

# QUALITROL® 104/TR6000

Remote mount thermometers



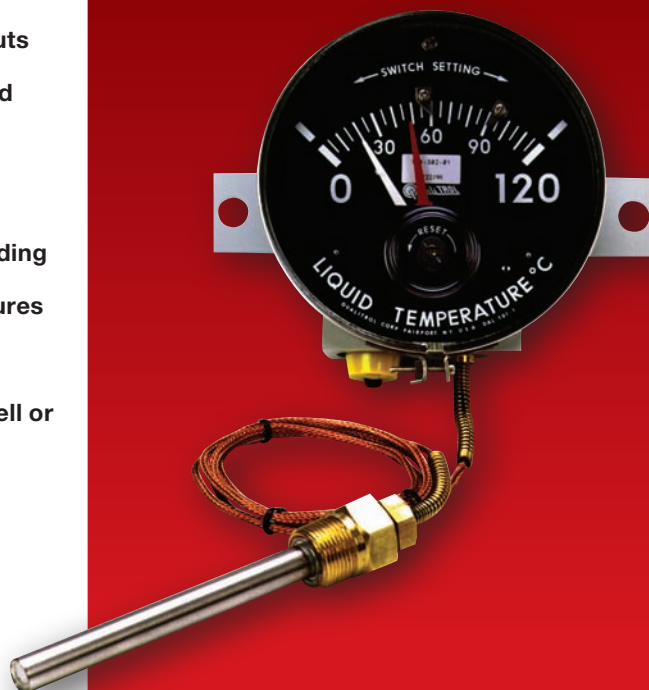
## Reliable liquid or simulated winding indication at eye level

- Rugged construction and corrosion resistant materials for life-long function
- Wide array of options to fit your exact application
- Advanced electronic communications for remote data monitoring

### Product Summary

**Description** Capillary based, remote indicating, mechanical thermometer. Features bourdon tube measurement with resettable maximum pointer and up to 4 switches for temperature related alarms and control signals. Electronic outputs also available for integration into SCADA and remote monitoring systems.

**Application** For oil (liquid) or simulated winding temperature indication with integrated features for control or alarm functions. Designed for use where the point of measurement (the well or pocket) is not easily viewed by personnel, requiring separate or remote indication.



**QUALITROL®**  
Defining Reliability

## QUALITROL® 104/TR6000 remote mount thermometers

### Reliable liquid or simulated winding indication at eye level

- Continuously improved design over 40 years of real world experience in substation environments
- North American industry standard, specified more often for liquid or simulated winding temperature measurement than any other thermometer
- 'Quick-test' feature enables test switch actuation by simply moving indicating pointer through switch settings, the no-stress spring-loaded clutch prevents damage to internal mechanisms
- Capillary system allows the remote indicator with a large 6 inch (150 mm) dial face to be viewed at eye level

### Rugged construction and corrosion resistant materials for life-long function

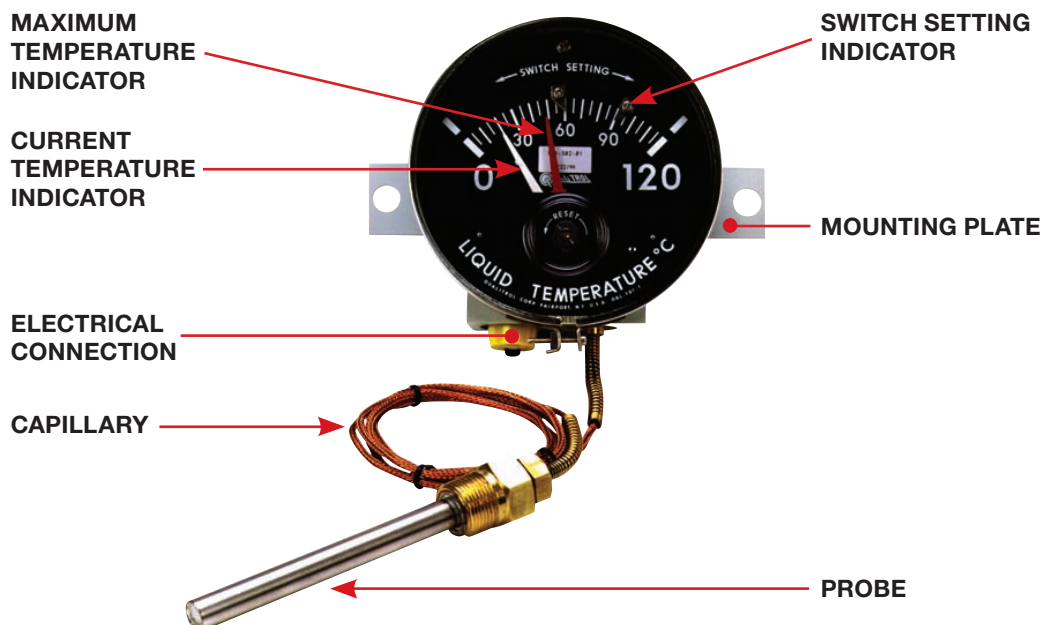
- Die-cast aluminum housing with thermosetting powder coat finish resists corrosion
- Molded neoprene channel gasket uniformly clamped in place, sealing against water entry around entire lens
- Stainless steel bezel ring and probe resist corrosion
- UV stabilized polycarbonate or glass lens options help prevent discoloration of dial face and lens for life-long readability

### Wide array of options to fit your exact application

- Wide variety of temperature ranges available for oil (liquid) or simulated winding temperature (winding temperature simulation requires heated well or QUALITROL thermal plate)
- Available with up to 4 user-adjustable switches featuring lockdown screws to reduce the effects of vibration and inhibit tampering
- Probe type and size, capillary length, protective armor and mounting styles can all be specified to meet your requirements
- Various electrical connection types, connector cable types, and SCADA outputs (0-1 mA or 4-20 mA) are available
- Models available for bearing temperature and dry-type transformer winding temperature applications

### Advanced electronic communications for remote data monitoring

- Optional SCADA analog outputs (0-1 mA and 4-20 mA) with integrated power supplies provide signals for remote monitoring and data acquisition



### Universal style

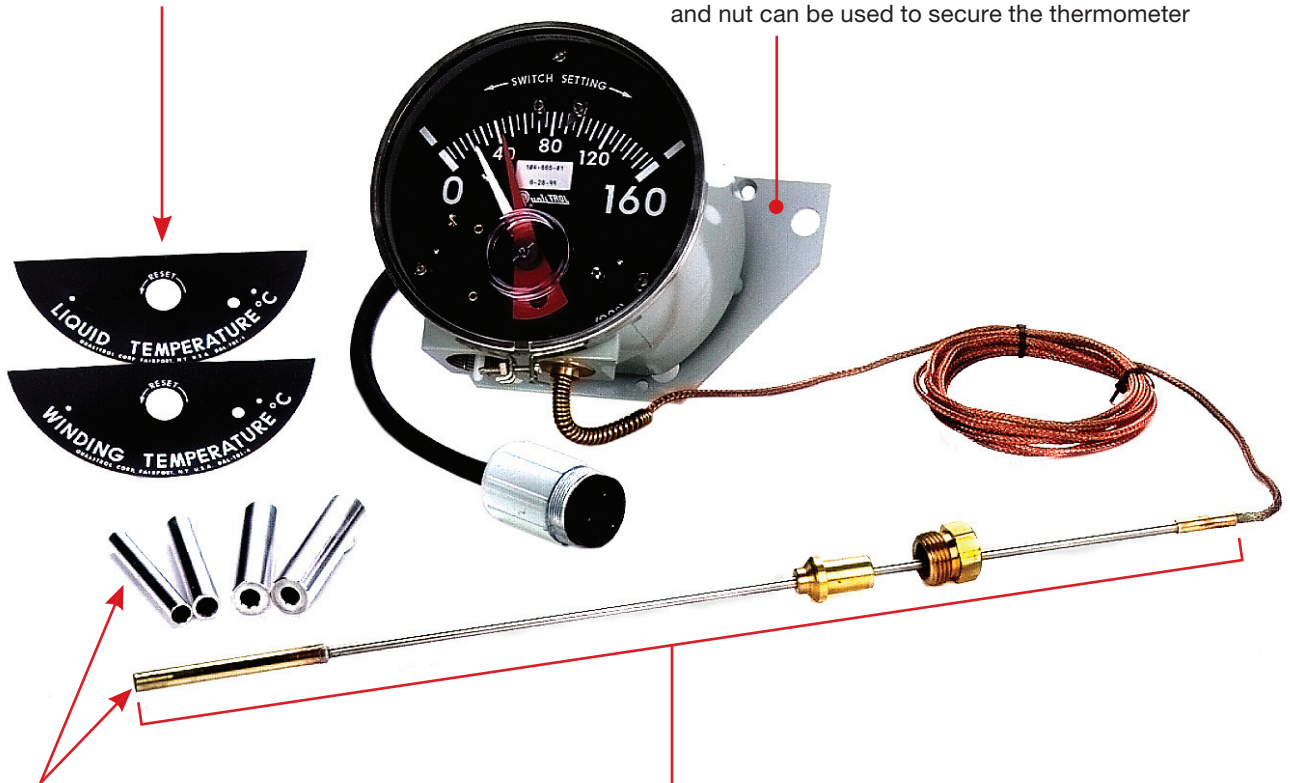
Universal thermometer for on-demand retrofit applications has a host of features to enhance its versatility to fit most situations.

#### UNIVERSAL DIAL

Models come with two dial assemblies indicating oil (liquid) or winding temperature for application as either type of measurement

#### UNIVERSAL MOUNT

Mounting plate for the indicating portion of the thermometer is designed so that any one of the 3 sets of holes or a threaded stud supplied with lock washer and nut can be used to secure the thermometer



#### UNIVERSAL PROBE DIAMETER

Compact 0.312" diameter probe can be adjusted to fit inside larger diameter wells by using one of the included adaptor sleeves for a snug, highly thermal conductive fit

#### UNIVERSAL PROBE LENGTH

Probe is design for use in any depth well from approximately 3" to 18" with a simple 4 step installation process:

1. Insert the probe into the existing well until it reaches the bottom
2. Slide the threaded nut and seal gland down the probe until seated in the well opening
3. Turn the nut until locked in place
4. Bend any remaining probe length outside the well to extend down the tank wall (Note: minimum bend radius of 1.5" must be maintained to minimize risk of collapsing the internal capillary tubing)



## QUALITROL® 104 models for special applications

### Euro style

European style thermometer with preferred mounting style and terminal box electrical connections



### SCADA style

Thermometers with SCADA analog output (0-1 mA and 4-20 mA) with integrated power supply provide signals for remote monitoring and data acquisition





# QUALITROL® 104/TR6000 remote mount thermometers

## TECHNICAL SPECIFICATIONS

<b>Mechanical</b>	Standard dial ranges	1-120, 0-160, 0-180, -20-180, 0-200, 0-220, and -20 to 160 (°C) (Custom dial ranges are available, please contact factory)
	Capillary protection	Standard double-braided copper armor, optional stainless steel, square-locked, flexible armor
<b>Dimensions</b>	Dial diameter	6" (152.4 mm)
<b>Materials</b>	Housing	Die-cast aluminum with thermosetting powder coat finish
	Bezel	Stainless steel
	External hardware	Stainless steel
	Lens	UV-stabilized polycarbonate
	Terminal box	Die-cast aluminum with thermosetting powder coat finish
<b>Environmental</b>	Ambient operating temperature	-40 to 140°F (-40 to +60°C)
	Storage temperature	-45 to 176°F (-50 to +80°C)
	Relative humidity	90% (non-condensing)
	Shock	10g in 3 orthogonal planes, 10 msec half-sine
	Vibration	50/60 Hz @ .004 inch displacement or whole multiples thereof
<b>Electrical</b>	Connection type	QUALITROL, ANSI, or Mil quick-disconnect; terminal box, permanently attached cable, or flying-leads
	Number of switches	Up to 4 user adjustable
	Standard switch type	Low-force, single-pole-double-throw (SPDT) changeover switch
	Optional switch types	Gold-plated contacts for low voltage
	Switch rating (AC)	10A and 1/3 HP @ 120-240 VAC
	Switch rating (DC)	0.50A at 125 VDC resistive
		0.25A at 250 VDC resistive
	Dielectric strength	1500 VAC, 50/60 Hz, Optional 2000 VAC, 50/60 Hz, Voltage applied all terminals to ground for 60 seconds



### Don't see what you need?

QUALITROL regularly creates models with special customer requirements. Contact your local sales representative or QUALITROL Application Engineer to review your special requirements.

