



*Since 1964*

# GAUGES & THERMOMETERS CATALOG



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# Supply House to the Processing Industries Since 1964

**Trusted supply house of sanitary processing equipment, parts and supplies for the dairy and food, brewery, beverage and pharmaceutical industries.**

Harco Enterprises offers a diverse line of sanitary and hygienic processing equipment, parts and supplies including pumps, sanitary valves, separators, homogenizers, gaskets and fittings, sanitary hoses, and instrumentation as well as a variety of other products from world leading manufacturers such as Alfa Laval, Ampco, Tetra Pak, Burkert, Tri-Clover, Remco, Vikan, Carlisle, Haynes, Strahman, and more.

These products are distributed to dairy, food, beverage processing facilities as well as the pharmaceutical, brewing, and fisheries industries throughout North America.

Many of our products are customized in design due to strict sanitary and hygienic standards, and all are built to stand up to the demands of high production environments. Resourcefulness and quick delivery are important to you, and Harco always provides both.

Check out our large collection of equipment, parts and supplies, including our line of color-coded products available.

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# GAUGES & THERMOMETERS

## Sanitary Digital Thermometers

### SANI-FLOW





# Sanitary Digital Thermometers

## SANI-FLOW

### FEATURES

The Sani-Flow Sanitary Digital Thermometer is built to withstand the harshest environment and function for many years with little or no maintenance. Our dedication to quality is not only evident in our products, but also in our customer service. We offer immediate availability on all products and respond quickly with quality service at reasonable prices. We feel so strongly about the quality of our products and service that we guarantee complete satisfaction.

**Accuracy:**  $\pm 0.5^{\circ}$  across the full scale with large, high contrast LCD display so there is no guessing, squinting or misreading the temperature. No problem reading several thermometers at one time from a distance.

**Durability:** Constructed with 316L stainless steel wetted surfaces to assure maximum corrosion resistance. A clean waterproof design allows the thermometer to be hosed down or submersed for cleaning. The Lexan® lens is virtually impervious to cracks and breakage.

**Dependability:** Powered by two field replaceable standard AAA battery with a life of up to 3 years - no expensive battery pack. Totally electronic which means no hassles with mercury or a separated column. The RTD does not wander or drift like other RTD type thermometers which means fewer recalibrations will be necessary.

**Versatility:** One thermometer covers a range from  $-58^{\circ}$  to  $302^{\circ}$ . There is no need to have different thermometers for different applications.

**Field Recalibratable:** Simply turn a screw on the electronics to adjust calibration. No special tools or charts needed. Check and adjust quickly and easily during routine maintenance or battery replacement.

**Special Probe Lengths** available in a matter of days not weeks.

**A Unique Modular Design** means any thermometer can be customized for tough, abusive or special applications.

**Repairable:** The modular design also allows for cost effective and timely repairs.

**Service:** Thermometers are available from stock ready to ship. No hassle return policy. No restocking charge on standard thermometers.

### SPECIFICATIONS

#### TOLERANCES

Compliance	3-A, NEMA 4X, IP67
Accuracy	$\pm 0.5^{\circ}\text{F}$ ( $\pm 0.3^{\circ}\text{C}$ )
Units	$^{\circ}\text{F}$ or $^{\circ}\text{C}$ - Field Selectable
LCD Display Size	1" (2.54 cm)
Refresh Rate	Once per Second
Process Temperature Range	More Info - Process
Temperature Range	$-58^{\circ}$ to $302^{\circ}\text{F}$ ( $-50^{\circ}$ to $150^{\circ}\text{C}$ )
Ambient Operating Limits	$-40^{\circ}$ to $176^{\circ}\text{F}$ ( $-40^{\circ}$ to $80^{\circ}\text{C}$ )
Ambient Storage Limits	$-40^{\circ}$ to $185^{\circ}\text{F}$ ( $-40^{\circ}$ to $85^{\circ}\text{C}$ )

#### CONSTRUCTION

Product Contact Material	316L Stainless Steel
Product Contact Finish	$R_{\text{a max}} = 8 \mu\text{in}$ (0.20 $\mu\text{m}$ )
Case & Lens Ring Material	304L Stainless Steel
Lens Material	$\frac{1}{4}$ " Polycarbonate
Power	Standard AAA Batteries
Battery Life Expectancy	1 to 3 Years
Approx. Shipping Weight	2 Pounds (0.9 Kg)

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

### FITTINGS

STYLE	SIZE	PROBE LENGTH	CODE
Tri-Clamp®	$\frac{1}{2}$ "	2 $\frac{1}{4}$ "	<b>1U</b>
	$\frac{3}{4}$ "	2 $\frac{3}{8}$ "	<b>3U</b>
	1"	2 $\frac{5}{8}$ "	<b>1U</b>
	1 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	<b>1<math>\frac{1}{2}</math>U</b>
	2"	3 $\frac{1}{2}$ " or 5 $\frac{1}{2}$ "	<b>2U</b>
	2 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "	<b>2<math>\frac{1}{2}</math>U</b>
	3"	3 $\frac{3}{4}$ "	<b>3U</b>
	4"	4 $\frac{1}{2}$ "	<b>4U</b>
Projectile Well	-	3 $\frac{3}{4}$ "	<b>3PW</b>
	-	9 $\frac{1}{8}$ "	<b>9PW</b>
	-	10 $\frac{1}{2}$ "	<b>10PW</b>
	-	12 $\frac{1}{8}$ "	<b>12PW</b>
NPT 1/4" - 3/4"	-	9"	<b>NPT</b>
Split Ferrule	-	5 $\frac{3}{4}$ "	<b>5SP</b>
Air Space	-	3 $\frac{3}{4}$ "	<b>3A</b>
	-	5"	<b>5A</b>
	-	7 $\frac{1}{4}$ "	<b>7A</b>
#13H Captive Nut	1"	1 $\frac{3}{4}$ "	<b>1T</b>
& #14 Bevel Seat	1 $\frac{1}{2}$ "	2 $\frac{1}{4}$ "	<b>15T</b>
	2"	2 $\frac{5}{8}$ "	<b>2T</b>

STYLE	SIZE	PROBE LENGTH	CODE
Cherry-Burrell	1"	1 $\frac{5}{8}$ "	<b>11</b>
Male I-Line	1 $\frac{1}{2}$ "	2 $\frac{3}{16}$ "	<b>1<math>\frac{1}{2}</math>I</b>
	2"	2 $\frac{1}{2}$ "	<b>2I</b>
	2 $\frac{1}{2}$ "	2 $\frac{7}{8}$ "	<b>2<math>\frac{1}{2}</math>I</b>
	3"	3 $\frac{3}{16}$ "	<b>3I</b>





# GAUGES & THERMOMETERS

## Sanitary Digital Thermometers

### Typical Fittings

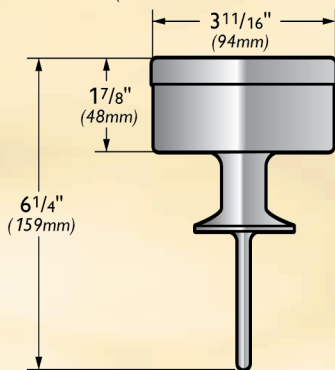
**LEFT SIDE MOUNT**  
(shown with 1 1/2" Tri-Clamp®)



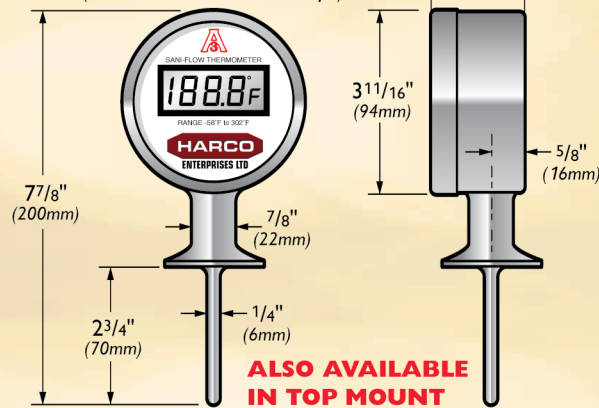
**RIGHT SIDE MOUNT**  
(shown with 1 1/2" Tri-Clamp®)



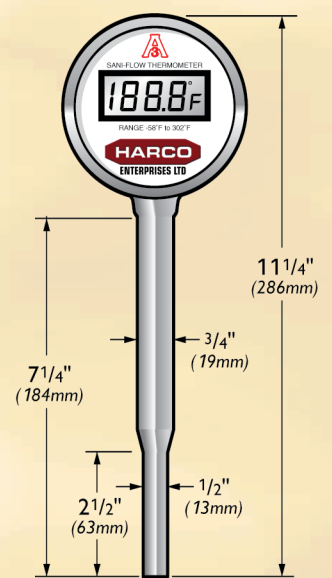
**BACK MOUNT**  
(shown with 1 1/2" Tri-Clamp®)



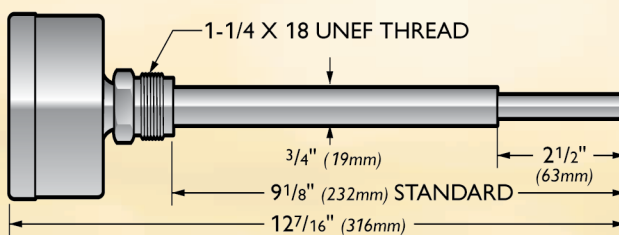
**BOTTOM MOUNT**  
(shown with 1 1/2" Tri-Clamp®)



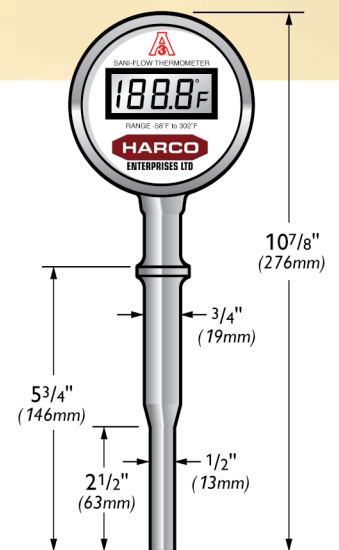
**AIR SPACE**



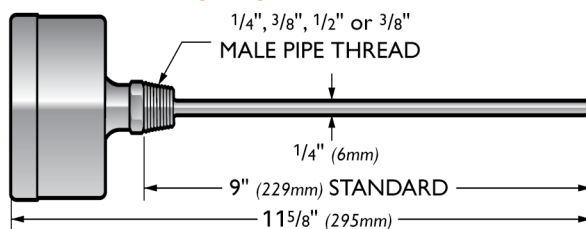
**PROJECTILE WELL**



**SPLIT FERRULE**



**PIPE THREAD (NPT)**



**REMOTE MOUNT**  
(shown with 1/2" NPT)



AVAILABLE IN  
ANY CONNECTION

FLEXIBLE FOOD GRADE  
PVC TUBING AVAILABLE  
IN DIFFERENT LENGTHS

## Sanitary Digital Thermometers

## ORDERING INFORMATION

Below are typical examples of models with their descriptions.

**EXAMPLE 1:****DT - 1½U - BT - DF**

Describes a Sani-Flow Digital Thermometer with 1½" tri-clamp fitting, bottom mounted with °F display.

**EXAMPLE 2:****DT - 2U - LF - DC**

Describes a Sani-Flow Digital Thermometer with 2" tri-clamp fitting, left side mounted with °C display.

**EXAMPLE 3:****DT - ½NPT - BK - DF**

Describes a Sani-Flow Digital Thermometer with ½" pipe thread fitting, back mounted with °F display.

**EXAMPLE 4:****DT - 9PW - BK - DF**

Describes a Sani-Flow Digital Thermometer with 9-1/8" projectile well fitting, back mounted with °F display.

**MODEL NUMBER CONSISTS OF:**

SERIES	FITTING	MOUNT	DISPLAY
DT	2U	BT	DF

Please make a selection from each category below:

**SERIES**

DT - Sani-Flow Digital Thermometer

**SANITARY FITTINGS**

(Fittings available in ½", ¾", 1½", 2", 2½", 3" & 4")

- H** G&H "H" Line Male
- I** Cherry-Burrell Male I-Line
- K** APC "K" Clamp
- Q** Cherry-Burrell Q-Line
- T** #13H Captive Nut & #14 Bevel Seat
- U** Tri-Clamp®

(Specify size, then adapter type such as 1½U for 1½" Tri-Clamp adapter.)

**OTHER FITTINGS**

(Specify probe length)

- A** Air Space
- M** Umbrella Fitting
- NPT** ¼", 3/8", ½", 5/8" or ¾" Pipe Thread
- PW** Projectile Well with 1¼- 18 UNEF Male Thread
- SP** Split Ferrule
- VP** - VAT Well Fitting with #13H Captive Nut
- OF** - No Fitting

**MOUNT**

- BT** Bottom Mount
- RT** Right Side Mount
- LF** Left Side Mount
- TP** Top Mount
- BK** Back Mount
- BTR** Remote Fitting

**DISPLAY**

- DF** °F (Fahrenheit) - Standard
- DC** °C (Celsius)

## Bi-Metal Thermometers





## Bi-Metal Thermometers

The Bi-Metal Thermometer is built to function for many years with little or no maintenance. Our dedication to quality is not only evident in our products, but also in our customer service. We offer immediate availability on all products and respond quickly with quality service at reasonable prices. We feel so strongly about the quality of our products and service that we guarantee complete satisfaction.

### FEATURES

**Standard 304 Stainless Steel Case and Bezel** on all external parts increases corrosion resistance.

**Super Sensitive Bimetallic Helix Coil** is fabricated to tight tolerances. Heat treated for stress relief and silicone coated to minimize pointer vibration and maximize heat transfer and response time

**Bi-Metal Bushing** is pressed into groove on stem to center the coil in stem. 302 stainless steel stem wire through center of bushing connects bimetal element to pointer to minimize coil interference with tube wall.

**C.I.P.** - can be cleaned in place for convenience and eliminates the possibility of damage from mishandling.

**Temperature Ranges** from -100°F (-75°C) to 1000°F (550°C).

**Hermetic Seal** on Case/Bezel assembly is a precision interference fit. Silicone gasket provides dustproof and leakproof seal

**External Reset Calibration** adjusts using an Allen wrench to discourage tampering.

**Silicone Fill** is available on all gauges for additional dampening of extreme vibration, or to assure consistent performance in low process temperature/high environmental humidity

**140°F (60°C) Maximum process temperature** Please consult factory when ordering for higher temperature applications.

**Immediate Availability** from stock for all pressure gauges.

**Experienced Engineers** are available to answers questions and solve difficult application problems.

**Unparalleled Customer Service** where the customer is always right and we are not happy until the customer is satisfied.

### SPECIFICATIONS

Accuracy	±2°F (1°C)
Over Range Capability	30%
Wetted Surfaces	316L Stainless Steel
Case Material	304 Stainless Steel
Dial Size	3", 4", 5" (76, 102, 127mm) Dia.
Standard Lens	Glass
Optional Lens	Various Shatter-Resistant Materials
Temp. Limits	-100°F/1000°F (-75°C/550°C)
Optional Fill	Silicone
Recalibration Feature	Standard
Dry Shipping Wt. 3", 4", 5"	11 oz, 16 oz, 20 oz
Filled Shipping Wt. 3", 4", 5"	14 oz, 22 oz, 30 oz

### AVAILABLE RANGES

20 different temperature ranges are available in both Fahrenheit and Celsius. Refer to back page for specific information.

### AVAILABLE FITTINGS

½-18 NPT.  
¾" Tri-Clamp®, 1½" Tri-Clamp®, 2" Tri-Clamp®,  
2½" Tri-Clamp®, 3" Tri-Clamp®, 4" Tri-Clamp®.

### AVAILABLE MOUNTINGS

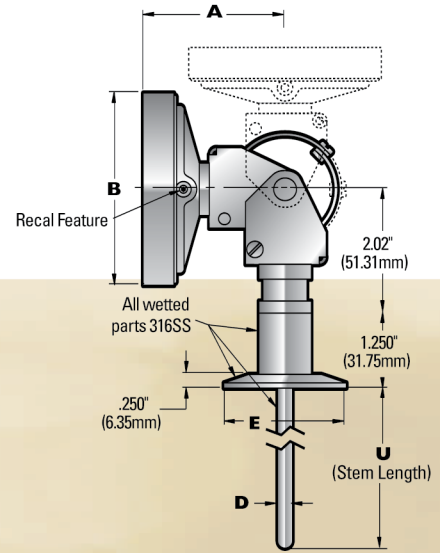
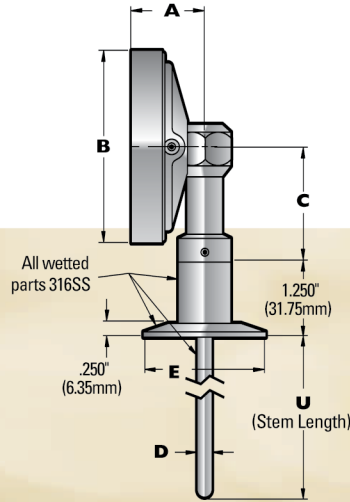
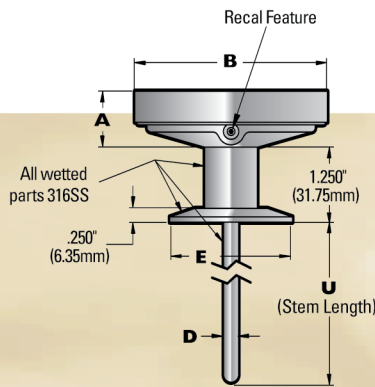
Bottom, Back and Adjustable mount.

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



## Bi-Metal Thermometers

### SANITARY FITTING DIMENSIONS



#### BACK MOUNT (shown with Tri-Clamp®)

SIZE	A	B
3"	.89" (23mm)	3.19" (81mm)
4"	.89" (23mm)	4.12" (104mm)
5"	.33" (34mm)	5.04" (128mm)

#### BOTTOM MOUNT (shown with Tri-Clamp®)

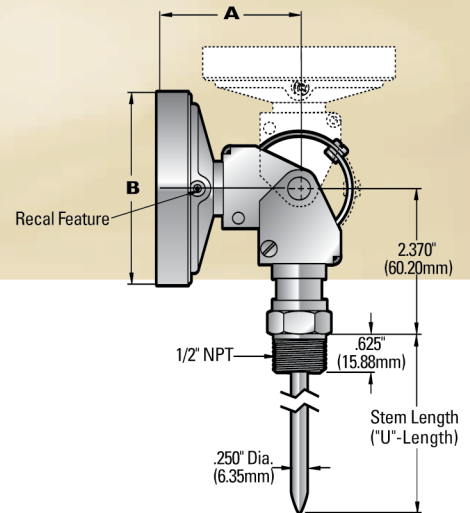
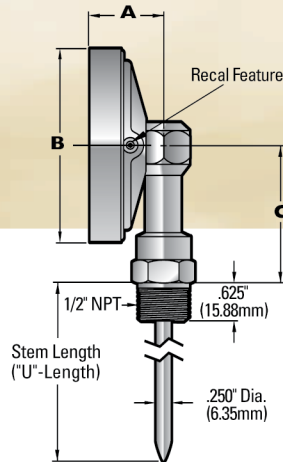
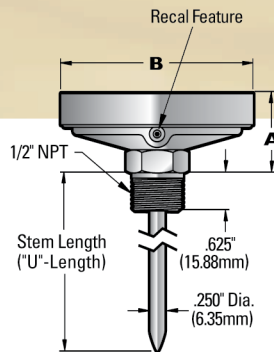
SIZE	A	B	C
3"	1.19" (30mm)	3.19" (81mm)	1.88" (48mm)
4"	1.19" (30mm)	4.12" (104mm)	2.62" (67mm)
5"	1.62" (41mm)	5.04" (128mm)	2.62" (67mm)

#### ADJUSTABLE MOUNT (shown with Tri-Clamp®)

SIZE	A	B
3"	2.43" (62mm)	3.19" (81mm)
4"	2.43" (62mm)	4.12" (104mm)
5"	2.66" (68mm)	5.04" (128mm)

Available Tri-Clamp® Fittings (E): 3/4" Tri-Clamp = .90" (25mm), 1-1/2" Tri-Clamp = 1.98" (50mm), 2" Tri-Clamp = 2.52" (64mm), 2-1/2" Tri-Clamp = 3.06" (77mm), 3" Tri-Clamp = 3.56" (91mm), 4" Tri-Clamp = 4.68" (119mm)  
Available Stem Lengths (U): 1.62" (41mm), 2.50" (64mm), 4.50" (114mm), 7.50" (190mm), 10.50" (267mm), 13.50" (343mm), 16.50" (419mm), 22.50" (572mm)

### INDUSTRIAL FITTING DIMENSIONS



#### BACK MOUNT (shown with 1/2" NPT)

SIZE	A	B
3"	1.38" (35mm)	3.19" (81mm)
4"	1.38" (35mm)	4.12" (104mm)
5"	4.72" (44mm)	5.04" (128mm)

#### BOTTOM MOUNT (shown with 1/2" NPT)

SIZE	A	B	C
3"	1.19" (30mm)	3.19" (81mm)	2.30" (58mm)
4"	1.19" (30mm)	4.12" (104mm)	3.00" (76mm)
5"	1.62" (41mm)	5.04" (128mm)	3.00" (76mm)

#### ADJUSTABLE MOUNT (shown with 1/2" NPT)

SIZE	A	B
3"	2.43" (62mm)	3.19" (81mm)
4"	2.43" (62mm)	4.12" (104mm)
5"	2.66" (68mm)	5.04" (128mm)

Available Stem Lengths (U): 2.50" (64mm), 4.00" (102mm), 6.00" (152mm), 9.00" (229mm), 12.00" (305mm), 15.00" (381mm), 18.00" (457mm), 24.00" (610mm)

## Bi-Metal Thermometers

### ORDERING INFORMATION

Below are typical examples of models with their descriptions.

#### EXAMPLE 1:

**3B - T67 - 2U - BK -**

**L4.5 - 3 / 8 - A**

Describes a 3" (76mm) Bi-metal Thermometer, 0 to 250°F, 2" Tri-Clamp fitting, back mounted, 4½" probe length with a .375" probe diameter, standard glass lens.

#### EXAMPLE 2:

**4B - T87 - 3U - BT -**

**L22.5 - 3 / 8 - C**

Describes a 4" (102mm) Bi-metal Thermometer, -75 to 175°C, 3" Tri-Clamp fitting, bottom mounted, 22½" probe length with a .375" probe diameter, safety glass lens.

#### EXAMPLE 3:

**5B - T6 1 - 1 / 2NPT - AA -**

**L7.5 - 3 / 8 - E**

Describes a 5" (127mm) Bi-metal Thermometer, 50 to 250°F, ½" NPT fitting, adjustable angle, 7½" probe length with a .375" probe diameter, polycarbonate lens.

### MODEL NUMBER CONSISTS OF:

SERIES	TEMP. RANGE	FITTING	MOUNT	PROBE LENGTH	PROBE DIA.	LENS
3B	T67	2U	BK	L4.5	3/8	A

Please make a selection from each category below:

#### SERIES

<b>3B</b>	3" Dial
<b>4B</b>	4" Dial
<b>5B</b>	5" Dial

#### TEMPERATURE RANGE

<b>T5 1</b>	-100/100°F	<b>T87</b>	-75/175°C
<b>T52</b>	-50/120°F	<b>TEA</b>	-70/70°C
<b>T53</b>	-40/160°F	<b>T7 1</b>	-50/100°C
<b>T54</b>	0/140°F	<b>T72</b>	-50/25°C
<b>T55</b>	0/180°F	<b>T73</b>	-50/50°C
<b>T50</b>	0/200°F	<b>T84</b>	-40/70°C
<b>T56</b>	0/220°F	<b>T86</b>	-20/120°C
<b>T67</b>	0/250°F	<b>T74</b>	-10/110°C
<b>T57</b>	0/300°F	<b>T75</b>	0/50°C
<b>T58</b>	0/500°F	<b>T95</b>	0/60°C
<b>T59</b>	20/240°F	<b>TEI</b>	0/80°C
<b>T60</b>	25/125°F	<b>T76</b>	0/100°C
<b>T6 1</b>	50/250°F	<b>T77</b>	0/150°C
<b>T62</b>	50/300°F	<b>T78</b>	0/200°C
<b>T63</b>	50/400°F	<b>T79</b>	0/250°C
<b>T64</b>	50/500°F	<b>T80</b>	0/300°C
<b>T68</b>	50/550°F	<b>T8 1</b>	0/400°C
<b>T44</b>	100/800°F	<b>T90</b>	0/450°C
<b>T65</b>	150/750°F	<b>T82</b>	100/400°C
<b>T66</b>	*200/1000°F	<b>T83</b>	*100/550°C

\*Not for continued use above 800°F (425°C)  
(for intermittent use only).

Ranges vary by dial size and fitting.

#### FITTINGS

<b>¾U</b>	¾" Tri-Clamp (3 16SS)*
<b>1½U</b>	1½" Tri-Clamp (316SS)**
<b>2U</b>	2" Tri-Clamp (3 16SS)
<b>2½U</b>	2½" Tri-Clamp (3 16SS)
<b>3U</b>	3" Tri-Clamp (3 16SS)
<b>4U</b>	4" Tri-Clamp (3 16SS)
<b>½NPT</b>	½" NPT (316SS)

\* Used on both ½" and ¾" lines.

\*\* Used on both 1" and 1½" lines.

#### MOUNT

<b>BT</b>	Bottom Mount
<b>BK</b>	Back Mount
<b>AA</b>	Adjustable Angle

#### PROBE LENGTH (U)

<b>L2.5</b>	2½" (½" NPT)
<b>L4</b>	4" (½" NPT)
<b>L6</b>	6" (½" NPT)
<b>L9</b>	9" (½" NPT)
<b>L12</b>	12" (½" NPT)
<b>L15</b>	15" (½" NPT)
<b>L18</b>	18" (½" NPT)
<b>L24</b>	24" (½" NPT)
<b>L30</b>	30" (½" NPT)
<b>L36</b>	36" (½" NPT)
<b>L42</b>	42" (½" NPT)
<b>L1.625</b>	1.625" (Tri-Clamp)
<b>L2.5</b>	2.5" (Tri-Clamp)
<b>L4.5</b>	4.5" (Tri-Clamp)
<b>L7.5</b>	7.5" (Tri-Clamp)
<b>L10.5</b>	10.5" (Tri-Clamp)
<b>L13.5</b>	13.5" (Tri-Clamp)
<b>L16.5</b>	16.5" (Tri-Clamp)
<b>L22.5</b>	22.5" (Tri-Clamp)

#### PROBE DIAMETER (D)

<b>15/64</b>	.236"
<b>1/4</b>	.250" Standard on NPT
<b>5/16</b>	.315"
<b>3/8</b>	.375" Standard on Tri-Clamp

#### LENS

<b>A</b>	Glass (Standard)
<b>B</b>	Tempered Glass
<b>C</b>	Safety Glass
<b>D</b>	Plastic, Acrylic
<b>E</b>	Plastic, Polycarbonate



## Sanitary Pressure Gauges

### SANI-FLOW



## Sanitary Pressure Gauges

### SANI-FLOW

The Sani-Flow Pressure Gauge is built to withstand the harshest environments and function for many years with little or no maintenance. Our dedication to quality is not only evident in our products, but also in our customer service. We offer immediate availability on all products at reasonable prices.

#### FEATURES

**316L Stainless Steel Sanitary Fittings & Diaphragm** assures maximum corrosion resistance while providing the most sanitary construction possible.

**304 Stainless Steel Case** for durability even in the harshest environments.

**Polycarbonate Lens** is virtually impervious to cracks and breakage.

**Waterproof Construction** throughout allows gauge to be submersed for cleaning.

**C.I.P.** - can be cleaned in place for convenience and to eliminate the possibility of damage from mishandling.

**Pressure Ranges** from 30" Hg vacuum to 1,000 psi.

**Recessed Diaphragm** helps to protect sensitive diaphragm from physical abuse.

**True Zero with Re-Zero Feature** is standard on all gauges.

**Unique Pulsation Dampening System** to insulate the gauge movement from punishing pulsations which shorten the life of an ordinary pressure gauge.

**Glycerine Fill** is standard to protect the gear mechanism against wear and vibration.

**500°F Maximum** process temperatures (260°C)\*.

**Immediate Availability** from stock for all pressure gauges.

**Experienced Engineers** are available to answer questions and solve difficult application problems.

**Unparalleled Customer Service** where the customer is always right and we are not happy until the customer is satisfied. No restocking charges plus 30 day no-risk trials are always available.

#### SPECIFICATIONS

Accuracy	±1.5% of Full Scale
Over Range Capability	30%
Wetted Surfaces	316L Stainless Steel
Surface Finish (wetted parts)	$R_{a\max} = 25$ microinches
Case Material	304 Stainless Steel
Dial Size	3-1/2"(90mm) or 5"(120mm) Dia.
Lens Material	(Polycarbonate)
Temp. Limits	0°F (-18°C) to 250°F (121°C)*
Standard Fill	Food Grade Glycerine
Rezero Feature	Standard on Pointer
Shipping Weight	Approx. 3 lbs. (1.3kg)

#### AVAILABLE RANGES (psi)

0 to 30	0 to 300	30"-0-60
0 to 60	0 to 400	30"-0-100
0 to 100	0 to 600	30"-0-150
0 to 160	0 to 1,000	30"-0-200
0 to 200	30"-0-30	30"-0-300

Standard scales are in PSI only, dual PSI/BAR and other scales available upon request.

#### AVAILABLE FITTINGS

Tri-Clamp®, Bevel Seat, Cherry-Burrell "I" Line, Cherry-Burrell "Q", APC, APV, G & H "H" Line, DIN, ISS, RJT, SMS, Westfalia.

*For other fittings please consult Harco.*



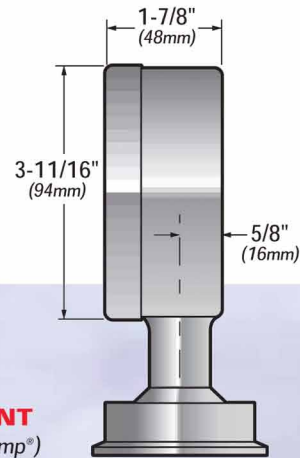
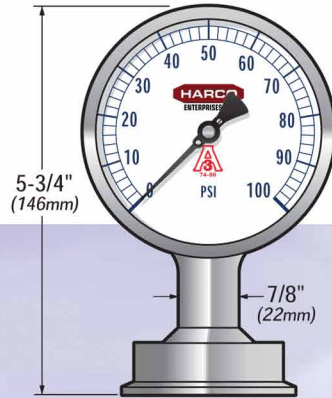
*\*For high temperature applications please consult factory.*

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

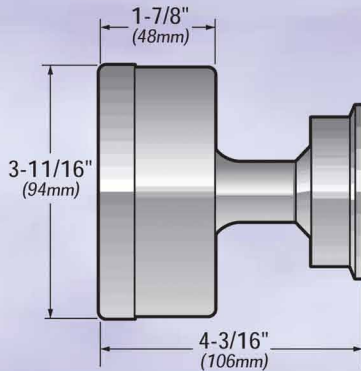
*Teflon® is a registered trademark of E. I. du Pont de Nemours and Company or its affiliates.*

## Sanitary Pressure Gauges

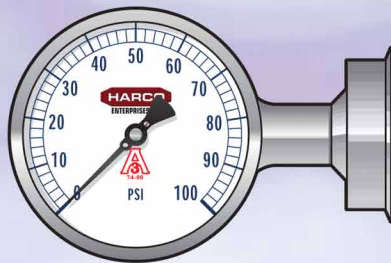
### 3-1/2" GAUGE (90mm)



**BOTTOM MOUNT**  
(shown with 2" Tri-Clamp®)



**BACK MOUNT**  
(shown with 2" Tri-Clamp®)

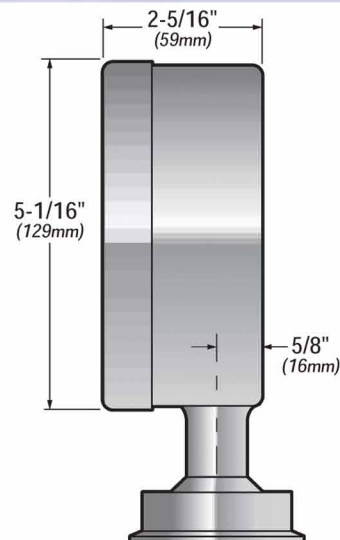
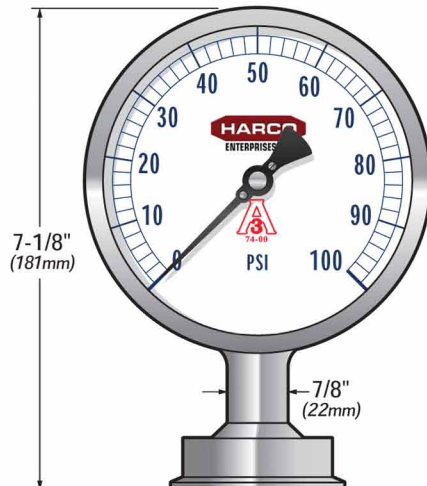


**RIGHT SIDE MOUNT**  
(shown with 2" Tri-Clamp®)



**LEFT SIDE MOUNT**  
(shown with 2" Tri-Clamp®)

### 5" GAUGE (120mm)





## Sanitary Pressure Gauges

## ORDERING INFORMATION

Below are typical examples of models with their descriptions.

**EXAMPLE 1:****3S - E - 2U - GF - BT - SS**

Describes a 3½" Sani-Flow Pressure Gauge, 0 to 160 psi, 2" Tri-clamp fitting, glycerine filled case, bottom mount, and a stainless steel diaphragm.

**EXAMPLE 2:****3S - DB - 15U - GF - BK - SS**

Describes a 3½" Sani-Flow Pressure Gauge, 0 to 100 psi/0 to 7 BAR, 1½" Tri-clamp fitting, glycerine filled case, back mount, and a stainless steel diaphragm.

**EXAMPLE 3:****3S - M - 2S - GF - BT - TF**

Describes a 3½" Sani-Flow Pressure Gauge, 30" Hg to 30 psi, 2" bevel seat threaded fitting, glycerine filled case, bottom mount, and a Teflon® diaphragm.

**EXAMPLE 4:****5S - GK - 25I - GF - RT - SS**

Describes a 5" Sani-Flow Pressure Gauge, 0 to 300 psi/0 to 28 Kg/cm², 2½" male I-line fitting, glycerine filled case, right side mount, and a stainless steel diaphragm.

**MODEL NUMBER CONSISTS OF:**

SERIES	PRESSURE RANGE	FITTING	FILLED CASE	MOUNT	DIAPHRAGM MATERIAL
3B	T67	2U	BK	L4.5	3/8

Please make a selection from each category below:

**SERIES**

**3S** 3½" Sani-Flow Pressure Gauge

**3S** 5" Sani-Flow Pressure Gauge

**PRESSURE RANGE\***

**B** 0 to 30 psi (2 BAR)

**C** 0 to 60 psi (4 BAR)

**D** 0 to 100 psi (7 BAR)

**E** 0 to 160 psi (11 BAR)

**F** 0 to 200 psi (14 BAR)

**G** 0 to 300 psi (21 BAR)

**H** 0 to 400 psi (28 BAR)

**I** 0 to 600 psi (41 BAR)

**K** 0 to 1,000 psi (70 BAR)

**M** 30" Hg to 30 psi (-1 to 2 BAR)

**N** 30" Hg to 60 psi (-1 to 4 BAR)

**O** 30" Hg to 100 psi (-1 to 7 BAR)

**P** 30" Hg to 150 psi (-1 to 10 BAR)

**Q** 30" Hg to 200 psi (-1 to 14 BAR)

**R** 30" Hg to 300 psi (-1 to 21 BAR)

\*Standard scales are in PSI only. For dual scales, after the pressure range add letter B for PSI/BAR, K for PSI/Kg/cm², P for PSI/KPa.

**FITTINGS**

(Fittings available in 1½", 2", 2½", 3")

**H** G&H "H" Line Male

**I** Cherry-Burrell Male I-Line

**J** Cherry-Burrell Female I-Line

**K** APC "K" Clamp

**N** ISS

**Q** Cherry-Burrell "Q"

**R** RJT

**S** #15 Bevel Seat Sanitary Male Thread

**T** #13H Captive Nut & #14 Bevel Seat

**U** Tri-Clamp®

**V** #15 APV Gasket Seat Sanitary Male Thread

**W** #13H Captive Nut & #14 APV Gasket Seat

**X** APC-PV Gasket Seat w/#13H Captive Nut

**Y** APC #15 Threaded Male

**DIN** DIN according to DIN 11851 (specify DIN40 or DIN50)

**SMS** SMS (specify SMS38 or SMS51)

(Specify size, then fitting type such as 1½"U for a 1½" Tri-Clamp fitting.)

**FILLED CASE**

**GF** Glycerine Filled

**NF** No Fill (Dry Case)

**04** Other (Specify)

**MOUNT**

**BT** Bottom Mount

**RT** Right Side Mount

**LF** Left Side Mount

**TP** Top Mount

**BK** Back Mount

**DIAPHRAGM MATERIAL**

**SS** Stainless Steel

**TF** Teflon®

## Pharmaceutical Pressure Gauges

PHARMA-FLOW



## Pharmaceutical Pressure Gauges

### PHARMA-FLOW

The Pharma-Flow Pressure Gauge is built to withstand the strict requirements of pharmaceutical plants, and function for many years with little or no maintenance. Our dedication to quality is not only evident in our products, but also in our customer service. We offer immediate availability on all products at reasonable prices.

#### FEATURES

**316L Stainless Steel Sanitary Fittings & Diaphragm** assures maximum corrosion resistance while providing the most sanitary construction possible.

**Totally Flush Diaphragm** with a mirror-like finish and no sharp corners makes this the industry's most sanitary pressure gauge available.

**304 Stainless Steel Case** for durability even in the roughest environments.

**Polycarbonate Lens** is virtually impervious to cracks and breakage.

**Waterproof Construction** throughout allows gauge to be submersed for cleaning.

**C.I.P.** - can be cleaned in place for convenience and to eliminate the possibility of damage from mishandling.

**Pressure Ranges** from 30" Hg vacuum to 1,000 psi.

**True Zero** with Re-Zero Feature is standard on all gauges.

**Unique Pulsation Dampening System** eliminates pointer oscillations and insulates the gauge movement from pulsations which shorten the life of an ordinary pressure gauge.

**Glycerine Fill** is standard to protect the gear mechanism against wear and vibration.

**500°F Maximum** process temperatures (260°C).\*

**Immediate Availability** from stock for all pressure gauges.

**Experienced Engineers** are available to answer questions and solve difficult application problems.

**Unparalleled Customer Service** where the customer is always right and we are not happy until the customer is satisfied. No restocking charges plus 30 day no-risk trials are always available.

#### SPECIFICATIONS

Accuracy	±0.75% of Full Scale
Over Range Capability	30%
Wetted Surfaces	316L Stainless Steel
Surface Finish (wetted parts)	R <sub>a</sub> max = 8 microinches
Case Material	304 Stainless Steel
Dial Size	2½"(63mm), 3½"(90mm) or 5"(120mm) Dia.
Lens Material	Polycarbonate
Temp. Limits	0°F (-18°C) to 250°F (121°C)*
Standard Fill	Food Grade Glycerine
Rezero Feature	Standard on Pointer
Shipping Weight	Approx. 3 lbs. (1.3kg)

(1) +/- 1% of full scale with 3/4" Tri-Clamp fitting

(2) For other diaphragm material options – please consult factory or see website configurator

(3) Not applicable for ¾" tri-clamp fitting

(4) High Temperature Option increases maximum process temperature to 204°C (400°F)

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

#### AVAILABLE RANGES (psi)

0 to 30	0 to 300	30"-0-60
0 to 60	0 to 400	30"-0-100
0 to 100	0 to 600	30"-0-150
0 to 160	0 to 1,000	30"-0-200
0 to 200	30"-0-30	30"-0-300

Standard scales are in PSI only, dual PSI/BAR and other scales available upon request.

#### AVAILABLE FITTINGS

Tri-Clamp®, Cherry-Burrell "I" Line, Cherry-Burrell "Q", APC "K" Clamp, G&H "H" Line.

*For other fittings please consult Harco.*

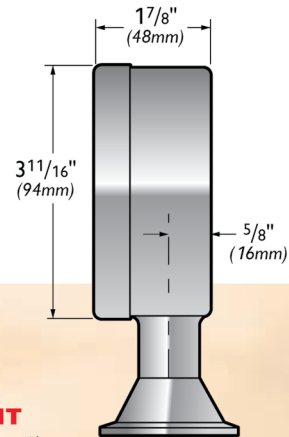
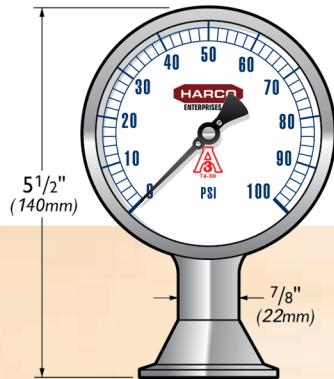




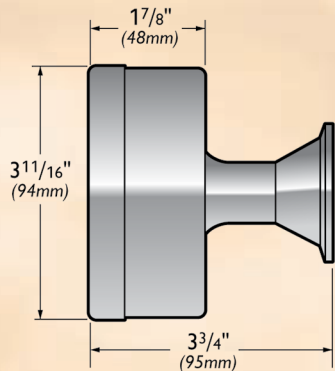
# GAUGES & THERMOMETERS

## Pharmaceutical Pressure Gauges

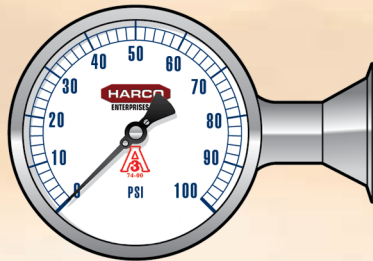
### 3 1/2" GAUGE (90mm)



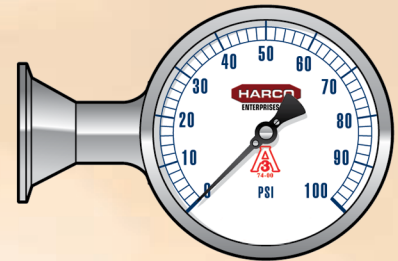
**BOTTOM MOUNT**  
(shown with 1 1/2" Tri-Clamp®)



**BACK MOUNT**  
(shown with 1 1/2" Tri-Clamp®)

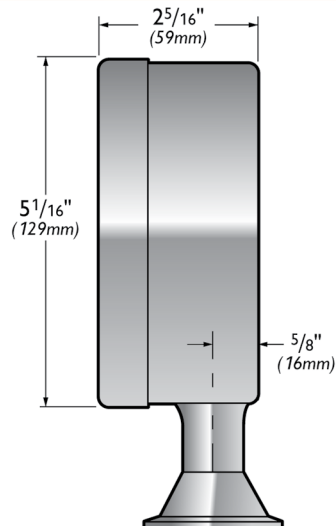
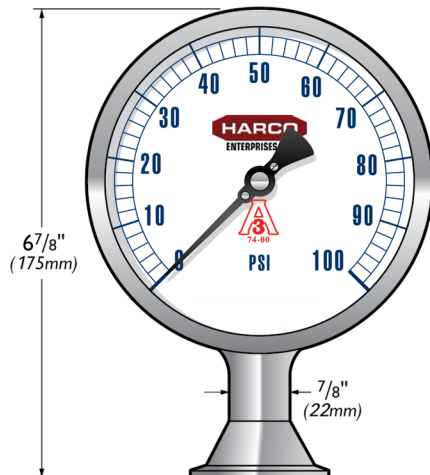


**RIGHT SIDE MOUNT**  
(shown with 1 1/2" Tri-Clamp®)



**LEFT SIDE MOUNT**  
(shown with 1 1/2" Tri-Clamp®)

### 5" GAUGE (120mm)



## Pharmaceutical Pressure Gauges

### ORDERING INFORMATION

Below are typical examples of models with their descriptions.

#### EXAMPLE 1:

##### 3P - E - 2U - GF - BT

Describes a 3½" Pharma-Flow Pressure Gauge, 0 to 160 psi, 2" Tri-clamp fitting, glycerine filled case, bottom mount.

#### EXAMPLE 2:

##### 3P - DB - 15U - GF - BK

Describes a 3½" Pharma-Flow Pressure Gauge, 0 to 100 psi/0 to 7 BAR, 1½" tri-clamp fitting, glycerine filled case, back mount.

#### EXAMPLE 3:

##### 3P - M - 2H - GF - LF

Describes a 3½" Pharma-Flow Pressure Gauge, 30" Hg to 30 psi, 2" G&H "H" line fitting, glycerine filled case, left side mount.

#### EXAMPLE 4:

##### 5P - GK - 25I - GF - RT

Describes a 5" Pharma-Flow Pressure Gauge, 0 to 300 psi/0 to 28 Kg/cm², 2½" male I-line fitting, glycerine filled case, right side mount.

### MODEL NUMBER CONSISTS OF:

SERIES	PRESSURE RANGE	FITTING	FILLED CASE	MOUNT
3P	D	2U	GF	GF

Please make a selection from each category below:

#### SERIES

<b>2P</b>	2½" (63mm) Pharma-Flow Pressure Gauge
<b>3P</b>	3½" (90mm) Pharma-Flow Pressure Gauge
<b>5P</b>	5" (120mm) Pharma-Flow Pressure Gauge

#### PRESSURE RANGE\*

<b>B</b>	0 to 30 psi (2 BAR)
<b>C</b>	0 to 60 psi (4 BAR)
<b>D</b>	0 to 100 psi (7 BAR)
<b>E</b>	0 to 160 psi (11 BAR)
<b>F</b>	0 to 200 psi (14 BAR)
<b>G</b>	0 to 300 psi (21 BAR)
<b>H</b>	0 to 400 psi (28 BAR)
<b>I</b>	0 to 600 psi (41 BAR)
<b>K</b>	0 to 1,000 psi (70 BAR)
<b>M</b>	30" Hg to 30 psi (-1 to 2 BAR)
<b>N</b>	30" Hg to 60 psi (-1 to 4 BAR)
<b>O</b>	30" Hg to 100 psi (-1 to 7 BAR)
<b>P</b>	30" Hg to 150 psi (-1 to 10 BAR)
<b>Q</b>	30" Hg to 200 psi (-1 to 14 BAR)
<b>R</b>	30" Hg to 300 psi (-1 to 21 BAR)

\*Standard scales are in PSI only. For dual scales, after the pressure range add letter B for PSI/BAR, K for PSI/Kg/cm², P for PSI/KPa.

#### FITTINGS

(Fittings available in 1½", 2", 2½", 3")

<b>H</b>	G&H "H" Line Male
<b>I</b>	Cherry-Burrell Male I-Line
<b>K</b>	APC "K" Clamp
<b>Q</b>	Cherry-Burrell "Q"
<b>U</b>	Tri-Clamp®

(Specify size, then fitting type such as 1½"U for a 1½" Tri-Clamp fitting.)

#### FILLED CASE

<b>GF</b>	Glycerine Filled
<b>NF</b>	No Fill (Dry Case)
<b>04</b>	Other (Specify)

#### MOUNT

<b>BT</b>	Bottom Mount
<b>RT</b>	Right Side Mount
<b>LF</b>	Left Side Mount
<b>TP</b>	Top Mount
<b>BK</b>	Back Mount

## Homogenizer Pressure Gauges

**SANI-FLOW**



## 5" Homogenizer Pressure Gauges

### SANI-FLOW

The Sani-Flow Homogenizer Pressure Gauge is built to withstand environments from food processing to pharmaceutical plants, and function for many years with little or no maintenance. Our dedication to quality is not only evident in our products, but also in our customer service. We offer immediate availability on all products and respond quickly with quality service at reasonable prices.

### FEATURES

**316L Stainless Steel Wetted Surfaces** to assure maximum corrosion resistance.

**304 Stainless Steel Case** for durability even in the harshest environments.

**Lexan® Lens** is virtually impervious to cracks and breakage.

**Unique Pulsation Dampening System** to insulate the gauge movement punishing pulsations of a homogenizer machine which shorten the life of an ordinary pressure gauge.

**Ranges** available up to 15,000 psi.

**Glycerine Fill** is standard to protect the gear mechanism against wear and vibration.

**Waterproof Construction** throughout to allow gauge to be submersed for cleaning.

**C.I.P.** - can be cleaned in place for convenience and to eliminate the possibility of damage from mishandling.

**250°F Maximum** process temperatures (121°C).\*

**Immediate Availability** from stock for all pressure gauges.

**True Zero with Re-Zero Feature** is standard on all gauges

### SPECIFICATIONS

Accuracy	±1% of Full Scale
Over Range Capability	25%
Wetted Surfaces	316L Stainless Steel
Surface Finish (wetted parts)	R <sub>a</sub> max = 25 microinches
Case Material	304 Stainless Steel
Dial Size	5" Diameter (120mm)
Lens Material	Lexan® (Polycarbonate)
Temp. Limits	0°F (-18°C) to 250°F (121°C)*
Standard Fill	Food Grade Glycerine
Rezero Feature	Standard on Pointer
Shipping Weight	Approx. 7 lbs. (3.2kg)

*\*For high temperature applications please consult factory.*

*Lexan® is a registered trademark of General Electric.*

### AVAILABLE RANGES (psi)

0 - 1,000 psi    0 - 5,000 psi    0 - 10,000 psi  
 0 - 2,500 psi    0 - 7,500 psi    0 - 15,000 psi  
 0 - 3,000 psi  
 Standard scales are in PSI only, dual PSI/BAR and other scales available upon request.

### AVAILABLE FITTINGS

7/8" Thick 2 Bolt Flange, 1-1/8" Thick 2 Bolt Flange, Waukesha 1/2" Thick 4 Bolt Flange, Waukesha 3/4" Thick 4 Bolt Flange, 1.66" Thick Laboratory Homogenizer Flange. Also available without flange.

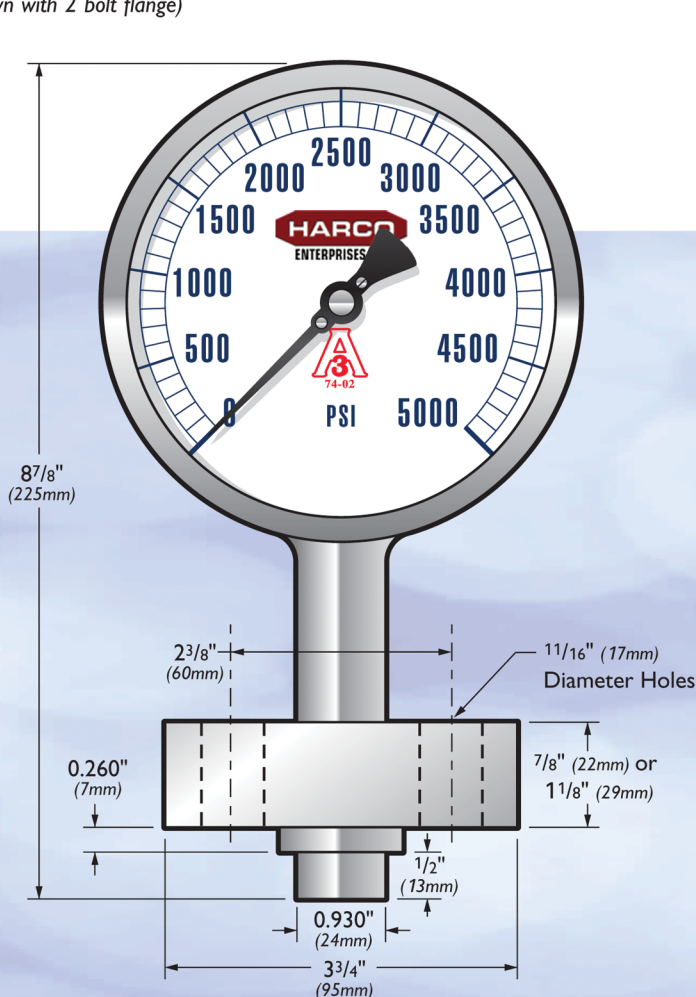




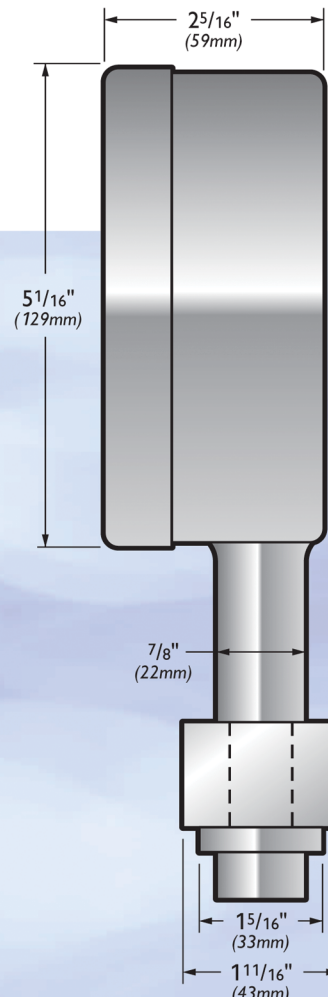
# 5" Homogenizer Pressure Gauges

**FRONT VIEW**

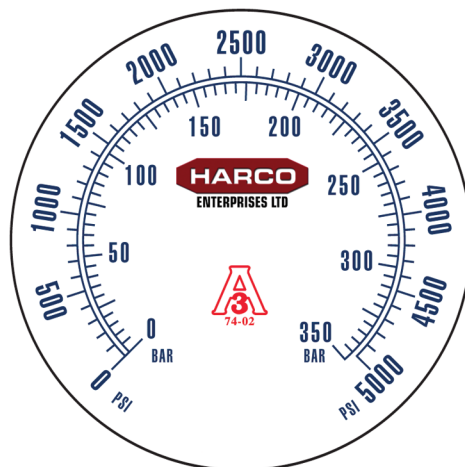
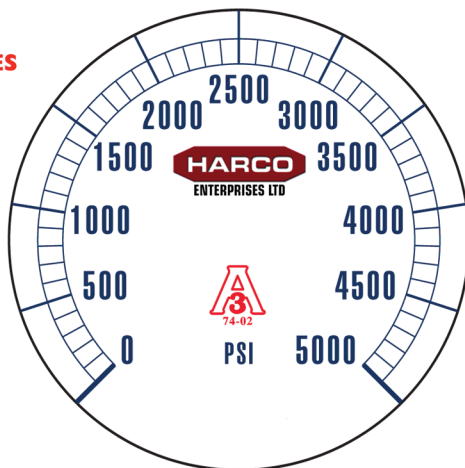
(shown with 2 bolt flange)



**SIDE VIEW**



**TYPICAL  
DIAL FACES**



Pharmaceutical Pressure Gauges

ORDERING INFORMATION

Below are typical examples of models with their descriptions.

EXAMPLE 1:

5H - V - 03

Describes a 5" Sani-Flow Homogenizer Pressure Gauge, 0 to 5,000 psi, a 1-1/8" thick flange, and a glycerine filled case.

EXAMPLE 2:

5H - WB - 01

Describes a 5" Sani-Flow Homogenizer Pressure Gauge, dual scale 0 to 10,000 psi/ 0 to 700 BAR, no flange, and a glycerine filled case.

MODEL NUMBER CONSISTS OF:

SERIES	PRESSURE RANGE	FLANGE
5H	V	03

Please make a selection from each category below:

SERIES

5H 5" Sani-FlowHomogenizer Pressure Gauge

PRESSURE RANGE\*

- K 0 to 1,000 psi (70 BAR)
- T 0 to 2,500 psi (170 BAR)
- U 0 to 3,000 psi (205 BAR)
- V 0 to 5,000 psi (350 BAR)
- Y 0 to 7,500 psi (520 BAR)
- W 0 to 10,000 psi (700 BAR)
- X 0 to 15,000 psi (1000 BAR)

FLANGE

- 01 No Flange
- 02 7/8" Thick 2 Bolt Flange
- 03 1-1/8" Thick 2 Bolt Flange
- 04 Waukesha 1/2" Thick 4 Bolt Flange
- 05 Waukesha 3/4" Thick 4 Bolt Flange
- 09 1.66" Thick Laboratory Homogenizer Flange

\*Standard scales are in PSI only. For dual scales, after the pressure range add letter B for PSI/BAR, K for PSI/Kg/cm², P for PSI/KPa (see examples in column).

# INDUSTRIAL STAINLESS STEEL PRESSURE GAUGES

INSTA-FLOW



All-Stainless Steel Construction



## INDUSTRIAL STAINLESS STEEL PRESSURE GAUGES

### INSTA-FLOW

The Industrial Stainless Steel Pressure Gauge is an extremely durable yet accurate all stainless steel industrial pressure gauge. We offer this gauge with NPT connections in ranges from 30" Hg vacuum to 23,000 psi in either a 2½" (63mm) or 4" (100mm) dial face. Quality products, and service to back them up, are the keys to our success and yours.

### FEATURES

**316L Stainless Steel Construction** on all wetted surfaces assures maximum corrosion resistance.

**304 Stainless Steel Case** for durability even in the roughest environments.

**Waterproof Construction** throughout to allow the gauge to be submersed for cleaning.

**C.I.P.** - can be cleaned in place for convenience and eliminates the possibility of damage from mishandling.

**Pressure Ranges** from 30" Hg vacuum to 23,000 psi.

**True Zero** is standard on all gauges. The pointer is not pinned at zero and there is not a large zero block. This lets the operator know the pressure is truly zero and gives the most accurate pressure reading available.

**Re-zero Feature** is optional on all gauges.

**Glycerin Fill** is standard on all gauges unless requested otherwise. This protects the gear mechanism with continuous lubrication against vibration and wear caused by applications with vibration or pressure pulsations.

**140°F (60°C) Maximum** process temperature Please consult factory when ordering for higher temperature applications.

**Immediate Availability** from stock for all pressure gauges.

**Experienced Engineers** are available to answer questions and solve difficult application problems. Unparalleled Customer Service where the customer is always right and we are not happy until the customer is satisfied. No restocking charges and 30 day no-risk trials are always available.

### SPECIFICATIONS

Accuracy	±1.5% of Full Scale
Over Range Capability	30%
Wetted Surfaces	316L Stainless Steel
Case Material	304 Stainless Steel
Dial Sizes	2½"(63mm) or 4"(100mm) Dia.
Lens Material 2½"	Polycarbonate
Lens Material 4"	Safety Glass or Polycarbonate
Temp. Limits	-40°F (-40°C) to 140°F (60°C)
Standard Fill	Food Grade Glycerine
Rezero Feature (on pointer)	Optional
Shipping Weight 2½"	Approx. 1 lbs. (.5kg)
Shipping Weight 4"	Approx. 2 lbs. (1kg)

*\*For high temperature applications please consult Harco.*

### AVAILABLE RANGES (psi)

0 to 15psi	0 to 400 psi	30" to 0 psi
0 to 30 psi	0 to 600 psi	30" to 15 psi
0 to 60 psi	0 to 1,000 psi	30" to 30 psi
0 to 100 psi	0 to 3,000 psi	30" to 60 psi
0 to 160 psi	0 to 10,000 psi	30" to 100 psi
0 to 200 psi	0 to 14,500 psi (2½" only)	30" to 150 psi
0 to 300 psi	0 to 23,000 psi (2½" only)	

Standard scales are in PSI only, dual scale PSI-BAR, PSI-KG/cm2, metric and other scales available upon request.

### AVAILABLE FITTINGS

¼-18 NPT for 2½" (63mm).  
¼-18 NPT or ½-18 NPT for 4" (100mm).  
For other fittings please consult Harco.

### AVAILABLE MOUNTINGS

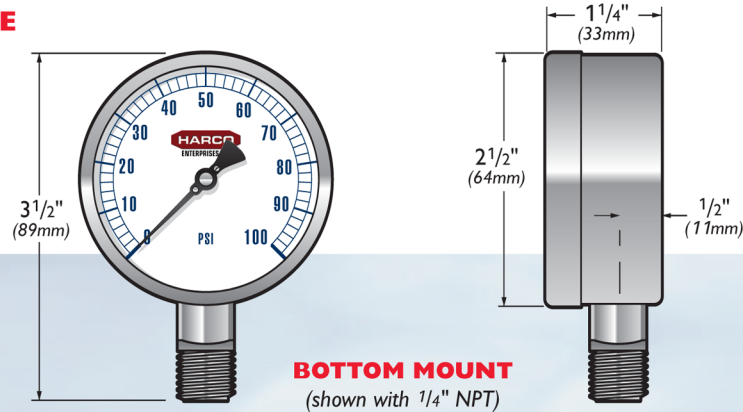
Bottom, Top, Left Side, Right Side and Back mount.



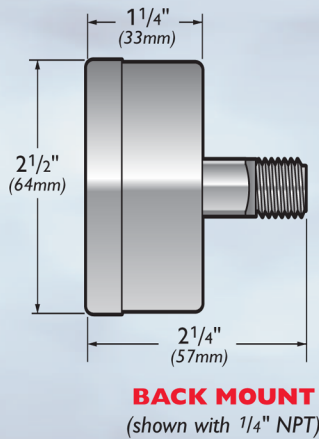


# INDUSTRIAL STAINLESS STEEL PRESSURE GAUGES

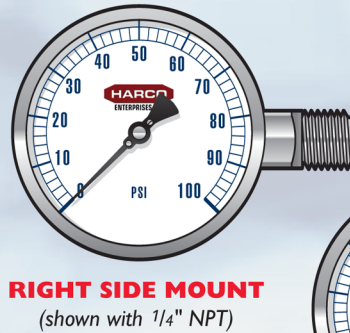
## 2 1/2" GAUGE (63mm)



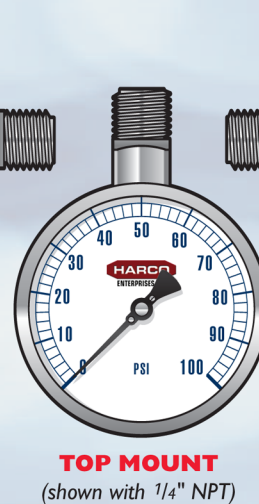
**BOTTOM MOUNT**  
(shown with 1/4" NPT)



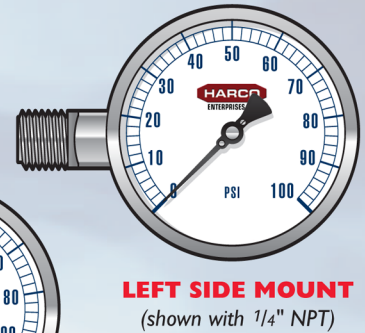
**BACK MOUNT**  
(shown with 1/4" NPT)



**RIGHT SIDE MOUNT**  
(shown with 1/4" NPT)

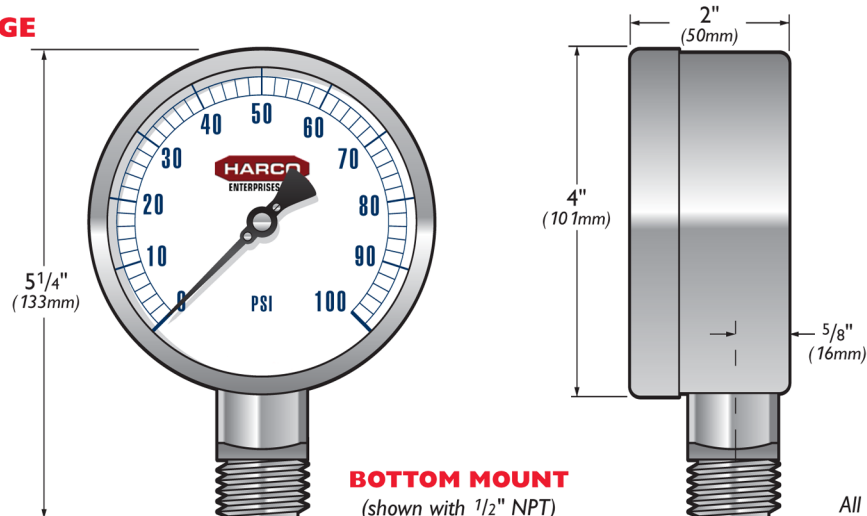


**TOP MOUNT**  
(shown with 1/4" NPT)



**LEFT SIDE MOUNT**  
(shown with 1/4" NPT)

## 4" GAUGE (100mm)



**BOTTOM MOUNT**  
(shown with 1/2" NPT)

All dimensions are approximate.

## INDUSTRIAL STAINLESS STEEL PRESSURE GAUGES

## ORDERING INFORMATION

Below are typical examples of models with their descriptions.

**EXAMPLE 1:****2N - E - 1/4NPT - GF - BT**

Describes a 2½" (63mm) Insta-Flow Pressure Gauge, 0 to 160 psi, 1/4" NPT fitting, glycerine filled case, bottom mounted.

**EXAMPLE 2:****2N - DB - 1/4NPT - GF - BT**

Describes a 2½" (63mm) Insta-Flow Pressure Gauge, 0 to 100 psi/0 to 7 BAR, 1/4" NPT fitting, glycerine filled case, bottom mounted.

**EXAMPLE 3:****4N - E - 1/2NPT - GF - BK**

Describes a 4" (100mm) Insta-Flow Pressure Gauge, 0 to 160 psi, 1/2" NPT fitting, glycerine filled case, back mounted.

**EXAMPLE 4:****4N - GK - 1/4NPT - GF - RT**

Describes a 4" (100mm) Insta-Flow Pressure Gauge, 0 to 300 psi/0 to 21 Kg/cm², 1/4" NPT fitting, glycerine filled case, right side mounted.

**MODEL NUMBER CONSISTS OF:**

SERIES	PRESSURE RANGE	FITTING	FILLED CASE	MOUNT
2N	D	1/4NPT	GF	BT

Please make a selection from each category below:

**SERIES**

**2N** - 2½" (63mm) Insta-Flow Gauge

**4N** - 4" (100mm) Insta-Flow Gauge

**PRESSURE RANGE\***

<b>A</b>	0 to 15 psi (1 BAR)
<b>B</b>	0 to 30 psi (2 BAR)
<b>C</b>	0 to 60 psi (4 BAR)
<b>D</b>	0 to 100 psi (7 BAR)
<b>E</b>	0 to 160 psi (11 BAR)
<b>F</b>	0 to 200 psi (14 BAR)
<b>G</b>	0 to 300 psi (21 BAR)
<b>H</b>	0 to 400 psi (28 BAR)
<b>I</b>	0 to 600 psi (41 BAR)
<b>K</b>	0 to 1,000 psi (70 BAR)
<b>M</b>	30" Hg to 30 psi (-1 to 2 BAR)
<b>N</b>	30" Hg to 60 psi (-1 to 4 BAR)
<b>O</b>	30" Hg to 100 psi (-1 to 7 BAR)
<b>P</b>	30" Hg to 150 psi (-1 to 10 BAR)
<b>U</b>	0 to 3,000 psi (205 BAR)
<b>W</b>	0 to 10,000 psi (700 BAR)
<b>14500</b>	0 to 14,500 psi (1,00 BAR)**
<b>23000</b>	0 to 23,000 psi (1,600 BAR)**
<b>J</b>	30" Hg to 0 psi (-1 to 0 BAR)
<b>L</b>	0" Hg to 15 psi (-1 to 1 BAR)
<b>M</b>	30" Hg to 30 psi (-1 to 2 BAR)
<b>N</b>	30" Hg to 60 psi (-1 to 4 BAR)
<b>O</b>	30" Hg to 100 psi (-1 to 7 BAR)
<b>P</b>	30" Hg to 150 psi (-1 to 10 BAR)

\* Standard scales are in PSI only. For dual scales, after the pressure range add letter B for PSI/BAR, K for PSI/Kg/cm², P for PSI/KPa.

\*\* Available in 2½" dial size only.

**FITTINGS**

**1/4NPT** 1/4-18 Male Pipe Thread

**1/2NPT** 1/2-14 Male Pipe Thread (4" only)

**FILLED CASE**

**GF** Glycerine Filled

**SF** Silicone Filled

**NF** No Fill (Dry Case)

**04** Other (Specify)

**MOUNT**

**BT** Bottom Mount

**BK** Back Mount

**TP** Top Mount

**RT** Right Side Mount

**LF** Left Side Mount

## SANITARY RTD'S & TEMPERATURE TRANSMITTERS

### SANI-FLOW



Transmitter

**RTD's (Resistance Temperature Detectors) include:**

- Platinum 100 Ohm 3 Wire Thin Film Element
- Compact, Durable All Stainless Steel Design
- 12 mm Industrial Connector with Gold Plated Copper Contacts
- NEMA 4X, IP-67 Rated

**Temperature Transmitters also include:**

- 4 to 20 mA Output
- Easy Span and Zero Adjustments
- Field Replaceable Circuit Board

## INDUSTRIAL STAINLESS STEEL PRESSURE GAUGES

## SANI-FLOW

Our Sani-Flow RTD and Temperature Transmitters have been designed to withstand the harshest environment. They have a standard 12 mm industrial connector to allow for easy installation and removal. No complicated wiring or leaking heads; simply plug in the connector and it is ready to use. CSE RTD and Temperature Transmitters use 100ohm, 3 wire Platinum (PT-100 ohm) elements, designed for direct immersion in sanitary process applications for the quickest most accurate reading possible.

## FEATURES

**Compact Design:** Means that these units will fit just about any location. No need to design around a bulky RTD or temperature transmitter.

**Durability:** All exterior surfaces are 316L stainless steel with a near mirror finish and the connector contacts are gold plated copper to assure maximum corrosion resistance and cleanability. All components are surface mounted to protect the electronics from damage caused by vibration. Transmitters incorporate enhanced EMI/RFI rejection circuitry to prevent interference from outside sources.

**Cleanability:** These 3-A approved hermetically sealed sensors are IP-67 (NEMA 4X) rated for temporary submersion and can be aggressively washed down. They can be cleaned in place (C.I.P), steamed in place (S.I.P) and the transmitter is even capable of being autoclaved. The exterior has a clean, sanitary preferred watershed design that is self draining.

**Connectorized:** Both the RTD and the Temperature Transmitter come with a standard 12mm industrial connector with gold plated contacts. This allows for quick and easy installation and removal. No complicated leaking wiring heads or tools required, simply plug in the connector and go. Cable can be purchased from CSE or from most industrial supply warehouses.

**Accuracy:** Sensor elements are accurate up to  $\pm 0.1^\circ\text{C}$ . Our PT-100 (Platinum 100 Ohm) 3 wire thin film RTD element ensures durability and the quickest most accurate reading possible.

**Repairable:** Designed with realization that nothing is indestructible, our sensors have been engineered to be repairable for a fraction of the replacement cost. The electronics can even be field replaced.

**Field Calibratable:** The zero and span of CSE Temperature Transmitters can be adjusted easily. They can even be calibrated or have their range changed in the field by a knowledgeable technician.

**Traceability:** All CSE sensors are permanently marked with model and serial numbers which allows for easy identification. We can even mark them with your numbers if preferred.

**Service:** As with all CSE products, these sensors come with our outstanding customer service where you can always talk to a knowledgeable engineer. Our sensors are available with many different fittings - most shipped from stock. We can also make special probe lengths to your exact requirements. All of this with a no hassle return policy and no restocking charges on standard items makes CSE RTD and Transmitters the perfect solution for your temperature sensing requirements.

## SPECIFICATIONS

## RTD and TT

Description:	3 Wire PT-100 (Platinum – 100 Ohm resistor)
Coefficient:	Alpha = 0.00385 Ohms/Ohm/°C (Per DIN 43760)
Stability:	Less than 0.05°C drift per year (at 0°C)
Material:	316L SS wetted surfaces
Surface Finish:	$R_{a\text{max}} = 8$ micro-inches
Ratings:	Nema 4X, IP-67
Connector:	Std. 12mm industrial connector, Gold plated copper contacts & Polyamide insert
CIP/SIP:	Yes

## RTD Element

Accuracy:	$\pm 0.15^\circ\text{C}$ ( $\pm 0.27^\circ\text{F}$ )
Process Temperature Limits:	$-50^\circ\text{C}$ to $200^\circ\text{C}$ ( $-58^\circ\text{F}$ to $392^\circ\text{F}$ )*

\*For high temperature applications please consult factory.

## TT - Temperature Transmitter

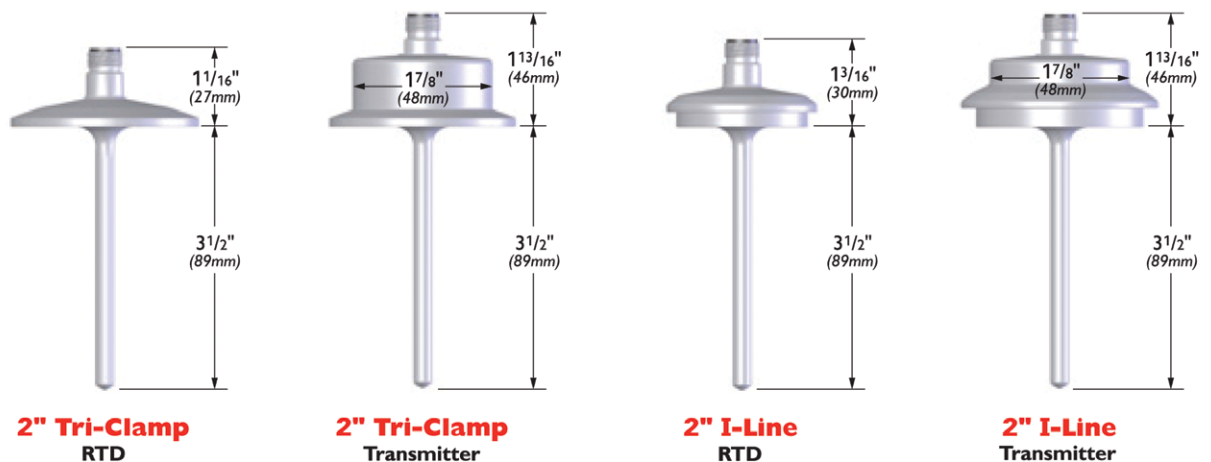
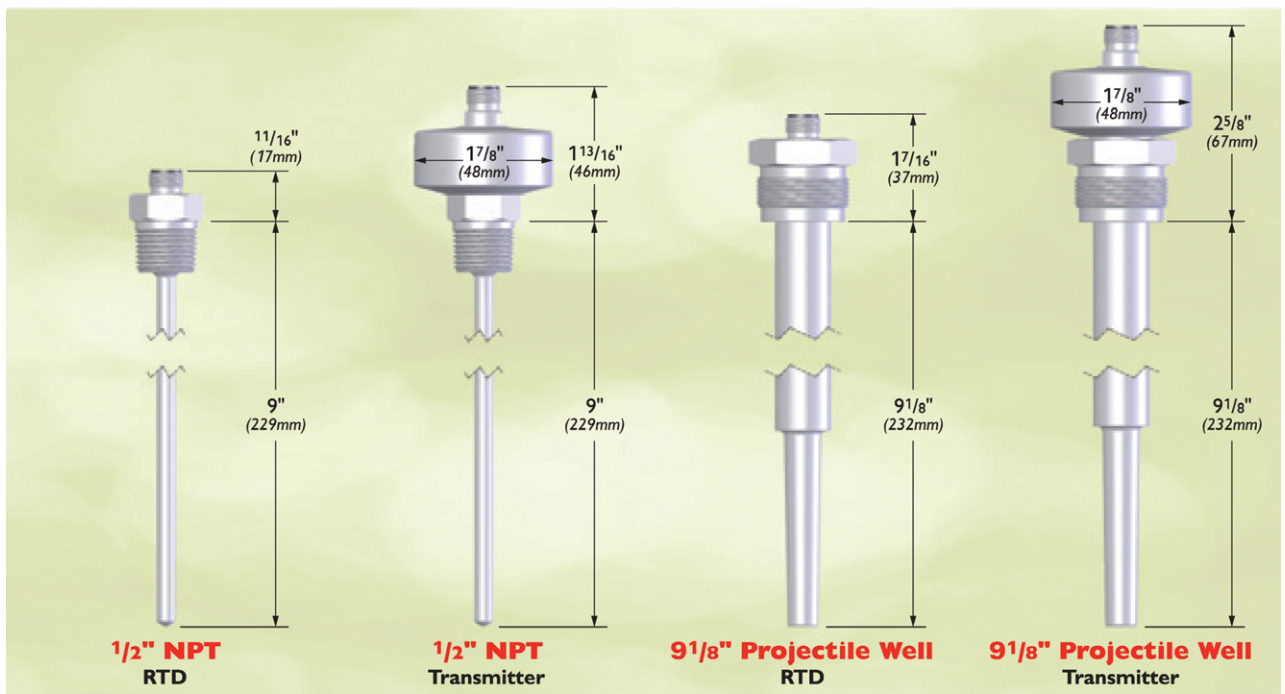
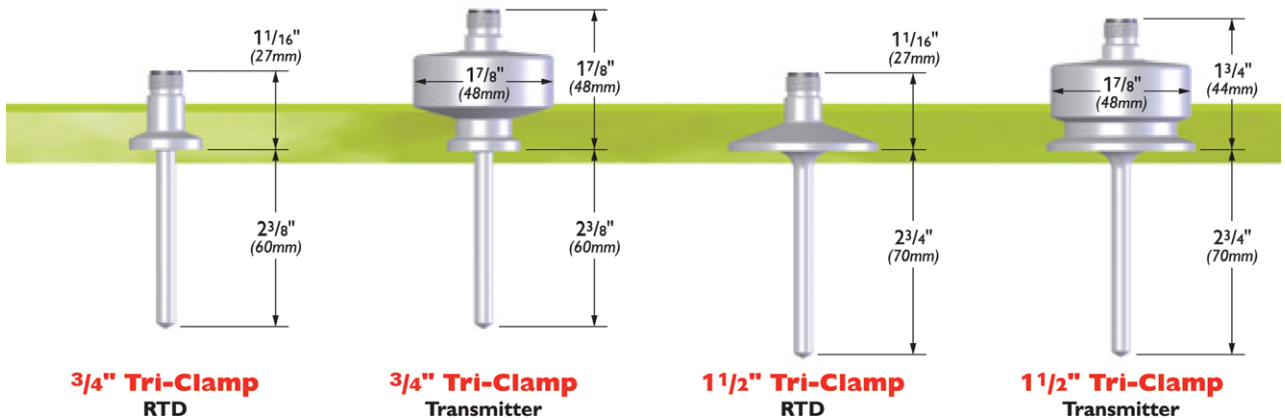
Output:	4 to 20 mA analog
Input:	8 to 38 Volts DC loop power
Accuracy:	0.2% of full scale
Range:	$-30^\circ\text{C}$ to $150^\circ\text{C}$ ( $-22^\circ\text{F}$ to $302^\circ\text{F}$ ) factory or field rangeable**
Span:	$20^\circ\text{C}$ ( $36^\circ\text{F}$ ) Minimum – $200^\circ\text{C}$ ( $360^\circ\text{F}$ ) Maximum
Linearity:	Better than $\pm 0.05\%$ of span referred to sensor temperature
Stability:	PT-100 ( $100^\circ\text{C}$ span): 0.03% of span/°C
Autoclavable:	Yes, with cap and electronics removed
Case:	316L SS Hermetically "O"-ring sealed
Max Load:	$R_{\text{max}} = (V_{\text{supply}} - 8V)/20\text{mA}$
Burnout:	Upscale
Isolation:	Non-Isolated (Enhanced RMI-EMI rejection circuitry)
Wiring:	Standard 12mm industrial connector
Calibration:	Field calibratable, zero and span adjustments, rangeable**
Zero Adjustment:	Pot adjustable to 20% of full scale
Span Adjustment:	Pot adjustable to 20% of full scale

\*\* By a knowledgeable technician.





# SANITARY RTD'S & TEMPERATURE TRANSMITTERS



## INDUSTRIAL STAINLESS STEEL PRESSURE GAUGES

### ORDERING INFORMATION

Below are typical examples of models with their descriptions.

#### EXAMPLE 1:

##### RTD - 1 1/2U - E1

Describes a Sani-Flow Resistive Temperature Device with a 1 1/2" Tri-Clamp Fitting with a Single Element.

#### EXAMPLE 2:

##### TT - 9PW

Describes a Sani-Flow Temperature Transmitter with a 9" Projectile Well Fitting.

#### EXAMPLE 3:

##### TT - 1/2NPT

Describes a Sani-Flow Temperature Transmitter with a 1/2" Male NPT Fitting.

### MODEL NUMBER CONSISTS OF:

SERIES	FITTING	ELEMENT
RTD	1 1/2U	E1

Please make a selection from each category below:

#### SERIES

RTD	Sani-Flow Resistive Temperature Device
TT	Sani-Flow Temperature Transmitter

#### SANITARY FITTINGS

(Fittings available in 1/2", 3/4", 1 1/2", 2", 2 1/2", 3" & 4")

H	G&H "H" Line Male
I	Cherry-Burrell Male I-Line
K	APC "K" Clamp
Q	Cherry-Burrell "Q"
T	#13H Captive Nut & #14 Bevel Seat
U	Tri-Clamp®

(Specify size, then fitting type such as 1 1/2"U for a 1 1/2" Tri-Clamp fitting.)

For special length probes add SP and the required probe length at the end of the part number; such as SP2.75 for a 2 3/4" long probe.

**Cable sold separately.**

#### OTHER FITTINGS

(Specify probe length)

A	Air Space
M	Umbrella Fitting
NPT	1/4", 3/8", 1/2", 5/8" or 3/4" Pipe Thread
PW	Projectile Well with 1/4- 18 UNEF Male Thread
SP	Split Ferrule
VP	VATWell Fitting with #13H Captive Nut
OF	No Fitting

#### ELEMENT\*

E1	Single Element
E2	Dual Element

\* Available for RTD only.



# Product Line Card

Supply House to the Processing Industries Since 1964

Harco partners with leading manufacturers in the industry to bring you an innovative range of sanitary and hygienic processing equipment and supplies. With experience in design, manufacturing and support, our partners are selected for their quality, reliability, and advanced products.



[www.harcosupply.com](http://www.harcosupply.com)

