BACK CONNECT DIAL THERMOMETER

Reotemp's Bimetal Thermometers offer dependable and precise temperature monitoring without the need for electricity or wiring. The Industrial Grade is available in stock, while the Process Grade can be tailored to specific requirements. Back Connect Thermometers are well-suited for obtaining local, eye-level temperature readings in various process applications. These thermometers offer the convenience of recalibration with a simple turn of the calibration screw located on the back of the dial.



Industrial Grade Style



Process Grade Style



FEATURES / BENEFITS

- Five Year Limited Warranty
- Accuracy ± 1% Full Scale (ASME B40.3 Grade A)
- Hermetically Sealed (ASME B40.3)
- Standard External Reset for Calibration
- · Fully Customized Dials Available
- Silicone Fillable for Vibration Available

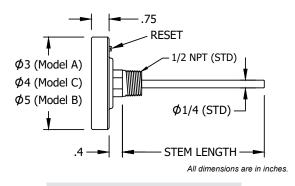
SPECIFICATIONS

| Accuracy | ± 1% Full Scale (ASME B40.3) |
|---|---|
| Dial Size | 3", 4" or 5" |
| Dial Material | Black marks on satin matte aluminum finish, Hi-Vis™, or white dial |
| Stem Length | 2" to 80" |
| Stem Diameter | 1/4" (Standard), 3/8" or 5/16" |
| Head, Bezel, Mounting Bushing, Stems | 300 Series SS, 316SS (Optional) |
| Operating Conditions | Head temperature should not exceed 200°F (150°F if silicone filled). Stem should not be exposed to continuous temperatures exceeding 50% over-range or 800°F (550°F if silicone filled) |
| Environmental Protection | IP67, NEMA 6 Rated (Hermetically sealed per ASME B40.3) |
| Lens | Glass (Standard), Acrylic, Polycarbonate, Laminated Safety Glass or Tempered Glass |
| Immersion | Minimum 2" in liquid, and 4" in gas for most ranges. Certain ranges require up to 4" in liquids & 5" in gas. |
| Mounting Connection | 1/2" NPT (Standard), 1/4" NPT, 3/4" NPT, Plain Hex Bushing, or 1/2" BSPT |
| Temperature Sensing Area | Last 2" to 4" of the stem |

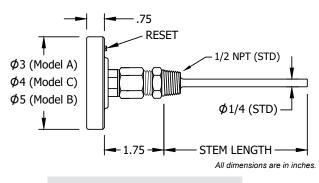
BACK CONNECT DIAL THERMOMETER

Industrial Grade Style

Note: Thermowells should be used whenever the stem or bulb would be exposed to pressure, corrosion, velocity, abrasion or shear forces. Thermowells also make it possible to remove the thermometer without losing pressure or the contents of the process.



Process Grade Style



Process Grade Style Fixed Union

REOTEMP

BACK CONNECT BIMETAL THERMOMETER

HOW TO ORDER: Choose options to build a part number. For example: AO0251F47-TS

| AO | 025 | 1 | F47 | -TS |
|--|--|---|---|--|
| DIAL SIZE | STEM LENGTH | CONNECTION | TEMPERATURE RANGE | OPTIONS |
| Industrial Grade AO = 3" Dial w/ Reset | Industrial Grade 025 = 2.5" 040 = 4" 060 = 6" 090 = 9" 120 = 12" | Industrial Grade 1 = 1/2" NPT | Industrial Grade F39 = 0°F to 150°F F47 = 0°F to 250°F F49 = 0°F to 300°F F63 = 50°F to 300°F F67 = 50°F to 500°F F69 = 50°F to 550°F F81 = 150°F to 750°F F85 = 200°F to 1000°F D47 = 0°F to 250°F & -20°C to 120°C | Industrial Grade Options -TS = Tag, Stainless -TP = Tag, Paper -TM = Stainless Steel Tag (11-80 Characters) -HT = Heat Transfer Compound For Additional Options Choose Process Grade |
| | | | | For Thermowells See Pages 290-296 |
| Process Grade AA = 3" Dial w/ Reset CC = 4" Dial w/ Reset BB = 5" Dial w/ Reset RR = 3" Dial w/o Reset CN = 4" Dial w/o Reset SS = 5" Dial w/o Reset | Process Grade 025 = 2.5" 040 = 4" 060 = 6" 090 = 9" 120 = 12" 150 = 15" 180 = 18" 240 = 24" 300 = 30" 360 = 36" Note: Intermediate stem lengths available up to 80". <i>Millimeter Stem</i> <i>Lengths</i> M???? = Use a code beginning in M to specify a mm stem length ex: 100mm = M0100 | Process Grade 1 = 1/2" NPT 4 = 1/4" NPT 5 = 3/4" NPT Adapter X = Plain Unthreaded Hex Bushing B = 1/2" BSPT U = 1/2" NPT Union | Process Grade F23 = -40°F to 160°F *F55 = 25°F to 125°F F43 = 0°F to 200°F F47 = 0°F to 200°F F63 = 50°F to 500°F F69 = 50°F to 550°F F81 = 150°F to 750°F F85 = 200°F to 1000°F C23 = -40°C to 70°C C55 = 0°C to 50°C* C43 = 0°C to 100°C C59 = 0°C to 150°C C67 = 0°C to 250°C C69 = 0°C to 300°C C73 = 0°C to 400°C C85 = 100°C to 500°C D43 = 0°F to 200°F & -10°C to 90°C D43 = 0°F to 200°F & -10°C to 90°C D43 = 0°F to 50°F & 10°C to 120°C D67 = 50°F to 550°F & 10°C to 250°C D69 = 50°F to 550°F & 10°C to 250°C D69 = 50°F to 550°F & 10°C to 200°C D67 = 50°F to 550°F & 10°C to 200°C D69 = 50°F to 550°F & 10°C to 200°C D81 = 150°F to 750°F & 70°C to 400°C C85 = 200°F to 100°F & 10°C to 500°C F8 = 200°F to 1000°F & 10°C to 500°C F8 = 200°F to 100°F & 10°C to 500°C | Process Grade General Options -3H = 316 SS Head and Bezel -PS = Pointed Stem -SF = Silicone Filled -SS = 316 Stainless Stem -WD = White Dial -NL = No Logo Dial -RE = Color Bands -PI = Color Pie -CL = Custom Logo Dial Window Options (Standard is Glass) -MM = Min-Max Pointer (Plastic Lens) -PC = Acrylic Window -PY = Polycarbonate Window -TG = Tempered Glass Window -SG = Laminated Safety Glass Calibration Cert. Options -R1 = One Point Calibration Cert (Reotemp Chooses Points) -R3 = Three Point Calibration Cert (Reotemp Chooses Points) Tags and Accessories -TS = Tag, Stainless -TP = Tag, Paper -AS = Adapts Bimet to 1-1/4-18 industria Socket |
| | | | For Additional Ranges See Master Range Code Sheet on Page 274 | -HT = Heat Transfer Compound |
| | | | Sour Sheel On Fage 214 | For Additional Ontions See Page 273 |

For Additional Options See Page 273 For Thermowells See Pages 290-296

Note: Thermowells should be used whenever the stem or bulb would be exposed to pressure, corrosion, velocity, abrasion or shear forces. Thermowells also make it possible to remove the thermometer without losing pressure or the contents of the process.

BIMETAL OPTION CODES

| | | | | 0 | | D 111 1 |
|-------------|--|-------------------------------------|--|---------------------------------------|-------------------|--------------------------|
| | | Industrial | Process | Small Dial OEM | Digital | Dual Mode Thermometer |
| Part # | Description | AO, LO, MO, JO, XO, YO, VO | AA, RR, CC, CN, BB, SS, XR, XX, YY, YN, VR, VV, LL, MM, JJ | QQ, GG, HH | DT, DTR, BT | DMT |
| | | ASE FILL O | | | | · · · |
| -SF | Silicone Filled Case | N/A LENS OPT | | N/A | N/A | √ |
| -PC | Acrylic Window | N/A | √ | ✓ | N/A | √ |
| -PY | Polycarbonate Window | N/A | ✓ | ✓ | STD | √ |
| -TG | Tempered Safety Glass Lens | N/A | · · | N/A | N/A | ✓ |
| -SG | Laminated Safety Glass Lens | N/A | • • | N/A | N/A | ✓ |
| -GL | Plain Glass | | • STD | STD | N/A ✓ | STD |
| -GL | Fidili Glass | N/A STEM OPT | | 310 | v | 310 |
| -PS | Pointed Tip | N/A | √ | ✓ | √ | N/A |
| -SS | 316 Stainless Steel Stem | N/A | · • | · · · · · · · · · · · · · · · · · · · | | √ |
| -F5 | 5/16" Diameter Stem (Not Available with 316SS Stem) | N/A | ~ | ✓ | ✓ | N/A |
| -S3 | 3/8" Diameter Stem | N/A | ~ | ✓ | ~ | ✓ |
| -TF | Teflon Coating (Stem Only) | N/A | ~ | ~ | ~ | ✓ |
| | | DIAL OPT | IONS | | | |
| -CL | Custom Logo Dial | N/A | ~ | ✓ | ✓ | √ |
| -HV | Hi-Vis Dial | N/A | ~ | MQ | N/A | ✓ |
| -СВ | Color Band | N/A | ~ | MQ | N/A | ✓ |
| -PI | Color Pie | N/A | ~ | MQ | N/A | ✓ |
| -WD | White Dial (Standard Ranges Only) | N/A | ~ | ✓ | ~ | ✓ |
| -MM | Min/Max Pointer | N/A | ✓ | N/A | N/A | ✓ |
| NL | No Logo | N/A | ~ | ✓ | ~ | ✓ |
| | | TAG OPT | ION | | | |
| -TS | Stainless Steel Tag (1-10 Characters) | ✓ | ✓ | ✓ | ~ | ✓ |
| -TP | Paper Tag | √ | √ | √ | √ | ✓ |
| -TM | Stainless Steel Tag (11-80 Characters) | | | ✓ | √ | √ |
| -R1 | 1pt. Calibration Certification (Reotemp Chooses the Point) | N/A | √ | ~ | ~ | √ |
| -R3 | 3 pt. Calibration Certification (Reotemp Chooses the Points) | N/A | ~ | ✓ | ~ | ✓ |
| -C1 | 1 pt. Calibration Certification (Customer Chooses the Point) | N/A | ~ | ✓ | ~ | ~ |
| -C3 | 3 pt. Calibration Certification (Customer Chooses the Points) | N/A | ~ | ✓ | ~ | * |
| -cs | NIST Calibration Sticker (No Logged Points) | N/A | √ | ✓ | 1 | √ |
| -CC | Certificate of Conformance | N/A OTHEI | √ | √ | √ | √ |
| -3H | 316 Stainless Steel Head & Bezel | N/A | x √ | N/A | STD | √ |
| -511 -HT | Heat Transfer Compound | N/A ✓ | • • | √ √ | 31D ✓ | ✓ |
| -n1 | Spring Handle (T-27) | v N/A | ▼ ✓ | ✓ ✓ | ↓ | v N/A |
| -AS | Allows Bimet to Fit 1-1/4-18 xxowell | | √ | · ✓ | ~ | √ |
| -43 | Allows Diffiel to Fit 1-1/4-16 XXOWEII | N/A | v | - | v | v |

Indicates that the option is available with the model.STD Indicates standard options with no additional cost.

N/A Indicates the option is not available with this model. MQ Minimum order quantity applies. **REOTEMP**

BIMETAL RANGE CODES

Div.

.5

.5

| FA | | 050 |
|------------------|----------|------|
| | | |
| Code | °F Range | Div. |
| F03 | -100/100 | 2 |
| F05 | -100/200 | 2 |
| F07 | -80/120 | 2 |
| F11 | -70/150 | 2 |
| F19 | -50/300 | 5 |
| F21 [†] | -40/120 | 2 |
| F23 | -40/160 | 2 |
| F25 | -40/180 | 2 |
| F26 | -40/200 | 2 |
| F27‡ | -40/70 | 1 |
| F31 [†] | -20/120 | 2 |
| F33 | -20/425 | 5 |
| F35‡ | 0/100 | 1 |
| F37 [†] | 0/140 | 2 |
| F39 [†] | 0/150 | 1 |
| F43 | 0/200 | 2 |
| F45 | 0/220 | 2 |
| F47 | 0/250 | 2 |
| F49 | 0/300 | 2 |
| F50 | 0/500 | 5 |
| F51 | 0/600 | 10 |
| F53 | 20/240 | 2 |
| | | |
| F55 [‡] | 25/125 | 1 |
| F57‡ | 30/130 | 1 |
| F63 | 50/300 | 2 |
| F65 | 50/400 | 5 |
| F67 | 50/500 | 5 |
| F69 | 50/550 | 5 |
| F71 | 50/650 | 10 |
| F73 | 50/750 | 10 |
| F78 | 100/600 | 5 |
| F79 | 100/800 | 10 |
| F81 | 150/750 | 10 |
| F82 | 200/700 | 20 |
| F83 | 200/300 | 2 |
| F84 | 100/900 | 5 |
| F85 | 200/1000 | 10 |
| F89 | 250/600 | 5 |
| F91 | 300/400 | 2 |
| | | |
| | | |

| DUAL RANGES | | | | |
|-------------------------|--------------------|--|--|--|
| Code | °F & °C Range | | | |
| D01 | -150/400 & 100/200 | | | |
| D03 | -100/100 & -70/40 | | | |
| D07 | -80/120 & -60/50 | | | |
| D15 | -50/210 & -50/100 | | | |
| D19 | -50/300 & -40/160 | | | |
| D23 | -40/160 & -40/70 | | | |
| D37 [†] | 0/140 & -15/60 | | | |
| D39 [†] | 0/150 & -20/65 | | | |
| D41 [†] | 0/160 & -15/70 | | | |
| D43 | 0/200 & -10/90 | | | |
| D45 | 0/220 & -10/100 | | | |
| D47 | 0/250 & -20/120 | | | |
| D49 | 0/300 & -10/150 | | | |
| D53 | 20/240 & -10/115 | | | |
| D55 [‡] | 25/125 & -5/50 | | | |
| D63 | 50/300 & 10/150 | | | |
| D65 | 50/400 & 10/200 | | | |
| D67 | 50/500 & 10/260 | | | |
| D69 | 50/550 & 10/290 | | | |
| D77 | 100/450 & 40/230 | | | |
| D79 | 100/800 & 40/400 | | | |
| D81 | 150/750 & 70/400 | | | |
| D85 | 200/1000 & 100/500 | | | |
| D87 | 200/1000 & 100/550 | | | |

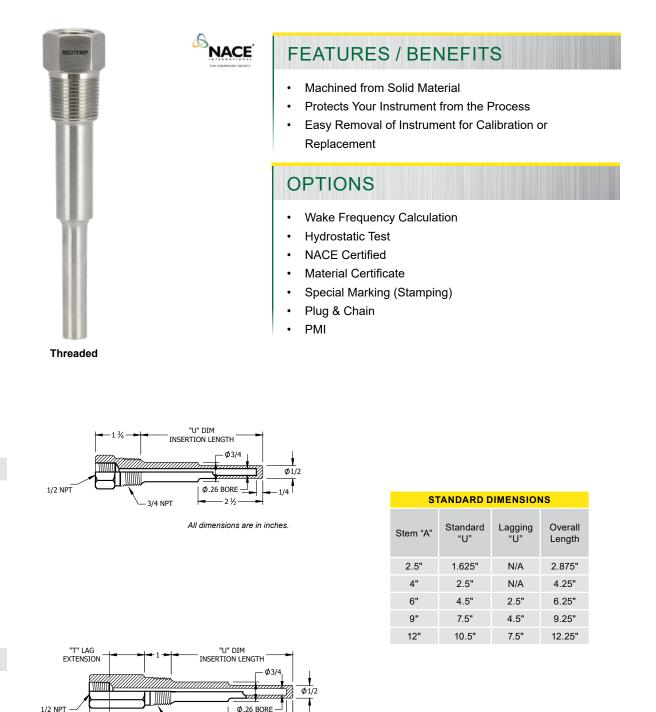
‡ Minimum stem length is 4".

⁺ For 2.5" stem, all bottom connect and all-angle models require adapter P/N AD22S.



THREADED THERMOWELLS

Reotemp Threaded Thermowells make it possible to remove an instrument without dropping pressure or losing contents of the process. Thermowells also protect the instrument from getting bent by the process media. Threaded thermowells are perfect for applications that require infrequent replacement and are commonly installed on smaller pipes or vessels. They are best suited for non-corrosive media. Reotemp threaded thermowells are machined from solid bar stock.



THERMOWELLS

Standard

Lagging

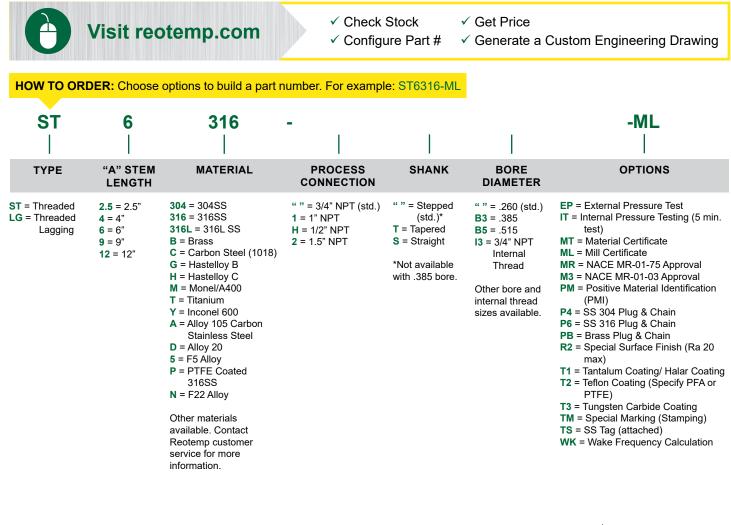
3/4

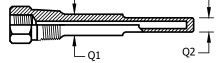
21/

3/4 NPT



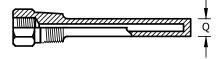
THREADED THERMOWELLS





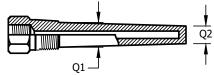
All dimensions are in inches.

| STEPPED SHANK | | | | | | |
|---------------|------------------------|-------------------------------|-----------------------|--|--|--|
| Bore Dia. | Ext. Thread Size | Shank Dia. "Q1" (U>2.5) | Shank Dia. "Q2" | | | |
| .260" | 1/2" NPT | .625" | .500" | | | |
| .260" | 3/4" NPT | .750" | .500" | | | |
| .260" | 1" NPT | .875" | .500" | | | |



All dimensions are in inches.

| STRAIGHT SHANK | | | | | |
|----------------|------------------------|------------------------------|------------------------------|--|--|
| Bore Dia. | Ext. Thread Size | Shank Dia. "Q" (U≤2.5) | Shank Dia. "Q" (U>2.5) | | |
| .260" | 1/2" NPT | .500" | .625" | | |
| .260" | 3/4" NPT | .500" | .625" | | |
| .260" | 1" NPT | .750" | .875" | | |
| .385" | 1/2" NPT | .680" | .680" | | |
| .385" | 3/4" NPT | .766" | .766" | | |
| .385" | 1" NPT | .875" | .875" | | |
| | | | | | |



All dimensions are in inches.

| TAPERED SHANK | | | | | | |
|---------------|------------------------|--------------------|-----------------------|--|--|--|
| Bore Dia. | Ext. Thread Size | Shank Dia. "Q1" | Shank Dia. "Q2" | | | |
| .260" | 1/2" NPT | .680" | .625" | | | |
| .260" | 3/4" NPT | .875" | .625" | | | |
| .260" | 1" NPT | 1.062" | .625" | | | |
| .385" | 1/2" NPT | .680" | .625" | | | |
| .385" | 3/4" NPT | .875" | .766" | | | |
| .385" | 1" NPT | 1.062" | .766" | | | |

THERMOWELLS

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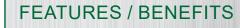
WELDED THERMOWELLS

Reotemp Welded Thermowells make it possible to remove an instrument without dropping pressure or losing the contents of the process. Thermowells also protect the instrument from getting bent by the process media. Weld-in thermowells are welded directly to a pipe or tank, providing a very high quality connection. Because they are welded, they should only be used when access is not required and corrosion is not an issue. Common installations include high temperature and high pressure applications with non-corrosive media. Reotemp weld-in thermowells are machined from bar stock.

NACE



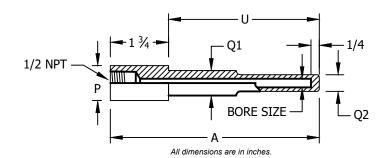
Socket Weld



- High Quality Connection
- Ideal for High Temperature and High Pressure Applications with Non-corrosive Media
- Socket Weld or Standard Weld-in
- Easy Removal of Instrument for Calibration or Replacement

OPTIONS

- Wake Frequency Calculation
- · Hydrostatic Test
- NACE Certified
- Material Certificate
- Special Marking (Stamping)
- Plug & Chain
- PMI



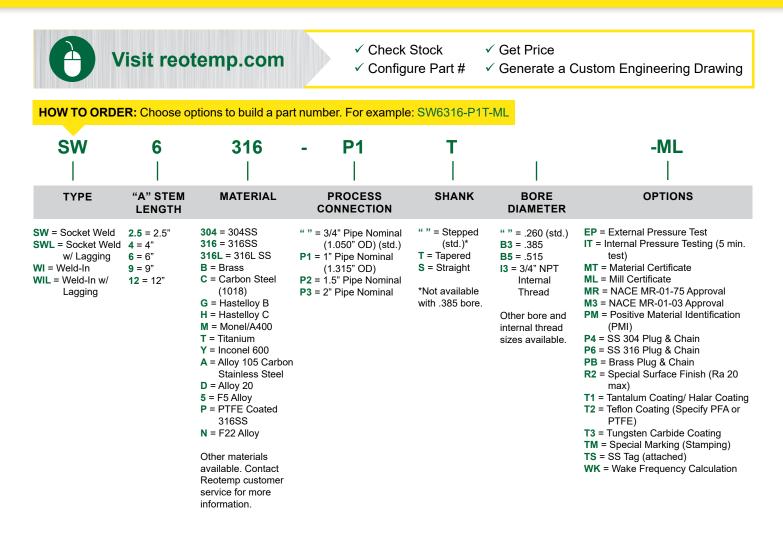
| SOCKET WELD STRAIGHT SHANK | | | | | | | |
|----------------------------|-----------------------------|-------------|----------------------------------|----------------------------------|--|--|--|
| Bore Dia. "B" | Nominal Pipe Size "P" | 0.D. "D" | Shank Dia. "Q2" (U≤2.5) | Shank Dia. "Q2" (U>2.5) | | | |
| .260" | 3/4" | 1.050" | .500" | .750" | | | |
| .260" | 1" | 1.315" | .750" | .875" | | | |
| .260" | 1.5" | 1.900" | 1.00" | 1.12" | | | |
| .385" | 3/4" | 1.050" | .766" | .766" | | | |
| .385" | 1" | 1.315" | .766" | .875" | | | |
| .385" | 1.5" | 1.900" | 1.00" | 1.12" | | | |

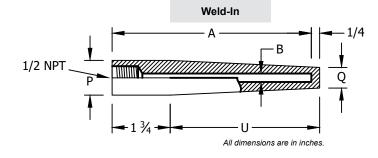
| | SOCKET WELD STEPPED SHANK | | | | | | |
|------------------|-----------------------------|-------------|-------------------------------|-------------------------------|-----------------------|--|--|
| Bore Dia. "B" | Nominal Pipe Size "P" | O.D. "D" | Shank Dia. "Q1" (U≤2.5) | Shank Dia. "Q1" (U>2.5) | Shank Dia. "Q2" | | |
| .260" | 3/4" | 1.050" | .500" | .750" | .500" | | |
| .260" | 1" | 1.315" | .750" | .875" | .500" | | |
| .260" | 1.5" | 1.900" | 1.000" | 1.120" | .500" | | |

| SOCKET WELD TAPERED SHANK | | | | | | |
|---------------------------|-----------------------------|-------------|--------------------|-----------------------|--|--|
| Bore Dia. "B" | Nominal Pipe Size "P" | O.D. "D" | Shank Dia. "Q1" | Shank Dia. "Q2" | | |
| .260" | 3/4" | 1.050" | .750" | .625" | | |
| .260" | 1" | 1.315" | 1.000" | .625" | | |
| .260" | 1.5" | 1.900" | 1.370" | .625" | | |



WELDED THERMOWELLS





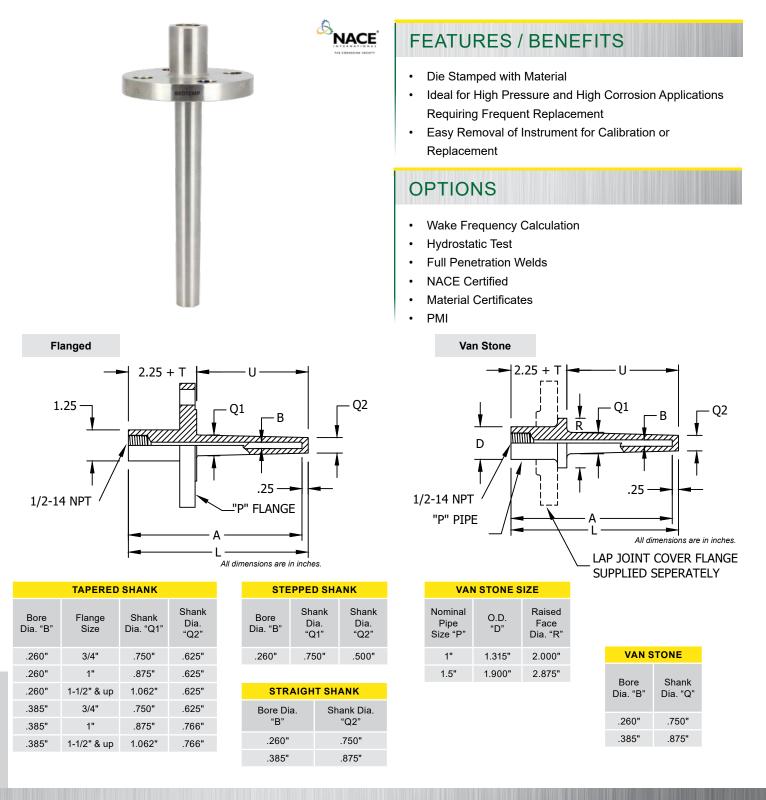
| WELD-IN TAPERED SHANK | | | | | |
|-----------------------|-----------------------------|-------------|----------------|--|--|
| Bore Dia. "B" | Nominal Pipe Size "P" | O.D. "D" | Tip Dia "Q" | | |
| .260 in | 3/4" | 1.050" | .625" | | |
| .260 IN | 1" | 1.315" | .766" | | |
| .385 in | 3/4" | 1.050" | .625" | | |
| | 1" | 1.315" | .766" | | |

THERMOWELLS



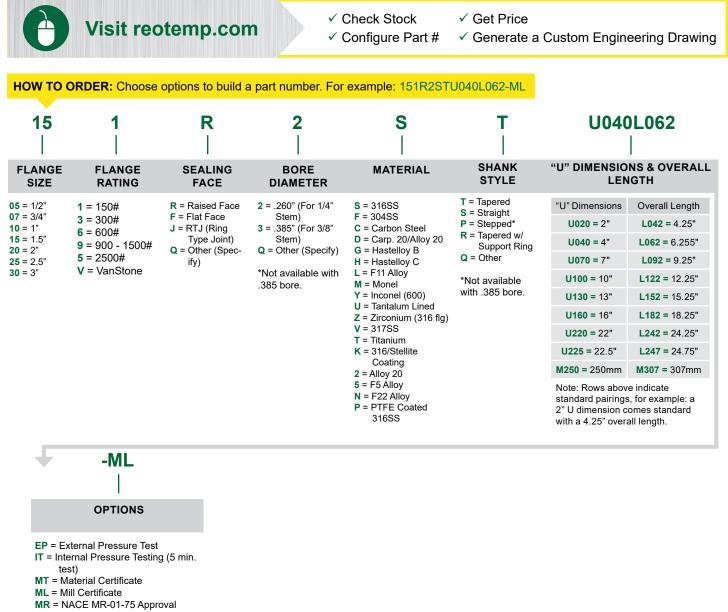
FLANGED THERMOWELLS

Reotemp's Flanged Thermowells make it possible to remove an instrument without dropping pressure or losing contents of the process. Thermowells also protect the instrument from getting bent by the process media. Flanged thermowells are the preferred well for applications that require frequent removal or replacement due to corrosion or other hazards. Flanged wells bolt to a mating flange that is installed on the process piping. Common installations include large pipes with high pressure and high corrosion.





FLANGED THERMOWELLS



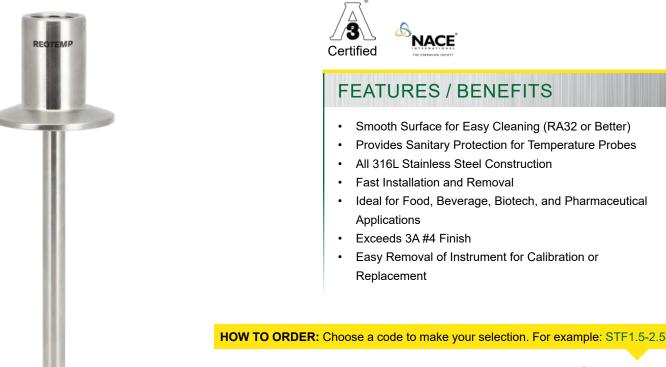
- M3 = NACE MR-01-03 Approval
- PM = Positive Material Identification (PMI)
- P4 = SS 304 Plug & Chain
- P6 = SS 316 Plug & Chain
- **PB** = Brass Plug & Chain
- R2 = Special Surface Finish (Ra 20 max)
- T1 = Tantalum Coating/ Halar Coating
- T2 = Teflon Coating (Specify PFA or
- PTFE)
- **T3** = Tungsten Carbide Coating
- TM = Special Marking (Stamping)
- TS = SS Tag (attached)
- WK = Wake Frequency Calculation

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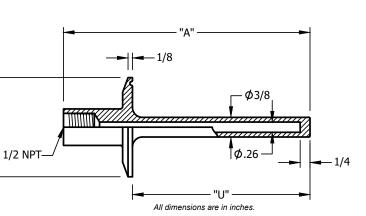


SANITARY THERMOWELLS

Reotemp's Sanitary Thermowells make it possible to remove an instrument without dropping pressure or losing contents. Each stainless steel Thermowell is die stamped with type of material from which it is made. Sanitary wells have a smooth surface (RA32 or Better) and a Tri-Clamp® connection which allows for easy cleaning to prevent contamination of the process. They are used in the Dairy, Food Processing and Pharmaceutical industries.



STF1.5-2.5



| Tri-Clamp® Size | "A" Stem Length | "U" Dimension | "C" Dimension | Code |
|--------------------|--------------------|------------------|---------------|------------|
| 1-1/2" | 2-1/2" | 1-5/8" | 2" | STF1.5-2.5 |
| | 4" | 2-1/2" | | STF1.5-4 |
| | 6" | 4-1/2" | | STF1.5-6 |
| | 9" | 7-1/2" | | STF1.5-9 |
| 2" | 2-1/2" | 1-5/8" | 2.5" | STF2-2.5 |
| | 4" | 2-1/2" | | STF2-4 |
| | 6" | 4-1/2" | | STF2-6 |
| | 9" | 7-1/2" | | STF2-9 |
| 2-1/2" | 2-1/2" | 1-5/8" | 3" | STF2.5-2.5 |
| | 4" | 2-1/2" | | STF2.5-4 |
| | 6" | 4-1/2" | | STF2.5-6 |
| | 9" | 7-1/2" | | STF2.5-9 |
| 3" | 2-1/2" | 1-5/8" | 3.6" | STF3-2.5 |
| | 4" | 2-1/2" | | STF3-4 |
| | 6" | 4-1/2" | | STF3-6 |
| | 9" | 7-1/2" | | STF3-9 |
| | | | | |

PTC-0424

THERMOWELLS

'C