,400 psi (97 bar), 15% for pressures over 1,400 psi (97 bar)
Gasket Material	EPDM	Silicone rubber for socket, EPDM for lens, filling plug and blow-out vent
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: -40°F to 150°F (-40°C to 65°C)	Dry: -40°F to 200°F (-40°C to 93°C) Glycerin Filled: -40°F to 150°F (-40°C to 65°C)
Accuracy	±1% ANSI/ASME Grade 1A	±1% ANSI/ASME Grade 1A
Enclosure Rating	IP65 per EN60529-1 (IEC529-1)	IP65 per EN60529-1 (IEC529-1)

## Order Codes

Dial Size	4" (100mm)			
Connection	1/4" Bottom	1/2" Bottom	1/4" Bottom	1/2" Bottom
Movement, Socket, Tube	Brass		SS	
30" Hg Vac / -1/0 bar	PCC600CR1R11	-	PCC640CR1R11	PCC655CR1R11
30"/0/15 psi / -1/1 bar	PCC1020CR1R11	-	PCC1036CR1R11	PCC1044CR1R11
30"/0/30 psi / -1/2 bar	PCC1021CR1R11	-	PCC1037CR1R11	PCC1045CR1R11
30"/0/60 psi / -1/4 bar	PCC1022CR1R11	-	PCC1038CR1R11	PCC1046CR1R11
30"/0/100 psi / -1/7 bar	PCC1023CR1R11	-	PCC1039CR1R11	PCC1047CR1R11
30"/0/160 psi / -1/11 bar	PCC1024CR1R11	-	PCC1040CR1R11	PCC1048CR1R11
30"/0/200 psi / -1/14 bar	PCC1026CR1R11	-	PCC1042CR1R11	PCC1050CR1R11
30"/0/300 psi / -1/20 bar	PCC1027CR1R11	-	PCC1043CR1R11	PCC1051CR1R11
0/15 psi / 0/1 bar	PCC601CR1R11	-	PCC641CR1R11	PCC656CR1R11
0/30 psi / 0/2 bar	PCC602CR1R11	-	PCC642CR1R11	PCC657CR1R11
0/60 psi / 0/4 bar	PCC603CR1R11	-	PCC643CR1R11	PCC658CR1R11
0/100 psi / 0/7 bar	PCC604CR1R11	-	PCC644CR1R11	PCC659CR1R11
0/160 psi / 0/11 bar	PCC605CR1R11	-	PCC645CR1R11	PCC660CR1R11
0/200 psi / 0/14 bar	PCC606CR1R11	-	PCC646CR1R11	PCC661CR1R11
0/300 psi / 0/20 bar	PCC607CR1R11	-	PCC647CR1R11	PCC662CR1R11
0/400 psi / 0/28 bar	PCC610CR1R11	-	PCC650CR1R11	PCC666CR1R11
0/600 psi / 0/40 bar	PCC608CR1R11	-	PCC648CR1R11	PCC663CR1R11
0/1,000 psi / 0/70 bar	PCC609CR1R11	PCC624CR1R11	PCC649CR1R11	PCC664CR1R11
0/1,500 psi / 0/100 bar	-	PCC625CR1R11	-	PCC665CR1R11
0/2,000 psi / 0/140 bar	-	PCC626CR1R11	-	PCC667CR1R11
0/3,000 psi / 0/200 bar	-	PCC627CR1R11	-	PCC668CR1R11
0/5,000 psi / 0/350 bar	-	PCC628CR1R11	-	PCC669CR1R11
0/10,000 psi / 0/700 bar	-	PCC629CR1R11	-	PCC670CR1R11
0/15,000 psi / 0/1,000 bar	-	PCC630CR1R11	-	PCC671CR1R11
0/20,000 psi / 0/1,400 bar	-	PCC639CR1R11	-	PCC672CR1R11

Other ranges, connection sizes and thread types are 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. PCC603CR1R11-G for GLYCERIN FILL.**

Colour Coded Cases	Colour	Suffix
	Red	1Y
	Yellow	2Y
	Black	3Y
	Blue	4Y

### Option suffix:

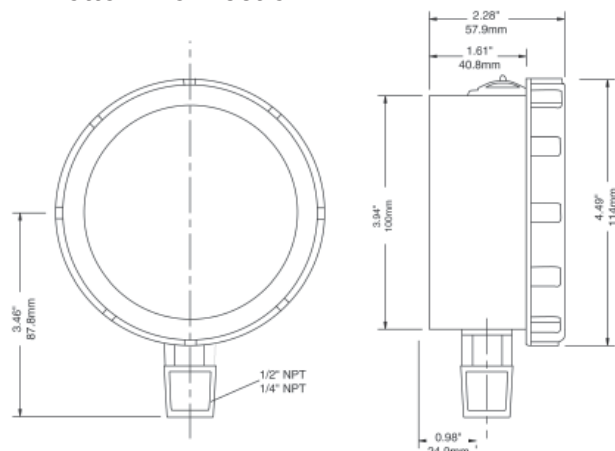
G = Glycerin filled case

SG4 = 4" (100mm) Safety glass lens

Add appropriate colour code as suffix.

(e.g. PCC662C1Y = Gauge Order Code + Case Colour Code)

## 4" Bottom Connection





## Description & Features:

- Economical 4.5" (115mm) stainless steel case gauge
- Brass or lead free brass wetted parts
- $\pm 1\%$  accuracy
- Zero adjustment screw
- 1/4" NPT
- Restricted orifice
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- Most commercial air, water and steam services that require a  $\pm 1\%$  full-scale accuracy

## Specifications

<b>Dial</b>	4.5" (115mm) white aluminum with black and red markings
<b>Case</b>	304 SS
<b>Lens</b>	Acrylic
<b>Ring</b>	304 SS
<b>Socket</b>	PCT: Brass PCT-LF: Lead free brass
<b>Connection</b>	1/4" or 1/2" NPT or BSP(G) standard (other thread types are available)
<b>Bourdon Tube</b>	Phosphor bronze
<b>Movement</b>	Brass
<b>Pointer</b>	Aluminum, anodized black, recalibrator screw
<b>Welding</b>	Silver solder
<b>Over-pressure Limit</b>	25% for pressures up to 1,450 psi (100 bar), 15% for pressures over 1,450 psi (100 bar)
<b>Working Pressure</b>	Maximum 75% of full scale value
<b>Ambient/Process Temperature</b>	-40°F to 200°F (-40°C to 93°C)
<b>Accuracy</b>	$\pm 1\%$ ANSI/ASME Grade 1A
<b>Enclosure Rating</b>	IP52

## PCT Order Codes

Connection	1/4" NPT Bottom	1/4" BSP(G) Bottom	1/2" NPT Bottom	1/2" BSP(G) Bottom
30" Hg Vac / -1/0 bar	PCT320R1R11	PCT320R1R11T1	PCT335R1R11	PCT335R1R11T1
30"/0/30 psi / -1/2 bar	PCT329R1R11	PCT329R1R11T1	PCT336R1R11	PCT336R1R11T1
30"/0/60 psi / -1/4 bar	PCT330R1R11	PCT330R1R11T1	PCT337R1R11	PCT337R1R11T1
30"/0/100 psi / -1/7 bar	PCT328R1R11	PCT328R1R11T1	PCT338R1R11	PCT338R1R11T1
30"/0/160 psi / -1/11 bar	PCT332R1R11	PCT332R1R11T1	PCT339R1R11	PCT339R1R11T1
30"/0/200 psi / -1/14 bar	PCT333R1R11	PCT333R1R11T1	PCT340R1R11	PCT340R1R11T1
30"/0/300 psi / -1/20 bar	PCT334R1R11	PCT334R1R11T1	PCT341R1R11	PCT341R1R11T1
0/15 psi / 0/1 bar	PCT319R1R11	PCT319R1R11T1	PCT342R1R11	PCT342R1R11T1
0/30 psi / 0/2 bar	PCT321R1R11	PCT321R1R11T1	PCT343R1R11	PCT343R1R11T1
0/60 psi / 0/4 bar	PCT322R1R11	PCT322R1R11T1	PCT344R1R11	PCT344R1R11T1
0/100 psi / 0/7 bar	PCT323R1R11	PCT323R1R11T1	PCT345R1R11	PCT345R1R11T1
0/160 psi / 0/11 bar	PCT324R1R11	PCT324R1R11T1	PCT346R1R11	PCT346R1R11T1
0/200 psi / 0/14 bar	PCT325R1R11	PCT325R1R11T1	PCT347R1R11	PCT347R1R11T1
0/230 psi / 0/16 bar	PCT1447R1R11	PCT1447R1R11T1	-	-
0/300 psi / 0/20 bar	PCT326R1R11	PCT326R1R11T1	PCT348R1R11	PCT348R1R11T1
0/400 psi / 0/28 bar	PCT327R1R11	PCT327R1R11T1	PCT349R1R11	PCT349R1R11T1
0/600 psi / 0/40 bar	PCT331R1R11	PCT331R1R11T1	PCT350R1R11	PCT350R1R11T1
0/1,000 psi / 0/70 bar	PCT293R1R11	PCT293R1R11T1	PCT351R1R11	PCT351R1R11T1
0/3,000 psi / 0/200 bar	PCT294R1R11	PCT294R1R11T1	PCT352R1R11	PCT352R1R11T1
0/5,000 psi / 0/350 bar	PCT295R1R11	PCT295R1R11T1	PCT353R1R11	PCT353R1R11T1

## PCT-LF Order Codes

Connection	1/4" NPT Bottom
30" Hg Vac/kPa	PCT320LF
30"/0/30 psi/kPa	PCT329LF
30"/0/60 psi/kPa	PCT330LF
30"/0/100 psi/kPa	PCT328LF
30"/0/160 psi/kPa	PCT332LF
30"/0/200 psi/kPa	PCT333LF
30"/0/300 psi/kPa	PCT334LF
0/15 psi/kPa	PCT319LF
0/30 psi/kPa	PCT321LF
0/60 psi/kPa	PCT322LF
0/100 psi/kPa	PCT323LF
0/160 psi/kPa	PCT324LF
0/200 psi/kPa	PCT325LF
0/300 psi/kPa	PCT326LF
0/400 psi/kPa	PCT327LF
0/600 psi/kPa	PCT331LF
0/1,000 psi/kPa	PCT293LF
0/3,000 psi/kPa	PCT294LF
0/5,000 psi/kPa	PCT295LF

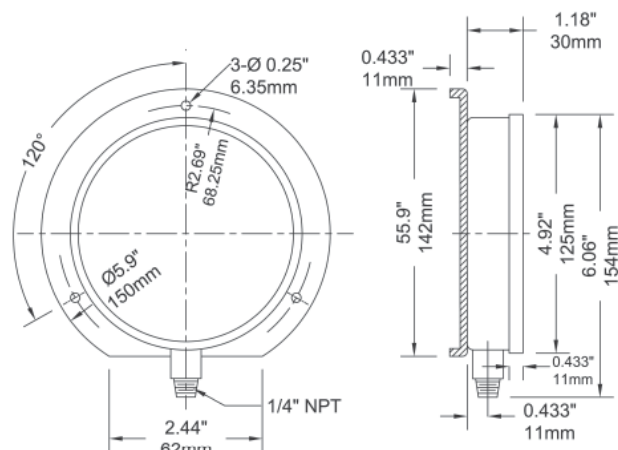
Other ranges, connection sizes and thread types are available upon request. For scale change, refer to How to Order Guide for scale codes.

**For options, attach suffix to end of order code: i.e. PCT322R1R11-45BF for BACK FLANGE.**

**Option suffix:**

45BF = 4.5" (115mm) Back flange

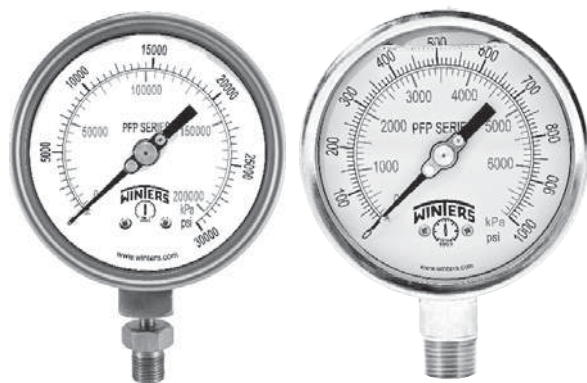
## 4.5" Bottom Connection





## Series Number (for custom, non-standard product)

	P	C	T	-			-		-		-		-		-			-			-		
SERIES																							
DIAL SIZE																							
4.5" (115mm)					4	5																	
CASE MATERIALS																							
304SS																							
316SS																							
WETTED PARTS																							
Brass																							
Special																							
CONFIGURATION																							
Bottom Connection, Stem Mounting																							
Bottom Connection, Back Flange, Surface Mounting																							
Special																							
CONNECTION SIZE																							
1/4"																							
Special																							
THREAD																							
NPT																							
BSP (G)																							
BSPT (R)																							
Special																							
PRIMARY SCALE																							
UNITS - See Page 8																							
RANGE - See Page 8																							
SECONDARY SCALE																							
UNITS - See Page 8																							
OPTIONS																							
Lead Free Wetted Parts																						L	F
Oxygen Cleaning																						S	L
Stainless Steel Tag Plate																						S	M
Test Certificate																						S	O
No Options																						X	X



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
- 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, pressure washers, oil field equipment, pumps, compressors and process systems

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	11/4" 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 (other thread types are available)
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 (100 bar), 15% for pressures over 1,450 psi (100 bar)	25% for pressures up to 1,450 psi (100 bar), 15% for pressures over 1,450 psi (100 bar)
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)	4" (100mm), 4.5" (115mm): 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)

## Order Codes

Dial Size	2.5" (63mm)		4" (100mm)			
Connection	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)
Movement, Socket, Tube	SS		Brass		SS	
30" Hg Vac / -1/0 bar	PFP820R1R11	PFP840R1R11	PFP600R1R11	PFP1000R1R11	PFP640R1R11	PFP1090R1R11
30"/0/15 psi / -1/1 bar	PFP860R1R11	PFP870R1R11	PFP1020R1R11	PFP1028R1R11	PFP1036R1R11	PFP1244R1R11
30"/0/30 psi / -1/2 bar	PFP861R1R11	PFP871R1R11	PFP1021R1R11	PFP1029R1R11	PFP1037R1R11	PFP1245R1R11
30"/0/60 psi / -1/4 bar	PFP862R1R11	PFP872R1R11	PFP1022R1R11	PFP1030R1R11	PFP1038R1R11	PFP1246R1R11
30"/0/100 psi / -1/7 bar	PFP863R1R11	PFP873R1R11	PFP1023R1R11	PFP1031R1R11	PFP1039R1R11	PFP1247R1R11
30"/0/150 psi / -1/10 bar	PFP864R1R11	PFP874R1R11	PFP1024R1R11	PFP1032R1R11	PFP1040R1R11	PFP1248R1R11
30"/0/200 psi / -1/14 bar	PFP866R1R11	PFP876R1R11	PFP1026R1R11	PFP1034R1R11	PFP1042R1R11	PFP1249R1R11
30"/0/300 psi / -1/20 bar	PFP867R1R11	PFP877R1R11	PFP1027R1R11	PFP1035R1R11	PFP1043R1R11	PFP1250R1R11
0/15 psi / 0/1 bar	PFP821R1R11	PFP921R1R11	PFP601R1R11	PFP1001R1R11	PFP641R1R11	PFP1091R1R11
0/30 psi / 0/2 bar	PFP822R1R11	PFP922R1R11	PFP602R1R11	PFP1002R1R11	PFP642R1R11	PFP1092R1R11
0/60 psi / 0/4 bar	PFP823R1R11	PFP923R1R11	PFP603R1R11	PFP1003R1R11	PFP643R1R11	PFP1093R1R11
0/100 psi / 0/7 bar	PFP824R1R11	PFP924R1R11	PFP604R1R11	PFP1004R1R11	PFP644R1R11	PFP1094R1R11
0/160 psi / 0/11 bar	PFP825R1R11	PFP925R1R11	PFP605R1R11	PFP1005R1R11	PFP645R1R11	PFP1095R1R11
0/200 psi / 0/14 bar	PFP826R1R11	PFP926R1R11	PFP606R1R11	PFP1006R1R11	PFP646R1R11	PFP1096R1R11
0/300 psi / 0/20 bar	PFP827R1R11	PFP927R1R11	PFP607R1R11	PFP1007R1R11	PFP647R1R11	PFP1097R1R11
0/400 psi / 0/28 bar	PFP880R1R11	PFP881R1R11	PFP610R1R11	PFP1016R1R11	PFP650R1R11	PFP1251R1R11
0/600 psi / 0/40 bar	PFP828R1R11	PFP928R1R11	PFP608R1R11	PFP1008R1R11	PFP648R1R11	PFP1098R1R11
0/1,000 psi / 0/70 bar	PFP829R1R11	PFP929R1R11	PFP609R1R11	-	PFP649R1R11	PFP1099R1R11
0/1,500 psi / 0/100 bar	PFP834R1R11	PFP934R1R11	-	-	PFP2301R1R11	PFP1252R1R11
0/2,000 psi / 0/140 bar	PFP830R1R11	PFP930R1R11	-	-	PFP2302R1R11	PFP1253R1R11
0/3,000 psi / 0/200 bar	PFP831R1R11	PFP931R1R11	-	-	PFP2303R1R11	PFP1254R1R11
0/5,000 psi / 0/350 bar	PFP832R1R11	PFP852R1R11	-	-	PFP2304R1R11	PFP1255R1R11
0/6,000 psi / 0/400 bar	PFP836R1R11	PFP851R1R11	-	-	PFP2305R1R11	PFP1259R1R11
0/10,000 psi / 0/700 bar	PFP833R1R11	PFP853R1R11	-	-	PFP2306R1R11	PFP1256R1R11
0/15,000 psi / 0/1,000 bar	PFP835R1R11	PFP855R1R11	-	-	PFP2307R1R11	PFP1257R1R11
0/20,000 psi / 0/1,400 bar	PFP837R1R11	-	-	-	-	PFP1258R1R11

Other ranges, connection sizes and thread types are 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. PFP929R1R11-25UC for U-CLAMP.**

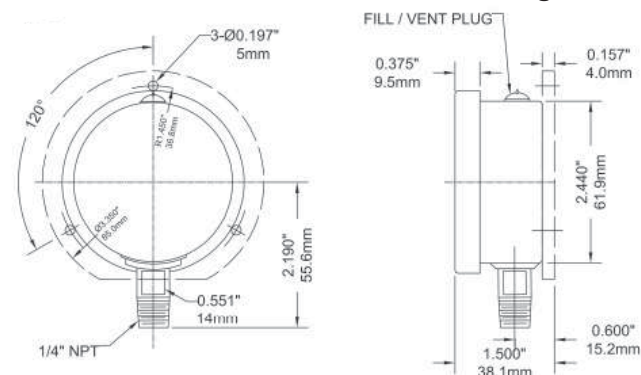
### Option suffix:

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

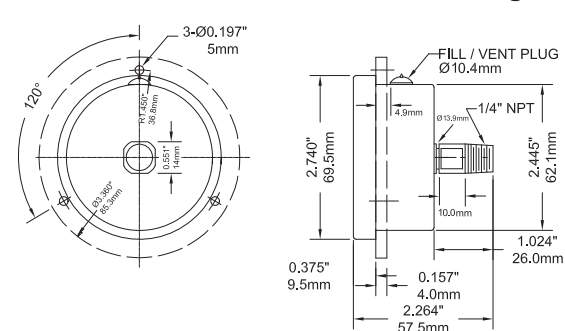
4FF = 4" (100mm) Front flange  
 4UC-P = 4" (100mm) U-Clamp premium  
 DRY = Supply gauge dry  
 EN = EN837-1 compliant  
 GID = Glow-in-the-dark dial  
 REST = Restrictor screw

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

## 2.5" Bottom Connection with Back Flange



## 2.5" Back Connection with Front Flange



## Order Codes

Dial Size	4" (100mm)			
Connection	1/2" Bottom	1/2" Back (LB)	1/2" Bottom	1/2" Back (LB)
Movement, Socket, Tube	Brass		SS	
30" Hg Vac / -1/0 bar	PFP2284R1R11	PFP4969R1R11	PFP655R1R11	PFP2308R1R11
30"/0/15 psi / -1/1 bar	PFP2285R1R11	PFP4970R1R11	PFP1044R1R11	PFP2309R1R11
30"/0/30 psi / -1/2 bar	PFP2286R1R11	PFP4971R1R11	PFP1045R1R11	PFP2310R1R11
30"/0/60 psi / -1/4 bar	PFP2287R1R11	PFP4972R1R11	PFP1046R1R11	PFP2311R1R11
30"/0/100 psi / -1/7 bar	PFP2288R1R11	PFP4973R1R11	PFP1047R1R11	PFP2312R1R11
30"/0/150 psi / -1/10 bar	PFP2289R1R11	PFP4974R1R11	PFP1048R1R11	PFP2313R1R11
30"/0/200 psi / -1/14 bar	PFP2290R1R11	PFP4975R1R11	PFP1050R1R11	PFP2314R1R11
30"/0/300 psi / -1/20 bar	PFP2291R1R11	PFP4976R1R11	PFP1051R1R11	PFP2315R1R11
0/15 psi / 0/1 bar	PFP2292R1R11	PFP4977R1R11	PFP656R1R11	PFP2316R1R11
0/30 psi / 0/2 bar	PFP2293R1R11	PFP4978R1R11	PFP657R1R11	PFP2317R1R11
0/60 psi / 0/4 bar	PFP2294R1R11	PFP4979R1R11	PFP658R1R11	PFP2318R1R11
0/100 psi / 0/7 bar	PFP2295R1R11	PFP4980R1R11	PFP659R1R11	PFP2319R1R11
0/160 psi / 0/11 bar	PFP2296R1R11	PFP4981R1R11	PFP660R1R11	PFP2320R1R11
0/200 psi / 0/14 bar	PFP2297R1R11	PFP4982R1R11	PFP661R1R11	PFP2321R1R11
0/300 psi / 0/20 bar	PFP2298R1R11	PFP4983R1R11	PFP662R1R11	PFP2322R1R11
0/400 psi / 0/28 bar	PFP2299R1R11	PFP4984R1R11	PFP666R1R11	PFP2323R1R11
0/600 psi / 0/40 bar	PFP2300R1R11	PFP4985R1R11	PFP663R1R11	PFP2324R1R11
0/1,000 psi / 0/70 bar	PFP624R1R11	PFP1009R1R11	PFP664R1R11	PFP2325R1R11
0/1,500 psi / 0/100 bar	PFP625R1R11	PFP1010R1R11	PFP665R1R11	PFP1190R1R11
0/2,000 psi / 0/140 bar	PFP626R1R11	PFP1011R1R11	PFP667R1R11	PFP1191R1R11
0/3,000 psi / 0/200 bar	PFP627R1R11	PFP1012R1R11	PFP668R1R11	PFP1192R1R11
0/5,000 psi / 0/350 bar	PFP628R1R11	PFP1013R1R11	PFP669R1R11	PFP1193R1R11
0/6,000 psi / 0/400 bar	PFP631R1R11	PFP1015R1R11	PFP675R1R11	PFP1197R1R11
0/10,000 psi / 0/700 bar	PFP629R1R11	PFP1014R1R11	PFP670R1R11	PFP1194R1R11
0/15,000 psi / 0/1,000 bar	PFP630R1R11	PFP1018R1R11	PFP671R1R11	PFP1195R1R11
0/20,000 psi / 0/1,400 bar	PFP639R1R11	PFP1019R1R11	PFP672R1R11	PFP1196R1R11

Other ranges, connection sizes and thread types are 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.**

**PFP1009R1R11-25UC for U-CLAMP.**

## Option suffix:

4BF = 4" (100mm) Back flange

4FF = 4" (100mm) Front flange

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

DRY = Supply gauge dry

EN = EN837-1 compliant

GID = Glow-in-the-dark dial

RSP4 = 4" (100mm) Red set pointer

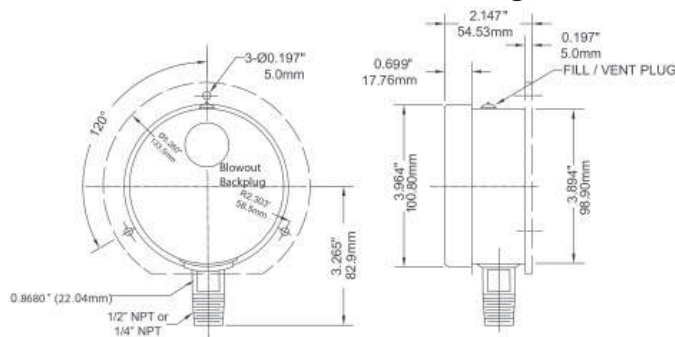
SF25 = 2.5" (63mm) Silicone filled

SF4 = 4" (100mm) Silicone filled

SG-25 = 2.5" (63mm) Safety glass lens

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

## 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, connection sizes and thread types are 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

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

DRY = Supply gauge dry

EN = EN837-1 compliant

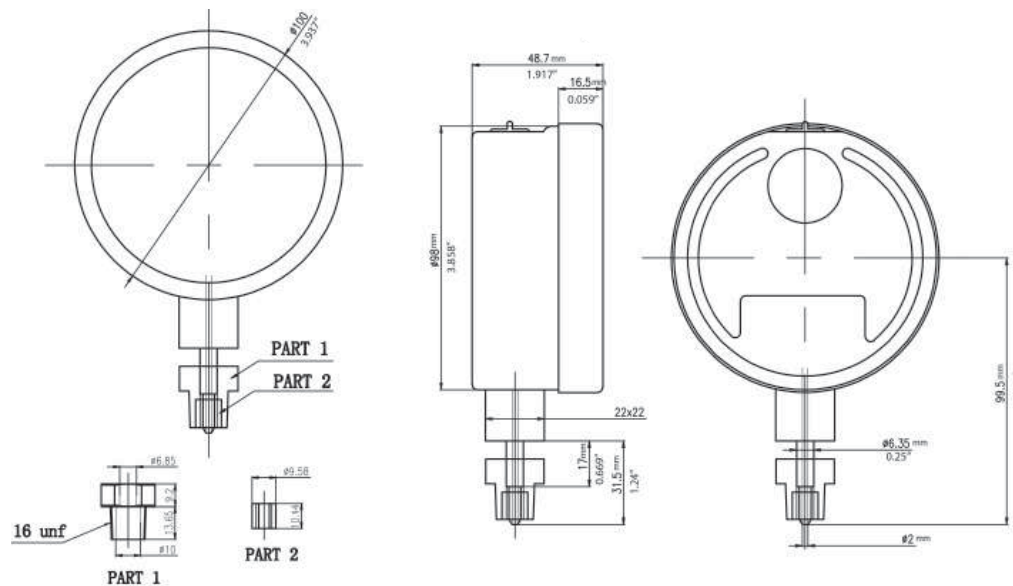
GID = Glow-in-the-dark dial

RSP4 = 4" (100mm) Red set pointer

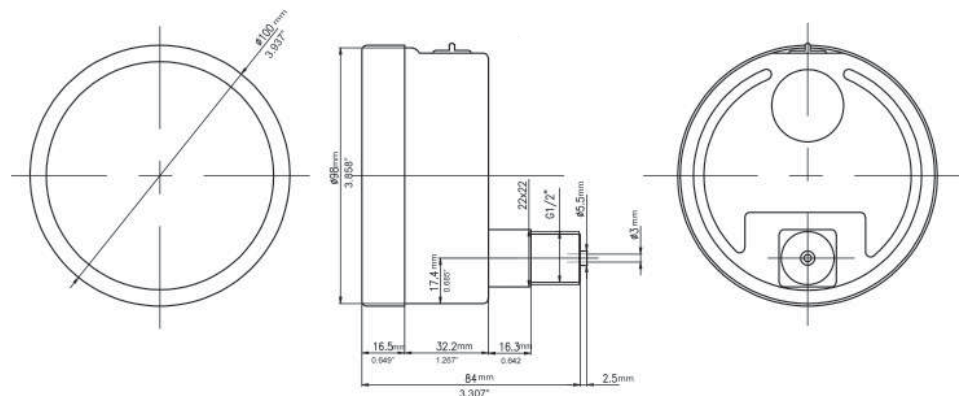
SF4 = 4" (100mm) Silicone filled

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

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



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



## 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 / -1/0 bar	PFP500R1R11	PFP1300R1R11	PFP550R1R11	PFP1350R1R11	PFP700R1R11	PFP400R1R11	PFP750R1R11	PFP450R1R11
30"/0/15 psi / -1/1 bar	PFP501R1R11	PFP1301R1R11	PFP551R1R11	PFP1351R1R11	PFP701R1R11	PFP401R1R11	PFP751R1R11	PFP451R1R11
30"/0/30 psi / -1/2 bar	PFP502R1R11	PFP1302R1R11	PFP552R1R11	PFP1352R1R11	PFP702R1R11	PFP402R1R11	PFP752R1R11	PFP452R1R11
30"/0/60 psi / -1/4 bar	PFP503R1R11	PFP1303R1R11	PFP553R1R11	PFP1353R1R11	PFP703R1R11	PFP403R1R11	PFP753R1R11	PFP453R1R11
30"/0/100 psi / -1/7 bar	PFP504R1R11	PFP1304R1R11	PFP554R1R11	PFP1354R1R11	PFP704R1R11	PFP404R1R11	PFP754R1R11	PFP454R1R11
30"/0/150 psi / -1/10 bar	PFP505R1R11	PFP1305R1R11	PFP555R1R11	PFP1355R1R11	PFP705R1R11	PFP405R1R11	PFP755R1R11	PFP455R1R11
30"/0/200 psi / -1/14 bar	PFP506R1R11	PFP1306R1R11	PFP556R1R11	PFP1356R1R11	PFP706R1R11	PFP406R1R11	PFP756R1R11	PFP456R1R11
30"/0/300 psi / -1/20 bar	PFP507R1R11	PFP1307R1R11	PFP557R1R11	PFP1357R1R11	PFP707R1R11	PFP407R1R11	PFP757R1R11	PFP457R1R11
0/15 psi / 0/1 bar	PFP508R1R11	PFP1308R1R11	PFP558R1R11	PFP1358R1R11	PFP708R1R11	PFP408R1R11	PFP758R1R11	PFP458R1R11
0/30 psi / 0/2 bar	PFP509R1R11	PFP1309R1R11	PFP559R1R11	PFP1359R1R11	PFP709R1R11	PFP409R1R11	PFP759R1R11	PFP459R1R11
0/60 psi / 0/4 bar	PFP510R1R11	PFP1310R1R11	PFP560R1R11	PFP1360R1R11	PFP710R1R11	PFP410R1R11	PFP760R1R11	PFP460R1R11
0/100 psi / 0/7 bar	PFP511R1R11	PFP1311R1R11	PFP561R1R11	PFP1361R1R11	PFP711R1R11	PFP411R1R11	PFP761R1R11	PFP461R1R11
0/160 psi / 0/11 bar	PFP512R1R11	PFP1312R1R11	PFP562R1R11	PFP1362R1R11	PFP712R1R11	PFP412R1R11	PFP762R1R11	PFP462R1R11
0/200 psi / 0/14 bar	PFP513R1R11	PFP1313R1R11	PFP563R1R11	PFP1363R1R11	PFP713R1R11	PFP413R1R11	PFP763R1R11	PFP463R1R11
0/300 psi / 0/20 bar	PFP514R1R11	PFP1314R1R11	PFP564R1R11	PFP1364R1R11	PFP714R1R11	PFP414R1R11	PFP764R1R11	PFP464R1R11
0/400 psi / 0/28 bar	PFP515R1R11	PFP1315R1R11	PFP565R1R11	PFP1365R1R11	PFP715R1R11	PFP415R1R11	PFP765R1R11	PFP465R1R11
0/600 psi / 0/40 bar	PFP516R1R11	PFP1316R1R11	PFP566R1R11	PFP1366R1R11	PFP716R1R11	PFP416R1R11	PFP766R1R11	PFP466R1R11
0/1,000 psi / 0/70 bar	PFP517R1R11	PFP1317R1R11	PFP567R1R11	PFP1367R1R11	PFP717R1R11	PFP417R1R11	PFP767R1R11	PFP467R1R11
0/1,500 psi / 0/100 bar	PFP518R1R11	PFP1318R1R11	PFP568R1R11	PFP1368R1R11	PFP718R1R11	PFP418R1R11	PFP768R1R11	PFP468R1R11
0/2,000 psi / 0/140 bar	PFP519R1R11	PFP1319R1R11	PFP569R1R11	PFP1369R1R11	PFP719R1R11	PFP419R1R11	PFP769R1R11	PFP469R1R11
0/3,000 psi / 0/200 bar	PFP520R1R11	PFP1320R1R11	PFP570R1R11	PFP1370R1R11	PFP720R1R11	PFP420R1R11	PFP770R1R11	PFP470R1R11
0/5,000 psi / 0/350 bar	PFP521R1R11	PFP1321R1R11	PFP571R1R11	PFP1371R1R11	PFP721R1R11	PFP421R1R11	PFP771R1R11	PFP471R1R11
0/6,000 psi / 0/400 bar	PFP522R1R11	PFP1322R1R11	PFP572R1R11	PFP1372R1R11	PFP722R1R11	PFP422R1R11	PFP772R1R11	PFP472R1R11
0/10,000 psi / 0/700 bar	PFP523R1R11	PFP1323R1R11	PFP573R1R11	PFP1373R1R11	PFP723R1R11	PFP423R1R11	PFP773R1R11	PFP473R1R11
0/15,000 psi / 0/1,000 bar	PFP524R1R11	PFP1324R1R11	PFP574R1R11	PFP1374R1R11	PFP724R1R11	PFP424R1R11	PFP774R1R11	PFP474R1R11
0/20,000 psi / 0/1,400 bar	PFP525R1R11	PFP1325R1R11	PFP575R1R11	PFP1375R1R11	PFP725R1R11	PFP425R1R11	PFP775R1R11	PFP475R1R11

Other ranges, connection sizes and thread types are 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:

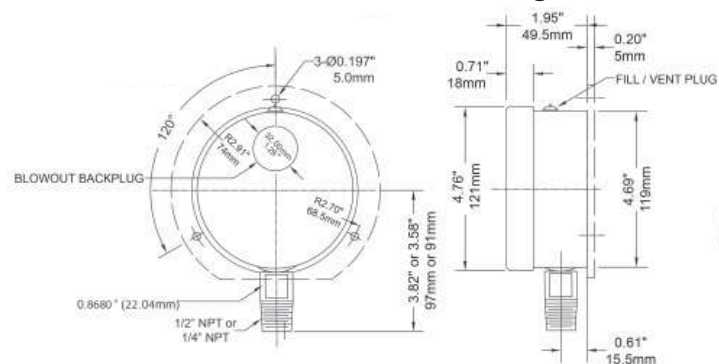
DRY = Supply gauge dry

SF45 = 4.5" (115mm) Silicone filled

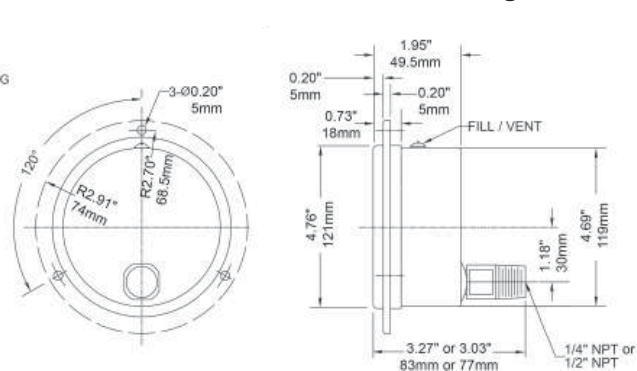
GID = Glow-in-the-dark dial

EN = EN837-1 compliant

## 4.5" Bottom Connection with Back Flange



## 4.5" Back Connection with Front Flange





## 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 / -1/0 bar	PFP1078R1R11	PFP1168R1R11	PFP2326R1R11	PFP4728R1R11
30"/0/15 psi / -1/1 bar	PFP1079R1R11	PFP1179R1R11	PFP2327R1R11	PFP4729R1R11
30"/0/30 psi / -1/2 bar	PFP1052R1R11	PFP1152R1R11	PFP2328R1R11	PFP4730R1R11
30"/0/60 psi / -1/4 bar	PFP1053R1R11	PFP1153R1R11	PFP2329R1R11	PFP4731R1R11
30"/0/100 psi / -1/7 bar	PFP1054R1R11	PFP1154R1R11	PFP2330R1R11	PFP4732R1R11
30"/0/150 psi / -1/10 bar	PFP1055R1R11	PFP1155R1R11	PFP2331R1R11	PFP4733R1R11
30"/0/200 psi / -1/14 bar	PFP1057R1R11	PFP1157R1R11	PFP2332R1R11	PFP4734R1R11
30"/0/300 psi / -1/20 bar	PFP1058R1R11	PFP1158R1R11	PFP2333R1R11	PFP4735R1R11
0/15 psi / 0/1 bar	PFP1059R1R11	PFP1159R1R11	PFP2334R1R11	PFP4736R1R11
0/30 psi / 0/2 bar	PFP1060R1R11	PFP1160R1R11	PFP2335R1R11	PFP4737R1R11
0/60 psi / 0/4 bar	PFP1061R1R11	PFP1161R1R11	PFP2336R1R11	PFP4738R1R11
0/100 psi / 0/7 bar	PFP1062R1R11	PFP1162R1R11	PFP2337R1R11	PFP4739R1R11
0/160 psi / 0/11 bar	PFP1063R1R11	PFP1163R1R11	PFP2338R1R11	PFP4740R1R11
0/200 psi / 0/14 bar	PFP1064R1R11	PFP1164R1R11	PFP2339R1R11	PFP4741R1R11
0/300 psi / 0/20 bar	PFP1065R1R11	PFP1165R1R11	PFP2340R1R11	PFP4742R1R11
0/400 psi / 0/28 bar	PFP1077R1R11	PFP1177R1R11	PFP2341R1R11	PFP4743R1R11
0/600 psi / 0/40 bar	PFP1066R1R11	PFP1166R1R11	PFP2342R1R11	PFP4744R1R11
0/1,000 psi / 0/70 bar	PFP1067R1R11	PFP1167R1R11	PFP1080R1R11	PFP4745R1R11
0/1,500 psi / 0/100 bar	PFP1068R1R11	-	PFP1081R1R11	PFP1169R1R11
0/2,000 psi / 0/140 bar	PFP1069R1R11	-	PFP1082R1R11	PFP1170R1R11
0/3,000 psi / 0/200 bar	PFP1070R1R11	-	PFP1083R1R11	PFP1171R1R11
0/5,000 psi / 0/350 bar	PFP1072R1R11	-	PFP1085R1R11	PFP1172R1R11
0/6,000 psi / 0/400 bar	PFP1289R1R11	-	PFP1089R1R11	PFP1176R1R11
0/10,000 psi / 0/700 bar	PFP1073R1R11	-	PFP1086R1R11	PFP1173R1R11
0/15,000 psi / 0/1,000 bar	PFP1074R1R11	-	PFP1087R1R11	PFP1174R1R11
0/15,000 psi / 0/1,000 bar	PFP1075R1R11	-	PFP1088R1R11	PFP1175R1R11

Other ranges, connection sizes and thread types are 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. PFP1064R1R11-SC for SAFETY CASE**

### Option suffix:

6BF = 6" (150mm) Back flange

6FF = 6" (150mm) Front flange

6UC = 6" (150mm) U-Clamp

DRY = Supply gauge dry

EN = EN837-1 compliant

GID = Glow-in-the-dark dial

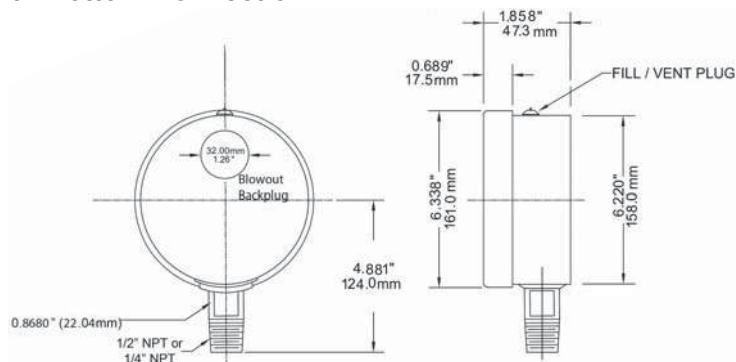
RSP6 = 6" (150mm) Red set pointer

SC = 6" (150mm) Safety case

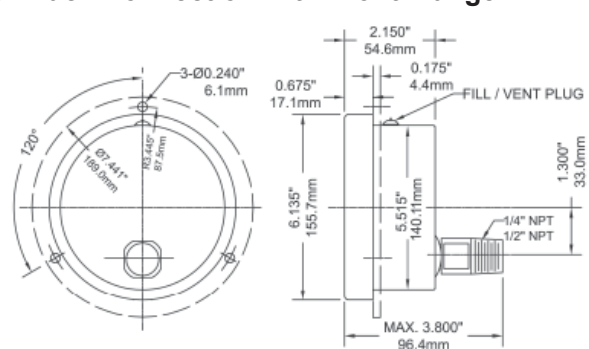
SF6 = 6" (150mm) Silicone fill

SG-6 = 6" (150mm) Safety glass lens

## 6" Bottom Connection



## 6" Back Connection with Front Flange



**Series Number (for custom, non-standard product)**

[illegible]

# Premium Stainless Steel Liquid Filled Gauge for Panel Mounting

PFP

Industrial



## 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 scale
- Stainless steel wetted parts
- Restricted orifice
- 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
- Hydraulic equipment, oil field equipment, pumps, compressors and process systems

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 (other thread types available)
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 (100 bar), 15% for pressures over 1,450 psi (100 bar)
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)

## Order Codes

Dial Size	2.5" (63mm)
Connection	1/4" Back (LBM)
Movement, Socket, Tube	SS
30" Hg Vac / -1/0 bar	PFP3772R1R11
30"/0/15 psi / -1/1 bar	PFP3773R1R1
30"/0/30 psi / -1/2 bar	PFP3774R1R1
30"/0/60 psi / -1/4 bar	PFP3775R1R1
30"/0/100 psi / -1/7 bar	PFP3776R1R1
30"/0/150 psi / -1/10 bar	PFP3777R1R1
30"/0/200 psi / -1/14 bar	PFP3778R1R1
30"/0/300 psi / -1/20 bar	PFP3779R1R1
0/15 psi / 0/1 bar	PFP3780R1R1
0/30 psi / 0/2 bar	PFP3781R1R1
0/60 psi / 0/4 bar	PFP3782R1R1
0/100 psi / 0/7 bar	PFP3783R1R1
0/160 psi / 0/11 bar	PFP3784R1R1
0/200 psi / 0/14 bar	PFP3785R1R1
0/300 psi / 0/20 bar	PFP3786R1R1
0/400 psi / 0/28 bar	PFP3787R1R1
0/600 psi / 0/40 bar	PFP3788R1R1
0/1,000 psi / 0/70 bar	PFP3789R1R1
0/1,500 psi / 0/100 bar	PFP3790R1R1
0/2,000 psi / 0/140 bar	PFP3791R1R1
0/3,000 psi / 0/200 bar	PFP3792R1R1
0/5,000 psi / 0/350 bar	PFP3793R1R1
0/6,000 psi / 0/400 bar	PFP3794R1R1
0/7,500 psi / 0/500 bar	PFP3795R1R1
0/10,000 psi / 0/700 bar	PFP3796R1R1
0/15,000 psi / 0/1,000 bar	PFP3797R1R1
0/20,000 psi / 0/1,400 bar	PFP3798R1R1

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

### Option suffix:

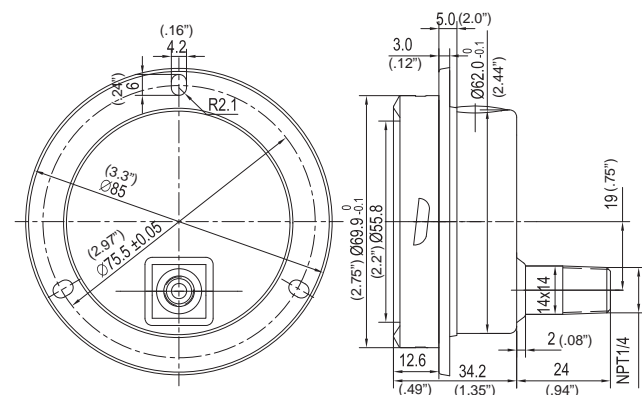
25DRY = Supply 2.5" (63mm) gauge dry

EN = EN837-1 compliant

GID = Glow-in-the-dark dial

SF25 = 2.5" (63mm) Silicone filled

## 2.5" Lower Back Connection with Front Flange



Dimensions in mm (inches)

# Stainless Steel Liquid Filled Gauge, Lead Free Stainless Steel Liquid Filled Gauge

**PFQ,  
PFQ-LF**



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, lead free brass or stainless steel internals
- Restricted orifice
- Ventable plug on 2.5" (63mm) and 4" (100mm) bottom mount (excluding SAE connection)
- Crimp-On bezel
- Dual scale (psi/kPa)/(psi/bar)
- 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

## Specifications

<b>Dial</b>	1.5" (40mm), 2" (50mm), 2.5" (63mm), 4" (100mm), white aluminum with black and red markings
<b>Case</b>	AISI 304 SS
<b>Lens</b>	Polycarbonate
<b>Ring</b>	AISI 304 SS, Crimp-On
<b>Socket</b>	PFQ: OT 58 brass or AISI 316 SS PFQ-LF: Lead free brass
<b>Connection</b>	1/8", 1/4" or 1/2" NPT or BSP (G) or 7/16-20 SAE standard with restricted orifice (other thread types are available)
<b>Fill Liquid</b>	Glycerin
<b>Bourdon Tube</b>	1.5" (40mm), 2" (50mm): Phosphor bronze C or coil shaped for brass socket SS C or coil shaped for 316 SS socket 2.5" (63mm), 4" (100mm): Phosphor bronze or lead free phosphor bronze C or coil shaped for brass socket, AISI 316 SS C or coil shaped for 316 SS socket
<b>Movement</b>	OT 59 brass or SS
<b>Pointer</b>	Aluminum, anodized black
<b>Welding</b>	Brass: Silver alloy, 316SS: TIG
<b>Over-pressure Limit</b>	25% for pressures up to 1,450 psi (100 bar), 15% for pressures over 1,450 psi (100 bar)
<b>Socket Gasket</b>	Buna N for two-piece internal socket seal
<b>Fill Plug</b>	Buna N
<b>Lens Ring Gasket</b>	Silicone rubber
<b>Working Pressure</b>	Maximum 75% of full scale value
<b>Ambient/Process Temperature</b>	Dry: -40°F to 200°F (-40°C to 93°C) Glycerin Filled: -4°F to 150°F (-20°C to 65°C)
<b>Accuracy</b>	1.5" (40mm), 2" (50mm): ±2.5% of full scale value 2.5" (63mm), 4" (100mm): ±1.5% of full scale value
<b>Enclosure Rating</b>	IP65

## Order Codes

Dial Size	1.5" (40mm)				2" (50mm)	
Connection	1/8" NPT Bottom	1/8" NPT Back (CB)	1/8" NPT Bottom	1/8" NPT Back (CB)	1/8" NPT Bottom	1/8" NPT Back (CB)
Movement, Socket, Tube	Brass		SS		Brass	
30" Hg Vac / -1/0 bar	PFQ4746R1R11	PFQ4760R1R11	PFQ1200R1R11	PFQ1220R1R11	PFQ2400R1R11	PFQ2426R1R11
30"/0/15 psi / -1/1 bar	PFQ4747R1R11	PFQ4761R1R11	PFQ4774R1R11	PFQ4786R1R11	PFQ2401R1R11	PFQ2427R1R11
30"/0/30 psi / -1/2 bar	PFQ4748R1R11	PFQ4762R1R11	PFQ4775R1R11	PFQ4787R1R11	PFQ2402R1R11	PFQ2428R1R11
30"/0/60 psi / -1/4 bar	PFQ4749R1R11	PFQ4763R1R11	PFQ4776R1R11	PFQ4788R1R11	PFQ2403R1R11	PFQ2429R1R11
30"/0/100 psi / -1/7 bar	PFQ4750R1R11	PFQ4764R1R11	PFQ4777R1R11	PFQ4789R1R11	PFQ2404R1R11	PFQ2430R1R11
30"/0/150 psi / -1/10 bar	PFQ4751R1R11	PFQ4765R1R11	PFQ4778R1R11	PFQ4790R1R11	PFQ2405R1R11	PFQ2431R1R11
30"/0/200 psi / -1/14 bar	PFQ4752R1R11	PFQ4766R1R11	PFQ4779R1R11	PFQ4791R1R11	PFQ2406R1R11	PFQ2432R1R11
30"/0/300 psi / -1/20 bar	PFQ4753R1R11	PFQ4767R1R11	PFQ4780R1R11	PFQ4792R1R11	PFQ2407R1R11	PFQ2433R1R11
0/15 psi / 0/1 bar	PFQ4754R1R11	PFQ4768R1R11	PFQ1201R1R11	PFQ1221R1R11	PFQ2408R1R11	PFQ2434R1R11
0/30 psi / 0/2 bar	PFQ1102R1R11	PFQ1122R1R11	PFQ1202R1R11	PFQ1222R1R11	PFQ2409R1R11	PFQ2435R1R11
0/60 psi / 0/4 bar	PFQ1103R1R11	PFQ1123R1R11	PFQ1203R1R11	PFQ1223R1R11	PFQ2410R1R11	PFQ2436R1R11
0/100 psi / 0/7 bar	PFQ1104R1R11	PFQ1124R1R11	PFQ1204R1R11	PFQ1224R1R11	PFQ2411R1R11	PFQ2437R1R11
0/160 psi / 0/11 bar	PFQ1105R1R11	PFQ1125R1R11	PFQ1205R1R11	PFQ1225R1R11	PFQ2412R1R11	PFQ2438R1R11
0/200 psi / 0/14 bar	PFQ1106R1R11	PFQ1126R1R11	PFQ1206R1R11	PFQ1226R1R11	PFQ2413R1R11	PFQ2439R1R11
0/300 psi / 0/20 bar	PFQ1107R1R11	PFQ1127R1R11	PFQ1207R1R11	PFQ1227R1R11	PFQ2414R1R11	PFQ2440R1R11
0/400 psi / 0/28 bar	PFQ4755R1R11	PFQ4769R1R11	PFQ4781R1R11	PFQ4793R1R11	PFQ2415R1R11	PFQ2441R1R11
0/600 psi / 0/40 bar	PFQ1108R1R11	PFQ1128R1R11	PFQ1208R1R11	PFQ1228R1R11	PFQ2416R1R11	PFQ2442R1R11
0/1,000 psi / 0/70 bar	PFQ1109R1R11	PFQ1129R1R11	PFQ1209R1R11	PFQ1229R1R11	PFQ2417R1R11	PFQ2443R1R11
0/1,500 psi / 0/100 bar	PFQ1110R1R11	PFQ1130R1R11	PFQ1210R1R11	PFQ1230R1R11	PFQ2418R1R11	PFQ2444R1R11
0/2,000 psi / 0/140 bar	PFQ1111R1R11	PFQ1131R1R11	PFQ1211R1R11	PFQ1231R1R11	PFQ2419R1R11	PFQ2445R1R11
0/3,000 psi / 0/200 bar	PFQ1112R1R11	PFQ1132R1R11	PFQ1212R1R11	PFQ1232R1R11	PFQ2420R1R11	PFQ2446R1R11
0/5,000 psi / 0/350 bar	PFQ1113R1R11	PFQ1133R1R11	PFQ1213R1R11	PFQ1233R1R11	PFQ2421R1R11	PFQ2447R1R11
0/6,000 psi / 0/400 bar	PFQ4756R1R11	PFQ4770R1R11	PFQ4782R1R11	PFQ4794R1R11	PFQ2422R1R11	PFQ2448R1R11
0/7,500 psi / 0/500 bar	PFQ4757R1R11	PFQ4771R1R11	PFQ4783R1R11	PFQ4795R1R11	PFQ2423R1R11	PFQ2449R1R11
0/10,000 psi / 0/700 bar	PFQ4758R1R11	PFQ4772R1R11	PFQ4784R1R11	PFQ4796R1R11	PFQ2424R1R11	PFQ2450R1R11
0/15,000 psi / 0/1,000 bar	PFQ4759R1R11	PFQ4773R1R11	PFQ4785R1R11	PFQ4797R1R11	PFQ2425R1R11	PFQ2451R1R11

Other ranges, connection sizes and thread types are 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. PFQ1102R1R11-15DRY for DRY CASE**

### Option suffix:

15DRY = Supply 1.5" (40mm) gauge dry  
15FF = 1.5" (40mm) Front flange  
15UC = 1.5" (40mm) U-Clamp  
2FF = 2" (50mm) Front flange

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



# Stainless Steel Liquid Filled Gauge, Lead Free Stainless Steel Liquid Filled Gauge

# PFQ, PFQ-LF

## Order Codes

Dial Size	2" (50mm)					
Connection	1/8" NPT Bottom	1/8" NPT Back (CB)	1/4" NPT Bottom	1/4" NPT Back (CB)	1/4" NPT Bottom	1/4" NPT Back (CB)
Movement, Socket, Tube	SS		Brass		SS	
30" Hg Vac / -1/0 bar	PFQ2248R1R11	PFQ2309R1R11	PFQ2452R1R11	PFQ2478R1R11	PFQ2247R1R11	PFQ2246R1R11
30"/0/15 psi / -1/1 bar	PFQ2295R1R11	PFQ2310R1R11	PFQ2453R1R11	PFQ2479R1R11	PFQ2271R1R11	PFQ2282R1R11
30"/0/30 psi / -1/2 bar	PFQ2241R1R11	PFQ2311R1R11	PFQ2454R1R11	PFQ2480R1R11	PFQ2272R1R11	PFQ2283R1R11
30"/0/60 psi / -1/4 bar	PFQ2296R1R11	PFQ2312R1R11	PFQ2455R1R11	PFQ2481R1R11	PFQ2273R1R11	PFQ2242R1R11
30"/0/100 psi / -1/7 bar	PFQ2297R1R11	PFQ2313R1R11	PFQ2456R1R11	PFQ2482R1R11	PFQ2274R1R11	PFQ2284R1R11
30"/0/150 psi / -1/10 bar	PFQ2298R1R11	PFQ2314R1R11	PFQ2457R1R11	PFQ2483R1R11	PFQ2275R1R11	PFQ2285R1R11
30"/0/200 psi / -1/14 bar	PFQ2299R1R11	PFQ2315R1R11	PFQ2458R1R11	PFQ2484R1R11	PFQ2276R1R11	PFQ2286R1R11
30"/0/300 psi / -1/20 bar	PFQ2300R1R11	PFQ2316R1R11	PFQ2459R1R11	PFQ2485R1R11	PFQ2277R1R11	PFQ2287R1R11
0/15 psi / 0/1 bar	PFQ2218R1R11	PFQ2217R1R11	PFQ2460R1R11	PFQ2486R1R11	PFQ2215R1R11	PFQ2214R1R11
0/30 psi / 0/2 bar	PFQ2253R1R11	PFQ2252R1R11	PFQ2461R1R11	PFQ2487R1R11	PFQ2250R1R11	PFQ2249R1R11
0/60 psi / 0/4 bar	PFQ2270R1R11	PFQ2269R1R11	PFQ2462R1R11	PFQ2488R1R11	PFQ2266R1R11	PFQ2265R1R11
0/100 psi / 0/7 bar	PFQ2209R1R11	PFQ2208R1R11	PFQ2463R1R11	PFQ2489R1R11	PFQ2205R1R11	PFQ2204R1R11
0/160 psi / 0/11 bar	PFQ2206R1R11	PFQ2207R1R11	PFQ2464R1R11	PFQ2490R1R11	PFQ2220R1R11	PFQ2219R1R11
0/200 psi / 0/14 bar	PFQ2301R1R11	PFQ2951R1R11	PFQ2465R1R11	PFQ2491R1R11	PFQ2267R1R11	PFQ2268R1R11
0/300 psi / 0/20 bar	PFQ2245R1R11	PFQ2318R1R11	PFQ2466R1R11	PFQ2492R1R11	PFQ2244R1R11	PFQ2243R1R11
0/400 psi / 0/28 bar	PFQ2302R1R11	PFQ2319R1R11	PFQ2467R1R11	PFQ2493R1R11	PFQ2254R1R11	PFQ2288R1R11
0/600 psi / 0/40 bar	PFQ2264R1R11	PFQ2320R1R11	PFQ2468R1R11	PFQ2494R1R11	PFQ2278R1R11	PFQ2289R1R11
0/1,000 psi / 0/70 bar	PFQ2203R1R11	PFQ2321R1R11	PFQ2469R1R11	PFQ2495R1R11	PFQ2202R1R11	PFQ2201R1R11
0/1,500 psi / 0/100 bar	PFQ2213R1R11	PFQ2322R1R11	PFQ2470R1R11	PFQ2496R1R11	PFQ2212R1R11	PFQ2211R1R11
0/2,000 psi / 0/140 bar	PFQ2304R1R11	PFQ2323R1R11	PFQ2471R1R11	PFQ2497R1R11	PFQ2279R1R11	PFQ2290R1R11
0/3,000 psi / 0/200 bar	PFQ2305R1R11	PFQ2324R1R11	PFQ2472R1R11	PFQ2498R1R11	PFQ2280R1R11	PFQ2291R1R11
0/5,000 psi / 0/350 bar	PFQ2258R1R11	PFQ2257R1R11	PFQ2473R1R11	PFQ2499R1R11	PFQ2256R1R11	PFQ2255R1R11
0/6,000 psi / 0/400 bar	PFQ2262R1R11	PFQ2261R1R11	PFQ2474R1R11	PFQ2500R1R11	PFQ2260R1R11	PFQ2259R1R11
0/7,500 psi / 0/500 bar	PFQ2306R1R11	PFQ2325R1R11	PFQ2475R1R11	PFQ2501R1R11	PFQ2281R1R11	PFQ2292R1R11
0/10,000 psi / 0/700 bar	PFQ2307R1R11	PFQ2326R1R11	PFQ2476R1R11	PFQ2502R1R11	PFQ2200R1R11	PFQ2293R1R11
0/15,000 psi / 0/1,000 bar	PFQ2308R1R11	PFQ2327R1R11	PFQ2477R1R11	PFQ2503R1R11	PFQ2210R1R11	PFQ2294R1R11

Other ranges, connection sizes and thread types are 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. PFQ2218R1R11-20DRY for DRY CASE**

### Option suffix:

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

## Order Codes

Dial Size	2.5" (63mm)				
Connection	1/4" NPT Bottom	1/4" NPT Back (CB)	1/4" NPT Bottom	1/4" NPT Back (CB)	7/16"-20 SAE Bottom
Movement, Socket, Tube	Brass		SS		Brass
30" Hg Vac / -1/0 bar	PFQ801R1R11	PFQ900R1R11	PFQ106R1R11	PFQ147R1R11	PFQ3643
30"/0/15 psi / -1/1 bar	PFQ790R1R11	PFQ890R1R11	PFQ107R1R11	PFQ148R1R11	PFQ3644
30"/0/30 psi / -1/2 bar	PFQ798R1R11	PFQ898R1R11	PFQ108R1R11	PFQ149R1R11	PFQ3645
30"/0/60 psi / -1/4 bar	PFQ799R1R11	PFQ899R1R11	PFQ109R1R11	PFQ151R1R11	PFQ3646
30"/0/100 psi / -1/7 bar	PFQ791R1R11	PFQ891R1R11	PFQ110R1R11	PFQ156R1R11	PFQ3647
30"/0/150 psi / -1/10 bar	PFQ792R1R11	PFQ892R1R11	PFQ111R1R11	PFQ157R1R11	PFQ3648
30"/0/200 psi / -1/14 bar	PFQ794R1R11	PFQ894R1R11	PFQ112R1R11	PFQ158R1R11	PFQ3649
30"/0/300 psi / -1/20 bar	PFQ795R1R11	PFQ895R1R11	PFQ113R1R11	PFQ159R1R11	PFQ3650
0/15 psi / 0/1 bar	PFQ800R1R11	PFQ901R1R11	PFQ118R1R11	PFQ162R1R11	PFQ3651
0/30 psi / 0/2 bar	PFQ802R1R11	PFQ902R1R11	PFQ119R1R11	PFQ163R1R11	PFQ3652
0/60 psi / 0/4 bar	PFQ803R1R11	PFQ903R1R11	PFQ120R1R11	PFQ164R1R11	PFQ3653
0/100 psi / 0/7 bar	PFQ804R1R11	PFQ904R1R11	PFQ121R1R11	PFQ169R1R11	PFQ3654
0/160 psi / 0/11 bar	PFQ805R1R11	PFQ905R1R11	PFQ122R1R11	PFQ170R1R11	PFQ3655
0/200 psi / 0/14 bar	PFQ806R1R11	PFQ906R1R11	PFQ123R1R11	PFQ171R1R11	PFQ3656
0/300 psi / 0/20 bar	PFQ807R1R11	PFQ907R1R11	PFQ124R1R11	PFQ175R1R11	PFQ3657
0/400 psi / 0/28 bar	PFQ817R1R11	PFQ917R1R11	PFQ125R1R11	PFQ177R1R11	PFQ3658
0/600 psi / 0/40 bar	PFQ808R1R11	PFQ908R1R11	PFQ126R1R11	PFQ178R1R11	PFQ3659
0/1,000 psi / 0/70 bar	PFQ809R1R11	PFQ909R1R11	PFQ127R1R11	PFQ179R1R11	PFQ3660
0/1,500 psi / 0/100 bar	PFQ816R1R11	PFQ914R1R11	PFQ128R1R11	PFQ180R1R11	PFQ3661
0/2,000 psi / 0/140 bar	PFQ810R1R11	PFQ910R1R11	PFQ129R1R11	PFQ181R1R11	PFQ3662
0/3,000 psi / 0/200 bar	PFQ811R1R11	PFQ911R1R11	PFQ137R1R11	PFQ182R1R11	PFQ3663
0/5,000 psi / 0/350 bar	PFQ812R1R11	PFQ912R1R11	PFQ138R1R11	PFQ183R1R11	PFQ3664
0/6,000 psi / 0/400 bar	PFQ814R1R11	PFQ915R1R11	PFQ139R1R11	PFQ184R1R11	PFQ3665
0/7,500 psi / 0/500 bar	PFQ818R1R11	PFQ918R1R11	PFQ144R1R11	PFQ186R1R11	PFQ3666
0/10,000 psi / 0/700 bar	PFQ813R1R11	PFQ913R1R11	PFQ145R1R11	PFQ190R1R11	PFQ3667
0/15,000 psi / 0/1,000 bar	-	-	PFQ146R1R11	PFQ191R1R11	PFQ3668

Other ranges, connection sizes and thread types are 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.**

### PFQ801R1R11-25DRY 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

# Stainless Steel Liquid Filled Gauge, Lead Free Stainless Steel Liquid Filled Gauge

# PFQ, PFQ-LF

## PFQ-LF Order Codes

Dial Size	2.5" (63mm)	
Connection	1/4" NPT Bottom	1/4" NPT Back (CB)
Socket, Tube	Lead Free Brass	
30" Hg Vac/kPa	PFQ801LF	PFQ900LF
30"/0/15 psi/kPa	PFQ790LF	PFQ890LF
30"/0/30 psi/kPa	PFQ798LF	PFQ898LF
30"/0/60 psi/kPa	PFQ799LF	PFQ899LF
30"/0/100 psi/kPa	PFQ791LF	PFQ891LF
30"/0/150 psi/kPa	PFQ792LF	PFQ892LF
30"/0/200 psi/kPa	PFQ794LF	PFQ894LF
30"/0/300 psi/kPa	PFQ795LF	PFQ895LF
0/15 psi/kPa	PFQ800LF	PFQ901LF
0/30 psi/kPa	PFQ802LF	PFQ902LF
0/60 psi/kPa	PFQ803LF	PFQ903LF
0/100 psi/kPa	PFQ804LF	PFQ904LF
0/160 psi/kPa	PFQ805LF	PFQ905LF
0/200 psi/kPa	PFQ806LF	PFQ906LF
0/300 psi/kPa	PFQ807LF	PFQ907LF
0/400 psi/kPa	PFQ817LF	PFQ917LF
0/600 psi/kPa	PFQ808LF	PFQ908LF
0/1,000 psi/kPa	PFQ809LF	PFQ909LF
0/1,500 psi/kPa	PFQ816LF	PFQ914LF
0/2,000 psi/kPa	PFQ810LF	PFQ910LF
0/3,000 psi/kPa	PFQ811LF	PFQ911LF
0/5,000 psi/kPa	PFQ812LF	PFQ912LF
0/6,000 psi/kPa	PFQ814LF	PFQ915LF
0/7,500 psi/kPa	PFQ818LF	PFQ918LF
0/10,000 psi/kPa	PFQ813LF	PFQ913LF
0/15,000 psi/kPa	-	-

## PFQ Order Codes

Dial Size	4" (100mm)			
Connection	1/4" NPT Bottom	1/4" NPT Back (CB)	1/4" NPT Bottom	1/4" NPT Back (CB)
Movement, Socket, Tube	Brass		SS	
30" Hg Vac / -1/0 bar	PFQ700R1R11	PFQ730R1R11	PFQ760R1R11	PFQ1260R1R11
30"/0/15 psi / -1/1 bar	PFQ701R1R11	PFQ731R1R11	PFQ761R1R11	PFQ1261R1R11
30"/0/30 psi / -1/2 bar	PFQ702R1R11	PFQ732R1R11	PFQ762R1R11	PFQ1262R1R11
30"/0/60 psi / -1/4 bar	PFQ703R1R11	PFQ733R1R11	PFQ763R1R11	PFQ1263R1R11
30"/0/100 psi / -1/7 bar	PFQ704R1R11	PFQ734R1R11	PFQ764R1R11	PFQ1264R1R11
30"/0/150 psi / -1/10 bar	PFQ705R1R11	PFQ735R1R11	PFQ765R1R11	PFQ1265R1R11
30"/0/200 psi / -1/14 bar	PFQ706R1R11	PFQ736R1R11	PFQ766R1R11	PFQ1266R1R11
30"/0/300 psi / -1/20 bar	PFQ707R1R11	PFQ737R1R11	PFQ767R1R11	PFQ1267R1R11
0/15 psi / 0/1 bar	PFQ708R1R11	PFQ738R1R11	PFQ768R1R11	PFQ1268R1R11
0/30 psi / 0/2 bar	PFQ709R1R11	PFQ739R1R11	PFQ769R1R11	PFQ1269R1R11
0/60 psi / 0/4 bar	PFQ710R1R11	PFQ740R1R11	PFQ770R1R11	PFQ1270R1R11
0/100 psi / 0/7 bar	PFQ711R1R11	PFQ741R1R11	PFQ771R1R11	PFQ1271R1R11
0/160 psi / 0/11 bar	PFQ712R1R11	PFQ742R1R11	PFQ772R1R11	PFQ1272R1R11
0/200 psi / 0/14 bar	PFQ713R1R11	PFQ743R1R11	PFQ773R1R11	PFQ1273R1R11
0/300 psi / 0/20 bar	PFQ714R1R11	PFQ744R1R11	PFQ774R1R11	PFQ1274R1R11
0/400 psi / 0/28 bar	PFQ715R1R11	PFQ745R1R11	PFQ775R1R11	PFQ1275R1R11
0/600 psi / 0/40 bar	PFQ716R1R11	PFQ746R1R11	PFQ776R1R11	PFQ1276R1R11
0/1,000 psi / 0/70 bar	PFQ724R1R11	PFQ192R1R11	PFQ1528R1R11	PFQ1552R1R11
0/1,500 psi / 0/100 bar	PFQ725R1R11	PFQ241R1R11	PFQ1529R1R11	PFQ1553R1R11
0/2,000 psi / 0/140 bar	PFQ726R1R11	PFQ242R1R11	PFQ1530R1R11	PFQ1554R1R11
0/3,000 psi / 0/200 bar	PFQ727R1R11	PFQ243R1R11	PFQ1531R1R11	PFQ1555R1R11
0/5,000 psi / 0/350 bar	PFQ728R1R11	PFQ244R1R11	PFQ1532R1R11	PFQ1556R1R11
0/6,000 psi / 0/400 bar	PFQ346R1R11	PFQ246R1R11	PFQ4801R1R11	PFQ4803R1R11
0/7,500 psi / 0/500 bar	PFQ347R1R11	PFQ247R1R11	PFQ4802R1R11	PFQ4804R1R11
0/10,000 psi / 0/700 bar	PFQ729R1R11	PFQ360R1R11	PFQ1533R1R11	PFQ1557R1R11
0/15,000 psi / 0/1,000 bar	PFQ261R1R11	PFQ361R1R11	PFQ1534R1R11	PFQ1558R1R11

Other ranges, connection sizes and thread types are 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. PFQ707R1R11-DRY 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

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

SF25 = 2.5" (63mm) Silicone filled

SF4 = 4" (100mm) Silicone filled

## Order Codes

Dial Size	4" (100mm)			
Connection	1/2" NPT Bottom	1/2" NPT Back (CB)	1/2" NPT Bottom	1/2" NPT Back (CB)
Movement, Socket, Tube	Brass		SS	
30" Hg Vac / -1/0 bar	PFQ1234R1R11	PFQ1285R1R11	PFQ1535R1R11	PFQ1559R1R11
30"/0/15 psi / -1/1 bar	PFQ1235R1R11	PFQ1286R1R11	PFQ1536R1R11	PFQ1560R1R11
30"/0/30 psi / -1/2 bar	PFQ1236R1R11	PFQ1287R1R11	PFQ1537R1R11	PFQ1561R1R11
30"/0/60 psi / -1/4 bar	PFQ1237R1R11	PFQ1288R1R11	PFQ1538R1R11	PFQ1562R1R11
30"/0/100 psi / -1/7 bar	PFQ1238R1R11	PFQ1289R1R11	PFQ1539R1R11	PFQ1563R1R11
30"/0/150 psi / -1/10 bar	PFQ1239R1R11	PFQ1290R1R11	PFQ1540R1R11	PFQ1564R1R11
30"/0/200 psi / -1/14 bar	PFQ1240R1R11	PFQ1291R1R11	PFQ1541R1R11	PFQ1565R1R11
30"/0/300 psi / -1/20 bar	PFQ1241R1R11	PFQ1292R1R11	PFQ1542R1R11	PFQ1566R1R11
0/15 psi / 0/1 bar	PFQ1242R1R11	PFQ1293R1R11	PFQ1543R1R11	PFQ1567R1R11
0/30 psi / 0/2 bar	PFQ1243R1R11	PFQ1294R1R11	PFQ1544R1R11	PFQ1568R1R11
0/60 psi / 0/4 bar	PFQ1244R1R11	PFQ1295R1R11	PFQ1545R1R11	PFQ1569R1R11
0/100 psi / 0/7 bar	PFQ1245R1R11	PFQ1296R1R11	PFQ1546R1R11	PFQ1570R1R11
0/160 psi / 0/11 bar	PFQ1246R1R11	PFQ1298R1R11	PFQ1547R1R11	PFQ1571R1R11
0/200 psi / 0/14 bar	PFQ1247R1R11	PFQ1524R1R11	PFQ1548R1R11	PFQ1572R1R11
0/300 psi / 0/20 bar	PFQ1248R1R11	PFQ1525R1R11	PFQ1549R1R11	PFQ1573R1R11
0/400 psi / 0/28 bar	PFQ1249R1R11	PFQ1526R1R11	PFQ1550R1R11	PFQ1574R1R11
0/600 psi / 0/40 bar	PFQ1250R1R11	PFQ1527R1R11	PFQ1551R1R11	PFQ1575R1R11
0/1,000 psi / 0/70 bar	PFQ717R1R11	PFQ747R1R11	PFQ777R1R11	PFQ1277R1R11
0/1,500 psi / 0/100 bar	PFQ718R1R11	PFQ748R1R11	PFQ778R1R11	PFQ1278R1R11
0/2,000 psi / 0/140 bar	PFQ719R1R11	PFQ749R1R11	PFQ779R1R11	PFQ1279R1R11
0/3,000 psi / 0/200 bar	PFQ720R1R11	PFQ750R1R11	PFQ780R1R11	PFQ1280R1R11
0/5,000 psi / 0/350 bar	PFQ721R1R11	PFQ751R1R11	PFQ781R1R11	PFQ1281R1R11
0/6,000 psi / 0/400 bar	PFQ784R1R11	PFQ785R1R11	PFQ789R1R11	PFQ1284R1R11
0/7,500 psi / 0/500 bar	PFQ4805R1R11	PFQ4806R1R11	PFQ4807R1R11	PFQ4808R1R11
0/10,000 psi / 0/700 bar	PFQ722R1R11	PFQ752R1R11	PFQ782R1R11	PFQ1282R1R11
00/15,000 psi / 0/1,000 bar	PFQ723R1R11	PFQ753R1R11	PFQ783R1R11	PFQ1283R1R11

Other ranges, connection sizes and thread types are 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

# Stainless Steel Liquid Filled Gauge, Lead Free Stainless Steel Liquid Filled Gauge

# PFQ, PFQ-LF

## PFQ-LF Order Codes

Dial Size	4" (100mm)			
Connection	1/4" NPT Bottom	1/4" NPT Back (CB)	1/2" NPT Bottom	1/2" NPT Back (CB)
Socket, Tube	Lead Free Brass			
30" Hg Vac/kPa	PFQ700LF	PFQ730LF	PFQ1234LF	PFQ1285LF
30"/0/15 psi/kPa	PFQ701LF	PFQ731LF	PFQ1235LF	PFQ1286LF
30"/0/30 psi/kPa	PFQ702LF	PFQ732LF	PFQ1236LF	PFQ1287LF
30"/0/60 psi/kPa	PFQ703LF	PFQ733LF	PFQ1237LF	PFQ1288LF
30"/0/100 psi/kPa	PFQ704LF	PFQ734LF	PFQ1238LF	PFQ1289LF
30"/0/150 psi/kPa	PFQ705LF	PFQ735LF	PFQ1239LF	PFQ1290LF
30"/0/200 psi/kPa	PFQ706LF	PFQ736LF	PFQ1240LF	PFQ1291LF
30"/0/300 psi/kPa	PFQ707LF	PFQ737LF	PFQ1241LF	PFQ1292LF
0/15 psi/kPa	PFQ708LF	PFQ738LF	PFQ1242LF	PFQ1293LF
0/30 psi/kPa	PFQ709LF	PFQ739LF	PFQ1243LF	PFQ1294LF
0/60 psi/kPa	PFQ710LF	PFQ740LF	PFQ1244LF	PFQ1295LF
0/100 psi/kPa	PFQ711LF	PFQ741LF	PFQ1245LF	PFQ1296LF
0/160 psi/kPa	PFQ712LF	PFQ742LF	PFQ1246LF	PFQ1298LF
0/200 psi/kPa	PFQ713LF	PFQ743LF	PFQ1247LF	PFQ1524LF
0/300 psi/kPa	PFQ714LF	PFQ744LF	PFQ1248LF	PFQ1525LF
0/400 psi/kPa	PFQ715LF	PFQ745LF	PFQ1249LF	PFQ1526LF
0/600 psi/kPa	PFQ716LF	PFQ746LF	PFQ1250LF	PFQ1527LF
0/1,000 psi/kPa	PFQ724LF	PFQ192LF	PFQ717LF	PFQ747LF
0/1,500 psi/kPa	PFQ725LF	PFQ241LF	PFQ718LF	PFQ748LF
0/2,000 psi/kPa	PFQ726LF	PFQ242LF	PFQ719LF	PFQ749LF
0/3,000 psi/kPa	PFQ727LF	PFQ243LF	PFQ720LF	PFQ750LF
0/5,000 psi/kPa	PFQ728LF	PFQ244LF	PFQ721LF	PFQ751LF
0/6,000 psi/kPa	PFQ346LF	PFQ246LF	PFQ784LF	PFQ785LF
0/7,500 psi/kPa	PFQ347LF	PFQ247LF	PFQ786LF	PFQ886LF
0/10,000 psi/kPa	PFQ729LF	PFQ360LF	PFQ722LF	PFQ752LF
0/15,000 psi/kPa	PFQ261LF	PFQ361LF	PFQ723LF	PFQ753LF

Other ranges, connection sizes and thread types are 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. PFQ728LF-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

## Order Codes

Dial Size	2.5" (63mm)				4" (100mm)	
Connection	1/4" BSP(G) Bottom	1/4" BSP(G) Back (CB)	1/4" BSP(G) Bottom	1/4" BSP(G) Back (CB)	1/4" BSP(G) Bottom	1/4" BSP(G) Back (CB)
Movement, Socket, Tube	Brass		SS		Brass	
30" Hg Vac / -1/0 bar	PFQ801R1R11T1	PFQ900R1R11T1	PFQ106R1R11T1	PFQ147R1R11T1	PFQ700R1R11T1	PFQ730R1R11T1
30"/0/15 psi / -1/1 bar	PFQ790R1R11T1	PFQ890R1R11T1	PFQ107R1R11T1	PFQ148R1R11T1	PFQ701R1R11T1	PFQ731R1R11T1
30"/0/30 psi / -1/2 bar	PFQ798R1R11T1	PFQ898R1R11T1	PFQ108R1R11T1	PFQ149R1R11T1	PFQ702R1R11T1	PFQ732R1R11T1
30"/0/60 psi / -1/4 bar	PFQ799R1R11T1	PFQ899R1R11T1	PFQ109R1R11T1	PFQ151R1R11T1	PFQ703R1R11T1	PFQ733R1R11T1
30"/0/100 psi / -1/7 bar	PFQ791R1R11T1	PFQ891R1R11T1	PFQ110R1R11T1	PFQ156R1R11T1	PFQ704R1R11T1	PFQ734R1R11T1
30"/0/150 psi / -1/10 bar	PFQ792R1R11T1	PFQ892R1R11T1	PFQ111R1R11T1	PFQ157R1R11T1	PFQ705R1R11T1	PFQ735R1R11T1
30"/0/200 psi / -1/14 bar	PFQ794R1R11T1	PFQ894R1R11T1	PFQ112R1R11T1	PFQ158R1R11T1	PFQ706R1R11T1	PFQ736R1R11T1
30"/0/300 psi / -1/20 bar	PFQ795R1R11T1	PFQ895R1R11T1	PFQ113R1R11T1	PFQ159R1R11T1	PFQ707R1R11T1	PFQ737R1R11T1
0/15 psi / 0/1 bar	PFQ800R1R11T1	PFQ901R1R11T1	PFQ118R1R11T1	PFQ162R1R11T1	PFQ708R1R11T1	PFQ738R1R11T1
0/30 psi / 0/2 bar	PFQ802R1R11T1	PFQ902R1R11T1	PFQ119R1R11T1	PFQ163R1R11T1	PFQ709R1R11T1	PFQ739R1R11T1
0/60 psi / 0/4 bar	PFQ803R1R11T1	PFQ903R1R11T1	PFQ120R1R11T1	PFQ164R1R11T1	PFQ710R1R11T1	PFQ740R1R11T1
0/100 psi / 0/7 bar	PFQ804R1R11T1	PFQ904R1R11T1	PFQ121R1R11T1	PFQ169R1R11T1	PFQ711R1R11T1	PFQ741R1R11T1
0/160 psi / 0/11 bar	PFQ805R1R11T1	PFQ905R1R11T1	PFQ122R1R11T1	PFQ170R1R11T1	PFQ712R1R11T1	PFQ742R1R11T1
0/200 psi / 0/14 bar	PFQ806R1R11T1	PFQ906R1R11T1	PFQ123R1R11T1	PFQ171R1R11T1	PFQ713R1R11T1	PFQ743R1R11T1
0/300 psi / 0/20 bar	PFQ807R1R11T1	PFQ907R1R11T1	PFQ124R1R11T1	PFQ175R1R11T1	PFQ714R1R11T1	PFQ744R1R11T1
0/400 psi / 0/28 bar	PFQ817R1R11T1	PFQ917R1R11T1	PFQ125R1R11T1	PFQ177R1R11T1	PFQ715R1R11T1	PFQ745R1R11T1
0/600 psi / 0/40 bar	PFQ808R1R11T1	PFQ908R1R11T1	PFQ126R1R11T1	PFQ178R1R11T1	PFQ716R1R11T1	PFQ746R1R11T1
0/1,000 psi / 0/70 bar	PFQ809R1R11T1	PFQ909R1R11T1	PFQ127R1R11T1	PFQ179R1R11T1	PFQ724R1R11T1	PFQ192R1R11T1
0/1,500 psi / 0/100 bar	PFQ816R1R11T1	PFQ914R1R11T1	PFQ128R1R11T1	PFQ180R1R11T1	PFQ725R1R11T1	PFQ241R1R11T1
0/2,000 psi / 0/140 bar	PFQ810R1R11T1	PFQ910R1R11T1	PFQ129R1R11T1	PFQ181R1R11T1	PFQ726R1R11T1	PFQ242R1R11T1
0/3,000 psi / 0/200 bar	PFQ811R1R11T1	PFQ911R1R11T1	PFQ137R1R11T1	PFQ182R1R11T1	PFQ727R1R11T1	PFQ243R1R11T1
0/5,000 psi / 0/350 bar	PFQ812R1R11T1	PFQ912R1R11T1	PFQ138R1R11T1	PFQ183R1R11T1	PFQ728R1R11T1	PFQ244R1R11T1
0/6,000 psi / 0/400 bar	PFQ814R1R11T1	PFQ915R1R11T1	PFQ139R1R11T1	PFQ184R1R11T1	PFQ346R1R11T1	PFQ246R1R11T1
0/7,500 psi / 0/500 bar	PFQ818R1R11T1	PFQ918R1R11T1	PFQ144R1R11T1	PFQ186R1R11T1	PFQ347R1R11T1	PFQ247R1R11T1
0/10,000 psi / 0/700 bar	PFQ813R1R11T1	PFQ913R1R11T1	PFQ145R1R11T1	PFQ190R1R11T1	PFQ729R1R11T1	PFQ360R1R11T1
0/15,000 psi / 0/1,000 bar	PFQ4809R1R11T1	PFQ4810R1R11T1	PFQ146R1R11T1	PFQ191R1R11T1	PFQ261R1R11T1	PFQ361R1R11T1

Other ranges, connection sizes and thread types are 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. PFQ707R1R11T1-25DRY 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

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

SF25 = 2.5" (63mm) Silicone filled

SF4 = 4" (100mm) Silicone filled

# Stainless Steel Liquid Filled Gauge, Lead Free Stainless Steel Liquid Filled Gauge

## PFQ, PFQ-LF

Industrial

### Order Codes

Dial Size	4" (100mm)					
Connection	1/4" BSP(G) Bottom	1/4" BSP(G) Back (CB)	1/2" BSP(G) Bottom	1/2" BSP(G) Back (CB)	1/2" BSP(G) Bottom	1/2" BSP(G) Back (CB)
Movement, Socket, Tube	SS		Brass		SS	
30" Hg Vac / -1/0 bar	PFQ760R1R11T1	PFQ1260R1R11T1	PFQ1234R1R11T1	PFQ1285R1R11T1	PFQ1535R1R11T1	PFQ1559R1R11T1
30"/0/15 psi / -1/1 bar	PFQ761R1R11T1	PFQ1261R1R11T1	PFQ1235R1R11T1	PFQ1286R1R11T1	PFQ1536R1R11T1	PFQ1560R1R11T1
30"/0/30 psi / -1/2 bar	PFQ762R1R11T1	PFQ1262R1R11T1	PFQ1236R1R11T1	PFQ1287R1R11T1	PFQ1537R1R11T1	PFQ1561R1R11T1
30"/0/60 psi / -1/4 bar	PFQ763R1R11T1	PFQ1263R1R11T1	PFQ1237R1R11T1	PFQ1288R1R11T1	PFQ1538R1R11T1	PFQ1562R1R11T1
30"/0/100 psi / -1/7 bar	PFQ764R1R11T1	PFQ1264R1R11T1	PFQ1238R1R11T1	PFQ1289R1R11T1	PFQ1539R1R11T1	PFQ1563R1R11T1
30"/0/150 psi / -1/10 bar	PFQ765R1R11T1	PFQ1265R1R11T1	PFQ1239R1R11T1	PFQ1290R1R11T1	PFQ1540R1R11T1	PFQ1564R1R11T1
30"/0/200 psi / -1/14 bar	PFQ766R1R11T1	PFQ1266R1R11T1	PFQ1240R1R11T1	PFQ1291R1R11T1	PFQ1541R1R11T1	PFQ1565R1R11T1
30"/0/300 psi / -1/20 bar	PFQ767R1R11T1	PFQ1267R1R11T1	PFQ1241R1R11T1	PFQ1292R1R11T1	PFQ1542R1R11T1	PFQ1566R1R11T1
0/15 psi / 0/1 bar	PFQ768R1R11T1	PFQ1268R1R11T1	PFQ1242R1R11T1	PFQ1293R1R11T1	PFQ1543R1R11T1	PFQ1567R1R11T1
0/30 psi / 0/2 bar	PFQ769R1R11T1	PFQ1269R1R11T1	PFQ1243R1R11T1	PFQ1294R1R11T1	PFQ1544R1R11T1	PFQ1568R1R11T1
0/60 psi / 0/4 bar	PFQ770R1R11T1	PFQ1270R1R11T1	PFQ1244R1R11T1	PFQ1295R1R11T1	PFQ1545R1R11T1	PFQ1569R1R11T1
0/100 psi / 0/7 bar	PFQ771R1R11T1	PFQ1271R1R11T1	PFQ1245R1R11T1	PFQ1296R1R11T1	PFQ1546R1R11T1	PFQ1570R1R11T1
0/160 psi / 0/11 bar	PFQ772R1R11T1	PFQ1272R1R11T1	PFQ1246R1R11T1	PFQ1298R1R11T1	PFQ1547R1R11T1	PFQ1571R1R11T1
0/200 psi / 0/14 bar	PFQ773R1R11T1	PFQ1273R1R11T1	PFQ1247R1R11T1	PFQ1524R1R11T1	PFQ1548R1R11T1	PFQ1572R1R11T1
0/300 psi / 0/20 bar	PFQ774R1R11T1	PFQ1274R1R11T1	PFQ1248R1R11T1	PFQ1525R1R11T1	PFQ1549R1R11T1	PFQ1573R1R11T1
0/400 psi / 0/28 bar	PFQ775R1R11T1	PFQ1275R1R11T1	PFQ1249R1R11T1	PFQ1526R1R11T1	PFQ1550R1R11T1	PFQ1574R1R11T1
0/600 psi / 0/40 bar	PFQ776R1R11T1	PFQ1276R1R11T1	PFQ1250R1R11T1	PFQ1527R1R11T1	PFQ1551R1R11T1	PFQ1575R1R11T1
0/1,000 psi / 0/70 bar	PFQ1528R1R11T1	PFQ1552R1R11T1	PFQ717R1R11T1	PFQ747R1R11T1	PFQ777R1R11T1	PFQ1277R1R11T1
0/1,500 psi / 0/100 bar	PFQ1529R1R11T1	PFQ1553R1R11T1	PFQ718R1R11T1	PFQ748R1R11T1	PFQ778R1R11T1	PFQ1278R1R11T1
0/2,000 psi / 0/140 bar	PFQ1530R1R11T1	PFQ1554R1R11T1	PFQ719R1R11T1	PFQ749R1R11T1	PFQ779R1R11T1	PFQ1279R1R11T1
0/3,000 psi / 0/200 bar	PFQ1531R1R11T1	PFQ1555R1R11T1	PFQ720R1R11T1	PFQ750R1R11T1	PFQ780R1R11T1	PFQ1280R1R11T1
0/5,000 psi / 0/350 bar	PFQ1532R1R11T1	PFQ1556R1R11T1	PFQ721R1R11T1	PFQ751R1R11T1	PFQ781R1R11T1	PFQ1281R1R11T1
0/6,000 psi / 0/400 bar	PFQ4801R1R11T1	PFQ4803R1R11T1	PFQ784R1R11T1	PFQ785R1R11T1	PFQ789R1R11T1	PFQ1284R1R11T1
0/7,500 psi / 0/500 bar	PFQ4802R1R11T1	PFQ4804R1R11T1	PFQ4805R1R11T1	PFQ4806R1R11T1	PFQ4807R1R11T1	PFQ4808R1R11T1
0/10,000 psi / 0/700 bar	PFQ1533R1R11T1	PFQ1557R1R11T1	PFQ722R1R11T1	PFQ752R1R11T1	PFQ782R1R11T1	PFQ1282R1R11T1
0/15,000 psi / 0/1,000 bar	PFQ1534R1R11T1	PFQ1558R1R11T1	PFQ723R1R11T1	PFQ753R1R11T1	PFQ783R1R11T1	PFQ1283R1R11T1

Other ranges, connection sizes and thread types are 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. PFQ775R1R11T1-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

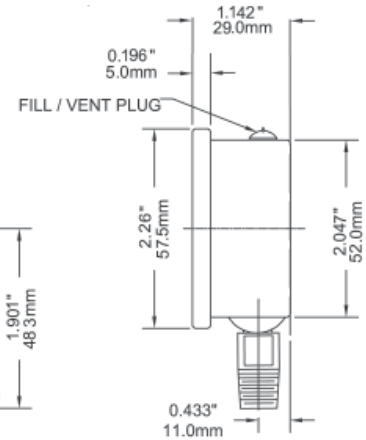
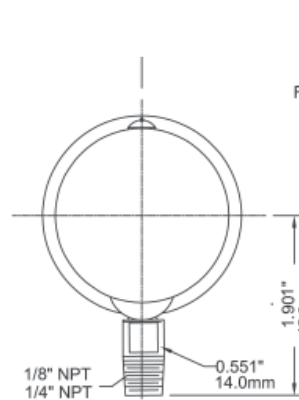
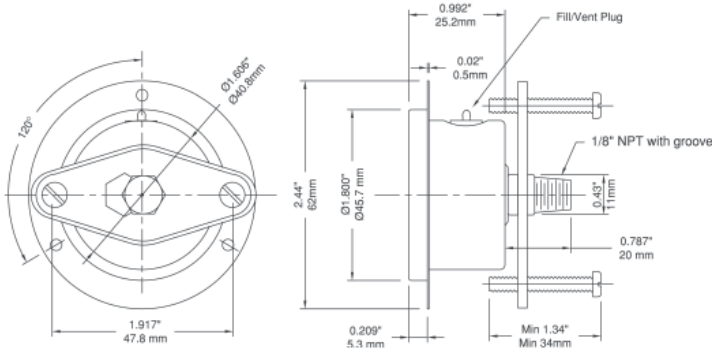
EN = EN837-1 compliant

SF4 = 4" (100mm) Silicone filled



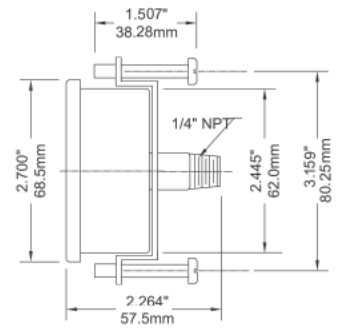
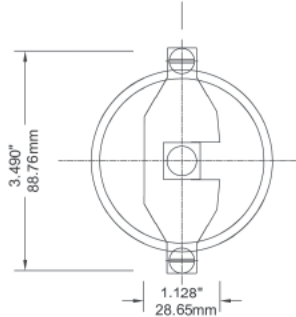
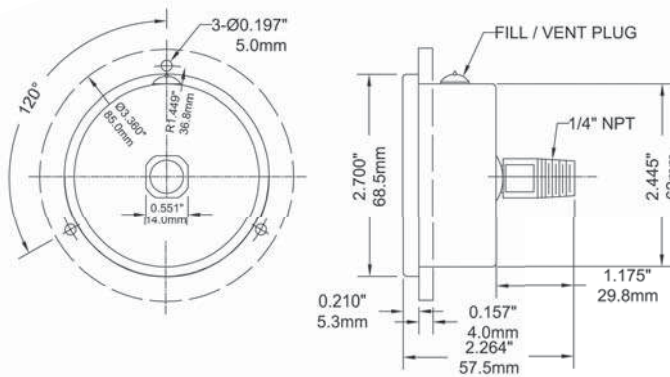
## 1.5" Back Connection with Front Flange and U-Clamp

## 2" Bottom Connection

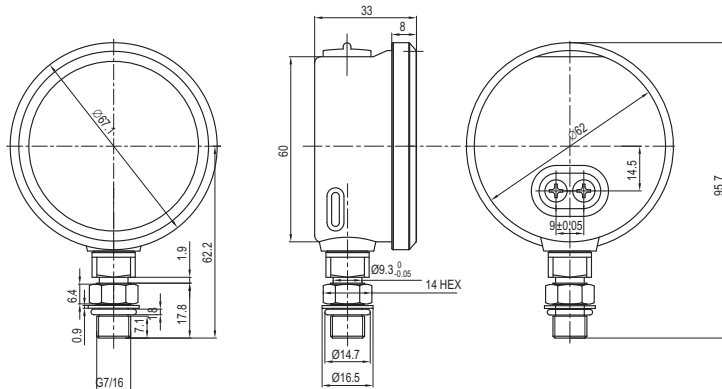


## 2.5" Back Connection with Front Flange

## 2.5" Back Connection with U-Clamp

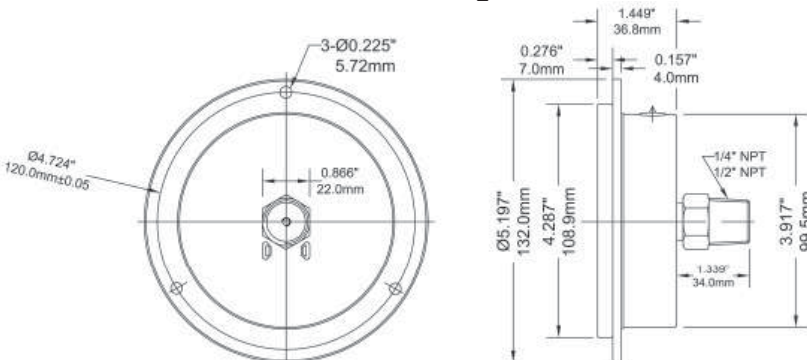


## 2.5" Bottom Connection SAE



Dimensions in mm

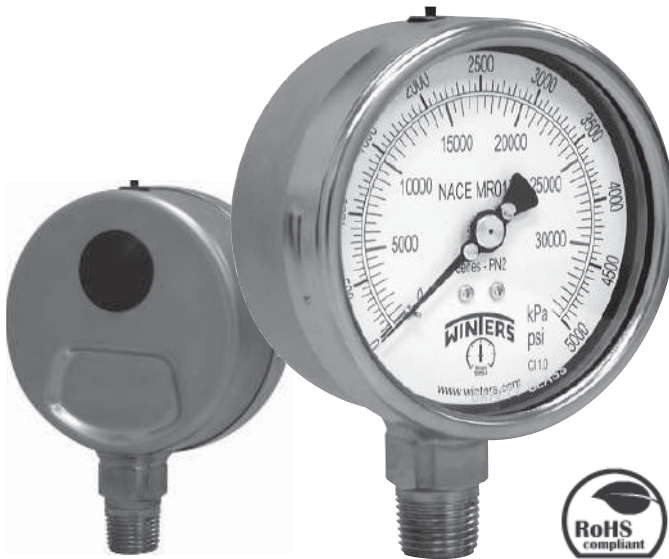
## 4" Back Connection with Front Flange



# PFQ, PFQ-LF

## Industrial

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## 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	AISI 316 SS
Connection	1/4" or 1/2" NPT, bottom or back (other thread types are available)
Bourdon Tube	AISI 316 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 (100 bar), 15% for pressures over 1,450 psi (100 bar)
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

Dial Size	4" (100mm)				6" (150mm)	
Connection	1/4" Bottom	1/4" Back (LB)	1/2" Bottom	1/2" Back (LB)	1/2" Bottom	1/2" Back (LB)
30" Hg Vac / -1/0 bar	PN2640NR1R11	PN21090NR1R11	PN2655NR1R11	-	PN21100NR1R11	-
30"/0/15 psi / -1/1 bar	PN21036NR1R11	-	PN21044NR1R11	-	PN21101NR1R11	-
30"/0/30 psi / -1/2 bar	PN21037NR1R11	-	PN21045NR1R11	-	PN21102NR1R11	-
30"/0/60 psi / -1/4 bar	PN21038NR1R11	-	PN21046NR1R11	-	PN21103NR1R11	-
30"/0/100 psi / -1/7 bar	PN21039NR1R11	-	PN21047NR1R11	-	PN21104NR1R11	-
30"/0/160 psi / -1/11 bar	PN21040NR1R11	-	PN21048NR1R11	-	PN21105NR1R11	-
30"/0/200 psi / -1/14 bar	PN21042NR1R11	-	PN21050NR1R11	-	PN21106NR1R11	-
30"/0/300 psi / -1/20 bar	PN21043NR1R11	-	PN21051NR1R11	-	PN21107NR1R11	-
0/15 psi / 0/1 bar	PN2641NR1R11	PN21091NR1R11	PN2656NR1R11	-	PN21108NR1R11	-
0/30 psi / 0/2 bar	PN2642NR1R11	PN21092NR1R11	PN2657NR1R11	-	PN21109NR1R11	-
0/60 psi / 0/4 bar	PN2643NR1R11	PN21093NR1R11	PN2658NR1R11	-	PN21110NR1R11	-
0/100 psi / 0/7 bar	PN2644NR1R11	PN21094NR1R11	PN2659NR1R11	-	PN21111NR1R11	-
0/160 psi / 0/11 bar	PN2645NR1R11	PN21095NR1R11	PN2660NR1R11	-	PN21112NR1R11	-
0/200 psi / 0/14 bar	PN2646NR1R11	PN21096NR1R11	PN2661NR1R11	-	PN21113NR1R11	-
0/300 psi / 0/20 bar	PN2647NR1R11	PN21097NR1R11	PN2662NR1R11	-	PN21114NR1R11	-
0/400 psi / 0/28 bar	PN2650NR1R11	PN2150NR1R11	PN2666NR1R11	-	PN21115NR1R11	-
0/600 psi / 0/40 bar	PN2648NR1R11	PN21098NR1R11	PN2663NR1R11	-	PN21116NR1R11	-
0/1,000 psi / 0/70 bar	PN2649NR1R11	PN21099NR1R11	PN2664NR1R11	-	PN21117NR1R11	PN21217NR1R11
0/1,500 psi / 0/100 bar	PN24986NR1R11	PN24994NR1R11	PN2665NR1R11	PN21190NR1R11	PN21118NR1R11	PN21218NR1R11
0/2,000 psi / 0/140 bar	PN24987NR1R11	PN24995NR1R11	PN2667NR1R11	PN21191NR1R11	PN21119NR1R11	PN21219NR1R11
0/3,000 psi / 0/200 bar	PN24988NR1R11	PN24996NR1R11	PN2668NR1R11	PN21192NR1R11	PN21120NR1R11	PN21220NR1R11
0/4,000 psi / 0/280 bar	-	-	PN2701NR1R11	PN2702NR1R11	PN21121NR1R11	PN21221NR1R11
0/5,000 psi / 0/350 bar	PN24989NR1R11	PN24997NR1R11	PN2669NR1R11	PN21193NR1R11	PN21122NR1R11	PN21222NR1R11
0/6,000 psi / 0/400 bar	PN24990NR1R11	PN24998NR1R11	PN2675NR1R11	PN2175NR1R11	PN21123NR1R11	PN21223NR1R11
0/10,000 psi / 0/700 bar	PN24991NR1R11	PN24999NR1R11	PN2670NR1R11	PN21194NR1R11	PN21124NR1R11	PN21224NR1R11
0/15,000 psi / 0/1,000 bar	PN24992NR1R11	PN25000NR1R11	PN2671NR1R11	PN21195NR1R11	PN21125NR1R11	PN21225NR1R11
0/20,000 psi / 0/1,400 bar	PN24993NR1R11	PN25005NR1R11	PN2672NR1R11	PN21196NR1R11	PN21126NR1R11	PN21226NR1R11

Other ranges, connection sizes and thread types are 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. PN22657NR1R11-DRY for DRY CASE**

### 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

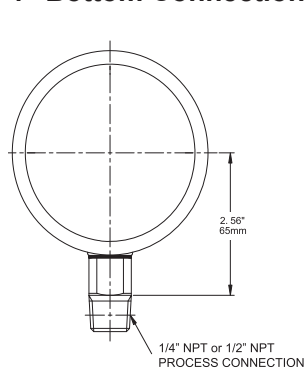
6UC-P = 6" (150mm) U-Clamp premium

DRY = Supply gauge dry

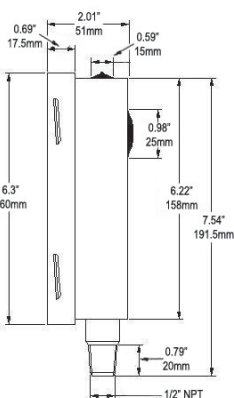
EN = EN837-1 compliant

REST = Restrictor screw

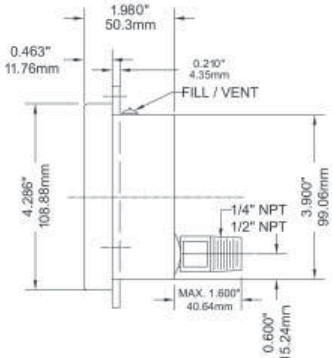
### 4" Bottom Connection



### 6" Bottom Connection

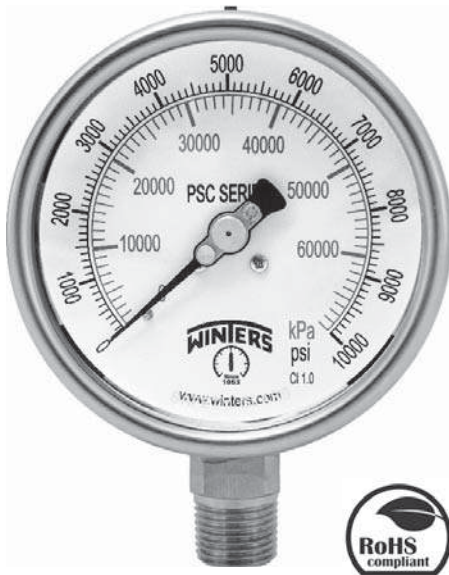


### 4" Back Connection



**Series Number (for custom, non-standard product)**

	P	N	2	-			-		-		-		-		-			-		-		
<b>SERIES</b>																						
<b>DIAL SIZE</b>																						
4.0" (100mm)					4	0																
6.0" (150mm)					6	0																
<b>CASE MATERIALS</b>																						
304SS								T														
316SS								S														
<b>WETTED PARTS</b>																						
316SS								S														
<b>CONFIGURATION</b>																						
Bottom Connection, Stem Mounting									A													
Bottom Connection, Back Flange, Surface Mounting									B													
Bottom Connection, Front Flange, Surface Mounting									C													
Back Connection, Stem Mounting									D													
Back Connection, Back Flange, Surface Mounting									E													
Back Connection, Wide Front Flange, (Drilled) Panel Mounting									F													
Back Connection, Narrow Front Ring, Panel Mounting (Yoke)									V													
Special									Z													
<b>CONNECTION SIZE</b>																						
1/4"										4												
3/8"										3												
1/2"										2												
Special										Z												
<b>THREAD</b>																						
NPT											N											
BSP (G)											B											
BSPT (R)											T											
Special											Z											
<b>PRIMARY SCALE</b>																						
<b>UNITS - See Page 8</b>																						
<b>RANGE - See Page 8</b>																						
<b>SECONDARY SCALE</b>																						
<b>UNITS - See Page 8</b>																						
<b>OPTIONS</b>																						
Fluorolube Filled																			S	R		
Glycerin Filled																			S	E		
Halocarbon Filled																			S	Q		
Maximum Adjustable Pointer																			S	J		
Oxygen Cleaning																			S	L		
Silicone Filled																			S	D		
Stainless Steel Tag Plate																			S	M		
Test Certificate																			S	O		
No Options																			X	X		



## 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

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 (other thread types are available)
Bourdon Tube	316L SS
Movement	304 SS with overload stop
Pointer	Aluminum, anodized black, micrometer adjustable
Over-pressure Limit	25% for pressures up to 1,450 psi (100 bar), 15% for pressures over 1,450 psi (100 bar)
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 / -1/0 bar	PSC248R1R11	PSC4870R1R11	PSC281R1R11	PSC4888R1R11	PSC283R1R11	PSC4906R1R11
30"/0/15 psi / -1/1 bar	PSC249R1R11	PSC4871R1R11	PSC282R1R11	PSC4889R1R11	PSC284R1R11	PSC4907R1R11
30"/0/30 psi / -1/2 bar	PSC257R1R11	PSC4872R1R11	PSC358R1R11	PSC4890R1R11	PSC285R1R11	PSC4908R1R11
30"/0/60 psi / -1/4 bar	PSC258R1R11	PSC4873R1R11	PSC359R1R11	PSC4891R1R11	PSC286R1R11	PSC4909R1R11
30"/0/100 psi / -1/7 bar	PSC259R1R11	PSC4874R1R11	PSC362R1R11	PSC4892R1R11	PSC287R1R11	PSC4910R1R11
30"/0/150 psi / -1/10 bar	PSC260R1R11	PSC4875R1R11	PSC363R1R11	PSC4893R1R11	PSC289R1R11	PSC4911R1R11
30"/0/200 psi / -1/14 bar	PSC261R1R11	PSC4876R1R11	PSC364R1R11	PSC4894R1R11	PSC296R1R11	PSC4912R1R11
30"/0/300 psi / -1/20 bar	PSC262R1R11	PSC4877R1R11	PSC365R1R11	PSC4895R1R11	PSC297R1R11	PSC4913R1R11
0/15 psi / 0/1 bar	PSC263R1R11	PSC4878R1R11	PSC366R1R11	PSC4896R1R11	PSC298R1R11	PSC4914R1R11
0/30 psi / 0/2 bar	PSC264R1R11	PSC4879R1R11	PSC367R1R11	PSC4897R1R11	PSC299R1R11	PSC4915R1R11
0/60 psi / 0/4 bar	PSC265R1R11	PSC4880R1R11	PSC368R1R11	PSC4898R1R11	PSC307R1R11	PSC4916R1R11
0/100 psi / 0/7 bar	PSC266R1R11	PSC4881R1R11	PSC369R1R11	PSC4899R1R11	PSC308R1R11	PSC4917R1R11
0/160 psi / 0/11 bar	PSC267R1R11	PSC4882R1R11	PSC370R1R11	PSC4900R1R11	PSC309R1R11	PSC4918R1R11
0/200 psi / 0/14 bar	PSC268R1R11	PSC4883R1R11	PSC371R1R11	PSC4901R1R11	PSC317R1R11	PSC4919R1R11
0/300 psi / 0/20 bar	PSC269R1R11	PSC4884R1R11	PSC372R1R11	PSC4902R1R11	PSC318R1R11	PSC4920R1R11
0/400 psi / 0/28 bar	PSC272R1R11	PSC4885R1R11	PSC373R1R11	PSC4903R1R11	PSC335R1R11	PSC4921R1R11
0/600 psi / 0/40 bar	PSC273R1R11	PSC4886R1R11	PSC374R1R11	PSC4904R1R11	PSC336R1R11	PSC4922R1R11
0/1,000 psi / 0/70 bar	-	PSC274R1R11	-	PSC375R1R11	-	PSC337R1R11
0/1,500 psi / 0/100 bar	-	PSC275R1R11	-	PSC376R1R11	-	PSC338R1R11
0/2,000 psi / 0/140 bar	-	PSC276R1R11	-	PSC377R1R11	-	PSC339R1R11
0/3,000 psi / 0/200 bar	-	PSC277R1R11	-	PSC378R1R11	-	PSC347R1R11
0/5,000 psi / 0/350 bar	-	PSC278R1R11	-	PSC379R1R11	-	PSC348R1R11
0/10,000 psi / 0/700 bar	-	PSC498R1R11	-	PSC380R1R11	-	PSC502R1R11
0/15,000 psi / 0/1,000 bar	-	PSC499R1R11	-	PSC381R1R11	-	PSC504R1R11
0/20,000 psi / 0/1,400 bar	-	PSC4887R1R11	-	PSC4905R1R11	-	PSC4923R1R11

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

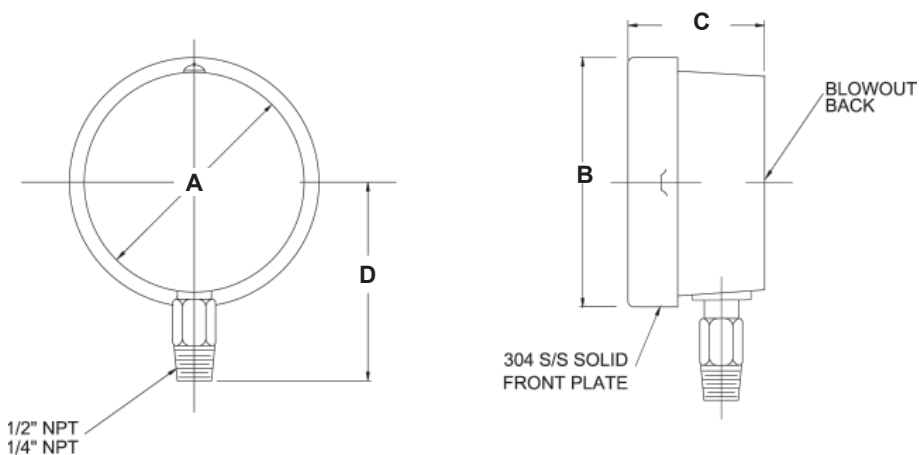
For options, attach suffix to end of order code: i.e. PSC374R1R11-G for GLYCERIN FILLED

## Option suffix:

EN = EN837-1 compliant

G = Glycerin filled

R1 = Single scale psi



Dial	A	B	C	D
4" (100mm)	4.1" (105mm)	4.67" (119mm)	2.44" (57mm)	3.80" (96.5mm)
4.5" (115mm)	4.764" (121mm)	4.374" (136.5mm)	2.335" (59.3mm)	4.193" (106.5mm)
6" (150mm)	5.67" (144mm)	6.32" (160mm)	2.44" (57mm)	4.63" (117.5mm)



**Series Number (for custom, non-standard product)**

[illegible]

**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**

<b>Dial</b>	4" (100mm), 6" (150mm) white aluminum with black markings Both dials have mirror band for precise instrument readings
<b>Case</b>	AISI 304 SS
<b>Lens</b>	Polycarbonate
<b>Ring</b>	AISI 304 SS
<b>Socket</b>	4" (100mm): Brass 6" (150mm): 316 SS
<b>Connection</b>	1/4" NPT or 1/2" NPT standard, bottom (other thread types are available)
<b>Bourdon Tube</b>	4" (100mm): Phosphor bronze 6" (150mm): 316 SS
<b>Movement</b>	4" (100mm): Brass 6" (150mm): AISI 304 SS temperature compensated
<b>Pointer</b>	Aluminum, anodized black, micrometer adjustable, knife-edge
<b>Welding</b>	Silver alloy (TIG for 316 SS wetted parts)
<b>Over-pressure Limit</b>	30% of full scale value
<b>Working Pressure</b>	Maximum 75% of full scale value
<b>Calibration Conditions</b>	68°F ( $\pm 5.4^\circ\text{F}$ ), 20°C ( $\pm 3^\circ\text{C}$ ) for ambient and process temperatures at atmospheric pressure
<b>Ambient/Process Temperature</b>	-4°F to 150°F (-20°C to 65°C)
<b>Accuracy</b>	4" (100mm): $\pm 0.5\%$ ANSI/ASME Grade 2A 6" (150mm): $\pm 0.25\%$ ANSI/ASME Grade 3A
<b>Enclosure Rating</b>	IP65

## 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, connection sizes and thread types are 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

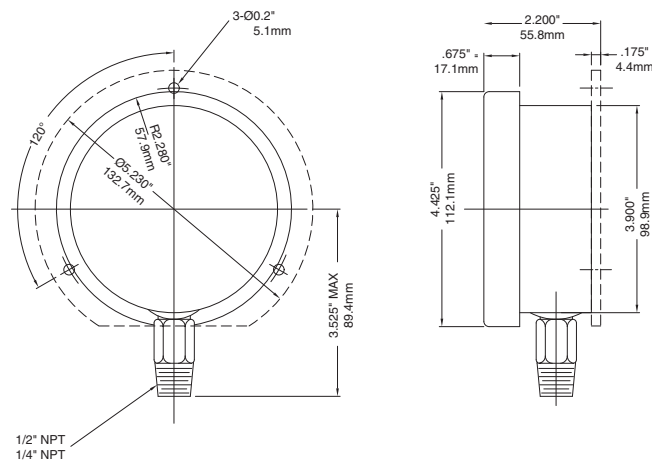
6FF = 6" (150mm) Front flange

B = Back connection

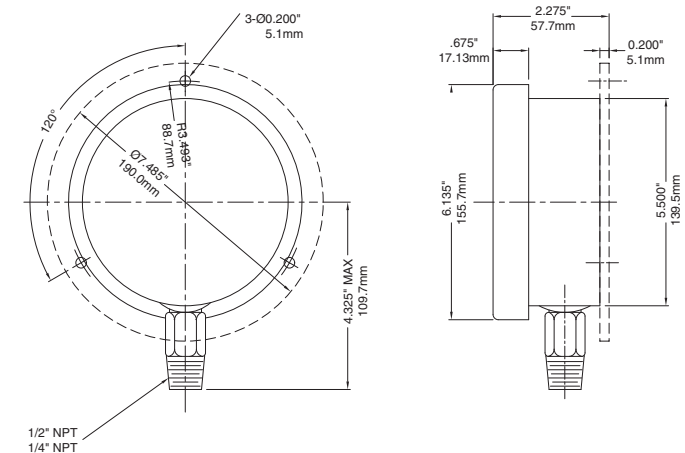
TG4 = 4" (100mm) Test gauge case

TG6 = 6" (150mm) Test gauge case

## 4" Bottom Connection with Back Flange



## 6" Bottom Connection with Back Flange



## Series Number (for custom, non-standard product)

	P	T	G	-			-		-		-		-		-			-		-		
<b>SERIES</b>																						
<b>DIAL SIZE</b>																						
4.0" (100mm)					4	0																
6.0" (150mm)					6	0																
<b>CASE MATERIALS</b>																						
304SS																						
316SS																						
<b>WETTED PARTS</b>																						
Brass																						
316SS																						
Special																						
<b>CONFIGURATION</b>																						
Bottom Connection, Stem Mounting																						
Bottom Connection, Back Flange, Surface Mounting																						
Bottom Connection, Front Flange, Surface Mounting																						
Back Connection, Stem Mounting																						
Special																						
<b>CONNECTION SIZE</b>																						
1/4"																						
3/8"																						
1/2"																						
Special																						
<b>THREAD</b>																						
NPT																						
BSP (G)																						
BSPT (R)																						
Special																						
<b>PRIMARY SCALE</b>																						
<b>UNITS - See Page 8</b>																						
<b>RANGE - See Page 8</b>																						
<b>SECONDARY SCALE</b>																						
<b>UNITS - See Page 8</b>																						
<b>OPTIONS</b>																						
Oxygen Cleaning																					S	L
Safety Glass																					S	A
Stainless Steel Tag Plate																					S	M
No Options																					X	X



## Description & Features:

- Gauge designed to be used with most standard double ferrule tube fittings, such as Parker A-Lok®
- Heavy duty, stainless steel, liquid-filled gauge
- Back, bottom, or panel mount configurations
- $\pm 1.5\%$  accuracy
- Facilitates 360° orientation
- Elimination of leak point
- Teflon® free connection
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- Specifically designed to be utilized with tube fitting applications
- Allows installation where space is limited
- Used where Teflon® free connection is needed
- Used where gauge alignment is critical

## Specifications

<b>Dial</b>	2.5" (63mm) aluminum with red and black markings
<b>Case</b>	Grade 304 SS
<b>Lens</b>	Polycarbonate
<b>Ring</b>	304 SS, bayonet
<b>Block</b>	316L SS
<b>Socket</b>	316L SS
<b>Connection</b>	1/4" Tube Stub
<b>Bourdon Tube</b>	316L SS
<b>Movement</b>	304 SS
<b>Pointer</b>	Aluminum, anodized black
<b>Welding</b>	Laser welded socket to case
<b>Fill Liquid</b>	Glycerin
<b>Over-pressure Limit</b>	15% of full scale value
<b>Gasket Materials</b>	Buna N
<b>Working Pressure</b>	75% of full scale value
<b>Ambient/Process Temperature</b>	Dry: -40°F to 200°F (-40°C to 93°C) Glycerin Filled: -4°F to 150°F (-20°C to 65°C)
<b>Accuracy</b>	$\pm 1.5\%$ of full scale value
<b>Enclosure Rating</b>	IP66 per EN60529-1 (IEC529-1)

Teflon® is a registered trademark of DuPont Corporation

A-Lok® is a registered trademark of Parker Hannifin Corporation

## Order Codes

Dial Size	2.5" (63mm)	
Connection	1/4" Tube Bottom	1/4" Tube Back (CB)
30" Hg Vac / -1-0 bar	PTS820-TSR1R11	PTS840-TSR1R11
30"/0/15 psi / -1/1 bar	PTS860-TSR1R11	PTS870-TSR1R11
30"/0/30 psi / -1/2 bar	PTS861-TSR1R11	PTS871-TSR1R11
30"/0/60 psi / -1/4 bar	PTS862-TSR1R11	PTS872-TSR1R11
30"/0/100 psi / -1/7 bar	PTS863-TSR1R11	PTS873-TSR1R11
30"/0/160 psi / -1/11 bar	PTS864-TSR1R11	PTS874-TSR1R11
30"/0/200 psi / -1/14 bar	PTS866-TSR1R11	PTS876-TSR1R11
30"/0/300 psi / -1/20 bar	PTS867-TSR1R11	PTS877-TSR1R11
0/15 psi / 0/1 bar	PTS821-TSR1R11	PTS921-TSR1R11
0/30 psi / 0/2 bar	PTS822-TSR1R11	PTS922-TSR1R11
0/60 psi / 0/4 bar	PTS823-TSR1R11	PTS923-TSR1R11
0/100 psi / 0/7 bar	PTS824-TSR1R11	PTS924-TSR1R11
0/160 psi / 0/11 bar	PTS825-TSR1R11	PTS925-TSR1R11
0/200 psi / 0/14 bar	PTS826-TSR1R11	PTS926-TSR1R11
0/300 psi / 0/20 bar	PTS827-TSR1R11	PTS927-TSR1R11
0/400 psi / 0/28 bar	PTS880-TSR1R11	PTS881-TSR1R11
0/600 psi / 0/40 bar	PTS828-TSR1R11	PTS928-TSR1R11
0/1,000 psi / 0/70 bar	PTS829-TSR1R11	PTS929-TSR1R11
0/1,500 psi / 0/100 bar	PTS835-TSR1R11	PTS935-TSR1R11
0/2,000 psi / 0/140 bar	PTS836-TSR1R11	PTS936-TSR1R11
0/3,000 psi / 0/200 bar	PTS831-TSR1R11	PTS931-TSR1R11
0/5,000 psi / 0/350 bar	PTS832-TSR1R11	PTS852-TSR1R11

Other ranges, 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. PTS820-TSR1R11-25DRY for DRY CASE**

### Option suffix:

25BF = 2.5" (63mm) Back flange

25BOOT = 2.5" (63mm) Protective black rubber boot

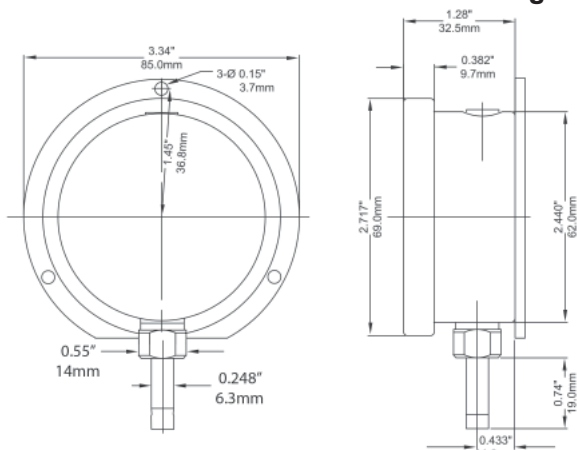
25DRY = Supply 2.5" (63mm) gauge dry

25FF = 2.5" (63mm) Front flange

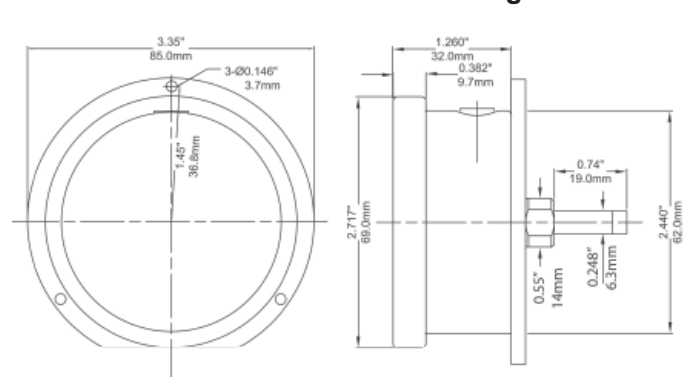
25UC = 2.5" (63mm) U-Clamp

SG-25 = 2.5" (63mm) Safety glass lens

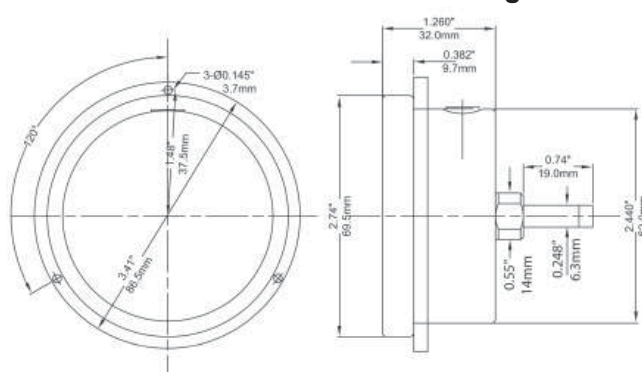
## 2.5" Bottom Connection with Back Flange



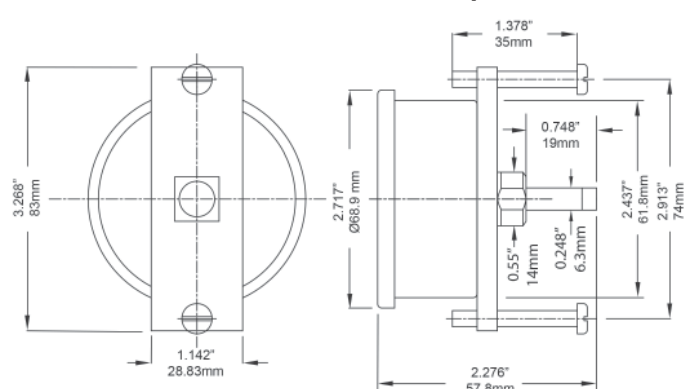
## 2.5" Back Connection with Back Flange



## 2.5" Back Connection with Front Flange



## 2.5" Back Connection with U-Clamp







## Description & Features:

- High quality, heavy duty gauge ideal for corrosive environments
- Stainless steel liquid filled gauge (dry optional)
- 1/2" NPT bottom (other thread types are available)
- 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
- Where harmful vibration and pulsation are present
- Designed to the specific needs of oil field equipment

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 (other thread types are 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 (100 bar), 15% for pressures over 1,450 psi (100 bar)
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 and thread types are 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 = Stabilizer™ movement



## Description & Features:

- A general-purpose gauge that is serviceable and pulsation resistant
- 1.5" (40mm) to 3.5" (90mm) dial sizes
- Dampened movement combined with a "flutterless" pointer
- Removable lens
- Zero-adjustment
- ASME B40.100 compliant
- CRN registered
- $\pm 2-1-2\%$  accuracy
- 5 year warranty

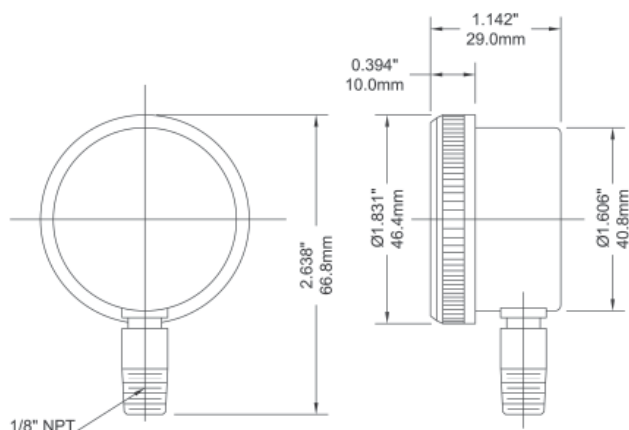
## Applications:

- Compressors, filters, regulators, water pumps, paint sprayers and a variety of other rapid pressure fluctuation applications

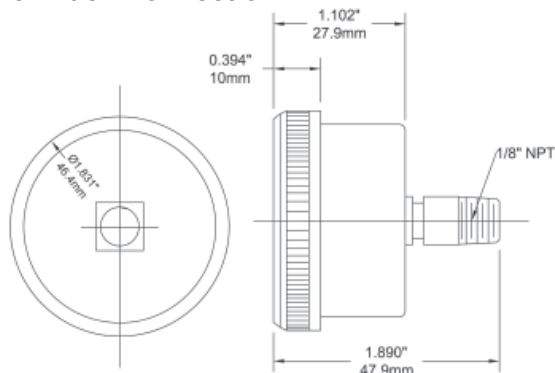
## Specifications

<b>Dial</b>	1.5" (40mm), 2" (50mm), 2.5" (63mm), 3.5" (90mm) white aluminum with black and red markings
<b>Case</b>	Steel, painted black
<b>Lens</b>	Acrylic, threaded
<b>Socket</b>	Brass
<b>Connection</b>	1/8" NPT or 1/4" NPT standard (other thread types are available)
<b>Bourdon Tube</b>	Phosphor bronze
<b>Movement</b>	Brass (flutterless) with zero adjustment
<b>Pointer</b>	Aluminum, black
<b>Welding</b>	<1,000 psi: 60% tin 40% lead, $\geq 1,000$ psi: silver alloy
<b>Over-pressure Limit</b>	25% of full scale value
<b>Working Pressure</b>	Maximum 75% of full scale value
<b>Ambient/Process Temperature</b>	-40°F to 150°F (-40°C to 65°C)
<b>Accuracy</b>	$\pm 2-1-2\%$ ANSI/ASME Grade A

## 1.5" Bottom Connection



## 1.5" Back Connection

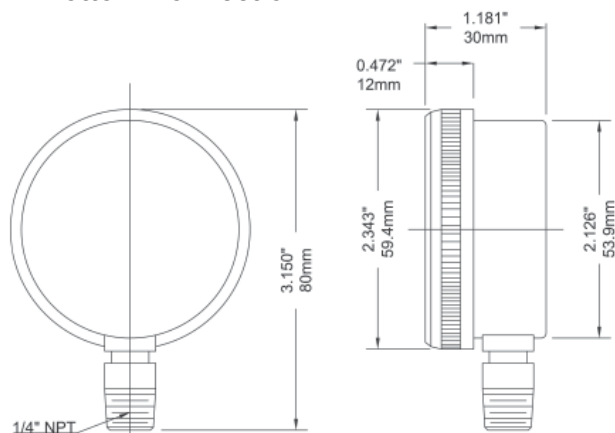


## Order Codes

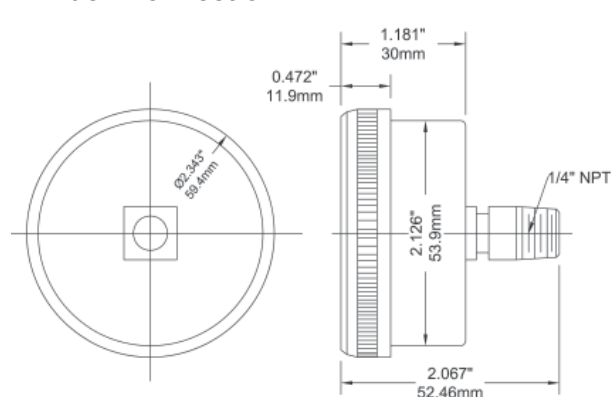
Dial Size	1.5" (40mm)		2" (50mm)			
Connection	1/8" Bottom	1/8" Back (CB)	1/8" Bottom	1/8" Back (CB)	1/4" Bottom	1/4" Back (CB)
30" Hg Vac / -1/0 bar	P9S901297R1R11	P9S901397R1R11	P9S90195R1R11	P9S901424R1R11	P9S90135R1R11	P9S901428R1R11
30"/0/15 psi / -1/1 bar	-	-	-	-	-	-
30"/0/30 psi / -1/2 bar	-	-	-	-	-	-
30"/0/60 psi / -1/4 bar	-	-	-	-	-	-
30"/0/100 psi / -1/7 bar	-	-	-	-	-	-
0/15 psi / 0/1 bar	P9S901299R1R11	P9S901399R1R11	P9S90196R1R11	P9S901425R1R11	P9S90136R1R11	P9S901429R1R11
0/30 psi / 0/2 bar	P9S901300R1R11	P9S901400R1R11	P9S90206R1R11	P9S901402R1R11	P9S90199R1R11	P9S901403R1R11
0/60 psi / 0/4 bar	P9S901301R1R11	P9S901401R1R11	P9S90207R1R11	P9S901404R1R11	P9S90201R1R11	P9S901405R1R11
0/100 psi / 0/7 bar	P9S901320R1R11	P9S901420R1R11	P9S90208R1R11	P9S901406R1R11	P9S90202R1R11	P9S901407R1R11
0/160 psi / 0/11 bar	P9S901321R1R11	P9S901421R1R11	P9S90197R1R11	P9S901408R1R11	P9S90203R1R11	P9S901409R1R11
0/200 psi / 0/14 bar	P9S901322R1R11	P9S901422R1R11	P9S90209R1R11	P9S901426R1R11	P9S90204R1R11	P9S901410R1R11
0/300 psi / 0/20 bar	P9S901323R1R11	P9S901423R1R11	P9S90198R1R11	P9S901427R1R11	P9S90205R1R11	P9S901411R1R11
0/400 psi / 0/28 bar	P9S901324R1R11	P9S901443R1R11	P9S901449R1R11	P9S901445R1R11	P9S901451R1R11	P9S901447R1R11
0/600 psi / 0/40 bar	P9S901325R1R11	P9S901444R1R11	P9S901450R1R11	P9S901446R1R11	P9S901452R1R11	P9S901448R1R11

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

## 2" Bottom Connection



## 2" Back Connection

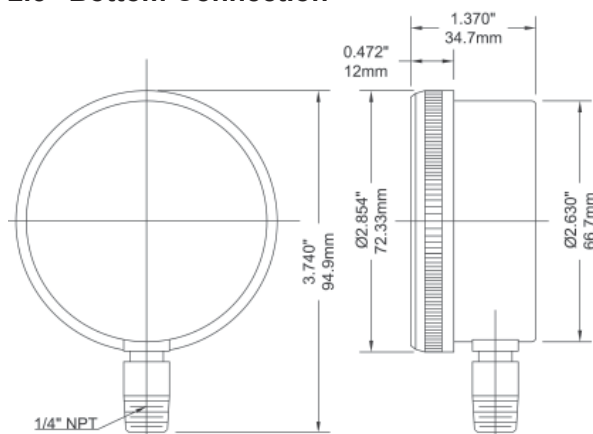


## Order Codes

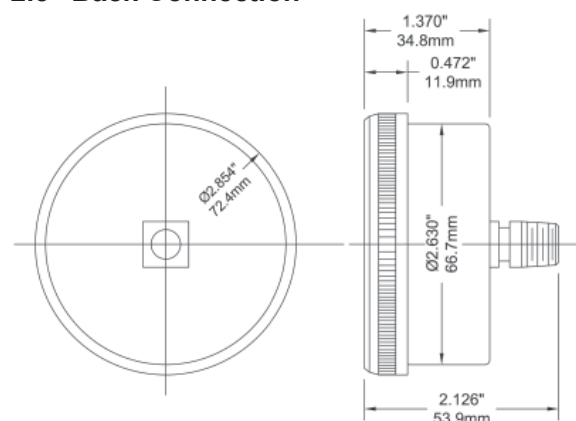
Dial Size	2.5" (63mm)		3.5" (90mm)	
Connection	1/4" Bottom	1/4" Back (CB)	1/4" Bottom	1/4" Back (CB)
30" Hg Vac / -1/0 bar	P9S90210R1R11	P9S901431R1R11	P9S90220R1R11	P9S901455R1R11
30"/0/15 psi / -1/1 bar	P9S90152R1R11	-	-	-
30"/0/30 psi / -1/2 bar	P9S90153R1R11	-	-	-
30"/0/60 psi / -1/4 bar	P9S90154R1R11	-	-	-
30"/0/100 psi / -1/7 bar	P9S90155R1R11	-	-	-
0/15 psi / 0/1 bar	P9S90211R1R11	P9S901436R1R11	P9S90229R1R11	P9S901464R1R11
0/30 psi / 0/2 bar	P9S90212R1R11	P9S901437R1R11	P9S90221R1R11	P9S901456R1R11
0/60 psi / 0/4 bar	P9S90213R1R11	P9S901438R1R11	P9S90222R1R11	P9S901457R1R11
0/100 psi / 0/7 bar	P9S90214R1R11	P9S901439R1R11	P9S90223R1R11	P9S901458R1R11
0/160 psi / 0/11 bar	P9S90215R1R11	P9S901440R1R11	P9S90224R1R11	P9S901459R1R11
0/200 psi / 0/14 bar	P9S90216R1R11	P9S901441R1R11	P9S90225R1R11	P9S901460R1R11
0/300 psi / 0/20 bar	P9S90217R1R11	P9S901442R1R11	P9S90226R1R11	P9S901461R1R11
0/400 psi / 0/28 bar	P9S90219R1R11	P9S901453R1R11	P9S90227R1R11	P9S901462R1R11
0/600 psi / 0/40 bar	P9S90218R1R11	P9S901454R1R11	P9S90228R1R11	P9S901463R1R11

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

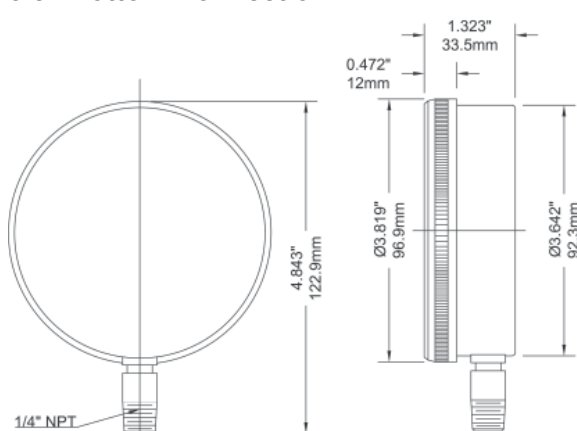
### 2.5" Bottom Connection



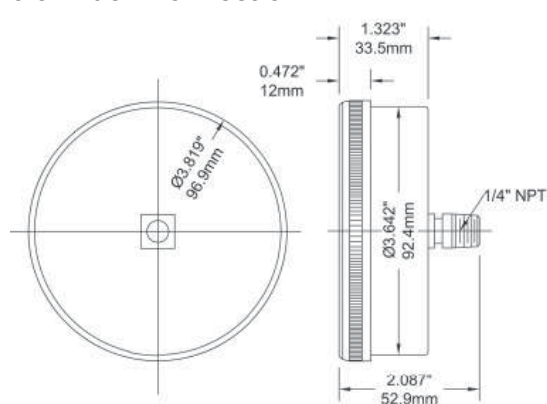
### 2.5" Back Connection



### 3.5" Bottom Connection

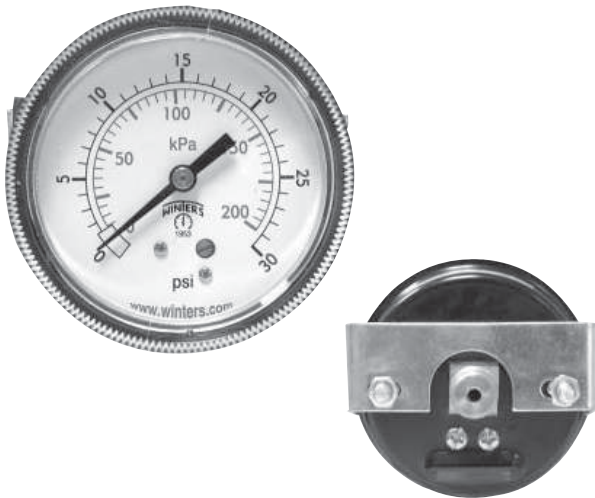


### 3.5" Back Connection



Series Number (for custom, non-standard product)

	P	9	S	-			-		-		-		-		-			-		-		
SERIES																						
DIAL SIZE																						
1.5" (40mm)		1	5																			
2.0" (50mm)		2	0																			
2.5" (63mm)		2	5																			
3.5" (90mm)		3	5																			
CASE MATERIALS																						
Steel Painted Black																						
WETTED PARTS																						
Brass																						
CONFIGURATION																						
Bottom Connection, Stem Mounting																						
Back Connection, Stem Mounting																						
Special																						
CONNECTION SIZE																						
1/8"																						
1/4"																						
Special																						
THREAD																						
NPT																						
BSP (G)																						
BSPT (R)																						
Special																						
PRIMARY SCALE																						
UNITS - See Page 8																						
RANGE - See Page 8																						
SECONDARY SCALE																						
UNITS - See Page 8																						
OPTIONS																						
Oxygen Cleaning																					S	L
No Options																					X	X



## Description & Features:

- General purpose panel mounted gauge with 1.5" (40mm) to 3.5" (90mm) dial sizes
- Flutterless pointer
- Dampened movement
- Removable lens
- Zero-adjustment
- $\pm 2-1-2\%$  accuracy
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

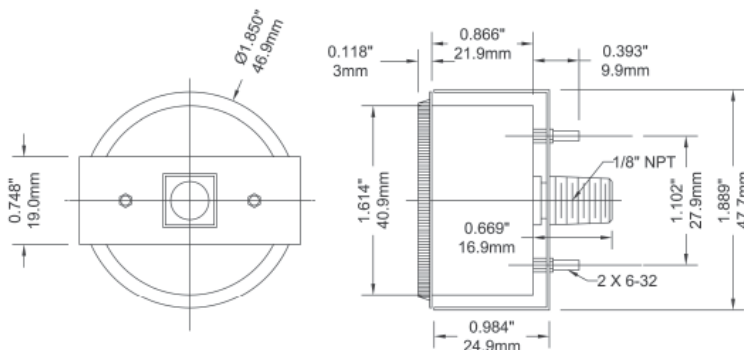
## Applications:

- Panels, compressor equipment, water and oil pumps where rapid pressure fluctuations or system vibration require a stable pointer

## Specifications

Dial	1.5" (40mm), 2" (50mm), 2.5" (63mm), 3.5" (90mm), white aluminum with black and red markings
Case	Steel, painted black
Lens	Acrylic, threaded
Socket	Brass
Connection	1/8" NPT or 1/4" NPT standard (other thread types are available)
Bourdon Tube	Phosphor bronze
Movement	Brass (flutterless movement)
Pointer	Aluminum, black
Welding	Silver alloy
Over-pressure Limit	25% of full scale value
Working Pressure	Maximum 75% of full scale value
Ambient/Process Temperature	-40°F to 150°F (-40°C to 65°C)
Accuracy	$\pm 2-1-2\%$ ANSI/ASME Grade A
Enclosure Rating	IP52

## 1.5" Back Connection with U-Clamp



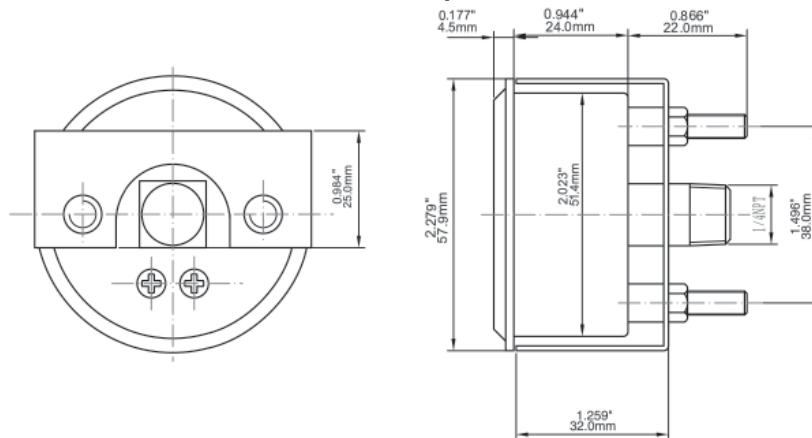


## Order Codes

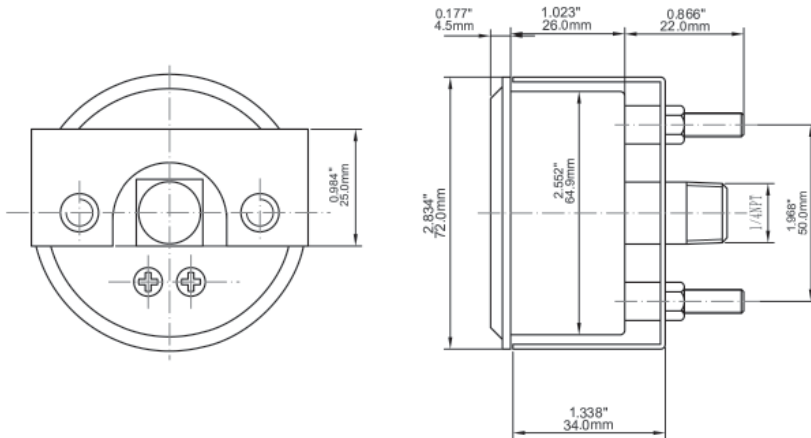
Dial Size	1.5" (40mm)	2" (50mm)		2.5" (63mm)	3.5" (90mm)
Connection	1/8" Back (CB)	1/8" Back (CB)	1/4" Back (CB)	1/4" Back (CB)	1/4" Back (CB)
Panel Cut-out	1.69" (43mm)	2.11" (53.5mm)	2.11" (53.5mm)	2.66" (67.5mm)	3.68" (93.5mm)
Overall O.D.	1.85" (47.7mm)	2.27" (57.9mm)	2.27" (57.9mm)	2.82" (71.9mm)	3.94" (98.9mm)
30" Hg Vac / -1/0 bar	P9U901397UCR1R11	P9U901424UCR1R11	P9U901428UCR1R11	P9U901431UCR1R11	P9U901455UCR1R11
30"/0/15 psi / -1/1 bar	-	-	-	-	-
30"/0/30 psi / -1/2 bar	-	-	-	-	-
30"/0/60 psi / -1/4 bar	-	-	-	-	-
30"/0/100 psi / -1/7 bar	-	-	-	-	-
0/15 psi / 0/1 bar	P9U901399UCR1R11	P9U901425UCR1R11	P9U901429UCR1R11	P9U901436UCR1R11	P9U901464UCR1R11
0/30 psi / 0/2 bar	P9U901400UCR1R11	P9U901402UCR1R11	P9U901403UCR1R11	P9U901437UCR1R11	P9U901456UCR1R11
0/60 psi / 0/4 bar	P9U901401UCR1R11	P9U901404UCR1R11	P9U901405UCR1R11	P9U901438UCR1R11	P9U901457UCR1R11
0/100 psi / 0/7 bar	P9U901420UCR1R11	P9U901406UCR1R11	P9U901407UCR1R11	P9U901439UCR1R11	P9U901458UCR1R11
0/160 psi / 0/11 bar	P9U901421UCR1R11	P9U901408UCR1R11	P9U901409UCR1R11	P9U901440UCR1R11	P9U901459UCR1R11
0/200 psi / 0/14 bar	P9U901422UCR1R11	P9U901426UCR1R11	P9U901410UCR1R11	P9U901441UCR1R11	P9U901460UCR1R11
0/300 psi / 0/20 bar	P9U901423UCR1R11	P9U901427UCR1R11	P9U901411UCR1R11	P9U901442UCR1R11	P9U901461UCR1R11
0/400 psi / 0/28 bar	P9U901443UCR1R11	P9U901445UCR1R11	P9U901447UCR1R11	P9U901453UCR1R11	P9U901462UCR1R11
0/600 psi / 0/40 bar	P9U901444UCR1R11	P9U901446UCR1R11	P9U901448UCR1R11	P9U901454UCR1R11	P9U901463UCR1R11

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

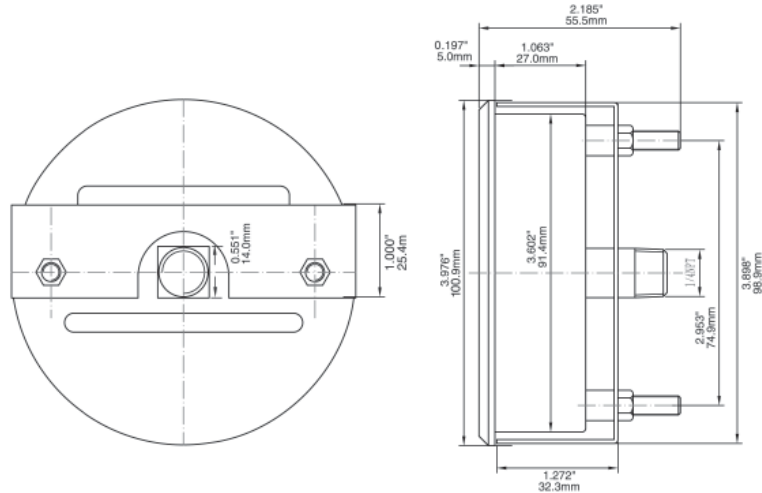
## 2" Back Connection with U-Clamp



## 2.5" Back Connection with U-Clamp



## 3.5" Back Connection with U-Clamp



Series Number (for custom, non-standard product)

	P	9	U	-			-		-		-		-		-			-		-		
SERIES																						
DIAL SIZE																						
1.5" (40mm)					1	5																
2.0" (50mm)					2	0																
2.5" (63mm)					2	5																
3.5" (90mm)					3	5																
CASE MATERIALS																						
Steel Painted Black								Y														
WETTED PARTS																						
Brass									B													
CONFIGURATION																						
Back Connection, U-Clamp										W												
Special										Z												
CONNECTION SIZE																						
1/8"											8											
1/4"											4											
Special											Z											
THREAD																						
NPT											N											
BSP (G)											B											
BSPT (R)											T											
Special											Z											
PRIMARY SCALE																						
UNITS - See Page 8																						
RANGE - See Page 8																						
SECONDARY SCALE																						
UNITS - See Page 8																						
OPTIONS																						
Oxygen Cleaning																				S	L	
No Option																				X	X	



## Description & Features:

- Most economical, all-purpose pressure gauge
- 1.5" (40mm) to 4" (100mm) sizes
- Friction bezel rings
- Black steel case
- Brass or lead free brass wetted parts
- $\pm 3-2-3\%$  accuracy
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- Plumbing, heating, air conditioning, pneumatic, hydraulic, water tanks, air compressors, OEM

Specifications	
Dial	1.5" (40mm), 2" (50mm), 2.5" (63mm), 4" (100mm) white aluminum with black and red markings
Case	Steel, painted black (plastic available)
Lens	1.5" (40mm), 2" (50mm), 2.5" (63mm): Acrylic 4" (100mm): Glass
Ring	1.5" (40mm), 2" (50mm): Steel, painted black 2.5" (63mm), 4" (100mm): Steel, chrome plated
Socket	PEM: Brass PEM-LF: Lead free brass
Connection	1/8" NPT , 1/4" NPT or BSP(G) standard (other thread types are available)
Bourdon Tube	PEM: Phosphor bronze PEM-LF: Lead free phosphor bronze
Movement	Brass
Pointer	Aluminum, black
Welding	Silver alloy
Over-pressure Limit	25% of full scale value
Working Pressure	Maximum 75% of full scale value
Ambient/Process Temperature	-40°F to 150°F (-40°C to 65°C)
Accuracy	$\pm 3-2-3\%$ ANSI/ASME Grade B
Enclosure Rating	IP52

## PEM Order Codes

Dial Size	1.5" (40mm)		2" (50mm)			
Connection	1/8" NPT Bottom	1/8" NPT Back (CB)	1/8" NPT Bottom	1/8" NPT Back (CB)	1/4" NPT Bottom	1/4" NPT Back (CB)
Case Material	Steel					
30" Hg Vac / -1/0 bar	PEM1297R1R11	PEM1397R1R11	PEM195R1R11	PEM1424R1R11	PEM135R1R11	PEM1428R1R11
30"/0/15 psi / -1/1 bar	-	-	-	-	-	-
30"/0/30 psi / -1/2 bar	-	-	-	-	-	-
30"/0/60 psi / -1/4 bar	-	-	-	-	-	-
30"/0/100 psi / -1/7 bar	-	-	-	-	-	-
0/15 psi / 0/1 bar	PEM1299R1R11	PEM1399R1R11	PEM196R1R11	PEM1425R1R11	PEM136R1R11	PEM1429R1R11
0/30 psi / 0/2 bar	PEM1300R1R11	PEM1400R1R11	PEM206R1R11	PEM1402R1R11	PEM199R1R11	PEM1403R1R11
0/60 psi / 0/4 bar	PEM1301R1R11	PEM1401R1R11	PEM207R1R11	PEM1404R1R11	PEM201R1R11	PEM1405R1R11
0/100 psi / 0/7 bar	PEM1320R1R11	PEM1420R1R11	PEM208R1R11	PEM1406R1R11	PEM202R1R11	PEM1407R1R11
0/160 psi / 0/11 bar	PEM1321R1R11	PEM1421R1R11	PEM197R1R11	PEM1408R1R11	PEM203R1R11	PEM1409R1R11
0/200 psi / 0/14 bar	PEM1322R1R11	PEM1422R1R11	PEM209R1R11	PEM1426R1R11	PEM204R1R11	PEM1410R1R11
0/300 psi / 0/20 bar	PEM1323R1R11	PEM1423R1R11	PEM198R1R11	PEM1427R1R11	PEM205R1R11	PEM1411R1R11
0/400 psi / 0/28 bar	-	-	-	-	-	PEM1414R1R11
0/600 psi / 0/40 bar	-	-	-	-	-	PEM1412R1R11
0/1,000 psi / 0/70 bar	-	-	-	-	-	-
0/3,000 psi / 0/200 bar	-	-	-	-	-	-
0/5,000 psi / 0/350 bar	-	-	-	-	-	-
0/6,000 psi / 0/400 bar	PEM1324R1R11	PEM1446R1R11	PEM264R1R11	PEM1447R1R11	PEM228R1R11	PEM1413R1R11

## PEM-LF Order Codes

Dial Size	1.5" (40mm)		2" (50mm)			
Connection	1/8" NPT Bottom	1/8" NPT Back (CB)	1/8" NPT Bottom	1/8" NPT Back (CB)	1/4" NPT Bottom	1/4" NPT Back (CB)
Case Material	Steel					
30" Hg Vac/kPa	PEM1297LF	PEM1397LF	PEM195LF	PEM1424LF	PEM135LF	PEM1428LF
30"/0/15 psi/kPa	-	-	-	-	-	-
30"/0/30 psi/kPa	-	-	-	-	-	-
30"/0/60 psi/kPa	-	-	-	-	-	-
30"/0/100 psi/kPa	-	-	-	-	-	-
0/15 psi/kPa	PEM1299LF	PEM1399LF	PEM196LF	PEM1425LF	PEM136LF	PEM1429LF
0/30 psi/kPa	PEM1300LF	PEM1400LF	PEM206LF	PEM1402LF	PEM199LF	PEM1403LF
0/60 psi/kPa	PEM1301LF	PEM1401LF	PEM207LF	PEM1404LF	PEM201LF	PEM1405LF
0/100 psi/kPa	PEM1320LF	PEM1420LF	PEM208LF	PEM1406LF	PEM202LF	PEM1407LF
0/160 psi/kPa	PEM1321LF	PEM1421LF	PEM197LF	PEM1408LF	PEM203LF	PEM1409LF
0/200 psi/kPa	PEM1322LF	PEM1422LF	PEM209LF	PEM1426LF	PEM204LF	PEM1410LF
0/300 psi/kPa	PEM1323LF	PEM1423LF	PEM198LF	PEM1427LF	PEM205LF	PEM1411LF

Other ranges, connection sizes and thread types are 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. PEM1399R1R11-GL15 for 1.5" GLASS LENS.**

### Option suffix:

ECASE15SSBK = 1.5" (40mm) SS back case connection  
 ECASE15SSBTM = 1.5" (40mm) SS bottom connection  
 ECASE20SSBK = 2" (50mm) SS case back connection

ECASE20SSBTM = 2" (50mm) SS case bottom connection  
 GL15 = Glass lens for 1.5" (40mm) dial  
 GL2 = Glass lens for 2" (50mm) dial

Note: For 1.5" to 2" SS internals, please see PRL Series Regulator Gauges.

## PEM Order Codes

Dial Size	2.5" (63mm)			
Connection	1/4" NPT Bottom	1/4" NPT Back (CB)	1/4" BSP(G) Bottom	1/4" BSP(G) Back (CB)
Case Material	Steel			
30" Hg Vac / -1/0 bar	PEM210R1R11	PEM1431R1R11	PEM210R1R11T1	PEM1431R1R11T1
30"/0/15 psi / -1/1 bar	PEM152R1R11	PEM4951R1R11	PEM152R1R11T1	PEM4951R1R11T1
30"/0/30 psi / -1/2 bar	PEM153R1R11	PEM4952R1R11	PEM153R1R11T1	PEM4952R1R11T1
30"/0/60 psi / -1/4 bar	PEM154R1R11	PEM4953R1R11	PEM154R1R11T1	PEM4953R1R11T1
30"/0/100 psi / -1/7 bar	PEM155R1R11	PEM4954R1R11	PEM155R1R11T1	PEM4954R1R11T1
0/15 psi / 0/1 bar	PEM211R1R11	PEM1436R1R11	PEM211R1R11T1	PEM1436R1R11T1
0/30 psi / 0/2 bar	PEM212R1R11	PEM1437R1R11	PEM212R1R11T1	PEM1437R1R11T1
0/60 psi / 0/4 bar	PEM213R1R11	PEM1438R1R11	PEM213R1R11T1	PEM1438R1R11T1
0/100 psi / 0/7 bar	PEM214R1R11	PEM1439R1R11	PEM214R1R11T1	PEM1439R1R11T1
0/160 psi / 0/11 bar	PEM215R1R11	PEM1440R1R11	PEM215R1R11T1	PEM1440R1R11T1
0/200 psi / 0/14 bar	PEM216R1R11	PEM1441R1R11	PEM216R1R11T1	PEM1441R1R11T1
0/300 psi / 0/20 bar	PEM217R1R11	PEM1442R1R11	PEM217R1R11T1	PEM1442R1R11T1
0/400 psi / 0/28 bar	PEM219R1R11	PEM3412R1R11	PEM219R1R11T1	PEM3412R1R11T1
0/600 psi / 0/40 bar	PEM218R1R11	PEM3413R1R11	PEM218R1R11T1	PEM3413R1R11T1
0/1,000 psi / 0/70 bar	PEM290R1R11	PEM4956R1R11	PEM290R1R11T1	PEM4956R1R11T1
0/3,000 psi / 0/200 bar	PEM291R1R11	PEM4957R1R11	PEM291R1R11T1	PEM4957R1R11T1
0/5,000 psi / 0/350 bar	PEM292R1R11	PEM4958R1R11	PEM292R1R11T1	PEM4958R1R11T1
0/6,000 psi / 0/400 bar	PEM293R1R11	PEM1456R1R11	PEM293R1R11T1	PEM1456R1R11T1
0/7,500 psi / 0/500 bar	PEM294R1R11	PEM1457R1R11	PEM294R1R11T1	PEM1457R1R11T1
0/10,000 psi / 0/700 bar	PEM295R1R11	PEM1458R1R11	PEM295R1R11T1	PEM1458R1R11T1

## PEM-LF Order Codes

Dial Size	2.5" (63mm)	
Connection	1/4" Bottom	1/4" Back (CB)
Case Material	Steel	
30" Hg Vac/kPa	PEM210LF	PEM1431LF
30"/0/15 psi/kPa	PEM152LF	-
30"/0/30 psi/kPa	PEM153LF	-
30"/0/60 psi/kPa	PEM154LF	-
30"/0/100 psi/kPa	PEM155LF	-
0/15 psi/kPa	PEM211LF	PEM1436LF
0/30 psi/kPa	PEM212LF	PEM1437LF
0/60 psi/kPa	PEM213LF	PEM1438LF
0/100 psi/kPa	PEM214LF	PEM1439LF
0/160 psi/kPa	PEM215LF	PEM1440LF
0/200 psi/kPa	PEM216LF	PEM1441LF
0/300 psi/kPa	PEM217LF	PEM1442LF
0/400 psi/kPa	PEM219LF	-
0/600 psi/kPa	PEM218LF	PEM3413LF
0/1,000 psi/kPa	PEM290LF	-
0/3,000 psi/kPa	PEM291LF	-
0/5,000 psi/kPa	PEM292LF	-

Other ranges, connection sizes and thread types are 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. PEM213R1R11-GL25 for 1.5" GLASS LENS.**

### Option suffix:

GL25 = Glass lens for 2.5" (63mm) dial

## PEM Order Codes

Dial Size	4" (100mm)			
Connection	1/4" NPT Bottom	1/4" BSP(G) Bottom	1/2" NPT Bottom	1/2" BSP(G) Bottom
Case Material	Steel			
30" Hg Vac / -1/0 bar	PEM220R1R11	PEM220R1R11T1	PEM240R1R11	PEM240R1R11T1
30"/0/15 psi / -1/1 bar	PEM4959R1R11	PEM4959R1R11T1	PEM241R1R11	PEM241R1R11T1
30"/0/30 psi / -1/2 bar	PEM4960R1R11	PEM4960R1R11T1	PEM242R1R11	PEM242R1R11T1
30"/0/60 psi / -1/4 bar	PEM4961R1R11	PEM4961R1R11T1	PEM243R1R11	PEM243R1R11T1
30"/0/100 psi / -1/7 bar	PEM4962R1R11	PEM4962R1R11T1	PEM244R1R11	PEM244R1R11T1
0/15 psi / 0/1 bar	PEM4963R1R11	PEM4963R1R11T1	PEM246R1R11	PEM246R1R11T1
0/30 psi / 0/2 bar	PEM221R1R11	PEM221R1R11T1	PEM247R1R11	PEM247R1R11T1
0/60 psi / 0/4 bar	PEM222R1R11	PEM222R1R11T1	PEM248R1R11	PEM248R1R11T1
0/100 psi / 0/7 bar	PEM223R1R11	PEM223R1R11T1	PEM249R1R11	PEM249R1R11T1
0/150 psi / 0/10 bar	-	-	PEM270R1R11	PEM270R1R11T1
0/160 psi / 0/11 bar	PEM224R1R11	PEM224R1R11T1	PEM250R1R11	PEM270R1R11T1
0/200 psi / 0/14 bar	PEM225R1R11	PEM225R1R11T1	PEM251R1R11	PEM251R1R11T1
0/230 psi / 0/16 bar	PEM263R1R11	PEM263R1R11T1	-	-
0/250 psi / 0/17 bar	-	-	PEM271R1R11	PEM271R1R11T1
0/300 psi / 0/20 bar	PEM226R1R11	PEM226R1R11T1	PEM252R1R11	PEM252R1R11T1
0/400 psi / 0/28 bar	PEM227R1R11	PEM227R1R11T1	PEM253R1R11	PEM253R1R11T1
0/600 psi / 0/40 bar	PEM4965R1R11	PEM4965R1R11T1	PEM254R1R11	PEM254R1R11T1
0/1,000 psi / 0/70 bar	PEM4966R1R11	PEM4966R1R11T1	PEM255R1R11	PEM255R1R11T1
0/3,000 psi / 0/200 bar	PEM4967R1R11	PEM4967R1R11T1	PEM256R1R11	PEM256R1R11T1
0/5,000 psi / 0/350 bar	PEM4968R1R11	PEM4968R1R11T1	PEM257R1R11	PEM257R1R11T1
0/6,000 psi / 0/400 bar	PEM237R1R11	PEM237R1R11T1	PEM258R1R11	PEM258R1R11T1
0/7,500 psi / 0/500 bar	PEM238R1R11	PEM238R1R11T1	PEM259R1R11	PEM259R1R11T1
0/10,000 psi / 0/700 bar	PEM239R1R11	PEM239R1R11T1	PEM260R1R11	PEM260R1R11T1

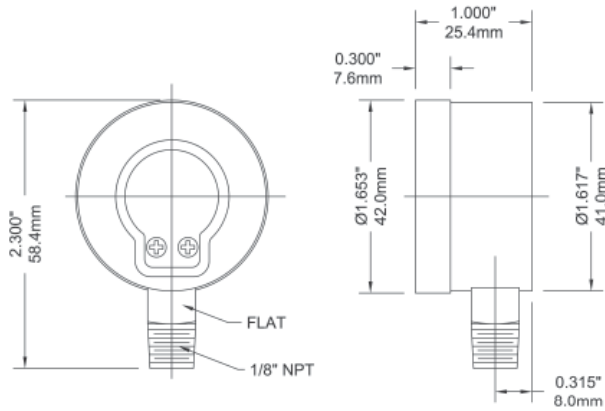
## PEM-LF Order Codes

Dial Size	4" (100mm)
Connection	1/4" Bottom
Case Material	Steel
30" Hg Vac/kPa	PEM220LF
30"/0/15 psi/kPa	-
30"/0/30 psi/kPa	-
30"/0/60 psi/kPa	-
30"/0/100 psi/kPa	-
0/15 psi/kPa	-
0/30 psi/kPa	PEM221LF
0/60 psi/kPa	PEM222LF
0/100 psi/kPa	PEM223LF
0/160 psi/kPa	PEM224LF
0/200 psi/kPa	PEM225LF
0/300 psi/kPa	PEM226LF
0/400 psi/kPa	PEM227LF
0/600 psi/kPa	-
0/1,000 psi/kPa	-
0/3,000 psi/kPa	-
0/5,000 psi/kPa	-

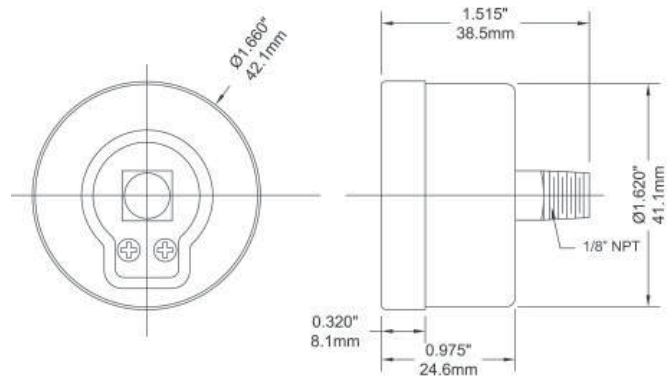
Other ranges, connection sizes and thread types are available upon request. For scale change, refer to How to Order Guide for scale codes.



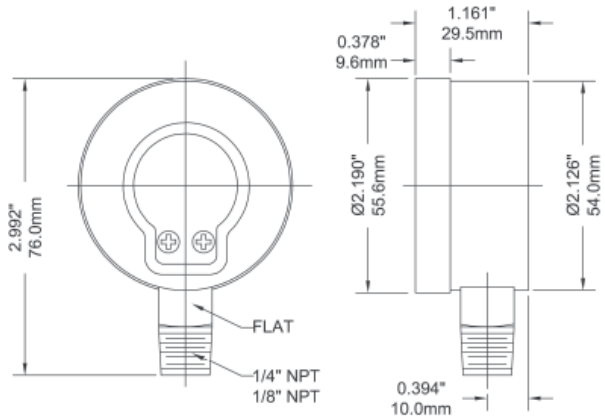
### 1.5" Bottom Connection



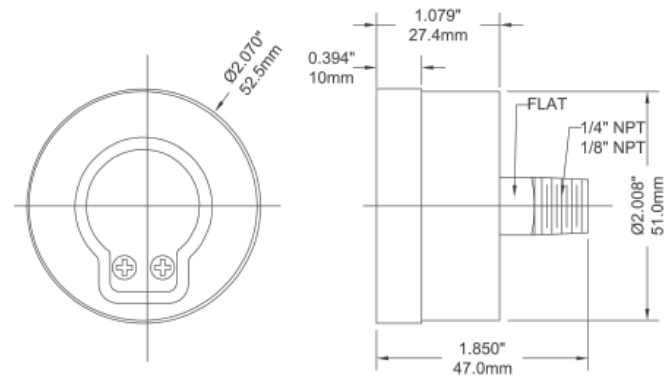
### 1.5" Back Connection



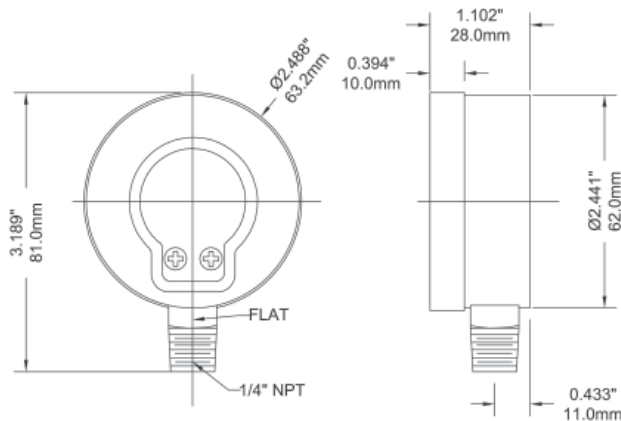
### 2" Bottom Connection



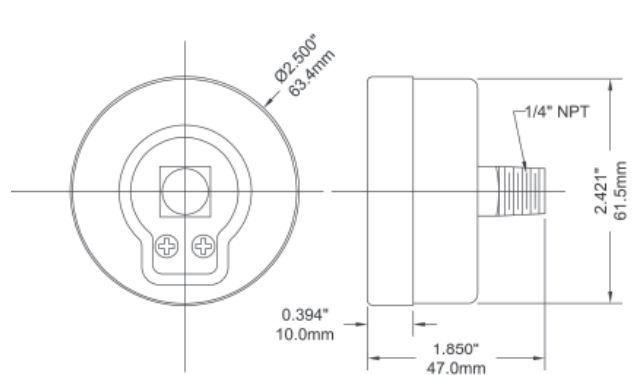
### 2" Back Connection



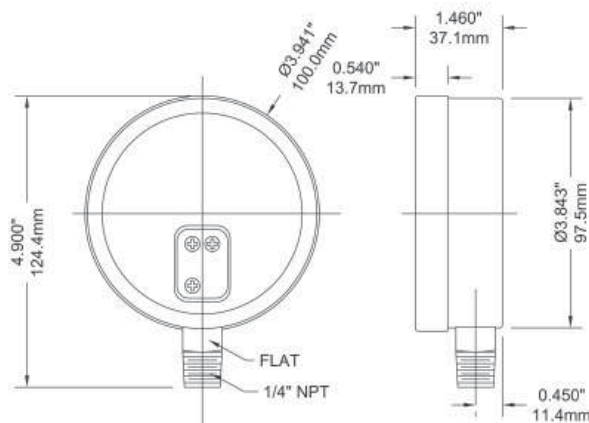
### 2.5" Bottom Connection



### 2.5" Back Connection



### 4" Bottom Connection



**Series Number (for custom, non-standard product)**

	P	E	M	-			-		-		-		-		-		-			-			-		
SERIES																									
DIAL SIZE																									
1.5" (40mm)					1	5																			
2.0" (50mm)					2	0																			
2.5" (63mm)					2	5																			
4.0" (100mm)					4	0																			
CASE MATERIALS																									
304SS								T																	
Plastic								P																	
Steel Painted Black								Y																	
WETTED PARTS																									
Brass									B																
316SS									S																
304SS									A																
Special									Z																
CONFIGURATION																									
Bottom Connection, Stem Mounting										A															
Bottom Connection, Back Flange, Surface Mounting										B															
Back Connection, Stem Mounting										D															
Back Connection, Back Flange, Surface Mounting										E															
Back Connection, Wide Front Flange, (Drilled) Panel Mounting										F															
Special										Z															
CONNECTION SIZE																									
1/8"											8														
1/4"											4														
1/2"											2														
Special											Z														
THREAD																									
NPT												N													
BSP (G)												B													
BSPT (R)												T													
M14 x 1.5												F													
M20 x 1.5												M													
Special												Z													
PRIMARY SCALE																									
UNITS - See Page 8																									
RANGE - See Page 8																									
SECONDARY SCALE																									
UNITS - See Page 8																									
OPTIONS																									
Black Rubber Boot																							S	Z	
Lead Free Wetted Parts																							L	F	
Maximum Adjustable Pointer (Acrylic Lens Only)																							S	J	
Oxygen Cleaning																							S	L	
Stainless Steel Tag Plate																							S	M	
Test Certificate																							S	O	
No Options																							X	X	



## Description & Features:

- Most economical pressure gauge used for panels
- 1.5" (40mm) to 2.5" (63mm) dial sizes
- Black steel case
- Brass wetted parts
- Stainless steel crimp-on bezel
- Stud-style U-Clamp design for secure panel mounting
- $\pm 3-2-3\%$  accuracy
- Dual scale (psi/bar)
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- For measuring gases, air, water and oils when equipment or processes require an economical panel mounted gauge

## Specifications

Dial	1.5" (40mm), 2" (50mm), 2.5" (63mm) white aluminum with black and red markings
Case	Steel, painted black
Lens	Acrylic
Ring	SS
Socket	Brass
Connection	1/8" NPT or 1/4" NPT standard (other thread types are available)
Bourdon Tube	Phosphor bronze
Movement	Brass
Pointer	Aluminum, black
Welding	Silver alloy
Over-pressure Limit	25% of full scale value
Working Pressure	Maximum 75% of full scale value
Ambient/Process Temperature	-40°F to 150°F (-40°C to 65°C)
Accuracy	$\pm 3-2-3\%$ ANSI/ASME Grade B
Enclosure Rating	IP52

## Order Codes

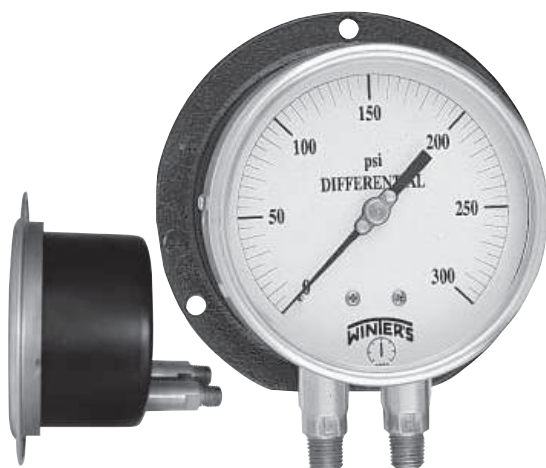
Dial Size	1.5" (40mm)	2" (50mm)	2" (50mm)	2.5" (63mm)
Connection	1/8"		1/4"	
30" Hg Vac / -1/0 bar	PEU1399UCR1R11	PEU1396UCR1R11	PEU1428UCR1R11	PEU1431UCR1R11
0/15 psi / 0/1 bar	PEU1398UCR1R11	PEU1397UCR1R11	PEU1429UCR1R11	PEU1436UCR1R11
0/30 psi / 0/2 bar	PEU1400UCR1R11	PEU1402UCR1R11	PEU1403UCR1R11	PEU1437UCR1R11
0/60 psi / 0/4 bar	PEU1401UCR1R11	PEU1404UCR1R11	PEU1405UCR1R11	PEU1438UCR1R11
0/100 psi / 0/7 bar	PEU1420UCR1R11	PEU1406UCR1R11	PEU1407UCR1R11	PEU1439UCR1R11
0/160 psi / 0/11 bar	PEU1421UCR1R11	PEU1408UCR1R11	PEU1409UCR1R11	PEU1440UCR1R11
0/200 psi / 0/14 bar	PEU1422UCR1R11	PEU1412UCR1R11	PEU1410UCR1R11	PEU1441UCR1R11
0/300 psi / 0/20 bar	PEU1423UCR1R11	PEU1413UCR1R11	PEU1411UCR1R11	PEU1442UCR1R11

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



## Series Number (for custom, non-standard product)

	P	E	U	-			-		-		-		-		-		-		-		
<b>SERIES</b>																					
<b>DIAL SIZE</b>																					
1.5" (40mm)						1	5														
2.0" (50mm)						2	0														
2.5" (63mm)						2	5														
<b>CASE MATERIALS</b>																					
304SS								T													
Brass								B													
Plastic								P													
Steel Painted Black								Y													
<b>WETTED PARTS</b>																					
Brass								B													
316SS								S													
Special								Z													
<b>CONFIGURATION</b>																					
Back Connection, U-clamp								V													
Special								Z													
<b>CONNECTION SIZE</b>																					
1/8"										8											
1/4"										4											
Special										Z											
<b>THREAD</b>																					
NPT										N											
BSP (G)										B											
BSPT (R)										T											
M14 x 1.5										F											
M20 x 1.5										M											
Special										Z											
<b>PRIMARY SCALE</b>																					
<b>UNITS - See Page 8</b>																					
<b>RANGE - See Page 8</b>																					
<b>SECONDARY SCALE</b>																					
<b>UNITS - See Page 8</b>																					
<b>OPTIONS</b>																					
Maximum Adjustable Pointer																			S	J	
Oxygen Cleaning																			S	L	
Stainless Steel Tag Plate																			S	M	
Test Certificate																			S	O	
No Options																			X	X	

**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

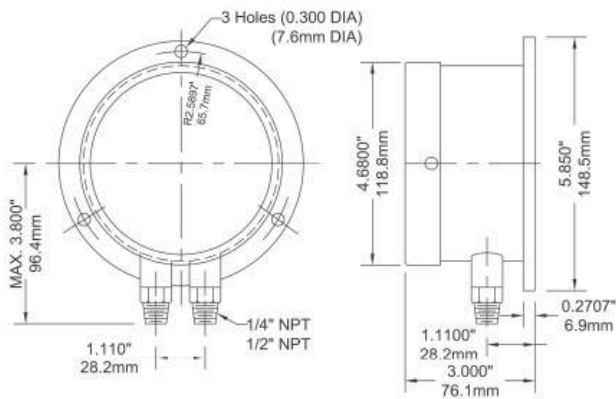
Specifications	
Dial	4.5" (115mm), 6" (150mm) white aluminum with black markings
Case	Aluminum, painted black
Front Flange	SS
Back Flange	Black steel
Lens	Glass
Ring	4.5" (115mm): SS 6" (150mm): Aluminum
Socket	Brass or 316 SS
Connections	1/4" NPT standard (other thread types are available)
Scale	PSID only
Bourdon Tubes	Phosphor bronze or AISI 316 SS, independent, matched
Movement	Brass
Pointer	Aluminum (micrometer)
Welding	Tin/copper alloy for brass internals, TIG argonarc for SS internals
Over-pressure Limit	30% of full scale value
Working Pressure	Maximum 75% of full scale value
Ambient/Process Temperature	-40°F to 150°F (-40°C to 65°C)
Accuracy	±1% ANSI/ASME Grade 1A

## Order Codes

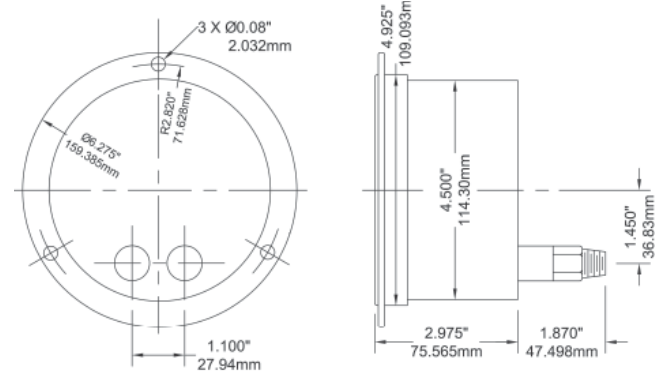
Dial Size	Max. Static Pressure	4.5" (115mm)			
Connection		1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)
Socket, Tube		Brass		SS	
0/15 psi / 0/1 bar	22 psi / 1.5 bar	PDT8051R1R11	PDT8051BR1R11	PDT8061R1R11	PDT8061BR1R11
0/30 psi / 0/2 bar	45 psi / 3 bar	PDT8052R1R11	PDT8052BR1R11	PDT8062R1R11	PDT8062BR1R11
0/60 psi / 0/4 bar	90 psi / 6 bar	PDT8053R1R11	PDT8053BR1R11	PDT8063R1R11	PDT8063BR1R11
0/100 psi / 0/7 bar	150 psi / 10 bar	PDT8054R1R11	PDT8054BR1R11	PDT8064R1R11	PDT8064BR1R11
0/160 psi / 0/11 bar	240 psi / 16.5 bar	PDT8055R1R11	PDT8055BR1R11	PDT8065R1R11	PDT8065BR1R11
0/200 psi / 0/14 bar	300 psi / 20 bar	PDT8056R1R11	PDT8056BR1R11	PDT8066R1R11	PDT8066BR1R11
0/300 psi / 0/20 bar	450 psi / 31 bar	PDT8057R1R11	PDT8057BR1R11	PDT8067R1R11	PDT8067BR1R11
0/600 psi / 0/40 bar	900 psi / 62 bar	PDT8058R1R11	PDT8058BR1R11	PDT8068R1R11	PDT8068BR1R11

Other ranges, connection sizes and thread types are 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



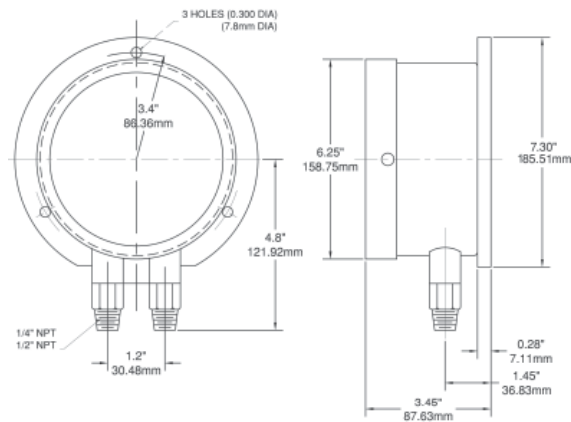


## Order Codes

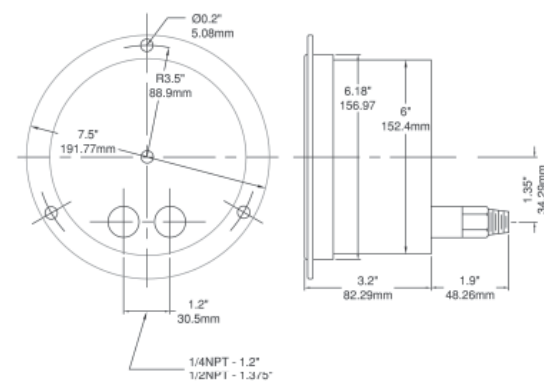
Dial Size	Max. Static Pressure	6" (150mm)			
Connection		1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)
Socket, Tube		Brass		SS	
0/15 psi / 0/1 bar	22 psi / 1.5 bar	PDT8071R1R11	PDT8071BR1R11	PDT8081R1R11	PDT8081BR1R11
0/30 psi / 0/2 bar	45 psi / 3 bar	PDT8072R1R11	PDT8072BR1R11	PDT8082R1R11	PDT8082BR1R11
0/60 psi / 0/4 bar	90 psi / 6 bar	PDT8073R1R11	PDT8073BR1R11	PDT8083R1R11	PDT8083BR1R11
0/100 psi / 0/7 bar	150 psi / 10 bar	PDT8074R1R11	PDT8074BR1R11	PDT8084R1R11	PDT8084BR1R11
0/160 psi / 0/11 bar	240 psi / 16.5 bar	PDT8075R1R11	PDT8075BR1R11	PDT8085R1R11	PDT8085BR1R11
0/200 psi / 0/14 bar	300 psi / 20 bar	PDT8076R1R11	PDT8076BR1R11	PDT8086R1R11	PDT8086BR1R11
0/300 psi / 0/20 bar	450 psi / 31 bar	PDT8077R1R11	PDT8077BR1R11	PDT8087R1R11	PDT8087BR1R11
0/600 psi / 0/40 bar	900 psi / 62 bar	PDT8078R1R11	PDT8078BR1R11	PDT8088R1R11	PDT8088BR1R11

Other ranges, connection sizes and thread types are 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.

## 6" Bottom Connection



## 6" Back Connection



## Series Number (for custom, non-standard product)

	P	D	T	-			-		-		-		-		-		-		-		
<b>SERIES</b>																					
<b>DIAL SIZE</b>																					
4.5" (115mm)						4	5														
6.0" (150mm)						6	0														
<b>CASE MATERIALS</b>																					
Aluminum								A													
<b>WETTED PARTS</b>																					
Brass																					
316SS																					
Special																					
<b>CONFIGURATION</b>																					
Bottom Connection, Stem Mounting																					
Bottom Connection, Back Flange, Surface Mounting																					
Bottom Connection, Front Flange, Surface Mounting																					
Back Connection, Stem Mounting																					
Back Connection, Back Flange, Surface Mounting																					
Back Connection, Wide Front Flange, (Drilled) Panel Mounting																					
Special																					
<b>CONNECTION SIZE</b>																					
1/4"																					
1/2"																					
Special																					
<b>THREAD</b>																					
NPT																					
BSP (G)																					
BSPT (R)																					
Special																					
<b>PRIMARY SCALE</b>																					
<b>UNITS - See Page 8</b>																					
<b>RANGE - See Page 8</b>																					
<b>SECONDARY SCALE</b>																					
<b>UNITS - See Page 8</b>																					
<b>OPTIONS</b>																					
Acrylic Lens																				S	V
Maximum Adjustable Pointer																				S	J
Oxygen Cleaning																				S	L
Safety Glass																				S	A
Stainless Steel Tag Plate																				S	M
Test Certificate																				S	O
No Options																				X	X



## 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 applications

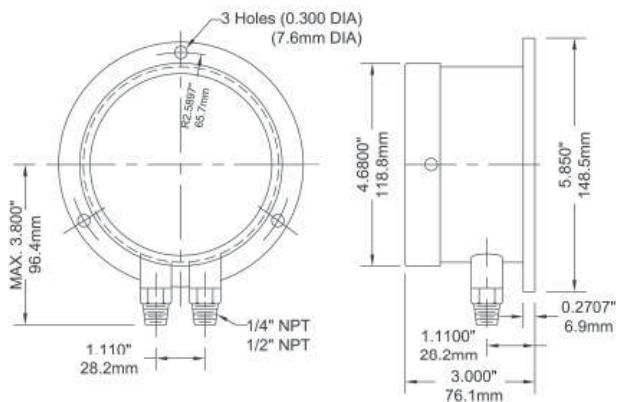
Specifications	
Dial	4.5" (115mm), 6" (150mm) white aluminum with black markings
Case	Aluminum, painted black
Front Flange	SS
Back Flange	Black steel
Lens	Glass
Ring	4.5" (115mm): SS 6" (150mm): Aluminum
Socket	Brass or 316 SS
Connections	1/4" NPT standard (other thread types are available)
Scale	PSI only
Bourdon Tubes	Phosphor bronze or AISI 316 SS, independent, matched
Movement	Brass
Pointer	Aluminum, micrometer
Welding	Tin/copper alloy for brass internals, TIG argonarc for SS internals
Over-pressure Limit	30% of full scale value
Working Pressure	Maximum 75% of full scale value
Ambient/Process Temperature	-40°F to 150°F (-40°C to 65°C)
Accuracy	±1% ANSI/ASME Grade 1A

## Order Codes

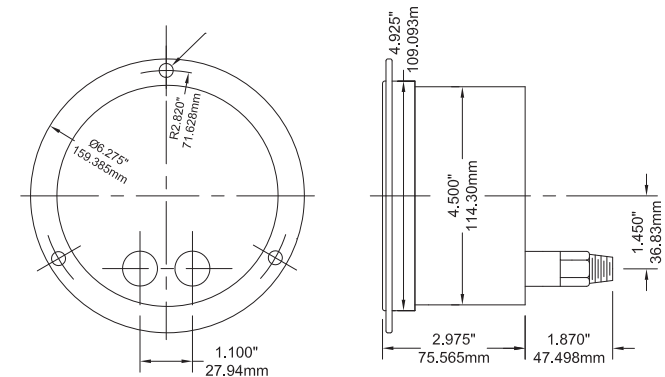
Dial Size	4.5" (115mm)				6" (150mm)			
Connection	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)	1/4" Bottom	1/4" Back (LB)
Socket, Tube	Brass		SS		Brass		SS	
0/15 psi	PDX8011	PDX8011B	PDX8021	PDX8021B	PDX8091	PDX8091B	PDX8101	PDX8101B
0/30 psi	PDX8012	PDX8012B	PDX8022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

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

### 4.5" Bottom Connection



### 4.5" Back Connection



Series Number (for custom, non-standard product)

	P	D	X	-			-		-		-		-		-		-		-		
SERIES																					
DIAL SIZE																					
4.5" (115mm)					4	5															
6.0" (150mm)					6	0															
CASE MATERIALS																					
Aluminum								A													
WETTED PARTS																					
Brass									B												
316SS									S												
Special									Z												
CONFIGURATION																					
Bottom Connection, Stem Mounting									A												
Bottom Connection, Back Flange, Surface Mounting									B												
Bottom Connection, Front Flange, Surface Mounting									C												
Back Connection, Stem Mounting									D												
Back Connection, Back Flange, Surface Mounting									E												
Back Connection, Wide Front Flange, (Drilled) Panel Mounting									F												
Special									Z												
CONNECTION SIZE																					
1/4"										4											
1/2"										2											
Special										Z											
THREAD																					
NPT											N										
BSP (G)											B										
BSPT (R)											T										
Special											Z										
PRIMARY SCALE																					
UNITS - See Page 8																					
RANGE - See Page 8																					
SECONDARY SCALE																					
UNITS - See Page 8																					
OPTIONS																					
Acrylic lens																			S	V	
Oxygen Cleaning																			S	L	
Safety Glass																			S	A	
Stainless Steel Tag Plate																			S	M	
Test Certificate																			S	O	
No Options																			X	X	



## 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:

- Filtration systems
- Low pressure gas systems
- Leak detection

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), Teflon®, Viton®, neoprene	Buna N (standard), Viton®	Buna N (standard), Viton®, silicone, neoprene	Buna N (standard), Viton®, 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 <sub>2</sub> 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 <sub>2</sub> O: ±5% of full scale 0-10 thru 400" H <sub>2</sub> O: ±2% of full scale

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Monel® is a registered trademark of Inco Alloys International  
Teflon® is a registered trademark of DuPont Corporation  
Viton® is a registered trademark of DuPont Performance Elastomers

## 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" H<sub>2</sub>O (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" H<sub>2</sub>O  $\pm 5\%$ , 0/10 thru 400" H<sub>2</sub>O  $\pm 2\%$

Note: Technical drawings are available upon request



## Series Number (for custom, non-standard product)

		P	P	D	-		-		-		-		-		-					
SERIES																				
TYPE	Aluminum body / Stainless Steel piston (Max system pressure 3,000 psi)					A														
	316 Stainless Steel body / Stainless Steel piston (Max system pressure 6,000 psi)					S														
	Monel body / Monel piston, 5% accuracy (Max system pressure 5,000 psi)					M														
	-> available differential ranges 0/10,15,20,25,30 only)																			
	Aluminum Bronze body / Aluminum Bronze piston, 5% accuracy (Max system pressure 5,000 psi)					N														
	-> available differential ranges 0/10,15,20,25,30 only)																			
	Special					Z														
DIAL SIZE	2.5" Round Uni-directional dial, plastic case (standard)					A														
	4.5" Round Uni-directional dial, plastic case					C														
	4.5" Round Bi-directional dial, plastic case					D														
	3.5" Round Uni-directional dial, aluminum case					E														
	4.5" Round Uni-directional dial, aluminum case					G														
	4.5" Round Bi-directional dial, aluminum case					H														
	Special					Z														
SEAL	Buna-N (standard)							0												
	Viton							1												
	Neoprene							2												
	Teflon							4												
	Ethylene Propylene							5												
	Special							Z												
CONNECTION	1/4" NPTF Back (standard), not available with Gauge Options M & N							0												
	1/4" NPTF End / In-line							2												
	1/4" NPTF Bottom, not available with Gauge Options M & N							3												
	1/2" NPTF End							4												
	7/16"-20 SAE with "O" ring Back, with Gauge Options A & S							6												
	Special							Z												
OPTIONS	No additional options required (standard)																O			
	Reversed High / Low process connections																A			
	Mounting Holes in gauge body for field mounting (switch options A & B only)																C			
	Mounting Holes in gauge body for field mounting (switch options L & M only)																D			
	Two (2) 1/4 - 20 mounting holes (not available for C & D switch options)																E			
	Carbon steel 2" pipe mounting kit (not available for C & D switch options)																F			
	Stainless steel 2" pipe mounting kit (not available for C & D switch options)																G			
	1/2" NPTF stainless steel adapters																K			
	Glycerin filled 2.5" case (not available with Safety glass or Maxi-pointer)																L			
	Glycerin filled 4.5" case (not available with Safety glass or Maxi-pointer)																L			
	Maxi-pointer 2.5" case (not available with Safety glass)																M			
	Maxi-pointer 4.5" case (not available with Safety glass)																M			
	NACE (for sour gas applications, not available in Bronze case)																N			
	CRN (Canadian Registration Number, aluminum or SS body only)																Q			
	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 Back Connections or C & D electrical options)																W			
	Special																Z			
SWITCH	No electrical options required (standard)																O			
	1 switch in standard enclosure with grommet wire seal																A			
	2 switches in standard enclosure with grommet wire seal																B			
	1 switch in standard enclosure with 1/4" NPTF electrical connection & NEMA 4X																C			
	2 switches in standard enclosure with 1/4" NPTF electrical connection & NEMA 4X																D			
	1 switch and Differential pressure gauge in NEMA 4X plastic enclosure (not available with End connections)																G			
	2 switch and Differential pressure gauge in NEMA 4X plastic enclosure (not available with End connections)																H			
	1 switch in standard enclosure with DIN plug connector (DIN43650 IP65)																L			
	2 switches in standard enclosure with DIN plug connector (DIN43650 IP65)																M			
	Special																Z			
ELECTRICAL	No electrical options required (standard)																O			
	SPDT 3W, 0.25A 125VAC / VDC, adjustable range 10-90%																A			
	SPDT 60W, 3.0A 240VAC / VDC, Normally open, adjustable range 25-95%																E			
	SPDT 60W, 3.0A 240VAC / VDC, Normally closed, adjustable range 25-95%																F			
	SPDT 60W, 3.0A 240VAC / VDC, 1 x Normally open 1 x Normally closed, adjustable range 25-95%																G			
	SPDT 60W, 1.0A 240VAC / VDC, adjustable range 25-100 (price per switch)																H			
	Special																Z			
DIFF. RANGE	Minimum differential range 0/5psid (example) - Maximum differential range 0/110psid - Maximum system pressure of 3,000 or 5,000 or 6,000psi (based on above)																0	0	5	psi

## PRD

## Differentia

107

## Series Number (for custom, non-standard product)

		P	S	D	-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-
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# PVD

## Differential

## WINTERS INSTRUMENTS



## Description & Features:

- Designed for food, beverage & dairy and pharmaceutical applications
- $\pm 0.75\%$  full scale value accuracy
- Food grade glycerin filling standard
- Re-zero feature standard
- Crack/breakage-resistant polycarbonate lens standard
- Clean-In-Place design
- Steam-In-Place design
- Autoclavable
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

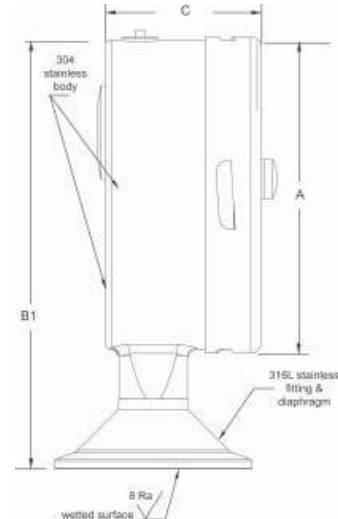
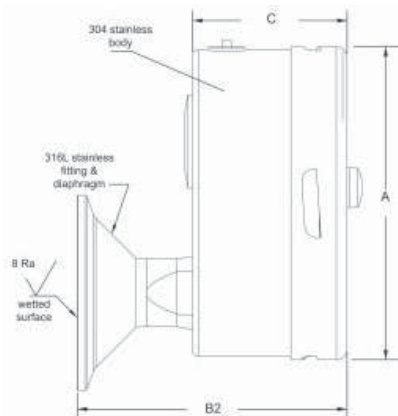
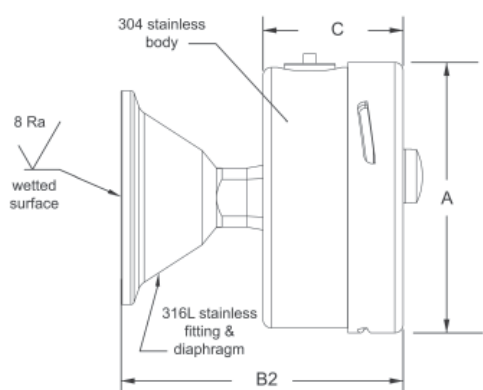
- Built to withstand the harshest of sanitary applications and where 3A approval is required

Specifications	
Dial	2.5" (63mm), 4" (100mm) aluminum
Case	304 SS, polished
Repeatability	0.25% of full scale value
Linearity	0.25% of full scale value
Lens	3/16" thick polycarbonate
Over-range Capability	50% of full scale
Hysteresis	0.25% of full scale
CIP Temperature Limit	250°F (121°C) continuous
SIP Temperature Limit	300°F (149°C) 1 hour, dry
Bourdon Tube	316L SS, welded
Socket	316L SS, welded
Storage Temperature	-22°F to 195°F (-30°C to 91°C)
Temperature Effect	Less than 0.16% per 10°F (5.5°C) change in process or ambient temperature
Actuating Fill	Food grade glycerin standard (Mineral oil, silicone and Neobee-20 optional)
Case Fluid	Food grade glycerin standard (Dry, mineral oil, silicone and Neobee-20 optional)
Pulsation Dampening	Standard
Re-zero Feature	Externally adjustable micrometer pointer
Wetted Parts	316L SS, Ra = 8 microinches
Bezel	304 SS, polished
Ambient Temperature	40°F to 140°F (4°C to 60°C)
Process Temperature	0°F to 250°F (-18°C to 121°C)
Accuracy	$\pm 0.75\%$ of full scale value

## Order Codes

Dial Size	2.5" (63mm)				4" (100mm)			
Tri-Clamp® Connection	1.5" (40mm) Bottom	1.5" (40mm) Back	2" (50mm) Bottom	2" (50mm) Back	1.5" (40mm) Bottom	1.5" (40mm) Back	2" (50mm) Bottom	2" (50mm) Back
30"/0/30 psi/bar	PAG15798	PAG15798B	PAG20798	PAG20798B	PAG151021	PAG151021B	PAG201021	PAG201021B
30"/0/60 psi/bar	PAG15799	PAG15799B	PAG20799	PAG20799B	PAG151022	PAG151022B	PAG201022	PAG201022B
30"/0/100 psi/bar	PAG15791	PAG15791B	PAG20791	PAG20791B	PAG151023	PAG151023B	PAG201023	PAG201023B
30"/0/150 psi/bar	PAG15793	PAG15793B	PAG20793	PAG20793B	PAG151025	PAG151025B	PAG201025	PAG201025B
30"/0/200 psi/bar	PAG15794	PAG15794B	PAG20794	PAG20794B	PAG151026	PAG151026B	PAG201026	PAG201026B
30"/0/300 psi/bar	PAG15795	PAG15795B	PAG20795	PAG20795B	PAG151027	PAG151027B	PAG201027	PAG201027B
0/30 psi/bar	PAG15802	PAG15802B	PAG20802	PAG20802B	PAG15602	PAG15602B	PAG20602	PAG20602B
0/60 psi/bar	PAG15803	PAG15803B	PAG20803	PAG20803B	PAG15603	PAG15603B	PAG20603	PAG20603B
0/100 psi/bar	PAG15804	PAG15804B	PAG20804	PAG20804B	PAG15604	PAG15604B	PAG20604	PAG20604B
0/160 psi/bar	PAG15805	PAG15805B	PAG20805	PAG20805B	PAG15605	PAG15605B	PAG20605	PAG20605B
0/200 psi/bar	PAG15806	PAG15806B	PAG20806	PAG20806B	PAG15606	PAG15606B	PAG20606	PAG20606B
0/300 psi/bar	PAG15807	PAG15807B	PAG20807	PAG20807B	PAG15607	PAG15607B	PAG20607	PAG20607B
0/600 psi/bar	PAG15808	PAG15808B	PAG20808	PAG20808B	PAG15608	PAG15608B	PAG20608	PAG20608B

Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes.  
Autoclavable option available on 4" (100mm) dry only.



Dial	A	B1 Tri-Clamp® Bottom	B2 Tri-Clamp® Back	C
2.5"	2.5" (63mm)	3 13/16" (96.8mm)	2 5/8" (66.8mm)	1 5/16" (33.3mm)
4"	4" (100mm)	5 7/16" (138.2mm)	3 7/16" (87.4mm)	1 15/16" (49.3mm)

Tri-Clamp® is a registered trade mark of Tri-Clover



## Description & Features:

- Quality series for all sanitary gauge systems
- Food grade glycerin filling standard
- Electro-polish finish
- Industrial grade polycarbonate lens standard
- Clean-In-Place and steam-in-place design
- 0.75", 1.5" and 2" Tri-Clamp® connection bottom and back
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- Built to withstand all sanitary applications where 3A approval is required including food, beverage and dairy installations

## Specifications

<b>Dial</b>	2.5" (63mm), 4" (100mm) aluminum
<b>Case</b>	304 SS, polished
<b>Bezel</b>	304 SS, polished
<b>Lens</b>	Polycarbonate
<b>Over Pressure Limit</b>	25% up to 600 psi (41 bar) 15% over 600 psi (41 bar)
<b>CIP Temperature Limit</b>	250°F (121°C) continuous
<b>SIP Temperature Limit</b>	266°F (130°C) 1 hour, dry
<b>Bourdon Tube</b>	316 SS
<b>Socket</b>	316 SS
<b>Movement</b>	304 SS
<b>Enclosure Rating</b>	IP65/NEMA 4X
<b>System Fill</b>	Food grade glycerin standard (Mineral oil, silicone and Neobee-20 optional)
<b>Case Fill</b>	Food grade glycerin standard (Dry, mineral oil, silicone and Neobee-20 optional)
<b>Re-zero Feature</b>	Adjustable micrometer pointer (4" (100mm) dial only)
<b>Wetted Parts</b>	316L SS, Ra = 8 microinches
<b>Ambient Temperature</b>	Glycerin filled: 40°F to 150°F (4°C to 65°C)
<b>Process Temperature</b>	0°F to 250°F (-18°C to 121°C)
<b>Accuracy</b>	2.5" (63mm): ±1.5% of full scale 4" (100mm): ±1.0% of full scale
<b>Agency Compliance</b>	3A standard 74-05

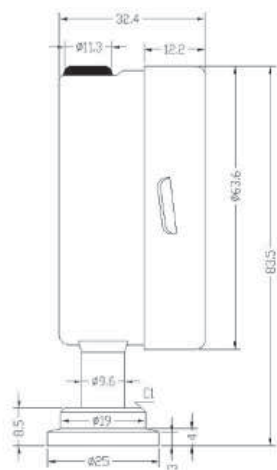


## Order Codes

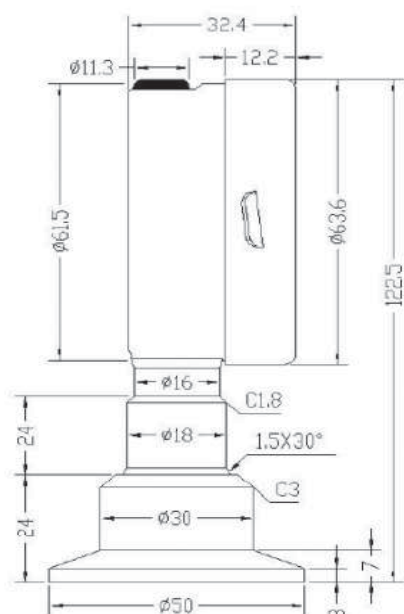
Dial Size	2.5" (63mm)						4" (100mm)			
Tri-Clamp® Connection	0.75" (20mm) Bottom	0.75" (20mm) Back	1.5" (40mm) Bottom	1.5" (40mm) Back	2" (50mm) Bottom	2" (50mm) Back	1.5" (40mm) Bottom	1.5" (40mm) Back	2" (50mm) Bottom	2" (50mm) Back
30" Hg Vac/bar	PSQ34797	PSQ34797B	PSQ15797	PSQ15797B	PSQ20797	PSQ20797B	PSQ15202	PSQ15202B	PSQ20120	PSQ20120B
30"/0/30 psi/bar	PSQ34798	PSQ34798B	PSQ15798	PSQ15798B	PSQ20798	PSQ20798B	PSQ151021	PSQ151021B	PSQ201021	PSQ201021B
30"/0/60 psi/bar	PSQ34799	PSQ34799B	PSQ15799	PSQ15799B	PSQ20799	PSQ20799B	PSQ151022	PSQ151022B	PSQ201022	PSQ201022B
30"/0/100 psi/bar	PSQ34791	PSQ34791B	PSQ15791	PSQ15791B	PSQ20791	PSQ20791B	PSQ151023	PSQ151023B	PSQ201023	PSQ201023B
30"/0/150 psi/bar	PSQ34793	PSQ34793B	PSQ15793	PSQ15793B	PSQ20793	PSQ20793B	PSQ151025	PSQ151025B	PSQ201025	PSQ201025B
30"/0/200 psi/bar	PSQ34794	PSQ34794B	PSQ15794	PSQ15794B	PSQ20794	PSQ20794B	PSQ151026	PSQ151026B	PSQ201026	PSQ201026B
30"/0/300 psi/bar	PSQ34795	PSQ34795B	PSQ15795	PSQ15795B	PSQ20795	PSQ20795B	PSQ151027	PSQ151027B	PSQ201027	PSQ201027B
0/30 psi/bar	PSQ34802	PSQ34802B	PSQ15802	PSQ15802B	PSQ20802	PSQ20802B	PSQ15602	PSQ15602B	PSQ20602	PSQ20602B
0/60 psi/bar	PSQ34803	PSQ34803B	PSQ15803	PSQ15803B	PSQ20803	PSQ20803B	PSQ15603	PSQ15603B	PSQ20603	PSQ20603B
0/100 psi/bar	PSQ34804	PSQ34804B	PSQ15804	PSQ15804B	PSQ20804	PSQ20804B	PSQ15604	PSQ15604B	PSQ20604	PSQ20604B
0/160 psi/bar	PSQ34805	PSQ34805B	PSQ15805	PSQ15805B	PSQ20805	PSQ20805B	PSQ15605	PSQ15605B	PSQ20605	PSQ20605B
0/200 psi/bar	PSQ34806	PSQ34806B	PSQ15806	PSQ15806B	PSQ20806	PSQ20806B	PSQ15606	PSQ15606B	PSQ20606	PSQ20606B
0/300 psi/bar	PSQ34807	PSQ34807B	PSQ15807	PSQ15807B	PSQ20807	PSQ20807B	PSQ15607	PSQ15607B	PSQ20607	PSQ20607B
0/600 psi/bar	PSQ34808	PSQ34808B	PSQ15808	PSQ15808B	PSQ20808	PSQ20808B	PSQ15608	PSQ15608B	PSQ20608	PSQ20608B
0/1,000 psi/bar	PSQ34809	PSQ34809B	PSQ15809	PSQ15809B	PSQ20809	PSQ20809B	PSQ15609	PSQ15609B	PSQ20609	PSQ20609B

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

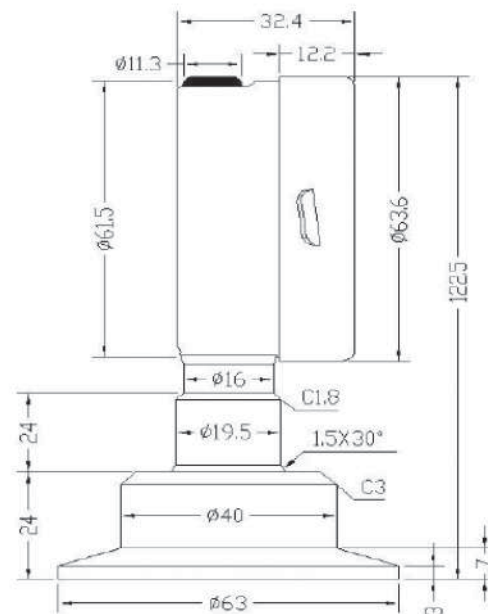
**2.5" Bottom Connection  
0.75" Tri-Clamp®**



**2.5" Bottom Connection  
1.5" Tri-Clamp®**

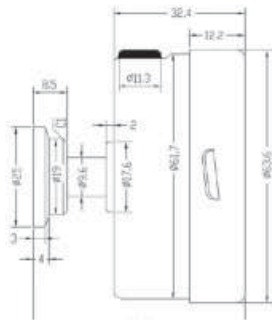


**2.5" Bottom Connection  
2" Tri-Clamp®**

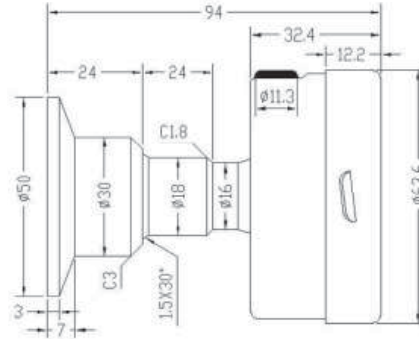


Tri-Clamp® is a registered trade mark of Tri-Clover

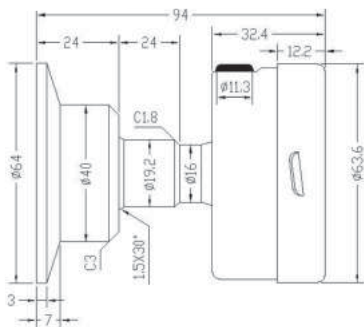
**2.5" Back Connection 0.75" Tri-Clamp®**



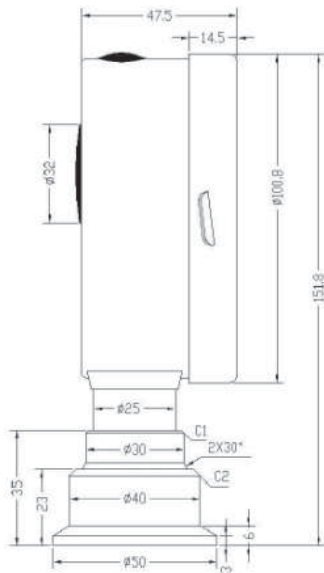
**2.5" Back Connection 1.5" Tri-Clamp®**



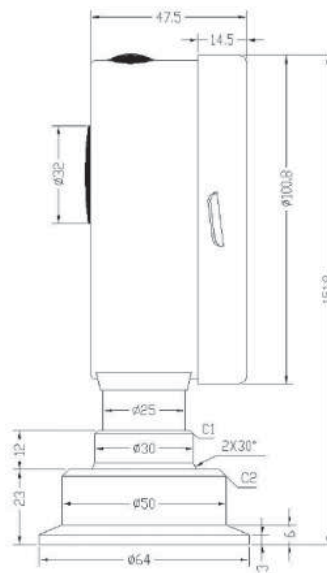
**2.5" Back Connection 2" Tri-Clamp®**



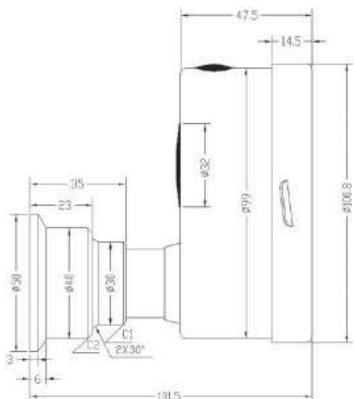
**4" Bottom Connection 1.5" Tri-Clamp®**



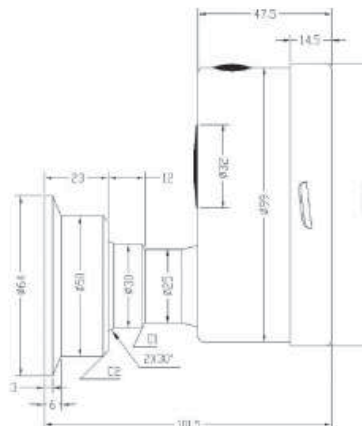
**4" Bottom Connection 2" Tri-Clamp®**



**4" Back Connection 1.5" Tri-Clamp®**



**4" Back Connection 2" Tri-Clamp®**



**Description & Features:**

- Economical 2" (50mm) gauge with built-in safety features
- Safety blowout back steel case
- ASME B40.100 compliant
- UL listed
- CRN registered
- 5 year warranty

**Applications:**

- Beverage dispensing, regulators and tanks. Low pressures are used on the down stream side of a regulator. High pressures are used for measuring cylinder gas or tank pressures

**Specifications**

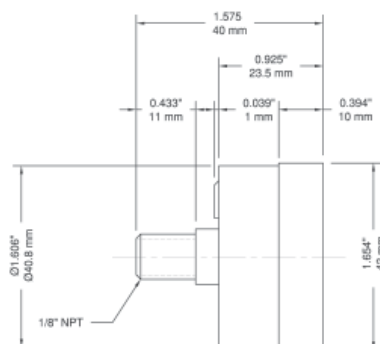
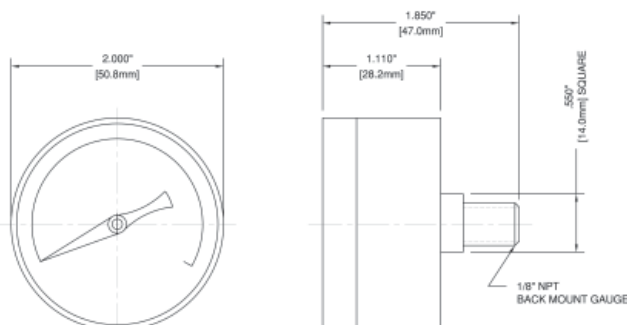
<b>Dial</b>	1.5" (40mm), 2" (50mm)
<b>Case</b>	Steel with blowout back, painted black
<b>Lens</b>	Acrylic
<b>Ring</b>	Steel, painted black
<b>Socket</b>	Brass
<b>Connection</b>	1/8" NPT or 1/4" NPT, bottom or back (other thread types are available)
<b>Bourdon Tube</b>	Brass
<b>Movement</b>	Brass
<b>Pointer</b>	Aluminum, painted black
<b>Over-pressure Limit</b>	25% of full scale value
<b>Working Pressure</b>	Maximum 75% of full scale value
<b>Ambient/Process Temperature</b>	-40°F to 150°F (-40°C to 65°C)
<b>Accuracy</b>	±3-2-3% ANSI/ASME Grade B
<b>Enclosure Rating</b>	IP52

**Order Codes**

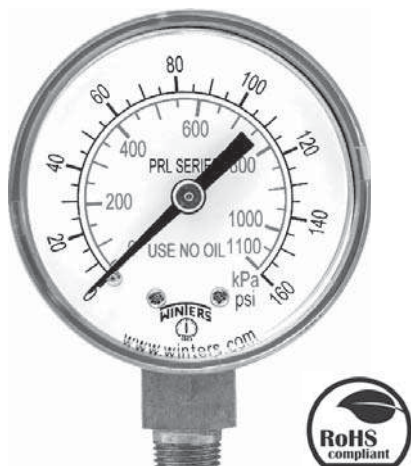
Dial Size	1.5" (40mm)	2" (50mm)	
Connection	1/8" Back	1/8" Back	1/4" Bottom
0/30 psi	PCG9014	-	PCG9020
0/60 psi	PCG9015	-	PCG9021
0/100 psi	-	PCG9017	PCG9022
0/160 psi	PCG9016	PCG9018	PCG9023
0/300 psi	-	PCG9019	PCG9024
0/2,000 psi	-	-	PCG9025
0/3,000 psi	-	-	PCG9026

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

UL252A recognized - low pressures 30-300 psi  
UL404 listed - high pressures 2000 psi and 3000 psi

**1.5" Back Connection****2" Back Connection**

# PRL Regulator Gauge



## Description & Features:

- Small diameter, all stainless steel gauge
- 1.5" (40mm) and 2" (50mm) dials
- Full view snap-in lens
- Back and bottom connection
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- Regulators, valve positioners and actuators that require a reliable and corrosion-resistant pressure gauge

## Specifications

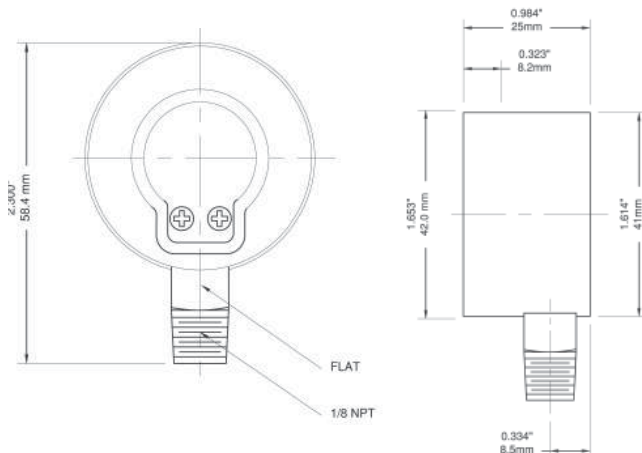
<b>Dial</b>	1.5" (40mm), 2" (50mm) white aluminum with black and red markings
<b>Case</b>	304 SS
<b>Lens</b>	Acrylic, snap-in type
<b>Socket</b>	316 SS
<b>Connection</b>	1/8" NPT or 1/4" NPT standard (other thread types are available)
<b>Bourdon Tube</b>	316 SS
<b>Movement</b>	304 SS
<b>Pointer</b>	Aluminum, painted black
<b>Welding</b>	Silver alloy
<b>Over-pressure Limit</b>	25% of full scale value
<b>Working Pressure</b>	Maximum 75% of full scale value
<b>Ambient/Process Temperature</b>	-40°F to 150°F (-40°C to 65°C)
<b>Accuracy</b>	±2.5% of full scale value
<b>Enclosure Rating</b>	IP52

## Order Codes

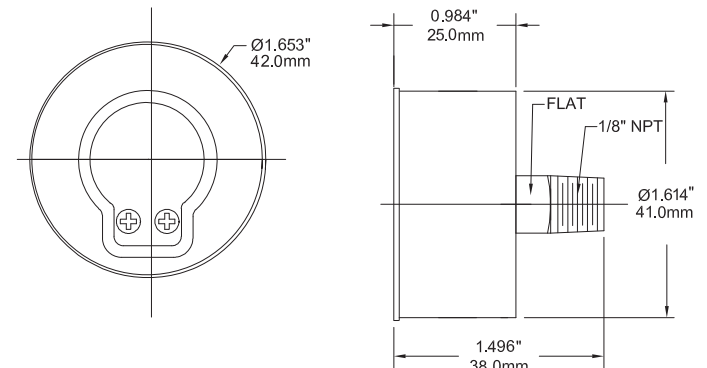
Dial Size	1.5" (40mm)		2" (50mm)			
Connection	1/8" Bottom	1/8" Back (CB)	1/8" Bottom	1/8" Back (CB)	1/4" Bottom	1/4" Back (CB)
30" Hg Vac / -1/0 bar	-	-	-	-	-	-
30"/0/15 psi / -1/1 bar	-	-	-	-	PRL017R1R11	PRL026R1R11
30"/0/30 psi / -1/2 bar	-	-	-	-	-	-
30"/0/60 psi / -1/4 bar	-	-	-	PRL040R1R11	PRL018R1R11	PRL027R1R11
30"/0/100 psi / -1/7 bar	-	-	-	-	PRL019R1R11	PRL028R1R11
30"/0/160 psi / -1/11 bar	-	-	-	-	PRL020R1R11	PRL029R1R11
0/15 psi / 0/1 bar	-	-	-	-	-	-
0/30 psi / 0/2 bar	PRL001R1R11	PRL005R1R11	PRL009R1R11	PRL013R1R11	PRL021R1R11	PRL030R1R11
0/60 psi / 0/4 bar	PRL002R1R11	PRL006R1R11	PRL010R1R11	PRL014R1R11	PRL022R1R11	PRL031R1R11
0/100 psi / 0/7 bar	PRL003R1R11	PRL007R1R11	PRL011R1R11	PRL015R1R11	PRL023R1R11	PRL032R1R11
0/160 psi / 0/11 bar	PRL004R1R11	PRL008R1R11	PRL012R1R11	PRL016R1R11	PRL024R1R11	PRL033R1R11
0/200 psi / 0/14 bar	-	-	-	-	PRL042R1R11	-
0/300 psi / 0/20 bar	-	-	-	-	-	-
0/400 psi / 0/28 bar	-	-	-	-	PRL036R1R11	-
0/600 psi / 0/40 bar	-	-	-	-	-	PRL034R1R11
0/1,000 psi / 0/70 bar	-	-	-	-	-	-
0/2,000 psi / 0/140 bar	-	-	-	-	-	-
0/3,000 psi / 0/200 bar	PRL038R1R11	PRL041R1R11	-	-	PRL025R1R11	PRL035R1R11
0/5,000 psi / 0/350 bar	-	PRL039R1R11	-	-	-	-

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

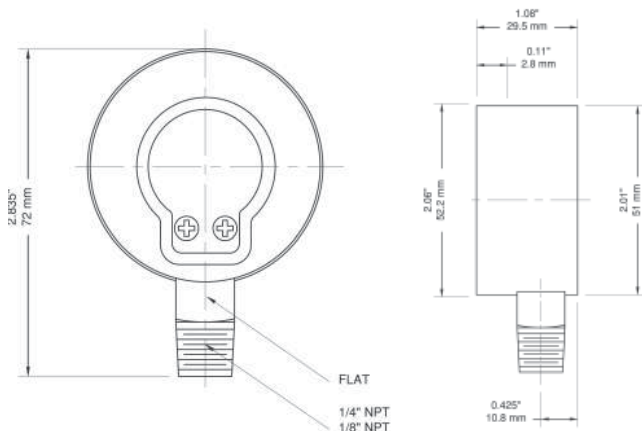
## 1.5" Bottom Connection



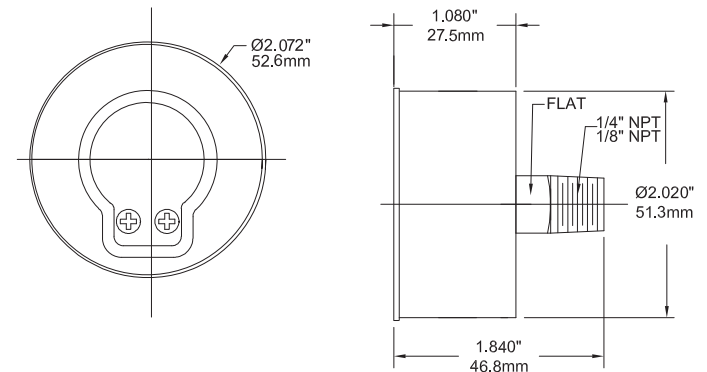
## 1.5" Back Connection



## 2" Bottom Connection



## 2" Back Connection



## Series Number (for custom, non-standard product)

	P	R	L	-			-		-		-		-		-		-		-		
SERIES																					
DIAL SIZE																					
1.5" (40mm)						1	5														
2.0" (50mm)						2	0														
CASE MATERIALS																					
304SS								T													
316SS								S													
WETTED PARTS																					
316SS								S													
Special								Z													
CONFIGURATION																					
Bottom Connection, Stem Mounting									A												
Back Connection, Stem Mounting									D												
Special									Z												
CONNECTION SIZE																					
1/8"										8											
1/4"										4											
Special										Z											
THREAD																					
NPT											N										
BSP (G)											B										
BSPT (R)											T										
Special											Z										
PRIMARY SCALE																					
UNITS - See Page 8																					
RANGE - See Page 8																					
SECONDARY SCALE																					
UNITS - See Page 8																					
OPTIONS																					
Oxygen Cleaning																			S	L	
Stainless Steel Tag Plate																			S	M	
Test Certificate																			S	O	
U-Clamp																			S	H	
No Options																			X	X	

**Description & Features:**

- Economical, non-sparking brass case gauge
- 1.5" (40mm), 2" (50mm) and 2.5" (63mm) brass case
- UL listing on the 4,000 psi range
- "USE NO OIL" on dial
- Brass socket
- Threaded-on polycarbonate lens
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

**Applications:**

- Welding tank regulators or manifolds, beverage dispensing regulators and other pressurized tanks
- Used on the down stream side of a regulator and the high pressures are UL listed for measuring cylinder gases

**Specifications**

<b>Dial</b>	1.5" (40mm), 2" (50mm), 2.5" (63mm) white aluminum with black and red markings
<b>Case</b>	Brass, polished
<b>Lens</b>	Polycarbonate, threaded
<b>Socket</b>	Brass
<b>Connection</b>	1.5" (40mm) dial: 1/8" NPT bottom, 2" (50mm), 2.5" (63mm): 1/4" NPT bottom (other thread types are available)
<b>Bourdon Tube</b>	Phosphor bronze
<b>Movement</b>	Brass
<b>Pointer</b>	Aluminum, painted black
<b>Welding</b>	Silver alloy
<b>Over-pressure Limit</b>	25% of full scale value
<b>Working Pressure</b>	Maximum 75% of full scale value
<b>Ambient/Process Temperature</b>	-40°F to 150°F (-40°C to 65°C)
<b>Accuracy</b>	±3-2-3% ANSI/ASME Grade B
<b>Enclosure Rating</b>	IP52

Note: Also see PCG Compressed Gas Gauge for more choices

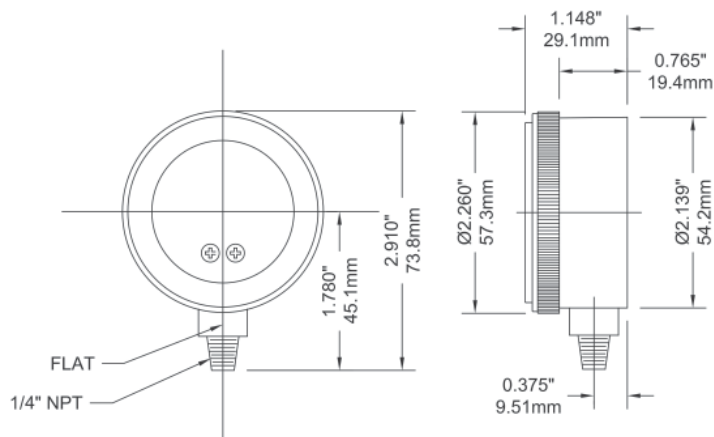
**Order Codes**

Dial Size	1.5" (40mm)	2" (50mm)	2.5" (63mm)
Connection	1/8" Bottom	1/4" Bottom	1/4" Bottom
0/30 psi / 0/2 bar	PWL2620R1R11	PWL2720R1R11	PWL2820R1R11
0/60 psi / 0/4 bar	PWL2621R1R11	PWL2721R1R11	PWL2821R1R11
0/100 psi / 0/7 bar	PWL2622R1R11	PWL2722R1R11	PWL2822R1R11
0/160 psi / 0/11 bar	-	PWL2723R1R11	-
0/200 psi / 0/14 bar	PWL2624R1R11	PWL2724R1R11	PWL2824R1R11
0/400 psi / 0/28 bar	PWL2626R1R11	PWL2726R1R11	PWL2826R1R11
0/600 psi / 0/40 bar	PWL2627R1R11	PWL2727R1R11	-
0/3,000 psi / 0/200 bar	-	PWL2731R1R11	-
0/4,000 psi / 0/280 bar	PWL2632R1R11	PWL2732R1R11	PWL2832R1R11

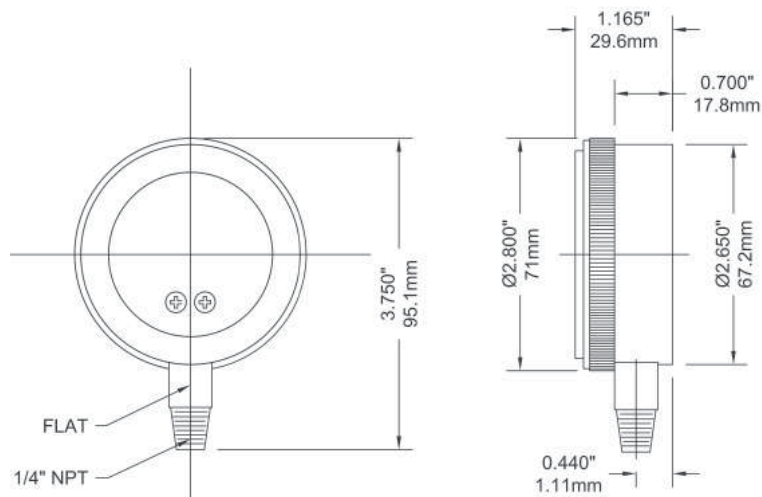
Other ranges, connection sizes and thread types are available upon request. For scale change, refer to How to Order Guide for scale codes.



### 2" Bottom Connection



### 2.5" Bottom Connection



**Series Number (for custom, non-standard product)**

	P	W	L	-			-		-		-		-			-			-			-		
SERIES																								
DIAL SIZE																								
1.5" (40mm)					1	5																		
2.0" (50mm)					2	0																		
2.5" (63mm)					2	5																		
CASE MATERIALS																								
304SS								T																
316SS								S																
Brass								B																
Plastic								P																
Steel Painted Black								Y																
WETTED PARTS																								
Brass								B																
316SS								S																
Monel								M																
Special								Z																
CONFIGURATION																								
Bottom Connection, Stem Mounting									A															
Special									Z															
CONNECTION SIZE																								
1/8"										8														
1/4"										4														
Special										Z														
THREAD																								
NPT											N													
BSP (G)											B													
BSPT (R)											T													
Special											Z													
PRIMARY SCALE																								
UNITS - See Page 8																								
RANGE - See Page 8																								
SECONDARY SCALE																								
UNITS - See Page 8																								
OPTIONS																								
Black Rubber Boot																						S	Z	
Blowout Disk																						S	B	
Oxygen Cleaning																						S	L	
Stainless Steel Tag Plate																						S	M	
Test Certificate																						S	O	
U-Clamp																						S	H	
UL Approval (4,000 psi only)																						U	L	
No Options																						X	X	



## 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
- $\pm 1\%$  accuracy ( $\pm 0.5\%$  optional)
- 1 year warranty

## Applications:

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

## Specifications

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

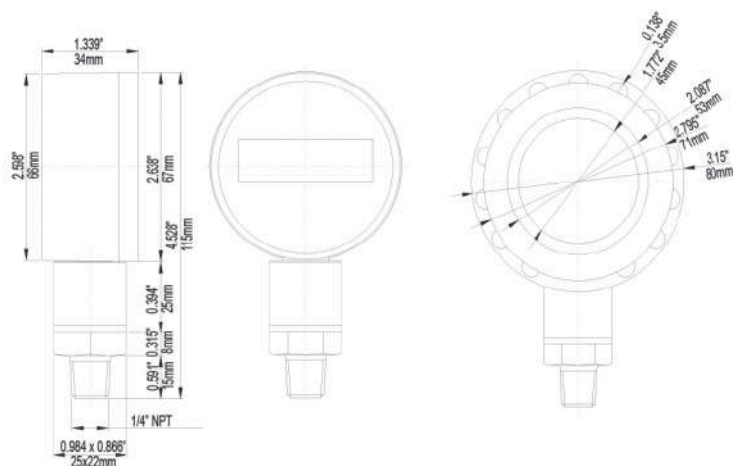
## Order Codes

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

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  $\pm 0.5\%$  Accuracy.**

### Option suffix:

5 =  $\pm 0.5\%$  Accuracy



Without Rubber Boot

With Rubber Boot

**Description & Features:**

- Premium aluminum case gauge designed to read head pressure
- Stainless steel or brass wetted parts
- PSI and Feet of Water scales
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

**Applications:**

- Used to indicate liquid level in tank or stand pipe, etc.
- Economical alternative for level measurement

Specifications	Stainless Steel Internals	Brass Internals
Dial	4.5" (115mm)	4.5" (115mm)
Case	Aluminum, painted black	Aluminum, painted black
Front Flange	SS, polished	SS, polished
Back Flange	Steel, painted black	Steel, painted black
Lens	Glass	Glass
Ring	SS, polished	SS, polished
Socket	316L SS	Brass
Connection	1/4" NPT or 1/2" NPT standard (other thread types are available)	1/4" NPT or 1/2" NPT standard (other thread types are available)
Bourdon Tube	316L SS	Phosphor bronze
Movement	SS	Brass
Pointer	Aluminum, anodized black, micrometer adjustable	Aluminum, anodized black, micrometer adjustable
Welding	316L SS 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	±0.5% ANSI/ASME Grade 2A	±0.5% ANSI/ASME Grade 2A
Enclosure Rating	IP52	IP52

## Order Codes

Dial Size	4.5" (115mm)	
Movement, Socket, Tube	Brass	SS
0/35 ft/water	PAL6008ALT	PAL6033ALT
0/70 ft/water	PAL6009ALT	PAL6034ALT
0/140 ft/water	PAL6010ALT	PAL6035ALT
0/230 ft/water	PAL6011ALT	PAL6036ALT
0/370 ft/water	PAL6012ALT	PAL6037ALT
0/460 ft/water	PAL6013ALT	PAL6038ALT
0/690 ft/water	PAL6014ALT	PAL6039ALT

Other ranges, units, connection sizes, thread types, dial sizes and gauge types 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. PAL6036ALT-B for BACK CONNECTION**

## Option suffix:

300BF = Back flange

B = Back connection

MAXI45 = Maximum adjustable pointer available

MS = Monel® socket and tube

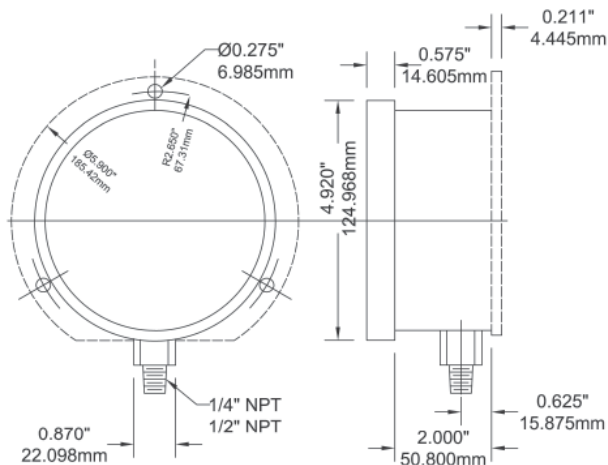
OST = Over stop protection

SFC = Solid front safety case

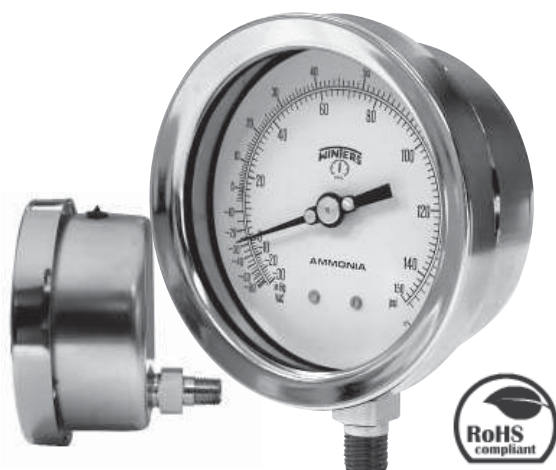
SG-45 = 4.5" (115mm) Safety glass lens

UST = Under stop protection

## 4.5" Bottom Connection with Standard Back Flange



Monel® is a registered trademark of Inco Alloys International

**Description & Features:**

- Wide variety to measure pressure and temperature of ammonia systems
- $\pm 0.5\%$  to  $\pm 3-2-3\%$  accuracy available
- 2.5" (63mm) to 10" (250mm) dial sizes
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

**Applications:**

- Used to display pressure and temperature on closed refrigeration systems

Note: RoHS applies to SS internals only

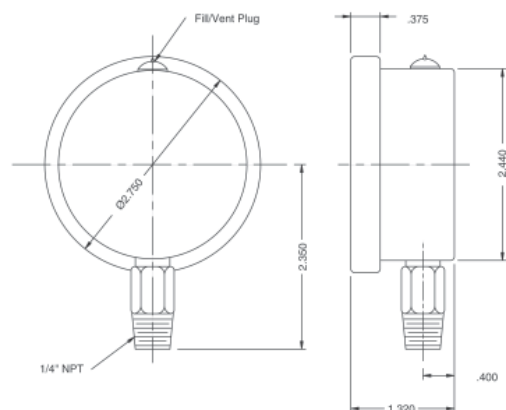
Specifications	Accuracy: $\pm 0.5\%$ to $\pm 1\%$	Accuracy: $\pm 1.5\%$	Accuracy: $\pm 3-2-3\%$
<b>Dial</b>	4" (100mm), 6" (150mm), 8.5" (215mm), 10" (250mm): White aluminum with black and red markings	2.5" (63mm), 3.5" (90mm), 4" (100mm): White aluminum with black and red markings	2.5" (63mm), 4" (100mm): White aluminum with black and red markings
<b>Case</b>	4" (100mm), 6" (150mm): AISI 304 SS 8.5" (215mm), 10" (250mm): Aluminum case	2.5" (63mm), 4" (100mm): AISI 304 SS 3.5" (90mm): Steel, painted black	2.5" (63mm), 4" (100mm): Steel, painted black
<b>Lens</b>	Polycarbonate	Polycarbonate	Polycarbonate
<b>Ring</b>	4" (100mm), 6" (150mm): 304 SS 8.5" (215mm), 10" (250mm): Aluminum	2.5" (63mm), 4" (100mm): 304 SS 3.5" (90mm): Steel painted black	2.5" (63mm), 4" (100mm): Steel painted black
<b>Socket</b>	316L SS	316L SS	2.5" (63mm): Steel 4" (100mm): Nickel plated steel
<b>Connection</b>	1/4" NPT (other thread types are available)	1/4" NPT (other thread types are available)	1/4" NPT (other thread types are available)
<b>Bourdon Tube</b>	316L SS, drawn seamless	316L SS, drawn seamless	316 SS
<b>Movement</b>	304 SS	304 SS	304 SS
<b>Pointer</b>	Aluminum, anodized black, micrometer adjustable	Aluminum, anodized black	Aluminum, anodized black
<b>Welding</b>	TIG	TIG	TIG
<b>Over-pressure Limit</b>	30% of full scale value	30% of full scale value	30% of full scale value
<b>Working Pressure</b>	Maximum 75% of full scale value	Maximum 75% of full scale value	Maximum 75% of full scale value
<b>Ambient/Process Temperature</b>	Dry: $-40^{\circ}\text{F}$ to $150^{\circ}\text{F}$ ( $-40^{\circ}\text{C}$ to $65^{\circ}\text{C}$ ) Glycerin filled: $-4^{\circ}\text{F}$ to $150^{\circ}\text{F}$ ( $-20^{\circ}\text{C}$ to $65^{\circ}\text{C}$ )	Dry: $-40^{\circ}\text{F}$ to $150^{\circ}\text{F}$ ( $-40^{\circ}\text{C}$ to $65^{\circ}\text{C}$ ) Glycerin filled: $-4^{\circ}\text{F}$ to $150^{\circ}\text{F}$ ( $-20^{\circ}\text{C}$ to $65^{\circ}\text{C}$ )	Dry: $-40^{\circ}\text{F}$ to $150^{\circ}\text{F}$ ( $-40^{\circ}\text{C}$ to $65^{\circ}\text{C}$ )
<b>Accuracy</b>	4" (100mm), 6" (150mm): $\pm 1\%$ ANSI/ASME Grade 1A 8.5" (215mm), 10" (250mm): $\pm 0.5\%$ ANSI/ASME Grade 2A	$\pm 1.5\%$ of full scale value	$\pm 3-2-3\%$ ANSI/ASME Grade B
<b>Enclosure Rating</b>	2.5" (63mm), 4" (100mm), 6" (150mm): IP65 8.5" (215mm), 10" (250mm): IP52	IP65	IP52

## Order Codes

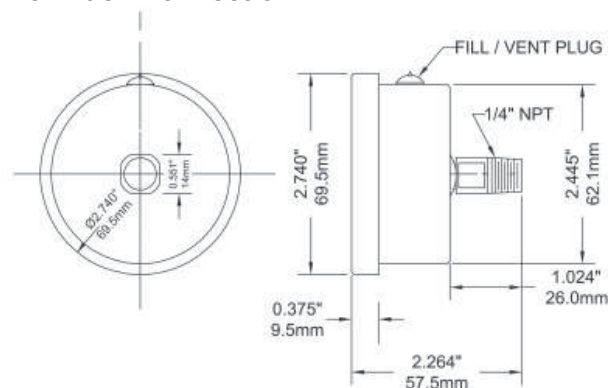
Dial Size	Accuracy: $\pm 0.5\%$ to $\pm 1\%$		Accuracy: $\pm 1.5\%$		Accuracy: $\pm 3-2-3\%$	
	30/0/150 psi/°F	30/0/300 psi/°F	30/0/150 psi/°F	30/0/300 psi/°F	30/0/150 psi/°F	30/0/300 psi/°F
2.5" (63mm) Bottom	-	-	PAM1750	PAM1751	PAM1699	PAM1700
2.5" (63mm) Back (CB)	-	-	PAM1752	PAM1753	-	-
3.5" (90mm) Bottom	-	-	PAM1717	PAM1818	-	-
4" (100mm) Bottom	PAM1705	PAM1706	PAM1701	PAM1702	PAM1695	PAM1696
4" (100mm) Back (LB)	PAM1708	PAM1709	-	-	-	-
4" (100mm) Back (CB)	-	-	PAM1703	PAM1704	PAM1697	PAM1698
6" (150mm) Bottom	PAM1710	PAM1711	-	-	-	-
8.5" (215mm) Bottom	PAM1712	PAM1713	-	-	-	-
10" (250mm) Bottom	PAM1714	PAM1715	-	-	-	-

Other ranges, connection sizes and thread types are available upon request. For scale change, refer to How to Order Guide for scale codes. Glycerin fill available (except on 8.5" (215mm), 10" (250mm) dials and gauges with a  $\pm 3-2-3\%$  accuracy). Front/back flange and u-clamp available.

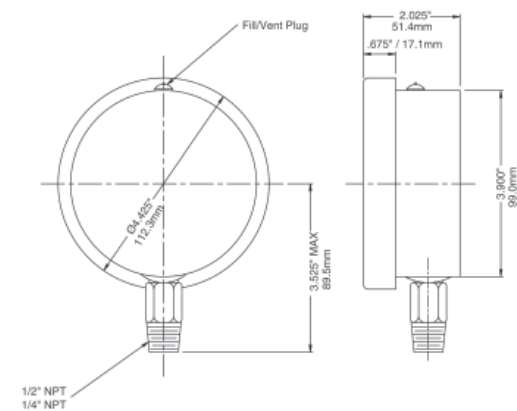
### 2.5" Bottom Connection



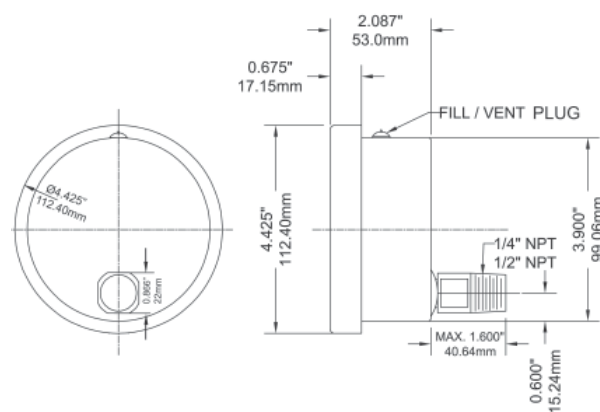
### 2.5" Back Connection



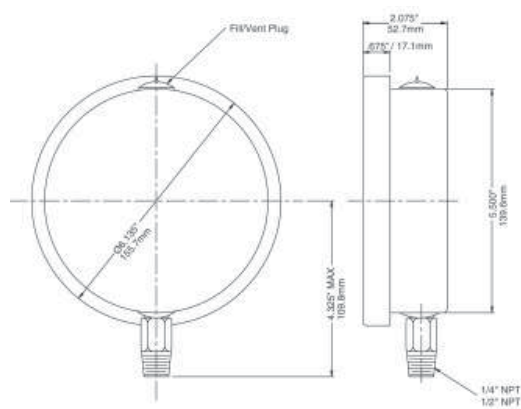
### 4" Bottom Connection



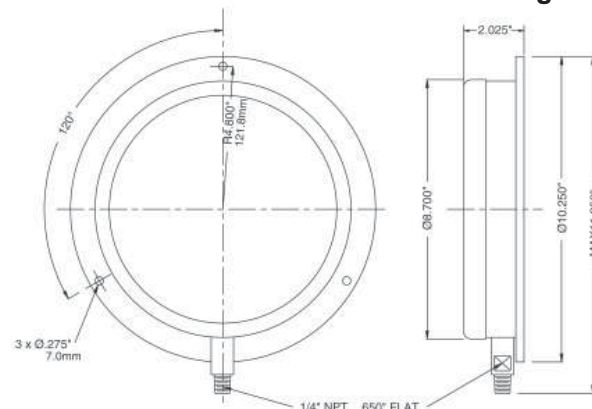
### 4" Back Connection



### 6" Bottom Connection

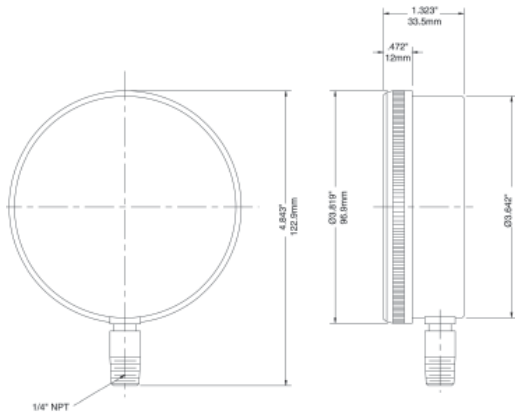


### 8.5" Bottom Connection with Back Flange

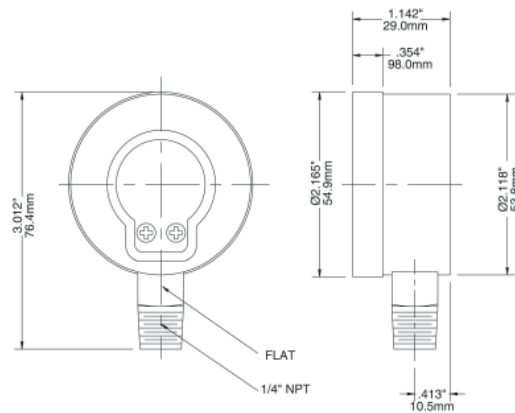




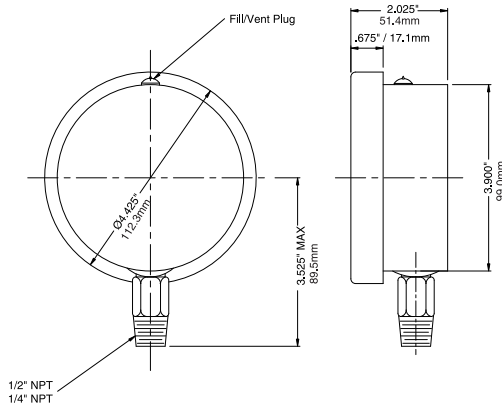
## PAM with Accuracy $\pm 1.5\%$ 3.5" Bottom Connection



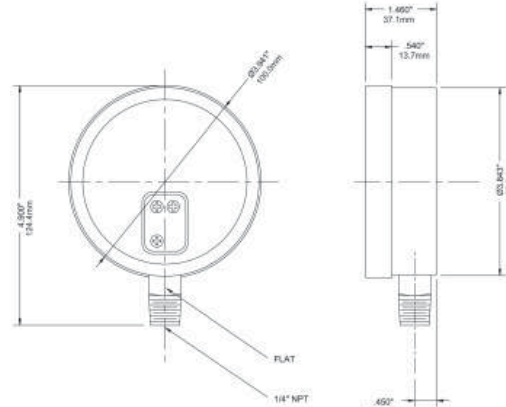
## PAM with Accuracy $\pm 3-2-3\%$ 2.5" Bottom Connection



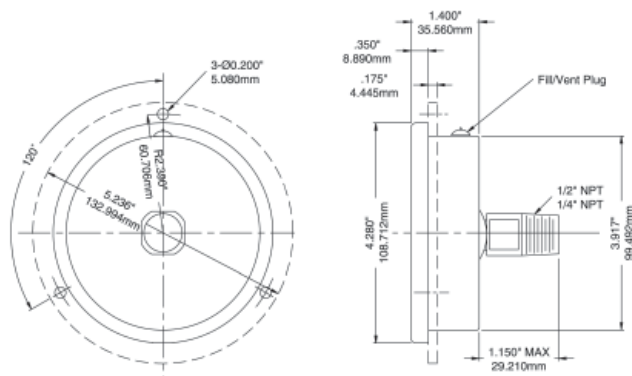
## 4" Bottom Connection



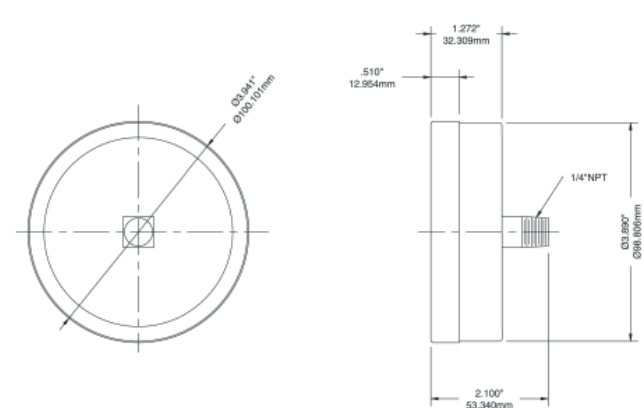
## 4" Bottom Connection



## 4" Back Connection

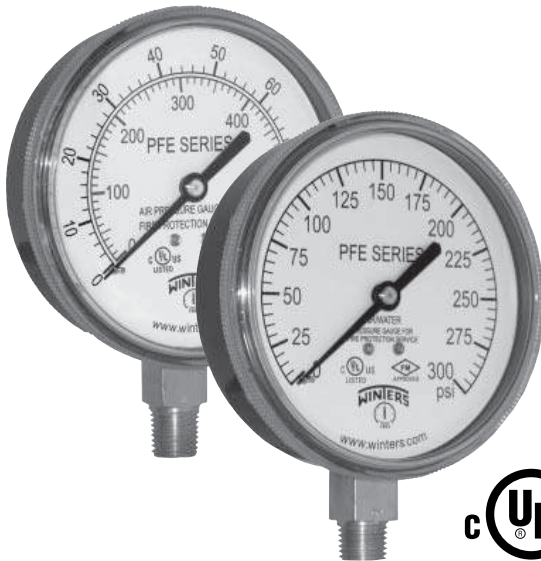


## 4" Back Connection



**Series Number (for custom, non-standard product)**

[illegible]



## Description & Features:

- Specially designed for fire sprinkler systems
- Suitable for air and water media
- Corrosion resistant case
- Dual scales (psi/kpa, psi/bar, psi/kg/cm<sup>2</sup>) and single scale (psi) pressure ratings
- Approved by Factory Mutual (FM) and listed by Underwriter Laboratory (UL-393), USA and Canada
- Internal pointer over-travel stop
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- Ideally suited for fire sprinkler systems and fire fighting equipment

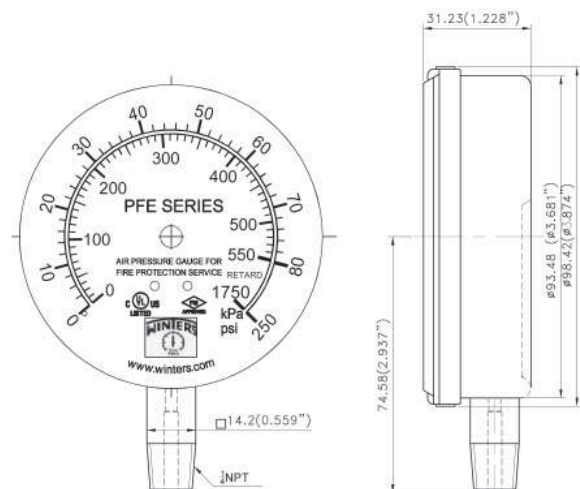


## Specifications

Dial	3.5" (90mm), white aluminum with black and red markings
Case	Black plastic
Lens	Polycarbonate, threaded
Socket	Brass
Connection	1/4" NPT standard, bottom
Bourdon Tube	Phosphor bronze
Movement	Brass
Pointer	Aluminum, black
Welding	Silver Alloy
Working Pressure	Maximum 75% of full scale value
Ambient/Process Temperature	-40°F to 150°F (-40°C to 65°C)
Accuracy	±3-2-3% ASME Grade B
Enclosure Rating	IP52

## Order Codes

Product	Air	Water	Air/Water
0/80/retard/250 psi	PFE3932R1	-	-
0/300 psi	-	PFE3933R1	PFE3935R1
0/80/retard/250 psi/kPa	PFE3932	-	-
0/300 psi/kPa	-	PFE3933	PFE3935



**Description & Features:**

- 2.5" (63mm) to 6" (150mm) durable gauges
- 2.5" (63mm) dial has a blue or red coloured case for easy identification
- Dual scale (psi/°F)
- Flutterless movement on the 2.5" (63mm)
- Chlorofluorocarbon (CFC) temperature scales (R-12, R-22 & R-502)
- Brass internals
- 1/4" NPT standard
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

**Applications:**

- Refrigeration equipment and refrigeration recovery equipment

Specifications	
Dial	2.5" (63mm), 4" (100mm), 6" (150mm): White aluminum
Case	2.5" (63mm): Plastic, colour coded, blue for low pressure and red for high pressure 4" (100mm), 6" (150mm): Steel, painted black
Lens	2.5" (63mm): Plexiglass, threaded 4" (100mm), 6" (150mm): Glass
Ring	2.5" (63mm): SS, crimped 4" (100mm): Brass, polished 6" (150mm): Steel, painted black
Connection	1/8" NPT or 1/4" NPT standard (other thread types are available)
Restrictor Screw	Standard
Recalibrator Screw	Standard
Bourdon Tube	2.5" (63mm): Phosphor bronze, vibration free (flutterless movement) 4" (100mm), 6" (150mm): Phosphor bronze
Pointer	Aluminum, anodized black
Welding	#50 tin solder
Over-pressure Limit	25% of full scale value
Scale	psi/°F (R-12/R-22/R-502)
Working Pressure	Maximum 75% of full scale value
Ambient/Process Temperature	-40°F to 158°F (-40°C to 70°C)
Accuracy	2.5" (63mm): ±2% of full scale value 4" (100mm), 6" (150mm): ±1% ANSI/ASME Grade 1A
Enclosure Rating	IP52

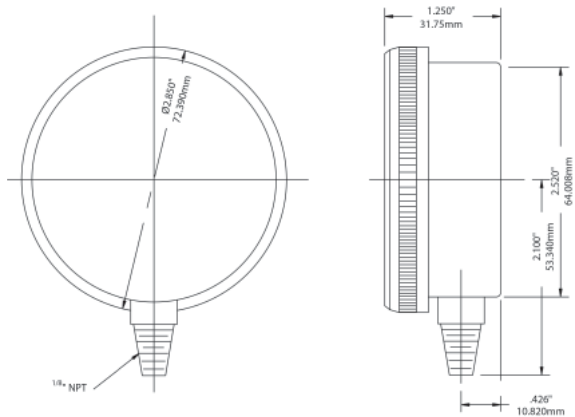
Specifications	
Dial	2.5" (63mm), 4" (100mm), 6" (150mm): White aluminum
Case	2.5" (63mm): Plastic, colour coded, blue for low pressure and red for high pressure 4" (100mm), 6" (150mm): Steel, painted black
Lens	2.5" (63mm): Plexiglass, threaded 4" (100mm), 6" (150mm): Glass
Ring	2.5" (63mm): SS, crimped 4" (100mm): Brass, polished 6" (150mm): Steel, painted black
Connection	1/8" NPT or 1/4" NPT standard (other thread types are available)
Restrictor Screw	Standard
Recalibrator Screw	Standard
Bourdon Tube	2.5" (63mm): Phosphor bronze, vibration free (flutterless movement) 4" (100mm), 6" (150mm): Phosphor bronze
Pointer	Aluminum, anodized black
Welding	#50 tin solder
Over-pressure Limit	25% of full scale value
Scale	psi/°F (R-12/R-22/R-502)
Working Pressure	Maximum 75% of full scale value
Ambient/Process Temperature	-40°F to 158°F (-40°C to 70°C)
Accuracy	2.5" (63mm): ±2% of full scale value 4" (100mm), 6" (150mm): ±1% ANSI/ASME Grade 1A
Enclosure Rating	IP52

## Order Codes

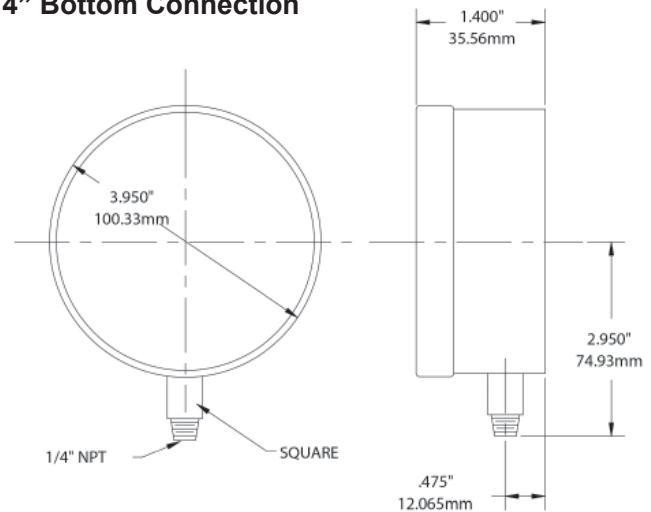
Dial Size	2.5" (63mm)		4" (100mm)		6" (150mm)	
Case Material	Plastic		Steel			
Connection	1/8" Bottom	1/8" Back	1/4" Bottom	1/4" Back	1/4" Bottom	1/4" Back
30°/0/120 psi (retard 250)	PFG1730	-	PFG1734	-	PFG1738	-
30°/0/300 psi	PFG1731	-	PFG1735	-	PFG1739	-
0/500 psi	PFG1732	-	PFG1736	-	PFG1740	-

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

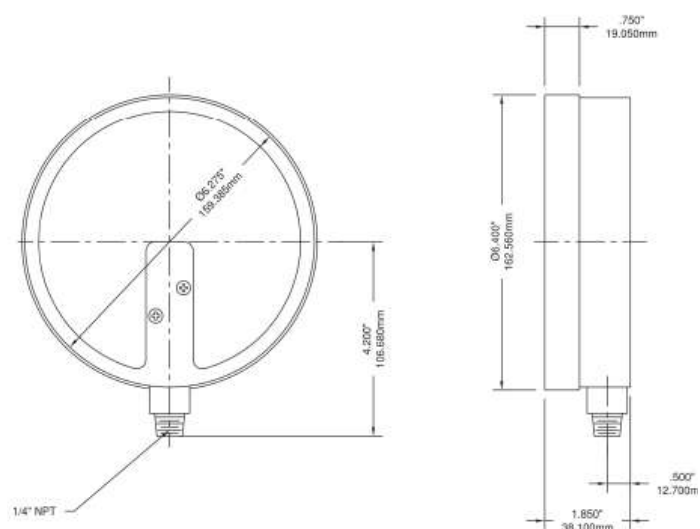
## 2.5" Bottom Connection



## 4" Bottom Connection



## 6" Bottom Connection





1. Bottom Connection  
2. Back Connection

#### Description & Features:

- Highly accurate reading of low pressures
- Brass or stainless steel wetted parts
- Ranges from 15" H<sub>2</sub>O/oz to 10 psi
- Overpressure 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
<b>Dial</b>	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
<b>Case</b>	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
<b>Lens</b>	2.5" (63mm), 4" (100mm): Polycarbonate 4.5" (115mm), 6" (150mm): Glass	2.5" (63mm), 4" (100mm): Polycarbonate 4.5" (115mm), 6" (150mm): Glass
<b>Ring</b>	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
<b>Socket</b>	AISI 316 SS	Brass
<b>Connection</b>	1/4" NPT standard (other thread types are available)	1/4" NPT standard (other thread types are available)
<b>Diaphragm Element</b>	AISI 316 SS	Phosphor bronze
<b>Movement</b>	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
<b>Pointer</b>	Aluminum, anodized black	Aluminum, anodized black
<b>Welding</b>	TIG	Solder/brazed
<b>Working Pressure</b>	75% of full scale value	60% of full scale value (fluctuating) 75% of full scale value (static)
<b>Over-pressure Limit</b>	30% of full scale value	30% of full scale value
<b>Ambient/Process Temperature</b>	-40°F to 150°F (-40°C to 65°C)	-40°F to 150°F (-40°C to 65°C)
<b>Accuracy</b>	±1.6% of full scale	±3-2-3% ANSI/ASME Grade B
<b>Enclosure Rating</b>	IP52	IP52

## Order Codes

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" 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/Overpressure protection
0/5 psi/kPa	PLP305OP
0/8 psi/kPa	PLP307OP
0/10 psi/kPa	PLP306OP

Other ranges, connection sizes and thread types are 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:

4PBT = 4" (100mm) PBT Enclosure

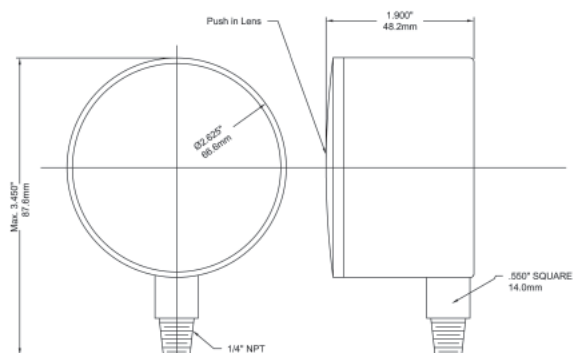
LPBF = Back flange (all sizes except 2.5" (63mm))

LPFF = 4.5" (115mm) Front flange

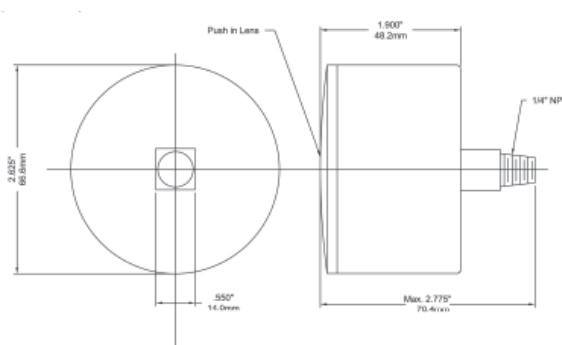
LPFF6 = 6" (150mm) Front flange

UC = 2.5" (63mm) U-clamp

### 2.5" Bottom Connection Brass

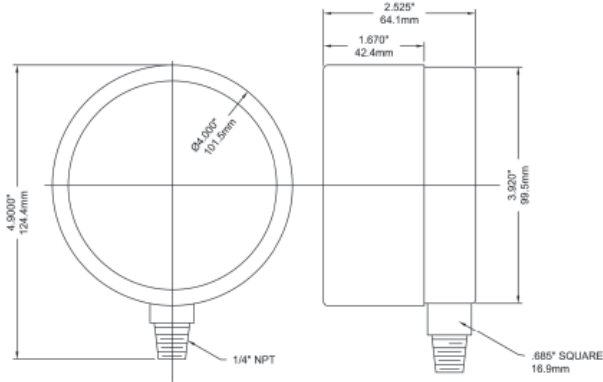


### 2.5" Back Connection Brass

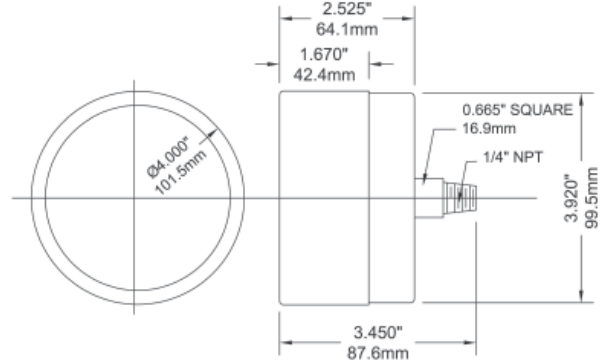




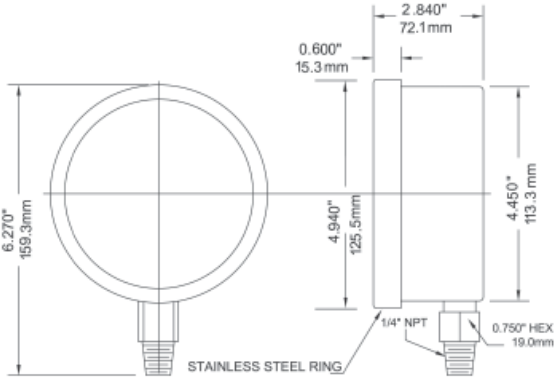
## 4" Bottom Connection Brass



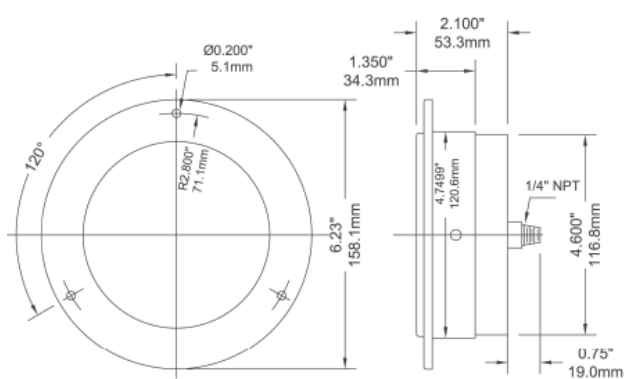
## 4" Back Connection Brass



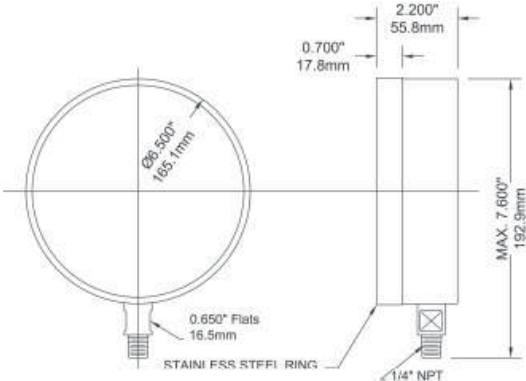
## 4.5" Bottom Connection Stainless Steel



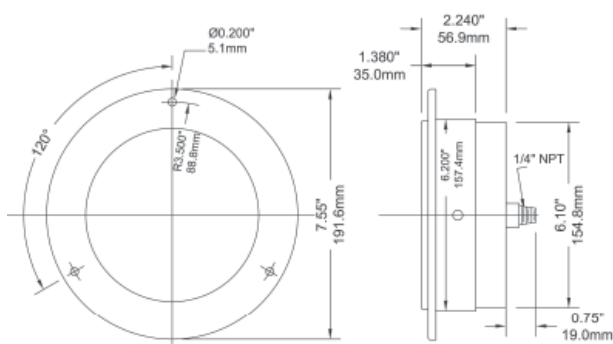
## 4.5" Back Connection Stainless Steel with Front Flange



## 6" Bottom Connection Stainless Steel



## 6" Back Connection Stainless Steel with Front Flange



Series Number (for custom, non-standard product)

	P	L	P	-			-		-		-		-			-			-		
SERIES																					
DIAL SIZE																					
2.5" (63mm)					2	5															
4.0" (100mm)					4	0															
4.5" (115mm)					4	5															
6.0" (150mm)					6	0															
CASE MATERIALS																					
304SS								T													
Aluminum								A													
Steel Painted Black								Y													
WETTED PARTS																					
Brass									B												
316SS									S												
CONFIGURATION																					
Bottom Connection, Stem Mounting									A												
Bottom Connection, Back Flange, Surface Mounting									B												
Bottom Connection, Front Flange, Surface Mounting									C												
Back Connection, Stem Mounting									D												
Back Connection, Back Flange, Surface Mounting									E												
Back Connection, Wide Front Flange, (Drilled) Panel Mounting									F												
Back Connection, Narrow Front Ring, Panel Mounting (Yoke)									V												
CONNECTION SIZE																					
1/4"										4											
1/2"										2											
Special										Z											
THREAD																					
NPT											N										
BSP (G)											B										
BSPT (R)											T										
Special											Z										
PRIMARY SCALE																					
UNITS - See Page 8																					
RANGE - See Page 8																					
SECONDARY SCALE																					
UNITS - See Page 8																					
OPTIONS																					
Oxygen Cleaning																			S	L	
Phenolic Case (only available with 4.5" case and SS internals)																			S	S	
Stainless Steel Tag Plate																			S	M	
Test Certificate																			S	O	
No Options																			X	X	



### Description & Features:

- Manufactured to GE® specifications
- Features a machined cast brass case with a machined cast aluminum bezel that is oil tight
- Consists of stainless steel and brass internals and stainless steel connection specific for turbine applications
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

### Applications:

- Removable bezel and lens with an adjustable micrometer pointer for in-place calibration

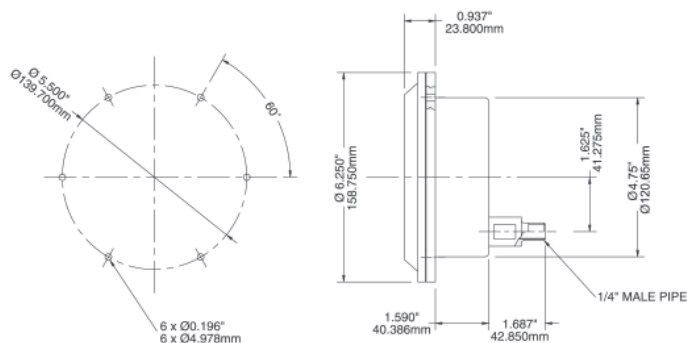
### Specifications

<b>Dial</b>	4.5" (115mm)
<b>Case</b>	Machined cast brass, painted black
<b>Lens</b>	Glass
<b>Bezel</b>	Machined cast aluminum bezel, painted black
<b>Socket</b>	316 SS
<b>Connection</b>	1/4" NPT standard
<b>Bourdon Tube</b>	316 SS
<b>Movement</b>	Brass
<b>Over-pressure Limit</b>	30% of full scale value
<b>Ambient/Process Temperature</b>	-40°F to 150°F (-40°C to 65°C)
<b>Working Pressure</b>	Maximum 75% of full scale value
<b>Accuracy</b>	±0.5% ANSI/ASME Grade 2A

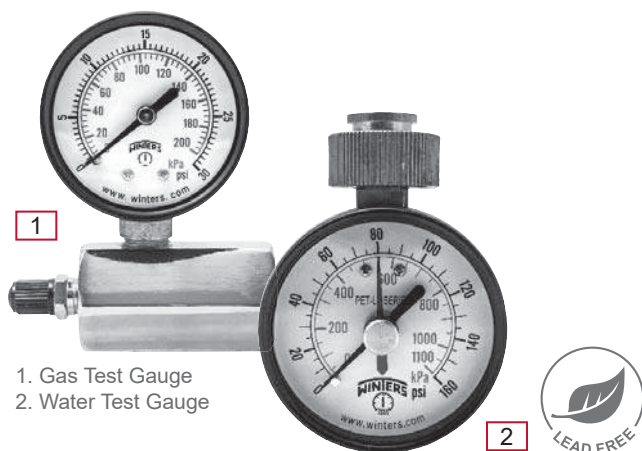
### Order Codes

Pressure Range	Code
0/60 psi	PTB4101GE
0/400 psi	PTB4106GE

Other ranges, connection sizes and thread types are available upon request. For scale change, refer to How to Order Guide for scale codes. Dial may require a service mark (i.e. "Pump Suction").



GE® is a registered trademark of General Electric. Gauges manufactured to GE® Drawing U175X.



## Description & Features:

- Economical pressure gauge and valve body assembly used for pressure testing
- Bleed port and plated housing on the gas test assembly
- Swivel hose adaptor on the Water Test Gauge
- Black steel case
- Brass or lead free brass wetted parts
- Dual scale (PSI/kPa)
- $\pm 3-2-3\%$  accuracy
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- Residential & commercial pressure testing of natural gas, air and water lines

## Specifications

<b>Dial</b>	2" (50mm), 2.5" (63mm) white aluminum with black and red markings
<b>Case</b>	Steel painted black
<b>Lens</b>	PETG: Polycarbonate PETM, PETM-LF, PETW, PETW-LF: Acrylic
<b>Ring</b>	Steel, painted black
<b>Bourdon Tube</b>	PET: Phosphor bronze PET-LF: Lead free phosphor bronze
<b>Movement</b>	Brass
<b>Pointer</b>	Aluminum, black
<b>Connection</b>	PETG: 3/4" NPTF (other thread types are available) PETM, PETM-LF, PETW, PETW-LF: 3/4" female swivel hose connection
<b>Maximum Pointer</b>	Available on Water Test Gauge only
<b>Welding</b>	#50 tin solder
<b>Ambient/Process Temperature</b>	-40°F to 150°F (-40°C to 65°C)
<b>Gas Test</b>	-40°F to 150°F (-40°C to 65°C)
<b>Water Test</b>	32°F to 150°F (0°C to 65°C)
<b>Working Pressure</b>	Maximum 75% of full scale value
<b>Accuracy</b>	$\pm 3-2-3\%$ ANSI/ASME Grade B
<b>Enclosure Rating</b>	IP52

## PET Order Codes

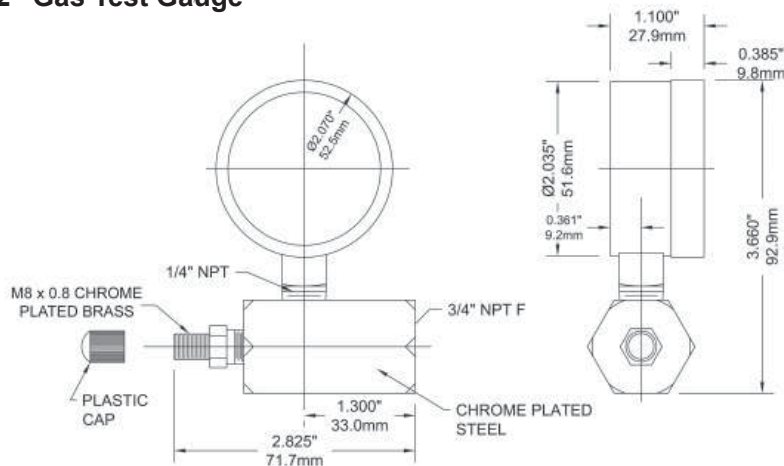
Product	Gas Test Gauge	Water Test Gauge	Maximum Pointer Water Test Gauge
Dial Size	2" (50mm)	2.5" (63mm)	2.5" (63mm)
Connection	Adapts to 3/4" NPTF	3/4" Female Swivel Hose Connection	3/4" Female Swivel Hose Connection
0/15 psi / 0/1 bar	PETG201R1R11	-	-
0/30 psi / 0/2 bar	PETG202R1R11	-	-
0/60 psi / 0/4 bar	PETG203R1R11	-	-
0/100 psi / 0/7 bar	PETG204R1R11	-	-
0/160 psi / 0/11 bar	PETG205R1R11	PETW213R1R11	PETM213R1R11
0/300 psi / 0/20 bar	-	PETW217R1R11	PETM217R1R11

## PET-LF Order Codes

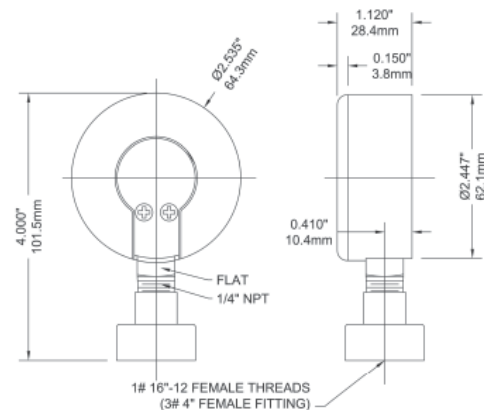
Product	Water Test Gauge	Maximum Pointer Water Test Gauge
Dial Size	2.5" (63mm)	2.5" (63mm)
Connection	3/4" Female Swivel Hose Connection	3/4" Female Swivel Hose Connection
0/160 psi/kPa	PETW213LF	PETM213LF
0/300 psi/kPa	PETW217LF	PETM217LF

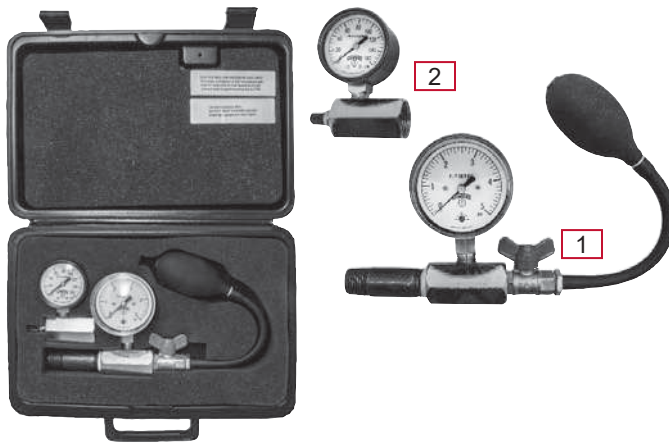
Other ranges, connection sizes and thread types are available upon request. For scale change, refer to How to Order Guide for scale codes.

## 2" Gas Test Gauge



## 2.5" Water Test Gauge





## Description & Features:

- Low and high pressure gauge kit in a protective plastic blow molded case
- Re-zero with external recalibration screw
- Plastic blow molded case for added durability
- Sleek design featuring secure latch
- Pump and fitting for simplified and quick connections
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- Portable leak and loss of pressure detection unit for gas and water lines

Specifications	Gas Test Gauge (1)	Water Test Gauge (2)
Dial	2.5" (63mm) white aluminum with black markings	2" (50mm) white aluminum with black markings
Case/Ring	Steel, painted black with steel ring	Steel, painted black
Lens	Polycarbonate snap in	Polycarbonate
Connection	Rubber hand pump with hose and mini ball valve with handle and 1/2" NPTF x 1/4" NPTF test block and 1/2" NPTM x 1/2" NPTM nipple	3/4" NPTF x M8x0.8 test block with cap
Pressure Range	0/5 psi	0/160 psi
Movement	Engineered plastic upper and lower plate with brass pinion and sector	Brass
Pointer	Aluminum, anodized black	Aluminum, black
Ambient Temperature	-40°F to 150°F (-40°C to 65°C)	-40°F to 150°F (-40°C to 65°C)
Accuracy	±3-2-3% ANSI/ASME Grade B	±3-2-3% ANSI/ASME Grade B
Enclosure Rating	IP52	IP52
Case	Plastic blow molded (11.875" x 18")	

## Order Codes

Kit	Additional Hand Pump
PGWT0100	PHPT0100



## Description & Features:

- Low pressure gauge kit in a protective plastic blow molded case
- Re-zero with external recalibration screw
- Plastic blow molded case for added durability
- Sleek design featuring secure latch
- Pump and fittings for simplified and quick connections
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

- Portable leak and loss of pressure detection unit for gas lines

### Gauge Specifications

Dial	2.5" (63mm) white aluminum with black markings
Case/Ring	Steel, painted black with steel ring
Lens	Polycarbonate snap in
Connection	Rubber hand pump with hose and mini ball valve with handle and 1/2" NPTF x 1/4" NPTF test block and 1/2" NPTM x 1/2" NPTM nipple, 1/2" NPTF x 3/4" NPTM adapter and 3/4" NPTF x 1" NPTM adapter
Movement	Engineered plastic upper and lower plate with brass pinion and sector
Pointer	Aluminum, anodized black
Ambient Temperature	-40°F to 150°F (-40°C to 65°C)
Accuracy	±3-2-3% ANSI/ASME Grade B
Enclosure Rating	IP52
Case	Plastic blow molded (11.875" x 18")

### Case and Accessory Specifications

Hand Pump and Hose	10" rubber hose with hand pump
Mini Ball Valve	SMV series valve with forged brass body 1/4" NPTF x 1/4" NPTM
Test Block	Chrome plated steel
Accessories	Pressure fitting with easy to install clamp
Nipple	Carbon steel 1/2" NPTM
Fittings	Carbon steel 1/2" NPTF x 3/4" NPTM and 3/4" NPTF x 1" NPTM

## Order Codes

Pressure Range	Code
0/5 psi	PLPT0005





## Description & Features:

- Low pressure gauge built into protective case for ease in use and durability
- Sensitive diaphragm gauge available in 3 pressure ranges
- Re-zero with external recalibration screw (PLT35 only)
- Easier to use than a manometer
- Plastic blow molded case for added durability
- Sleek design featuring secure latch
- Facilitates safe handling
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

## Applications:

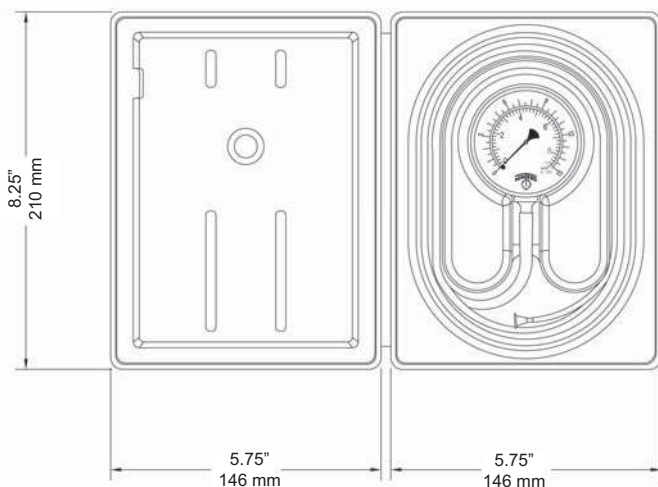
- Test kit for low pressure gas installations

Gauge Specifications	
Dial	2.5" (63mm), white aluminum with red and black markings
Case/Ring	Steel, painted black
Lens	Polycarbonate
Connection	Brass hose barb (1/4") (gear clamp included)
Diaphragm Element	Phosphor bronze
Movement	Engineering plastic upper and lower plate with brass pinion and sector, with zero adjustment*
Ambient Temperature	-40°F to 150°F (-40°C to 65°C)
Accuracy	±3-2-3% ANSI/ASME Grade B
Enclosure Rating	IP52

Case and Accessory Specifications	
Tube Nipple	Rubber: 0.256" (6.5mm) ID x 0.472" (12mm) OD x 1.339" (34mm) 1/4" NPTM x 1/4" hose barb
Case Material	Plastic blow molded: 5.75" x 8.25" (146mm x 210mm)
Hose Tube	Rubber: 3' (91cm) in length; 0.197" (5mm) ID x 0.315" (8mm) OD
Accessory	Easy to install clamp

## Order Codes

Pressure Range	Code
0/15" water / 0/8 oz/in <sup>2</sup>	PLT15
0/35" water / 0/20 oz/in <sup>2</sup>	PLT35
0/100" water / 0/58 oz/in <sup>2</sup>	PLT100



\*Zero adjustment available on PLT35 only

**Kit Contents**

1. Gauge
2. Gauge Adaptor
3. Bimetal Pocket Thermometer 0°F to 250°F (-17°C to 121°C)
4. Bimetal Pocket Thermometer -40°F to 160°F (-40°C to 71°C)
5. Carrying Case

**Description & Features:**

- A portable kit with durable carrying case to protect the test instruments between uses and test locations
- Includes two thermometers for high or low temperature tests
- Pressure gauge includes secondary adjustable set pointer to assist the operator in pressure test evaluations
- Hardened stainless steel gauge adaptor probe for test plug insertion
- Eliminates the need for costly, permanently installed pressure gauges or recording devices
- Multi-scale (psi/ft H<sub>2</sub>O/kPa/meters H<sub>2</sub>O) pressure gauge dial face for acceptance in a variety of applications
- CRN registered
- 5 year warranty

**Applications:**

- To determine pressure or temperature levels where test plugs are installed in the process
- Used at start-up or periodic testing of pipelines or pressure vessels
- Chilled and hot water systems, refrigeration and hydronics, pneumatics, prototype equipment, new building construction, building maintenance

**Specifications**

<b>Case</b>	Black plastic with custom cut foam inserts for parts
<b>Pressure Gauge</b>	3.5" (90mm) dial, brass wetted, 0-100 psi/Ft H <sub>2</sub> O/kPa/meters H <sub>2</sub> O, 1/4" NPT bottom with attached gauge adaptor ±2-1-2% ANSI/ASME Grade A, red stationary pointer
<b>Gauge Adaptor (picture #2)</b>	1.75" (45mm) x 0.125" (3mm) SS probe with 1/4" NPTF swivel gauge fitting
<b>Thermometer (picture #3)</b>	1" (25mm) dial, 5" (127mm) x 0.142" (4mm) stem, includes plastic sheath ±1% accuracy Range: 0°F to 250°F (-17°C to 121°C)
<b>Thermometer (picture #4)</b>	1" (25mm) dial, 5" (127mm) x 0.142" (4mm) stem, includes plastic sheath ±1% accuracy Range: -40°F to 160°F (-40°C to 71°C)

**Order Codes**

<b>Kit Code</b>
PTK1500



**Description & Features:**

- Developed for OEM applications
- Compact stainless steel construction with ceramic sensor
- Available ranges include Vac up to 8,700 psi (-1 up to 600 bar)
- Wide range of mechanical and electrical connections
- Zero and span adjustment option available
- $\pm 0.5\%$  accuracy ( $\pm 1\%$  for pressures  $\leq 45$  psi (3 bar))
- IP65 and IP67 enclosure ratings
- CE approved
- 1 year warranty

**Applications:**

- Suitable for a variety of applications including pump and compressor monitoring, refrigeration and HVAC

**Specifications**

<b>Output Signal</b>	Standard 2-wire: 4-20 mA / Vs = 12-30 Vdc Optional 3-wire: 0.5-4.5 Vdc / Vs = 10-30 Vdc / Vac
<b>Accuracy</b>	$\pm 0.5\%$ FSO ( $\pm 1\%$ FSO for pressures $\leq 45$ psi (3 bar))
<b>Response Time</b>	<10 ms
<b>Insulation</b>	>100 M $\Omega$ @ 50V
<b>Permissible Temperatures</b>	Operating: -40°F to 212°F (-40°C to 100°C) (185°F (85°C) maximum zero span) Compensating: 14°F to 176°F (-10°C to 80°C) (158°F (70°C) maximum zero span)
<b>Pressure Port / Housing</b>	304 SS
<b>Wetted Parts</b>	Seals: NBR Diaphragm: Ceramic
<b>Current Consumption</b>	2-wire: 25 mA max 3-wire voltage: 5 mA (short-circuit current 20 mA)
<b>EMC</b>	EMI: EN50081-1/-2 EMS: EN50082-2
<b>Stability</b>	Vibration: 10 g / 5 Hz to 200 Hz Shock: 20 g / 11 ms
<b>Operation Life</b>	2 M cycles
<b>Approval</b>	CE

**Order Codes**

Range	Over-pressure	Burst Pressure*	Code
30" Hg Vac	15 psi	30 psi	LE130VC
30"/0/30 psi	45 psi	90 psi	LE10030
30"/0/60 psi	75 psi	150 psi	LE10060
30"/0/100 psi	150 psi	300 psi	LE10100
30"/0/150 psi	225 psi	450 psi	LE10150
0/15 psi	23 psi	45 psi	LE115
0/25 psi	38 psi	75 psi	LE125
0/50 psi	75 psi	150 psi	LE150
0/60 psi	90 psi	180 psi	LE160
0/100 psi	150 psi	300 psi	LE1100
0/150 psi	225 psi	450 psi	LE1150
0/200 psi	300 psi	600 psi	LE1200
0/300 psi	450 psi	900 psi	LE1300
0/500 psi	750 psi	1,500 psi	LE1500
0/1,000 psi	1,500 psi	3,000 psi	LE11000
0/2,000 psi	3,000 psi	6,000 psi	LE12000
0/3,000 psi	4,500 psi	9,000 psi	LE13000
0/5,000 psi	7,500 psi	15,000 psi	LE15000
0/5,800 psi	8,700 psi	17,400 psi	LE16000
0/7,250 psi	10,875 psi	21,750 psi	LE17500
0/8,700 psi	13,050 psi	26,100 psi	LE18500

Range	Over-pressure	Burst Pressure*	Code
-1/0 bar	1 bar	2 bar	LE130VCR11
-1/3 bar	4.5 bar	9 bar	LE10030R11
-1/4 bar	6 bar	12 bar	LE10060R11
-1/6 bar	9 bar	18 bar	LE10100R11
-1/10 bar	15 bar	30 bar	LE10150R11
0/1 bar	2 bar	3 bar	LE115R11
0/1.6 bar	2 bar	5 bar	LE125R11
0/2.5 bar	4 bar	8 bar	LE150R11
0/4 bar	6 bar	12 bar	LE160R11
0/6 bar	9 bar	18 bar	LE1100R11
0/10 bar	15 bar	30 bar	LE1150R11
0/16 bar	24 bar	48 bar	LE1200R11
0/25 bar	38 bar	75 bar	LE1300R11
0/40 bar	60 bar	120 bar	LE1500R11
0/60 bar	90 bar	180 bar	LE11000R11
0/100 bar	150 bar	300 bar	LE12000R11
0/160 bar	240 bar	480 bar	LE13000R11
0/250 bar	375 bar	750 bar	LE15000R11
0/300 bar	450 bar	900 bar	LE15500R11
0/400 bar	600 bar	1,200 bar	LE16000R11
0/500 bar	750 bar	1,500 bar	LE17500R11
0/600 bar	900 bar	1,800 bar	LE18500R11

Other connections available upon request. **For options, attach suffix to end of order code: i.e. LE1150-SP for ZERO SPAN.**

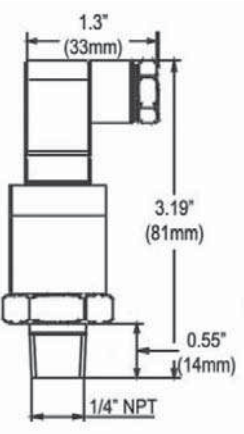
**Option suffix:**

SP = Zero span

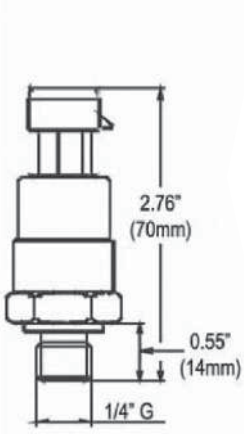
\*LE1 Zero and span burst pressure = 2.5 x rated pressure

Electrical Connection\*

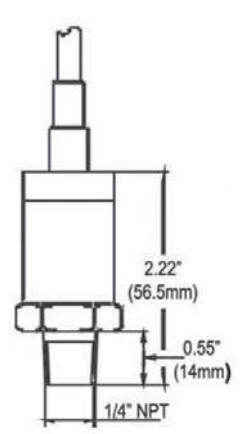
Micro



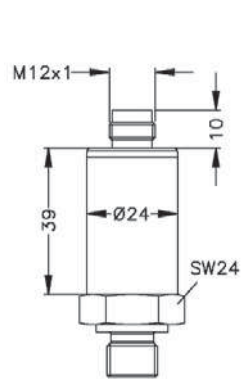
Packard



Cable Leads

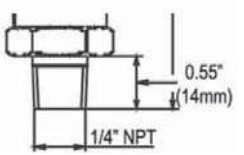


M12

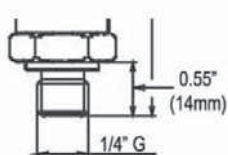


Mechanical Connection

Standard

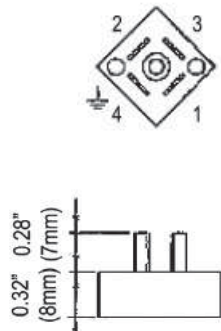


Optional

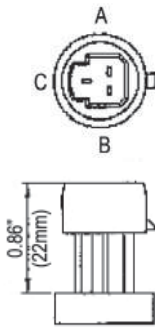


Wiring Diagram

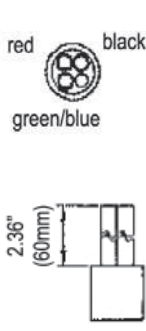
Micro



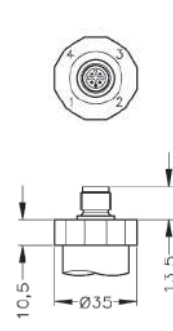
Packard



Cable Leads



M12



\* See LE1 zero span drawing online for dimensions and connection options

Micro			Packard			Cable Leads			M12	
Pin #:	2-wire (current):	3-wire (voltage):	Pin #:	2-wire (current):	3-wire (voltage):	Cable Colours:	2-wire (current):	3-wire (voltage):	Pin #:	Electrical Connection
1	Vcc	Vcc	A	No Connection	Ground	Red	Vcc	Vcc	1	Supply+
2	Iout	Ground	B	Vcc	Vcc	Green/Blue	Iout	Vout	2	Supply-
3	No Connection	Vout	C	Iout	Vout	Black	No Connection	Ground	3	Signal+ (for 3-wire)
4	Shield	Shield	-	-	-	Yellow	Shield	Shield	4	Shield

**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
- 1 year warranty

**Applications:**

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

**Specifications**

<b>Output Signal</b>	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: $V_{sig} = 0.5-4.5$ Vs / $V_s = 5 \pm 0.5$ Vdc
<b>Accuracy</b>	$\pm 0.5\%$ FSO
<b>Permissible Load</b>	2-wire: $R_{max} = [(V_s - V_{s \min}) / 0.02]$ Ohm 3-wire: $R_{min} = 10$ kOhm
<b>Influence Effects</b>	Supply: 0.05% FSO / 10 V Load: 0.05% FSO / kOhm
<b>Response Time</b>	2-wire: <10 ms 3-wire: <3 ms
<b>Measuring Rate</b>	1 kHz
<b>Thermal Error</b>	$< \pm 0.5\%$ FSO / 10K
<b>Permissible Temperatures</b>	Medium: $-13^\circ\text{F}$ to $257^\circ\text{F}$ ( $-25^\circ\text{C}$ to $125^\circ\text{C}$ ) Electronics environment: $-13^\circ\text{F}$ to $185^\circ\text{F}$ ( $-25^\circ\text{C}$ to $85^\circ\text{C}$ ) Storage: $-40^\circ\text{F}$ to $185^\circ\text{F}$ ( $-40^\circ\text{C}$ to $85^\circ\text{C}$ )
<b>Short-circuit Protection</b>	Permanent 3-wire ratiometric: None
<b>Reverse Polarity Protection</b>	No damage. No function.
<b>Electromagnetic Protection</b>	Emission and immunity according to EN 61326
<b>Stability</b>	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
<b>Pollution Degree</b>	4, electrical equipment for outdoor use
<b>Pressure Port / Housing</b>	304 SS
<b>Wetted Parts</b>	Seals: FKM (Viton® standard). Diaphragm: Ceramic $\text{Al}_2\text{O}_3$ 96%
<b>Weight</b>	120 g
<b>Current Consumption</b>	2-wire: 25 mA max 3-wire voltage: 5 mA (short-circuit current 20 mA) 3-wire ratiometric: 1.5 mA
<b>Long-term Stability</b>	$< \pm 0.3\%$ FSO/yr at reference conditions
<b>Operation Life</b>	$> 100 \times 10^6$ cycles
<b>CE Conformity</b>	EMC directive: 2004/108/EC Pressure equipment directive: 97/23/EC (module A). Valid for devices with max permissible overpressure $> 3,000$ psi

Viton® is a registered trademark of DuPont Performance Elastomers

## Order Codes

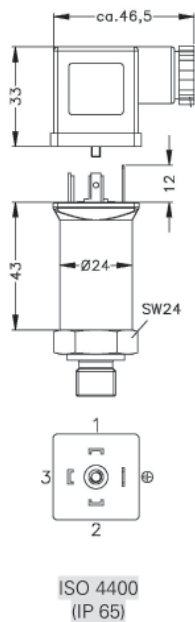
Range	Over-pressure	Burst Pressure	Code
30" Hg Vac	15 psi	44 psi	LE330VC
0/15 psi	15 psi	44 psi	LE315
0/25 psi	58 psi	102 psi	LE325
0/50 psi	58 psi	102 psi	LE350
0/60 psi	145 psi	218 psi	LE360
0/100 psi	145 psi	218 psi	LE3100
0/150 psi	290 psi	508 psi	LE3150
0/200 psi	580 psi	1,015 psi	LE3200
0/300 psi	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

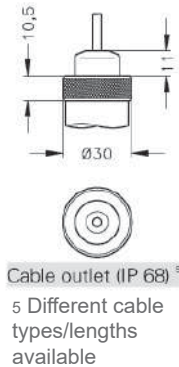
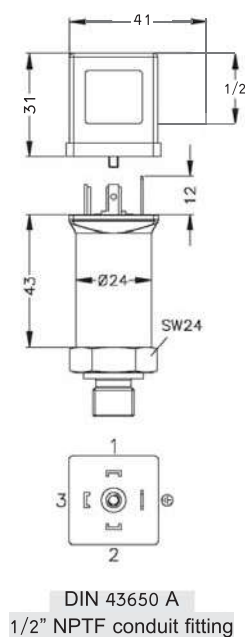
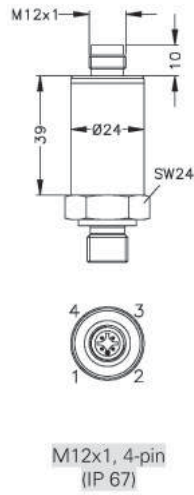
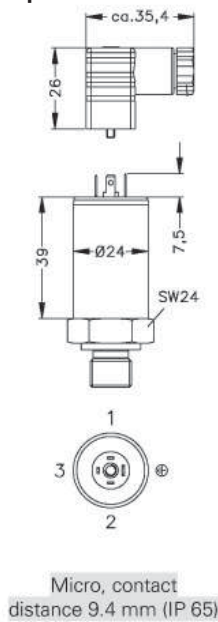
Range	Over-pressure	Burst Pressure	Code
0/-1 bar	1 bar	3 bar	LE330VCR11
0/1 bar	1 bar	3 bar	LE315R11
0/1.6 bar	4 bar	7 bar	LE325R11
0/2.5 bar	4 bar	7 bar	LE350R11
0/4 bar	12 bar	15 bar	LE360R11
0/6 bar	12 bar	15 bar	LE3100R11
0/10 bar	20 bar	25 bar	LE3150R11
0/16 bar	50 bar	70 bar	LE3200R11
0/25 bar	50 bar	70 bar	LE3300R11
0/40 bar	120 bar	150 bar	LE3500R11
0/60 bar	120 bar	150 bar	LE31000R11
0/100 bar	200 bar	200 bar	LE32000R11
0/160 bar	400 bar	500 bar	LE33000R11
0/250 bar	400 bar	500 bar	LE35000R11

## Electrical Connection

### Standard

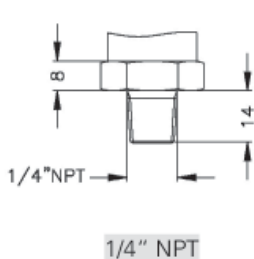


### Optional

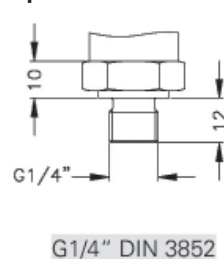


## Mechanical Connection

### Standard



### Optional

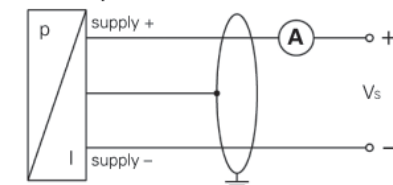


Note: Measurements are in mm

## Wiring Diagram

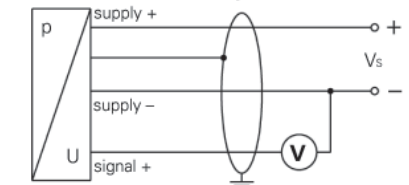
### Standard

#### 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



## Series Number (for custom, non-standard product)

	L	E	3	-		-		-		-		-		-		-		-	
<b>SERIES</b>																			
<b>RANGE (PSI)</b>																			
30" Hg					V		1												
15					1		5												
25					2		5												
50					5		0												
60					6		0												
100					1		T												
150					2		T												
200					3		T												
300					4		T												
500					5		T												
1000					1		F												
2000					6		T												
3000					7		T												
5000					8		T												
<b>PRESSURE</b>																			
Gauge								R											
<b>OUTPUT</b>																			
4...20 mA / 2-wire (std)									1										
0...10 V / 3-wire									3										
0.5...4.5 V / 3-wire ratiometric									R										
<b>ACCURACY</b>																			
0.5%										5									
<b>ELECTRICAL CONNECTION</b>																			
Male and female plug ISO 4400 (std)										1	0								
Male and female plug Micro										C	1								
Male plug M12x1 (4-pin), plastic										M	0								
Female 1/2" conduit fitting										2	C								
Cable Outlet (6')										T	R								
<b>MECHANICAL CONNECTION</b>																			
1/4" NPT (std)												N	4						
G1/4" DIN 3852												3	0						
<b>SEALS</b>																			
FKM Viton (std)																	1		
<b>SPECIAL</b>																			
Standard																		S	

Contact your Winters rep for custom requirements

Series Number (for custom, non-standard product)

	L	E	3	-			-		-		-			-			-		
SERIES																			
RANGE (BAR)																			
-1						V													5
1						1													B
1.6						2													B
2.5						3													B
4						4													B
6						5													B
10						6													B
16						7													B
25						8													B
40						9													B
60						1													M
100						2													M
160						3													M
250						4													M
PRESSURE																			
Gauge										R									
OUTPUT																			
4...20 mA / 2-wire (std)																			1
0...10 V / 3-wire																			3
0.5...4.5 V / 3-wire ratiometric																			R
ACCURACY																			
0.5%																			5
ELECTRICAL CONNECTION																			
Male and female plug ISO 4400 (std)																			1 0
Male and female plug Micro																			C 1
Male plug M12x1 (4-pin), plastic																			M 0
Female 1/2" conduit fitting																			2 C
Cable Outlet (6')																			T R
MECHANICAL CONNECTION																			
1/4" NPT (std)																			N 4
G1/4" DIN 3852																			3 0
SEALS																			
FKM Viton (std)																			1
SPECIAL																			
Standard																			S

Contact your Winters rep for custom requirements



## 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
- 1 year warranty

## Applications:

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

## Specifications

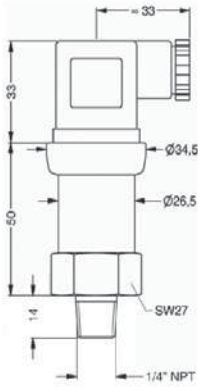
<b>Output Signal</b>	Standard 2-wire: 4-20 mA / Vs = 8-32 Vdc I.S. protection: Vs = 14-28 Vdc Optional 3-wire: 0-20 mA / Vs = 14-30 Vdc 0-10 V / Vs = 14-30 Vdc
<b>Accuracy</b>	±0.5% FSO IEC 60770
<b>Permissible Load</b>	Current 2-wire: Rmax = [(Vs - Vs min) / 0.02] Ohm Current 3-wire: Rmax = 500 Ohm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

## Order Codes

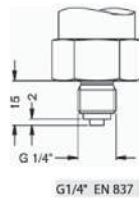
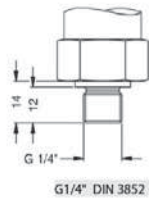
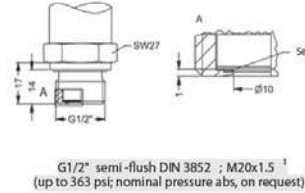
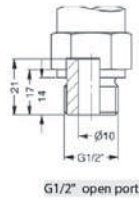
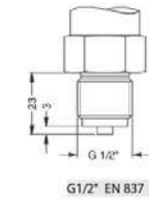
Range	Over-pressure	Burst Pressure	Code
30" Hg Vac	58 psi	102 psi	LIM428
0/15 psi	29 psi	58 psi	LIM429
0/20 psi	58 psi	73 psi	LIM435
0/35 psi	58 psi	73 psi	LIM445
0/60 psi	145 psi	174 psi	LIM447
0/85 psi	145 psi	174 psi	LIM448
0/145 psi	290 psi	363 psi	LIM449
0/230 psi	580 psi	725 psi	LIM450
0/360 psi	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

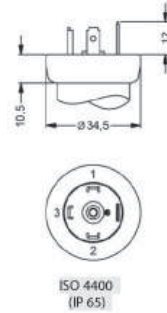


### Optional

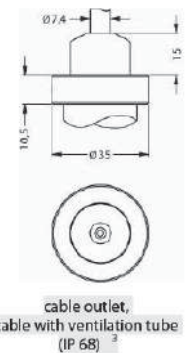
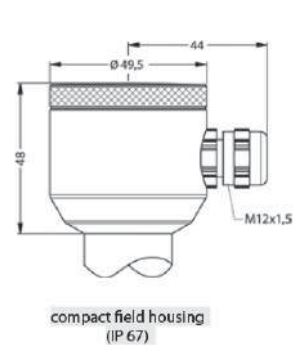
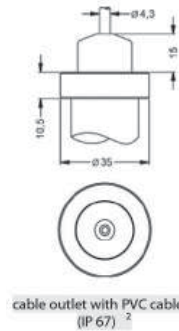
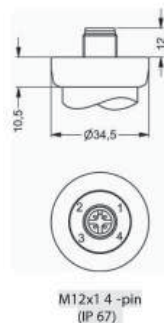
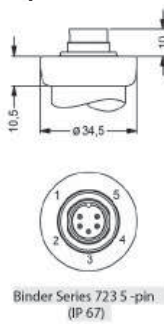


## Electrical Connection

### Standard



### 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	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)

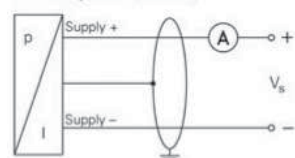
Note: Measurements are in mm

- <sup>1</sup> Possible for nominal pressure ranges ≤ 360 psi
- <sup>2</sup> Standard: 2m PVC cable without ventilation tube.  
Optional: Cable with ventilation tube
- <sup>3</sup> Different cable types/lengths available

## Wiring Diagram

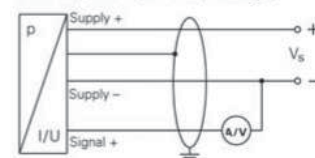
### Standard

2-wire-system (current)



### Optional

3-wire-system (current / voltage)



## Series Number (for custom, non-standard product)

	L	I	M																
SERIES																			
RANGE (PSI)																			
30"Hg				V	1														
15				1	5														
20				2	0														
35				3	5														
60				6	0														
85				8	5														
145				1	T														
230				2	T														
360				3	T														
580				4	T														
870				5	T														
1500				1	F														
2300				6	T														
3600				7	T														
5800				8	T														
8700				9	T														
PRESSURE																			
Gauge						R													
OUTPUT																			
4...20 mA / 2-wire (std)																			
0...20 mA / 3-wire																			
0...10 V / 3-wire																			
ACCURACY																			
0.50%																			
ELECTRICAL CONNECTION																			
Male and female plug ISO 4400 (std)																			
Binder series 723 (5-pin)																			
M12x1 (4-pin)																			
Female 1/2" conduit fitting																			
Cable gland incl. cable *																			
Cable outlet																			
Male plug Buccaneer IP68																			
Field housing stainless steel																			
MECHANICAL CONNECTION																			
1/4" NPT (std)																			
1/2" NPT																			
G1/2" DIN 3852																			
G1/2" EN 837																			
G1/4" DIN 3852																			
G1/4" EN 837																			
G1/2" DIN 3852 with semi-flush sensor																			
G1/2" DIN 3852 open pressure port																			
SEALS																			
For Pn<1450 psi / FKM (Viton std)																			
For Pn<1450 psi / FKM (Kalrez optional)																			
For Pn>1450 psi / NBR (Buna N)																			
PRESSURE PORT																			
316Ti SS																			
DIAPHRAGM																			
Ceramic Al <sub>2</sub> O <sub>3</sub> 96%																			
SPECIAL																			
Standard																			

\* different cable types and lengths available; standard: 2m PVC cable without ventilation tube, optional cable with ventilation tube  
Contact your Winters rep for custom requirements



## 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
- 1 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 <sub>N</sub> < 1,450 psi: FKM70. Others available. P <sub>N</sub> > 1,450 psi: FKM90. Others available. Diaphragm: Ceramic Al <sub>2</sub> O <sub>3</sub> 96%

Weight	140 g
Current Consumption	Current: 25 mA max Voltage: 7 mA max
Operating Life	>100 x 10 <sup>6</sup> 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

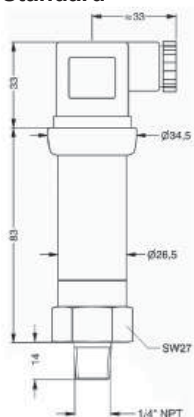
## Order Codes

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

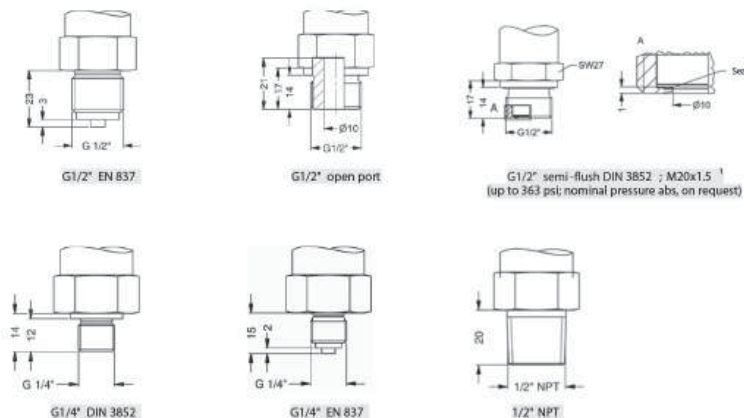
Note: Intrinsically safe approval only applies to 4-20mA output signal

## Mechanical Connection

### Standard

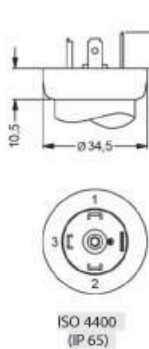


### Optional



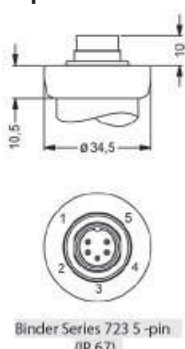
## Electrical Connection

### Standard

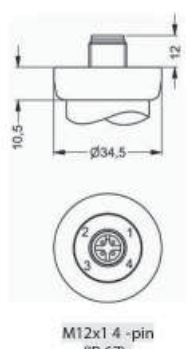


ISO 4400  
(IP 65)

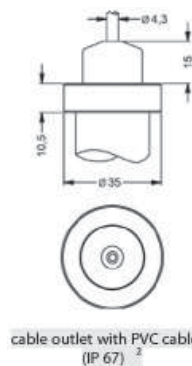
### Optional



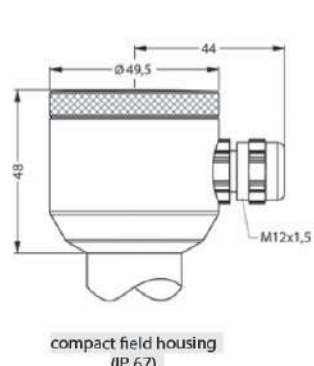
Binder Series 723 5-pin  
(IP 67)



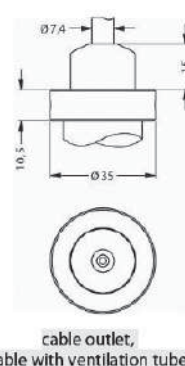
M12x1 4-pin  
(IP 67)



cable outlet with PVC cable  
(IP 67) <sup>3</sup>





compact field housing  
(IP 67)



cable outlet,  
cable with ventilation tube  
(IP 68) <sup>3</sup>

## Pin Configuration

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)

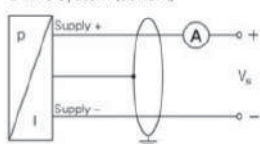
Note: Measurements are in mm

- <sup>1</sup> Possible for nominal pressure ranges ≤ 360 psi  
<sup>2</sup> Standard: 2m PVC cable without ventilation tube.  
 Optional: Cable with ventilation tube  
<sup>3</sup> Different cable types/lengths available

## Wiring Diagram

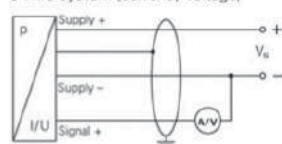
### Standard

2-wire-system (current)



### Optional

3-wire-system (current / voltage)





Series Number (for custom, non-standard product)

	L	I	S	-			-		-		-			-		-				
SERIES																				
RANGE (PSI)																				
30"Hg																				
15					1	5														
20					2	0														
35					3	5														
60					6	0														
85					8	5														
145					1	T														
230					2	T														
360					3	T														
580					4	T														
870					5	T														
1500					1	F														
2300					6	T														
3600					7	T														
5800					8	T														
8700					9	T														
PRESSURE																				
Gauge							R													
OUTPUT																				
4...20 mA / 2-wire intrinsic safe (std)								S												
0...20 mA / 3-wire								2												
0...10 V / 3-wire								3												
ACCURACY																				
0.5%									5											
ELECTRICAL CONNECTION																				
Male and female plug ISO 4400 (std)									1	0										
Binder series 723 (5-pin)									2	0										
M12x1 (4-pin)									M	1										
Female 1/2" conduit fitting									2	C										
Cable gland incl. cable *									4	0										
Cable outlet									T	R										
Field housing stainless steel									8	0										
MECHANICAL CONNECTION																				
1/4" NPT (std)									N	4										
1/2" NPT									N	0										
G1/2" DIN 3852									1	0										
G1/2" EN 837									2	0										
G1/4" DIN 3852									3	0										
G1/4" EN 837									4	0										
G1/2" DIN 3852 with semi-flush sensor									F	0										
G1/2" DIN 3852 open pressure port									H	0										
SEALS																				
For Pn<1450 psi / FKM (Viton std)																				
For Pn<1450 psi / FKM (Kalrez optional)																				
For Pn>1450 psi / NBR (Buna N)																				
PRESSURE PORT																				
316 L SS																				
DIAPHRAGM																				
Ceramic Al <sub>2</sub> O <sub>3</sub> 96%																				
SPECIAL																				
Standard																				

\* different cable types and lengths available; standard: 2m PVC cable without ventilation tube, optional cable with ventilation tube  
Contact your Winters rep for custom requirements

**Description & Features:**

- Compact stainless steel construction with stainless steel sensor
- Available in in/H<sub>2</sub>O to 25 psi
- Wide range of mechanical and electrical connections
- $\pm 0.5\%$  accuracy
- NEMA 4X and 6P / IP65, IP67 and IP68
- CE and RoHS compliant
- Customizable
- 1 year warranty

**Applications:**

- Developed for low pressure applications in general industry and OEM applications

**Specifications**

<b>Output Signal</b>	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 / $V_s = 5 \pm 0.5$ Vdc
<b>Accuracy</b>	$\pm 0.5\%$ FSO
<b>Permissible Load</b>	2-wire: $R_{max} = [(V_s - V_{s\ min}) / 0.02]$ Ohm 3-wire: $R_{min} = 10$ kOhm
<b>Influence Effects</b>	Supply: 0.05% FSO / 10 V Load: 0.05% FSO / kOhm
<b>Response Time</b>	2-wire: <10 ms 3-wire: <3 ms
<b>Measuring Rate</b>	1 kHz
<b>Thermal Error</b>	$< \pm 0.3\%$ FSO / 10K in compensated range 32°F to 158°F (0°C to 70°C)
<b>Permissible Temperatures</b>	Medium: -13°F to 185°F (-25°C to 85°C) Electronics environment: -13°F to 185°F (-25°C to 85°C) Storage: -40°F to 185°F (-40°C to 85°C)
<b>Short-circuit Protection</b>	Permanent 3-wire ratiometric: None
<b>Reverse Polarity Protection</b>	No damage. No function.
<b>Electromagnetic Protection</b>	Emission and immunity according to EN 61326
<b>Stability</b>	Vibration: 10 g, 25 Hz to 2 kHz according to DIN EN 60068-2-6 Shock: 100 g / 1 ms according to DIN EN 60068-2-27
<b>Pressure Port / Housing</b>	304 SS
<b>Wetted Parts</b>	Seals: FKM (Viton® standard) Diaphragm: 316L SS
<b>Weight</b>	120 g
<b>Current Consumption</b>	2-wire: 25 mA max 3-wire voltage: 5 mA (short-circuit current 20 mA) 3-wire ratiometric: 1.5 mA
<b>CE Conformity</b>	EMC directive: 2004/108/EC

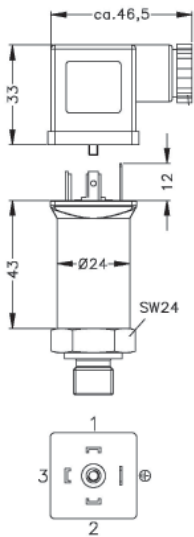
Viton® is a registered trademark of DuPont Performance Elastomers

## Order Codes

Range	Over-pressure	Burst Pressure	Code
0/1 psi (28" H <sub>2</sub> O)	15 psi	22 psi	LLP0001
0/2 psi (55" H <sub>2</sub> O)	15 psi	22 psi	LLP0002
0/3 psi (83" H <sub>2</sub> O)	15 psi	22 psi	LLP0003
0/5 psi (138" H <sub>2</sub> O)	15 psi	22 psi	LLP0005
0/10 psi	44 psi	73 psi	LLP0010
0/15 psi	44 psi	73 psi	LLP0015
0/25 psi	87 psi	145 psi	LLP0025

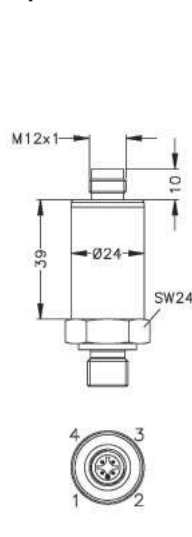
## Electrical Connection

### Standard

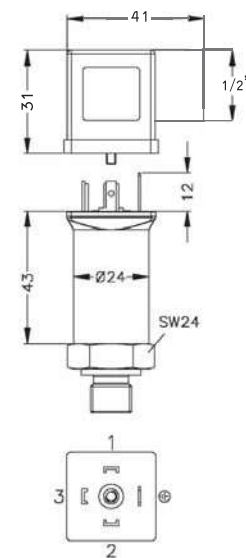


ISO 4400  
(IP 65)

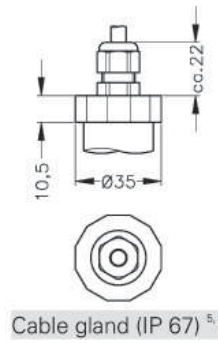
### Optional



M12x1, 4-pin  
(IP 67)



DIN 43650 A  
1/2" NPTF conduit fitting



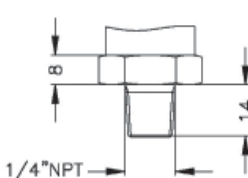
Cable gland (IP 67) <sup>5,6</sup>

<sup>5</sup> Different cable types/lengths available

<sup>6</sup> Standard: 2m PVC cable without ventilation tube.  
Optional: Cable with ventilation tube

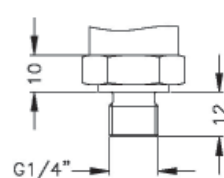
## Mechanical Connection

### Standard



1/4" NPT

### Optional

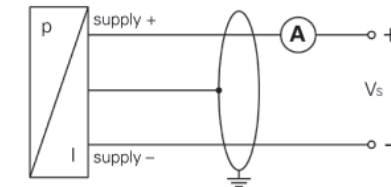


G1/4" DIN 3852

## Wiring Diagram

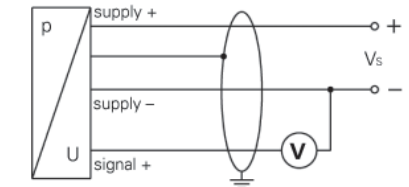
### Standard

#### 2-wire-system (current)



### Optional

#### 3-wire-system (voltage)



Note: Measurements are in mm

## Pin Configuration

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

## Series Number (for custom, non-standard product)

	L	L	P	-			-		-		-			-			-		
SERIES																			
RANGE (PSI)																			
1					0	1													
2					0	2													
3					0	3													
10					1	0													
15					1	5													
25					2	5													
PRESSURE																			
Gauge							R												
OUTPUT																			
4...20 mA / 2-wire (std)								1											
0...10 V / 3-wire								3											
0.5...4.5 V / 3-wire ratiometric								R											
ACCURACY																			
0.5%									5										
ELECTRICAL CONNECTION																			
Male and female plug ISO 4400 (std)										1	0								
Male plug M12x1 (4-pin), plastic										M	0								
Female 1/2" conduit fitting										2	C								
Cable Outlet (6')										T	R								
MECHANICAL CONNECTION																			
1/4" NPT (std)												N	4						
G1/4" DIN 3852												3	0						
SEALS																			
FKM Viton (std)																	1		
SPECIAL																			
Standard																		S	

Contact your Winters rep for custom requirements



## Description & Features:

- Heavy-duty submersible transmitter for level measurement in sludge and slurry installations
- 316L SS housing with anti-clogging sensor and reinforced diaphragm seal
- Standard ranges from 5 thru 25 psi, optional ranges up to 100 psi
- $\pm 0.5\%$  accuracy
- 40' of vented cable standard, other lengths also available
- NEMA 6P / IP68 for full immersion
- 1 year warranty

## Applications:

- Manufactured for level measurement in sludge and slurry installations

## Specifications

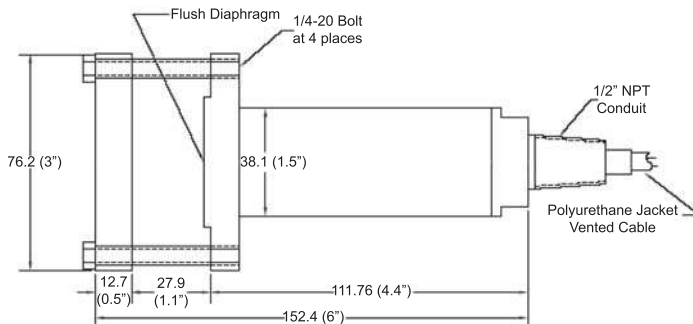
<b>Output Signal</b>	Standard 2-wire: 4-20 mA / $V_s = 8-38$ Vdc Optional 3-wire: 0-5 V / $V_s = 8-38$ Vdc
<b>Accuracy</b>	Standard: $\pm 0.5\%$ FSO Optional: $\pm 0.25\%$ FSO
<b>Response Time</b>	<5 ms
<b>Permissible Temperature</b>	Operating: 0°F to 200°F (-18°C to 93°C) Storage: -20°F to 250°F (-29°C to 121°C)
<b>Reverse Polarity Protection</b>	No damage. No function.
<b>Short Circuit Protection</b>	Up to 40 Vdc
<b>Electromagnetic Compatibility</b>	Internal filtering
<b>Housing</b>	316L SS
<b>Pressure Port</b>	Flush mount
<b>Diaphragm</b>	316L SS, triple seated
<b>Weight</b>	570 g (without cable)
<b>Electrical Connector</b>	1/2" NPTM submersible conduit
<b>Lightning Protection</b>	MOV and dual gas discharge tube
<b>Enclosure Rating</b>	NEMA 6P/IP68

## Order Codes

Range	Over-pressure	Burst Pressure	Code
0/5 psi	10 psi	25 psi	LM1005
0/10 psi	20 psi	50 psi	LM1010
0/15 psi	30 psi	75 psi	LM1015
0/25 psi	50 psi	125 psi	LM1025

## Pin Configuration

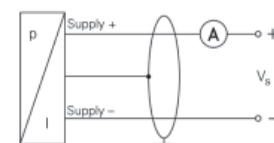
Electrical Connection		Cable Colours
2-wire system	Supply + Supply -	Red / Pin 1 / Pin A Black / Pin 2 / Pin B
3-wire system	Supply + Supply - Signal + Supply -	Red / Pin 1 / Pin A Black / Pin 2 / Pin B Green / Pin 3 / Pin C + Sig ref to -Power



## Wiring Diagram

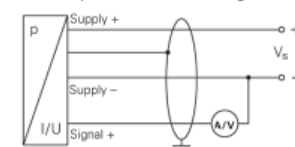
### Standard

2-wire-system (current)



### Optional

3-wire-system (current / voltage)



**Description & Features:**

- Slimline probe is especially suited for applications with restricted space
- Designed for continuous level measurement in water or other liquids with low viscosity
- 316L SS probe with stainless steel sensor for ease in cleaning
- Available ranges from H<sub>2</sub>O up to 300 psi
- ±0.35% accuracy rating
- NEMA 6P / IP68
- Approved for outdoor use
- Customizable
- 1 year warranty

**Applications:**

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

**Specifications**

<b>Output Signal</b>	Standard 2-wire: 4-20 mA / V <sub>s</sub> = 12-36 Vdc
<b>Accuracy</b>	±0.35% FSO BFSL Optional nominal pressure > 5 psi: <±0.25% FSO BFSL
<b>Permissible Load</b>	R <sub>max</sub> = [(V <sub>s</sub> - V <sub>s</sub> min) / 0.02] Ohm
<b>Influence Effects</b>	Supply: 0.05% FSO / 10 V Load: 0.05% FSO / kOhm
<b>Long-term Stability</b>	<±0.1% FSO/yr
<b>Response Time</b>	<10 ms
<b>Permissible Temperatures</b>	Medium: 14°F to 158°F (-10°C to 70°C) Storage: -13°F to 158°F (-25°C to 70°C)
<b>Reverse Polarity Protection</b>	No damage. No function.
<b>Electromagnetic Protection</b>	Emission and immunity according to EN 61326
<b>Electrical Connection</b>	Cable with sheath material*: PVC grey, PUR black, FEP black
<b>Housing</b>	316Ti SS
<b>Seals</b>	FKM (Viton®, Kalrez®) / EPDM (Nordel®)
<b>Diaphragm</b>	316L SS
<b>Weight</b>	100 g (without cable)
<b>Current Consumption</b>	25 mA max
<b>Connecting Cables</b>	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
<b>Enclosure Rating</b>	NEMA 6P / IP68

**Thermal Errors (Offset and Span)**

Nominal Pressure (psi)	<1	<4	<5	<15	>15
Tolerance Band (% FSO)	<±2	<±1.5	<±1	<±1	<±0.75
TC, Average (% FSO/10K)	±0.3	±0.2	±0.14	±0.1	±0.07
Compensated Range	32°F to 122°F 0°C to 50°C			32°F to 158°F 0°C to 70°C	

**Pin Configuration**

Electrical Connection		Cable Colours
2-wire system	Supply + Supply -	White Brown
	Ground	Yellow/green (shield)

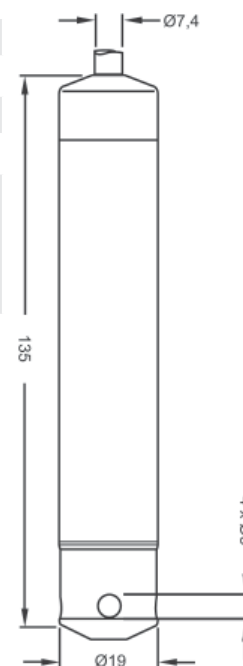
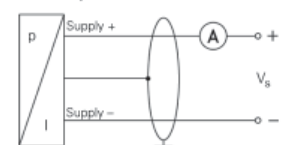
**Order Codes**

Range	Over-pressure	Burst Pressure	Code
0/50" water	15 psi	22 psi	LM3W05
0/100" water	15 psi	22 psi	LM3W10
0/150" water	15 psi	22 psi	LM3W15
0/200" water	15 psi	22 psi	LM3W20
0/300" water	15 psi	22 psi	LM3W30
0/400" water	15 psi	22 psi	LM3W40
0/5 psi	15 psi	44 psi	LM3005
0/10 psi	44 psi	109 psi	LM3010
0/15 psi	44 psi	109 psi	LM3015
0/25 psi	87 psi	218 psi	LM3025
0/50 psi	290 psi	218 psi	LM3050
0/100 psi	290 psi	725 psi	LM3100
0/200 psi	870 psi	1,740 psi	LM3200
0/300 psi	1,450 psi	1,740 psi	LM3300

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**Wiring Diagram**

2-wire-system (current)



Note: Measurements are in mm. Cable not included (specify type and length)

\* Cable with integrated air tube for atmosphere pressure reference

Series Number (for custom, non-standard product)

	L	M	3	-				-		-		-				
SERIES																
RANGE (PSI)																
0-50" H2O					W	0	5									
0-100" H2O					W	1	0									
0-150" H2O					W	1	5									
0-200" H2O					W	2	0									
0-300" H2O					W	3	0									
0-400" H2O					W	4	0									
0-5 PSI					0	0	5									
0-10 PSI					0	1	0									
0-15 PSI					0	1	5									
0-25 PSI					0	2	5									
0-50 PSI					0	5	0									
0-100 PSI					1	0	0									
0-200 PSI					2	0	0									
0-300 PSI					3	0	0									
OUTPUT																
4-20 mA 2 WIRE (std)								1								
0-20 mA 3 WIRE								2								
0-10 VDC 3 WIRE								3								
SPECIAL								9								
SEALS																
FKM (Viton (std), Kalrez (optional))								1								
EPDM (Nordel)								2								
SPECIAL								9								
ACCURACY																
0.25%										2						
SPECIAL										9						
ELECTRICAL CONNECTION																
PVC CABLE											1					
PUR CABLE											2					
FEP CABLE											3					
SPECIAL											9					
CABLE LENGTH																
FEET x 5													X	X		



**Description & Features:**

- Designed for continuous level measurement in water or other liquids with low viscosity
- 316L SS probe with stainless steel sensor for ease of cleaning
- Available ranges from H<sub>2</sub>O up to 300 psi
- ±0.1% to ±0.35% accuracy ratings
- NEMA 6P / IP68. Approved for outdoor use
- Customizable
- 1 year warranty

**Applications:**

- Typical installations include ground or tank level monitoring of water and sewage treatment measurement

**Specifications**

<b>Output Signal</b>	Standard 2-wire: 4-20 mA / V <sub>s</sub> = 8-32 Vdc Optional 3-wire: 0-20 mA / V <sub>s</sub> = 14-30 Vdc 0-10 V / V <sub>s</sub> = 14-30 Vdc
<b>Accuracy</b>	±0.35% FSO Optional nominal pressure ≥ 5 psi: ≤±0.25% FSO BFSL All nominal pressure <±0.1% FSO BFSL
<b>Permissible Load</b>	Current 2-wire: R <sub>max</sub> = [(V <sub>s</sub> - V <sub>s min</sub> ) / 0.02] Ohm Current 3-wire: R <sub>max</sub> = 500 Ohm Voltage 3-wire: R <sub>min</sub> = 10 kOhm
<b>Influence Effects</b>	Supply: 0.05% FSO / 10 V Load: 0.05% FSO / kOhm
<b>Long-term Stability</b>	<±0.1% FSO/yr
<b>Response Time</b>	≤10 ms*
<b>Permissible Temperatures</b>	Medium: 14°F to 158°F (-10°C to 70°C) Storage: -13°F to 158°F (-25°C to 70°C)
<b>Reverse Polarity Protection</b>	No damage. No function.
<b>Electromagnetic Compatibility</b>	Emission and immunity according to EN 61326
<b>Electrical Connection</b>	Cable with sheath material**: PVC grey, PUR black, FEP black, others available
<b>Pollution Degree</b>	4, electrical equipment for outdoor use
<b>Housing</b>	316L SS
<b>Seals</b>	FKM, others available
<b>Diaphragm</b>	316L SS
<b>Weight</b>	200 g (without cable)
<b>Current Consumption</b>	Current: 25 mA max Voltage: 7 mA max
<b>Connecting Cables</b>	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
<b>Enclosure Rating</b>	NEMA 6P / IP68

\* With optional accuracy 0.1% FSO the response time is 200 ms

\*\* Cable with integrated air tube for atmospheric pressure reference

Note: Measurements are in mm. Total length of devices with accuracy 0.1% FSO IEC 60770 increases by 35mm. Cable not included (specify type and length)

**Order Codes**

Range	Over-pressure	Burst Pressure	Code
0/50" water	7 psi	22 psi	LM6W05
0/100" water	15 psi	22 psi	LM6W10
0/150" water	29 psi	44 psi	LM6W15
0/200" water	29 psi	44 psi	LM6W20
0/300" water	73 psi	109 psi	LM6W30
0/400" water	73 psi	109 psi	LM6W40
0/5 psi	15 psi	22 psi	LM6005
0/10 psi	73 psi	109 psi	LM6010
0/15 psi	73 psi	109 psi	LM6015
0/25 psi	145 psi	218 psi	LM6025
0/50 psi	145 psi	218 psi	LM6050
0/100 psi	580 psi	725 psi	LM6100
0/200 psi	580 psi	725 psi	LM6200
0/300 psi	1,160 psi	1,740 psi	LM6300

**Thermal Errors (Offset and Span)**

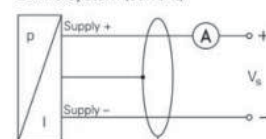
Nominal Pressure (psi)	<5	>5
Tolerance Band (% FSO)	<±1	<±0.75
Compensated Range	32°F to 158°F 0°C to 70°C	

**Pin Configuration**

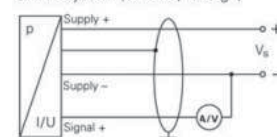
Electrical Connection		Cable Colours (DIN 47100)
2-wire system	Supply +	White
	Supply -	Brown
	Ground	Yellow/green (shield)
3-wire system	Supply +	White
	Supply -	Brown
	Signal +	Green
	Ground	Yellow/green (shield)

**Wiring Diagram**

2-wire-system (current)



3-wire-system (current / voltage)



## Series Number (for custom, non-standard product)

	L	M	6	-				-		-		-			
<b>SERIES</b>															
<b>RANGE (PSI)</b>															
0-50" H2O					W	0	5								
0-100" H2O					W	1	0								
0-150" H2O					W	1	5								
0-200" H2O					W	2	0								
0-300" H2O					W	3	0								
0-400" H2O					W	4	0								
0-5 PSI					0	0	5								
0-10 PSI					0	1	0								
0-15 PSI					0	1	5								
0-25 PSI					0	2	5								
0-50 PSI					0	5	0								
0-100 PSI					1	0	0								
0-200 PSI					2	0	0								
0-300 PSI					3	0	0								
<b>OUTPUT</b>															
4-20 mA 2 WIRE (std)								1							
0-20 mA 3 WIRE								2							
0-10 VDC 3 WIRE								3							
SPECIAL								9							
<b>SEALS</b>															
FKM (Viton (std), Kalrez (optional))								1							
EPDM (Nordel)								2							
SPECIAL								9							
<b>ACCURACY</b>															
0.35%										2					
SPECIAL										9					
<b>ELECTRICAL CONNECTION</b>															
PVC CABLE											1				
PUR CABLE											2				
FEP CABLE											3				
SPECIAL											9				
<b>CABLE LENGTH</b>															
FEET x 5													X	X	

**Description & Features:**

- Designed for continuous level measurement in water or wastewater (thin film)
- Good linearity for long term stability
- Available ranges up to 300 psi
- Wide range of mechanical and electrical connections
- $\pm 0.5\%$  accuracy
- NEMA 6P / IP68. Approved for outdoor use
- Customizable
- 1 year warranty

**Applications:**

- Appropriate for all level and depth measurement applications including open tanks, ground water monitoring, sewage and water treatment facilities

**Specifications**

<b>Output Signal</b>	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
<b>Accuracy</b>	$\leq \pm 0.5\%$ FSO
<b>Permissible Load</b>	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
<b>Influence Effects</b>	Supply: 0.05% FSO / 10 V Load: 0.05% FSO / kOhm
<b>Response Time</b>	$\leq 10$ ms
<b>Thermal Error</b>	$\leq \pm 0.2\%$ FSO / 10K
<b>Permissible Temperatures</b>	Medium: 14°F to 158°F (-10°C to 70°C) Storage: -13°F to 158°F (-25°C to 70°C)
<b>Short Circuit Protection</b>	Permanent
<b>Reverse Polarity Protection</b>	No damage. No function.
<b>Electromagnetic Protection</b>	Emission and immunity according to EN 61326
<b>Connecting Cables</b>	Cable capacitance: Signal line/shield and signal line/signal line: 160 pF/m Cable inductance: Signal line/shield and signal line/signal line: 1 $\mu$ H/m
<b>Electrical Connection</b>	Cable with sheath material: PVC grey, PUR black, FEP black
<b>Pollution Degree</b>	4, electrical equipment for outdoor use
<b>Housing</b>	316L SS
<b>Seals</b>	FKM (Viton®, Kalrez®) / EPDM
<b>Diaphragm</b>	Ceramic $Al_2O_3$ 96%
<b>Protection Cap</b>	POM
<b>Current Consumption</b>	Current: 25 mA max Voltage: 7 mA max
<b>Weight</b>	250 g (without cable)
<b>Enclosure Rating</b>	NEMA 6P / IP68
<b>CE Conformity</b>	EMC directive: 2004/108/EC

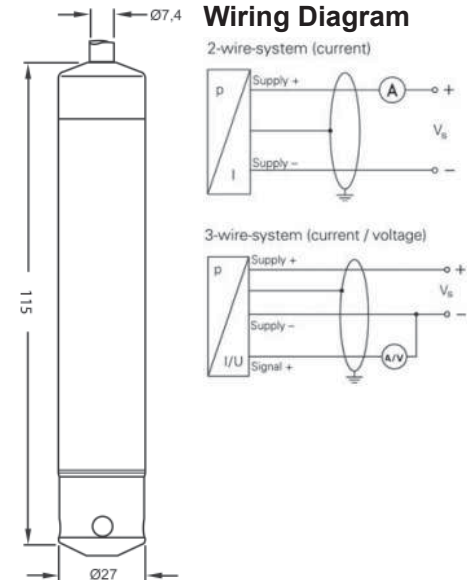
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**Order Codes**

Range	Over-pressure	Burst Pressure	Code
0/8 psi	9 psi	58 psi	LM7008
0/15 psi	29 psi	58 psi	LM7015
0/20 psi	58 psi	73 psi	LM7020
0/35 psi	58 psi	73 psi	LM7035
0/60 psi	145 psi	174 psi	LM7060
0/100 psi	145 psi	174 psi	LM7100
0/160 psi	290 psi	363 psi	LM7160
0/200 psi	580 psi	725 psi	LM7200
0/300 psi	580 psi	725 psi	LM7300

**Pin Configuration**

Electrical Connection	Cable Colours (DIN 47100)
Supply +	White
Supply -	Brown
Signal + (only 3-wire)	Green
Shield	Yellow/green

**Wiring Diagram**

Note: Measurements are in mm. Cable not included (specify type and length)

Series Number (for custom, non-standard product)

	L	M	7	-				-		-		-				
SERIES																
RANGE (PSI)																
0-8 PSI					0	0	8									
0-15 PSI					0	1	5									
0-20 PSI					0	2	0									
0-35 PSI					0	3	5									
0-60 PSI					0	6	0									
0-100 PSI					1	0	0									
0-160 PSI					1	6	0									
0-200 PSI					2	0	0									
0-300 PSI					3	0	0									
OUTPUT																
4-20 mA 2 WIRE (std)									1							
0-20 mA 3 WIRE									2							
0-10 V 3 WIRE									3							
SPECIAL									9							
SEALS																
FKM (Viton (std), Kalrez (optional))									1							
EPDM (Nordel)									2							
SPECIAL									9							
ACCURACY																
0.35%										2						
SPECIAL										9						
ELECTRICAL CONNECTION																
PVC CABLE											1					
PUR CABLE											2					
FEP CABLE											3					
SPECIAL											9					
CABLE LENGTH																
FEET x 5													X	X		



## 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
- $\pm 0.5\%$  accuracy
- NEMA 4X / IP65 and IP67
- CE and RoHS compliant
- Customizable
- 1 year warranty

## Applications:

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

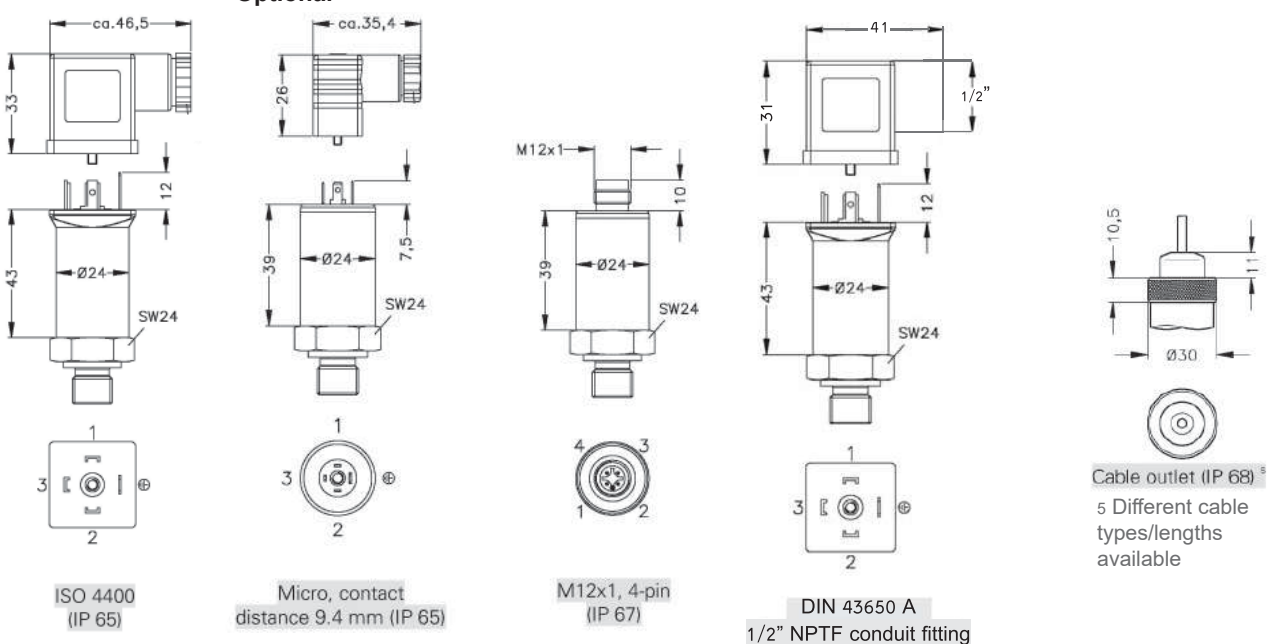
## Specifications

<b>Output Signal</b>	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: $V_{sig} = 0.5-4.5$ Vs / $V_s = 5 \pm 0.5$ Vdc
<b>Accuracy</b>	$\pm 0.5\%$ FSO
<b>Permissible Load</b>	2-wire: $R_{max} = [(V_s - V_{s \min}) / 0.02]$ Ohm 3-wire: $R_{min} = 10$ kOhm
<b>Influence Effects</b>	Supply: 0.05% FSO / 10 V Load: 0.05% FSO / kOhm
<b>Response Time</b>	2-wire: $\leq 10$ ms 3-wire: $\leq 3$ ms
<b>Measuring Rate</b>	1 kHz
<b>Thermal Error</b>	$< \pm 0.3\%$ FSO / 10K, Compensated range 32°F to 158°F (0°C to 70°C)
<b>Permissible Temperatures</b>	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)
<b>Short-circuit Protection</b>	Permanent 3-wire ratiometric: None
<b>Reverse Polarity Protection</b>	No damage. No function.
<b>Electromagnetic Protection</b>	Emission and immunity according to EN 61326
<b>Stability</b>	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
<b>Pressure Port</b>	316Ti SS
<b>Pressure Port Connection</b>	1/4" NPT (others available upon request)
<b>Housing</b>	304 SS
<b>Diaphragm</b>	17-4PH SS, welded
<b>Weight</b>	120 g
<b>Current Consumption</b>	2-wire: 25 mA max 3-wire voltage: 5 mA (short-circuit current 20 mA) 3-wire ratiometric: 3 mA
<b>Long-term Stability</b>	$< \pm 0.3\%$ FSO/yr at reference conditions
<b>Operating Life</b>	$> 100 \times 10^6$ cycles
<b>CE Conformity</b>	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

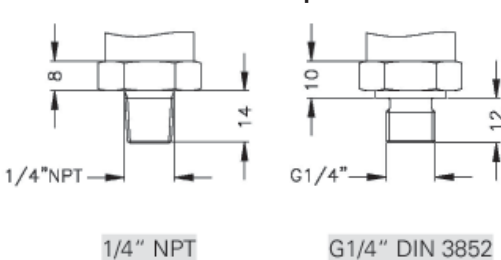
Range	Over-pressure	Burst Pressure	Code
0/100 psi	203 psi	406 psi	LMH0100
0/145 psi	508 psi	1,015 psi	LMH0145
0/230 psi	508 psi	1,015 psi	LMH0230
0/360 psi	1,015 psi	2,030 psi	LMH0360
0/580 psi	2,030 psi	4,060 psi	LMH0580
0/870 psi	2,030 psi	4,060 psi	LMH0870
0/1,500 psi	5,075 psi	10,150 psi	LMH1500
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



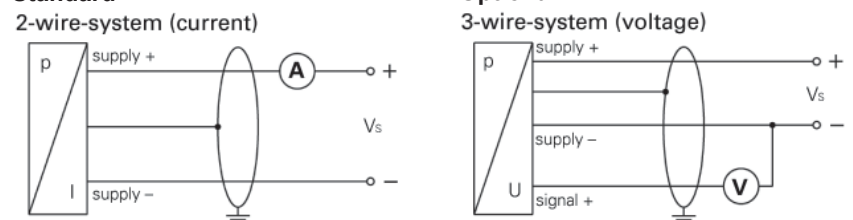
Note: Other connections available upon request

## Mechanical Connection



Note: Measurements are in mm

## Wiring Diagram



## 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:**

- Constructed of 316-grade welded stainless steel, NEMA 4X rated
- 3A approved
- Excellent accuracy rating of  $\pm 0.25\%$  full scale output
- Available with a 0.5" (13mm) to 5" (127mm) Tri-Clamp®
- Pressure ranges up to 1,000 psi
- 1 year warranty

**Applications:**

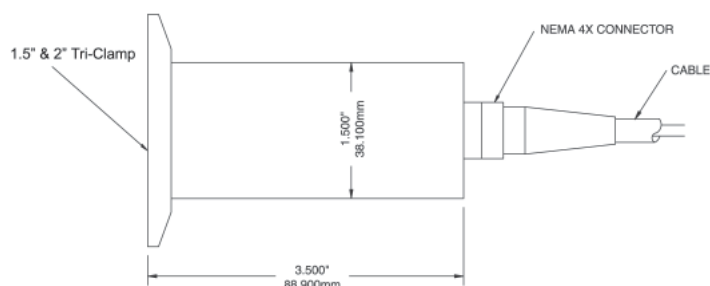
- Ideal for applications where sanitary conditions are of high priority (i.e. dairy, food processing, pharmaceutical, etc.)

Specifications	
Electrical Output Signal	4-20mA, 2 wire
Electrical Connection	10 ft (3m) Belden 9536 flying wire
Excitation Voltage	8-38 Vdc
Accuracy	$\pm 0.25\%$ ANSI/ASME Grade 3A
EMI/RFI Enclosure Rating	Meets and exceeds CE standards
Zero / Span	Optional
Wetted Parts / Connection	316L SS Tri-Clamp®
Housing	316 SS
Enclosure Rating	NEMA 4X (IP65)
Proof Pressure	2X full scale
Burst Pressure	5X full scale (maximum 3,000 psi)
Normal Operating Temperature Range	-40°F to 200°F (-40°C to 93°C)
Compensated Temperature Range	0°F to 170°F (-18°C to 77°C)
Temperature Effect Range Zero / Span	$\leq \pm 1.5\%$ FSO over compensated range
Long Term Stability	$\leq 0.25\%/yr$
Weight	10 oz (283 g)

**Order Codes**

Range	1.5" Tri-Clamp®	2" Tri-Clamp®
0/200 psi	LST15200	LST20200
0/300 psi	LST15300	LST20300
0/500 psi	LST15500	LST20500
0/750 psi	LST15750	LST20750
0/1,000 psi	LST151000	LST201000

Note: Other ranges (e.g. kPa, bar, etc.), outputs and options available upon request.



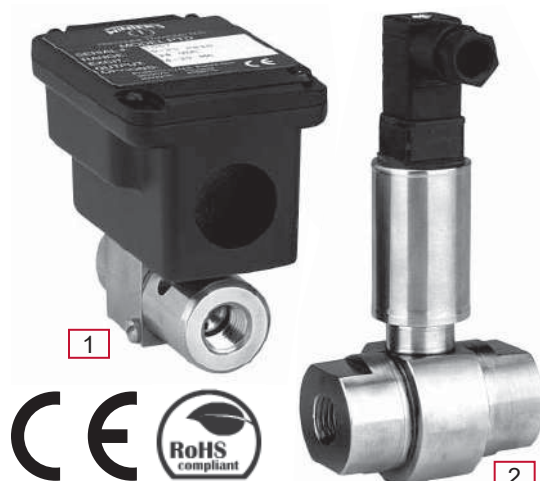
Wiring Lead			
Wiring	Cable Colours:	V	mA
1	Red	+Excitation	+Excitation/Signal
2	Black	-Excitation/Signal	-Excitation/Signal
3	Green	+Signal	NC
Grnd.	Shield/White	Grnd.	Grnd.

Tri-Clamp® is a registered trademark of Tri-Clover, Inc.



Series Number (for custom, non-standard product)

	L	S	T	-				-		-		-			-		
SERIES																	
PRESSURE																	
200					2	0	0										
300					3	0	0										
500					5	0	0										
750					7	5	0										
1000					0	1	K										
Custom					9	9	9										
PRESSURE																	
psi								P									
kPa								K									
Bar								B									
Special								X									
OUTPUT																	
4...20 mA / 2-wire									1								
ACCURACY																	
0.25%										2							
Custom										9							
ELECTRICAL CONNECTION																	
10' Belden 9536 flying wire											F	W					
Custom											9	9					
MECHANICAL CONNECTION																	
1.5" Tri-Clamp													T	1			
2" Tri-Clamp													T	2			
Custom													9	9			



1. Low Range  
2. High Range

### Description & Features:

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

Viton® is a registered trademark of DuPont Performance Elastomers

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

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

High Range Wet/Wet	
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.)

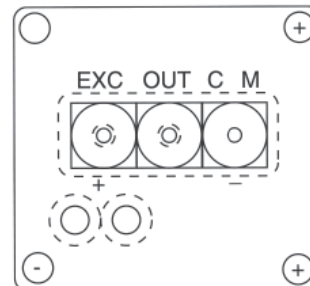
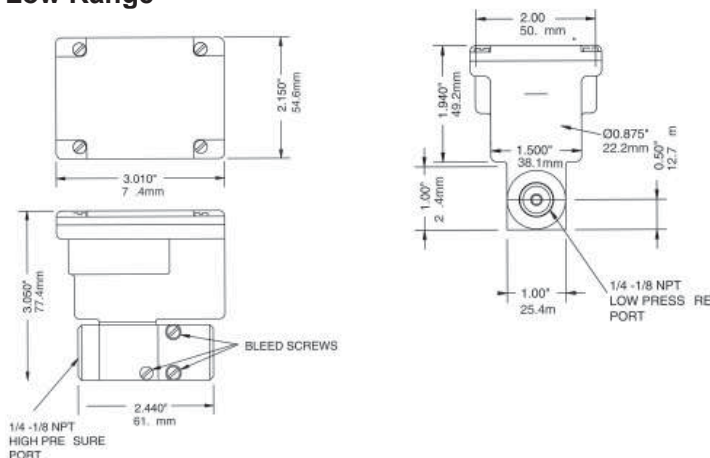
Other ranges (e.g. bar, etc.) available upon request

Other outputs and options available upon request

### Definitions:

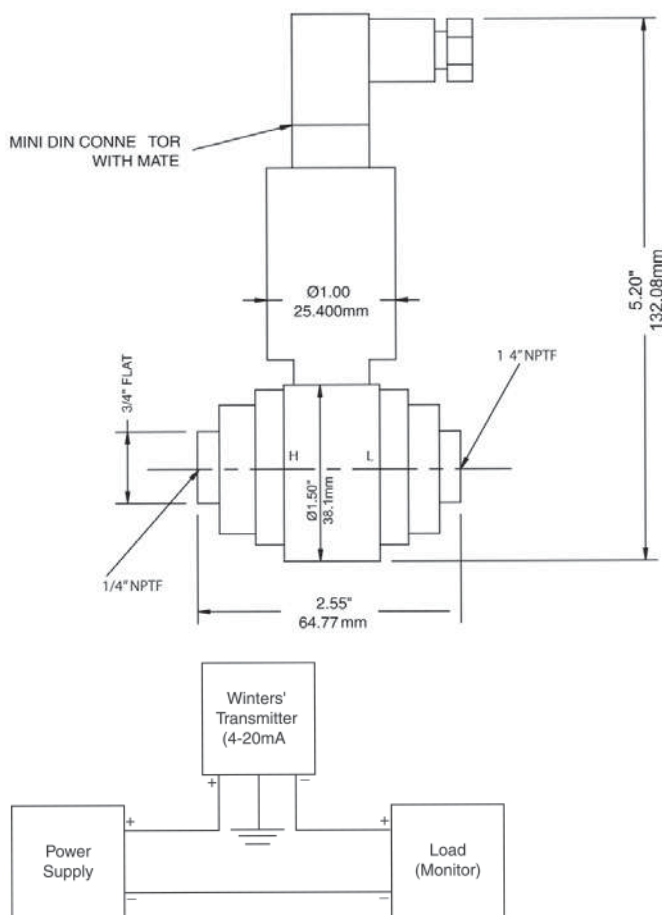
- Wet/Wet = Can be used on any liquid or gas that is compatible with 316 SS
- Uni-directional = The instrument is calibrated with a 4 mA output at 0 psid and 20 mA output at full scale (i.e. For 0-10 psid range: 4 mA = 0 psid and 20 mA = 10 psid)
- Bi-directional = The instrument is calibrated with a 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

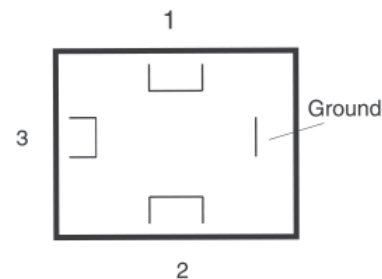


- For voltage output, use COM, OUT and EXC terminals
- For current (4-20 mA) output, use + and - terminals

## High Range



## Hirschmann® 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
Gnd	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
Gnd	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:**  $30 + 0.004 \times (\text{Resistance of receiver plus line})$

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



## 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
- 1 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

Specifications	
Output Signal	Standard 2-wire: 4-20 mA / Vs = 8-32 Vdc Optional 3-wire: 0-20 mA / Vs = 14-30 Vdc 0-10 V / Vs = 14-30 Vdc
Accuracy	$\pm 0.50\%$ FSO
Permissible Load	Current 2-wire: $R_{max} = [(V_s - V_{s \min}) / 0.02]$ 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: $\leq 10$ ms 3-wire: $\leq 3$ ms
Thermal Error <sup>1</sup>	$\leq \pm 0.2\%$ FSO / 10K In compensated range: -4°F to 185°F (-20°C to 85°C)
Permissible Temperatures <sup>2</sup>	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 $\mu$ H/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

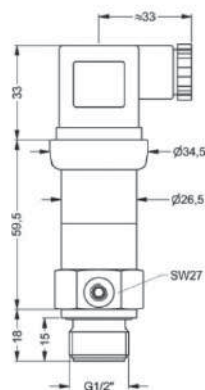
<sup>1</sup> An optional cooling element can influence thermal effects for offset and span depending on installation position and filling conditions

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

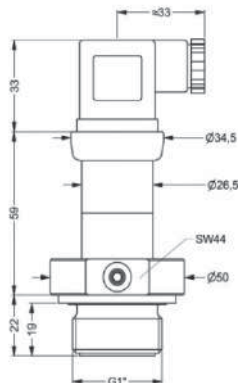
## Mechanical Connection

## Standard

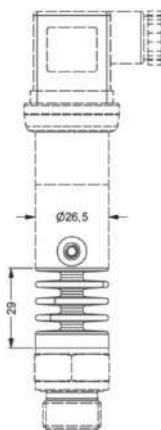
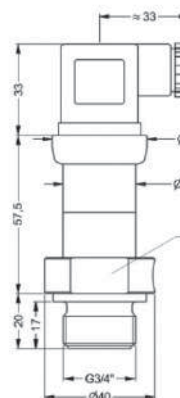
## Optional



G1/2" flush DIN 3852



G1" flush DIN 3852

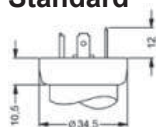
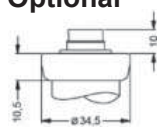
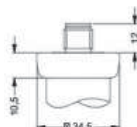
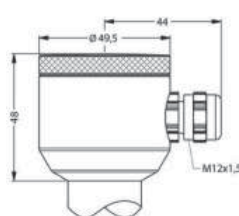
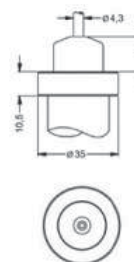
cooling element  
300 °C

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)compact field housing  
(IP 67)cable outlet with PVC cable  
(IP 67) 1

## 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

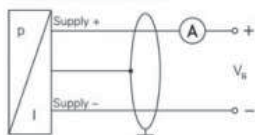
Note: Measurements are in mm

1 Standard: 2m PVC cable without ventilation tube

## Wiring Diagram

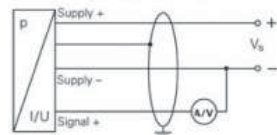
## Standard

2-wire-system (current)



## Optional

3-wire-system (current / voltage)



**Series Number (for custom, non-standard product)**

[illegible]

Contact your Winters rep for custom requirements



**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
- 1 year warranty

**Applications:**

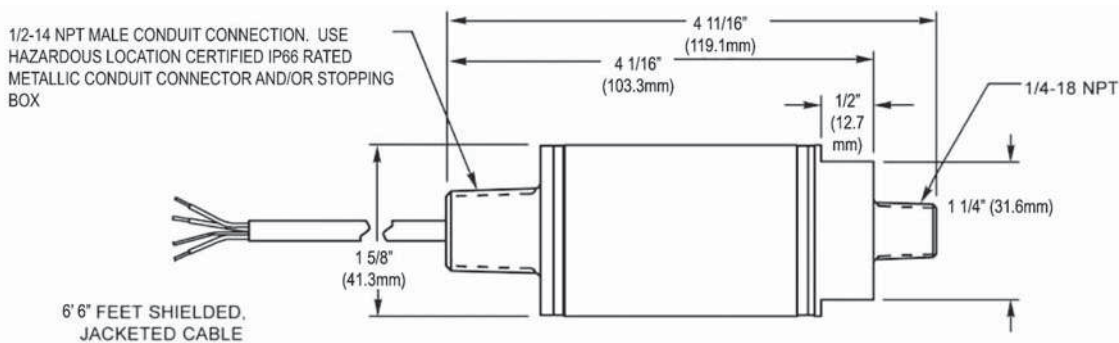
- Suitable for a variety of hazardous applications where the added security of an explosion proof enclosure is required including petrochemical plants, pipelines, fuel transfer systems and power plants.

**Specifications**

<b>Output Signal</b>	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
<b>Accuracy</b>	$\pm 0.25\%$ BFSL / $\pm 0.5\%$ for vacuum only
<b>Temperature Ranges</b>	Operating: $-40^{\circ}\text{F}$ to $160^{\circ}\text{F}$ ( $-40^{\circ}\text{C}$ to $71^{\circ}\text{C}$ ) Compensating: $30^{\circ}\text{F}$ to $160^{\circ}\text{F}$ ( $-1^{\circ}\text{C}$ to $71^{\circ}\text{C}$ ) Storage: $-40^{\circ}\text{F}$ to $185^{\circ}\text{F}$ ( $-40^{\circ}\text{C}$ to $85^{\circ}\text{C}$ )
<b>Temperature Shift</b>	0.0125% per $^{\circ}\text{F}$ over compensated range $75^{\circ}\text{F}$ ( $24^{\circ}\text{C}$ ) reference
<b>Vibration</b>	15 g / 10 to 2,000 Hz (MIL-STD-202)
<b>Shock</b>	50 g / 11 ms (MIL-STD-202, M213, Cond. G)
<b>Pressure Connection</b>	1/4" NPTM, 1/2" NPTM optional
<b>Housing</b>	304 SS
<b>Wetted Parts</b>	316 SS diaphragm and 17-4PH SS process connection
<b>Proof Pressure</b>	2 x rated pressure or 13,000 psi max
<b>Current Supply</b>	3 mA maximum (no load)
<b>Protection</b>	EMI, ESD and RFI, reverse polarity protected
<b>Approval</b>	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
<b>Weight</b>	7.4 oz. (210 grams): $\leq 1,000$ psi 9.9 oz. (281 grams): $\geq 2,000$ psi

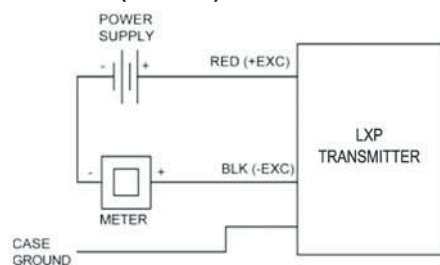
## Order Codes

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

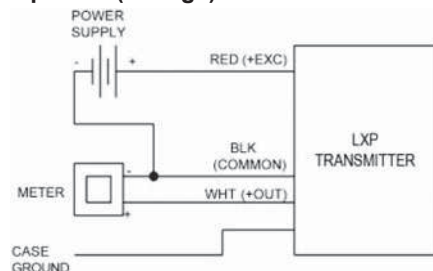


## Wiring Diagram

### 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 (for custom, non-standard product)**

[illegible]



## 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
- $\pm 2\%$  of the adjustable range accuracy
- NEMA 4, IP65 enclosure rating (NEMA 4X optional)
- UL, CSA approved and PED compliant
- CRN registered
- 1 year warranty

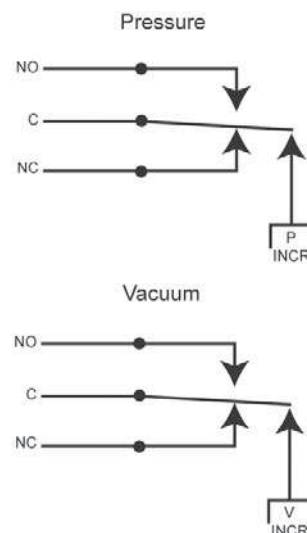
## Applications:

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

## Specifications

<b>Housing Material</b>	Anodized aluminum
<b>Accuracy</b>	$\pm 2\%$ of the adjustable range
<b>Pressure Connection</b>	1/4" NPTF
<b>Electrical Connection</b>	1/2" NPTF conduit connection with screw terminals
<b>Wetted Parts</b>	Aluminum and Buna N (Teflon® O-ring or Viton® diaphragm optional)
<b>Set Point Adjustment</b>	Self locking adjustment nut
<b>Deadband</b>	Fixed or adjustable
<b>Contact Rating</b>	10 amps @ 125/250 Vac 3 amps @ 480 Vac
<b>No. of Contacts</b>	One, SPDT
<b>Ambient/Process Temperature</b>	-20°F to 165°F (-29°C to 74°C)
<b>Enclosure Rating</b>	NEMA 4, IP65 (NEMA 4X optional)
<b>Approvals</b>	UL, CSA, CRN, PED 97/23/EC compliant
<b>Weight</b>	1.5 lbs (680 grams)

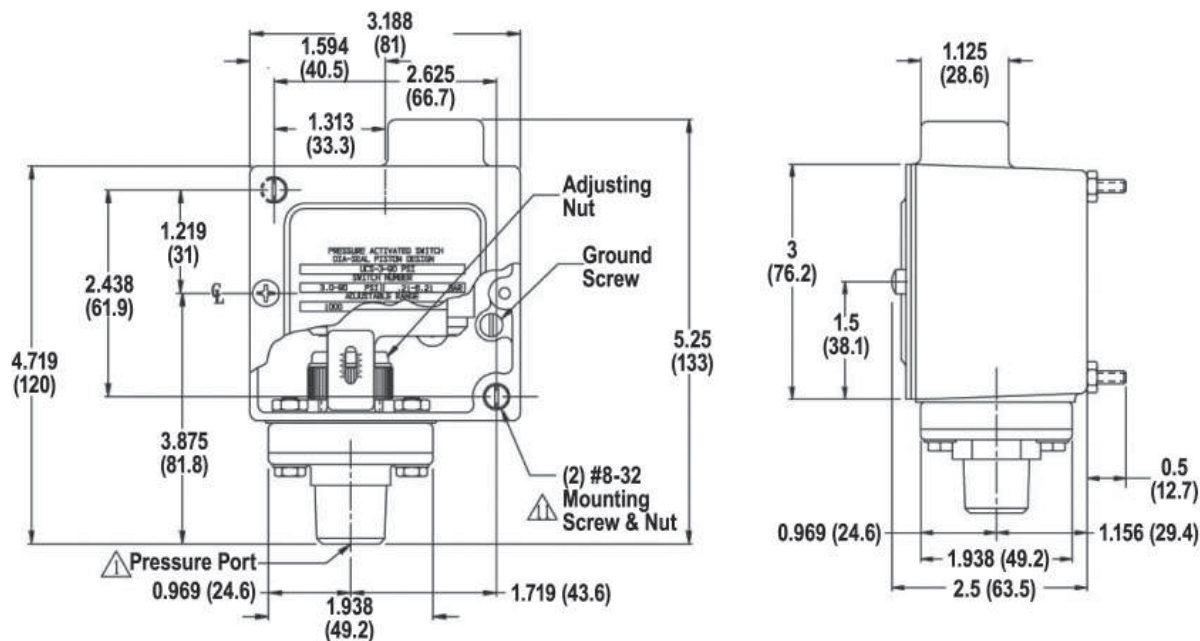
## Wiring Schematic



## 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

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**Series Number (for custom, non-standard product)**

**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 ( <i>Actuation Value based on CC</i> )
Min	Max	
0.5" Hg	30" Hg	0.3-2.5" Hg
0.5 (0.03)	15 (1)	0.1-1.2 (0.01-0.08)
3 (0.2)	90 (6)	0.5-8 (0.03-0.5)
10 (0.7)	250 (17)	1-20 (0.07-1.3)
25 (1.7)	500 (34)	4-28 (0.3-1.9)
1" Hg	30" Hg	
1 (0.07)	15 (1)	
6 (0.4)	90 (6)	Contact Winters for Values
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

Teflon

Viton diaphragm

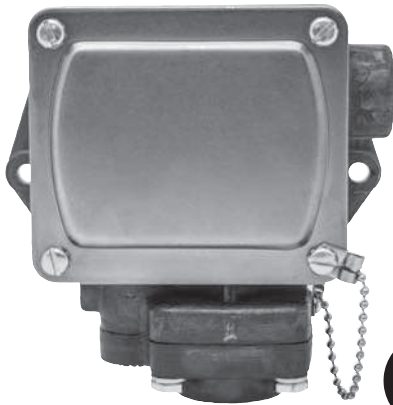
## OPTIONS

NEMA 4X enclosure

Manual reset (must select class G limit switch)

Factory preset (consult factory)

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**Description & Features:**

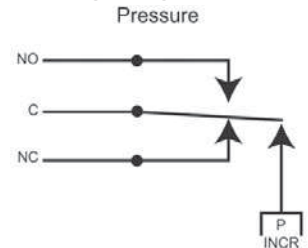
- Piston-type pressure switch
- 30 to 1,600 psi pressure range
- SPDT switch
- Simple set point adjustment, SPDT snap action
- Anodized aluminum construction with Buna-N wetted parts
- Hermetically sealed contacts available
- $\pm 2\%$  of the adjustable range accuracy
- NEMA 4, IP65 enclosure rating (NEMA 4X optional)
- CSA approved and PED compliant
- CRN registered (up to 340 psi models)
- 1 year warranty

**Applications:**

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

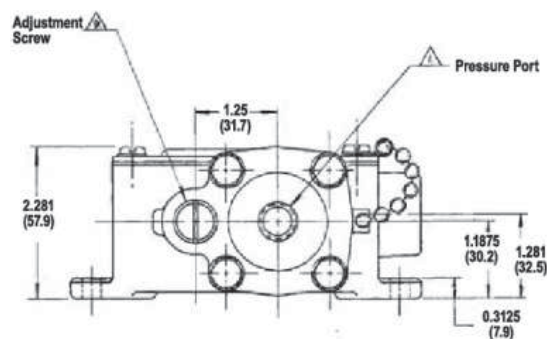
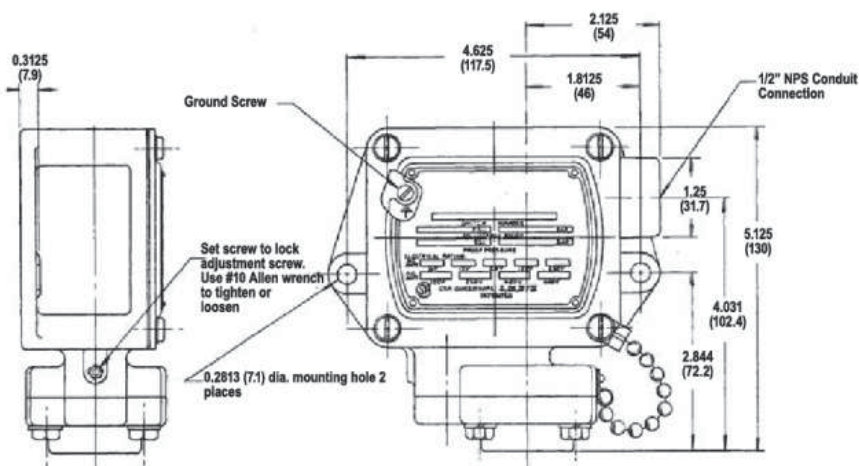
**Specifications**

<b>Housing Material</b>	Anodized aluminum
<b>Accuracy</b>	$\pm 2\%$ of the adjustable range
<b>Pressure Connection</b>	1/4" NPTF
<b>Electrical Connection</b>	1/2" NPTF conduit connection with screw terminals
<b>Wetted Parts</b>	Aluminum and Buna N (Teflon® or Viton® diaphragm optional)
<b>Set Point Adjustment</b>	Self locking adjustment nut
<b>Deadband</b>	Fixed
<b>Contact Rating</b>	10 amps @ 125/250/480 Vac 0.05 amps @ 125 Vdc 0.03 amps @ 250 Vdc (standard for 30, 85 and 340 ranges) 5 amps @ 125/250 Vac (hermetically sealed)
<b>No. of Contacts</b>	One, SPDT (hermetically sealed option available)
<b>Ambient Temperature</b>	-20°F to 165°F (-29°C to 74°C)
<b>Storage Temperature</b>	-40°F to 200°F (-40°C to 93°C)
<b>Enclosure Rating</b>	NEMA 4, IP65 (NEMA 4X optional)
<b>Approvals</b>	CSA, PED 97/23/EC compliant, UL recognized (switch only)
<b>Weight</b>	3.75 lbs (1.7 kg)

**Wiring Diagram****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 (0.03)	30 (2)	0.4-2 (0.03-.13)	2,000 (133)	3WPSH030N4	3WPSH030N4FX
3 (0.2)	85 (5.7)	0.8-7 (0.05-0.5)	2,000 (133)	3WPSH085N4	3WPSH085N4FX
6 (0.4)	340 (23)	2-22 (0.13-1.5)	2,000 (133)	3WPSH340N4	3WPSH340N4FX
25 (1.7)	600 (40)	2-17 (0.13-1.1)	2,000 (133)	3WPSH600N4	3WPSH600N4FX
400 (27)	1,600 (107)	20-80 (1.3-5.3)	2,000 (133)	3WPSH1600N4	3WPSH1600N4FX

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**Series Number (for custom, non-standard product)**

**SERIES**

## SWITCH

10 amps @ 125/250 VAC; 3 amps @ 480 VAC (standard for 600 range)

1 amp @ 125 VAC; gold contact, 1 amp @ 24 VDC

5 amps @ 125/250 VAC (hermetically sealed)

**PRESSURE RANGES PSI (BAR)**

Adjustable Range psi (bar)		Approximate Deadband ( <i>Actuation Value based on CC</i> )
Min	Max	
0.5 (0.03)	30 (2)	0.4-2 (0.03-0.13)
3 (0.2)	85 (5.7)	0.87-7 (0.05-0.5)
6 (0.4)	340 (23)	2-22 (0.13-1.5)
25 (1.7)	600 (40)	2-17 (0.13-1.1)
400 (27)	1,600 (107)	20-80 (1.3-5.3)

## PRESSURE FITTING

Stainless steel, 1/4" NPT

### WETTED PARTS

Teflon diaphragm

Viton diaphragm

## OPTIONS

1/4" NPT (standard)

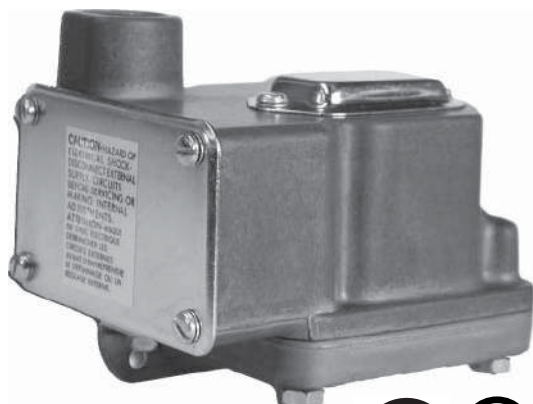
1/2" NPT pressure fitting (only available in stainless steel)

NEMA 4X enclosure

Factory preset (consult factory)

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## Description & Features:

- Single or dual set point
- "Hg to 150 psi pressure range
- Fixed deadband
- Simple set point adjustment
- Anodized aluminum housing with stainless steel diaphragm
- Hermetically sealed contacts available (excluding vacuum models)
- $\pm 0.5\%$  accuracy
- NEMA 4 enclosure rating (NEMA 4X optional)
- UL, CSA approved and PED compliant
- CRN registered
- 1 year warranty

## Applications:

- Suitable for oil and gas, mining and general industrial applications

Specifications	
<b>Housing Material</b>	Anodized aluminum
<b>Accuracy</b>	$\pm 0.5\%$ of the adjustable range
<b>Pressure Connection</b>	1/4" NPTF (1/2" NPTF optional)
<b>Electrical Connection</b>	Terminal block through 1/2" NPTF conduit connector
<b>Wetted Parts</b>	304 SS process connection and 17-7 PH SS diaphragm
<b>Set Point Adjustment</b>	Self locking adjustment screw
<b>Deadband</b>	Fixed
<b>Contact Rating</b>	10 amps @ 125/250 Vac
<b>No. of Contacts</b>	1 x SPDT (2 x SPDT optional)
<b>Ambient Temperature</b>	-65°F to 165°F (-54°C to 74°C)
<b>Storage Temperature</b>	-65°F to 200°F (-54°C to 93°C)
<b>Enclosure Rating</b>	NEMA 4 (NEMA 4X optional)
<b>Approvals</b>	UL, CSA, CRN, PED 97/23/EC compliant
<b>Weight</b>	2.0 lbs (907 grams)

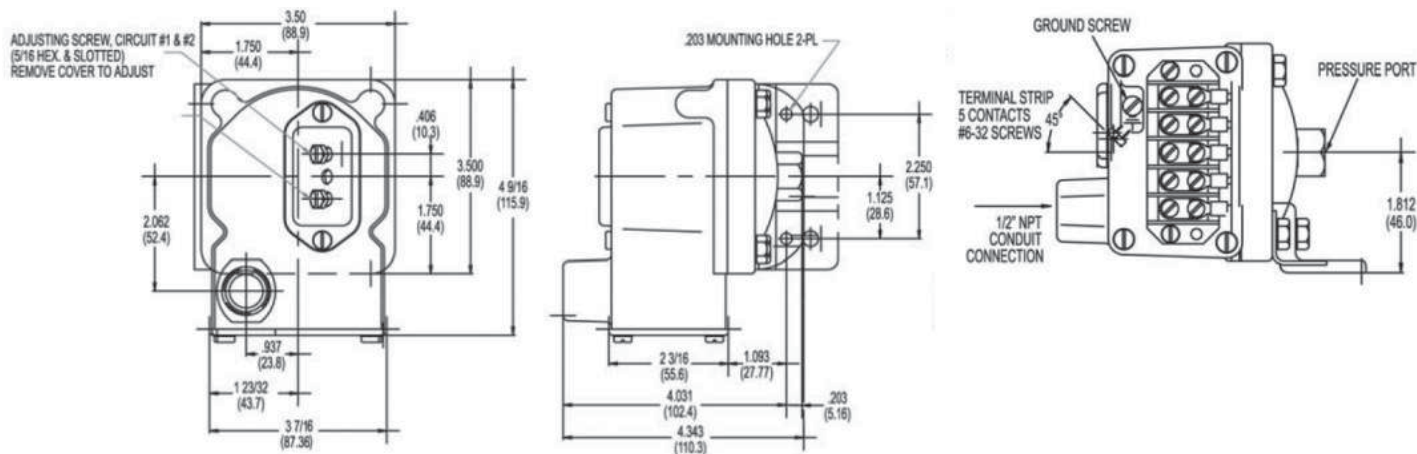
Note: Hermetically sealed option is only available for 1 x SPDT switches

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## Order Codes

Adjustable Range "Hg (mbar)		Approximate Deadband (Actuation value) "Hg (mbar)	Proof Pressure "Hg (mbar)	NEMA 4 Code	NEMA 4X Code
Min	Max				
0.06 (2)	6 (203)	0.14-0.28 (4.7-9.5)	20 (677)	4WPS103VN4	4WPS103VN4FX
0.8 (2.7)	30 (1,016)	0.4-0.8 (14-27)	30 (1,016)	4WPS118VN4	4WPS118VN4FX

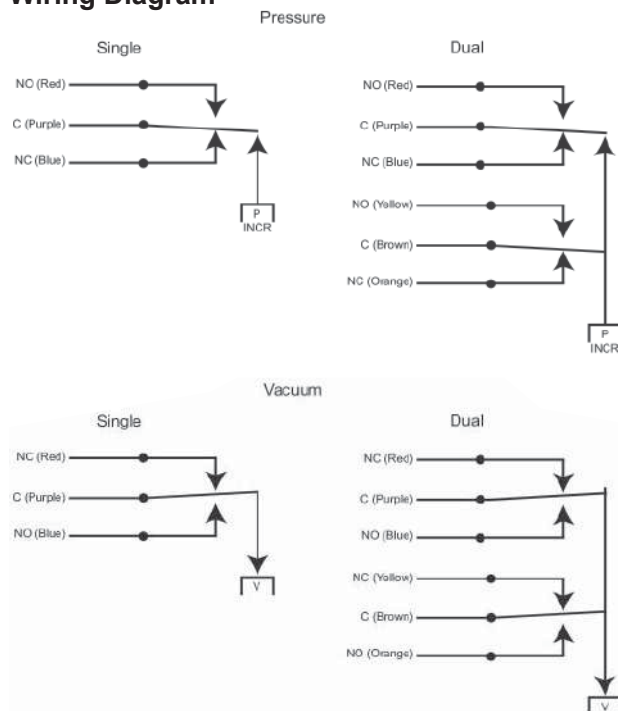
Adjustable Range psi (bar)		Approximate Deadband (Actuation value) psi (bar)	Proof Pressure psi (bar)	NEMA 4 Code	NEMA 4X Code
Min	Max				
0.03 (0)	3 (0.2)	0.07-0.15 (0-0.01)	10 (0.7)	4WPS1003N4	4WPS1003N4FX
0.4 (0.03)	18 (1.2)	0.12-0.26 (0.01-0.02)	60 (4.1)	4WPS1018N4	4WPS1018N4FX
0.5 (0.03)	80 (5.5)	1.6-3.4 (0.1-0.2)	160 (10.9)	4WPS1080N4	4WPS1080N4FX
1.5 (0.1)	150 (10.3)	2.3-6 (0.2-0.4)	300 (20.4)	4WPS1150N4	4WPS1150N4FX



## 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

## Wiring Diagram



# 4WPS

## Switches



## 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
- 1 year warranty

## Applications:

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



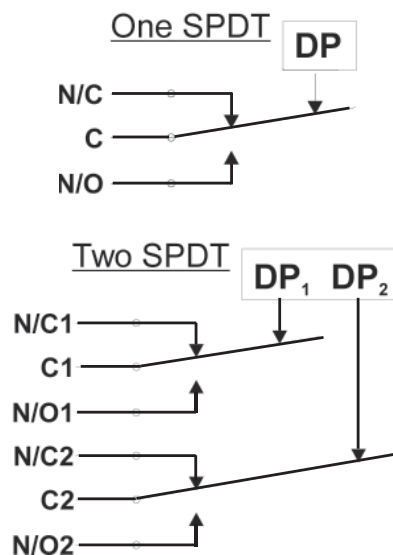
## Specifications

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

# 5WPS

[illegible]

**Description & Features:**

- Vac to 10,000 psi pressure range
- Explosion proof SPDT or DPDT switch
- Stainless steel with Viton® and Teflon® wetted parts
- ANSI dual seal design
- Dia-seal/piston sensor
- Safe to adjust during operation
- Lockable setpoint wheel to avoid shifting during operation
- $\pm 2\%$  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)
- 1 year warranty

**Applications:**

- Suitable for hazardous locations including safety panels and with pump and gas compressors, turbines and other oil & gas applications

Specifications	
<b>Housing Material</b>	316 SS
<b>Port Material</b>	316 SS
<b>Accuracy</b>	$\pm 2\%$ of full scale
<b>Pressure Connection</b>	1/4" NPTF (1/2" NPTF optional)
<b>Electrical Connection</b>	1/2" NPTM, 18 AWG, 18" (300 mm) free leads
<b>Wetted Parts</b>	Vacuum and low pressure - seals: Viton® diaphragm High pressure - piston: SS with Teflon® backup ring and Viton® o-ring
<b>Set Point Adjustment</b>	Internal adjustment wheel with built in locking set-screws (#6) <sup>1</sup>
<b>Deadband</b>	Fixed
<b>Contact Rating</b>	11 amps @ 125/250 Vac 5 amps @ 30 Vdc
<b>No. of Contacts</b>	SPDT (DPDT optional)
<b>Vibration</b>	10 g 10-500 Hz, MIL-STD-202F
<b>Shock</b>	50 g 11 ms, MIL-S-901C
<b>EMI/RFI Protection</b>	EN55011
<b>Ambient Temperature</b>	-40°F to 104°F (-40°C to 40°C) (140°F (60°C) maximum temperature for 9WPSH models)
<b>Enclosure Rating</b>	NEMA 4X, 7 & 9
<b>Approvals</b>	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
<b>Typical Life</b>	2.5 million cycles
<b>Weight</b>	1.85 lbs (839 grams)

Specifications	
<b>Housing Material</b>	316 SS
<b>Port Material</b>	316 SS
<b>Accuracy</b>	$\pm 2\%$ of full scale
<b>Pressure Connection</b>	1/4" NPTF (1/2" NPTF optional)
<b>Electrical Connection</b>	1/2" NPTM, 18 AWG, 18" (300 mm) free leads
<b>Wetted Parts</b>	Vacuum and low pressure - seals: Viton® diaphragm High pressure - piston: SS with Teflon® backup ring and Viton® o-ring
<b>Set Point Adjustment</b>	Internal adjustment wheel with built in locking set-screws (#6) <sup>1</sup>
<b>Deadband</b>	Fixed
<b>Contact Rating</b>	11 amps @ 125/250 Vac 5 amps @ 30 Vdc
<b>No. of Contacts</b>	SPDT (DPDT optional)
<b>Vibration</b>	10 g 10-500 Hz, MIL-STD-202F
<b>Shock</b>	50 g 11 ms, MIL-S-901C
<b>EMI/RFI Protection</b>	EN55011
<b>Ambient Temperature</b>	-40°F to 104°F (-40°C to 40°C) (140°F (60°C) maximum temperature for 9WPSH models)
<b>Enclosure Rating</b>	NEMA 4X, 7 & 9
<b>Approvals</b>	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
<b>Typical Life</b>	2.5 million cycles
<b>Weight</b>	1.85 lbs (839 grams)

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

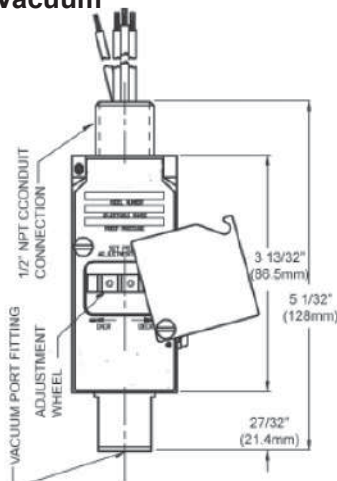
Viton® is a registered trademark of DuPont Performance Elastomers

Teflon® is a registered trademark of DuPont Corporation

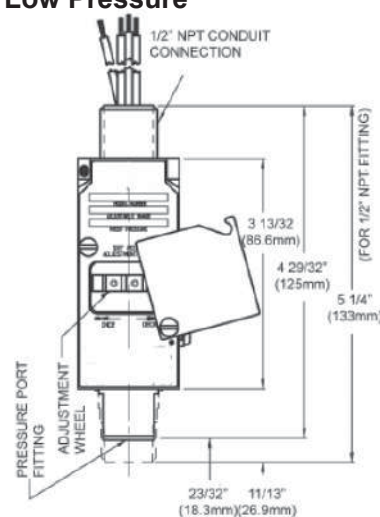
## Order Codes

Adjustable Range psi (bar)		Deadband (Actuation value based on CC) 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

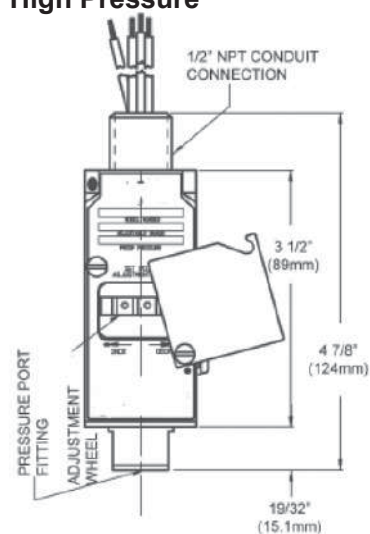
## Vacuum



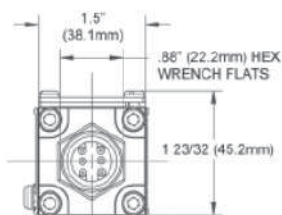
## Low Pressure



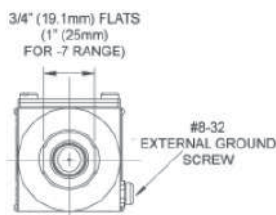
## High Pressure



## Top View



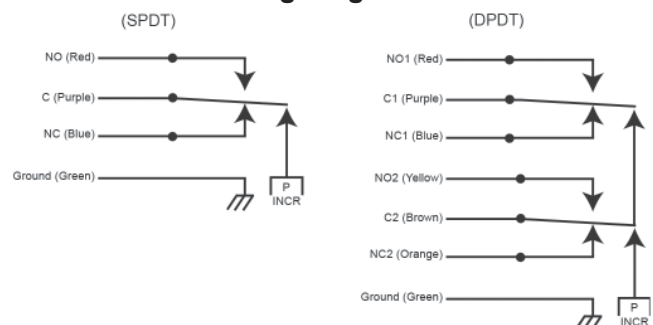
## Bottom View



## 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 (for custom, non-standard product)**

SERIES

PRESSURE RANGES PSI (BAR)

Adjustable Range psi (bar)		Deadband ( <i>Actuation Value based on CC</i> )
Min	Max	
1" Hg	30" Hg	4-9" Hg
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)
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

[illegible]

**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 its 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.

	Series	Instrument Connection			Process Connection						Wetted Parts Material								Pressure Range											
Catalogue Page		1/4" NPT	1/2" NPT	1/2" NPT Male	1/4" NPT	1/2" NPT	3/4" NPT	≥1" NPT	Tri-Clamp®	RF Flange	Wafer Flange	Buna	Hastelloy® C	Monel®	PVC	Stainless Steel	Tantalum	Teflon®	Viton®	Other	Vac - 200 psi	30-600 psi	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	RoHS compliant
192	D10 #10 PVC Diaphragm Seal	X			X	X									X			X			X									
193	D15 #15 Diaphragm Seal	X					X									X									X				X	X
194	D20 #20 Diaphragm Seal	X							X							X						X								X
195	D30 #30 Diaphragm Seal	X			X											X													X	X
196	D40 #40 Diaphragm Seal	X	X		X	X										X							X							X
197	D44 #80 Flanged Diaphragm Seals (Teflon®)	X	X							X								X						X						
199	D44 #80 Flanged Diaphragm Seals (Welded)	X	X							X			X	X	X	X	X	X	X	X							X			
201	D46 Flanged Flush Mount Seal	X	X							X						X								X						
202	D70 #70 Diaphragm Seals	X	X		X	X	X	X				X	X	X		X		X	X							X				X
204	D71 #70 NACE Diaphragm Seals	X	X		X	X		X				X	X					X	X									X		
206	D81 #60 Isolation Ring	X	X	X				X			X	X	X		X	X		X	X	X	X		X							
208	D85 In Line Flow Thru Seal	X	X		X	X	X	X								X						X								
209	D90 Saddle Weld Seal	X	X					X					X	X		X	X	X	X	X		X								

Hastelloy® is a registered trademark of Haynes International, Inc.  
 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  
 Teflon® is a registered trademark of DuPont Corporation  
 Tri-Clamp® is a registered trademark of Tri-Clover  
 Viton® is a registered trademark of DuPont Performance Elastomers

Vacuum to 200 psi (-1 to 14 bar)



### Description & Features:

- Features a durable and flexible Teflon® diaphragm seal, which serves as a protective barrier between the process fluid and instrument
- High accuracy and dependability
- ASME B40.100 compliant
- 1 year warranty

### Applications:

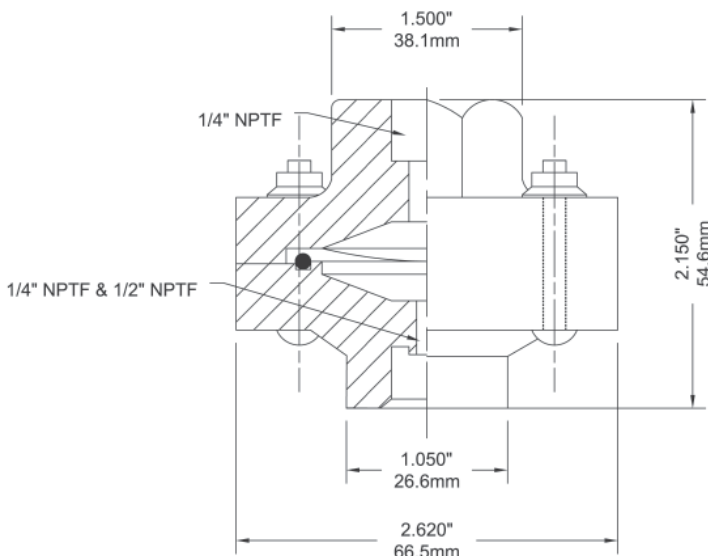
- Provides an economical solution to protect instruments from corrosion and clogging
- Used to isolate and protect a pressure instrument on ultra-pure or highly corrosive fluid lines
- Can be used with liquids such as demineralized water, sulphuric acid, hydrochloric acid and caustic gases (such as corrosive air and ammonia), where such fluids will corrode metal instruments
- Review of chemical compatibility is available upon request

### Specifications

<b>Housing</b>	PVC (Polyvinyl Chloride, Type 1, Grade 1)
<b>Diaphragm</b>	Teflon®
<b>Minimum Operating Pressure</b>	Vacuum
<b>Maximum Operating Pressure</b>	200 psi (14 bar)
<b>Gauge Connection</b>	1/4" NPTF (other thread types are available)
<b>Process Connection</b>	1/4", 1/2" NPTF (other thread types are available)
<b>Process Temperature</b>	77°F to 104°F (25°C to 40°C)

### Order Codes

<b>1/4" NPTF x 1/4" NPTF</b>	<b>1/4" NPTF x 1/2" NPTF</b>
D10985	D10986



50 to 5,800 psi (4 to 400 bar)



#### 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
- 1 year warranty

#### Applications:

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

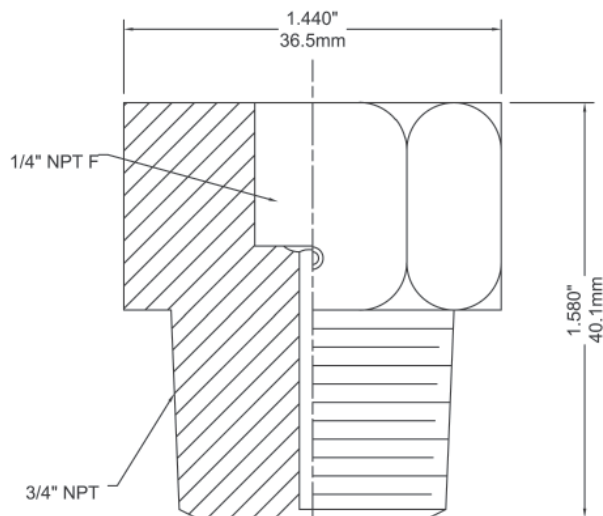
Specifications	
Housing	AISI 316 SS
Diaphragm	AISI 316L SS, welded
Minimum Operating Pressure	50 psi (4 bar)
Maximum Operating Pressure	5,800 psi (400 bar)
Gauge Connection	1/4" NPTF (other thread types are available)
Process Connection	3/4" NPTM (other thread types are available)
Process Temperature	-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)



30 to 600 psi (2 to 41 bar)



#### Description & Features:

- Meets the requirements of dairy, food, beverage, chemical and pharmaceutical industries
- 3A approved
- ASME B40.100 compliant
- CRN registered
- 1 year warranty

#### Applications:

- D20 may be attached to any Winters all SS gauge for sanitary installations.

#### Specifications

<b>Housing</b>	AISI 316 SS
<b>Diaphragm</b>	AISI 316L SS, welded
<b>Minimum Operating Pressure</b>	30 psi (2 bar)
<b>Maximum Operating Pressure</b>	600 psi (41 bar)
<b>Gauge Connection</b>	1/4" NPTF (other thread types are available)
<b>Process Connection</b>	1.5" (40mm) and 2" (50mm) Tri-Clamp® fitting standard
<b>Process Temperature</b>	-4°F to 248°F (-20°C to 120°C)
<b>Surface Finish</b>	8 Ra

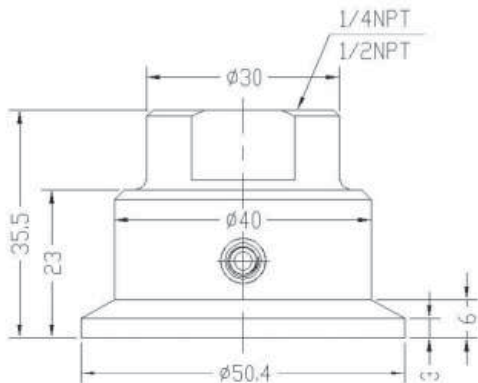
#### Order Codes

1.5" (40mm)	2" (50mm)
D20980	D20976

#### Option suffix for above order codes only:

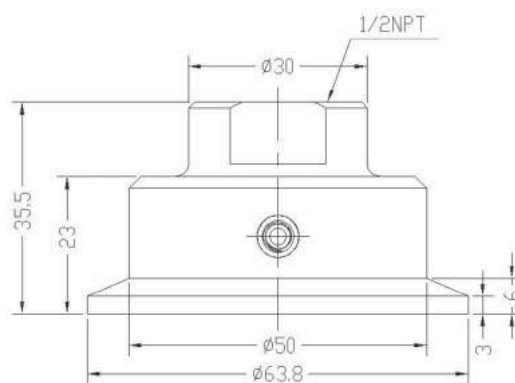
SF-D = Silicone fill (seal only)

#### 1.5" Tri-Clamp®

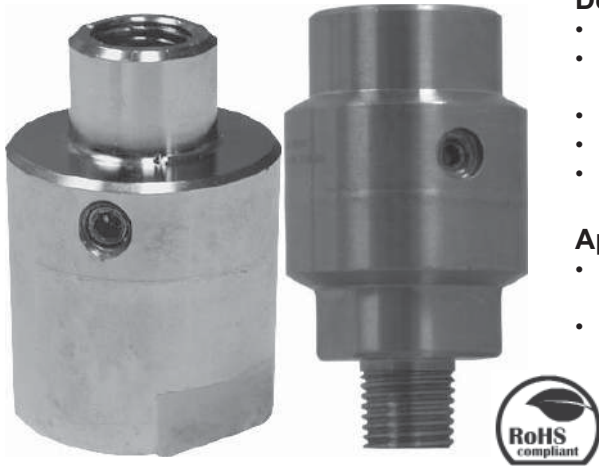


Tri-Clamp® is a registered trademark of Tri-Clover

#### 2" Tri-Clamp®



1,000 to 6,000 psi (69 to 414 bar)



#### 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
- 1 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

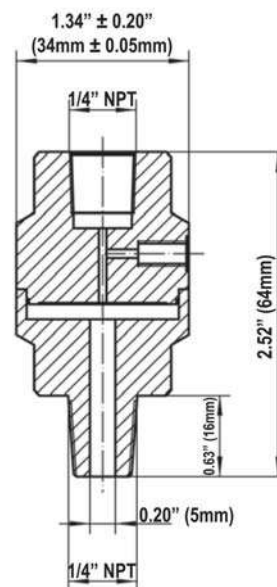
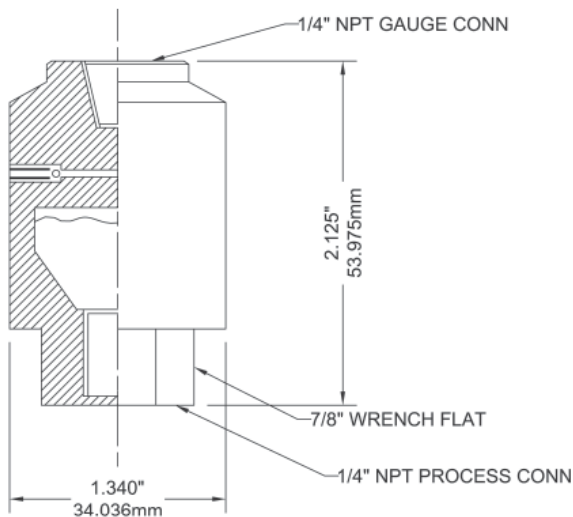
Specifications	
Housing	AISI 316 SS
Diaphragm	AISI 316L SS, welded
Minimum Operating Pressure	1,000 psi (69 bar)
Maximum Operating Pressure	6,000 psi (414 bar)
Gauge Connection	1/4" NPTF
Process Connection	1/4" NPTF or NPTM
Process Temperature	-49°F to 302°F (-45°C to 150°C)

#### 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)



15 to 1,000 psi (1 to 69 bar)



## Description & Features:

- Compact (one piece), lightweight and economical
- ASME B40.100 compliant
- CRN registered
- 1 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

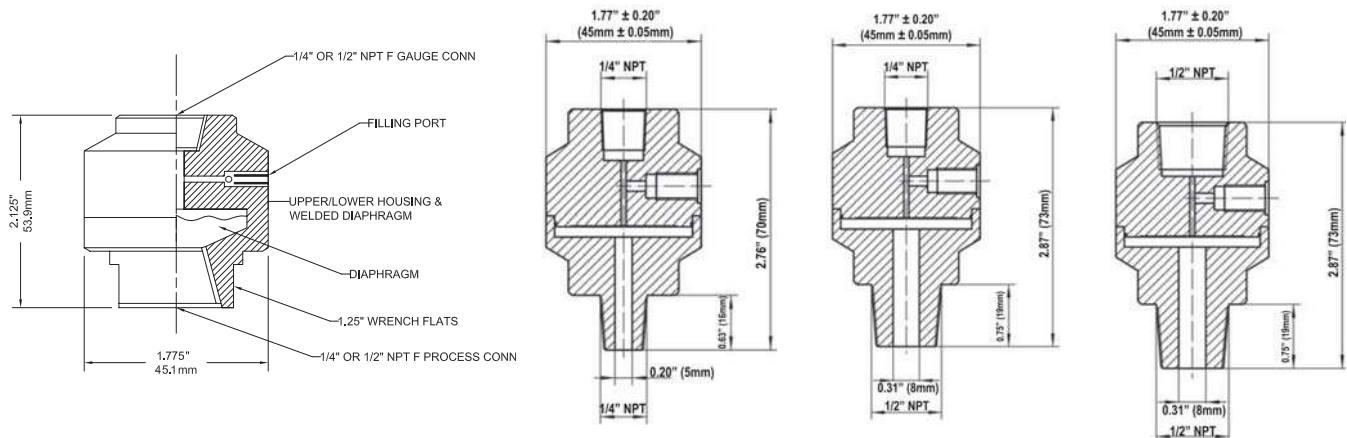
Specification	Value
Housing	AISI 316 SS
Diaphragm	AISI 316L SS, welded
Minimum Operating Pressure	15 psi (1 bar)
Maximum Operating Pressure	1,000 psi (69 bar)
Gauge Connection	1/4", 1/2" NPTF
Process Connection	1/4", 1/2" NPTF or NPTM
Process Temperature	-49°F to 302°F (-45°C to 150°C)

## Order Codes

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)





0 to 1,000 psi (0 to 69 bar)



#### 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
- 1 year warranty

#### Applications:

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

#### Specifications

<b>Housing</b>	316 SS, Monel®, Hastelloy® B & C, titanium, tantalum, PVC, carbon steel, Teflon®, Carpenter 20®, other (nickel plated carbon steel or SS upper housing standard)
<b>Diaphragm</b>	Teflon® for increased compatibility, sensitivity and versatility
<b>Construction</b>	Two piece construction
<b>Connection</b>	1/4", 1/2" NPTF gauge connections standard (other NPTF gauge connections and thread types are available) 1" (25mm), 1.5" (40mm) and 2" (50mm) pipe size and #150 and #300 pressure rating standard (other configurations available)
<b>Maximum Temperature Limit</b>	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	
Teflon® Diaphragm	1/4" NPTF	Teflon®	316 SS - Teflon® lined	D44003	D44004
	1/2" NPTF			D44001	D44002
1" - 300#RF					
Teflon® Diaphragm	1/4" NPTF	Teflon®	316 SS - Teflon® lined	D44007	D44008
	1/2" NPTF			D44005	D44006
1.5" - 150#RF					
Teflon® Diaphragm	1/4" NPTF	Teflon®	316 SS - Teflon® lined	D44011	D44012
	1/2" NPTF			D44009	D44010
1.5" - 300#RF					
Teflon® Diaphragm	1/4" NPTF	Teflon®	316 SS - Teflon® lined	D44015	D44016
	1/2" NPTF			D44013	D44014
2" - 150#RF					
Teflon® Diaphragm	1/4" NPTF	Teflon®	316 SS - Teflon® lined	D44019	D44020
	1/2" NPTF			D44017	D44018
2" - 300#RF					
Teflon® Diaphragm	1/4" NPTF	Teflon®	316 SS - Teflon® lined	D44023	D44024
	1/2" NPTF			D44021	D44022

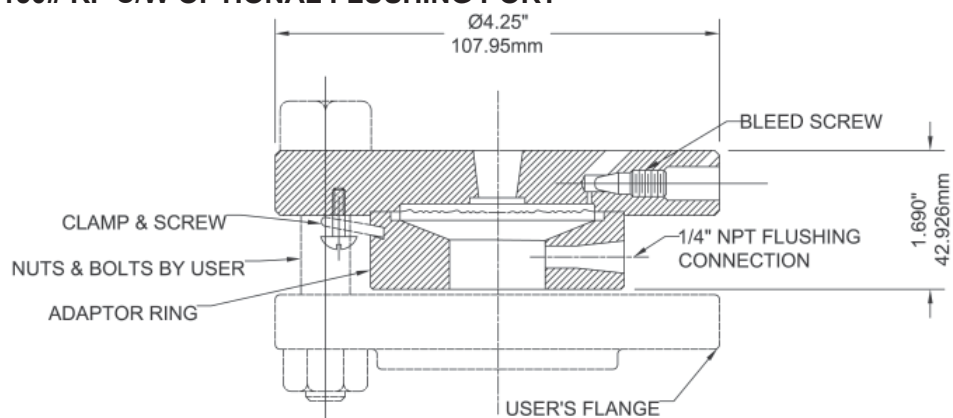
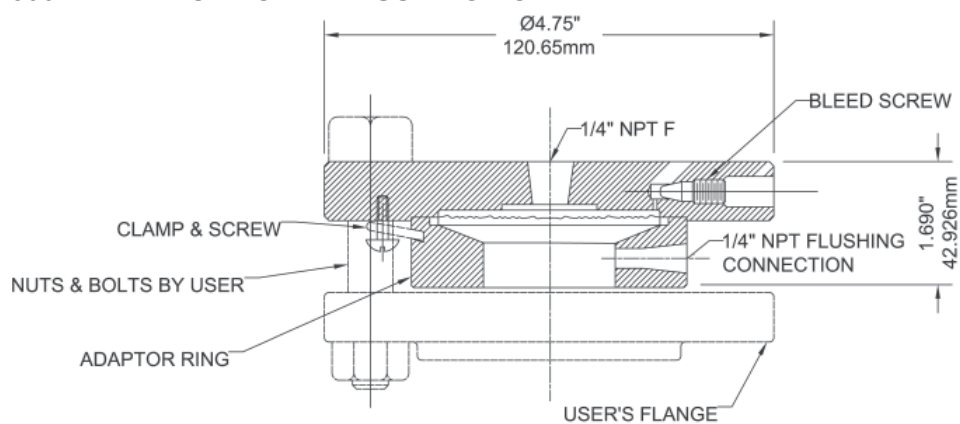
\*Replaceable diaphragms available

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

Monel® is a registered trademark of Inco Alloys International

Teflon® is a registered trademark of DuPont Corporation

**150# RF C/W OPTIONAL FLUSHING PORT****300# RF C/W OPTIONAL FLUSHING PORT**

Teflon® is a registered trademark of DuPont Corporation

0 to 2,500 psi (0 to 172 bar)

**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
- 1 year warranty

**Applications:**

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

Specifications	
<b>Housing</b>	316 SS, Monel®, Hastelloy® B & C, titanium, tantalum, PVC, carbon steel, Teflon®, Carpenter 20®, other (nickel plated carbon steel or SS upper housing standard)
<b>Construction</b>	Two piece construction
<b>Connection</b>	1/4", 1/2" NPTF gauge connections standard (other NPTF gauge connections and thread types are available) 1" (25mm), 1.5" (40mm) and 2" (50mm) pipe size and #150 and #300 pressure rating standard (other configurations available)
<b>Maximum Temperature Limit</b>	450°F (232°C) Teflon® lined: 400°F (204°C) (higher temperature limits available)
<b>Other</b>	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 - Teflon® 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 - Teflon® lined	D441150UL5CS	D441150UL5SS
		Hastelloy® C	Monel®	D441150HM5CS	D441150HM5SS
		Hastelloy® C	Hastelloy® C	D441150HH5CS	D441150HH5SS
1" - 300#RF					
Welded Diaphragm	1/4" NPTF	316 SS	316 SS	D441300SS25CS	D441300SS25SS
		Tantalum	316 SS - Teflon® 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 - Teflon® lined	D441300UL5CS	D441300UL5SS
		Hastelloy® C	Monel®	D441300HM5CS	D441300HM5SS
		Hastelloy® C	Hastelloy® C	D441300HH5CS	D441300HH5SS

\*Replaceable and Teflon® diaphragms available

Other materials, pipe size and pressure ratings available upon request

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Monel® is a registered trademark of Inco Alloys International

Teflon® is a registered trademark of DuPont Corporation

## 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 - Teflon® 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 - Teflon® 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 - Teflon® 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 - Teflon® 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 - Teflon® 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 - Teflon® 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 - Teflon® 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 - Teflon® lined	D442300UL5CS	D442300UL5SS
		Hastelloy® C	Monel®	D442300HM5CS	D442300HM5SS
		Hastelloy® C	Hastelloy® C	D442300HH5CS	D442300HH5SS

\*Replaceable and Teflon® diaphragms available

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

For technical drawings, refer to D44 Teflon®.

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Monel® is a registered trademark of Inco Alloys International

Teflon® is a registered trademark of DuPont Corporation

30 to 1,300 psi (2 to 90 bar)



## 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
- 1 year warranty

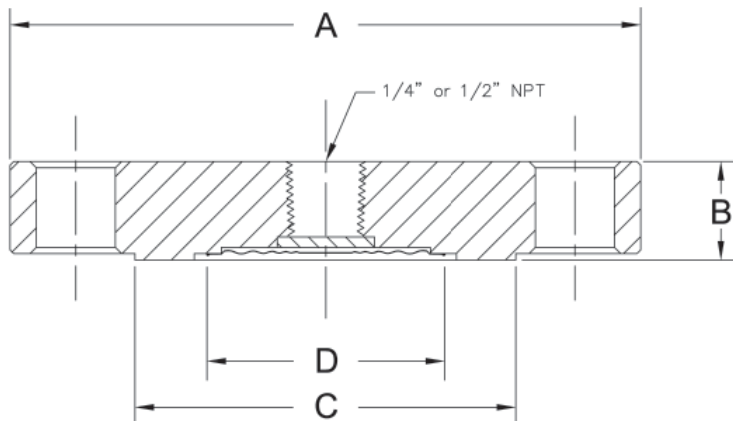
## Applications:

- 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 (other thread types are available) 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 (2 to 172 bar)



#### 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 (2 bar) and above; optional Viton® diaphragm available for ranges from 30” Hg Vacuum (-1 bar) up to 100 psi (7 bar). Other diaphragms available
- Viton® diaphragm is highly recommended for applications less than 10 psi
- ASME B40.100 compliant
- CRN registered (all 316 SS only)
- 1 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	
<b>Housing</b>	316L SS, Monel®, Hastelloy® C
<b>Diaphragm</b>	316L SS, Monel®, Hastelloy® C, Viton®
<b>Construction</b>	Two piece construction
<b>Gasket Material</b>	Buna N (Viton®, Teflon® optional)
<b>Connection</b>	Bottom: 1/4”, 1/2”, 3/4” and 1” NPTF Top: 1/4” and 1/2” NPTF (other thread types are available)
<b>Process Temperature</b>	-22°F to 212°F (-30°C to 100°C)
<b>Other</b>	Flushing connection available. Other materials such as Teflon®, PVC, carbon steel, Alloy 20, Hastelloy® B, titanium, tantalum, etc. are available upon request

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Teflon® is a registered trademark of DuPont Corporation

Viton® is a registered trademark of DuPont Performance Elastomers

## Order Codes

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 Viton®	D70954V
316L SS, 1/2" NPTF Viton®	D70956V
316L SS, 1/2" NPTF with flushing, Viton®	D70957V
316L SS, 3/4" NPTF with flushing, Viton®	D70959V
316L SS, 3/4" NPTF Viton®	D70963V
316L SS, 1" NPTF Viton®	D70964V
316L SS, 1" NPTF with flushing, Viton®	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 Viton® 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 Viton® diaphragm	D70953

## Option suffix for above order code only:

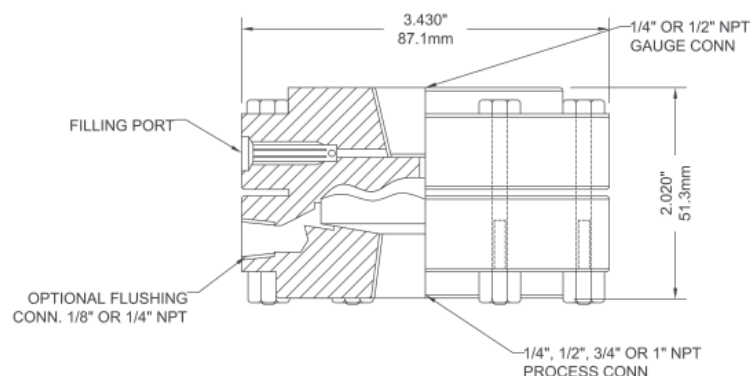
SF-D = Silicone fill (seal only)

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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 Teflon® is a registered trademark of DuPont Corporation  
 Viton® is a registered trademark of DuPont Performance Elastomers



30 to 2,500 psi (21 to 172 bar)



#### Description & Features:

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

#### Applications:

- Sour gas applications requiring instrumentation that meet NACE International Standards

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

#### Order Codes

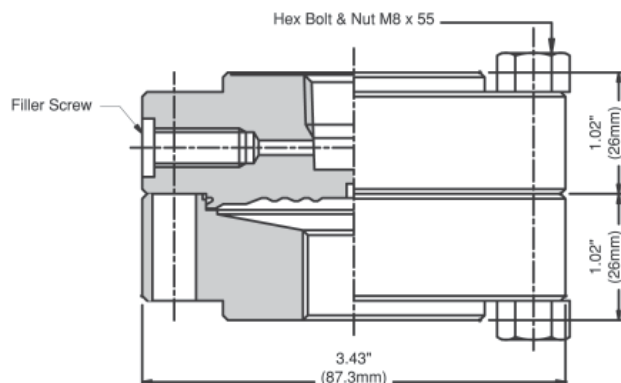
Upper Housing (Top)	
Hast. C, 1/4" NPTF conn., Hastelloy® C diaphragm	D71966HASC75
Hast. C, 1/2" NPTF conn., Hastelloy® C diaphragm	D71967HASC75
Lower Housing (Bottom)	
Hastelloy® C, 1/4" NPTF	D71954HASC75
Hastelloy® C, 1/2" NPTF	D71956HASC75
Hastelloy® C, 1/2" NPTF with flushing	D71957HASC75
Hastelloy®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



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 Viton® is a registered trademark of DuPont Performance Elastomers

30 to 2,500 psi (21 to 172 bar)



#### Description & Features:

- Can be used on applications requiring a NACE compliant MR0175-2003 diaphragm seal
- ASME B40.100 compliant
- 1 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 (Viton®, Teflon® optional)
Connection	Top: 1/4" and 1/2" NPTF Bottom: 1/4", 1/2", 3/4" and 1" NPTF (other thread types are available)
Process Temperature	-22°F to 212°F (-30°C to 100°C)
Other	Flushing connections available. Other materials available upon request.

#### Order Codes

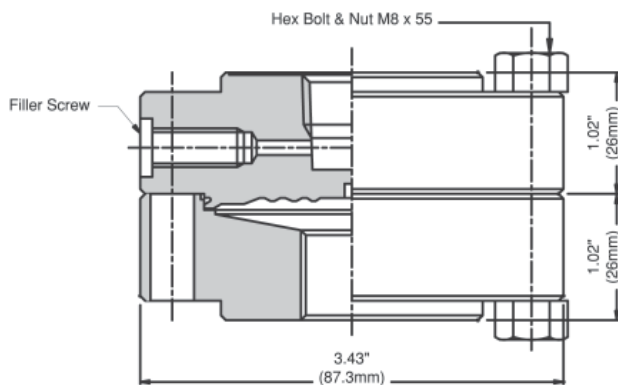
Upper Housing (Top)	
316 SS, 1/4" NPTF Monel® diaphragm	D7195003
316 SS, 1/2" NPTF Monel® diaphragm	D7195203
Lower Housing (Bottom)	
316 SS, 1/4" NPTF	D7195403
316 SS, 1/2" NPTF	D7195603
316 SS, 1/2" NPTF with flushing	D7195703
316 SS, 3/4" NPTF	D7196303
316 SS, 3/4" NPTF with flushing	D7195903
316 SS,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



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 Viton® is a registered trademark of DuPont Performance Elastomers

Vacuum to 1,000 psi (-1 to 69 bar)



#### Description & Features:

- Various materials and configurations available to fit your specific application
- Unique WinCONNECT fitting allows for easy field removal of gauge or switch for calibration, repair or replacement without interrupting process flow
- Thicker break-resistant instrument stem
- Optional tees for installation of multiple instruments
- ASME B40.100 compliant
- 1 year warranty

#### Applications:

- This isolation ring is ideal for measuring pressures of viscous or slurry media, utilizing a flow-through system that eliminates clogging or pressure blocking from occurring
- Designed for installation in water treatment facilities, mining and pulp & paper plants

Note: WinCONNECT comes standard with all D81 Isolation Rings

#### Order Codes

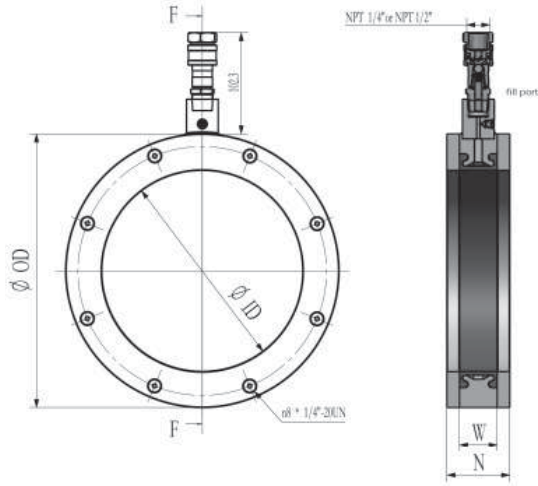
Specifications		
Sensor Type	WIR	Wafer, nests inside bolt circle
	RIR	Full flange (150# standard, 300# optional)
	SIR	Threaded connections
	QIR	Tri-Clover sanitary quick connect
	VIR	Victaulic connections
Pipe I.D.	1" - 48"	1" (25mm) up to 48" (1,220mm). Consult factory for larger sizes
Centre Section	C	Carbon Steel
	S	316 SS
	CK	Carbon Steel / Kynar® coated
End Plates	S	316 SS
	A	Acetal
	C20	Carpenter 20®
	TEF	Teflon®
	K	Kynar®
	H	Hastelloy® C
	T	Titanium
	U	UHMW / Ultra High Molecular Weight Polyethylene
Elastomer (Sleeve)	N	Neoprene (-20°F to 220°F)
	B	Nitrile (Buna N) (-20°F to 180°F)
	E	EPDM (Nordel®) (-20°F to 300°F)
	V	Fluoroelastomer (Viton®)
	R	Natural rubber (-49°F to 212°F)
Fill Fluid	SF	Silicone (standard)
	GF	Glycerin
	GW	Glycerin and water
Instrument Connection	4N	1/4" NPTF
	2N	1/2" NPTF

Not all options are available with all sensor types

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Hypalon® is a registered trademark of DuPont Performance Elastomers  
Kynar® is a registered trademark of Elf Atochem North America

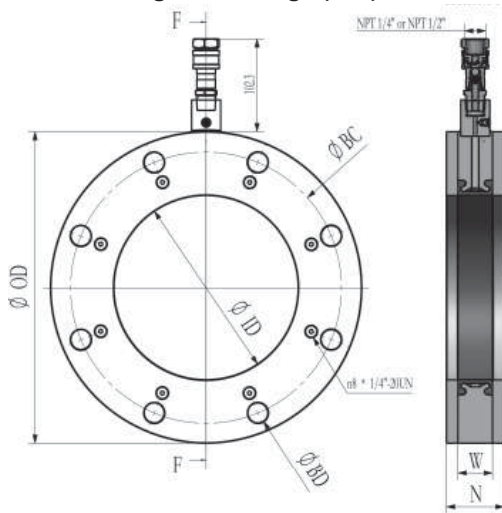
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## Isolation Ring - Wafer Style (WIR)



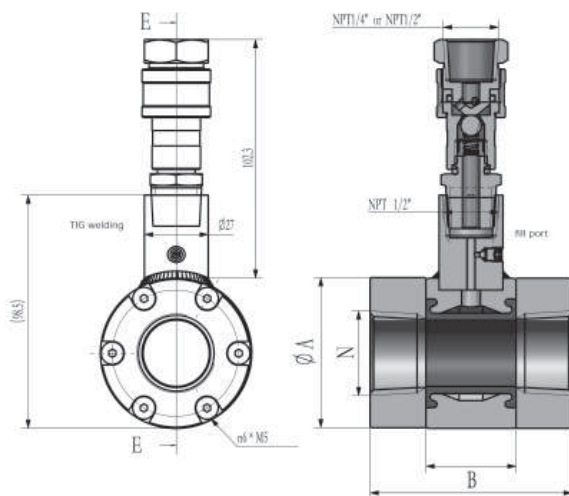
Dimensions				
Size	ID	OD	W	N
2"	2.07"	4.00"	1.50"	2.13"
3"	3.07"	5.25"		
4"	4.03"	6.75"		
6"	5.99"	8.63"		
8"	7.98"	10.88"		
10"	10.02"	13.25"	1.75"	3.00"
12"	12.00"	16.00"		
14"	13.25"	17.63"		
16"	15.25"	20.13"		
18"	17.25"	21.50"		
20"	19.25"	23.75"		

## Isolation Ring - Full Flange (RIR)



Dimensions								
ANSI ASME CLASS	Size	ID	OD	W	N	BC	BD	Number of Mounting Holes
150#	2"	2.07"	6.00"	1.50"	2.13"	4.75"	0.75"	4
	3"	3.07"	7.50"			6.00"		
	4"	4.03"	9.00"			7.50"		
	6"	6.07"	11.00"		2.25"	9.50"	0.88"	8
	8"	7.98"	13.50"		2.50"	11.75"		
300#	10"	10.02"	16.00"		2.75"	14.25"	1.00"	12
	2"	2.07"	6.50"		2.13"	5.00"	0.75"	8
	3"	3.07"	8.25"			6.62"		
	4"	4.03"	10.00"			7.88"		
	6"	6.07"	12.50"		2.25"	10.62"	0.88"	12
	8"	7.98"	15.00"		2.50"	13.00"		
	10"	10.02"	17.50"		2.75"	15.25"	1.13"	16

## Isolation Ring - Threaded (SIR)



Dimensions		
Size N	A	B
0.5"	2.50"	2.87"
0.75"		
1"		
1.5"	3.25"	3.37"
2"	4.00"	
3"	5.25"	
4"	6.75"	

## WinCONNECT Order Codes

Connection	Material	Code
1/2" Process x 1/4" Instrument	Stainless Steel	FIR0400
1/2" Process x 1/2" Instrument		FIR0200



30 to 600 psi (2 to 41 bar)



#### Description & Features:

- Two piece construction
- Clean-out design allows process media to flow through the seal
- Reduces potential for process media blockages inside diaphragm housing
- ASME B40.100 compliant
- 1 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

<b>Housing</b>	316 SS
<b>Diaphragm</b>	316 SS welded
<b>Construction</b>	Two piece construction
<b>Connection</b>	Instrument: 1/4", 1/2" NPTF Process: 1/4", 1/2", 3/4", 1" NPTF or socket weld (other thread types are available)
<b>Process Temperature</b>	-22°F to 302°F (-30°C to 150°C). Other ranges are available upon request
<b>Other</b>	Other materials such as carbon steel are available upon request

#### Order Codes

Lower Housing (process conn.)	Upper Housing (instrument conn.)	Code
1/4" NPTF	1/4" NPTF	D852536
	1/2" NPTF	D852537
1/4" Socket Weld	1/4" NPTF	D852538
	1/2" NPTF	D852539
1/2" NPTF	1/4" NPTF	D852540
	1/2" NPTF	D852541
1/2" Socket Weld	1/4" NPTF	D852542
	1/2" NPTF	D852543
3/4" NPTF	1/4" NPTF	D852544
	1/2" NPTF	D852545
3/4" Socket Weld	1/4" NPTF	D852546
	1/2" NPTF	D852547
1" NPTF	1/4" NPTF	D852690
	1/2" NPTF	D852691
1" Socket Weld	1/4" NPTF	D852692
	1/2" NPTF	D852693

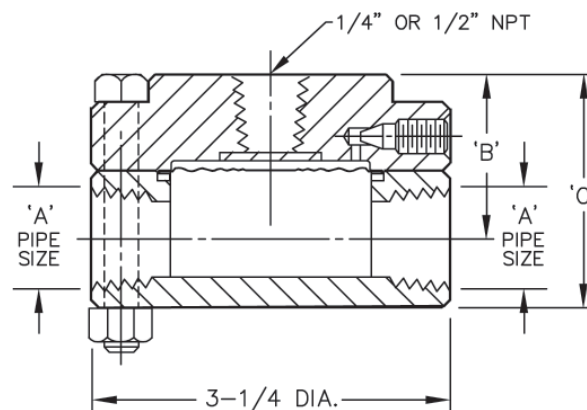
#### Option suffix for above order code only:

SF-D = Silicone fill (seal only)

FL-D = Fluorolube fill (seal only)

Other fill fluids (seal only) available upon request

Larger displacement diaphragms and other materials available upon request.



A (NPT)	B	C
1/4"	1.25"	1.625"
1/2"	1.5"	2.125"
3/4"	1.625"	2.375"
1"	1.75"	2.625"

30 to 600 psi (21 to 41 bar)



#### Description & Features:

- Finished with a cleanout design
- Various pipe sizes 1" (25mm) to 4" (100mm) and housing materials available
- ASME B40.100 compliant
- 1 year warranty

#### Applications:

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

#### Specifications

<b>Housing</b>	316 SS standard. Steel, nickel, 304 SS, Carpenter® 20, Hastelloy® B available upon request
<b>Diaphragm</b>	316 SS, Monel®, Hastelloy® C, Viton® standard. Nickel, Teflon®, tantalum, 304 SS, Carpenter® 20, Hastelloy® B available upon request
<b>Construction</b>	Two piece construction
<b>Connection</b>	1/4", 1/2" NPTF gauge connections standard (Other NPTF gauges connections and thread types are available). 1" (25mm), 1.5" (40mm), 2" (50mm), 3" (75mm), 4" (100mm) pipe size standard
<b>Maximum Temperature Limit</b>	450°F (232°C) Viton®: 350°F (176°C) (Higher temperature limits available)
<b>Other</b>	Cleanout type for easy cleaning and calibrating

#### Order Codes

Pipe Size	Diaphragm	Instrument Conn.	Code
1" (25mm)	316 SS	1/4"	D902564
		1/2"	D902560
	Hastelloy® C	1/4"	D902565
		1/2"	D902561
	Monel®	1/4"	D902566
		1/2"	D902562
	Viton®	1/4"	D902570
		1/2"	D902563
1.5" (40mm)	316 SS	1/4"	D902575
		1/2"	D902571
	Hastelloy® C	1/4"	D902576
		1/2"	D902572
	Monel®	1/4"	D902577
		1/2"	D902573
	Viton®	1/4"	D902578
		1/2"	D902574
2" (50mm)	316 SS	1/4"	D902583
		1/2"	D902579
	Hastelloy® C	1/4"	D902584
		1/2"	D902580
	Monel®	1/4"	D902585
		1/2"	D902581
	Viton®	1/4"	D902586
		1/2"	D902582

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Monel® is a registered trademark of Inco Alloys International

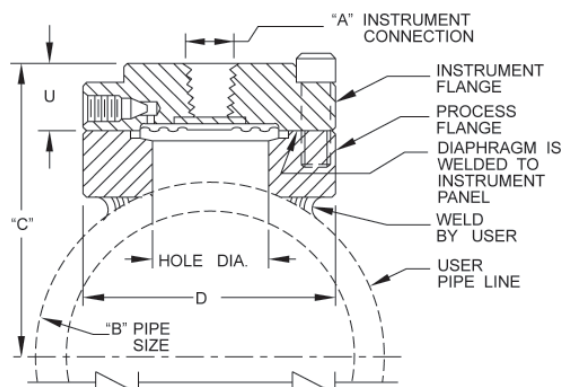
Teflon® is a registered trademark of DuPont Corporation

Viton® is a registered trademark of DuPont Performance Elastomers

## Order Codes

Pipe Size	Diaphragm	Instrument Conn.	Code
3" (75mm)	316 SS	1/4"	D902595
		1/2"	D902587
	Hastelloy® C	1/4"	D902596
		1/2"	D902592
	Monel®	1/4"	D902597
		1/2"	D902593
	Viton®	1/4"	D902598
		1/2"	D902594
4" (100mm)	316 SS	1/4"	D902695
		1/2"	D902599
	Hastelloy® C	1/4"	D902696
		1/2"	D902608
	Monel®	1/4"	D902697
		1/2"	D902609
	Viton®	1/4"	D902698
		1/2"	D902694

Larger displacement diaphragms and pipe sizes more than 4" available upon request.



Diaphragm Type	Instrument Connection A	Pipe Size B	C	D	U	Hole Diameter	
Welded, std.	1/4", 1/2" NPT	1"	2.13" (55mm)	3.5" (89mm)	0.88" (22mm)	1" (25mm)	
		1.5"	2.38" (60mm)			1.5" (38mm)	
		2"	2.63" (67mm)				
		3"	3.25" (83mm)				
		4"	3.81" (97mm)			1" (25mm)	
Welded, large		1"	2.13" (55mm)	4.25" (108mm)			1" (25mm)
		1.5"	2.38" (60mm)				1.5" (38mm)
		2"	2.63" (67mm)				
		3"	3.25" (83mm)				
		4"	3.81" (97mm)				
Viton®		1"	2.13" (55mm)	3.5" (89mm)	1" (25mm)	1" (25mm)	
		1.5"	2.38" (60mm)			1.5" (38mm)	
		2"	2.63" (67mm)				
		3"	3.25" (83mm)				

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

Monel® is a registered trademark of Inco Alloys International

Viton® is a registered trademark of DuPont Performance Elastomers

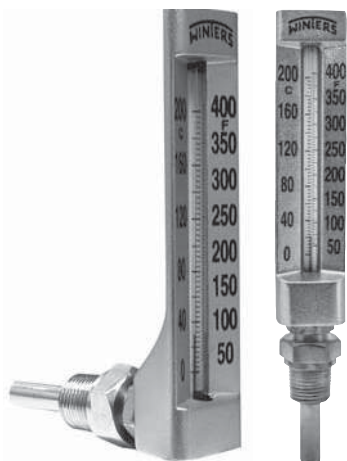


# Thermometer Selection Guide



	Series	Dial Size								Scale Size					Case Material				Wetted Parts	Connection Size			Accuracy								
Catalogue Page		≤2"	2.5"	3"	3.5"	4"	4.5"	5"	≥6"	4.5"	5"	6"	8"	9"	Steel	SS	Aluminum	Valox®	Plastic	Brass	SS	1/4" NPT	1/2" NPT	3/4" NPT	1% (Grade A)	2% (Grade B)	2.5% (Grade B)	3% (Grade B)	With thermowell	RoHS compliant	Lead Free Option
212	TAG HVAC Gold Case Thermometer									X		X				X				X	X		X			X			X		
219	TAS/TAS-LF Industrial/Lead Free Industrial 5" Thermometer										X								X	X			X			X			X	X	X
221	TBM Bi-Metal Thermometer	X		X		X		X	X							X					X	X	X		X				X		
227	TBT HVAC Bi-Metal Thermometer				X										X					X			X			X					
229	TCT Clamp-On Thermometer		X												X													X			
230	THR HVAC Remote Reading Thermometer	X	X													X				X							X				
232	THS Solar Digital Bi-Metal Thermometer			X												X					X		X		X					X	
233	TIM/TIM-LF Industrial/Lead Free Industrial 9" Thermometer													X			X	X		X				X	X				X	X	X
235	TMT Surface Magnet Thermometer	X													X												X				
236	TNC Non-Contact Infrared Thermometer																									X					
237	TNR Food & Beverage Bi-Metal Thermometer			X												X					X		X		X					X	
238	TRR Gas or Vapour Remote Reading Thermometer		X		X	X	X		X						X	X	X			X	X		X	X	X	X				X	
244	TSI Industrial Solar Digital									X									X	X				X	X				X	X	
246	TSW/TSW-LF Hot Water/Lead Free Hot Water Thermometer	X	X										X		X		X			X			X		X				X		X
249	TTD Tridicator		X	X											X					X		X	X					X			

Valox® is a registered trademark of the General Electric Company

**Description & Features:**

- Available in 4.5" (115mm), 6" (150mm) or 8" (200mm) scales
- Brass socket 1/2" NPT is standard (stainless steel optional)
- Available in either a straight model (bottom connection) or 90° angle model (back connection)
- ASME B40.200 and ASTM E2511 compliant
- 5 year warranty

**Applications:**

- Heating, plumbing, air conditioning and ventilation applications

Specifications	
Scale	Aluminum, black markings
Case	4.5" (115 mm), 6" (150 mm) or 8" (200mm) aluminum, anodized gold (reinforced nylon optional)
Tube	Glass, cushioned
Liquid Filling	Organic liquid (red)
Stem	Brass (SS optional)
Connection	1/2" NPT or 1/2" BSP(G)
Swivel Nut	Brass (SS optional; swivel and stem one unit)
Ambient/Process Temperature	-40°F to 400°F (-40°C to 204°C)
Operating Temperature	Maximum 80% of full scale value recommended
Accuracy	±2% of full scale
Enclosure Rating	IP65

## Order Codes

2" Stem (NPT)						
Anodized Gold						
	Straight			Angle		
Range	4.5" (110mm)	6" (150mm)	8" (200mm)	4.5" (110mm)	6" (150mm)	8" (200mm)
-40°F to 110°F & -40°C to 40°C	TAG130AG4	TAG130AG6	TAG130AG8	TAG140AG4	TAG140AG6	TAG140AG8
-20°F to 160°F & -30°C to 70°C	TAG135AG4	TAG135AG6	TAG135AG8	TAG144AG4	TAG144AG6	TAG144AG8
10°F to 140°F & -10°C to 60°C	TAG136AG4	TAG136AG6	TAG136AG8	TAG145AG4	TAG145AG6	TAG145AG8
20°F to 180°F & -5°C to 80°C	TAG131AG4	TAG131AG6	TAG131AG8	TAG141AG4	TAG141AG6	TAG141AG8
30°F to 140°F & 0°C to 160°C	TAG137AG4	TAG137AG6	TAG137AG8	TAG146AG4	TAG146AG6	TAG146AG8
30°F to 240°F & 0°C to 115°C	TAG132AG4	TAG132AG6	TAG132AG8	TAG150AG4	TAG150AG6	TAG150AG8
30°F to 300°F & 0°C to 150°C	TAG134AG4	TAG134AG6	TAG134AG8	TAG143AG4	TAG143AG6	TAG143AG8
50°F to 400°F & 10°C to 200°C	TAG133AG4	TAG133AG6	TAG133AG8	TAG142AG4	TAG142AG6	TAG142AG8

4" Stem (NPT)						
Anodized Gold						
	Straight			Angle		
Range	4.5" (110mm)	6" (150mm)	8" (200mm)	4.5" (110mm)	6" (150mm)	8" (200mm)
-40°F to 110°F & -40°C to 40°C	TAG151AG4	TAG151AG6	TAG151AG8	TAG159AG4	TAG159AG6	TAG159AG8
-20°F to 160°F & -30°C to 70°C	TAG152AG4	TAG152AG6	TAG152AG8	TAG160AG4	TAG160AG6	TAG160AG8
10°F to 140°F & -10°C to 60°C	TAG153AG4	TAG153AG6	TAG153AG8	TAG161AG4	TAG161AG6	TAG161AG8
20°F to 180°F & -5°C to 80°C	TAG154AG4	TAG154AG6	TAG154AG8	TAG162AG4	TAG162AG6	TAG162AG8
30°F to 140°F & 0°C to 160°C	TAG155AG4	TAG155AG6	TAG155AG8	TAG163AG4	TAG163AG6	TAG163AG8
30°F to 240°F & 0°C to 115°C	TAG156AG4	TAG156AG6	TAG156AG8	TAG164AG4	TAG164AG6	TAG164AG8
30°F to 300°F & 0°C to 150°C	TAG157AG4	TAG157AG6	TAG157AG8	TAG165AG4	TAG165AG6	TAG165AG8
50°F to 400°F & 10°C to 200°C	TAG158AG4	TAG158AG6	TAG158AG8	TAG166AG4	TAG166AG6	TAG166AG8

6" Stem (NPT)						
Anodized Gold						
	Straight			Angle		
Range	4.5" (110mm)	6" (150mm)	8" (200mm)	4.5" (110mm)	6" (150mm)	8" (200mm)
-40°F to 110°F & -40°C to 40°C	TAG167AG4	TAG167AG6	TAG167AG8	TAG175AG4	TAG175AG6	TAG175AG8
-20°F to 160°F & -30°C to 70°C	TAG168AG4	TAG168AG6	TAG168AG8	TAG176AG4	TAG176AG6	TAG176AG8
10°F to 140°F & -10°C to 60°C	TAG169AG4	TAG169AG6	TAG169AG8	TAG177AG4	TAG177AG6	TAG177AG8
20°F to 180°F & -5°C to 80°C	TAG170AG4	TAG170AG6	TAG170AG8	TAG178AG4	TAG178AG6	TAG178AG8
30°F to 140°F & 0°C to 160°C	TAG171AG4	TAG171AG6	TAG171AG8	TAG179AG4	TAG179AG6	TAG179AG8
30°F to 240°F & 0°C to 115°C	TAG172AG4	TAG172AG6	TAG172AG8	TAG180AG4	TAG180AG6	TAG180AG8
30°F to 300°F & 0°C to 150°C	TAG173AG4	TAG173AG6	TAG173AG8	TAG181AG4	TAG181AG6	TAG181AG8
50°F to 400°F & 10°C to 200°C	TAG174AG4	TAG174AG6	TAG174AG8	TAG182AG4	TAG182AG6	TAG182AG8

Other ranges and connection sizes available upon request. 304 SS thermowell available upon request.

## Order Codes

2" Stem (BSP(G))						
Anodized Gold						
	Straight			Angle		
Range	4.5" (110mm)	6" (150mm)	8" (200mm)	4.5" (110mm)	6" (150mm)	8" (200mm)
-40°F to 110°F & -40°C to 40°C	TAG183AG4	TAG183AG6	TAG183AG8	TAG191AG4	TAG191AG6	TAG191AG8
-20°F to 160°F & -30°C to 70°C	TAG184AG4	TAG184AG6	TAG184AG8	TAG192AG4	TAG192AG6	TAG192AG8
10°F to 140°F & -10°C to 60°C	TAG185AG4	TAG185AG6	TAG185AG8	TAG193AG4	TAG193AG6	TAG193AG8
20°F to 180°F & -5°C to 80°C	TAG186AG4	TAG186AG6	TAG186AG8	TAG194AG4	TAG194AG6	TAG194AG8
30°F to 140°F & 0°C to 160°C	TAG187AG4	TAG187AG6	TAG187AG8	TAG195AG4	TAG195AG6	TAG195AG8
30°F to 240°F & 0°C to 115°C	TAG188AG4	TAG188AG6	TAG188AG8	TAG196AG4	TAG196AG6	TAG196AG8
30°F to 300°F & 0°C to 150°C	TAG189AG4	TAG189AG6	TAG189AG8	TAG197AG4	TAG197AG6	TAG197AG8
50°F to 400°F & 10°C to 200°C	TAG190AG4	TAG190AG6	TAG190AG8	TAG198AG4	TAG198AG6	TAG198AG8

4" Stem (BSP(G))						
Anodized Gold						
	Straight			Angle		
Range	4.5" (110mm)	6" (150mm)	8" (200mm)	4.5" (110mm)	6" (150mm)	8" (200mm)
-40°F to 110°F & -40°C to 40°C	TAG199AG4	TAG199AG6	TAG199AG8	TAG207AG4	TAG207AG6	TAG207AG8
-20°F to 160°F & -30°C to 70°C	TAG200AG4	TAG200AG6	TAG200AG8	TAG208AG4	TAG208AG6	TAG208AG8
10°F to 140°F & -10°C to 60°C	TAG201AG4	TAG201AG6	TAG201AG8	TAG209AG4	TAG209AG6	TAG209AG8
20°F to 180°F & -5°C to 80°C	TAG202AG4	TAG202AG6	TAG202AG8	TAG210AG4	TAG210AG6	TAG210AG8
30°F to 140°F & 0°C to 160°C	TAG203AG4	TAG203AG6	TAG203AG8	TAG211AG4	TAG211AG6	TAG211AG8
30°F to 240°F & 0°C to 115°C	TAG204AG4	TAG204AG6	TAG204AG8	TAG212AG4	TAG212AG6	TAG212AG8
30°F to 300°F & 0°C to 150°C	TAG205AG4	TAG205AG6	TAG205AG8	TAG213AG4	TAG213AG6	TAG213AG8
50°F to 400°F & 10°C to 200°C	TAG206AG4	TAG206AG6	TAG206AG8	TAG214AG4	TAG214AG6	TAG214AG8

6" Stem (BSP(G))						
Anodized Gold						
	Straight			Angle		
Range	4.5" (110mm)	6" (150mm)	8" (200mm)	4.5" (110mm)	6" (150mm)	8" (200mm)
-40°F to 110°F & -40°C to 40°C	TAG215AG4	TAG215AG6	TAG215AG8	TAG223AG4	TAG223AG6	TAG223AG8
-20°F to 160°F & -30°C to 70°C	TAG216AG4	TAG216AG6	TAG216AG8	TAG224AG4	TAG224AG6	TAG224AG8
10°F to 140°F & -10°C to 60°C	TAG217AG4	TAG217AG6	TAG217AG8	TAG225AG4	TAG225AG6	TAG225AG8
20°F to 180°F & -5°C to 80°C	TAG218AG4	TAG218AG6	TAG218AG8	TAG226AG4	TAG226AG6	TAG226AG8
30°F to 140°F & 0°C to 160°C	TAG219AG4	TAG219AG6	TAG219AG8	TAG227AG4	TAG227AG6	TAG227AG8
30°F to 240°F & 0°C to 115°C	TAG220AG4	TAG220AG6	TAG220AG8	TAG228AG4	TAG228AG6	TAG228AG8
30°F to 300°F & 0°C to 150°C	TAG221AG4	TAG221AG6	TAG221AG8	TAG229AG4	TAG229AG6	TAG229AG8
50°F to 400°F & 10°C to 200°C	TAG222AG4	TAG222AG6	TAG222AG8	TAG230AG4	TAG230AG6	TAG230AG8

Other ranges and connection sizes available upon request. 304 SS thermowell available upon request.

## Order Codes

2" Stem (NPT)						
Reinforced Nylon						
	Straight			Angle		
Range	4.5" (110mm)	6" (150mm)	8" (200mm)	4.5" (110mm)	6" (150mm)	8" (200mm)
-40°F to 110°F & -40°C to 40°C	TAG130AP4	TAG130AP6	TAG130AP8	TAG140AP4	TAG140AP6	TAG140AP8
-20°F to 160°F & -30°C to 70°C	TAG135AP4	TAG135AP6	TAG135AP8	TAG144AP4	TAG144AP6	TAG144AP8
10°F to 140°F & -10°C to 60°C	TAG136AP4	TAG136AP6	TAG136AP8	TAG145AP4	TAG145AP6	TAG145AP8
20°F to 180°F & -5°C to 80°C	TAG131AP4	TAG131AP6	TAG131AP8	TAG141AP4	TAG141AP6	TAG141AP8
30°F to 140°F & 0°C to 160°C	TAG137AP4	TAG137AP6	TAG137AP8	TAG146AP4	TAG146AP6	TAG146AP8
30°F to 240°F & 0°C to 115°C	TAG132AP4	TAG132AP6	TAG132AP8	TAG150AP4	TAG150AP6	TAG150AP8
30°F to 300°F & 0°C to 150°C	TAG134AP4	TAG134AP6	TAG134AP8	TAG143AP4	TAG143AP6	TAG143AP8
50°F to 400°F & 10°C to 200°C	TAG133AP4	TAG133AP6	TAG133AP8	TAG142AP4	TAG142AP6	TAG142AP8

4" Stem (NPT)						
Reinforced Nylon						
	Straight			Angle		
Range	4.5" (110mm)	6" (150mm)	8" (200mm)	4.5" (110mm)	6" (150mm)	8" (200mm)
-40°F to 110°F & -40°C to 40°C	TAG151AP4	TAG151AP6	TAG151AP8	TAG159AP4	TAG159AP6	TAG159AP8
-20°F to 160°F & -30°C to 70°C	TAG152AP4	TAG152AP6	TAG152AP8	TAG160AP4	TAG160AP6	TAG160AP8
10°F to 140°F & -10°C to 60°C	TAG153AP4	TAG153AP6	TAG153AP8	TAG161AP4	TAG161AP6	TAG161AP8
20°F to 180°F & -5°C to 80°C	TAG154AP4	TAG154AP6	TAG154AP8	TAG162AP4	TAG162AP6	TAG162AP8
30°F to 140°F & 0°C to 160°C	TAG155AP4	TAG155AP6	TAG155AP8	TAG163AP4	TAG163AP6	TAG163AP8
30°F to 240°F & 0°C to 115°C	TAG156AP4	TAG156AP6	TAG156AP8	TAG164AP4	TAG164AP6	TAG164AP8
30°F to 300°F & 0°C to 150°C	TAG157AP4	TAG157AP6	TAG157AP8	TAG165AP4	TAG165AP6	TAG165AP8
50°F to 400°F & 10°C to 200°C	TAG158AP4	TAG158AP6	TAG158AP8	TAG166AP4	TAG166AP6	TAG166AP8

6" Stem (NPT)						
Reinforced Nylon						
	Straight			Angle		
Range	4.5" (110mm)	6" (150mm)	8" (200mm)	4.5" (110mm)	6" (150mm)	8" (200mm)
-40°F to 110°F & -40°C to 40°C	TAG167AP4	TAG167AP6	TAG167AP8	TAG175AP4	TAG175AP6	TAG175AP8
-20°F to 160°F & -30°C to 70°C	TAG168AP4	TAG168AP6	TAG168AP8	TAG176AP4	TAG176AP6	TAG176AP8
10°F to 140°F & -10°C to 60°C	TAG169AP4	TAG169AP6	TAG169AP8	TAG177AP4	TAG177AP6	TAG177AP8
20°F to 180°F & -5°C to 80°C	TAG170AP4	TAG170AP6	TAG170AP8	TAG178AP4	TAG178AP6	TAG178AP8
30°F to 140°F & 0°C to 160°C	TAG171AP4	TAG171AP6	TAG171AP8	TAG179AP4	TAG179AP6	TAG179AP8
30°F to 240°F & 0°C to 115°C	TAG172AP4	TAG172AP6	TAG172AP8	TAG180AP4	TAG180AP6	TAG180AP8
30°F to 300°F & 0°C to 150°C	TAG173AP4	TAG173AP6	TAG173AP8	TAG181AP4	TAG181AP6	TAG181AP8
50°F to 400°F & 10°C to 200°C	TAG174AP4	TAG174AP6	TAG174AP8	TAG182AP4	TAG182AP6	TAG182AP8

Other ranges and connection sizes available upon request. 304 SS thermowell available upon request.

## Order Codes

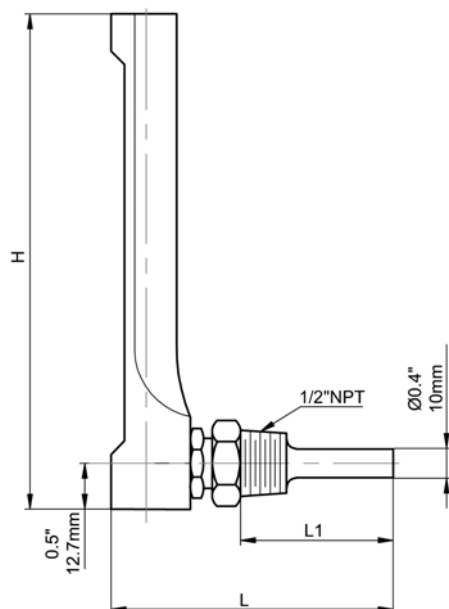
2" Stem (BSP(G))						
Reinforced Nylon						
Range	Straight			Angle		
	4.5" (110mm)	6" (150mm)	8" (200mm)	4.5" (110mm)	6" (150mm)	8" (200mm)
-40°F to 110°F & -40°C to 40°C	TAG183AP4	TAG183AP6	TAG183AP8	TAG191AP4	TAG191AP6	TAG191AP8
-20°F to 160°F & -30°C to 70°C	TAG184AP4	TAG184AP6	TAG184AP8	TAG192AP4	TAG192AP6	TAG192AP8
10°F to 140°F & -10°C to 60°C	TAG185AP4	TAG185AP6	TAG185AP8	TAG193AP4	TAG193AP6	TAG193AP8
20°F to 180°F & -5°C to 80°C	TAG186AP4	TAG186AP6	TAG186AP8	TAG194AP4	TAG194AP6	TAG194AP8
30°F to 140°F & 0°C to 160°C	TAG187AP4	TAG187AP6	TAG187AP8	TAG195AP4	TAG195AP6	TAG195AP8
30°F to 240°F & 0°C to 115°C	TAG188AP4	TAG188AP6	TAG188AP8	TAG196AP4	TAG196AP6	TAG196AP8
30°F to 300°F & 0°C to 150°C	TAG189AP4	TAG189AP6	TAG189AP8	TAG197AP4	TAG197AP6	TAG197AP8
50°F to 400°F & 10°C to 200°C	TAG190AP4	TAG190AP6	TAG190AP8	TAG198AP4	TAG198AP6	TAG198AP8

4" Stem (BSP(G))						
Reinforced Nylon						
Range	Straight			Angle		
	4.5" (110mm)	6" (150mm)	8" (200mm)	4.5" (110mm)	6" (150mm)	8" (200mm)
-40°F to 110°F & -40°C to 40°C	TAG199AP4	TAG199AP6	TAG199AP8	TAG207AP4	TAG207AP6	TAG207AP8
-20°F to 160°F & -30°C to 70°C	TAG200AP4	TAG200AP6	TAG200AP8	TAG208AP4	TAG208AP6	TAG208AP8
10°F to 140°F & -10°C to 60°C	TAG201AP4	TAG201AP6	TAG201AP8	TAG209AP4	TAG209AP6	TAG209AP8
20°F to 180°F & -5°C to 80°C	TAG202AP4	TAG202AP6	TAG202AP8	TAG210AP4	TAG210AP6	TAG210AP8
30°F to 140°F & 0°C to 160°C	TAG203AP4	TAG203AP6	TAG203AP8	TAG211AP4	TAG211AP6	TAG211AP8
30°F to 240°F & 0°C to 115°C	TAG204AP4	TAG204AP6	TAG204AP8	TAG212AP4	TAG212AP6	TAG212AP8
30°F to 300°F & 0°C to 150°C	TAG205AP4	TAG205AP6	TAG205AP8	TAG213AP4	TAG213AP6	TAG213AP8
50°F to 400°F & 10°C to 200°C	TAG206AP4	TAG206AP6	TAG206AP8	TAG214AP4	TAG214AP6	TAG214AP8

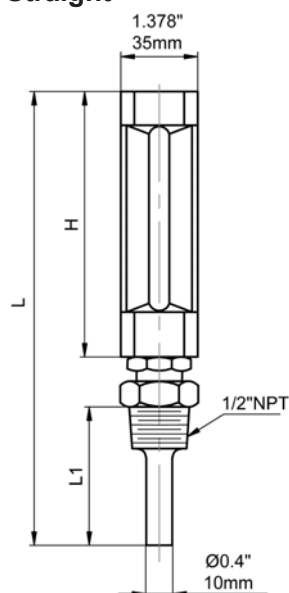
6" Stem (BSP(G))						
Reinforced Nylon						
Range	Straight			Angle		
	4.5" (110mm)	6" (150mm)	8" (200mm)	4.5" (110mm)	6" (150mm)	8" (200mm)
-40°F to 110°F & -40°C to 40°C	TAG215AP4	TAG215AP6	TAG215AP8	TAG223AP4	TAG223AP6	TAG223AP8
-20°F to 160°F & -30°C to 70°C	TAG216AP4	TAG216AP6	TAG216AP8	TAG224AP4	TAG224AP6	TAG224AP8
10°F to 140°F & -10°C to 60°C	TAG217AP4	TAG217AP6	TAG217AP8	TAG225AP4	TAG225AP6	TAG225AP8
20°F to 180°F & -5°C to 80°C	TAG218AP4	TAG218AP6	TAG218AP8	TAG226AP4	TAG226AP6	TAG226AP8
30°F to 140°F & 0°C to 160°C	TAG219AP4	TAG219AP6	TAG219AP8	TAG227AP4	TAG227AP6	TAG227AP8
30°F to 240°F & 0°C to 115°C	TAG220AP4	TAG220AP6	TAG220AP8	TAG228AP4	TAG228AP6	TAG228AP8
30°F to 300°F & 0°C to 150°C	TAG221AP4	TAG221AP6	TAG221AP8	TAG229AP4	TAG229AP6	TAG229AP8
50°F to 400°F & 10°C to 200°C	TAG222AP4	TAG222AP6	TAG222AP8	TAG230AP4	TAG230AP6	TAG230AP8

Other ranges and connection sizes available upon request. 304 SS thermowell available upon request.

## Angle



## Straight



### Dimensions

Case Height (H)	Stem Length (L1)	L (Angle)	L (Straight)
4.5" (114mm)	2" (50.8mm)	3.69" (93.7mm)	7.17" (182.1mm)
6" (152.4mm)			8.67" (220.2mm)

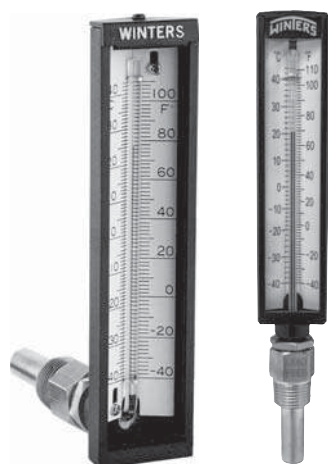


## Series Number (for custom, non-standard product)

	T	A	G	-		-		-						-		-		-			
<b>SERIES</b>																					
<b>SCALE SIZE</b>																					
4.5" (115mm)					4																
6.0" (150mm)					6																
8.0" (200mm)					8																
<b>CONFIGURATION</b>																					
Angle							A														
Bottom							B														
<b>THERMOWELL LENGTH</b>																					
2"								0	2	0											
3"								0	3	0											
4"								0	4	0											
Other (in inches x 10)								X	X	X											
<b>THERMOWELL MATERIAL</b>																					
Brass											B										
304SS											2										
<b>THREAD SIZE</b>																					
1/2"												2									
3/4"												4									
Special												Z									
<b>THREAD TYPE</b>																					
NPT													N								
BSP (G)													B								
BSPT (R)													T								
M20 x 1.5													M								
Special													Z								
<b>RANGE</b>																					
-40/110 F&C																	B	4	1		
-20/160 F&C																	B	6	6		
10/140 F&C																	B	6	7		
20/180 F&C																	B	2	1		
30/120 F&C																	B	3	1		
30/140 F&C																	B	6	8		
30/240 F&C																	B	3	2		
30/300 F&C																	B	3	3		
50/400 F&C																	B	5	4		

# Industrial 5" Thermometer, Lead Free Industrial 5" Thermometer

**TAS,  
TAS-LF**



Note: RoHS applies only to SS thermowell

## Description & Features:

- An all-purpose, economical thermometer with a vertical sensing tube and case
- Separable brass, lead free brass or stainless steel thermowell
- Impact resistant ABS case
- Red liquid-in glass
- Dual scale (°F & °C)
- Straight or angle connection
- 1/2" NPT process connection
- ASME B40.200 and ASTM E2511 compliant
- 5 year warranty

## Applications:

- Hot water lines, boilers, heating, ventilation and air conditioning

Specifications	
Scale	Aluminum, painted white with black markings
Case	5" (127mm) black ABS
Lens	Glass
Tube	Glass, cushioned
Sensing Liquid	Kerosene, tinted red
Stem	Brass
Thermowell	TAS: Brass 1/2" NPT standard, (3/4" and SS optional, other thread types are available) TAS-LF: Lead free brass 1/2" NPT (3/4" optional, other thread types are available)
Operating Pressure	Maximum 710 psi (50 kg/cm <sup>2</sup> )
Ambient Temperature	-40°F to 122°F (-40°C to 50°C)
Process Temperature	-40°F to 400°F (-40°C to 204°C)
Accuracy	±2% of full scale
Enclosure Rating	IP50

## TAS Order Codes

Range	Straight	Angle
-40°F to 110°F & -40°C to 40°C	TAS130	TAS140
20°F to 180°F & -5°C to 80°C	TAS131	TAS141
30°F to 240°F & 0°C to 115°C	TAS132	TAS150
30°F to 300°F & 0°C to 150°C	TAS134	TAS143
50°F to 400°F & 10°C to 200°C	TAS133	TAS142

## Thermowell

Connection	Material	Code
1/2" NPT - Standard (Included with thermometer)	Brass	TAS62
1/2" NPT - Optional	304 SS	TAS62-1
3/4" NPT - Optional	Brass	TAS64
3/4" NPT - Optional	304 SS	TAS64-1

## TAS-LF Order Codes

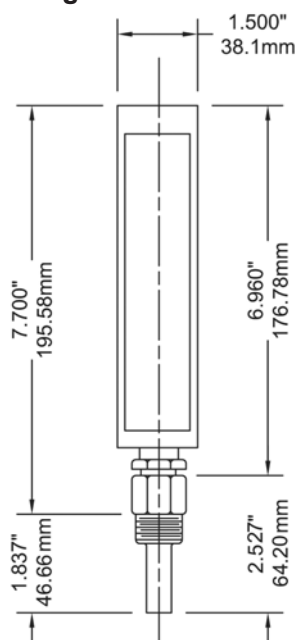
Range	Straight	Angle
-40°F to 110°F & -40°C to 40°C	TAS130LF	TAS140LF
20°F to 180°F & -5°C to 80°C	TAS131LF	TAS141LF
30°F to 240°F & 0°C to 115°C	TAS132LF	TAS150LF
30°F to 300°F & 0°C to 150°C	TAS134LF	TAS143LF
50°F to 400°F & 10°C to 200°C	TAS133LF	TAS142LF

## Thermowell

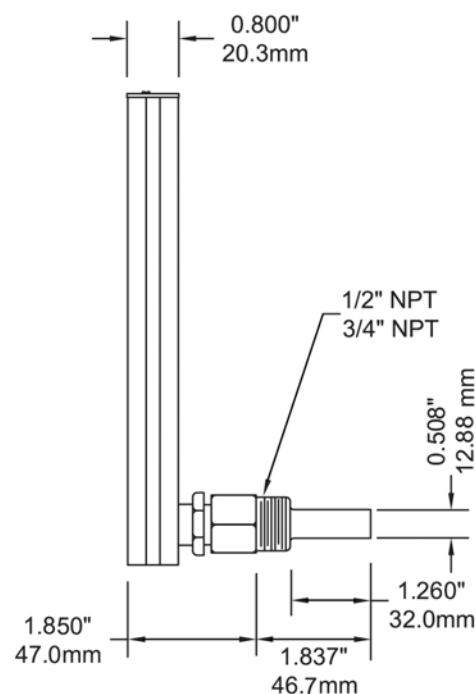
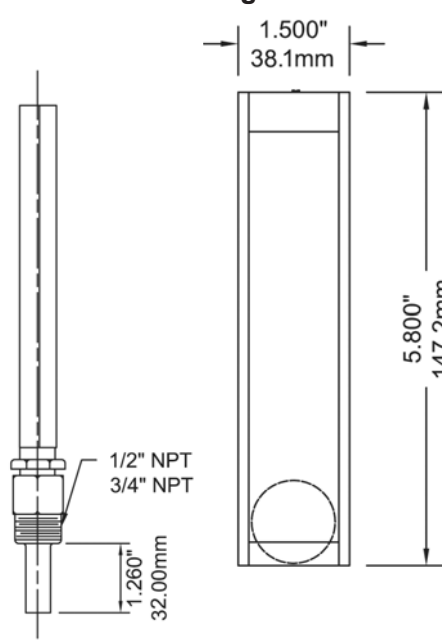
Connection	Material	Code
1/2" NPT - Standard (Included with thermometer)	Brass	TAS62LF
3/4" NPT - Optional	Brass	TAS64LF

Other ranges and connection sizes available upon request. 304 SS thermowell available upon request. Plastic lens available upon request. 3/4" NPT connection available upon request.

## Straight



## Angle



**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
- $\pm 1\%$  accuracy
- Anti-parallax dial that reduces operator reading errors (3" (75mm)-6" (150mm))
- Recalibrator screw is standard on all dial sizes
- ASME B40.200 compliant
- 5 year warranty

**Applications:**

- Industrial process, heating and air conditioning, ventilation and wastewater

**Specifications**

<b>Dial</b>	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
<b>Case</b>	AISI 304 SS
<b>Stem</b>	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
<b>Recalibrator Screw</b>	Standard
<b>Lens</b>	1" (25mm): Polycarbonate Others: Glass standard, hermetically sealed
<b>Ring</b>	AISI 304 SS
<b>Connection</b>	1" (25mm): None 2" (50mm): 1/4" NPT standard 3" (75mm), 4" (100mm), 5" (127mm), 6" (150mm): 1/2" NPT standard
<b>Sensing Element</b>	Bi-metallic coil
<b>Pointer</b>	Aluminum, painted black
<b>Maximum Operating Pressure</b>	125 psi (861 kPa)
<b>Operating Temperature</b>	75% of full scale value (recommended maximum)
<b>Ambient Temperature</b>	-58°F to 248°F (-50°C to 120°C)
<b>Accuracy</b>	$\pm 1\%$ of full scale
<b>Enclosure Rating</b>	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:** 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) NPT Connection	2.5" (63mm)	TBM20025	-	-
	4" (100mm)	TBM20040	-	-
	6" (150mm)	TBM20060	-	-
	9" (230mm)	TBM20090	-	-
	12" (300mm)	TBM20120	-	-
	15" (370mm)	TBM20150	-	-
3" (75mm) NPT Connection	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) NPT Connection	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) NPT Connection	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) NPT Connection	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

Dial Size	Stem Length	Fixed Centre Back	Bottom	Adjustable Angle
3" (75mm) BSP(G) Connection	2.5" (63mm)	TBM30025T1	TBM31025T1	TBM32025T1
	4" (100mm)	TBM30040T1	TBM31040T1	TBM32040T1
	6" (150mm)	TBM30060T1	TBM31060T1	TBM32060T1
	9" (230mm)	TBM30090T1	TBM31090T1	TBM32090T1
	12" (300mm)	TBM30120T1	TBM31120T1	TBM32120T1
	15" (370mm)	TBM30150T1	TBM31150T1	TBM32150T1
4" (100mm) BSP(G) Connection	2.5" (63mm)	TBM40025T1	TBM41025T1	TBM42025T1
	4" (100mm)	TBM40040T1	TBM41040T1	TBM42040T1
	6" (150mm)	TBM40060T1	TBM41060T1	TBM42060T1
	9" (230mm)	TBM40090T1	TBM41090T1	TBM42090T1
	12" (300mm)	TBM40120T1	TBM41120T1	TBM42120T1
	15" (370mm)	TBM40150T1	TBM41150T1	TBM42150T1
5" (127mm) BSP(G) Connection	2.5" (63mm)	TBM50025T1	TBM51025T1	TBM52025T1
	4" (100mm)	TBM50040T1	TBM51040T1	TBM52040T1
	6" (150mm)	TBM50060T1	TBM51060T1	TBM52060T1
	9" (230mm)	TBM50090T1	TBM51090T1	TBM52090T1
	12" (300mm)	TBM50120T1	TBM51120T1	TBM52120T1
	15" (370mm)	TBM50150T1	TBM51150T1	TBM52150T1
6" (150mm) BSP(G) Connection	2.5" (63mm)	TBM60025T1	TBM61025T1	TBM62025T1
	4" (100mm)	TBM60040T1	TBM61040T1	TBM62040T1
	6" (150mm)	TBM60060T1	TBM61060T1	TBM62060T1
	9" (230mm)	TBM60090T1	TBM61090T1	TBM62090T1
	12" (300mm)	TBM60120T1	TBM61120T1	TBM62120T1
	15" (370mm)	TBM60150T1	TBM61150T1	TBM62150T1

## Temperature Codes

°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, connection sizes and thread types available upon request. For glycerin fill, maximum temperature limit is 300°F (150°C). Silicone fill available.

**Option suffix for above order code only:**

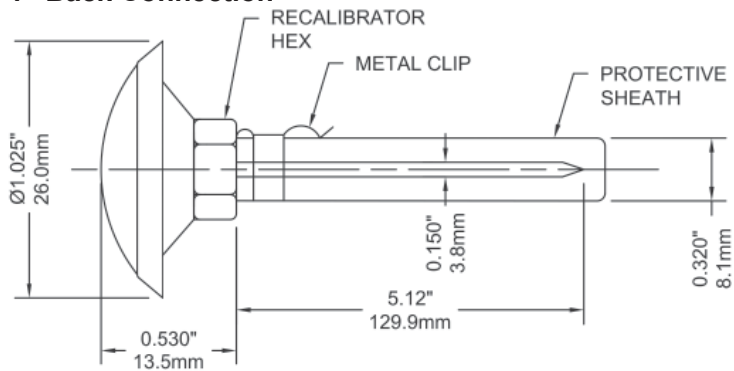
AP3 = 3" (75mm) acrylic lens  
 AP4 = 4" (100mm) acrylic lens  
 AP5 = 5" (127mm) acrylic lens  
 AP6 = 6" (150mm) acrylic lens  
 BG3 = 3" (75mm) glycerin filling  
 BG4 = 4" (100mm) glycerin filling

BG5 = 5" (127mm) glycerin filling  
 BG6 = 6" (150mm) glycerin filling  
 DUCT = Aluminum duct flange  
 RSP4 = 4" (100mm) Red set pointer  
 RSP5 = 5" (127mm) Red set pointer  
 RSP6 = 6" (150mm) Red set pointer

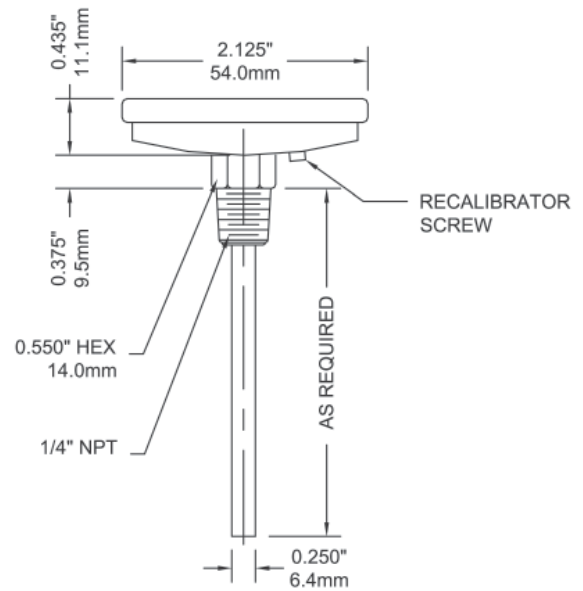
SCK = Socket conversion kit  
 SPG3 = 3" (75mm) Shatterproof glass lens  
 SPG5 = 5" (127mm) Shatterproof glass lens  
 SPG6 = 6" (150mm) Shatterproof glass lens

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

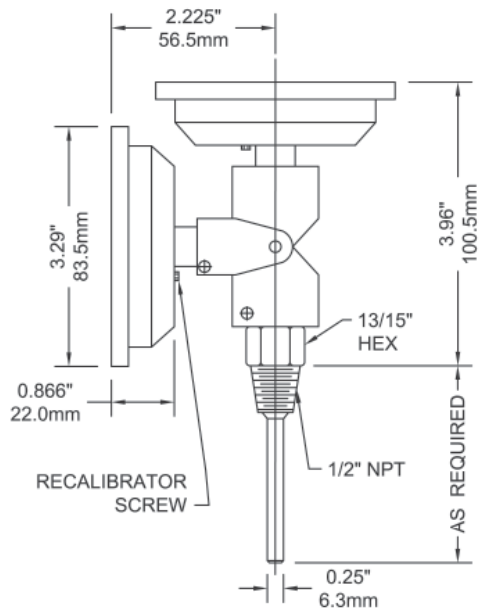
## 1" Back Connection



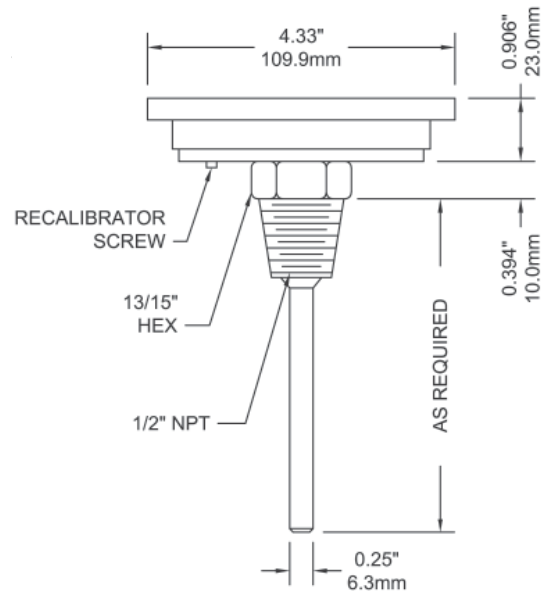
## 2" Back Connection



## 3" Adjustable Angle Connection

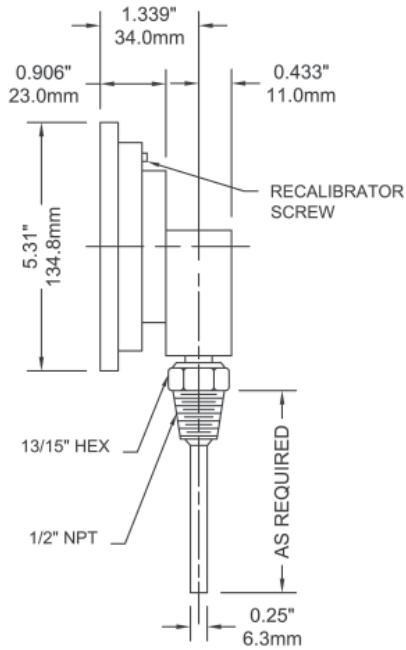


## 4" Back Connection

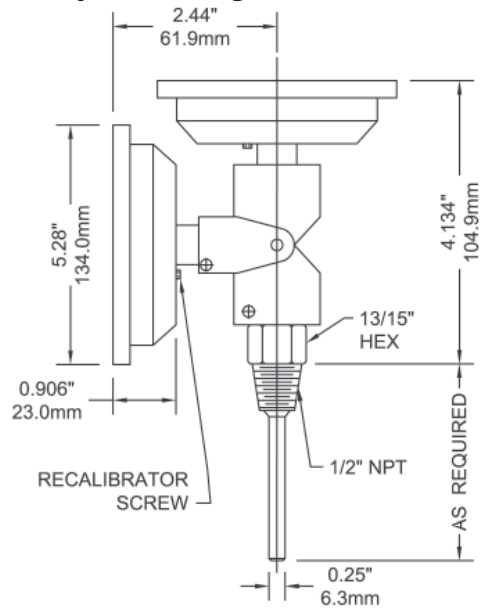




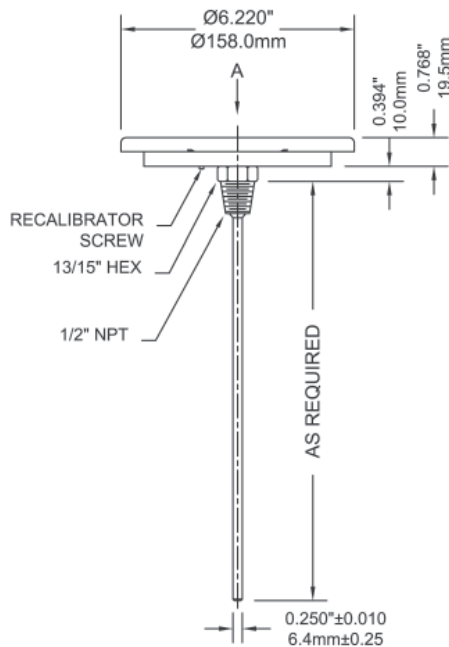
## 5" Bottom Connection



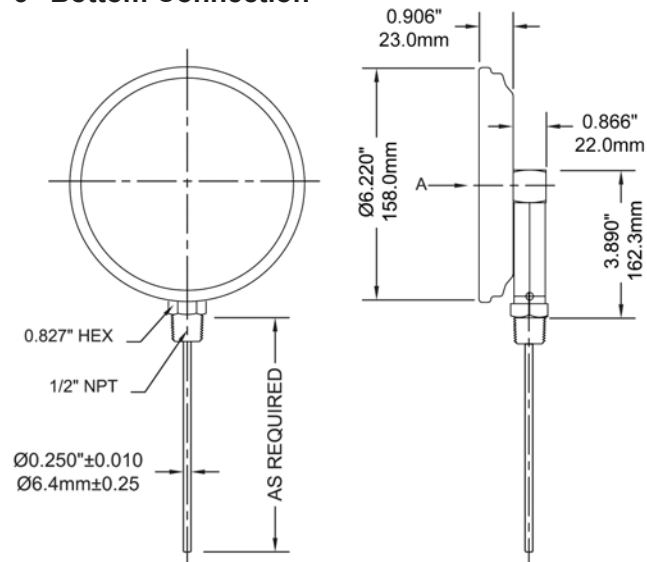
## 5" Adjustable Angle Connection



## 6" Back Connection

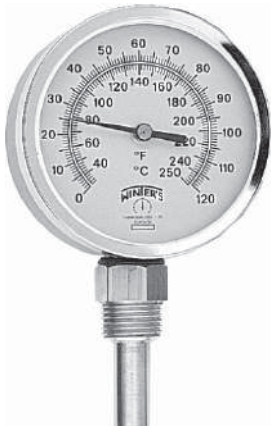


## 6" Bottom Connection



**Series Number (for custom, non-standard product)**

[illegible]

**Description & Features:**

- A durable and accurate thermometer with a rigid connection
- Separable thermowell
- Rugged steel case
- Bi-metallic element
- Dual scale (°F & °C)
- Back or bottom connected
- 1/2" NPT process connection (other thread types are available)
- ASME B40.200 compliant
- 5 year warranty

**Applications:**

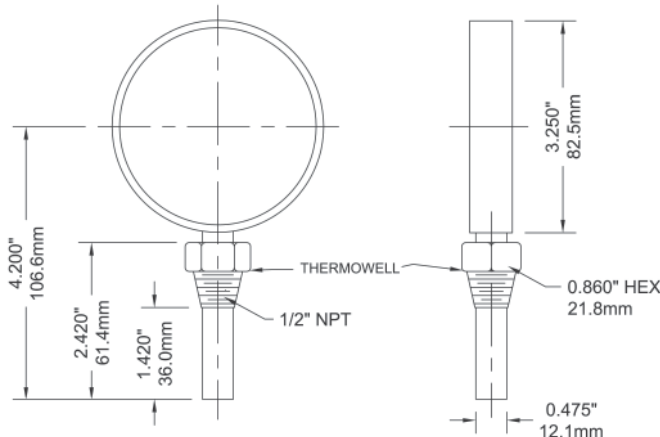
- Hot water lines, boilers and hydronic heating

Specifications	
Dial	3.5" (90mm), aluminum with black markings
Case	Steel
Lens	Glass
Ring	Steel, chrome plated
Stem	Brass
Thermowell	Brass, 1/2" NPT (standard), separable (other thread types are available)
Sensing Element	Bi-metallic coil
Pointer	Aluminum, painted black
Over Range Enclosure Rating	±25% of full scale value
Reset	Standard
Ambient Temperature	-22°F to 158°F (-30°C to 70°C)
Process Temperature	-22°F to 250°F (-30°C to 120°C)
Accuracy	±2% of full scale
Enclosure Rating	IP50

**Order Codes**

Range	Bottom	Back
30°F to 250°F & 0°C to 121°C	TBT165	TBT160
0°F to 120°F	-	TBT161

Other ranges, connection sizes and thread types available upon request.

**Bottom Connection**

## Series Number (for custom, non-standard product)

	T	B	T	-			-		-				-		-		-			
SERIES																				
DIAL SIZE																				
3.5"																				
CONFIGURATION																				
Back																				
Bottom																				
THERMOWELL LENGTH																				
2.5"																				
Other (in inches X10)																				
THERMOWELL MATERIAL																				
Brass																				
THREAD SIZE																				
1/2"																				
Special																				
THREAD TYPE																				
NPT																				
BSP																				
BSPT																				
M20x1.5																				
RANGE																				
30/250 F&C																				
0/120 F&C																				



## Description & Features:

- Provides an economical and accurate method to measure surface temperatures on a 1/2" (12.5mm) to 4" (100mm) pipe
- Clamp-on design with steel spring
- Dual scale (°F & °C)
- 3 ranges available
- Easy to install
- ASME B40.200 compliant
- 5 year warranty

## Applications:

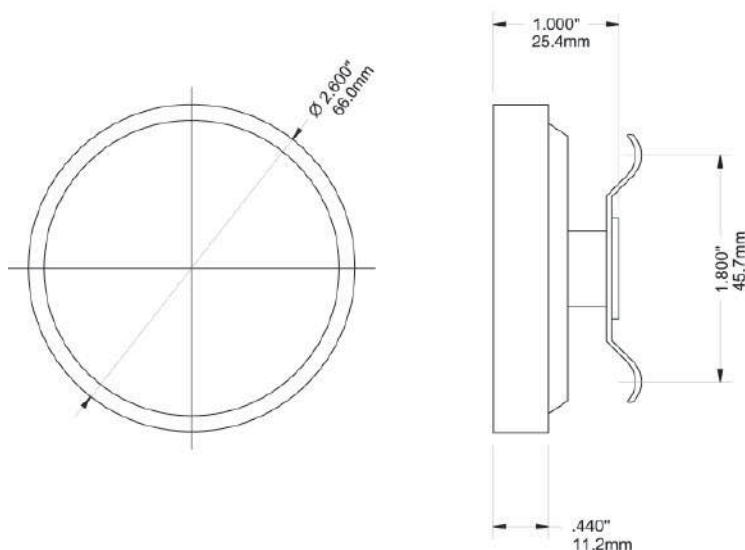
- To measure surface temperature on pipe in the heating, ventilation, air conditioning, wastewater, industrial process markets

Specifications	
Dial	2.5" (63mm) aluminum with black markings
Case	Mild steel
Lens	Plexiglass
Ring	Steel, chrome plated
Sensing Element	Bi-metallic coil
Pointer	Aluminum, painted black
Over-Range Enclosure Rating	25% of full scale value
Ambient/Process Temperature	-40°F to 390°F (-40°C to 200°C)
Accuracy	±3% of full scale
Enclosure Rating	IP52

## Order Codes

Range	Code
-40°F to 110°F & -40°C to 40°C	TCT166
30°F to 250°F & 0°C to 120°C	TCT167
30°F to 390°F & 0°C to 200°C	TCT168

Other ranges and connection sizes available upon request.



**Description & Features:**

- An economical thermometer for remote reading applications
- Stainless steel case
- Vapour actuated
- Panel mounted (Front Flange or U-Clamp)
- Dual scale (°F & °C)
- 9' capillary length
- ASME B40.200 compliant
- 5 year warranty

**Applications:**

- Freezers, walk-in refrigeration units, food storage cabinets, heating and ventilation. Widely specified in the HVAC, commercial and mechanical industry segments

**Specifications**

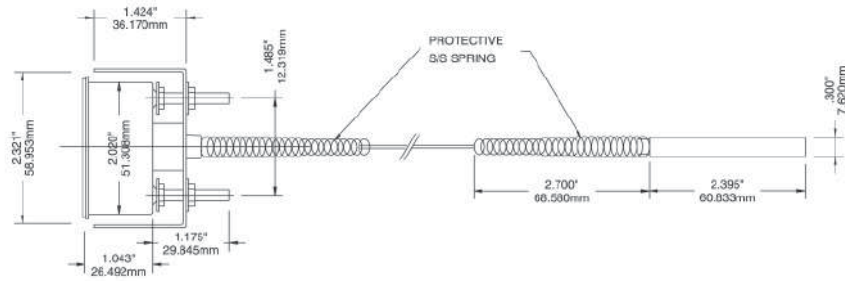
<b>Dial</b>	Aluminum, painted white with black markings
<b>Case</b>	SS front flange, SS U-Clamp case
<b>Lens</b>	Plexiglass
<b>Bourdon Tube</b>	Phosphor bronze
<b>Movement</b>	Brass
<b>Pointer</b>	Aluminum, painted black
<b>Welding</b>	Silver alloy
<b>Capillary</b>	9' (3m) nickel plated brass
<b>Protective Spring</b>	SS
<b>Bulb</b>	Nickel plated brass
<b>Operating Temperature</b>	Recommended maximum 75% of full scale value
<b>Accuracy</b>	±2.5% of full scale
<b>Enclosure Rating</b>	IP52

**Order Codes**

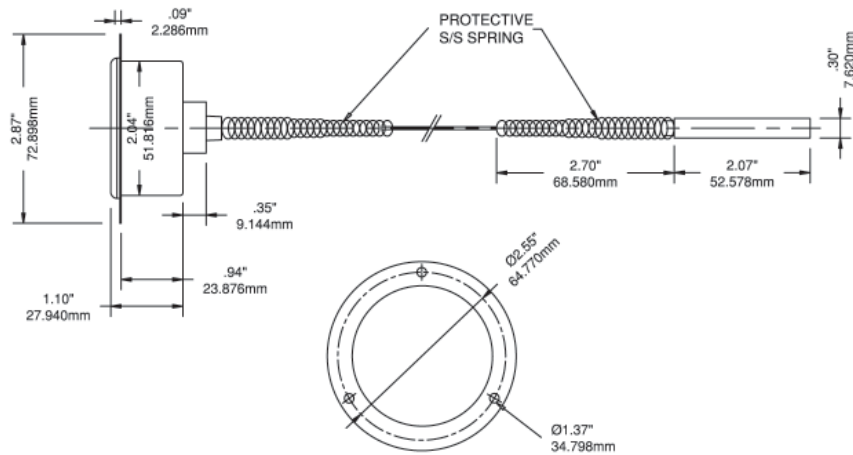
Dial Size	Panel Cut-out	Case Style	Range	Code
2" (50mm)	2.05" (52mm)	Front Flange	-40°F to 60°F & -40°C to 15°C	THR2214090R4
2" (50mm)			-20°F to 120°F & -30°C to 50°C	THR2214090R5
2" (50mm)		U-Clamp	-40°F to 60°F & -40°C to 15°C	THR2514090R4
2" (50mm)			-20°F to 120°F & -30°C to 50°C	THR2514090R5
2.5" (63mm)	2.55" (64mm)	Front Flange	-40°F to 60°F & -40°C to 15°C	THR3214090R4
2.5" (63mm)			-20°F to 120°F & -30°C to 50°C	THR3214090R5
2.5" (63mm)		U-Clamp	-40°F to 60°F & -40°C to 15°C	THR3514090R4
2.5" (63mm)			-20°F to 120°F & -30°C to 50°C	THR3514090R5

Other ranges and connection sizes available upon request.

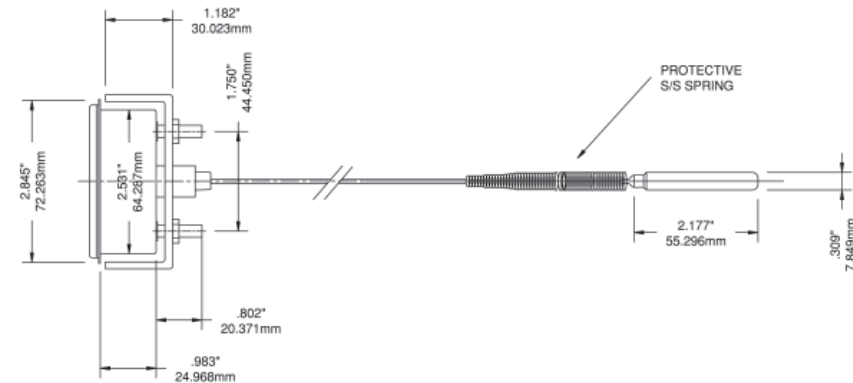
**2" with U-Clamp**



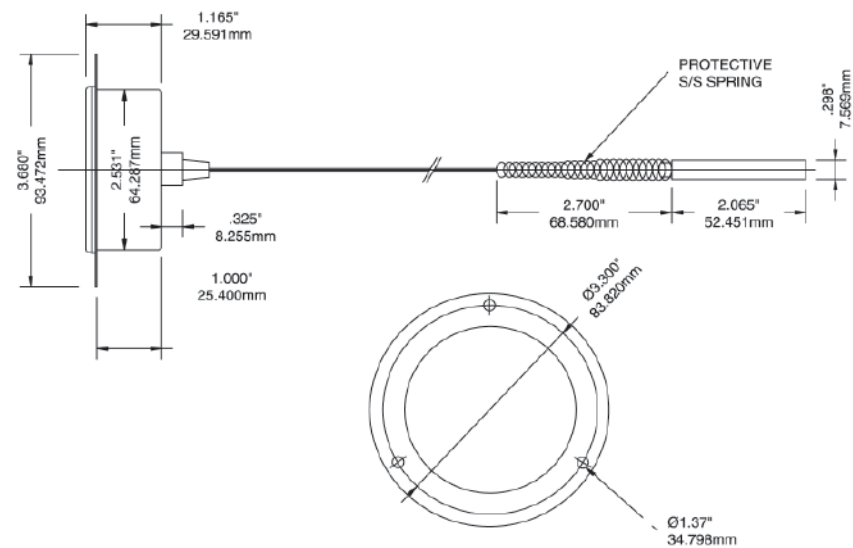
**2" with Front Flange**



**2.5" with U-Clamp**



**2.5" with Front Flange**







## Description & Features:

- A solar powered digital thermometer that provides a local temperature reading to 1/10 of a degree
- 304 stainless steel case, stem and socket
- Hermetically sealed thermometer case
- Minimum required light 35 Lux
- Ceramic resistance sensing element
- 1/2" adjustable angle connection (other thread types are available)
- 4" (100mm), 6" (150mm) and 9" (230mm) stem lengths
- °F or °C scales available
- ASME B40.200 compliant
- 5 year warranty

## Applications:

- Temperature sensing for heating, ventilation, air conditioning, food processing, waste water, industrial processes or compressors

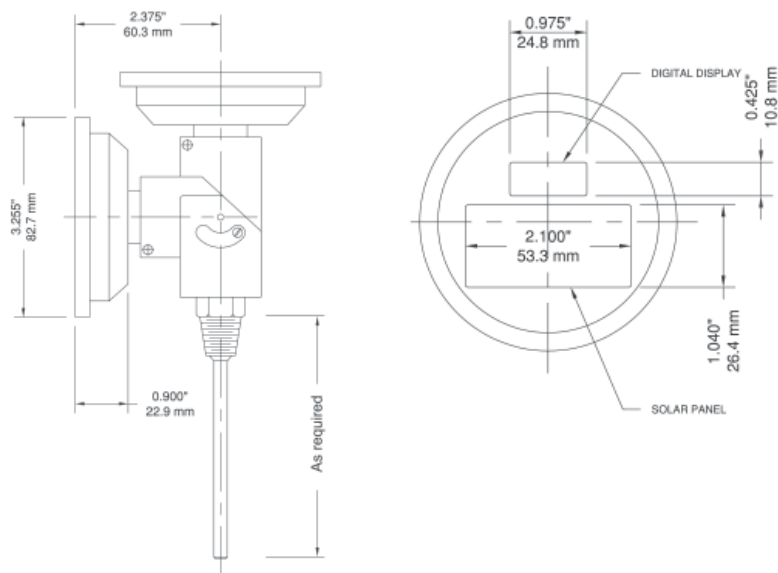
## Specifications

Dial	3" (75mm)
Case	304 SS
Lens	Glass (3mm thickness)
Ring	304 SS, bezel, hermetically sealed
Display	LCD
Stem	304 SS, 0.25" (6mm) diameter with lengths 2.5" (63mm) to 24" (600mm)
Connection	1/2" NPT fully adjustable (other thread types are available)
Sensor	Ceramic resistance
Lux Rating	35 Lux
Ambient Temperature	-4°F to 122°F (-20°C to 50°C)
Temperature Range	-50°F to 320°F (-45°C to 160°C)
Read Interval	Every 6 seconds
Accuracy	±1%
Enclosure Rating	NEMA 4 / IP68

## Order Codes

Stem Length	°F Scale	°C Scale
2.5" (63mm)	THS32025F	THS32025C
4" (100mm)	THS32040F	THS32040C
6" (150mm)	THS32060F	THS32060C
9" (230mm)	THS32090F	THS32090C
12" (300mm)	THS32120F	THS32120C
15" (370mm)	THS32150F	THS32150C
18" (450mm)	THS32180F	THS32180C
24" (600mm)	THS32240F	THS32240C

Other ranges and connection sizes and thread types are available upon request. 1/4" NPT and 3/8" NPT connection available. Longer stem lengths available up to 72". 316 SS wetted parts and sharp tip are available.



# Industrial 9" Thermometer, Lead Free Industrial 9" Thermometer

**TIM,  
TIM-LF**



## Description & Features:

- Widely specified in the industrial and commercial plumbing trade
- Includes a separable brass or lead free brass thermowell
- 3.5" (90mm) and 6" (150mm) stem
- Available in aluminum or Valox® (9") case
- Organic filled tube (magnifying)
- Dual scale (°F & °C)
- Adjustable angle connection and 360° case rotation for easy installation
- Graphite filled bulb chamber for maximum heat conduction
- ASME B40.200 and ASTM E2511 compliant
- CAN/CGSB-14.4-M88 compliant
- ±1% accuracy
- 5 year warranty

## Applications:

- New construction, plumbing, water lines, boilers, heating, ventilation and air conditioning



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

## Specifications

<b>Scale</b>	9" (230mm) aluminum or Valox® case, impact resistant
<b>Lens</b>	Glass, acrylic and shatterproof available
<b>Connection</b>	3/4" NPT with thermowell (other thread types are available) 1 1/4" - 18 UNF swivel nut (no thermowell)
<b>Scales</b>	Aluminum, painted white with black markings
<b>Bulb Chamber</b>	Tapered cast aluminum with graphite fill
<b>Tube and Sensing Liquid</b>	Glass (magnifying), organic fluid, red, green, blue (green is default)
<b>Adjustment</b>	Fully adjustable
<b>Thermowell</b>	TIM: 3/4" Brass, separable socket (SS optional) TIM-LF: 3/4" Lead free brass, separable socket (other thermowells and thread types are available)
<b>Accuracy</b>	±1%
<b>Enclosure Rating</b>	IP54

Note: For an Industrial Thermowell, please refer to the Industrial Thermowell product page

## TIM Order Codes

Stem	Aluminum Case		Valox® Case	
	3.5" (90mm)	6" (150mm)	3.5" (90mm)	6" (150mm)
-40°F to 110°F & -40°C to 40°C	TIM101A	TIM101-6A	TIM101	TIM101-6
0°F to 120°F & -15°C to 50°C	TIM102A	TIM102-6A	TIM102	TIM102-6
0°F to 160°F & -15°C to 70°C	TIM103A	TIM103-6A	TIM103	TIM103-6
30°F to 180°F & 0°C to 80°C	TIM104A	TIM104-6A	TIM104	TIM104-6
30°F to 240°F & 0°C to 115°C	TIM100A	TIM100-6A	TIM100	TIM100-6
30°F to 300°F & 0°C to 150°C	TIM105A	TIM105-6A	TIM105	TIM105-6

Other ranges , connection sizes and thread types are available upon request. Duct flange available upon request.  
Union connection available upon request.

## Option suffix:

AP9 = Acrylic lens

B = Blue fill fluid

R = Red fill fluid

SPG9 = Shatterproof glass

Valox® is a registered trademark of the General Electric Company

## TIM-LF Order Codes

Stem	Aluminum Case		Valox® Case	
	3.5" (90mm)	6" (150mm)	3.5" (90mm)	6" (150mm)
-40°F to 110°F & -40°C to 40°C	TIM101ALF	TIM101-6ALF	TIM101LF	TIM101-6LF
0°F to 120°F & -15°C to 50°C	TIM102ALF	TIM102-6ALF	TIM102LF	TIM102-6LF
0°F to 160°F & -15°C to 70°C	TIM103ALF	TIM103-6ALF	TIM103LF	TIM103-6LF
30°F to 180°F & 0°C to 80°C	TIM104ALF	TIM104-6ALF	TIM104LF	TIM104-6LF
30°F to 240°F & 0°C to 115°C	TIM100ALF	TIM100-6ALF	TIM100LF	TIM100-6LF
30°F to 300°F & 0°C to 150°C	TIM105ALF	TIM105-6ALF	TIM105LF	TIM105-6LF

Other ranges, connection sizes and thread types are available upon request. Duct flange available upon request. Union connection available upon request.

### Option suffix:

AP9 = Acrylic lens

B = Blue fill fluid

R = Red fill fluid

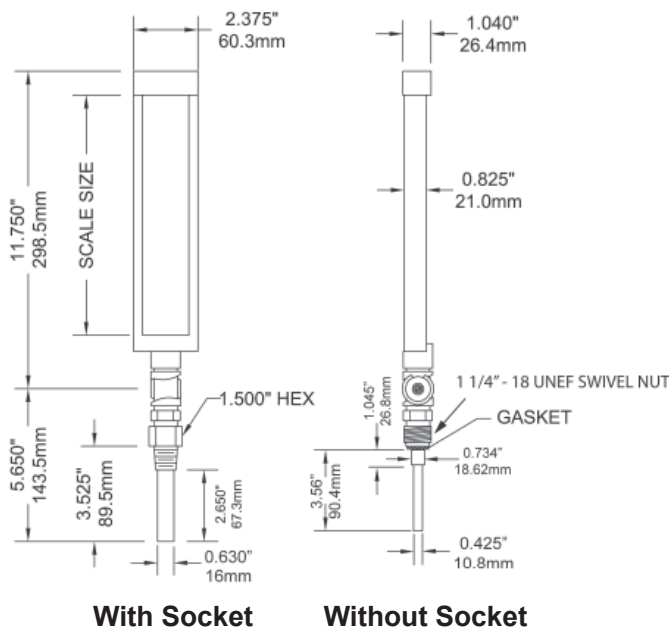
SPG9 = Shatterproof glass

Valox® is a registered trademark of the General Electric Company

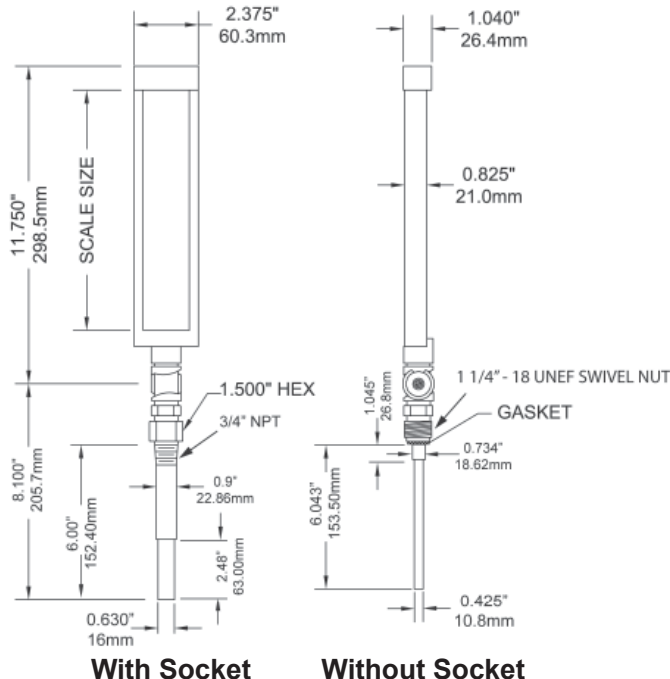
## TIW-LF Thermowell Order Codes

Stem Length	Overall Length	Material	Insertion Length	3/4" NPT Connection
3.5" Without Lagging	4.25" (108mm)	Lead Free Brass	2.5" (63mm)	TIW01LF
6" Without Lagging	6.75" (172mm)	Lead Free Brass	5" (127mm)	TIW04LF

### 3.5" Stem



### 6" Stem





## Description & Features:

- Provides an economical and accurate method for measuring the temperature on a flat metallic surface
- 2" (50mm) dial
- Dual scale (°F & °C)
- 3 ranges available
- Easy to install
- ASME B40.200 compliant
- 5 year warranty

## Applications:

- Ductwork or motor housings

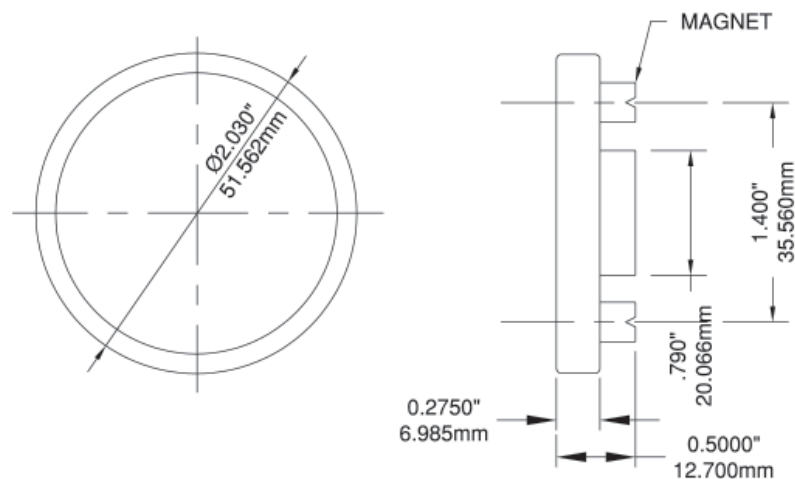
## Specifications

Dial	2" (50mm) aluminum with black and red markings
Case	Steel, painted black
Lens	Glass
Sensing Element	Bi-metallic coil
Pointer	Aluminum, painted black
Ambient/Process Temperature	Recommended maximum 75% of full scale value
Accuracy	±2% of full scale
Enclosure Rating	IP52

## Order Codes

Range	Code
0°F to 250°F & -20°C to 120°C	TMT7412
0°F to 500°F & -15°C to 260°C	TMT7410
50°F to 750°F & 10°C to 400°C	TMT7409

Other ranges and connection sizes available upon request.



**Description & Features:**

- A portable "point and shoot" infrared thermometer that measures remote surface temperatures
- Digital readout (°F or °C)
- Single hand operated
- Uses less than 1 milliwatt of power
- Auto power off feature to conserve battery
- 9 volt battery powered
- Fast response time (0.25 seconds)
- ASME B40.200 compliant
- 5 year warranty

**Applications:**

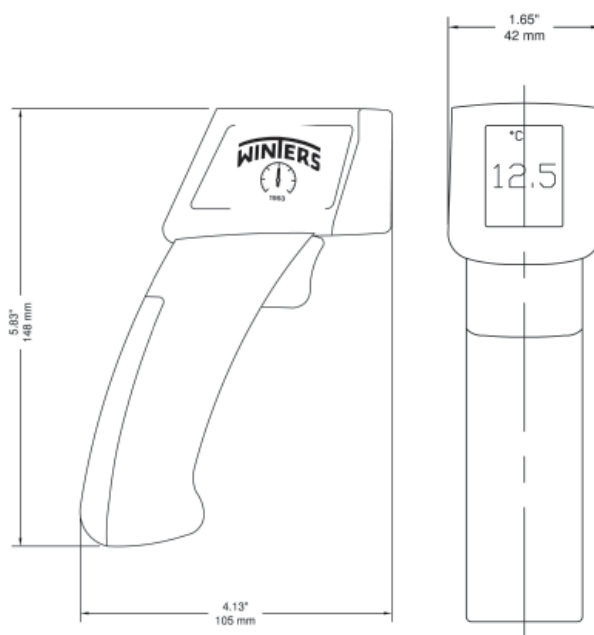
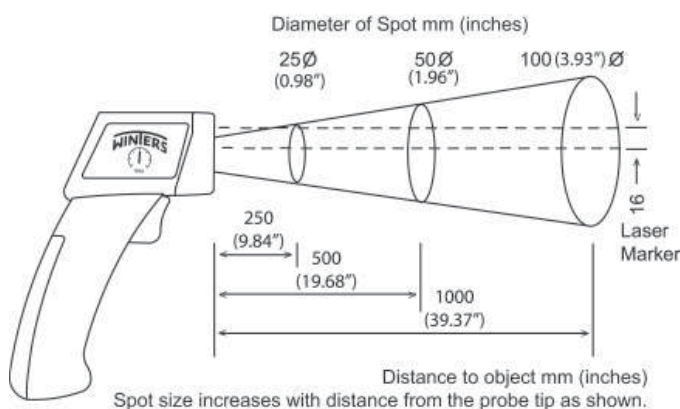
- To measure remote surface temperatures on bearings, electrical panels, assembly line machines, pumps and concrete construction

**Specifications**

Housing	ABS
Dimensions	5.8" (h) x 4.1" (w) x 1.68" (d) (148mm x 105mm x 42mm)
Temp. Range	-22°F to 1,022°F (-30°C to 550°C)
Accuracy	±2%
Response Time	0.25 seconds
Field of View	10:1 with laser mark
Sensor Thermopile	6-14μm
Fixed Emissivity (E)	0.95
Laser Classification	Class 2
Auto Power Off	10 seconds
Battery	9 Volt

**Order Codes**

Description	Code
With Laser -22°F to 1,022°F (-30°C to 550°C)	TNC150



**Description & Features:**

- A general purpose, tamper-proof, 304 stainless steel thermometer
- Hermetically sealed case
- Bi-metallic sensing element for reliable readings
- Back connected
- Stem length from 2.5" (63mm) and up
- $\pm 1\%$  accuracy
- Anti-parallax dial that reduces operator reading errors
- Lexan® lens
- ASME B40.200 compliant
- 5 year warranty

**Applications:**

- Food processing and beverage industry

**Specifications**

<b>Dial</b>	3" (75mm) dish shaped dial, aluminum with black markings
<b>Case/Ring</b>	AISI 304 SS
<b>Lens</b>	Lexan®, hermetically sealed
<b>Stem</b>	AISI 304 SS
<b>Connection</b>	1/2" NPT, centre back (other thread types are available)
<b>Sensing Element</b>	Bi-metallic coil
<b>Pointer</b>	Aluminum, painted black
<b>Welding</b>	TIG
<b>Maximum Operating Pressure</b>	125 psi (861 kPa)
<b>Operating Temperature</b>	Recommended maximum 75% of full scale value
<b>Ambient/Process Temperature</b>	Maximum 248°F (120°C)
<b>Accuracy</b>	$\pm 1\%$
<b>Enclosure Rating</b>	IP68

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

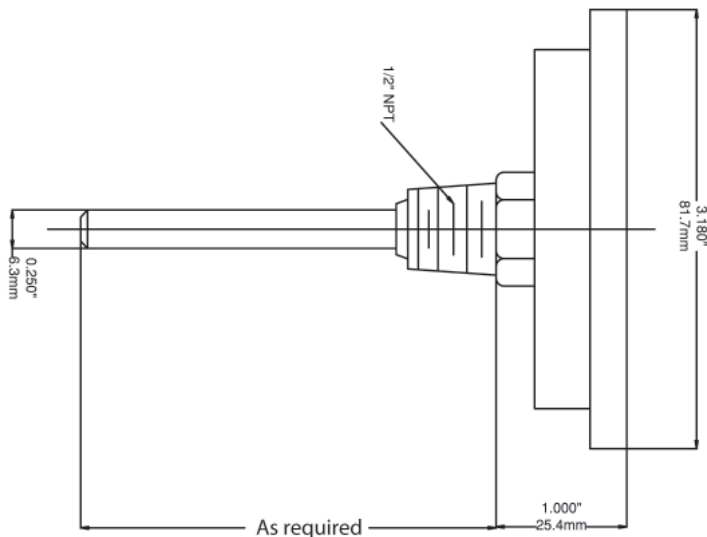
**Order Codes**

Dial and Stem	Code
3" (75 mm) dial with 2.5" (63mm) stem	TNR33025
3" (75 mm) dial with 4" (100mm) stem	TNR33040
3" (75 mm) dial with 6" (150mm) stem	TNR33060
3" (75 mm) dial with 9" (225mm) stem	TNR33090

Dual Scale Range	Code Suffix
-40°F to 120°F & -40°C to 50°C	B2
-40°F to 160°F & -40°C to 70°C	B4
0°F to 200°F & -20°C to 90°C	B6
0°F to 250°F & -20°C to 120°C	B8
50°F to 300°F & 10°C to 150°C	B9
50°F to 400°F & 10°C to 200°C	B10
50°F to 500°F & 10°C to 260°C	B11
150°F to 750°F & 100°C to 400°C	B12
200°F to 1,000°F & 100°C to 540°C	B13

Other ranges and connection sizes and thread types are available upon request.

(i.e. 3" TNR with 4" (100mm) stem, -40°F to 160°F & -40°C to 70°C = **TNR33040B4**)



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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

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



## 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	-	TRR12253050G18	-	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	TRR32351050V13	TRR32351100V13
100°F to 350°F&C	TRR31251050V15	TRR32251050V15	TRR31251100V15	TRR32251100V15	TRR32351050V15	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	TRR32401050V11	TRR31401100V11	TRR32401100V11
20°F to 220°F&C	TRR31401050V12	TRR32401050V12	TRR31401100V12	TRR32401100V12
50°F to 250°F&C	TRR31401050V13	TRR32401050V13	TRR31401100V13	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	TRR32601050V12	TRR31601100V12	TRR32601100V12
50°F to 250°F&C	TRR31601050V13	TRR32601050V13	TRR31601100V13	TRR32601100V13
100°F to 350°F&C	TRR31601050V15	TRR32601050V15	TRR31601100V15	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			
		3.5" (90mm)		2	1/2" NPT SS sliding union			
	35	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			
			7	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
Vapour Ranges	200°F to 1,000°F*	200°F to 1,000°F* & 90°C to 540°C*	90°C to 540°C
	-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

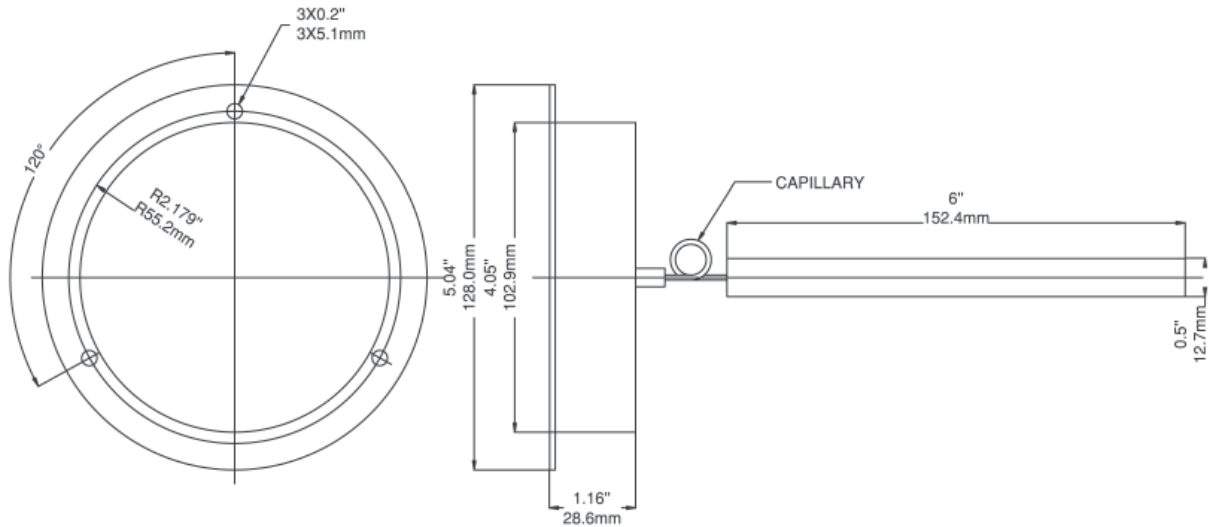
\*Ranges require stainless steel capillary and bulb

## Please contact us for:

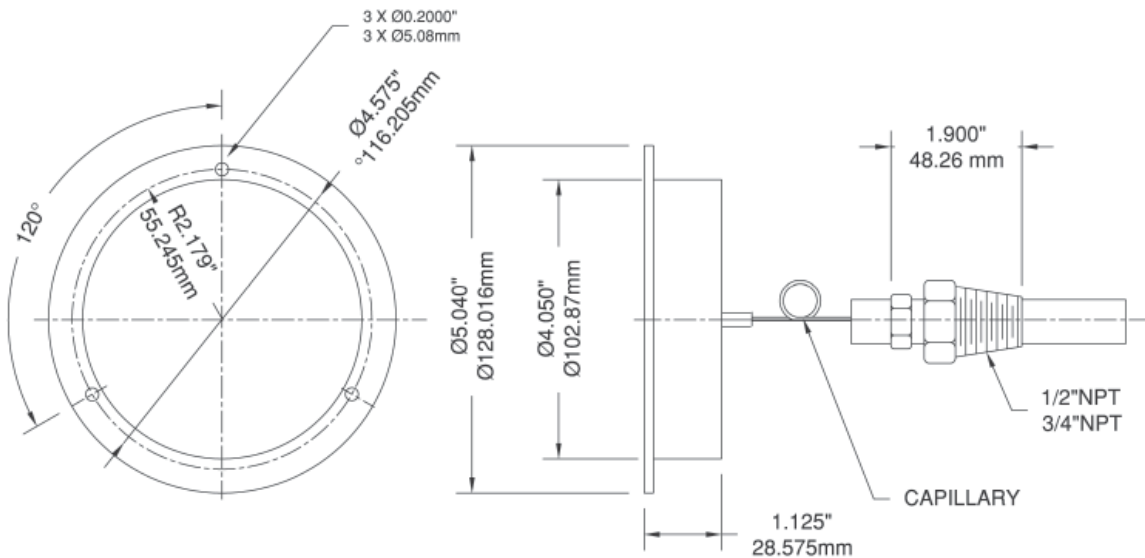
Duct flanges, sliding union, various bulb dimensions, averaging bulb (gas only), other ranges, stainless steel 4" (100mm) and 6" (150mm) cases and capillary available on gas remote/direct reading models

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.

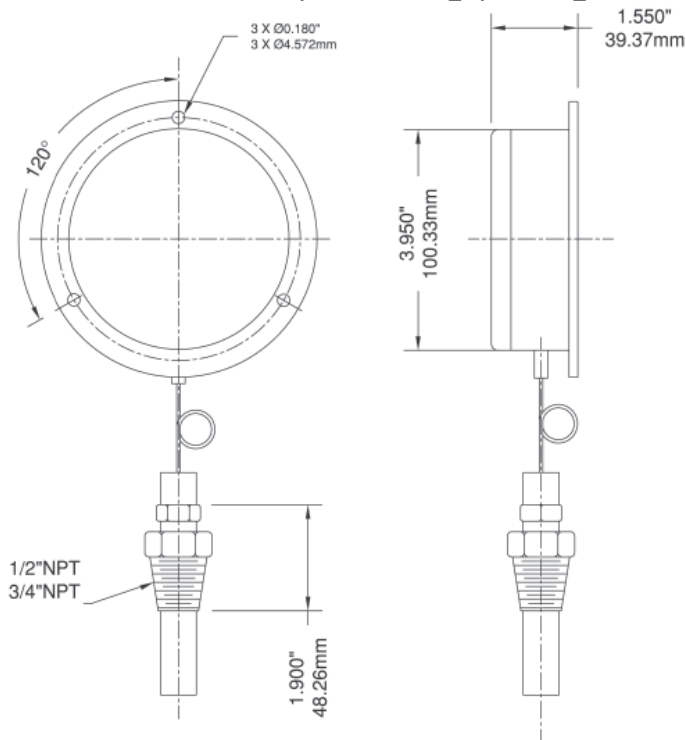
## 4" Back Connection, Front Flange, Plain Bulb



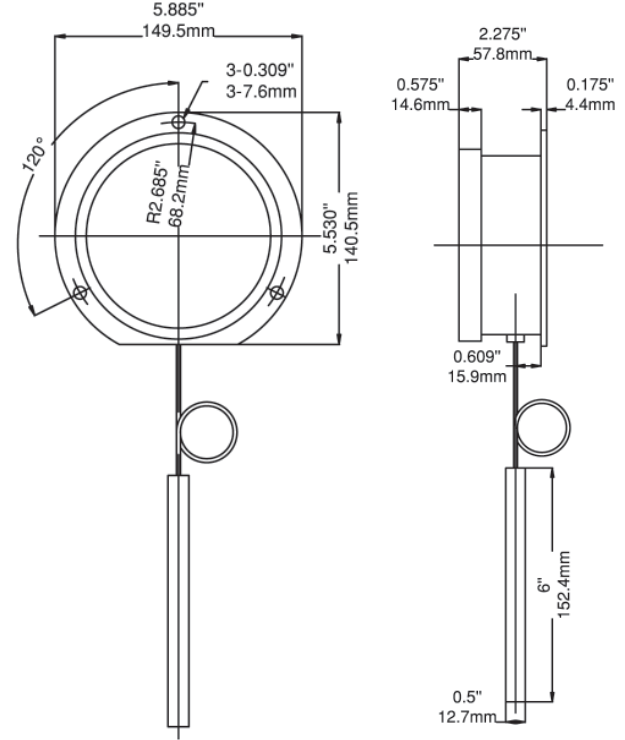
## 4" Back Connection, Front Flange, Sliding Union



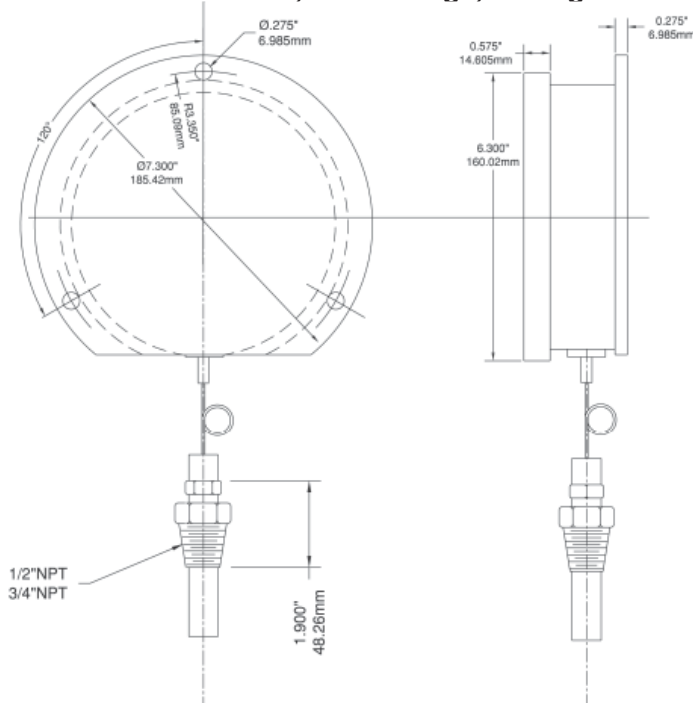
## 4" Bottom Connection, Back Flange, Sliding Union



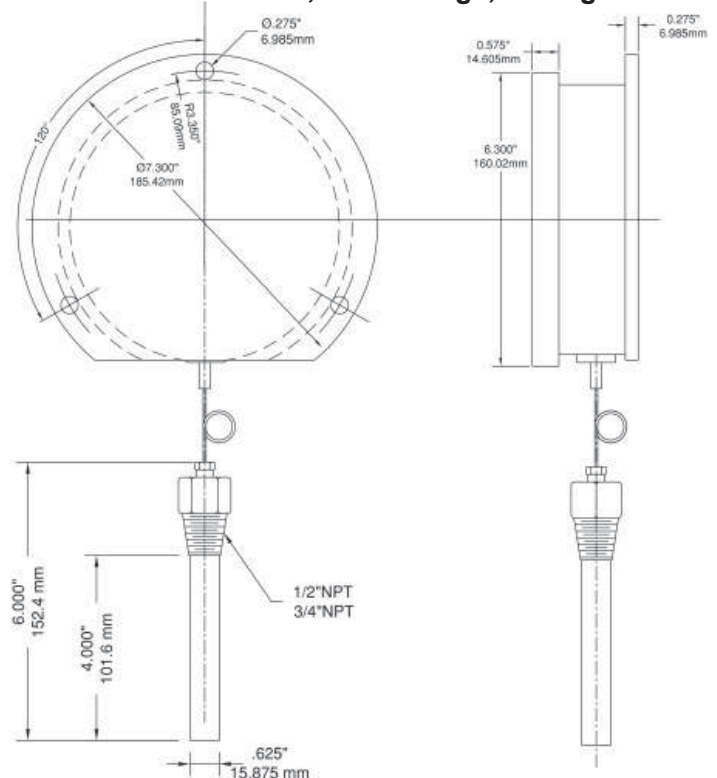
## 4.5" Bottom Connection. Back Flange. Plain Bulb



## 6" Bottom Connection, Back Flange, Sliding Union



## 6" Bottom Connection, Back Flange, Sliding Union





Note: RoHS applies only with SS TIW thermowell

### Description & Features:

- A versatile thermometer that provides a solar powered digital read out commonly used in the industrial and commercial plumbing trade
- Low light compatible (16 Lux minimum)
- Includes a separable thermowell
- Durable ABS case
- Switchable temperature scale (°F or °C)
- Adjustable angle connection for easy installation
- ±1% accuracy
- ASME B40.200 compliant
- 5 year warranty

### Applications:

- New construction, plumbing, water lines, boilers, heating, ventilation and air conditioning

### Specifications

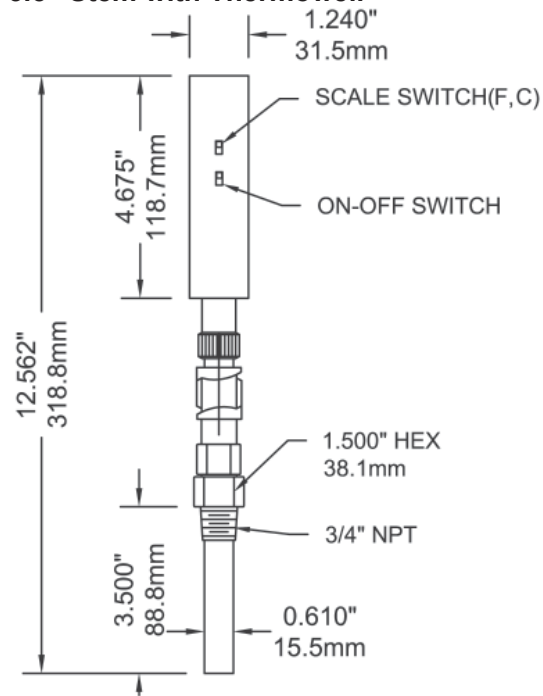
<b>Display</b>	2.55" x 4.67" (63.7mm x 116.7mm) solar powered display
<b>Housing</b>	High impact ABS plastic housing with aluminum movable parts
<b>Lux Rating</b>	16 Lux
<b>Sensing Element</b>	Liquid
<b>Stem Length</b>	3.5" (90mm), 6" (150mm)
<b>Connection / Thermowell</b>	3/4" NPT, with brass thermowell standard, (SS optional) (other thread types are available) 1-1/4" UNF swivel nut (without thermowell)
<b>Temperature Range</b>	-50°F to 320°F (-45°C to 160°C)
<b>Read Interval</b>	Every 6 seconds
<b>Ambient Temperature</b>	14°F to 150°F (-10°C to 65°C)
<b>Process Temperature</b>	-50°F to 320°F (-45°C to 160°C)
<b>Accuracy</b>	±1%
<b>Enclosure Rating</b>	NEMA 5 / IP54

### Order Codes

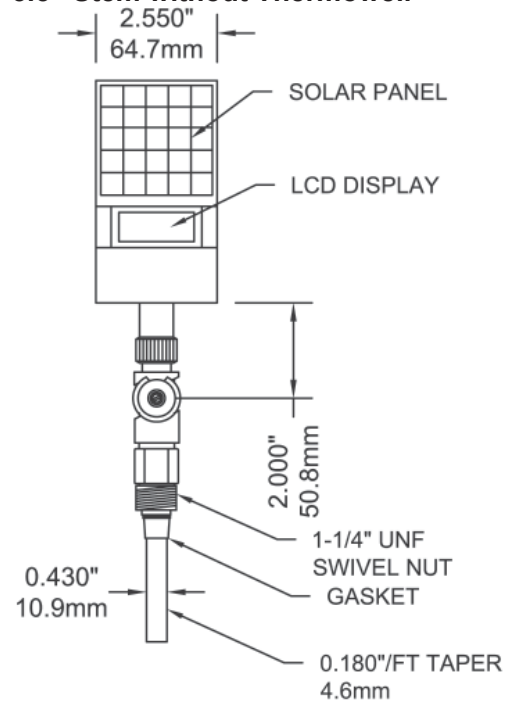
Stem/Ranges	Code (Includes Thermowell)
3.5" (90mm) Stem (-50°F to 320°F or -45°C to 160°C)	TSD9ITSD
6" (150mm) Stem (-50°F to 320°F or -45°C to 160°C)	TSD9ITSD6

Other ranges and connection sizes and thread types are available upon request. Duct flange and union connection available upon request. 6" (150mm) stem available. For an Industrial Thermowell, please refer to the Industrial Thermowell product page.

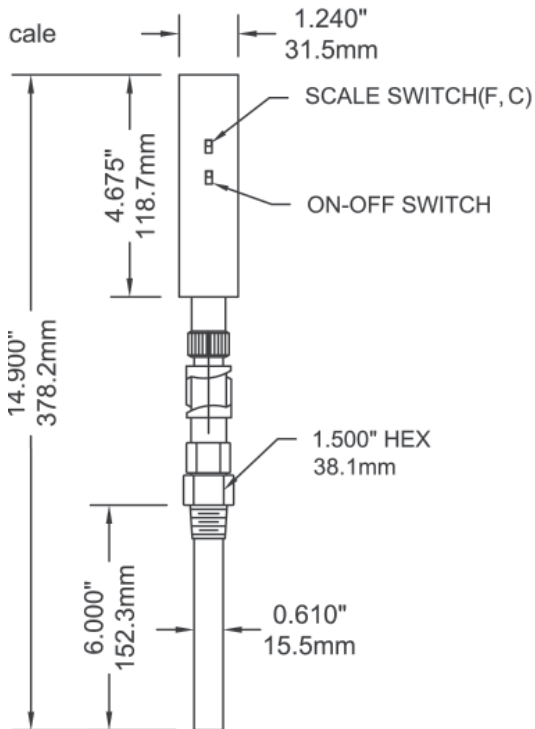
## 3.5" Stem with Thermowell



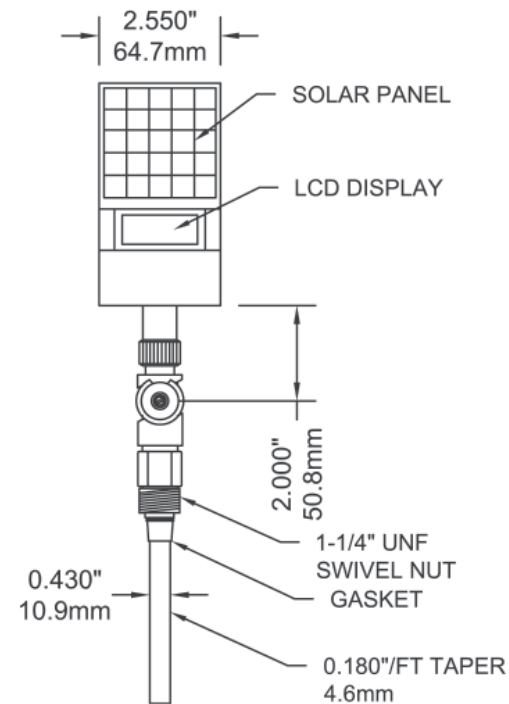
## 3.5" Stem without Thermowell



## 6" Stem with Thermowell



## 6" Stem without Thermowell







Dial Type



Scale Type



## Description & Features:

- An economical and accurate way to measure air or water temperatures
- Separable brass or lead free brass thermowell
- Bi-metallic element (dial type only)
- Dual scale (°F & °C)
- Dial type or vertical scale type
- Easy to install
- 1/2" NPT process connection (other thread types are available)
- ASME B40.200 compliant
- 5 year warranty

## Applications:

- Hot water lines, boilers and hydronic heating

### Dial Type Specifications

Dial	2" (50mm), 2.5" (63mm) aluminum, painted white with black and red markings
Case	Aluminum
Lens	Glass
Ring	Steel, chrome plated
Thermowell	TSW: Brass (HPB59-1), 1/2" NPT standard, separable (other thread types are available) TSW-LF: Lead free brass, 1/2" NPT standard, separable (other thread types are available)
Stem	Brass
Sensing Element	Bi-metallic element
Pointer	Aluminum, painted black
Recalibrator	Standard
Accuracy	±1%

### Scale Type Specifications

Scale/Case	8" (200mm) scale with steel case, painted white with black markings
Tube	#N-16 glass
Sensing Liquid	Organic fluid
Thermowell	TSW: Brass (HPB59-1), 1/2" NPT standard, separable (other thread types are available) TSW-LF: Lead free brass, 1/2" NPT standard, separable (other thread types are available)
Accuracy	±1%

## TSW Dial Order Codes

Dial	Range	Connection	Code
2" (50mm)	30°F to 250°F & 0°C to 120°C	1/2" NPT centre back	TSW174-2
2.5" (63mm)	30°F to 250°F & 0°C to 120°C	1/2" NPT centre back	TSW174
		3/4" Sweatwell	TSW174-SW

Other ranges, stem lengths, dial and connection sizes and thread types are available upon request.

## TSW Scale Order Codes

Scale	Range	Connection	Code
8" (200mm)	40°F to 280°F & 5°C to 135°C	Straight	TSW172
		Angle	TSW173

Other ranges and connection sizes and thread types are available upon request.

## TSW-LF Dial Order Codes

Dial	Range	Connection	Code
2" (50mm)	30°F to 250°F & 0°C to 120°C	1/2" NPT centre back	TSW174-2LF
2.5" (63mm)	30°F to 250°F & 0°C to 120°C	1/2" NPT centre back	TSW174LF
		3/4" Sweatwell	TSW174-SWLF

Other ranges, stem lengths, dial and connection sizes and thread types are available upon request.

## TSW-LF Scale Order Codes

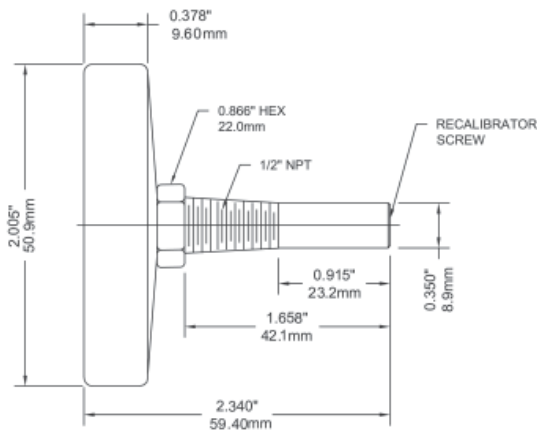
Scale	Range	Connection	Code
8" (200mm)	40°F to 280°F & 5°C to 135°C	Straight	TSW172LF
		Angle	TSW173LF

Other ranges, stem lengths, dial and connection sizes and thread types are available upon request.

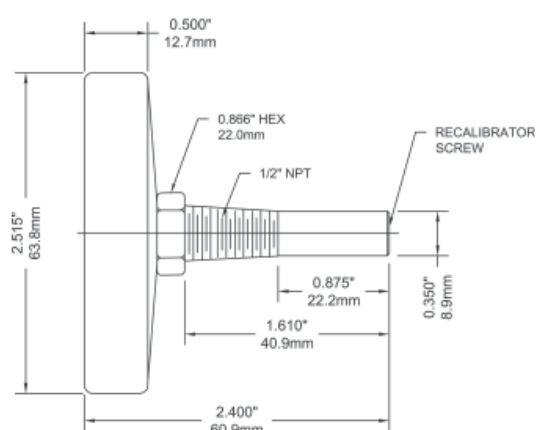
## Thermowell Order Codes

Connection	Material	Code
1/2" NPT (for TSW174-2)	Lead Free Brass	TSW45LF
1/2" NPT (for TSW174)	Lead Free Brass	TSW65LF
1/2" NPT (for TSW174-SW)	Lead Free Brass	TSW85LF
1/2" NPT (for TSW172 & TSW173)	Lead Free Brass	TSW25LF

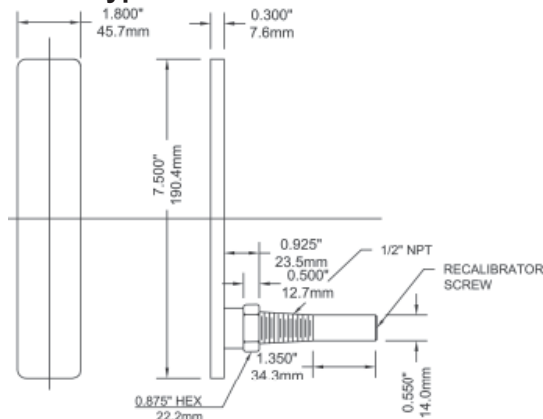
### 2" Dial Type



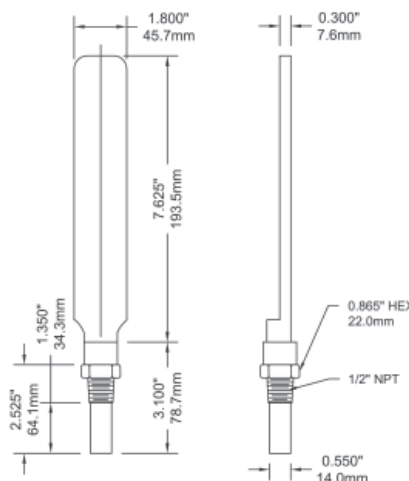
### 2.5" Dial Type



### Scale Type



### Back Connection



### Bottom Connection

Series Number (for custom, non-standard product)

	T	S	W	-		-		-	
SERIES									
TYPE									
172 Scale Type					2				
173 Scale Type					3				
174 Dial Type					4				
174SW Dial Type					5				
CONNECTION TYPE									
1/2"						2			
174 with Sweatwell						4			
Special						Z			
CONNECTION THREAD									
NPT								T	
BSP(G)								S	
BSPT(R)								A	



Optional Thermowell

**Description & Features:**

- Measures both pressure and temperature on the same dial
- 2.5" (63mm) and 3" (75mm) dials
- Dual scale (°F & °C)
- Back or bottom connection
- Brass wetted parts
- 1" (25mm), 2" (50mm) and 2.5" (63mm) stems
- Multiple pressure and temperature ranges available
- Ranges are compliant to industry standard ASME Boiler Code Section IV HG-612
- 5 year warranty

**Applications:**

- Hot water and steam pressure for boilers

Specifications	
Dial	2.5" (63mm), 3" (75mm) aluminum, painted white
Case	Steel, painted black
Lens	2.5" (63mm): Acrylic, threaded 3" (75mm): Glass
Ring	3" (75mm): Chrome
Stem	Brass
Socket	Brass
Tube	Phosphor bronze
Movement	Brass and phosphor bronze
Sensing Element	Temperature: Bi-metallic coil Pressure: Bourdon tube
Pointer	Aluminum, anodized black
Welding	Tin-alloy solder
Pressure Limit	75% of full scale range
Ambient Temperature	23°F to 122°F (-5°C to 50°C)
Process Temperature	75% of full scale range
Accuracy	Pressure: ±3-2-3% Temperature: ±3% of full scale
Enclosure Rating	IP50

**Order Codes**

Range	Dial	Connection	Stem Length	Code
0-75psi/kPa, 70°F to 320°F & 20°C to 160°C	2.5" (63mm)	1/4" NPT, Back	1" (25mm)	TTD410
0-75psi/kPa, 70°F to 320°F & 20°C to 160°C	2.5" (63mm)	1/4" NPT, Extension Back	2" (50mm)	TTD401
0-75psi/kPa, 70°F to 320°F & 20°C to 160°C	2.5" (63mm)	1/4" NPT, Back	2" (50mm)	TTD404
0-75psi/kPa, 70°F to 320°F & 20°C to 160°C	3" (75mm)	1/2" NPT, Bottom	2.5" (63mm)	TTD403
0-75psi/kPa, 70°F to 320°F & 20°C to 160°C	3" (75mm)	1/2" NPT, Back	2.5" (63mm)	TTD402
0-100psi/kPa, 70°F to 320°F & 20°C to 160°C	3" (75mm)	1/2" NPT, Bottom	2.5" (63mm)	TTD409
0-100psi/kPa, 70°F to 320°F & 20°C to 160°C	3" (75mm)	1/2" NPT, Back	2.5" (63mm)	TTD408
0-200psi/kPa, 70°F to 320°F & 20°C to 160°C	3" (75mm)	1/2" NPT, Bottom	2.5" (63mm)	TTD405
0-200psi/kPa, 70°F to 320°F & 20°C to 160°C	3" (75mm)	1/2" NPT, Back	2.5" (63mm)	TTD407
0-250psi/kPa, 70°F to 320°F & 20°C to 160°C	3" (75mm)	1/2" NPT, Bottom	2.5" (63mm)	TTD399
0-250psi/kPa, 70°F to 320°F & 20°C to 160°C	3" (75mm)	1/2" NPT, Back	2.5" (63mm)	TTD398

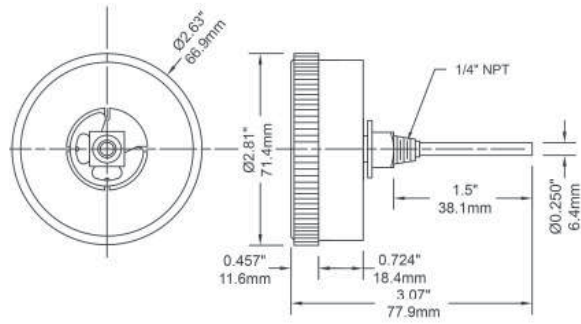
Other ranges, stem lengths, dial, connection sizes and thread types are available upon request.

**Option suffix:**

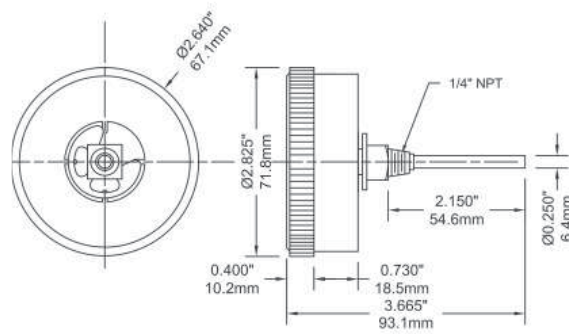
TST025 = 1/4" brass thermowell

TST050 = 1/2" brass thermowell

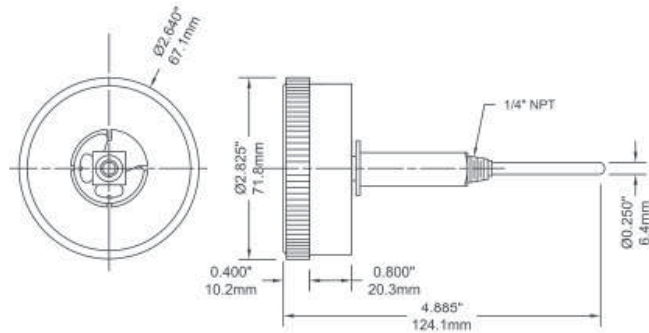
## 2.5" Back Connection, 1" Stem



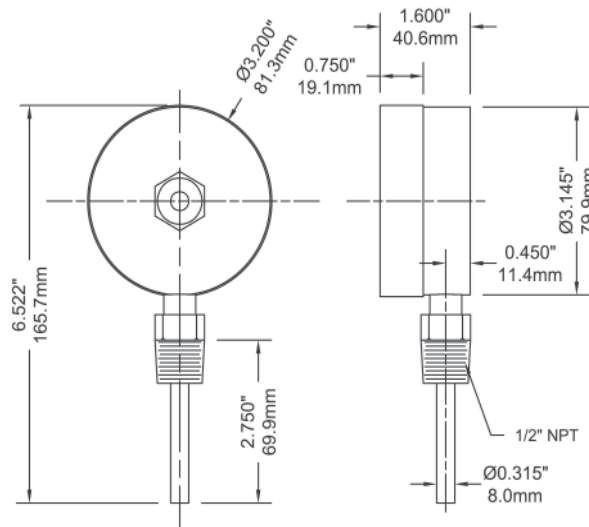
## 2.5" Back Connection



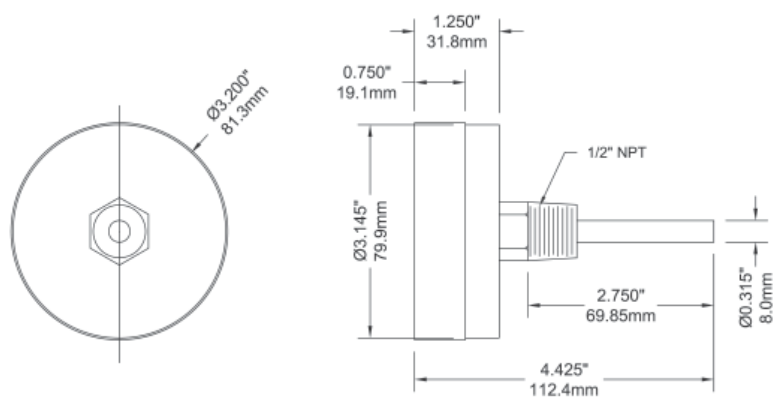
## 2.5" Extension Back Connection



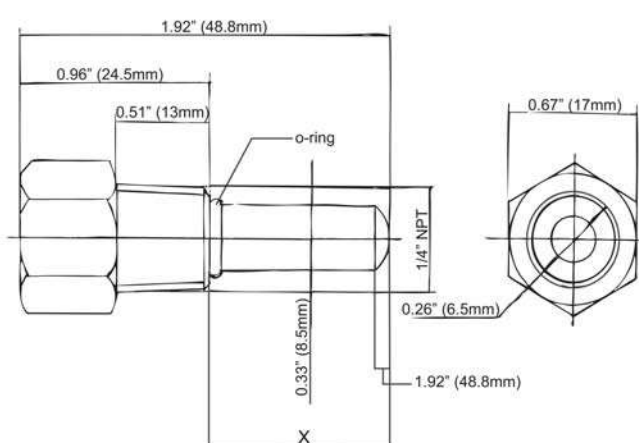
## 3" Bottom Connection



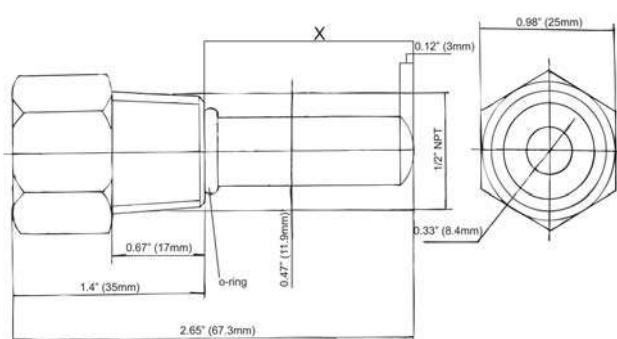
## 3" Back Connection



## 1/4" TST025



## 1/2" TST050





RoHS applies only to 304 SS and 316 SS thermowells

## 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
- 1 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

Specifications	
Thermometer Connection	1/2" NPTF connection standard Other thread sizes and types are available upon request
Process Connection	3/4", 1/2" or 1" NPT connection standard Other thread sizes and types 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

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.)

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		3/4" (19mm)
		316 SS	TBR650-2		
	3/4"	Brass	TBR6		
		304 SS	TBR6-1		7/8" (22mm)
		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		3/4" (19mm)
		316 SS	TBR950-2		
	3/4"	Brass	TBR9		
		304 SS	TBR9-1		7/8" (22mm)
		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		3/4" (19mm)
		316 SS	TBR1250-2		
	3/4"	Brass	TBR12		
		304 SS	TBR12-1		7/8" (22mm)
		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			3/4" (19mm)
		304 SS	TBRN9-1			
		316 SS	TBRN9-2			
	1"	Brass	TBRN9100			7/8" (22mm)
		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			3/4" (19mm)
		304 SS	TBRN12-1			
		316 SS	TBRN12-2			
	1"	Brass	TBRN1210			7/8" (22mm)
		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")

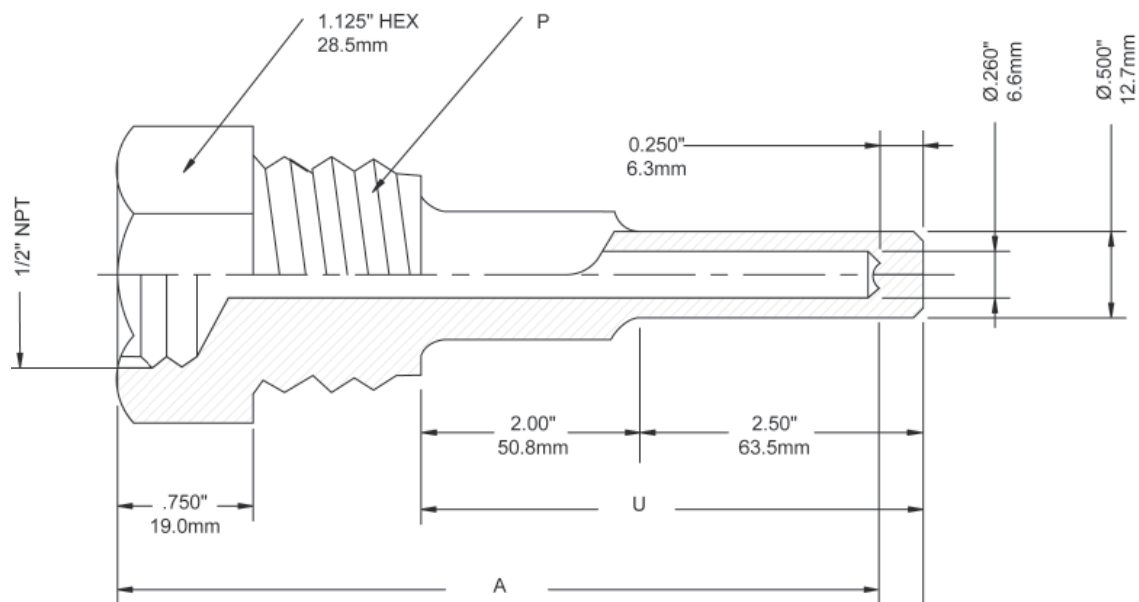
W60-1 = Stainless steel cap and chain (1/2")

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

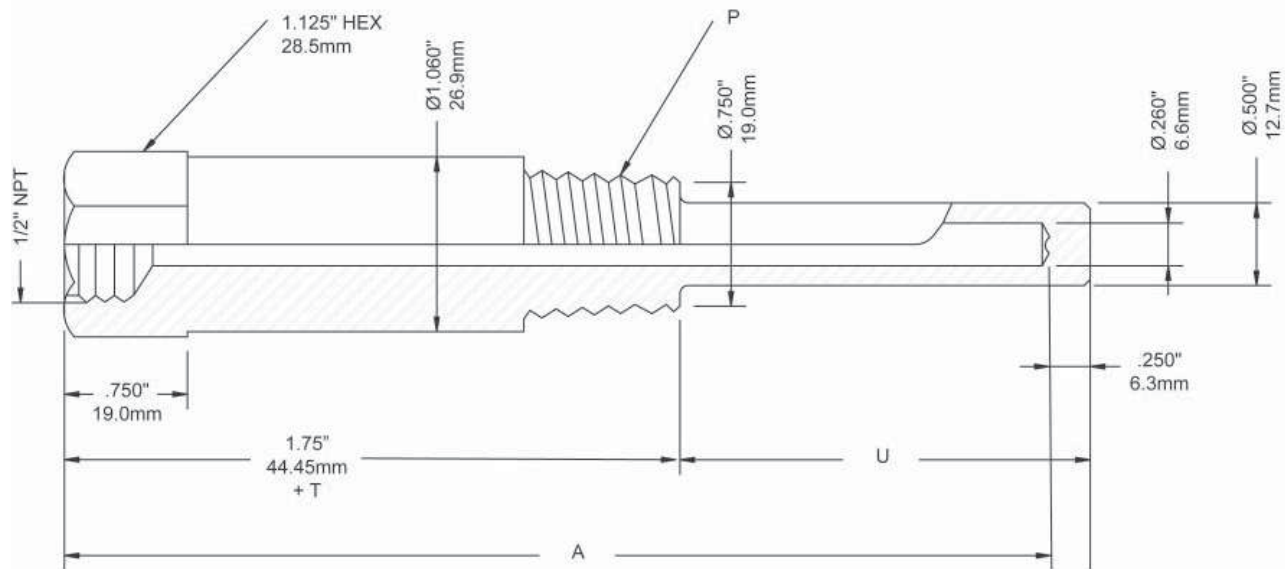
Inconel® is a registered trademark of Special Metals Corporation

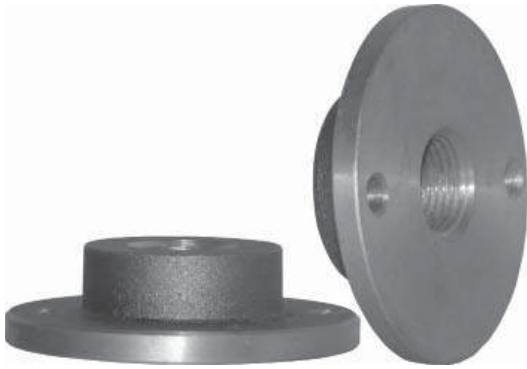
Monel® is a registered trademark of Inco Alloys International

## Standard Thermowell without lag



## Standard Thermowell with lag





## Description & Features:

- Ideal for ventilation installations
- Lightweight aluminum construction for durable mounting
- Instrument connections available for both TIM and TBM thermometers
- 304 SS and 316 SS options available

## Applications:

- Specially designed for heating and air conditioning ventilation systems in residential and commercial buildings and industrial plants

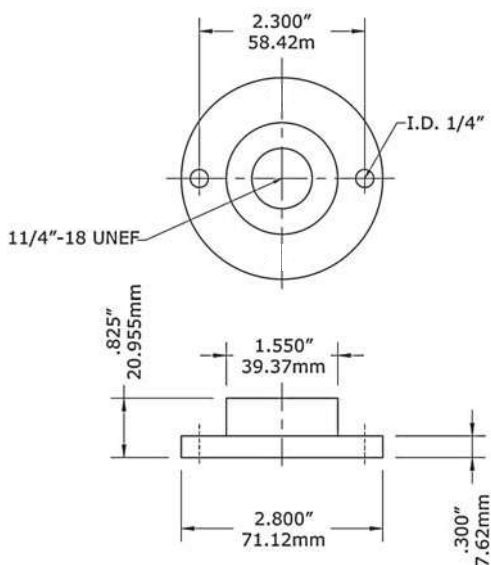
Specifications	
Material	Aluminum
Thermometer Connection	1-1/4"-18 UNEF or 1/2" NPTF

## Order Codes

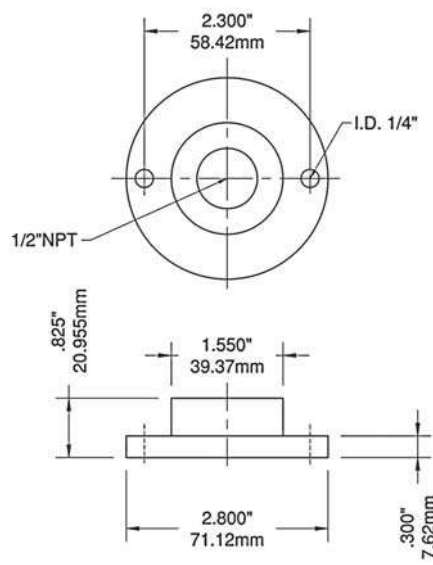
Thermometer	Thermometer Connection	Thermometer	Code
TIM Series	1-1/4"-18 UNEF	2 hole	TDF100
TBM Series	1/2" NPT		TDF200

3 or 4 hole options available.

## TDF100



## TDF200





## Description & Features:

- Designed for use with all 9" (230mm) industrial thermometers to create a "sealed system"
- Allows the easy replacement of thermometers without the need to shut down or drain the system
- CAN/CGSB-14.4-M88 compliant
- CRN registered
- 1 year warranty

## Applications:

- HVAC, pipes, chill water and hot water lines



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

## Specifications

<b>Material</b>	TIW: Brass, AISI 304 SS, AISI 316 SS TIW-LF: Lead free brass
<b>Bore Diameter</b>	7/16" tapered
<b>Form</b>	Stepped standard, straight available
<b>Thermometer Connection</b>	1-1/4" UNF (other thread types are available)
<b>Process Connection</b>	3/4" NPTM standard (other thread types are available)

## TIW Thermowell Order Codes

Stem Length	Overall Length	Material	Insertion Length	Lagging Extension	1/2" NPT Connection	3/4" NPT Connection
3.5" Without Lagging	4.25" (108mm)	Brass	2.5" (63mm)	-	-	TIW01
		304 SS			-	TIW01-1
		316 SS			-	TIW01-2
3.5" With Lagging	4.25" (108mm)	Brass	1.75" (44mm)	1" (25mm)	TIW02	TIW03
		304 SS			TIW02-1	TIW03-1
		316 SS			TIW02-2	TIW03-2
6" Without Lagging	6.75" (172mm)	Brass	5" (127mm)	-	-	TIW04
		304 SS			-	TIW04-1
		316 SS			-	TIW04-2
6" With Lagging	6.75" (172mm)	Brass	2.5" (63mm)	2.5" (63mm)	-	TIW07
		304 SS			-	TIW07-1
		316 SS			-	TIW07-2

## TIW-LF Thermowell Order Codes

Stem Length	Overall Length	Material	Insertion Length	Lagging Extension	3/4" NPT Connection
3.5" Without Lagging	4.25" (108mm)	Lead Free Brass	2.5" (63mm)	-	TIW01LF
3.5" With Lagging		Lead Free Brass	1.75" (44mm)	1" (25mm)	TIW03LF
6" Without Lagging	6.75" (172mm)	Lead Free Brass	5" (127mm)	-	TIW04LF
6" With Lagging		Lead Free Brass	2.5" (63mm)	2.5" (63mm)	TIW07LF

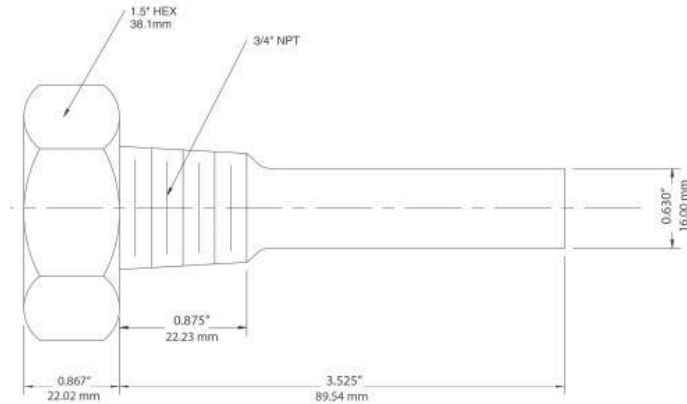
Other configurations available. Other threads available upon request. Longer thermowells available upon request.  
Other materials such as Monel®, Inconel®, Hastelloy® C and Titanium are available upon request.

## Option suffix:

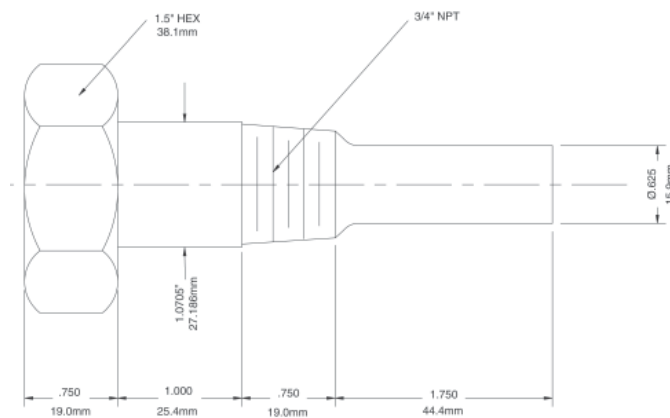
W61 = Brass cap and chain (1.25" UNF)  
W61-1 = SS cap and chain (1.25" UNF)

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

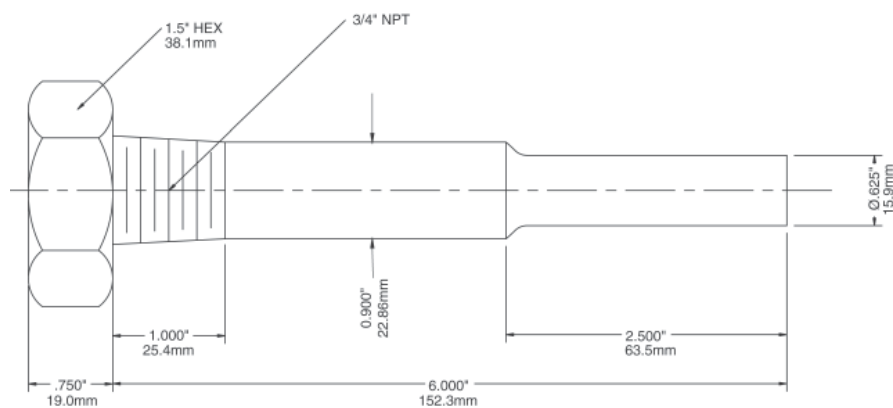
## 3.5" Stem Without Lagging



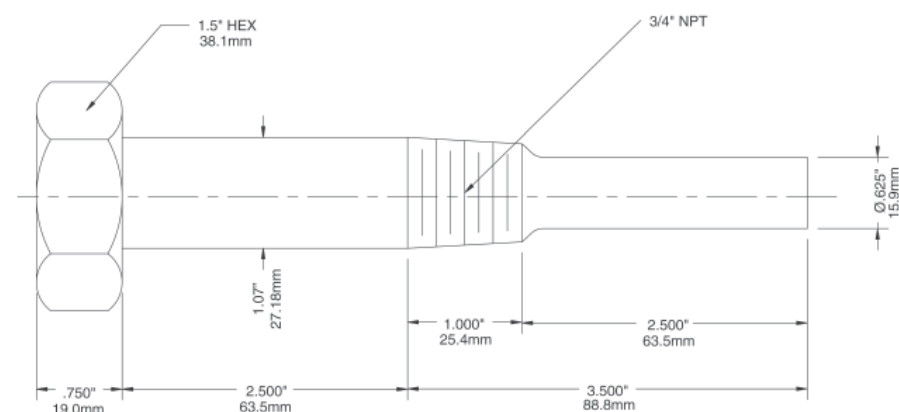
## 3.5" Stem With Lagging



## 6" Stem Without Lagging



## 6" Stem With Lagging





## Description & Features:

- Allows for easy installation and replacement of bi-metallic dial thermometers without draining the process
- 3A approved
- 1 year warranty

## Applications:

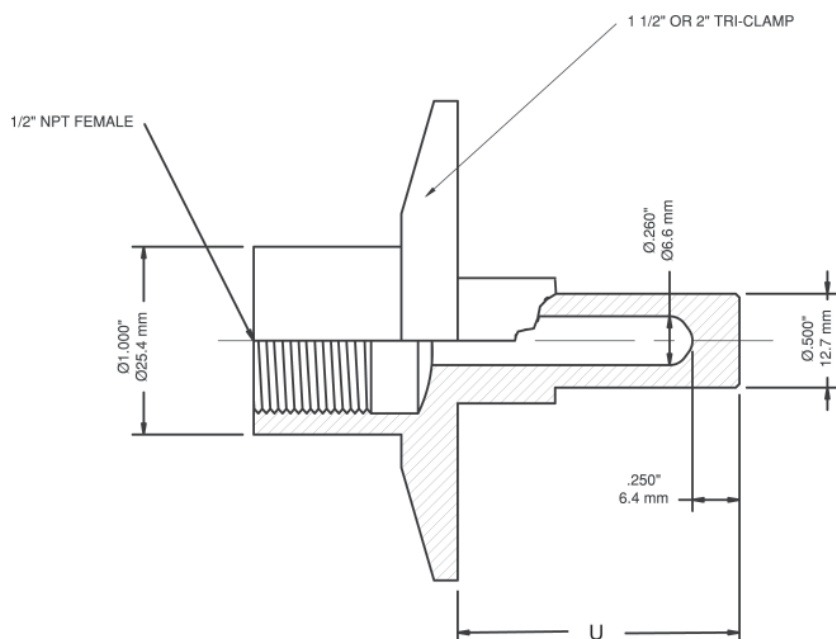
- Designed specifically for the sanitary requirements of the food and dairy industries

## Specifications

<b>Material</b>	316 SS
<b>Connection</b>	1.5" (40mm) or 2" (50mm) Tri-Clamp®
<b>Thermometer Connection</b>	1/2" NPT
<b>Bore</b>	0.260" (6.6mm) standard
<b>Other</b>	Lengths fit all standard bi-metal thermometers

## Order Codes

Tri-Clamp®	Stem Length	U Dimensions	Code
1.5" (40mm)	2.5" (63mm)	1.5" (40mm)	TSN15SANI2
	4" (100mm)	3" (75mm)	TSN15SANI4
	6" (150mm)	5" (125mm)	TSN15SANI6
	9" (225mm)	8" (200mm)	TSN15SANI9
2" (50mm)	2.5" (63mm)	1.5" (40mm)	TSN2SANI2
	4" (100mm)	3" (75mm)	TSN2SANI4
	6" (150mm)	5" (125mm)	TSN2SANI6
	9" (225mm)	8" (200mm)	TSN2SANI9



Tri-Clamp® is a registered trademark of Tri-Clover



## Description & Features:

- Spring loaded allowing TST to stay open when tridicator is installed. Once tridicator is removed thermowell closes preventing media from exiting the system
- Minimizes system downtime with quick instrument replacement
- CRN registered
- Up to 250 psi pressure rating (matching TTD Tridicator)
- 1 year warranty

## Applications:

- Boilers and hydronic heating systems

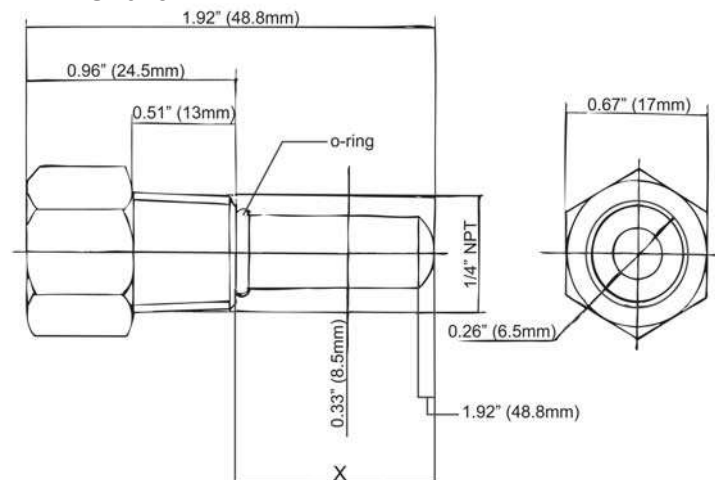
## Specifications

<b>Material</b>	Brass
<b>Tridicator Connection</b>	1/4" or 1/2" NPTM standard

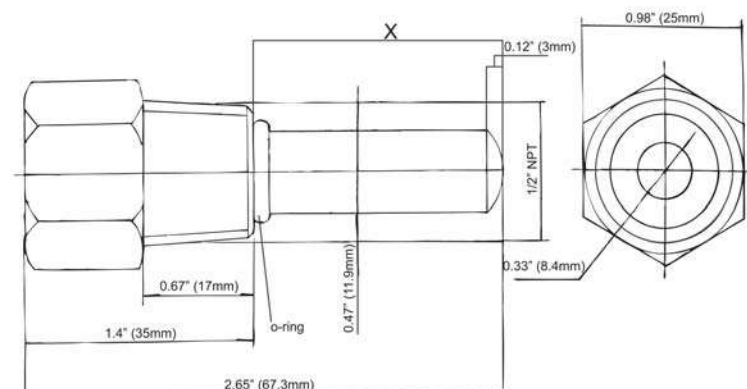
## Order Codes

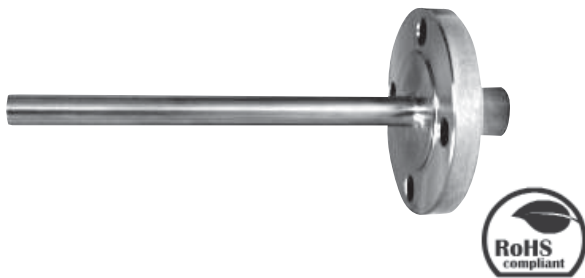
Stem Length	Maximum Extension (X)	Instrument & Pipe NPT Connection	Code
1.92" (48.8mm)	1.3" (33.8mm)	1/4"	TST025
2.65" (67.3mm)	1.6" (41.5mm)	1/2"	TST050

### 1/4" TST025



### 1/2" TST050





## Description & Features:

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

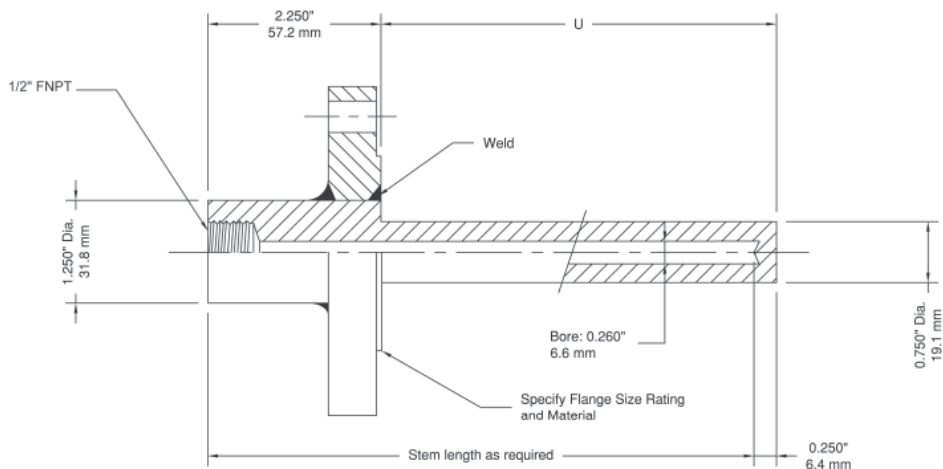
## Applications:

- 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.





## Series Number (for custom, non-standard product)

	T	W	F	-		-					-		-		-				-				
<b>SERIES</b>																							
<b>FLANGE SIZE</b>																							
1"																							
2"																							
3"																							
4"																							
Other in inches																							
<b>FLANGE RATING</b>																							
150#																							
200#																							
300#																							
600#																							
900#																							
Special																							
<b>FLANGE TYPE</b>																							
RF																							
FF																							
RTJ																							
<b>MATERIAL</b>																							
304SS																							
316SS																							
316L																							
Brass																							
Hastelloy C																							
Monel																							
Duplex																							
Special																							
<b>CONSTRUCTION</b>																							
Tapered = T Straight = S																							
<b>INSTRUMENT THREAD SIZE</b>																							
1/4"																							
3/8"																							
1/2"																							
Special																							
<b>INSTRUMENT THREAD TYPE</b>																							
NPT																							
BSP (G)																							
BSPT (R)																							
Special																							
<b>BORE DIAMETER</b>																							
6.6mm																							
13mm																							
Special																							
<b>TOTAL INSERTION LENGTH</b>																							
2.5"																							
4"																							
6"																							
9"																							
12"																							
Other (in inches)																							

**Description & Features:**

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

**Applications:**

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

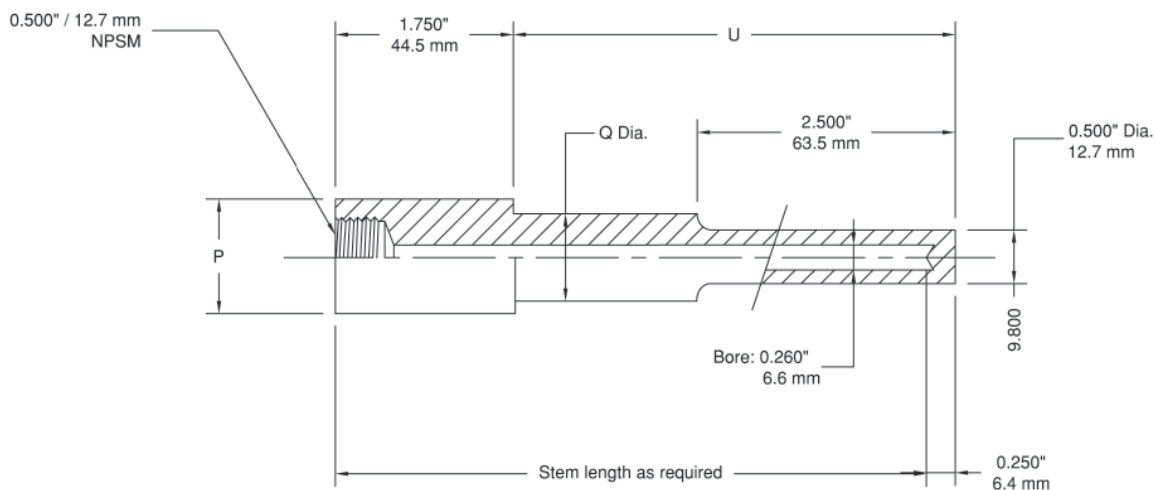
**Specifications**

<b>Material</b>	304 or 316 SS
<b>Thermometer Connection</b>	1/2" NPT
<b>Bore</b>	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
- 1 year warranty

## Applications:

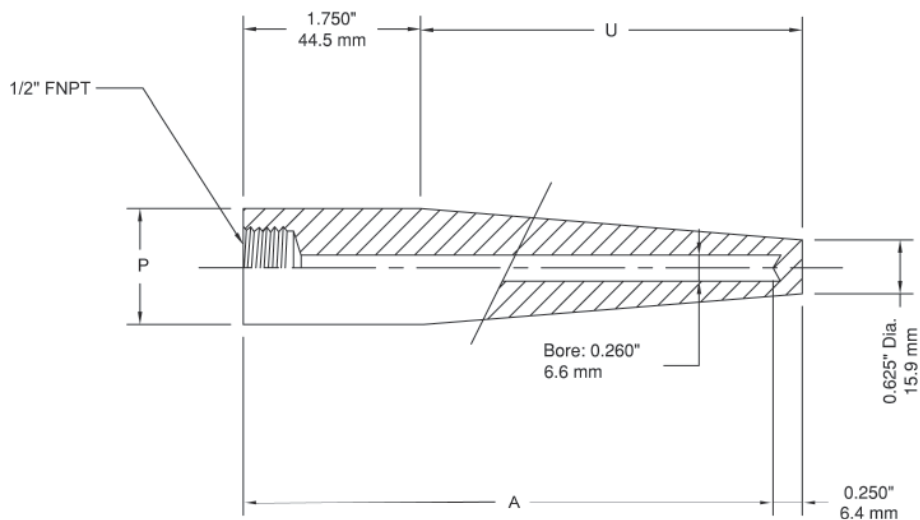
- Where high pressure or high flow of media is present (i.e. pipes)

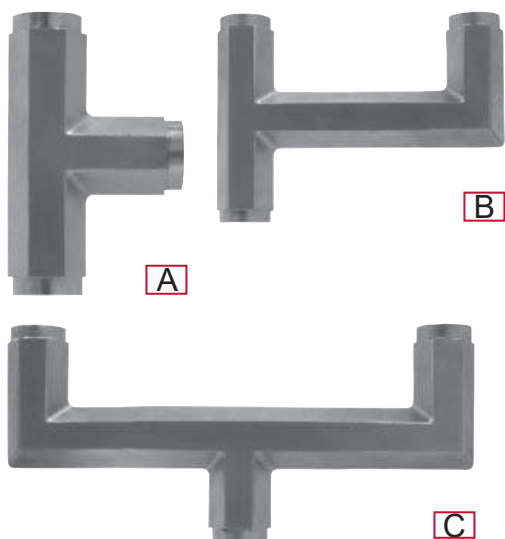
Specifications	
Material	304 or 316 SS
Thermometer Connection	1/2" NPT
Bore	0.260" (6.5mm) Standard
Other	1.5" Connection pipe size standard

## 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
6" (150mm)			4.5" (115mm)	304 SS	TWW156304
				316 SS	TWW156316
9" (230mm)			7.5" (191mm)	304 SS	TWW159304
				316 SS	TWW159316
12" (300mm)			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.





## Description & Features:

- Robust tees for isolation ring assembly
- 316 SS construction with 1/4" or 1/2" NPTF instrument connections and a 1/2" NPTF process connection
- Ideal for installing pressure gauges with other instruments for full functionality

## Applications:

- Water treatment facilities and other slurry environments where isolation rings are installed and more than one pressure instrument is required (eg. pressure gauge with pressure switch or transmitter)

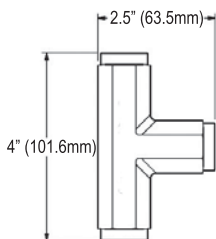
## Specifications

<b>Material</b>	316 SS
<b>Connections</b>	2 instrument, 1 process
<b>Instrument Connections</b>	1/4" or 1/2" NPTF
<b>Process Connection</b>	1/2" NPTF

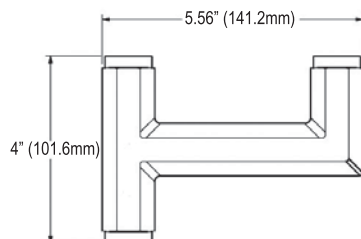
## Order Codes

Type	1/4"	1/2"
A	FIR0014	FIR0010
B	FIR0024	FIR0020
C	FIR0034	FIR0030

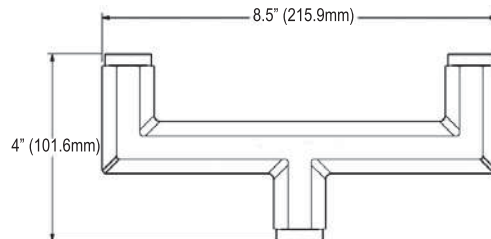
### Type A

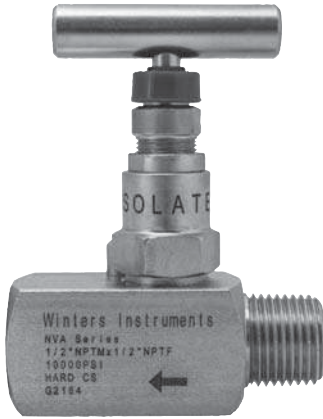


### Type B



### Type C





## 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
- 1 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

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

### Option suffix:

CPM = Carbon steel panel mount kit

SPM = Stainless steel panel mount kit

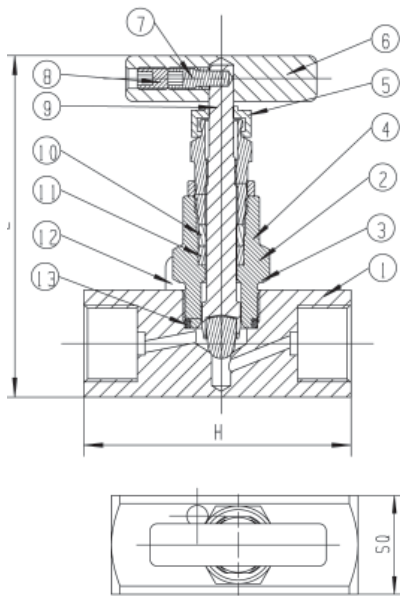
## Straight Body NACE Order Codes

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

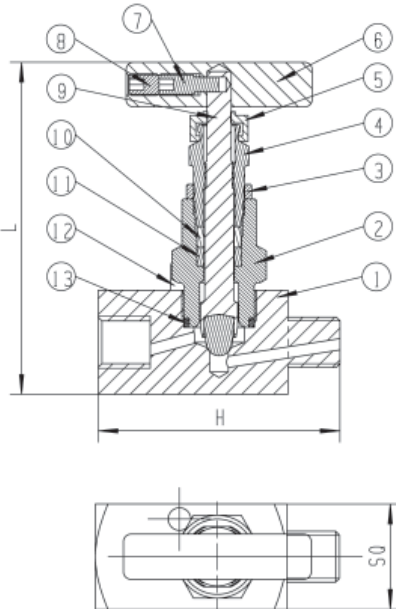
## Material

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	Teflon®/Graphite	Teflon®/Graphite	Teflon®/Graphite	Teflon®/Graphite
Dwell Pin	12	Carbon Steel	Carbon Steel	304 SS	304 SS
Gland Packing	13	Teflon®/Graphite	Teflon®/Graphite	Teflon®/Graphite	Teflon®/Graphite

## Female x Female



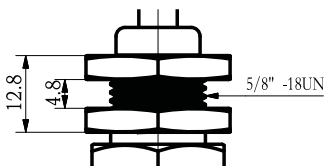
## Male x Female



## 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)



Teflon® is a registered trademark of DuPont Corporation



## 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
- 1 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

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:

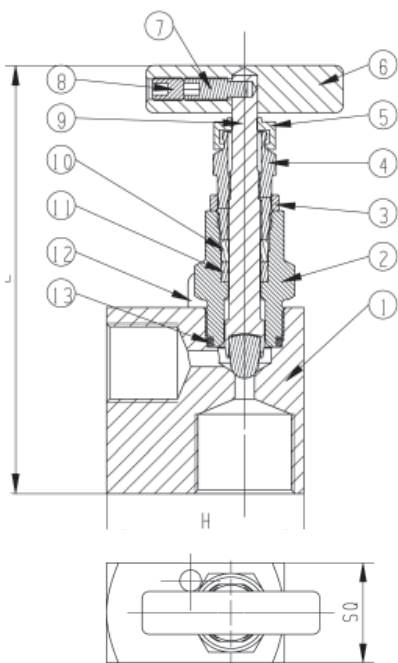
CPM = Carbon steel panel mount kit

SPM = Stainless steel panel mount kit

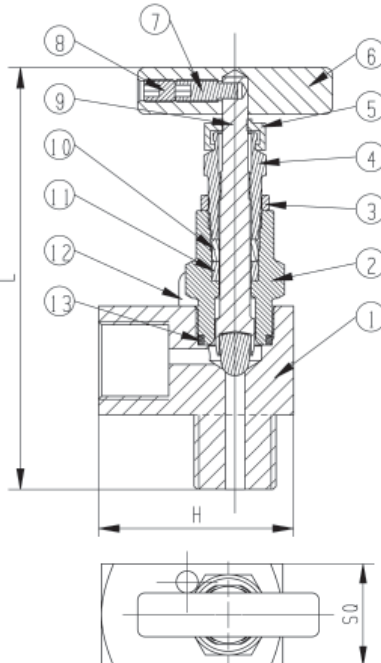
## Material

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

## Female x Female



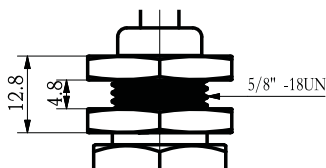
## Male x Female



## Dimensions

Size	H	L	SQ
1/4" Female x 1/4" Female	1.81" (46mm)	4.10" (104mm)	1.10" (28mm)
1/4" Male x 1/4" Female	1.77" (45mm)	4.02" (102mm)	1.10" (28mm)
3/8" Female x 3/8" Female	1.81" (46mm)	4.10" (104mm)	1.10" (28mm)
3/8" Male x 3/8" Female	1.77" (45mm)	4.02" (102mm)	1.10" (28mm)
1/2" Female x 1/2" Female	1.97" (50mm)	4.25" (108mm)	1.10" (28mm)
1/2" Male x 1/2" Female	1.97" (50mm)	4.25" (108mm)	1.10" (28mm)
3/4" Female x 1/2" Female	1.97" (50mm)	4.25" (108mm)	1.26" (32mm)
3/4" Male x 1/2" Female	1.97" (50mm)	4.25" (108mm)	1.10" (28mm)
3/4" Female x 3/4" Female	1.97" (50mm)	4.25" (108mm)	1.26" (32mm)
3/4" Male x 3/4" Female	1.97" (50mm)	4.25" (108mm)	1.26" (32mm)
1" Female x 1" Female	2.48" (63mm)	4.84" (123mm)	1.58" (40mm)
1" Male x 1" Female	2.48" (63mm)	4.84" (123mm)	1.58" (40mm)

## Panel Mount Kit (CPM/SPM)



Teflon® is a registered trademark of DuPont Corporation





## 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
- 1 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

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	NVA1020
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

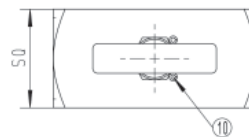
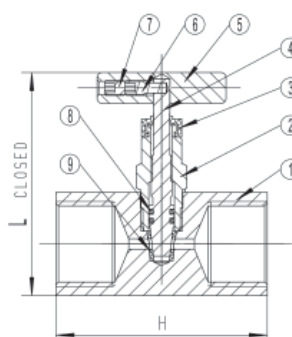
SPM = Stainless steel panel mount kit

Teflon® is a registered trademark of DuPont Corporation

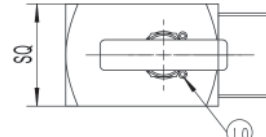
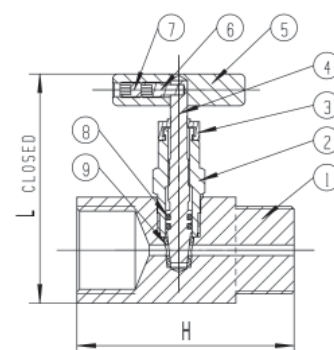
## Material

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

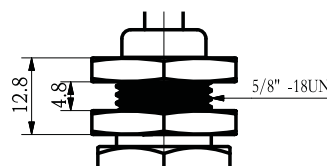
### Female x Female

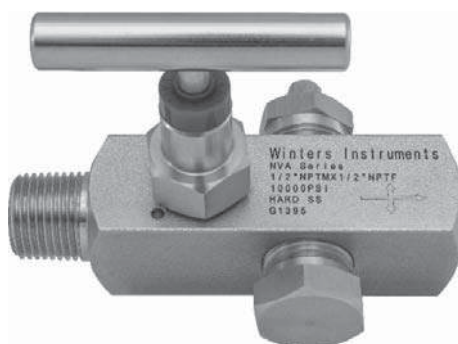


### Male x Female



### Panel Mont 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
- 1 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	Carbon Steel			NVA4202
1/2" Male x 1/2" Female	Stainless Steel			NVA1201
3/4" Male x 1/2" Female	Stainless Steel			NVA1202
1/2" Male x 1/2" Female	Carbon Steel	Hard Seat	10,000 psi	NVA6201
3/4" Male x 1/2" Female	Carbon Steel			NVA6202
1/2" Male x 1/2" Female	Stainless Steel			NVA3201
3/4" Male x 1/2" Female	Stainless Steel			NVA3202

**Multiport NACE Order Codes**

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

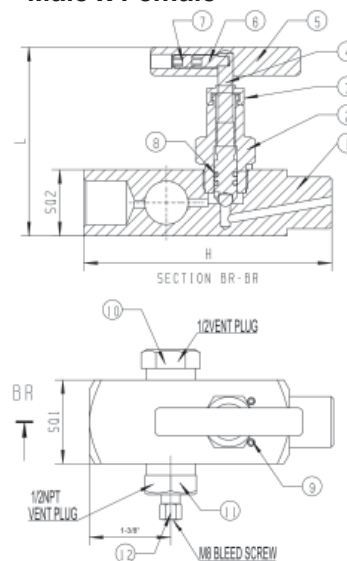
Note: Bleed screw and plugs not included

**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**

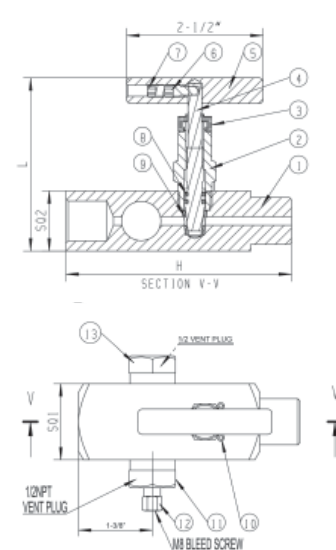
Size	H	L	SQ1	SQ2
3/4" Male x 1/2" Female	4.29 (109mm)	3.07 (78mm)	1.42 (36mm)	1.10 (28mm)

**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
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 pending
- 1 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

#### 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

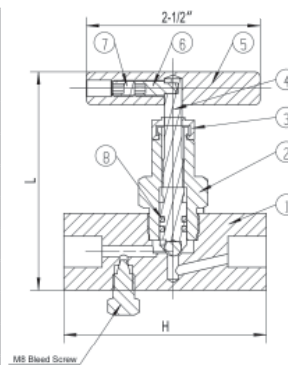
#### Replacement Bleed Screw Order Codes

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

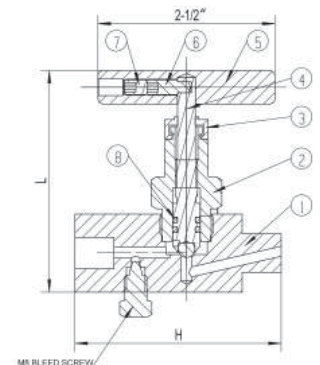
## Hard Seat Material

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

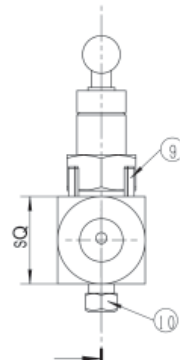
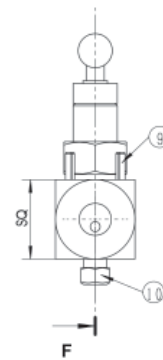


## Male x Female



## Hard Seat Dimensions

Size	H	L	SQ
1/4" Female x 1/4" Female	2.91" (74mm)	3.07" (78mm)	1.10" (28mm)
1/4" Male x 1/4" Female	2.91" (74mm)	3.07" (78mm)	1.10" (28mm)
1/2" Female x 1/2" Female	2.91" (74mm)	3.07" (78mm)	1.10" (28mm)
1/2" Male x 1/2" Female	2.91" (74mm)	3.07" (78mm)	1.10" (28mm)



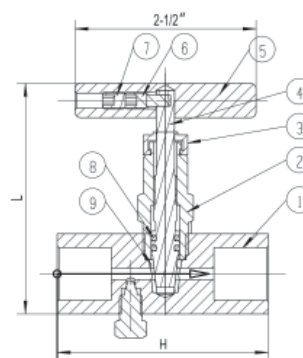
## Soft Seat Material

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

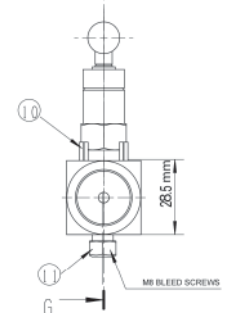
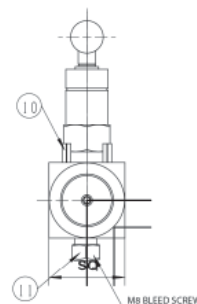
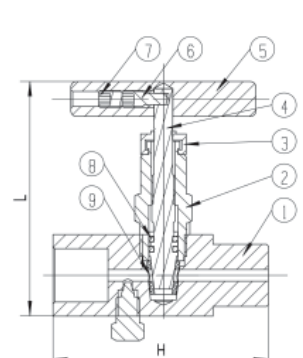
## Soft Seat Dimensions

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)

## Female x Female



## Male x Female





## 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 pending
- 1 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

## 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				BBV421
1/2" Male x 1/2" Female				BBV4201
1/4" Female x 1/4" Female	Stainless Steel			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
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
1/4" Female x 1/4" Female	Stainless Steel			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

## 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

## 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



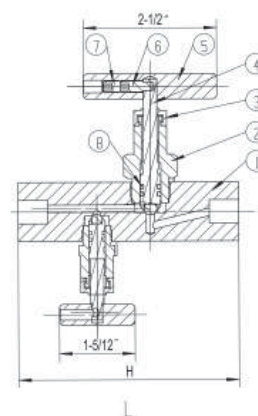
## Hard Seat Material

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

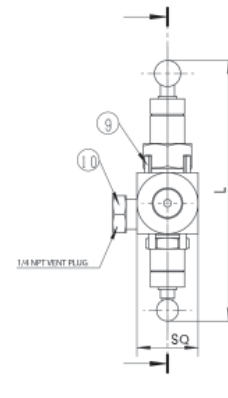
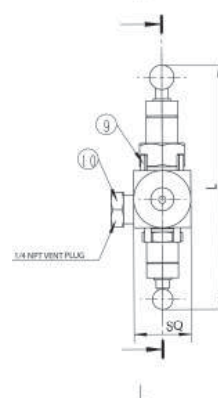
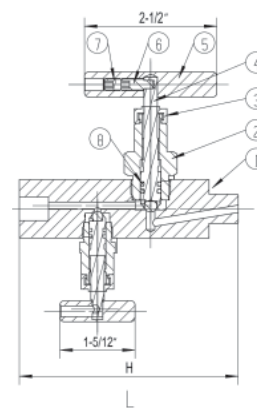
## Hard Seat Dimensions

Size	H	L	SQ
1/4" Female x 1/4" Female	4.13" (105mm)	4.55" (116mm)	1.10" (28mm)
1/4" Male x 1/4" Female	4.13" (105mm)	4.55" (116mm)	1.10" (28mm)
1/2" Female x 1/2" Female	4.13" (105mm)	4.55" (116mm)	1.10" (28mm)
1/2" Male x 1/2" Female	4.13" (105mm)	4.55" (116mm)	1.10" (28mm)

## Female x Female



## Male x Female



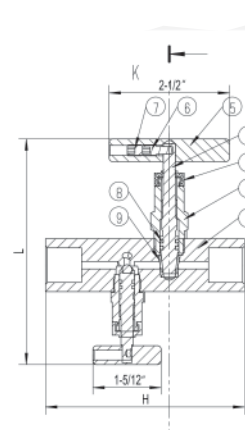
## Soft Seat Material

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-rings	8	FKM	FKM
Seat	9	Delrin	Delrin
Dwell Pin	10	304 SS	304 SS
Vent Plug	11	Carbon Steel	316 SS

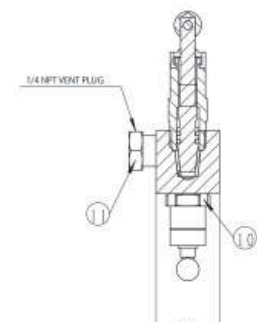
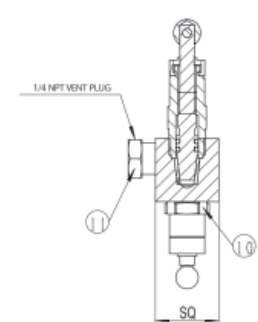
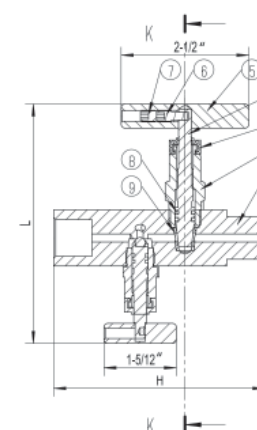
## Soft Seat Dimensions

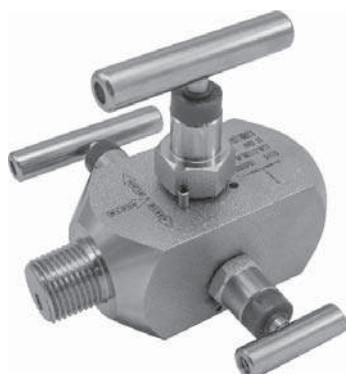
Size	H	L	SQ
1/4" Female x 1/4" Female	4.13" (105mm)	4.68" (119mm)	1.10" (28mm)
1/4" Male x 1/4" Female	4.13" (105mm)	4.68" (119mm)	1.10" (28mm)
1/2" Female x 1/2" Female	4.13" (105mm)	4.68" (119mm)	1.10" (28mm)
1/2" Male x 1/2" Female	4.13" (105mm)	4.68" (119mm)	1.10" (28mm)

## Female x Female



## Male x Female





## 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 pending
- 1 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

## 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

## 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

## 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



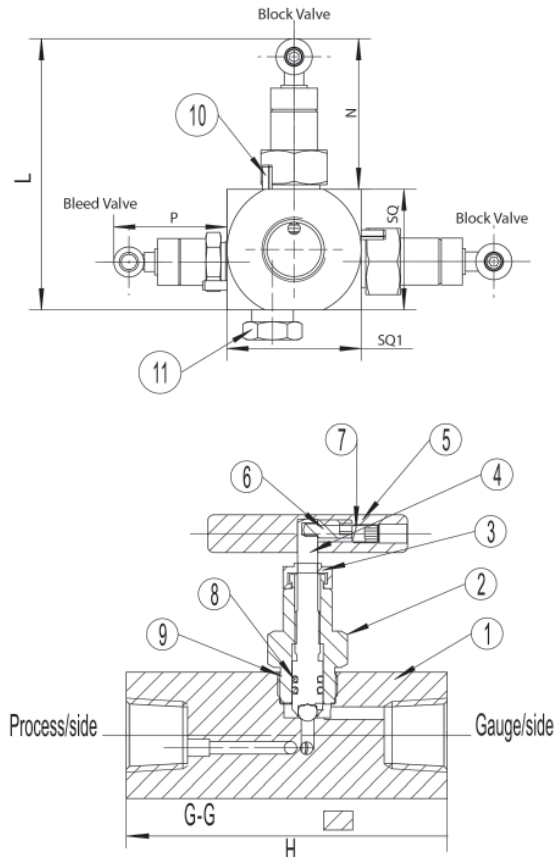
## Material

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
Gland Packing	9	Teflon®	Teflon®
Dwell Pin	10	304 SS	304 SS
Vent Plug	11	316 SS	316 SS NACE

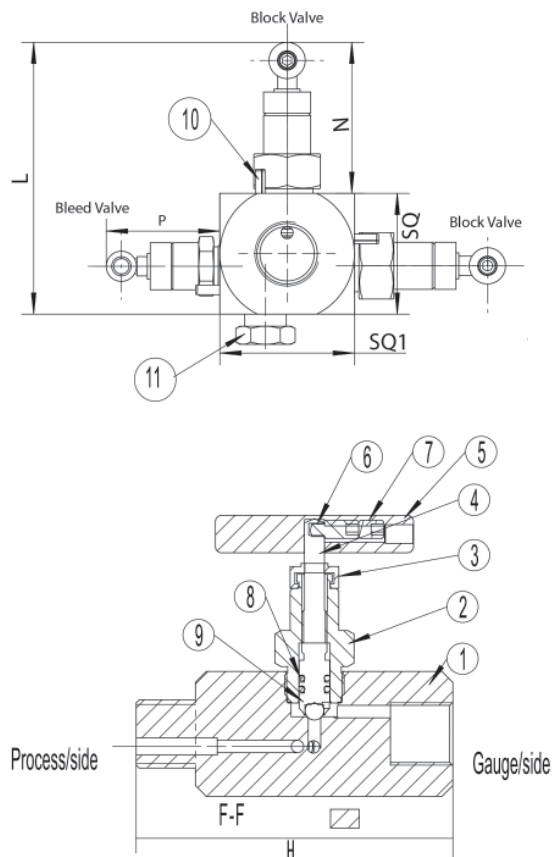
## Dimensions

Size	H	L	SQ	SQ1	M	N	P
1/4" Female x 1/4" Female	3.70" (94mm)	3.54" (90mm)	1.57" (40mm)	1.75" (44.5mm)	5.20" (132mm)	1.97" (50mm)	1.50" (38mm)
1/4" Male x 1/4" Female	4.02" (102mm)	3.54" (90mm)	1.57" (40mm)	1.75" (44.5mm)	5.20" (132mm)	1.97" (50mm)	1.50" (38mm)
1/2" Female x 1/2" Female	3.70" (94mm)	3.54" (90mm)	1.57" (40mm)	1.75" (44.5mm)	5.20" (132mm)	1.97" (50mm)	1.50" (38mm)
1/2" Male x 1/2" Female	4.02" (102mm)	3.54" (90mm)	1.57" (40mm)	1.75" (44.5mm)	5.20" (132mm)	1.97" (50mm)	1.50" (38mm)

### Female x Female



### Male x Female



Teflon® is a registered trademark of DuPont Corporation



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

<b>Body</b>	Brass or SS
<b>Connection</b>	1/4" or 1/2" NPTM x NPTF (other thread types are available)
<b>Temperature Range</b>	-40°F to 248°F (-40°C to 120°C)

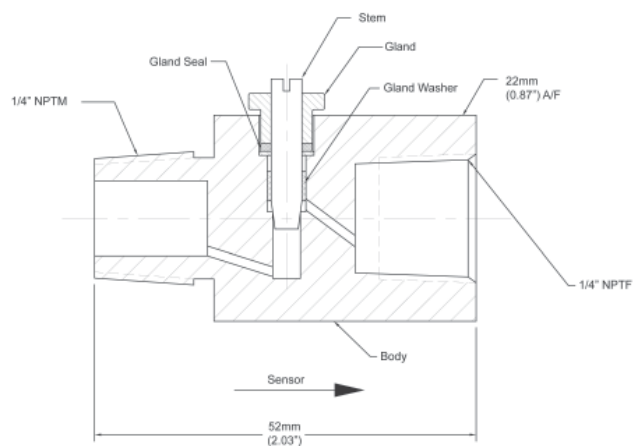
## Order Codes

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

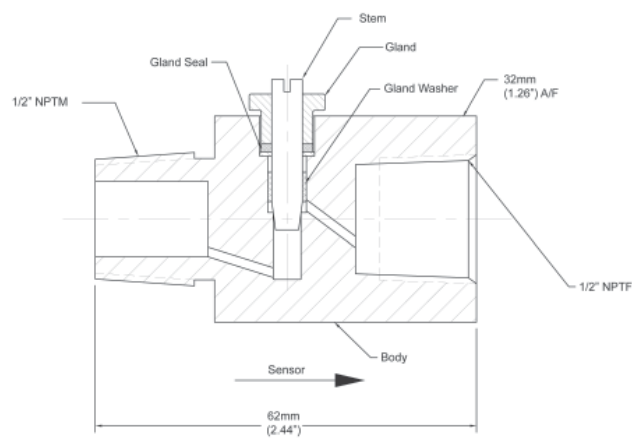
Description	SS	Brass
Gland Seal	Teflon®	
Stem	316 SS	
Gland	316 SS	Brass
Gland Washer	316 SS	
Body	316 SS	Brass

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

## 1/4" NPT



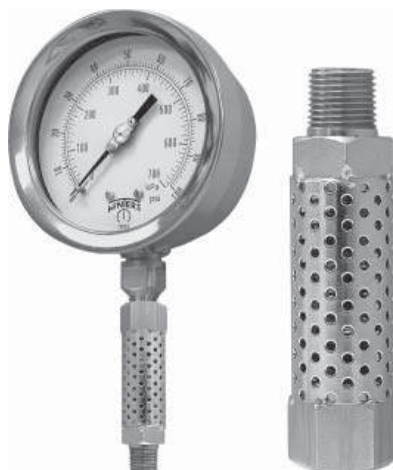
## 1/2" NPT



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Series Number (for custom, non-standard product)

	S	A	S	-		-		-	
SERIES									
MATERIAL									
Brass							B		
316SS							S		
CONNECTION SIZE									
1/4"								4	
3/8"								3	
1/2"								2	
THREAD									
NPT									N
BSP (G)									B
BSPT (R)									T

**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

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 (other thread types are available)

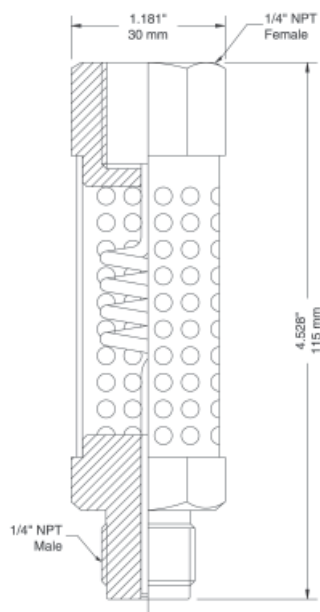
**Order Codes**

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

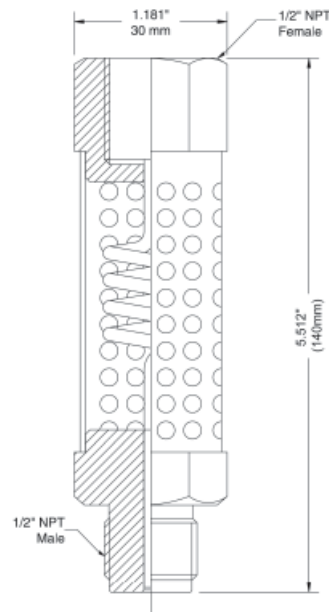
Other connections available upon request

**SCT-400**

1/4" NPTM x 1/4" NPTF

**SCT-500**

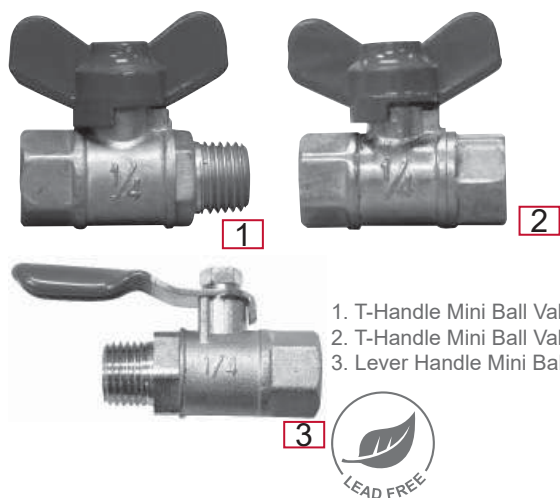
1/2" NPTM x 1/2" NPTF



\*Degree of cooling is dependent on ambient conditions

# Mini Ball Valve, Lead Free Mini Ball Valve

# SMV, SMV-LF



1. T-Handle Mini Ball Valve (F x M)
2. T-Handle Mini Ball Valve (F x F)
3. Lever Handle Mini Ball Valve (MXF)

## Description & Features:

- An economical isolation valve for pressure gauges and transmitters
- Brass or lead free brass wetted parts
- ASME B1.20.1 compliant
- CRN registered
- 1 year warranty

## Applications:

- Provides flow control for non-corrosive applications

## Specifications

<b>Body</b>	SMV: #59-1 forged brass SMV-LF: Lead free forged brass
<b>Ball</b>	SS
<b>Gaskets</b>	Teflon®
<b>Handle</b>	Steel, plated, plastic covered
<b>Process Temperature</b>	-9°F to 212°F (-23°C to 100°C)
<b>Maximum Operating Pressure</b>	400 psi (2,758 kPa)
<b>Connection</b>	1/4", 1/2" NPT and BSP

## SMV Order Codes

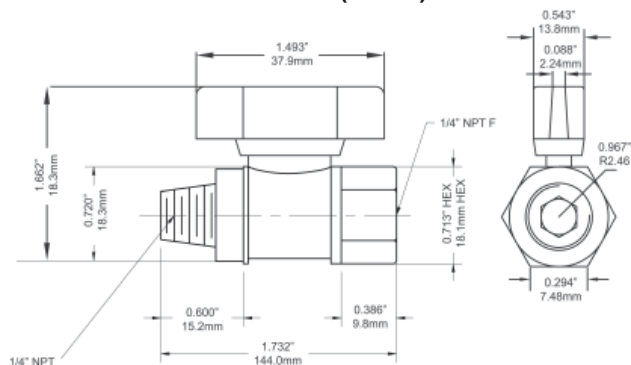
Connection	T-Handle	Lever Handle
1/4" NPT F x M	SMV532	SMV500
1/4" BSP F x M	SMV534T1	SMV501T1
1/4" NPT F x F	SMV533	-
1/2 NPT F x M	SMV536	SMV503
1/2" BSP F x M	SMV538T1	SMV505T1

## SMV-LF Order Codes

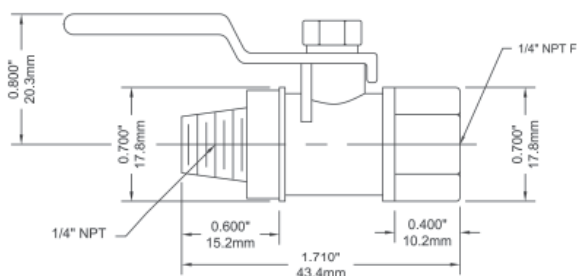
Connection	T-Handle	Lever Handle
F x M	SMV532LF	SMV500LF
F x F	SMV533LF	-

Other sizes and materials available upon request.

## T-Handle Mini Ball Valve (M x F)

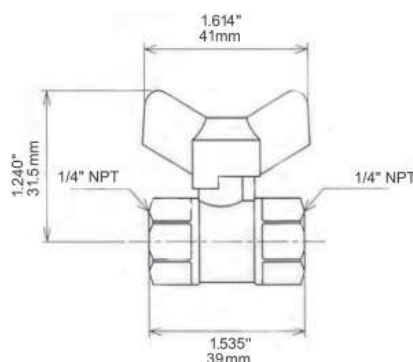


## Lever Handle Mini Ball Valve (M x F)



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## T-Handle Mini Ball Valve (F x F)



## Series Number (for custom, non-standard product)

	S	M	V	-		-		-	
SERIES									
CONNECTION SIZE									
1/4"					4				
3/8"					3				
1/2"					2				
CONNECTION THREAD									
NPT							N		
BSP (G)							B		
BSPT (R)							T		
HANDLE									
T-Handle								T	
Lever Handle								L	



## Description & Features:

- An isolation valve for pressure gauges and transmitters
- For mild applications, this valve can be used to throttle pulsation. Please see NVA Stainless Steel Needle Valve for more demanding applications
- Brass or lead free brass wetted parts
- ASME B1.20.1 compliant
- CRN registered
- 1 year warranty

## Applications:

- Provides precision flow control for any non-corrosive application up to 400 psi (2,758 kPa)

## Specifications

<b>Body</b>	SMV: #59-1 forged brass SMV-LF: Lead free forged brass
<b>Handle</b>	ABS plastic, dyed red
<b>O-ring</b>	Rubber
<b>Shaft</b>	SNV: #59-1 brass SNV-LF: Lead free brass
<b>Nut</b>	SNV: #59-1 brass SNV-LF: Lead free brass
<b>Ambient/Process Temperature</b>	-9°F to 212°F (-23°C to 100°C)
<b>Maximum Operating Pressure</b>	400 psi (2,758 kPa)
<b>Connection</b>	1/4", 1/2" NPTF and BSP(G)F

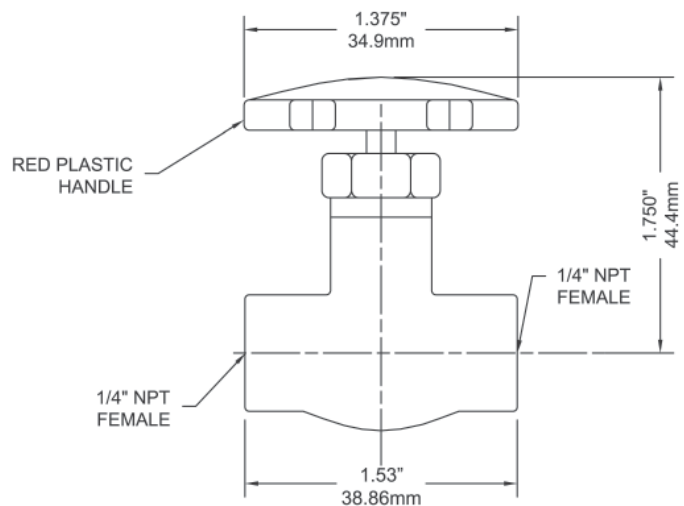
## SNV Order Codes

Connection	Code
1/4" NPT	SNV510
1/4" BSP(G)	SNV511
1/4" NPT	SNV512
1/2" BSP(G)	SNV513

## SNV-LF Order Codes

Connection	Code
1/4" NPT	SNV510LF

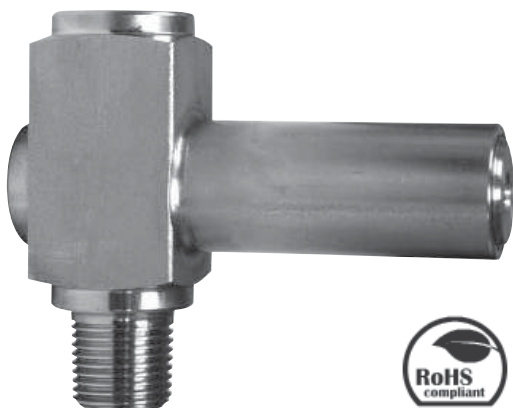
Other sizes and materials available upon request.



## Series Number (for custom, non-standard product)

	<div>S</div> <div>N</div> <div>V</div>	-	<div></div>	-	<div></div>
SERIES					
CONNECTION SIZE					
1/4"			4		
3/8"			3		
1/2"			2		
CONNECTION THREAD					
NPT					N
BSP (G)					B
BSPT (R)					T



**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:**

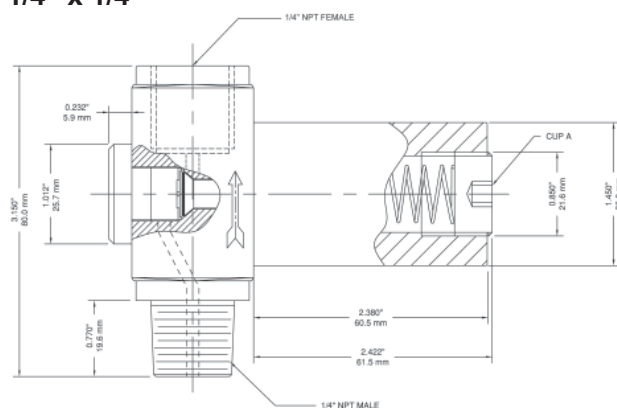
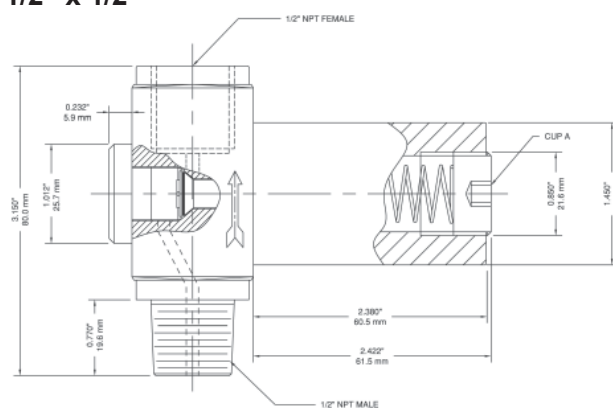
- Utilized to protect pressure instruments against surges and pulsation
- Available in Bellows and Piston Type

**Specifications**

<b>Body</b>	Bellows Type: 316 SS Piston Type: 316 SS
<b>Gasket</b>	Viton®
<b>Maximum Operating Pressure</b>	10,000 psi
<b>Temperature Rating</b>	-40°F to 248°F (-40°C to 120°C)
<b>Connection</b>	1/4" NPTM x 1/4" NPTF or 1/2" NPTM x 1/2" NPTF (other thread types are available)

**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"**

Viton® is a registered trademark of DuPont Performance Elastomers



## 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, lead free 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



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 (1,379 bar)	Maximum 10,000 psi (690 bar)
Burst Pressure	60,000 psi (4,138 bar)	30,000 psi (2,069 bar)
Housing	316 SS	SSN: Brass SSN-LF: Lead free brass
Snubbing Element	Sintered, porous type 316 SS	Sintered, porous type 316 SS
Retainer	300 series SS	300 series SS

## SSN Order Codes

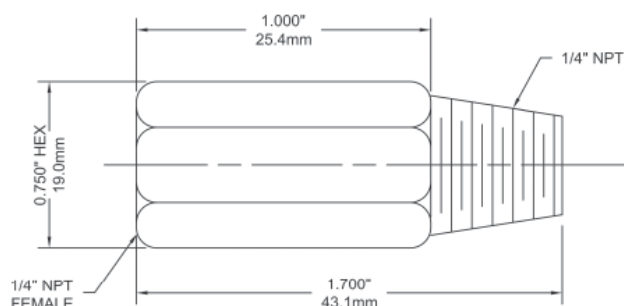
Model	Heavy Oil	Water	Air
1/4" Brass	SSN517	SSN515	SSN516
1/4" SS	SSN520	SSN518	SSN519
1/2" Brass	SSN514	SSN512	SSN513
1/2" SS	SSN531	SSN529	SSN530

## SSN-LF Order Codes

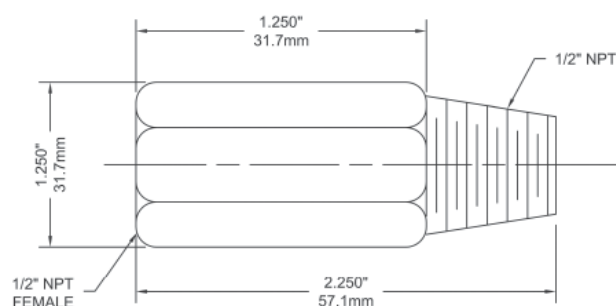
Model	Water
1/4" Brass	SSN515LF
1/2" Brass	SSN512LF

Note: Other thread types and sizes available upon request

## 1/4" Snubber



## 1/2" Snubber



Series Number (for custom, non-standard product)

	S	S	N	-		-		-	
SERIES									
MATERIAL									
Brass							B		
316SS							S		
CONNECTION SIZE									
1/4"								4	
3/8"								3	
1/2"								2	
THREAD									
NPT									N
BSP (G)									B
BSPT (R)									T



## 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)



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

## Specifications

<b>Material</b>	Schedule 40 brass, schedule 40, 80 carbon steel, 304 SS or 316 SS (all types seamless)
<b>Style</b>	180° coil
<b>Connection</b>	1/4" NPTM x 1/4" NPTM (or BSP(G)M x BSP(G)M) or 1/2" NPTM x 1/2" NPTM (or BSP(G)M x BSP(G)M)
<b>Maximum Operating Pressure</b>	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)

## O Syphon Order Codes

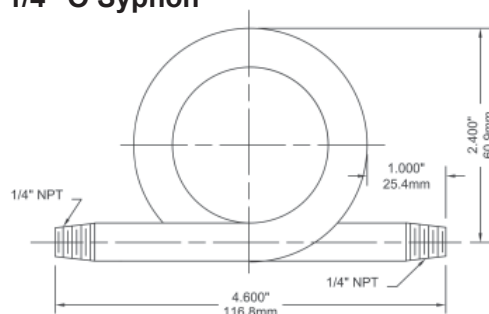
Material	1/4" NPT	1/2" NPT	1/4" BSP(G)	1/2" BSP(G)
Schedule 40 Brass	SSP545	SSP559	SSP545T1	SSP559T1
Schedule 40 Carbon Steel	SSP525	SSP555	SSP560T1	SSP555T1
Schedule 40 304 SS	SSP535	SSP585	SSP535T1	SSP585T1
Schedule 40 316 SS	SSP554	SSP557	SSP554T1	SSP557T1
Schedule 80 Carbon Steel	SSP556	SSP2715	SSP556T1	SSP566T1
Schedule 80 304 SS	SSP595	SSP2716	SSP595T1	SSP567T1
Schedule 80 316 SS	SSP4925	SSP2719	SSP561T1	SSP568T1
Schedule 160 Carbon Steel	SSP4926	SSP4933	SSP562T1	SSP569T1
Schedule 160 304 SS	SSP4927	SSP4934	SSP563T1	SSP570T1
Schedule 160 316 SS	SSP4928	SSP4935	SSP564T1	SSP571T1

## U Syphon Order Codes

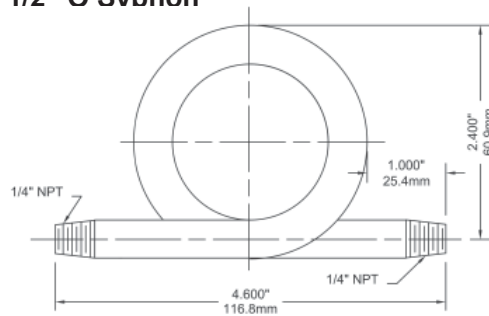
Material	1/4" NPT	1/2" NPT	1/4" BSP(G)	1/2" BSP(G)
Schedule 40 Brass	SSP573	SSP584	SSP597T1	SSP608T1
Schedule 40 Carbon Steel	SSP574	SSP586	SSP598T1	SSP609T1
Schedule 40 304 SS	SSP575	SSP587	SSP599T1	SSP610T1
Schedule 40 316 SS	SSP576	SSP588	SSP600T1	SSP611T1
Schedule 80 Carbon Steel	SSP577	SSP589	SSP601T1	SSP612T1
Schedule 80 304 SS	SSP578	SSP590	SSP602T1	SSP613T1
Schedule 80 316 SS	SSP579	SSP591	SSP603T1	SSP614T1
Schedule 160 Carbon Steel	SSP580	SSP592	SSP604T1	SSP615T1
Schedule 160 304 SS	SSP581	SSP593	SSP605T1	SSP616T1
Schedule 160 316 SS	SSP582	SSP594	SSP606T1	SSP617T1

Note: Schedule 80 316 SS and extra-extra strong schedule available. L shape syphons also available upon request.

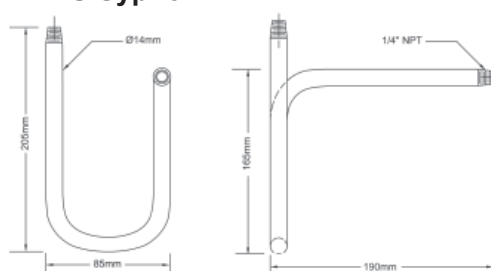
## 1/4" O Syphon



## 1/2" O Syphon

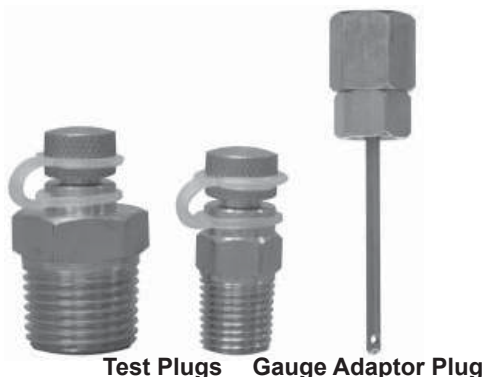


## 1/4" U Syphon



Series Number (for custom, non-standard product)

	S	S	P	-			-		-		-		-	
SERIES														
PIPE SCHEDULE														
40					4	0								
80					8	0								
Double Extra					2	0								
MATERIAL														
Brass								B						
Steel								S						
304 stainless steel								4						
316 stainless stell								6						
CONNECTION SIZE														
1/4"									4					
3/8"									3					
1/2"									2					
CONNECTION THREAD														
NPT										N				
BSP (G)										B				
BSPT (R)										T				
OPTIONS														
90 degree angle												9		



## Description & Features:

- Facilitates quick pressure and temperature readings at recommended test points within process
- Test plugs are available in brass or lead free brass wetted parts
- Gauge adapters ship with protective aluminum sleeve
- ASME B1.20.1 compliant
- 1 year warranty

## Applications:

- Mainly used in plumbing, heating, ventilation and air conditioning installations.

## Specifications

<b>Body</b>	STP: Brass STP-LF: Lead free brass
<b>Diaphragm/Core</b>	NBR (Buna N)
<b>Temperature Rating</b>	-40°F to 302°F (-40°C to 150°C)
<b>Maximum Pressure Rating</b>	1,000 psi (6,895 kPa)
<b>Connection</b>	1/4" NPT or 1/2" NPT

## STP Order Codes

Brass Test Plug	
1/4" NPTM	STP001
1/2" NPTM	STP002

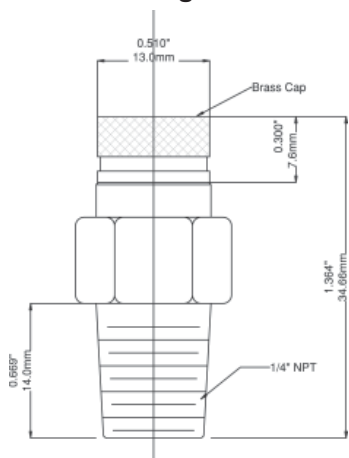
Gauge Adaptor	
2.75 OAL x 1.75" x 0.125" probe	STP003
2.25 OAL x 1.75" x 0.125" probe	STP004

## STP-LF Order Codes

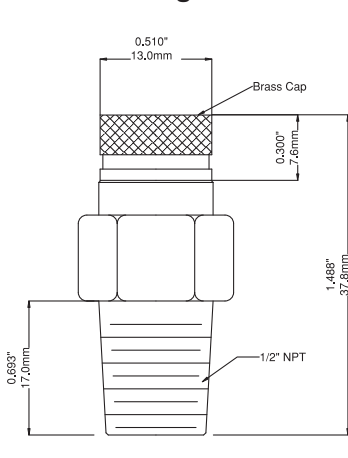
Lead Free Brass Test Plug	
1/4" NPTM	STP001LF
1/2" NPTM	STP002LF

Note: Other sizes, materials and plugs with lagging extensions available upon request.

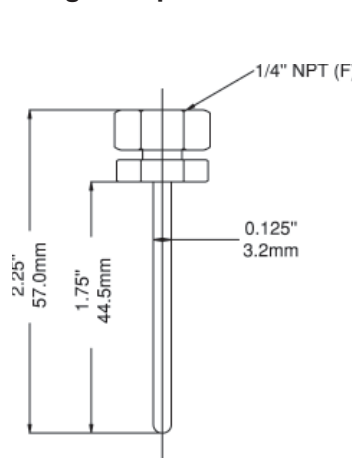
### 1/4" Test Plug



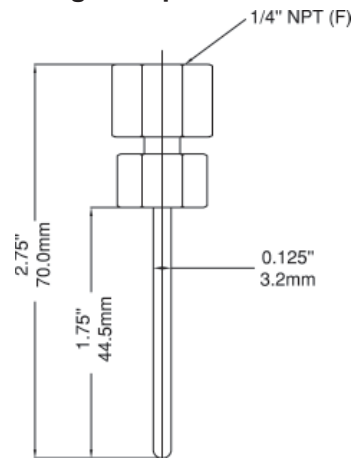
### 1/2" Test Plug



### Gauge Adaptor 2.25"



### Gauge Adaptor 2.75"





## **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 9001:2008

Winters is a ISO 9001:2008 Corporation. ISO 9001:2008 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

<b>Hazardous Location Definitions</b>	
<b>Class I</b>	Locations in which flammable gases or vapours are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.
<b>Class II</b>	Locations which are hazardous because of the presence of combustible dust.
<b>Class III</b>	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.
<b>Division 1</b>	Locations in which hazardous concentrations in the air exist continuously, intermittently, or periodically under normal operating conditions.
<b>Division 2</b>	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.
<b>Group A</b>	Atmospheres containing acetylene.
<b>Group B</b>	Atmospheres containing hydrogen, or gases or vapours of equivalent hazard, such as manufactured gas.
<b>Group C</b>	Atmospheres containing ethyl-ether vapours, ethylene, or cyclo-propane.
<b>Group D</b>	Atmospheres containing gasoline, hexane, naphtha, benzene, butane, propane, alcohol, benzol, lacquer solvent vapours, or natural gas.
<b>Group E</b>	Atmospheres containing metal dust, including aluminum, magnesium and their commercial alloys and other metals of similar hazardous characteristics.
<b>Group F</b>	Atmospheres containing carbon black, coal or coke dust.
<b>Group G</b>	Atmospheres containing flour, starch or grain dust.
<b>Hazardous Location Definitions - International</b>	
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:	
<b>Zone 0</b>	An area in which an explosive gas/air mixture is constantly present or present for long periods of time.
<b>Zone 1</b>	An area in which an explosive gas/air mixture is likely to occur during normal operation (Similar to Division 1).
<b>Zone 2</b>	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

## 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.

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

## 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**

# Pressure Conversion Table



## Pressure Conversion Table

Dial Scale	psi	kPa	kg/cm <sup>2</sup>	cm of H <sub>2</sub> O	feet of H <sub>2</sub> O	inches of Hg	mm of Hg	inches of H <sub>2</sub> 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 <sup>2</sup>	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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>2</sub> 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](http://www.winters.com/converter.htm)

# WINTERS INSTRUMENTS

MANUFACTURER OF INDUSTRIAL INSTRUMENTATION



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