

# TRR Remote Reading Thermometer



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

## Description & Features:

- Versatile, heavy duty gas or vapour thermometer for remote reading
- Built to order
- Brass or stainless steel capillary and bulbs
- Plain, sliding union or thermowell connection
- Capillary lengths over 5 feet available
- 1/2" bulb diameter
- Panel or direct mount
- Gas:  $\pm 0.5\%$  accuracy; Vapour:  $\pm 2\%$  accuracy
- 5 year warranty

## Applications:

- For remote temperature sensing

## Specifications

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Dial	2.5" (63mm), 3.5" (90mm), 4" (100mm), 4.5" (115mm), 6" (150mm), 8.5" (215mm)
Case/Ring	2.5" (63mm): 316 SS 3.5" (90mm), 4" (100mm): Steel, painted black Others: Aluminum, painted black
Lens	2.5" (63mm) to 6" (150mm): Glass Others: Polycarbonate
Connection	Plain Brass or 316 SS sliding union Brass or 316 SS thermowell
Sensing Fill	Gas or vapour
Movement	Gas: 304 SS Vapour: Brass
Pointer	Aluminum, painted black
Accuracy	Gas: $\pm 0.5\%$ of full scale value Vapour: $\pm 2\%$ of full scale value
Bulb	6" (150mm), 1/2" diameter standard Custom sizes available

## Selection Notes

### Gas-filled Systems

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

### Vapour-filled Systems

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

### Capillary Protection

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

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

## Order Codes

Specify the code for each section and the range:

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

Section	Code	Description Type	Section	Code	Description Bulb and Capillary			
					Bulb Dimensions	Bulb Material	Capillary Material	Capillary Protection
I	TRR1	Gas Remote Reading	IV	1	6" OAL, 1/2" OD	Brass	Copper	Copper Dbl Braided
	TRR2	Gas Direct Reading		2	6" OAL, 1/2" OD	316 SS	316 SS	None
	TRR3	Vapour Remote Reading		3	6" OAL, 1/2" OD	316 SS	316 SS	SS Armour
	TRR4	Vapour Direct Reading	V	Capillary Length (ft)				
Case Type, Connection		05		Standard, 5 feet (1.5m)				
II	1	Bottom connection, back flange	VI	-	Use 2 digits ie: 15 = 15 feet			
	Connection			0	None			
	2	Back connection, front flange		1	1/2" NPT brass sliding union			
	3	Back connection, back flange		2	1/2" NPT SS sliding union			
III	Dial Size		VI	3	3/4" NPT brass sliding union			
	25	2.5" (63mm)		4	3/4" NPT SS sliding union			
	35	3.5" (90mm) Back connection only		5	1/2" NPT brass thermowell			
	40	4" (100mm)		6	1/2" NPT SS thermowell			
	45	4.5" (115mm)		7	3/4" NPT brass thermowell			
	60	6" (150mm)		8	3/4" NPT SS thermowell			
	85	8.5" (215mm)						

Vapour Ranges	°F only	°F & °C	°C only
All Dial Sizes	-40°F to 110°F	-40°F to 110°F & -40°C to 40°C	-40°C to 40°C
	0°F to 100°F	0°F to 100°F & -20°C to 38°C	-20°C to 38°C
	0°F to 180°F	0°F to 180°F & -20°C to 80°C	-20°C to 80°C
	20°F to 220°F	20°F to 220°F & 0°C to 100°C	0°C to 100°C
	50°F to 250°F	50°F to 250°F & 10°C to 120°C	10°C to 120°C
	100°F to 350°F	100°F to 350°F & 40°C to 175°C	40°C to 175°C
	200°F to 450°F	200°F to 450°F & 100°C to 230°C	100°C to 230°C
Gas Ranges			
All Dial Sizes	0°F to 100°F	0°F to 100°F & -20°C to 38°C	-20°C to 40°C
	-40°F to 110°F	-40°F to 110°F & -40°C to 40°C	-40°C to 40°C
	-20°F to 120°F	-20°F to 120°F & -28°C to 48°C	-30°C to 50°C
	30°F to 150°F	30°F to 150°F & -1°C to 65°C	-1°C to 65°C
	0°F to 180°F	0°F to 180°F & -20°C to 80°C	-20°C to 80°C
	30°F to 240°F	30°F to 240°F & -1°C to 115°C	-1°C to 115°C
	40°F to 220°F	40°F to 220°F & 4°C to 100°C	0°C to 100°C
	80°F to 300°F	80°F to 300°F & 26°C to 148°C	0°C to 150°C
	100°F to 400°F*	100°F to 400°F* & 40°C to 204°C*	0°C to 200°C
	100°F to 500°F*	100°F to 500°F* & 40°C to 260°C*	0°C to 260°C
	0°F to 600°F*	0°F to 600°F* & -20°C to 315°C*	0°C to 300°C
	200°F to 1,000°F*	200°F to 1,000°F* & 100°C to 537°C*	0°C to 500°C

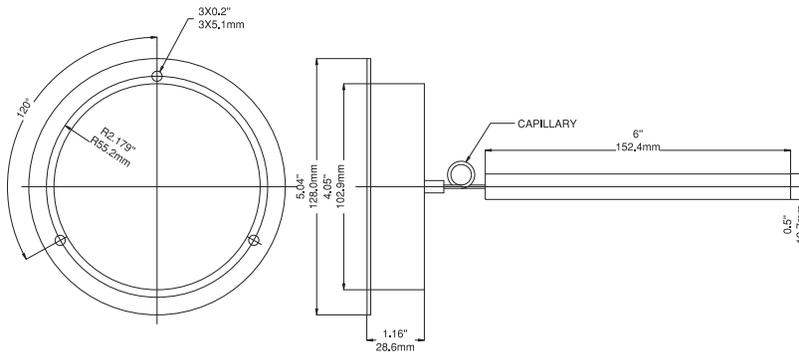
\*Ranges require stainless steel capillary and bulb

**Please contact us for:**

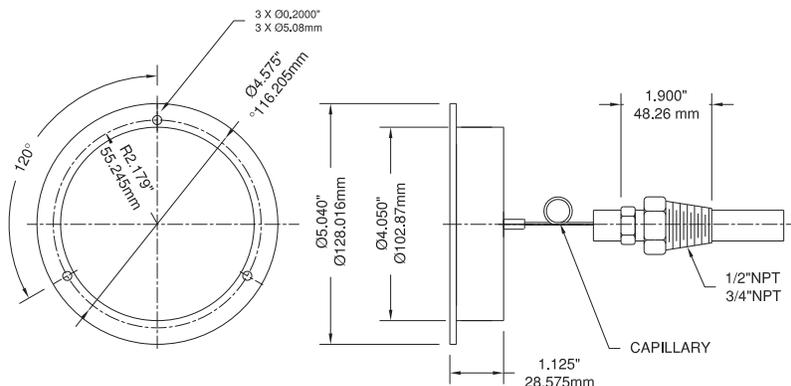
Duct flanges, sliding union, various bulb dimensions, averaging bulb (gas only), other ranges, stainless steel 4" (100mm) and 6" (150mm) cases and capillary available on gas remote/direct reading models

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

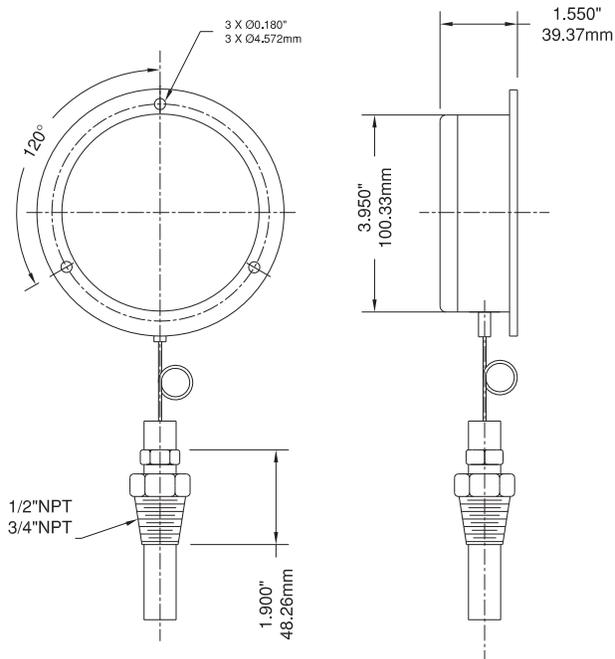
**4" Back Connection, Front Flange, Plain Bulb**



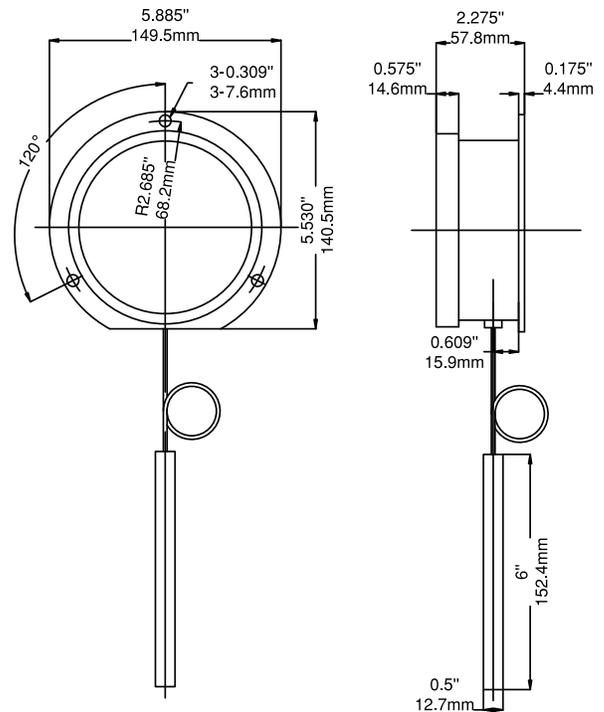
**4" Back Connection, Front Flange, Sliding Union**



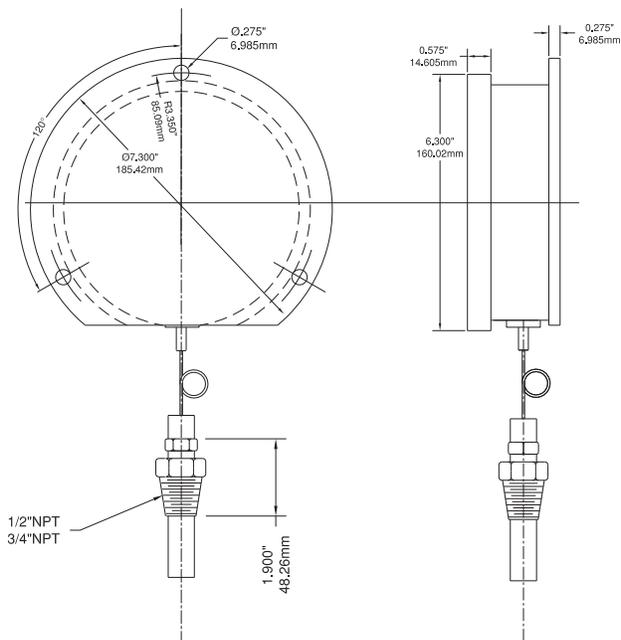
**4" Bottom Connection, Back Flange, Sliding Union**



**4.5" Bottom Connection, Back Flange, Plain Bulb**



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



**6" Bottom Connection, Back Flange, c/w Thermowell**

