

# Bimetal, Industrial Type with External Reset, Sanitary Options



## 300 SERIES



### APPLICATIONS

- Industrial process
- Petrochemical
- Food & beverage processing
- Commercial
- Wastewater



Sanitary options available

- Highest quality thermometers available on the market
- Easy to calibrate with 1/16" Allen key
- Corrosion-resistant 304 Stainless Steel case and bezel provide a hermetic seal to prevent lens fogging and moisture damage
- Sanitary Tri-Clamp® options available
- Single °F, single °C, and dual scale options available
- Accuracy:  $\pm 1\%$  full scale, Grade A, ASME B40.3
- 2", 3" and 5" sizes - center back and bottom connections
- 2" Dial Size - 1/4" NPT; 3" & 5" Dial Sizes - 1/2" NPT
- Standard stem lengths 2-1/2" through 42"
- Minimum or maximum indicating pointers are available in 3" and 5" sizes
- Highly sensitive bimetallic helix coil is heat-treated for stress relief, and silicone-coated to minimize pointer vibration and maximize heat transfer and response time
- 360° groove around stem is a visual reference to show minimum immersion point
- Made in the U.S.A.

|                         | SERIES                                                                                                | SPECIFICATIONS                                                                                                           |
|-------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Case & bezel            | All 300 Series                                                                                        | 304 Stainless Steel                                                                                                      |
| Lens                    | All 300 Series                                                                                        | Instrument glass                                                                                                         |
| Pointer                 | All 300 Series                                                                                        | Aluminum, black finish                                                                                                   |
| Stem diameter           | 300 Series, Standard & 06SAN<br>300 Series, All Other Sanitary models                                 | .250" (6.35 mm)<br>.375" (9.53 mm)                                                                                       |
| Accuracy                | All 300 Series                                                                                        | $\pm 1\%$ full scale, Grade A, ASME B40.3                                                                                |
| Dial                    | All 300 Series                                                                                        | Anodized Aluminum with large black numbers and graduations                                                               |
| Process connection      | 300 Series, 2" Dial Size, Standard<br>300 Series, 3" & 5" Dial Size, Standard<br>300 Series, Sanitary | 1/4" NPT<br>1/2" NPT<br>3/4" Tri-Clamp through 4" Tri-Clamp                                                              |
| Wetted parts            | 300 Series, Standard<br>300 Series, Sanitary                                                          | 304 Stainless Steel; 316 Stainless Steel optional<br>316 Stainless Steel                                                 |
| Hermetic seal           | All 300 Series                                                                                        | Per ASME B40.3 dustproof and leakproof                                                                                   |
| Bimetal coil            | All 300 Series                                                                                        | Silicone coated helix coil on ranges below 500 °F for vibration dampening, maximum heat transfer and response time       |
| Over temperature limits | All 300 Series                                                                                        | Up to 250 °F 100%; 250 °F to 550 °F 50%;<br>550 °F to 1,000 °F continuous use up to 800 °F; intermittent use over 800 °F |
| Recalibrator            | All 300 Series                                                                                        | External reset                                                                                                           |
| Adjustable angle form   | 320 Series                                                                                            | All Stainless Steel brackets with screws that loosen to allow 360° rotation of head and 180° adjustment of stem position |



WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

Thermowells are recommended for pressure, corrosive fluids and high velocity applications, see pages 48-50.



| ORDERING INFORMATION                           |              |                             |            |                                    |                                                     |                                |  |
|------------------------------------------------|--------------|-----------------------------|------------|------------------------------------|-----------------------------------------------------|--------------------------------|--|
| DIAL SIZES                                     | 20           | 2" (Back connected only)    | 30         | 3"                                 | 50                                                  | 5"                             |  |
| CASE TYPES                                     | 300          | Bottom connection           | 310        | Back connection                    | 320                                                 | Adjustable angle connection ** |  |
| STEM LENGTHS                                   | 025          | 2-1/2"                      | 120        | 12"                                | 300                                                 | 30"                            |  |
|                                                | 040          | 4"                          | 150        | 15"                                | 360                                                 | 36"                            |  |
|                                                | 060          | 6"                          | 180        | 18"                                | 420                                                 | 42"                            |  |
|                                                | 090          | 9"                          | 240        | 24"                                | Available up to 120"                                |                                |  |
| TEMPERATURE RANGES<br><i>Dual Scale °F/ °C</i> | -100/100 F/C | -100 °F/°C to 100 °F/°C     | 0/250 F/C  | 0 °F/°C to 250 °F/°C               | 50/500 F/C                                          | 50 °F/°C to 500 °F/°C          |  |
|                                                | -40/160 F/C  | -40 °F/°C to 160 °F/°C      | 20/240 F/C | 20 °F/°C to 240 °F/°C              | 150/750 F/C                                         | 150 °F/°C to 750 °F/°C         |  |
|                                                | 0/140 F/C    | 0 °F/°C to 140 °F/°C        | 25/125 F/C | 25 °F/°C to 125 °F/°C †            | 200/1000 F/C                                        | 200 °F/°C to 1,000 °F/°C *     |  |
|                                                | 0/180 F/C    | 0 °F/°C to 180 °F/°C        | 50/300 F/C | 50 °F/°C to 300 °F/°C              |                                                     |                                |  |
|                                                | 0/220 F/C    | 0 °F/°C to 220 °F/°C        | 50/400 F/C | 50 °F/°C to 400 °F/°C              |                                                     |                                |  |
| <i>Single Scale °F</i>                         | -100/100 F   | -100 °F to 100 °F           | 0/250 F    | 0 °F to 250 °F                     | 50/400 F                                            | 50 °F to 400 °F                |  |
|                                                | -50/120 F    | -50 °F to 120 °F            | 0/300 F    | 0 °F to 300 °F**                   | 50/500 F                                            | 50 °F to 500 °F                |  |
|                                                | -40/160 F    | -40 °F to 160 °F            | 0/500 F    | 0 °F to 500 °F**                   | 50/550 F                                            | 50 °F to 550 °F                |  |
|                                                | 0/140 F      | 0 °F to 140 °F              | 20/240 F   | 20 °F to 240 °F                    | 100/800 F                                           | 100 °F to 800 °F**             |  |
|                                                | 0/180 F      | 0 °F to 180 °F              | 25/125 F   | 25 °F to 125 °F                    | 150/750 F                                           | 150 °F to 750 °F               |  |
|                                                | 0/200 F      | 0 °F to 200 °F              | 50/250 F   | 50 °F to 250 °F                    | 200/1000 F                                          | 200 °F to 1,000 °F*            |  |
|                                                | 0/220 F      | 0 °F to 220 °F              | 50/300 F   | 50 °F to 300 °F                    |                                                     |                                |  |
| <i>Single Scale °C</i>                         | -75/175 C    | -75 °C to 175 °C            | 0/50 C     | 0 °C to 50 °C                      | 0/300 C                                             | 0 °C to 300 °C                 |  |
|                                                | -70/70 C     | -70 °C to 70 °C **          | 0/60 C     | 0 °C to 60 °C **                   | 0/400 C                                             | 0 °C to 400 °C                 |  |
|                                                | -50/100 C    | -50 °C to 100 °C **         | 0/80 C     | 0 °C to 80 °C **                   | 0/450 C                                             | 0 °C to 450 °C                 |  |
|                                                | -50/50 C     | -50 °C to 50 °C             | 0/100 C    | 0 °C to 100 °C                     | 100/400 C                                           | 100 °C to 400 °C               |  |
|                                                | -40/70 C     | -40 °C to 70 °C             | 0/150 C    | 0 °C to 150 °C                     | 100/550 C                                           | 100 °C to 550 °C *             |  |
|                                                | -20/120 C    | -20 °C to 120 °C **         | 0/200 C    | 0 °C to 200 °C                     | (Consult factory for additional temperature ranges) |                                |  |
|                                                | -10/110 C    | -10 °C to 110 °C **         | 0/250 C    | 0 °C to 250 °C                     |                                                     |                                |  |
| OPTIONS                                        | 6            | 6 mm stem diameter **       | HD         | Heavy-Duty Stem (0.375" Dia.) **   | SG                                                  | Safety Glass Lens **           |  |
|                                                | 8            | 8 mm stem diameter **       | LL         | Polycarbonate Lens                 | SL                                                  | Silicone Filled †††            |  |
|                                                | 316          | 316 SS Connection & Stem ** | MIP        | Min or Max Indicating Pointer***   | ST                                                  | Stainless Steel Tagging        |  |
|                                                | AU           | 1/2" NPT Adjustable Union** | MIP2       | Min and Max Indicating Pointers*** | TG                                                  | Tempered Glass Lens ††         |  |
|                                                | GD           | Glow Dial †                 | PL         | Acrylic Lens                       |                                                     |                                |  |

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

Note: All 316 Stainless Steel construction (case, bezel, wetted parts) is available. Please consult factory.

\* Thermometers with temperature ranges 200/1000 °F and 100/500 °C are not recommended for continuous use above 800 °F/425 °C.

For intermittent use only.

\*\* Available for 3" and 5" dial sizes only.

\*\*\* Available only on 30-310 and 50-310 models.

† Available only on 50-310 and 50-320 model. Includes reflective pointer and two reflective clips.

†† Not available with Silicone Filled (SL) option.

††† Available only for ranges from -50 °F (-45 °C) to 500 °F (260 °C). Polycarbonate lens is standard with Silicone Fill.

| ORDERING INFORMATION - SANITARY TRI-CLAMP |           |                            |            |                            |       |                             |
|-------------------------------------------|-----------|----------------------------|------------|----------------------------|-------|-----------------------------|
| DIAL SIZES                                | 30        | 3"                         | 50         | 5"                         |       |                             |
| CASE TYPES                                | 300       | Bottom connection          | 310        | Back connection            | 320   | Adjustable angle connection |
| STEM LENGTHS                              | 01625     | 1.625"                     | 045        | 4.5"                       | 135   | 13.5"                       |
|                                           | 025       | 2.5"                       | 075        | 7.5"                       | 165   | 16.5"                       |
|                                           | 0275      | 2.75"                      | 105        | 10.5"                      | 225   | 22.5"                       |
| TEMPERATURE RANGES                        | 0/220 F/C | 0 °F/°C to 220 °F/°C       | 20/240 F/C | 20 °F/°C to 240 °F/°C      |       |                             |
| <i>Dual Scale °F/ °C</i>                  | 0/250 F/C | 0 °F/°C to 250 °F/°C       | 50/300 F/C | 50 °F/°C to 300 °F/°C      |       |                             |
| <i>Single Scale °F</i>                    | 0/220 F   | 0 °F to 220 °F             | 20/240 F   | 20 °F to 240 °F            |       |                             |
|                                           | 0/250 F   | 0 °F to 250 °F             | 50/300 F   | 50 °F to 300 °F            |       |                             |
| <i>Single Scale °C</i>                    | -20/120 C | -20 °C to 120 °C           | 0/100 C    | 0 °C to 100 °C             |       |                             |
|                                           | -10/110 C | -10 °C to 110 °C           | 0/150 C    | 0 °C to 150 °C             |       |                             |
| PROCESS CONNECTIONS                       | 06SAN     | 3/4" Sanitary Tri-Clamp®   | 16SAN      | 2" Sanitary Tri-Clamp®     | 24SAN | 3" Sanitary Tri-Clamp®      |
|                                           | 12SAN     | 1-1/2" Sanitary Tri-Clamp® | 20SAN      | 2-1/2" Sanitary Tri-Clamp® | 32SAN | 4" Sanitary Tri-Clamp®      |

Note: Most standard bimetal thermometer options are available with Sanitary Tri-Clamp connection, consult factory.

## EXAMPLE

50 - 310 - 120 - 50/300 F/C - SL

Dial size ..... 5"

Case type ..... Back connection

Stem length ..... 12"

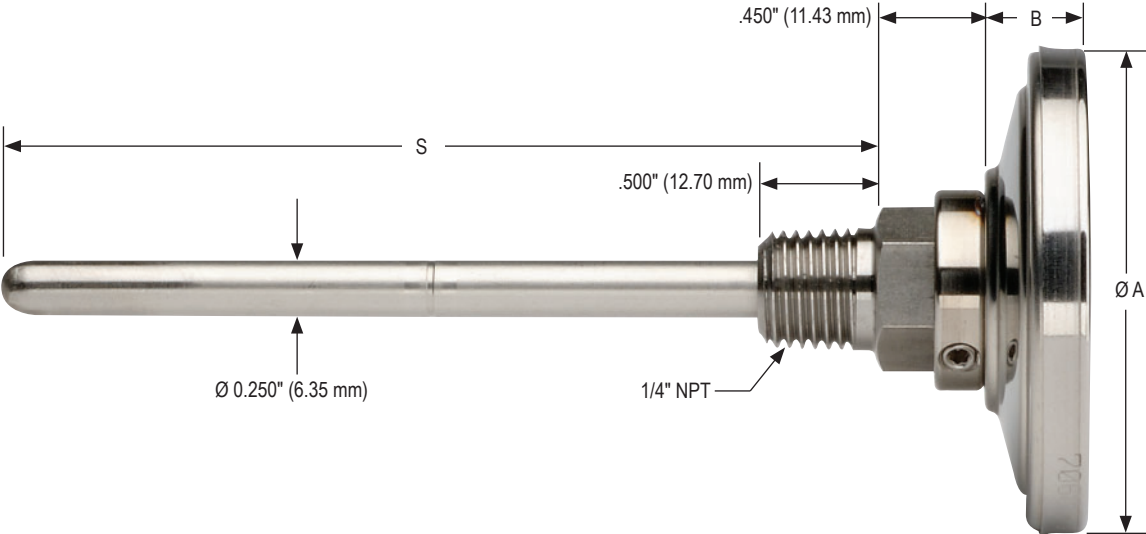
Temperature range ..... 50 °F/°C to 300 °F/°C

Options ..... Silicone Filled

Dial Indicating Thermometers

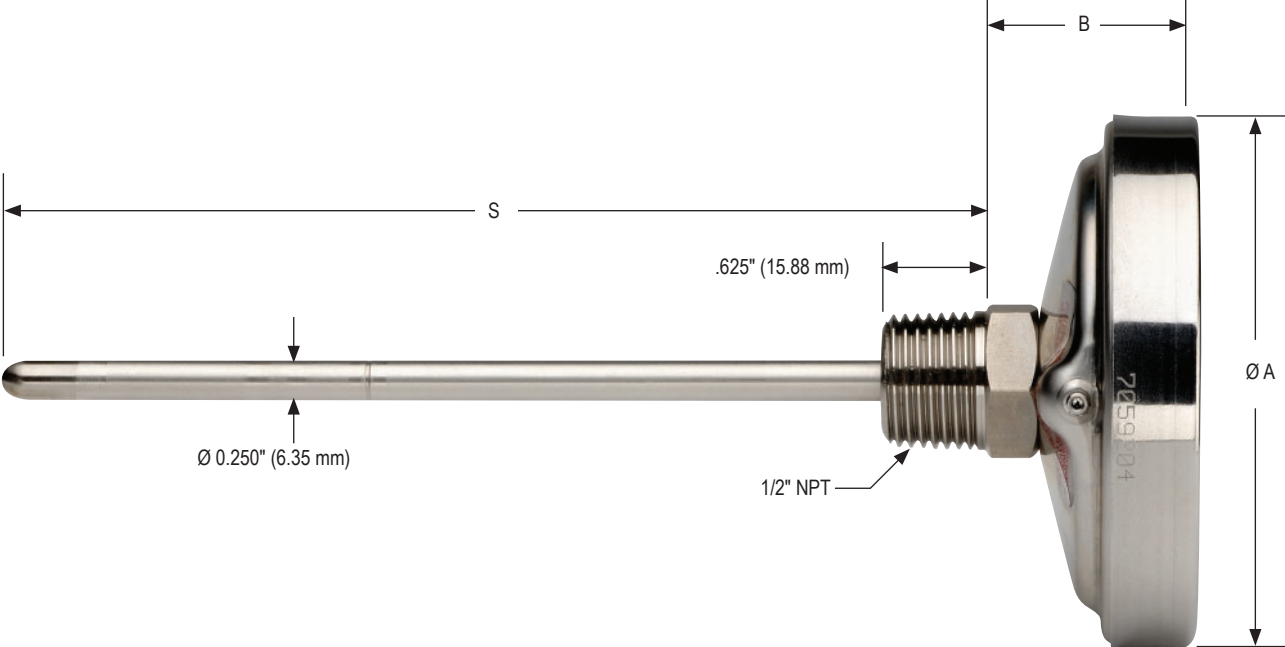
# Dimensions

20-310



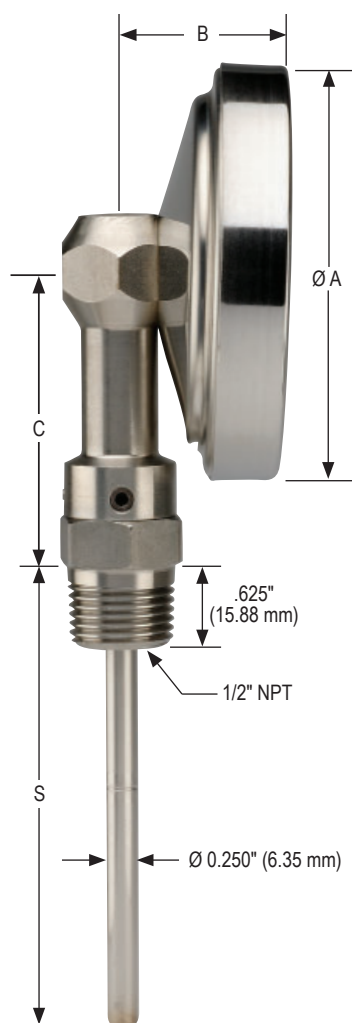
See page 15 for dimension chart.

30-310/50-310

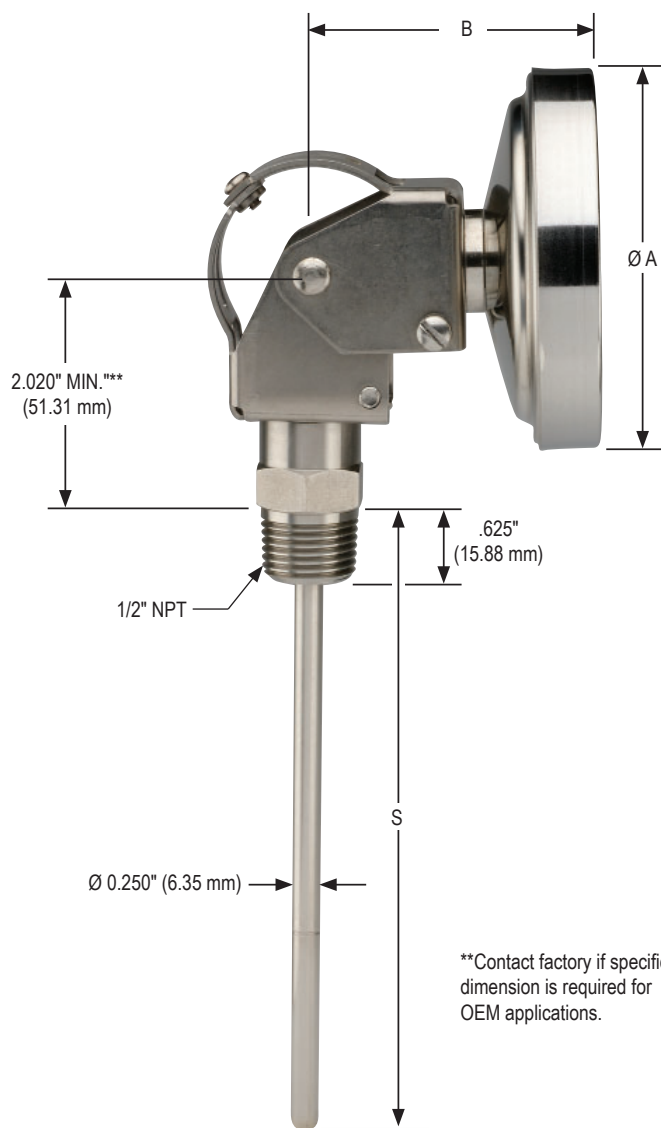


See page 15 for dimension chart.

## 30-300/50-300



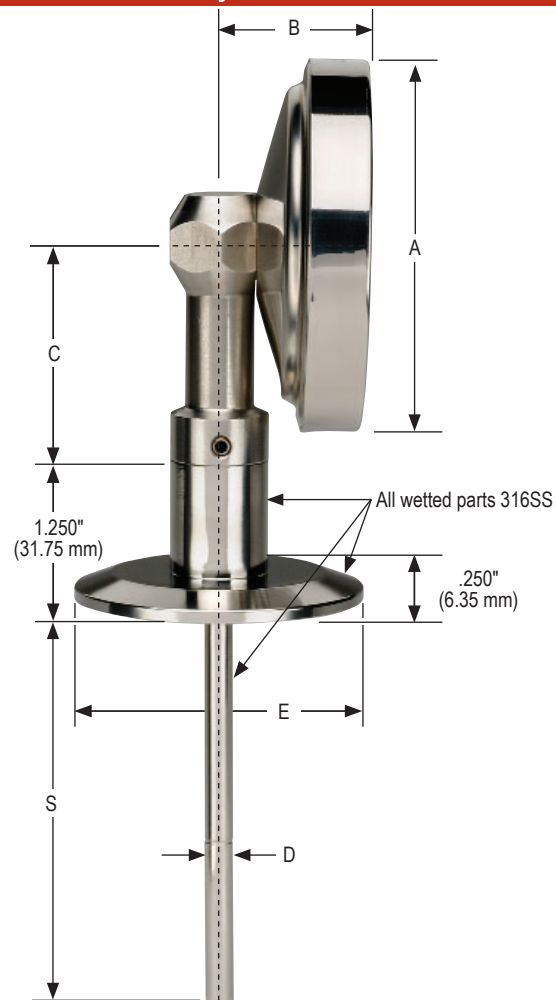
## 30-320/50-320



\*\*Contact factory if specific dimension is required for OEM applications.

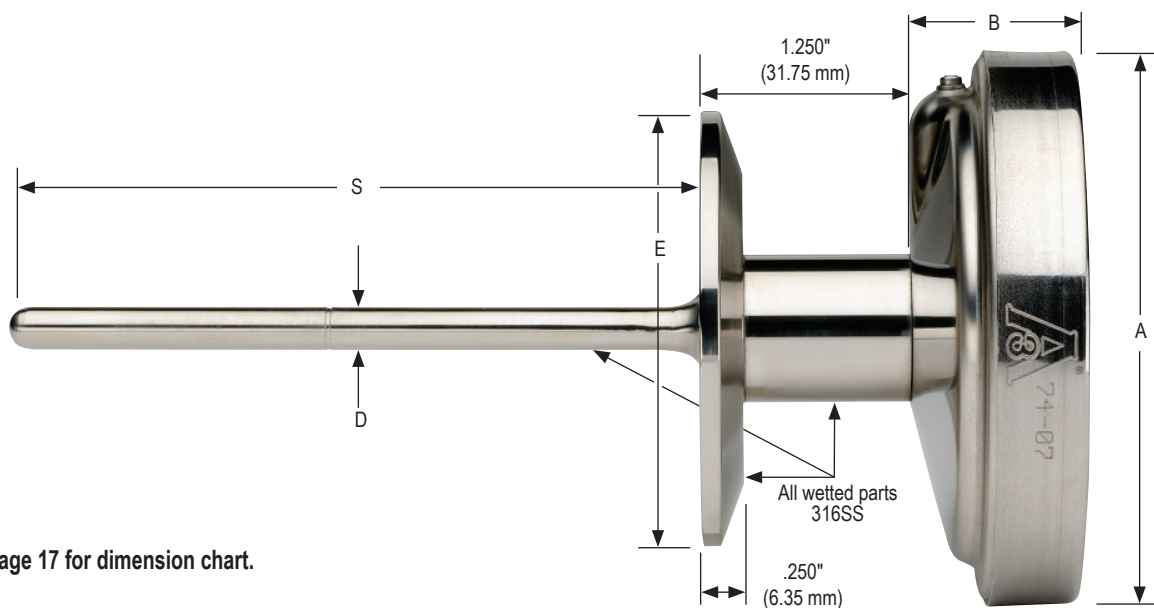
| Series | Ø A                 | B                  | C                    | S (Stem Length) |
|--------|---------------------|--------------------|----------------------|-----------------|
| 20-310 | 2.089"<br>53.06 mm  | .438"<br>11.13 mm  | —                    | As specified    |
| 30-310 | 3.187"<br>80.95 mm  | 1.375"<br>34.93 mm | —                    | As specified    |
| 50-310 | 5.040"<br>128.02 mm | 1.718"<br>43.63 mm | —                    | As specified    |
| 30-300 | 3.187"<br>80.95 mm  | 1.187"<br>30.15 mm | 2.300"<br>(58.42 mm) | As specified    |
| 50-300 | 5.040"<br>128.02 mm | 1.625"<br>41.28 mm | 3.000"<br>(76.20 mm) | As specified    |
| 30-320 | 3.187"<br>80.95 mm  | 2.430"<br>61.72 mm | —                    | As specified    |
| 50-320 | 5.040"<br>128.02 mm | 2.660"<br>67.56 mm | —                    | As specified    |

## 300 Series Sanitary Bimetal Thermometer



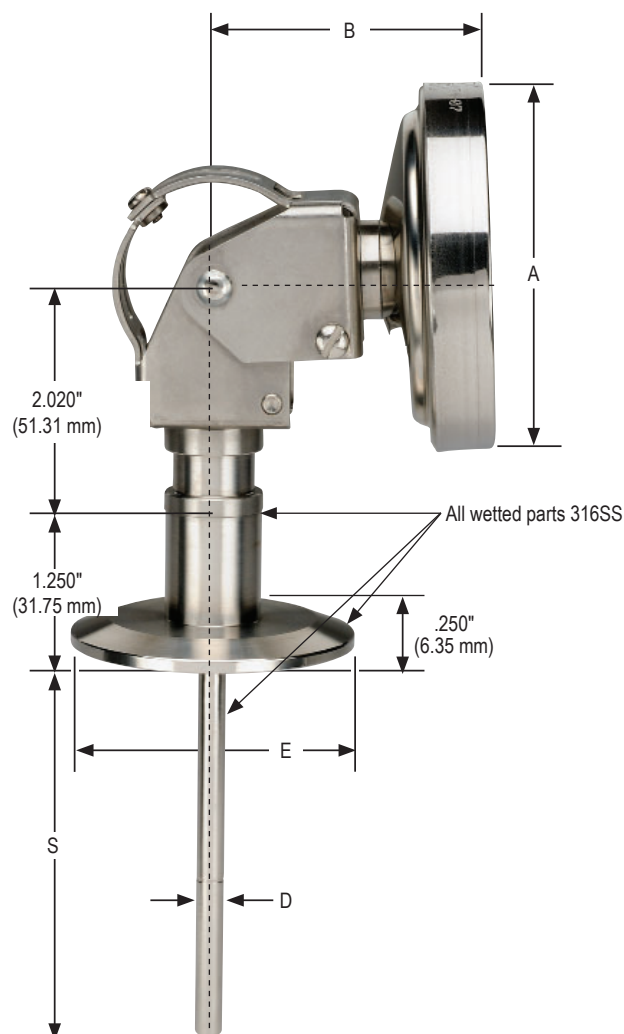
See page 17 for dimension chart.

## 310 Series Sanitary Bimetal Thermometer



See page 17 for dimension chart.

## 320 Series Sanitary Bimetal Thermometer



300 SERIES BIMETAL THERMOMETERS - SANITARY TRI-CLAMP® MODELS

| Series | A                   | B                  | C                    | D                | S (Stem Length) |
|--------|---------------------|--------------------|----------------------|------------------|-----------------|
| 30-300 | 3.187"<br>80.95 mm  | 1.187"<br>30.15 mm | 1.875"<br>47.63 mm   | .375"<br>9.53 mm | As specified    |
| 30-310 | 3.187"<br>80.95 mm  | .890"<br>22.61 mm  | —                    | .375"<br>9.53 mm | As specified    |
| 30-320 | 3.187"<br>80.95 mm  | 2.430"<br>61.72 mm | —                    | .375"<br>9.53 mm | As specified    |
| 50-300 | 5.040"<br>128.02 mm | 1.625"<br>41.28 mm | 2.625"<br>(66.68 mm) | .375"<br>9.53 mm | As specified    |
| 50-310 | 5.040"<br>128.02 mm | 1.328"<br>33.73 mm | —                    | .375"<br>9.53 mm | As specified    |
| 50-320 | 5.040"<br>128.02 mm | 2.660"<br>67.56 mm | —                    | .375"<br>9.53 mm | As specified    |

TRI-CLAMP® FITTING

| Part Number Designation | Tri-Clamp Connection Size | E                   |
|-------------------------|---------------------------|---------------------|
| 06SAN *                 | 3/4"                      | .984"<br>25.00 mm   |
| 12SAN **                | 1-1/2"                    | 1.984"<br>50.40 mm  |
| 16SAN                   | 2"                        | 2.516"<br>63.90 mm  |
| 20SAN                   | 2-1/2"                    | 3.047"<br>77.40 mm  |
| 24SAN                   | 3"                        | 3.579"<br>90.90 mm  |
| 32SAN                   | 4"                        | 4.682"<br>118.90 mm |

\* Used on both 1/2" and 3/4" lines

\*\* Used on both 1" and 1-1/2" lines