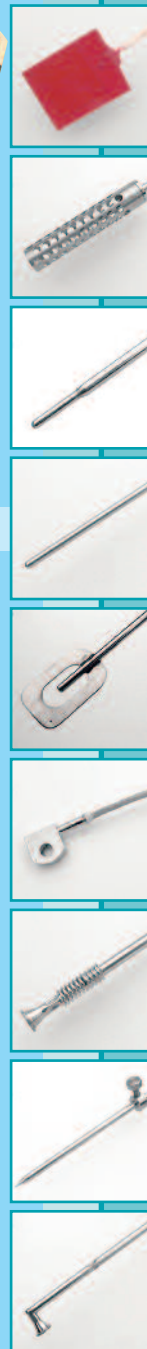


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HEAT-PROBER®

Hand-Held Thermometers



PALMER Wahl

INSTRUMENTATION GROUP

170 Years of Continued Innovation

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Rev D

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Why so many Heat-Prober® Meters?

Meters are the basic component of a Heat-Prober System. Probes, no matter how well designed and constructed, will not compensate if the wrong meter is chosen for the job. Wahl Heat-Probers are offered in three basic measurement types:

Platinum RTD

Platinum Resistance Temperature Detectors (RTD's) are recognized as the most reliable standard for measuring temperature information. Platinum provides long-term stability, response and repeatability for use as a primary standard. It has a wide useful temperature range and can be used in varying conditions, making it ideal for many applications.

Thermocouple

Thermocouple portable temperature sensors have the advantage over other types due to their fast response, wide temperature range, and ruggedness. The sensors are small in size, versatile and convenient to use. An added advantage of thermocouple use is derived from their wide-spread availability and meter/probe compatibility.

Thermistor

Thermistor sensors offer excellent accuracy and long-term stability, but over a relatively narrow temperature range. Thermistors are generally used to measure moderate temperatures in applications demanding greater accuracy than thermocouples, but less demanding than Platinum RTD Thermometer Systems.

Each type has advantages and characteristics described in the catalog sections to follow. Basically the differences center on accuracy, temperature range, type of display and price.



TM410 Type K Meter
with TP-100 Penetration Probe

Calibration Services Available

NEW! TM602 • TM612 • TM630 Pocket Thermometers

TM Series Pocket Thermometers

Measurement with Thermocouple, RTD or Thermocouple and RTD Rugged IP54 Construction for On Site Use

User friendly and robust, the **New Wahl TM Series Pocket Thermometers** are designed to simplify temperature transmitters and probes maintenance and commissioning. They feature **0.02% Accuracy** and measure in Thermocouples and/or RTD's. Resolution is programmable for better reading by user with up to 1mΩ or 1μV.

- **TM602 Thermocouple Thermometer**
- **TM612 RTD Thermometer**
- **TM630 Thermocouple and RTD Thermometer**
- Well adapted for different process job procedures due to their wide choice of ranges and specific functions such as data recording
- Very low temperature coefficient: 15ppm/°C in thermocouples, 10ppm/°C in resistance
- Optional DATACAL Calibration Management Software
- Accuracy is maintained even in harsh environmental conditions
- Measurement of 14 thermocouples and 12 RTD types
- Data Recording and On screen analysis
- High Accuracy: 0.02% of Reading
- Display in °C, °F, mV and Ohm

NEW!



For a complete specifications and probe selection please visit www.palmerwahl.com and click: Hand Held Instruments > RTD Meters and Probes or Thermocouple Meters & Probes



What is a Heat-Prober®?

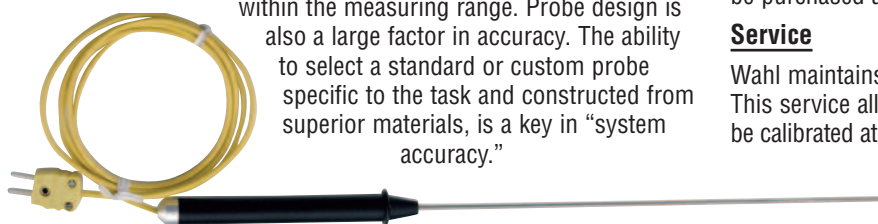
Wahl pocket-sized digital Heat-Probers are complete, high performance portable temperature measurement systems. Wahl originated the systems approach to provide engineers, technicians and research scientists the high confidence required for "routinely critical" temperature measurement.

A Heat-Prober "system" consists of a meter and a sensing probe. The Heat-Prober meter serves (by means of a microprocessor) to accurately interpret the temperature sensed by the probe, provide digital output and allow measurement options such as peak reading hold or maximum/minimum memory. The meter also contains the power (battery) to allow complete system portability.

Heat-Prober probes are designed to be interchangeable. This allows a meter/probe system to be formed with any number of probes for specific applications used interchangeably with the meter. More probes for additional applications or replacement probes may be purchased, or an additional or replacement meter can be utilized without replacing existing probes.

Accuracy

Because of the Heat-Prober meter's microprocessor, the probe's sensor can be linearized to yield maximum accuracy at all points within the measuring range. Probe design is also a large factor in accuracy. The ability to select a standard or custom probe specific to the task and constructed from superior materials, is a key in "system accuracy."



Type K Thermocouple Probe

Calibration Services Available

Portability and Ruggedness

A Heat-Prober's battery power and rugged compact design make them the perfect choice for service and maintenance technicians who must use their temperature measurement equipment on the move and in a variety of tough environments. Kits with user-selected probes are available for many of the meters. Heat-Probers store away in small spaces without special requirements.

Versatility

Wahl offers Heat-Prober meters utilizing platinum RTD, Thermocouple and Thermistor technology. Many meters offer range, display and kit options. All meters have a full set of interchangeable probes carefully designed and built to perform specific measurement tasks. This approach allows Heat-Prober users maximum versatility in specifying, purchasing, utilizing and maintaining a temperature measuring system suited to their needs.

Cost Effectiveness

Buy meters and interchangeable probes specifically for your applications and needs. Replacement and additional probes can be purchased as required.

Service

Wahl maintains a complete calibration lab with NIST traceability. This service allows your Heat-Prober meters, probes or systems to be calibrated at standard or user-specified points. Wahl also offers repair service for meters and probes.

392A High Performance Platinum RTD Thermometer System

Exceptional Accuracy and Long-Term Stability in a Versatile Meter System with Interchangeable Probes

- **392AHPF Meter** Range: -290° to 1450°F
- **392AHPC Meter** Range: -180° to 788°C
- **392AHPD Dual Scale Meter** Range: -290° to 1450°F (-180° to 788°C)
- Meter Accuracy $\pm 0.1^\circ\text{F}/^\circ\text{C}$ at 32°F (0°C)
- System Accuracy $\pm 0.25\%$ of reading (392AHP Meter & 202HP Immersion Probe)
- Complete tracing of the platinum standard DIN 43760 to 0.1°F conformity over the entire temperature range
- Readings updated 2.5 times per second
- Bright 0.33" high-visibility LED display
- Maxi-Temp® holds peak temperature reading
- Tough, drop tested meter assembly
- Interchangeable, 4-wire snap-in connection HP Series probes
- Automatic compensation for probe calibration of temperature at ice point and alpha
- Noise suppression circuit
- NIST traceable conforming to ITS-90

Wahl invented the portable Platinum-RTD Thermometer (Pat. No. 4,050,309) to provide exceptional accuracy and conformity in laboratory and industrial applications. The 392AHP Meter/Probe System represents the ultimate in Heat-Prober System Performance.

Thousands of 392AHP Heat-Probers are used by various industries, making critical temperature measurements as well as calibrating sensors and other instruments.

Use the 392AHP system to calibrate installed sensors, to make quality assurance tests and to make highly accurate process temperature measurements. An internal feedback loop maintains system calibration during use. And you can order additional HP probes at any time without calibration.

The 392AHP features a special noise rejection program for use near high EMF machines.

See pages 6-7 for complete meter specifications, options, accessories, and money saving kits.

See pages 8-9 for Platinum RTD Probe listings.



The performance of our meters is warranted for three years against defects in parts and workmanship.

APPLICATIONS

- Petrochemical
- Food
- Photographic
- Aerospace
- Electronics
- Nuclear Power



392HPC Meter



392HP Probe Connector

5-POINT NIST TRACEABLE RTD CALIBRATORS

Assures System Reliability Before Every Measurement

CAL392HP-HT High Temperature Calibrator for 392HP only, NIST Certificate optional.

Calibration Points: -58°F, 32°F, 212°F, 284°F, 752°F
-50°C, 0°C, 100°C, 140°C, 400°C

CAL392HP-LT Low Temperature Calibrator for 392HP only
Ice Point to Boil

Calibration Points: 32°F, 68°F, 104°F, 140°F, 212°F
0°C, 20°C, 40°C, 60°C, 100°C

10786-NIST Certificate of NIST Traceability with Test Data.

To request *Custom Calibrators* with special calibration points, please contact Customer Service.



Application Example with 392AMF Meter and optional 5-point Calibrator, CAL392-HT

Calibration Services Available

392A Series Platinum RTD Thermometer Systems

392 Precision Systems Offer Wide Temperature Range and Meter Options



392AEXC Meter

Model 392AM features a bright .33" high red LED display for normal to low lighting conditions. It operates on a rechargeable NiCad battery pack. Includes battery recharger and AC line adapter.

Model 392AMX features a 0.4" high red LCD for normal to bright lighting conditions and operates on a rechargeable NiCad battery pack. Includes battery recharger and AC line adapter.

Model 392AVX features a .4" high red LCD for normal to bright lighting conditions and is powered by a 9-volt alkaline battery for 8 hours continuous use making it an excellent choice for field tests.

Use **F, C, or D** Model No. suffix to designate Fahrenheit, Celsius, or Dual Range °F/°C Switchable.

See pages 6-7 for complete meter specifications, options, accessories, and money saving kits.

See pages 8-9 for Platinum RTD Probe listings.

- **392AMF Meter** Range -60° to 752°F
- **392AMC Meter** Range -51.1° to 400°C
- **392AMD Dual Scale Meter** Range -60° to 752°F (-51.1° to 400°C)
- Meter options for display type and power source
- Meter accuracy of $\pm 0.1^\circ\text{F}/\text{C}$ ± 1 digit at 32°F (0°C)
- System accuracy $\pm 0.5\%$ of reading (392A Meter & 202 Immersion Probe)
- Large LED or LCD display for indoor or outdoor readings
- Interchangeable Platinum RTD probes
- Peak Hold and Auto-Ranging display features.
- Interchangeable probes compensated for calibration at ice point
- NIST traceable conforming to ITS-90

A precision, microprocessor driven meter is the heart of a complete, portable and rugged Heat-Prober temperature measurement system. Using 392A Meters, engineers in maintenance, quality assurance, energy conservation and process control can now have laboratory accuracy anywhere in the plant, laboratory, or field.

The 392A system gives you outstanding accuracy with a choice of interchangeable probes for measuring surfaces, liquids, semi-solids and gases. Interchangeable 3-wire, snap-in connection Platinum-RTD probes are shown on pages 8 and 9. In addition, 392A Meter/Probe Systems are ideal for use as an in-house calibration standard for less accurate thermometers and to calibrate installed thermowells.

For complete portability and ease of use, Wahl Heat-Prober Meters are battery powered. The 392A Series are supplied with rechargeable batteries that allow 8 hours continuous operation. The supplied recharger allows these meters to be used as a continuously operating bench unit. For field backup, a spare rechargeable battery pack (page 6) may be purchased.

5-POINT NIST TRACEABLE RTD CALIBRATORS



Platinum RTD Meter 392AMF shown with 5-point calibrator CAL392-HT

All 392A Series Meters assure laboratory accuracy in the field when used in conjunction with the NIST traceable Calibrator CAL392.

Assures System Reliability Before Every Measurement

CAL392-HT High Temperature Calibrator

Calibration Points:

-58°F, 32°F, 212°F, 284°F, 752°F
-50°C, 0°C, 100°C, 140°C, 400°C

CAL392-LT Low Temperature Calibrator

Calibration Points:

32°F, 68°F, 104°F, 140°F, 212°F
0°C, 20°C, 40°C, 60°C, 100°C

NIST Certificate optional



Calibration Services Available

(800)668.3979 www.bestobell.com

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RTD Meter Specifications

See our New TM612 RTD Thermometer, and
TM630 Thermocouple and RTD Thermometer featured on page 3.

392A SERIES RTD METER SPECIFICATIONS

Model	392AHP	392AM 392AMX	392AM-S 392AMX-S	392AVX
Range	-290° to 1450°F -180° to 788°C	-60° to 752°F -51° to 400°C		-60° to 752°F -51° to 400°C
Digital Display	Bright 0.33" LED	392AM Bright 0.33" high LED	Discontinued	Red, 0.4" high LCD
		392AMX Red, 0.4" high LCD		
Resolution	0.1° below 375°F (190°C). Auto Ranges to 1° above 375°F (190°C).			
Meter Accuracy at 77°F	±0.1°F/C ±1 digit at 32°F (0°C)			
System Accuracy (Meter with 202 immersion probe)	±0.1°F ±1 digit at ice point, ±0.25% reading thereafter	±0.3°F at ice point, ±0.5% reading thereafter		
Repeatability	±0.2°F			
Peak Hold	Microcomputer calculated, switch to "P" to activate			
Ambient Operating Range	0° to 130°F (-18° to +55°C)			
Temperature Coefficient	0.01 deg/deg over ambient range			
FM (Factory Mutual) Approved*	Discontinued	Discontinued	Discontinued	Not Available
Power	11681-1 6.25 V NiCad Battery	11681-1 6.25 V NiCad Battery	11681-2 Discontinued	9V Alkaline battery (NEDA 1604A)
Battery Life	6 hours. per charge	392AM 8 hours per charge	Discontinued	8 hours. per charge
		392AMX/392 10 hours per charge		
Low Battery Indicator	Yes			
Noise Rejection	Greater than 40 dB at 60 Hz increasing at 20 dB per decade. Spurious noise attenuated by internal 16 Hz filter. 392AHP includes special noise rejection program for use in presence of rampant EMF such as spark ignition engines.			
Size	3" W x 6" L x 1.5" D (7.5 cm x 15 cm x 3.75cm)			
Weight	12 oz. (340 grams)	12 oz. (340 grams)		7 oz. (198 grams)
All 392A Models Available in °F, °C, or Dual Scale, add "F", "C" or "D" to Model Number.				

392 SERIES METER ACCESSORIES

DA-4	Silicone Paste	MA-150	Battery Recharger, 120V AC 50/60Hz
DA-6	Belt-Clip Meter Case with Hand Strap	MA-150E	Battery Recharger, 220V AC 50/60Hz, European
DA-10	Nylon Safety Wrist Strap	11681-1	Spare NiCad Battery Pack
12423-06	Shock-Proof Attache-Style Instrument Case	11681-2	Discontinued
		12232	Standard 9V Alkaline Battery
METER OPTIONS			
392NIST	Certificate with 3 Standard Calibration Points between 32°F (0°C) & 500°F (250°C) Meter calibration includes one probe.	392NIST-1	Certificate with 3 User-specified Calibration Points between -40°F (-40°C) & 600°F (315°C) Meter calibration includes one probe.



RTD Meter/Probe Kits

Compact, ready-to-use Heat-Prober Kits provide everything you need for precise temperature measurements anytime, anywhere.



As of April 2010, all pre-configured Meter Kits have been Discontinued. You can now customize your kit and receive a FREE Carrying Case when you buy any meter and 2 related items!

Meter Options

- | | |
|------------------|---|
| 392NIST | Certificate of NIST traceability with test data at 3 standard calibration points between 32°F (0°C) and 500°F (250°C). Meter calibration includes one probe. |
| 392NIST-1 | Certificate of NIST traceability with test data at 3 user-specified calibration points between -40°F (-40°C) and 600°F (315°C). Meter calibration includes one probe. Extra points available. |

Heat-Prober High Performance Kit K392HP-1 and K392HP-2

Choose the high performance kit to:

- Calibrate installed sensors
- Calibrate portable instruments
- Measure temperatures with accuracy to $\pm 0.25\%$ of reading

K392HP-1 includes:

Discontinued

- 392HP** Thermometer,
Specify **F** (°F), **C** (°C), or **D** (°F/°C Dual Scale)
202HP Sensitive Immersion Probe
CAL392HP-HT Calibrator
DA-60 Shock-proof attache-style Instrument Case
MA150 Battery Charger, specify 120V AC or 220V AC

K392HP-2 includes:

Discontinued

- 392HP** Thermometer,
Specify **F** (°F), **C** (°C), or **D** (°F/°C Dual Scale)
145HP Surface Probe
202HP Sensitive Immersion Probe
CAL392HP-HT Calibrator
DA-4 Silicone Paste
DA-60 Shock-proof attache-style Instrument Case
MA150 Battery Charger, specify 120V AC or 220V AC

Heat-Prober Precision RTD Kit K392VX **Discontinued**

Choose the versatile high accuracy kit to:

- Measure most surfaces, liquids and gases with excellent repeatability
- Calibrate installed sensors
- Full line of interchangeable probes available without meter recalibration

K392VX includes:

Discontinued

- 392VX** Thermometer,
Specify **F** (°F), **C** (°C), or **D** (°F/°C Dual Scale)
145 Spring Articulated Surface Probe
202 High Sensitivity Immersion Probe
CAL392-HT Calibrator
DA-4 Silicone Paste
DA-60 Shock-proof attache-style Instrument Case. You may substitute Heat-Prober Thermometer **392M**, **392MX**, **392M-S**, or **392MX-S**. Specify 120V AC or 220 V AC for recharger.

You may also add or substitute any Wahl Platinum-RTD probe listed on pages 8 and 9. Contact Customer Service for prices and for additional portable Platinum RTD probes. Remember that additional probes purchased with a kit are priced at 15% off.

Custom Probes for Your Applications

Contact Wahl for custom-made probes to your specifications, or let us help you design the right probe for your application.

Calibration Services Available

(800)668.3979 www.bestobell.com

170 Years of Continued Innovation

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RTD Meters 392A Series Platinum RTD Probes

392A Series Platinum RTD Probes

Platinum resistance temperature detectors (RTD's) are recognized worldwide by metrology laboratories as the most reliable standard for measuring and comparing temperature information. Platinum provides long-term stability and repeatability for use as a primary standard. It has a wide useful temperature range which makes it ideal for laboratory and industrial applications.

Our accurate, stable platinum sensors are housed in thin wall stainless steel shanks with low mass tips that don't compete with the measured object. That's why Wahl probes have fast response, and provide an accuracy of $\pm 0.2^\circ\text{F}$ at ice point, $\pm 0.5\%$ of reading thereafter.

Every probe is engineered to do a specific job in measuring surfaces, liquids, semi-solids or gasses. Each probe has a high quality, heat-resistant Delrin® handle, a coiled 5-foot cord and a snap-in connector that mates it solidly to our thermometer (exceptions noted in descriptions below).

Every probe is calibrated at two or three temperature points on NIST traceable secondary standards and tagged "Wahl Test Certified" with calibration data. You can order a NIST certificate with test data for meters and probes. See page 6.

For 392AHP Probes, simply add "HP" after Model Number

112 Fine-Tip Penetration Probe for foods and other soft substances. .084" diameter, 1" long tip at the end of a 2-3/4" overall length shank. 450°F temperature limit with 3 second response⁽²⁾.

114 Heavy-Duty Piercing Probe for plastic melts, rubber, asphalt, frozen foods, or other semi-solids. Adjustable penetration depth limiter. 900°F temperature limit with 3.7 second response⁽²⁾. 4-1/2" shank length is 1/8" diameter with penetration tip.

121 Spring Articulated Straight Surface Probe for molds, dies, platens, electronics, machine housings and all other surfaces. Spring tip allows conformity and maximum contact to measured surface. 900°F temperature limit; 2-second response⁽¹⁾. 4-1/4" shank, .25" diameter, straight tip design. Also with -12" and -18" shank lengths.

123U Right Angle Fast Surface Probe sealed sensor design with low profile 90° bend tip for reaching into die and mold cavities, electronic chassis, or other restricted areas. 900°F temperature limit, 3-second response⁽¹⁾. 4" shank, .250" diameter tip

124 Rigid Shank Fast Surface Probe. Sealed sensor design for rugged applications. 4" shank length, straight tip. 900°F temperature limit with 3 second response⁽¹⁾.

145 45° Spring Articulated Surface Probe, for molds, dies, platens, electronics, and all other surfaces. Spring tip allows conformity and maximum contact. 4" shank and 45° tip angle.

155 Bolt-on Surface Probe for permanent installation. Used to monitor engine or reactor surface temperatures. Copper sheathed sensor with .218" diameter bolt hole. 10' stainless steel covered cable and connector. 930°F; 2 second response⁽²⁾. No handle.

172 Self-Adhesive Surface Probe Polymer-encased sensor in a 1.25" x 1", pressure-sensitive adhesive patch. 10' Teflon coated cable (no handle). Used for monitoring environmental tests, curing cycles, and oven processing. 350°F temperature limit with 1 second response⁽²⁾.

201 General Purpose Immersion Probe for liquids, foods, candy, granular materials, and semi-solids. 5.75" long X .125" diameter shank. For measurements to 600°F with 1.7 second response⁽²⁾.

202 Sensitive Immersion Probe with low mass .084" diameter. 5" long shank. Super fast response time of 1.4 seconds⁽²⁾ for use in all liquids and semi-solids. Temperature limit of 900°F.

Response time legend (to 63%): ⁽¹⁾ Measured on flat surface at 400°F; ⁽²⁾ Measured in boiling water; ⁽³⁾ Measured in air at 10 fps

Custom Probes for Your Applications

Contact Wahl for custom-made probes to your specifications, or let us help you design the right probe for your application.



Look for the "Wahl Tested Certified" calibration tag on every probe.



121 Spring Tip Surface Probe



123U Right Angle Surface Probe

205 Heavy-duty Immersion Probe

205SH Heavy-Duty Shielded Immersion Probe

204CT Paddle Probe

305 Miniature Air/Gas Probe

112 Fine-Tip Penetration Probe

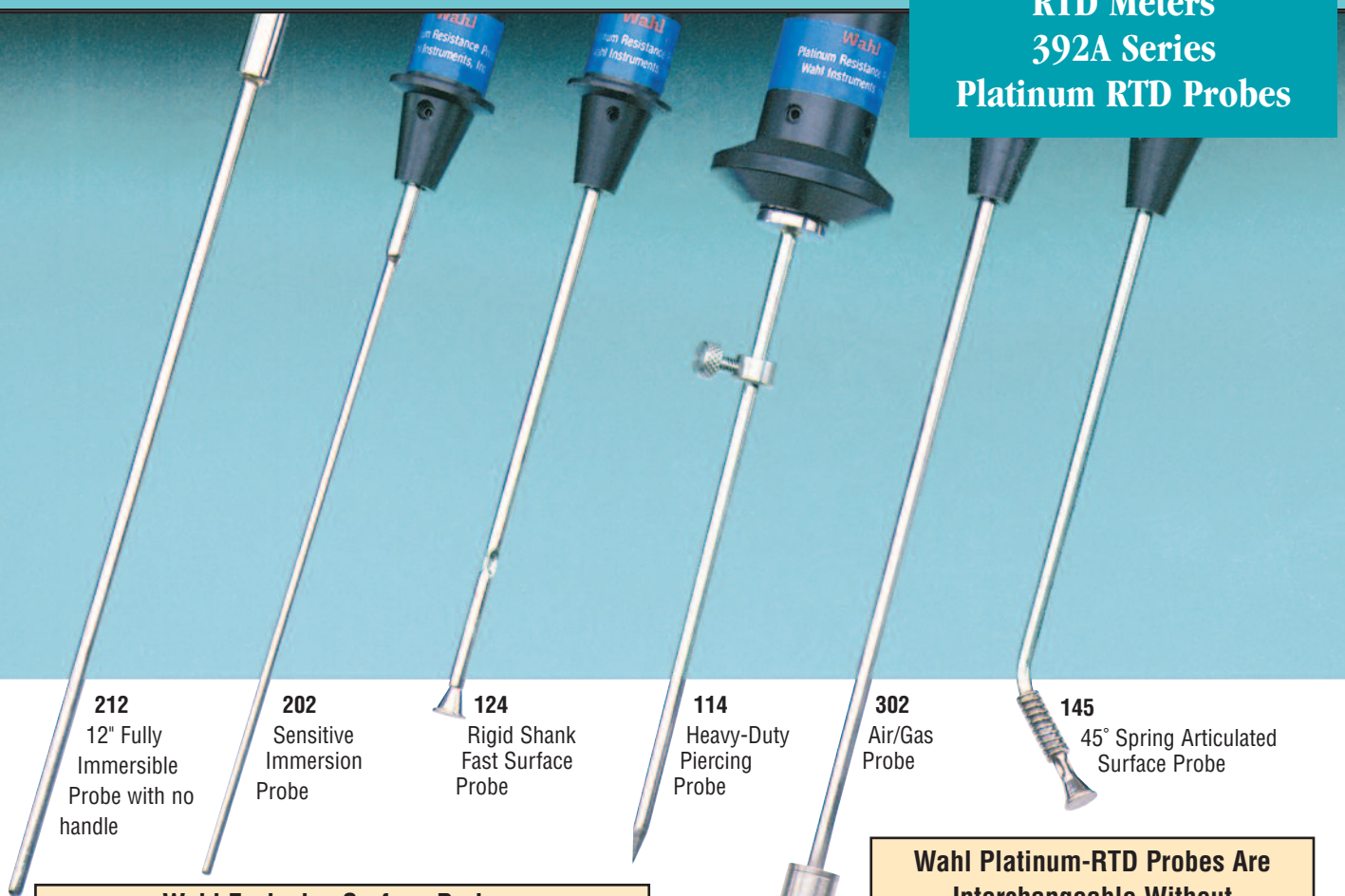
172 Self-Adhesive Surface Probe

155 Bolt-on Surface Probe



Probe listing continued on page 9

RTD Meters 392A Series Platinum RTD Probes



212
12" Fully
Immersible
Probe with no
handle

202
Sensitive
Immersion
Probe

124
Rigid Shank
Fast Surface
Probe

114
Heavy-Duty
Piercing
Probe

302
Air/Gas
Probe

145
45° Spring Articulated
Surface Probe

Wahl Exclusive Surface Probes

For surface probes where it is necessary to bring the greatest amount of surface heat in direct contact with the sensor, a unique design developed for the U.S. Space Program is employed. The coil is bonded to a platinum base plate of low thermal resistance which contacts the measured surface. The platinum base, in turn, is bonded directly to a thin stainless steel, bell-shaped housing of low mass. Heat loss is impeded by high thermal resistance elements: stainless steel housing, shank and coil spring.



The coil spring in Wahl **121** and **145** surface probes provides automatic articulation of the tip for conformity and uniform contact with the surface being measured. This is especially useful in blind recesses where contact measurements are made by "feel" instead of sight.

Wahl Platinum-RTD Probes Are Interchangeable Without Recalibration

Only Wahl offers an interchangeable probe system that assures consistent accuracy and $\pm 0.2^\circ\text{F}$ repeatability without meter recalibration. Our most popular probes are shown on these pages. Contact Wahl for more of our precision Platinum-RTD probes.

Custom Probes for Your Applications

Contact Wahl for custom-made probes to your specifications, or let us help you design the right probe for your application.

For 392AHP Probes, simply add "HP" after Model Number

- 203 Teflon-Coated Immersion Probe** for use where corrosive solutions and possible metallic contamination are a concern. 5" shank, .084" diameter 450°F limit, 2 second response⁽²⁾.
- 204 12" Long-Reach Immersion Probe** with 12" shank (.125" diameter.) for baths, vats, kettles and other deep vessels. 900°F limit with 2 second response⁽²⁾.
- 204CT Paddle Probe** for crystallization and fluid temperatures while agitating liquids. 3/4" wide paddle tip; .125" diameter shank is 10" long to the paddle tip. 900°F limit with 2 second response⁽²⁾.
- 205 Heavy-Duty Immersion Probe** for solder baths, liquids, granular materials, and gas. 8" shank. Also with -12", -18", and -24" shank lengths. All have .125" diameter tip. 900°F limit; 3 second response⁽²⁾. Consult factory for Teflon coating option.
- 205SH Heavy-Duty Shielded Immersion Probe.** Shield protects the tip from the shock of hitting vat or container walls. 24" length shank has .125" diameter. with 3/8" diameter. shield. Temperature limit of 900°F; 7.25 second response⁽²⁾.

- 212 Fully Immersible Probe** with no handle for plating baths, dipping solutions, brewing vats, storage vats, tanks, rivers and streams. Temperature limit of 450°F; 2 second response⁽²⁾. 0.125" diameter. by 12" length shank with 10' Teflon cable with connector.
- 302 Air/Gas Probe** with perforated sensor shield to induce good velocity and prevent radiation errors, used in industrial application such as ovens, stacks and ducts. 600°F temperature limit, 6 second response⁽³⁾. 6-5/8" shank, 3/8" diameter. 2" long shield.
- 305 Miniature Air/Gas Probe** highly sensitive, low mass sensor is shielded by thin, small diameter (.120") perforated steel tube for fast response HVAC applications. 450°F limit, 4 second response⁽³⁾.

Response time legend (to 63%):

⁽¹⁾ Measured on flat surface at 400°F

⁽²⁾ Measured in boiling water;

⁽³⁾ Measured in air at 10 fps



Calibration Services Available

(800)668.3979 www.bestobell.com

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170 Years of Continued Innovation

Thermocouple Meters 2500/1370 Series

2500/1370 Series Type K Thermocouple Meters

- **2500 Meter** Range -100° to 2500°F
- **1370 Meter** Range -70° to 1370°C
- Meter options for °F or °C range, display type and power
- Meter accuracy is $\pm 0.2\%$ of reading ± 1 digit
- Maxi-Temp® automatically holds peak reading
- Accepts all type K probes with ANSI mini-connectors
- Microprocessor circuitry for thermocouple linearization

Heat-Prober® Thermocouple Thermometers and Probes are rugged and reliable instruments made for process and maintenance temperature measurements.

The pocket-sized microprocessor-based Heat-Prober Type K thermometer updates readings three times per second with an accuracy of $\pm 0.2\%$ of reading ± 1 digit in 1°F or °C resolution. The precision cold junction is compensated with a unique, permanently calibrated circuit.

The Wahl Maxi-Temp peak hold switch, available on all models, permits the Heat-Prober to hold and display the highest temperature reached. This function is ideal where the operator must concentrate on the probe when making the measurement and where an instantaneous transient peak is to be recorded. Maxi-Temp meters also can be switched to normal operation.

Advanced electronics are housed in ABS plastic, thoroughly tested for environmental integrity and subjected to 4-foot drop tests, battery life and running life tests. All units are calibrated with simulated EMF inputs and powered during a high-temperature burn-in cycle.

Model 2500M (-100° to 2500°F) features a bright .33" high red LED display for normal to low lighting conditions. It operates on a rechargeable 6.25V NiCad battery pack. Includes battery recharger/AC line adapter.

Model 1370M as above with -70° to 1370°C range.

Model TCMR-K °F/°C switchable.

Model 2500MX (-100° to 2500°F) features a .5" high red LCD display for normal to bright lighting conditions. It operates on a rechargeable 6.25V NiCad battery pack. Includes battery recharger/AC line adapter.

Model 1370MX as above with -70° to 1370°C range.

Model TCMR-KX °F/°C switchable.

Model 2500MVX (-100° to 2500°F) features a .5" high red LCD display for normal to bright lighting conditions and is powered by an easily replaceable single standard 9V battery.

Model 1370MVX as above with -70° to 1370°C range.

Model TCMR-KVX °F/°C switchable.

See Meter specifications on page 12.

See page 12-13 for 2500/1370 Series meter, probe, and accessory money-saving kits.

See pages 14-17 for interchangeable thermocouple probes.



2500MX Type K Thermocouple Heat-Prober

NIST TRACEABLE THERMOCOUPLE CALIBRATORS



TA-70AFK Precision Calibrator in use with 2500MX Thermocouple Meter

This thermocouple meter accessory allows calibration over the meter's full range.

Useful for quick field diagnostics, it assures meter accuracy whenever a measurement is in question.

Accuracy is $\pm 0.3^\circ\text{F}/^\circ\text{C}$ or 0.2% of reading, whichever is greater.

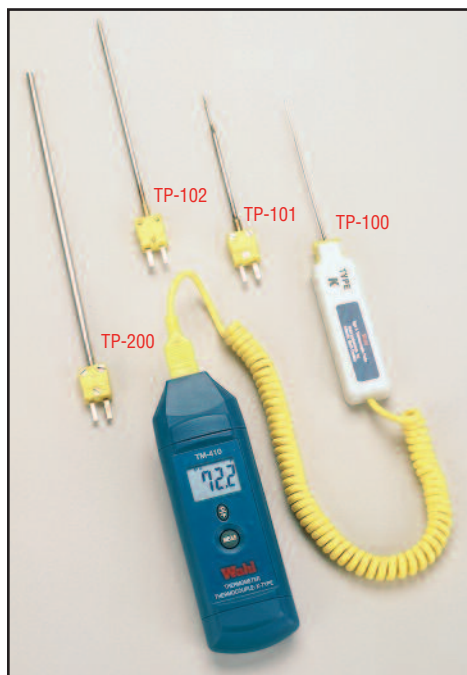
User sends the *calibrator only* back to the factory for NIST Certification.

One Calibrator maintains NIST traceability for all in-house meters.

NIST Certification is optional with Calibrator

THERMOCOUPLE CALIBRATOR MODELS		
Model	Type	Calibration Points
TA30AFK	K	Discontinued
TA50AFK	K	100°F - 155°F - 200°F - 250°F - 300°F
TA70AFK	K	130°F - 650°F - 1300°F - 1900°F
TA70ACK	K	70°C - 400°C - 800°C - 1200°C
TA70AFT	T	Discontinued

TM410 Thermocouple Food Service Thermometer



TM410 with TCL329K Extension Handle allows use of interchangeable probes with one handle and cord set. See page 15 for probe descriptions.

The Wahl **TM410 Type K Thermocouple Digital Heat Prober® Thermometer** is economical and compact. It provides the highest accuracy at the lowest price of any Thermocouple Instrument on the market today.

- Accuracy of $\pm 1.0^\circ\text{F}$ ($\pm 0.5^\circ\text{C}$) in an operating range of 32° to 200°F (0° to 93°C)
- Meets and exceeds FDA Requirements (Food Code requires $\pm 2^\circ\text{F}$)
- Optional probes plug into the top of TM410 for easy single-handed use
- Optional TCL329K Extension Handle for extended reach
- Built in pocket/belt clip on back of unit
- Reduced dirt-harboring crevices for easy cleaning
- $^\circ\text{F}$ and $^\circ\text{C}$ Switchable

Wahl TP Probes (shown left with TM410, described on page 15) are specially manufactured with food service in mind to give fast and accurate results. They can be inserted into the TM410 for single handed operation and are durable enough to withstand the rigors of a busy kitchen. Probes can be safely passed through the dishwasher for ease of cleaning. Accuracy is maintained regardless of which probe is attached, assuring greater certainty of safe food temperature, and tighter control over the quality of the finished product.



TM410 shown in use with NIST Certified TA50AFK Calibrator, page 10.

TM500 Thermocouple Meter

The Wahl **TM500** Heat Prober Meter offers value with exceptional features. The TM500 has advanced microprocessor functions, dual display and dual probe capability for more advanced testing in critical process and laboratory applications.

- **TM500 Type J** Range of -328°F to 1922°F (-200°C to 1050°C).
- **TM500 Type K** Range of -328°F to 2498°F (-200°C to 1370°C).
- Large LCD and Dual probe input accepts one or two Type J or Type K Thermocouple probe(s) with standard ANSI mini-connectors.
- Selectable temperature scale, Fahrenheit or Celsius readings.
- Main LCD displays the temperature reading from either selected probe or the temperature difference between the two.
- Third LCD displays time or timing duration (hours, minutes, seconds) of MAX/MIN or AVERAGE temperature events.
- "Recording" mode allows data storage for MAX, MIN, and AVERAGE temperatures reached over a time period.
- "Set" mode allows entry of reference and alarm points.
- Supplied with water and shock resistant rubber boot, built-in easel stand, 9V battery, and two Type K test probes.

See Specifications for both Meters above on page 12.

See page 13 for Thermocouple Meter, probe, and accessory money-saving kits.

See pages 14-17 for interchangeable thermocouple probes.



TM500 shown with TC869 45° Spring Articulated Surface Probe

TM500 CALIBRATOR	
Type K Range	-328° to 2498°F and -200° to 1370°C
Type J Range	-328° to 1922°F and -200° to 1050°C
Resolution	0.1° , $^\circ\text{F}$ or $^\circ\text{C}$
Meter Accuracy	$\pm 0.05\%$ reading $\pm 0.6^\circ\text{F}$ (0.3°C) @ $-58^\circ/2498^\circ\text{F}$ (-50° to 1370°C) $\pm 0.05\%$ reading $\pm 1.4^\circ\text{F}$ (0.7°C) @ $-58^\circ/328^\circ\text{F}$ (-50° to 200°C)
Power	One standard 9V, NEDA 1604 or equiv.
Display	5 Digit LCD
Meter Size	7-5/8" x 3-5/8" x 2-1/8" (190 x 92 x 54mm)

Calibration Services Available

(800)668.3979 www.bestobell.com

170 Years of Continued Innovation

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INSTRUMENTATION GROUP

Thermocouple Meter Specifications

See our New TM602 Thermocouple Thermometer and TM630 Thermocouple and RTD Thermometer featured on page 3

Thermocouple Meter Specifications								
Model	2500M	2500MX	2500MVX	1370M	1370MX	1370MVX	TM410	TM500
Range	-100°/2500°F			-70°/1370°C			-40°/1999°F -40°/1092°C	-328°/2498°F -200°/1370°C
Digital Display	LED	LCD	LCD	LED	LCD	LCD	LCD	Dual LCD
F/C Switch	Optional			Optional			Yes	Yes
Resolution	1°			1°			1.0° or 0.1°	0.1°
Meter Accuracy	±0.2% ±1 digit			±0.2% ±1 digit			±1.0°F @ 32°/200°F (±0.5°C @ 0°/93°C)	±0.05% reading ±0.6°F (0.3°C) @ -58°/2498°F (-50°/1370°C)
							0.3% reading, ±2°F @ -40°/32°F (-40°/0°C)	±0.05% reading ±1.4°F (0.7°C) @ -58°/-328°F (-50°/-200°C)
							0.3% reading, ±2°F @ 200°/1999°F ±0.4°C @ 93°/1092°C	
Thermocouple Type	K			K			K	J, K
Peak Hold	Yes			Yes			No	Yes
Ambient Operating Range	-20°/120°F -29°/49°C		0°/120°F -18°/49°C	-20°/120°F -29°/49°C		0°/120°F -18°/49°C	32°/122°F 0°/50°C	32°/122°F 0°/50°C
Power	6.25V NiCad Recharge Pk		9V	6.25V NiCad Recharge Pk		9V	Three 1.5V AAA	9V
AC Power	Yes		No	Yes		No	No	No
Battery Life	8 hours	50 hours	50 hours	8 hours	50 hours	50 hours	140 hours	100 hours
Low Battery Ind	Yes			Yes			Yes	Yes
Recharger Included	7.5V @ 100 mA 110 or 220 V AC		N/A	7.5V @ 100 mA 110 or 220 V AC		N/A	N/A	N/A
Size	6" x 3" x 1"			6" x 3" x 1"			6" x 2" x 3/4"	7.5" x 4" x 2"
Weight	10.5 oz. (298 grams)			10.5 oz. (298 grams)			3.6 oz. (102 grams)	15.5 oz. (439 grams)

THERMOCOUPLE METER ACCESSORIES	
DA-4	Silicone Paste
DA-6	Belt-Clip Meter Case with Hand Strap
DA-10	Nylon Safety Wrist Strap
MA-150	Battery Recharger, 110V AC 50/60Hz
MA-150E	Battery Recharger, 220V AC 50/60Hz, European connector
TA-60	Shock-Proof attache-style Instrument Case
11681-1	Spare NiCad Battery Pack
12232	Standard 9V Alkaline Battery
12234-02	3V, Lithium, coin Cell Battery for TA30 and TA50
12235	7.5V, Alkaline, Multi-Cell Battery for TA50 and TA70
METER OPTIONS	
NIST-12	Certificate with 3 Standard Calibration Points between 32°F (0°C) & 500°F (250°C). Meter calibration includes one probe.
NIST-12-1	Certificate with 3 User-specified Calibration Points between -40°F (-40°C) & 600°F (315°C). Meter calibration includes one probe.



Sample Meter Kit sold on pages 7 and 13. Kit includes Meter, Carrying Case, Calibrator, Wrist Strap, Recharger and Probe.

Type K Meter/Probe Kits

As of April 2010, all pre-configured Meter Kits have been Discontinued. You can now customize your kit and receive a FREE Carrying Case when you buy any meter and 2 related items!

K2500VX °F Extension Handle Kit: **Discontinued**

For your toughest factory applications.

- **2500MVX** Type K thermometer
- **TC829-12** 12" Extension Handle
- **RTC822** Z-Tip Fast Response Surface Probe
- **RTC828** Replaceable Immersion Probe
- **TA70AF** Calibrator
- **DA-4** Silicone Paste
- **TA-60** Shock proof attache-style Instrument Case

For °C meter, specify **K1370VX**

For °F/°C switchable meter, specify **KTCMR-KVX**

K2501VX °F Extension Handle Kit: **Discontinued**

For surface measurements.

- **2500MVX** Type K thermometer;
- **TC829-12** 12" Extension Handle;
- **RTC822** Z-tip Fast Response Surface Probe
- **TA-60** Shock proof attache-style Instrument Case

For °C meter, specify **K1371VX**

For °F/°C switchable meter, specify **KTCMR-KVX**

K2502VX °F Meter/Probe Kit: **Discontinued**

For general purpose use.

- **2500MVX** Type K thermometer
- **TC809 H** Heavy-Duty Surface Probe, 45° tip
- **TC801** Immersion Probe
- **TA70AF** Calibrator
- **DA-4** Silicone Paste
- **TA-60** Shock proof attache-style Instrument Case

For °C meter, specify **K1372VX**

For °F/°C switchable meter, specify **KTCMR-KVX**

Custom Probes for Your Applications

Contact Wahl for custom-made probes to your specifications, or let us help you design the right probe for your application.



Heat-Prober Kits can be custom-ordered to include meters, probes, extension handle systems and accessories for your temperature measurement needs.

Kit prices are 15% less than total prices of component models purchased individually. **PLUS** Save 15% on any additional probes purchased with kits.

You may substitute Heat-Prober Thermometers 2500M and 2500MX in any kit. Specify 120V AC or 220V AC for recharger.



Custom TM410 Food Service Kit shown with optional accessories: TA50AFK Calibrator, TCL329K Extension Handle, Type K Probes, Temp-Plate® Temperature Labels and cleansing wipes (not included).

TM410 Probe Kit:

Customize Your TM410 - Food Service Kit to ensure your HACCP program maintains the most stringent standards, at the lowest cost.

Purchase a TM410 Prober and choose the optional accessories that best suit your needs:

TA50AFK - NIST Certified Calibrator

TCL329K - Extension Handle

12423 - Hard Foam Lined Carrying Case

Type K Probes (See pg 14 & 15 for part number and description, Economy TP Probes are best suited for Food Service programs)

Temp-Plate® Temperature Labels

#414-160F-071C (box of 20)(recommended for testing internal water temperature of dishwashers)

**Save 15% when
purchased as a Kit!**

Calibration Services Available

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Thermocouple Meters Type K Probes

Type K Thermocouple Probes

Probes for High Performance

The quality of temperature measurement depends principally on the probe design as it relates to the object being measured. That's why each of Wahl's interchangeable thermocouple Type K probes is scientifically engineered to do a specific job.

Wahl thermocouple probes are designed for the fastest response possible depending upon use. Each starts with the thermocouple junction, precision welded for virtually instant response. Then a stainless steel sheath is created with a thin wall for fast measurements or a thicker wall for heavy duty applications. Surface probe tips are Wahl-engineered to provide optimum contact with the least thermal load.

Portable probes have (except as noted) rugged Delrin® handles, ANSI mini-connectors and 5-foot flexible compensated cables.

These probes are compatible and interchangeable for use with Wahl Heat-Prober Meters **2500/1370** series (page 10), **TM410**, and **TM500** (page 11).

Calibration Traceable to NIST

All thermocouple probes are individually calibrated at two temperature points to the same NIST-traceable secondary standards and tagged with calibration data. Probes are calibrated with your purchased meter or with a factory maintained standard, so you get guaranteed precise temperature measurements in the harshest environments.



Look for the "Wahl Tested Certified" calibration tag on every probe.

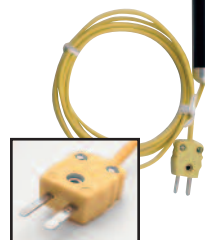


Thin wall 300 series stainless steel sheath results in fast probe response.

Rugged Delrin® handle withstands high temperatures.

Flexible compensated cable takes abuse.

Type K ANSI mini-connector plugs solidly into thermocouple meters.



TC801 Immersion Probe S.S. sheath with grounded junction and 1/8" diameter, 10" shank for fluids, corrosive mixtures, solder baths and viscous materials to 1600°F. 6 sec. response⁽²⁾. For 24" shank, order **TC801-24**.

TC803 Electronics Tip Probe for electronic and biological applications. Low mass, 0.032" diameter fine-point sensing tip measures pc boards and small components with minimal disturbance. Limit of 900°F, 5 sec response⁽¹⁾.

TC805 Air/Gas Probe with perforated radiation shield over bare head thermocouple junction for fast response and good accuracy in high temperature radiation backgrounds. 8" shank, to 1200°F, 45 sec. response in circulation oven. Available as **TC805-24** with 24" shank.

TC809 Heavy-Duty Surface Probe System. Low mass provides accurate and fast response for surface temperature measurement of ingots, furnaces, kilns, molds and platens to 1200°F limit with 3

second response⁽¹⁾. Utilizes snap-in, (replaceable and Surface Probe interchangeable) probe tips with miniature Z-tip, spring-loaded thermocouples protected by ceramic housing. Braided stainless steel 4' extension cable, extra heavy duty handle with 5" shank (optional 12" shank). Order with desired tip below.

TC809H Heavy Duty Surface Probe, 45° tip; **TC809H-12** for 12" shank.

TC809R Heavy Duty Surface Probe, 90° tip; **TC809R-12** for 12" shank.

TC809S Heavy Duty Surface Probe, straight tip; **TC809S-12** 12" shank.

TC809 Tips Only: **TC821H** 45° tip; **TC821R** 90° tip; **TC821S** straight tip.

Response time legend (to 99% of 212°F): ⁽¹⁾ clean hot plate surface, ⁽²⁾ immersion in boiling water ⁽³⁾ immersion in liquid solder bath

Custom Probes for Your Applications

Contact Wahl for custom-made probes to your specifications, or let us help you design the right probe for your application.



TC813
Bolt-on
Surface
Probe

TC801
Immersion
Probe

TC803
Electronics
Surface
Probe

TC805
Air/Gas
Probe

TC869
45° Spring
Articulated
Surface Probe

TC809H
Heavy Duty Surface Probe
System with 45° tip

Replaceable Heavy Duty
Surface Probe Tips only:
TC821R 90° Tip
TC821S Straight Tip
TC821H 45° Tip

*Probe listing
continued
on page 15*

Type K Thermocouple Probes

TC812K Magnetic Surface Probe with 3 lb. pull magnet attaches easily to ferrous surfaces. Measurements to 450°F, 30 sec response⁽¹⁾, 4-ft over-braid cable (no handle). Spring loaded follower holds thermocouple junction firmly against surface.

TC813 Bolt-On Surface Probe for continuous monitoring, withstands hazardous environments to 1600°F. Rigid 5/8" diameter, 1/8" thick S.S. washer, high-temperature 4 ft. overbraid cable (no handle). 20 sec. response⁽¹⁾

TC814 Hypodermic Probe for minimal disruption when inserted into semi-solids up to 1000°F. 2-1/2" long stainless steel shank is 0.05" diameter. Sharpened tip yields extremely fast readings (0.5 second⁽²⁾ response).

TC817 Heavy-Duty Piercing Probe for plastic melts, rubber, asphalt, frozen foods, or other semi-solids. Adjustable penetration depth limiter. 1000°F temperature limit with 4 second response⁽²⁾. 4-1/2" shank is 3/16" diameter with penetration tip which tapers to 0.1".

TC861 Pencil-Type Electronic Tip Probe with 7/16" hardened shank, 0.032" diameter. For electronic component testing up to 600°F. Response of 2 seconds⁽¹⁾.

Response time legend (to 99% of 212°F): ⁽¹⁾ clean hot plate surface, ⁽²⁾ immersion in boiling water ⁽³⁾ immersion in liquid solder bath

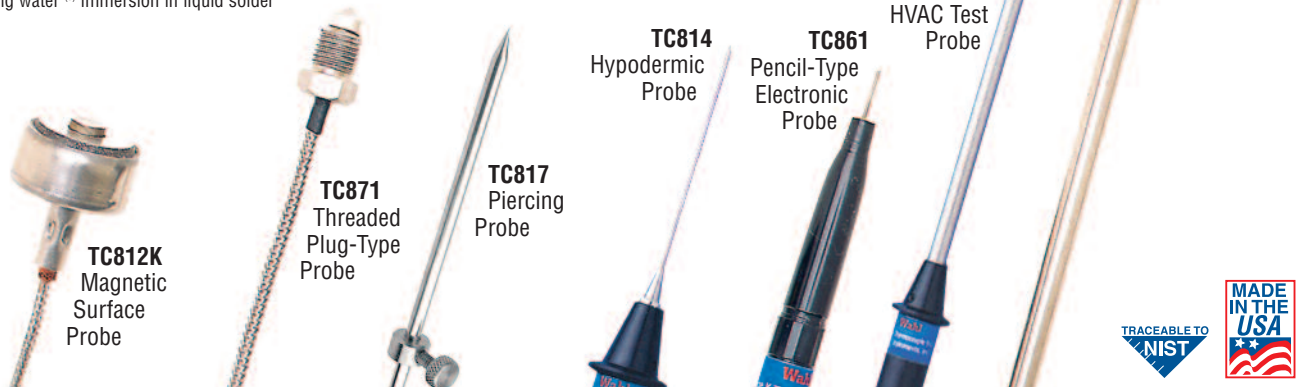
TC867 Soldering Iron Tester Probe unique patented TC Sensor. Instant checking of iron for critical operations. Probe contains solder at junction tip. Soldering iron melts solder to establish true temperature as required by MIL specifications.

TC869 45° Spring Articulated Surface Probe provides certain surface contact for platens, hot plates, molds, etc. to 1000°F. 1/8" diameter x 8" shank., 250" tip diameter. 4 sec. response⁽¹⁾

TC871 Threaded Plug-Type Probe for shell cavities and machinery walls to 850°F, 6 sec response⁽¹⁾. 188° cone with backup, 7/16" hex nut threaded 3/8" - 24NF, 4 ft over-braided cable (no handle).

TC873 Right Angle Surface Probe with long reach 6" handle, flexible bands for rolls, curved surfaces, platens, molds. Ceramic/metal head to 482°F limit, 2 sec response⁽¹⁾, 90° head, 1/2" high, 1/2" tip diameter. Fits in 2-1/2" clearance.

RB873 Spare bands for **TC873**, pkg/2.



ECONOMY TYPE K AND J THERMOCOUPLE PROBES

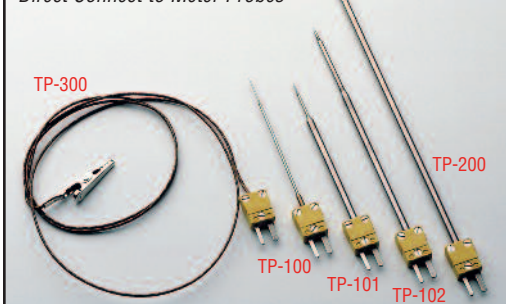
Economy Type K Thermocouple Probes

For routine maintenance and testing applications. **TCL329K** Extension Handle allows use of interchangeable, "direct to meter" probes with one handle and cord set. This economical and compact Type K probe system is usable with any Wahl Thermocouple Meter, but works especially well with **TM-410**, page 11.

Model No.	Description
TP-100	Needle-Tip Penetration Probe , 4" shank, direct connect to meter
TP-101	Fine-Tip Penetration Probe , 4" shank, direct connect to meter
TP-102	Sharp-Tip Penetration Probe , 6" shank, direct connect to meter
TP-200	General-Purpose Immersion Probe , 8" shank, direct connect to meter
TP-300	Alligator Clip-on Oven/Air Probe , 4' length, high temperature insulated connector cable
TCL301J/K*	General Purpose Probe with Delrin handle, 8" shank with .125" diameter
TCL309J/K*	Handle and Probe Set . TCL329K handle sold with TCL383K immersion probe
TCL329J/K*	Handy Extension Handle for use with direct connect probes. 4" Handle accepts all ANSI mini-connector type J or K probes. 5' coiled lead connects to meter.
TCL363J/K*	Unmounted 3' Bare Thermocouple , exposed junction
TCL383J/K*	Immersion Probe , 8" shank with .125" diameter, direct connect to meter

* Specify J or K at end of Model Number. For additional Type J Thermocouple Sensors Probes, consult Customer Service for specifications, availability, and pricing.

Direct Connect to Meter Probes



TCL329 Extension Handle

Calibration Services Available

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137 Years of Continuity

Thermocouple Meter Probe Systems and Extension Handle

Type K Thermocouple Probe Systems and Extension Handle

TC829 Extension Handles are designed for rugged, long-reach applications. The **TC829** Handle/Probe System is compatible with any Wahl Thermocouple Heat-Prober Meter. Screw on any of the replaceable **RTC Series** probes and go to work with confidence. The **TC829** has an articulated head and a three-foot stainless steel armored cable with reinforced ANSI mini-connector. The chrome-plated handle is contoured to assure a solid grip. Order by length.



TC829 Systems have a fully articulated head for adjustment to any measurement angle required.

RTC822 Z-Tip Fast Response Surface Probe for molds, platens, dies, bearings, glass or any other clean surface to 1000°F 3 sec. response⁽¹⁾. 1/2" diameter tip x 1" length.

RTC822L Heavy Duty Z-Tip Fast Response Surface Probe has an upper temperature limit of 1500°F, 5 sec. response⁽¹⁾. 1/2" diameter tip x 2 1/4" length.

RTC823 Spring-Loaded Z-Tip Surface Probe has patented protective collar. Mechanical stop provides 0.020" clearance for ceramic tip to increase life of probe. Upper temperature limit: 1000°F. 3 sec. response⁽¹⁾. 1-1/8" length.

RB824 Spare Band package of 2

RTC825 Heavy-Duty Curved Surface Band Probe for large diameter rolls or other curved surfaces. Surface speed limit 600ft/min. Place flexible band in static or sliding contact with surface. Heavy-duty band, 1/4" x 5", supported by flexible spring plate. Also recommended for pipe surfaces. Limit to 600°F, 12 sec. response⁽¹⁾.

RTC826 Penetration Probe penetrates semi-fluid materials like plastic, rubber and wax to 1200°F. 4 sec. response⁽²⁾.

RTC827 Ingot Probe gives fast measurement of hot, soft aluminum, or brass ingots. Upper temp. limit: 1800°F. 1 sec. response⁽¹⁾.

RTC827A Heavy Duty Ingot Probe gouges through surface crusts of copper and aluminum ingots. Close-coupled to minimize resistance errors. Upper temp. limit: 1800°F. 3 sec. response⁽¹⁾.

RTC828 Immersion Probe for liquids including corrosive fluids to 1800°F. 12" stainless steel shank. 6 sec. response⁽²⁾ For 24" shank, specify **RTC828-24**.

RTC842 Roll Surface Probe for moving surfaces up to 600ft/min. such as heating rolls, moving strip steel, rubber or paper. Head can be rotated 90°. Upper temperature limit: to 450°F. 5 sec. response⁽¹⁾.

RTC877 Moving Surface Probe with Teflon bars for moving surfaces or rotating rollers to 2600ft/min. Reduced friction keeps temperature rise to less than 1°F on smooth surface. Upper temp. limit: 450°F. 5 sec. response⁽¹⁾.

RTC877 for 24" diameter rolls and flat surfaces

RTC877-1 Discontinued (for 6" to 24" diameter rolls)

RTC877-2 Discontinued (for 4" to 6" diameter rolls)

RB877 Spare Band (1)

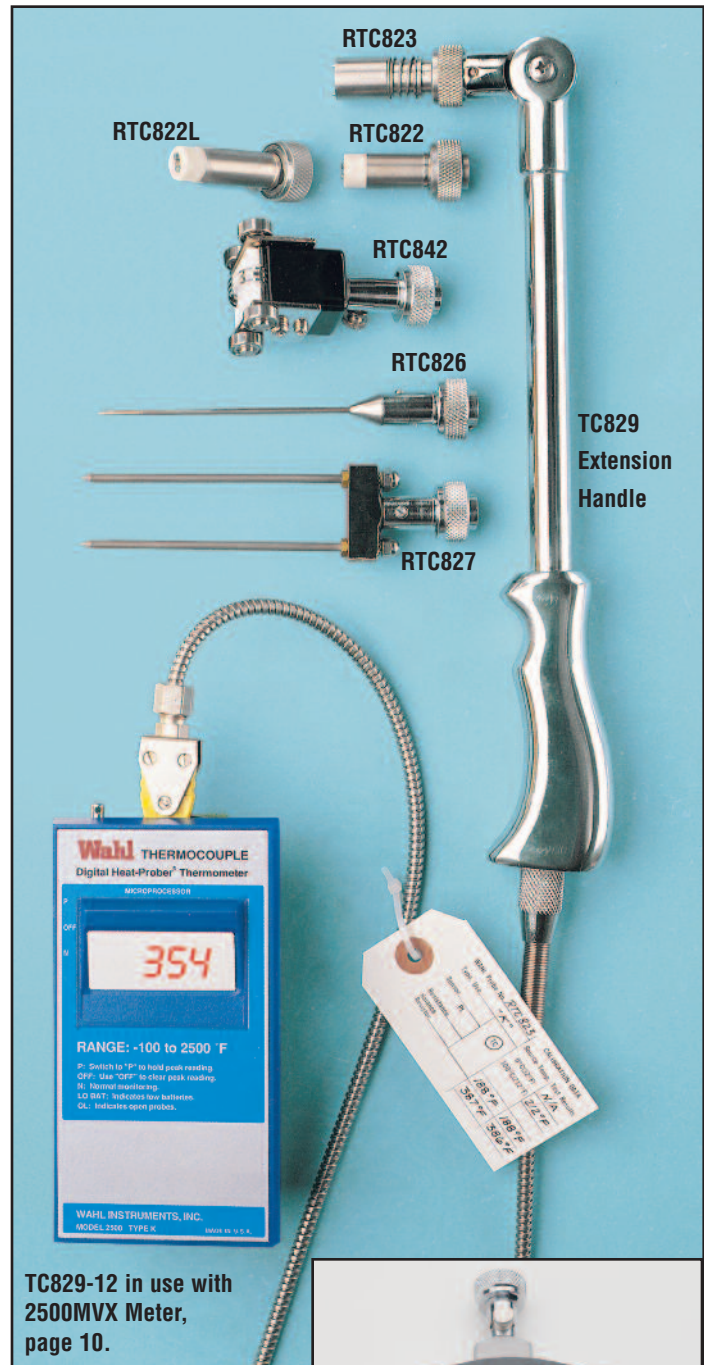
Response time legend (to 99% of 212°F): ⁽¹⁾ clean hot plate surface ⁽²⁾ immersion in boiling water



RTC827A Heavy Duty Ingot Probe



Part No.	Length
TC829-12	12"
TC829-24	24"
TC829-36	36"
TC829-48	48"



TC829-12 in use with 2500MVX Meter, page 10.

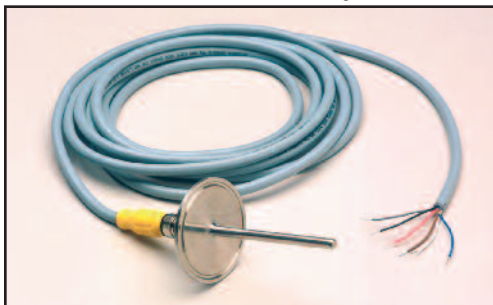
RTC825 Heavy-Duty Curved Surface Band Probe



Calibration Services Available

Thermocouple Meters New Probes Custom Probes

New! RTD Sanitary Probe



SPD Sanitary Probe Shown with Cable #12071-02

- Single 4 wire or Dual 3 wire RTD Sensors
- "No Tool Required" IP-68 rated connector
- 316 Stainless Steel construction
- Vibration resistant
- Flange available in 1.5", 2.0", 2.5", and 3.0".

Insert Flange Code: **1.5**, **2.0**, **2.5**, or **3.0** in place of **XX** (in table, above)

- Standard Stem Lengths in 2.5", 3.5", 4.5" and 6.0" (Other lengths available)

Insert Stem Length Code: **2.5**, **3.5**, **4.5**, or **6.0** in place of **YY** (in table, above)

- Optional Cables (order separately): **12071-01** - 4 conductor cable, SPS Series (Both cables are 4 meters in length) **12071-02** - 6 conductor cable, SPD Series

SANITARY PROBES

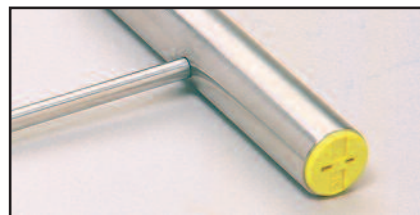
Single Sensor	Dual Sensor
SPSXXYY	SPDXXYY

New! T-Handle Piercing Probe



- 304 Stainless Steel Shank
- Equipped with "Mini-T/C Female" connector
- 8" Shank length
- Single or Dual Sensor Type K Thermocouple Probe
- Wide range of applications such as Canning, Meat Processing

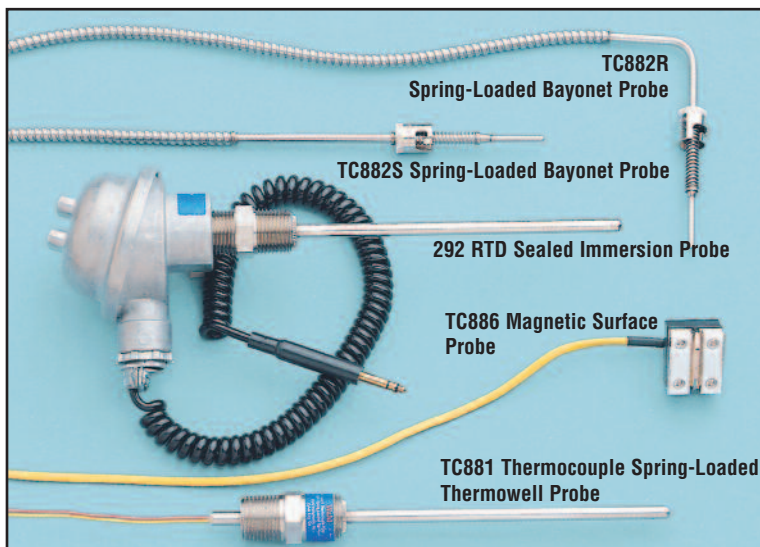
PTK T-Handle Piercing Probe shown at left with Model DST200C Digi Stem Thermometer, and CA1KMM06 Cable (ordered separately).



Close up of T-Handle Piercing Probe showing thermocouple connection on side of handle.

T-HANDLE PIERCING PROBES

Single	Dual
PTKS-8	PTKD-8



TC881 Spring-Loaded Thermowell Probe Provides contact in thermowell to reduce time lag. Available as Type K - TC and 100-ohm RTD. Stainless steel 6" shank .250" diameter. **TC881-9** 9" shank **TC881-12** 12" shank.

TC882 Spring-Loaded Type K TC Bayonet Probe Right-angle and straight. Quick disconnect. 3' armored cable. 1/2" shank x .125" diameter. **TC882R** - Right Angle, **TC882S** - Straight, **TC882R-1**, **TC882S-1** - 1" Shank.

TC886 Magnetic Surface TC Probe Fast response 2-lb. pull magnet attaches to ferrous surface. Sensitive, flexible sensor positioned between Teflon bars. 4' cord with connector. Sensor 1" wide x 1-3/8".

292RTD Sealed Immersion Probe For installation in thermowells. Connector head, 5' coil cable and plug to fit Heat-Prober. .250" diameter shank. Available as 100-ohm RTD and Type K thermocouple.

Wahl Will Custom-Engineer and Build Probes To Your Requirements.

If you have a unique requirement for temperature probes, Wahl will custom-engineer and build them for you. We have produced more than 2000 custom designs.

It's simple: FAX a sketch of dimensional requirements, environmental conditions, temperature limits, output (TC or RTD) and quantity. We will promptly return an engineered design and price quotation.

In addition to the thermocouple and platinum-RTD probes shown throughout, Wahl offers off-the-shelf probes for immersion in liquids and semi-fluids, insertion, penetration, air and gas calibration, surface measurements, and other applications.



Calibration Services Available

(800)668.3979 www.bestobell.com

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Dipstick Thermometer Systems

Dipstick Thermometer Systems

Measure Molten Metals Quickly, Safely, and Accurately

- **TC840 Type S** Range 3200°F / 1770°C
- **TC850 Type K** Range 2500°F / 1370°C
- Measure ferrous and nonferrous molten metals
- User-selected lance lengths and expendable or reusable tips
- Bright, large displays make readings easy to see
- Maxi-Temp circuit holds peak temperature
- Resolution 1°F/°C; system accuracy $\pm 0.3\%$ or reading

Wahl's family of Heat-Prober Dipstick high-temperature monitors combine high accuracy, fast-response, comfort, and convenience in rugged, reliable systems. Special Wahl "dip tip" Type K and S thermocouples are designed to measure molten metals and other high temperature processes.

All systems feature the Maxi-Temp circuit that holds and displays peak temperature reading, even if the expendable tips burn open. System accuracy at molten metal temperatures with a Wahl meter and probe is typically $\pm 9^\circ\text{F}$ with a Type S thermocouple and $\pm 11^\circ$ with a Type K. Dipstick can be configured with any 2500/1370 Series Meter.



Type S Dipstick Thermometer Systems Ferrous Metal Systems to 3200°F / 1770°C

Use in molten iron and steel alloys with or without slag for measuring melts in ladles and melt-pots. Stable readings are obtained in 6-8 seconds. Dipstick comes with one expendable tip. Spare tips are sold separately.

- **TC840-1F or C** - 48" length dipstick with 45° angle bend (12" from tip), meter with RTC832 expendable tip.
- **TC840-2F or C** - 60" length dipstick with 45° angle bend (12" from tip), meter and RTC832 expendable tip.
- **TC840-3F or C** - 60" straight dipstick meter with RTC832 expendable tip.
- **RTC832** Expendable Type S 1-3/4" quartz covered (exposed) tip for shallow dips, box of 100.
- **RTC832S** Expendable Type S 1-3/4" quartz covered (exposed) tip with 12" cardboard sleeve for deeper dips, slag, box 50.
- **RTC832SCL** Expendable Type S 1-3/4" quartz covered (exposed) tip with 12" ceramic impregnated sleeve for better protection, box 50.

For molten gold applications use the TC840 Meter with the RTC832 Tip.

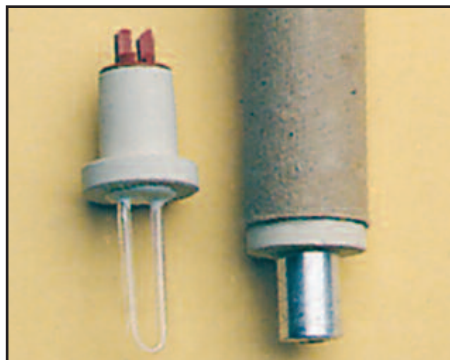
*Expendable Type S tips
RTC832 and RTC832S*

Type K Dipstick Thermometer Systems Nonferrous Metal Systems to 2500°F / 1370°C

Rugged reusable chrome-tip with Type K thermocouple measures nonferrous metals such as brass, bronze and aluminum, and enclosures such as furnaces, stacks, and ovens. It can be used for hundreds of dips, depending on composition of process materials.

- **TC850-1F or C** - 55" length dipstick with right angle bend, meter, chrome/iron tip 1/2" diameter x 8" long.
- **TC850-2F or C** - 72" length dipstick with right angle bend, meter, chrome/iron tip 1/2" diameter x 8" long.
- **10693-2** Replacement 8" chrome/iron tip.
- **10694-2** Replacement 15" chrome/iron tip.

*TC850 Type K Dipstick for
nonferrous metals*



700 Series Thermistor and Probes

High accuracy Digital Thermometer is microprocessor based and accepts interchangeable probes.

- **700MC Meter** Range -1.00° to 60.99°C
- **700MF Meter** Range 30.20° to 141.78°F
- Resolution .01°C/°F
- Accuracy $\pm 0.03^{\circ}\text{C}$ ($\pm 0.06^{\circ}\text{F}$)
- Large 0.33" LED display
- Rechargeable Battery Pack Powered

Apply the latest technological advances to laboratory and field work with Wahl's exceptionally sensitive and stable Model **700M** Thermistor Heat-Prober. With a resolution of 0.01°C/°F and matching sensitivity, the **700M** features $\pm 0.03^{\circ}\text{C}$ accuracy over a range of -1° to 60.99°C. Available with five precision interchangeable probes (below). The meter design is similar to platinum meter Model **392M** Heat-Prober described on page 5.

For complete specifications refer to 392M, page 6.



700MC Meter with
LN0253 Screw-in
Immersion Probe

Specifications

Temperature range	-1.00° to 60.99°C (30.20° to 141.78°F)	Drift (per year)	$\pm 0.02^{\circ}\text{C}$ (0.04°F)
Meter accuracy	$\pm 0.03^{\circ}\text{C}$ (.06°F)	Interchangeability (probe to probe)	0.10°C (0.18°F)
System accuracy	$\pm 0.15^{\circ}\text{C}$ (0.27°F) when meter and probe are calibrated separately	Readout	0.33 in. high LED
or:	$\pm 0.04^{\circ}\text{C}$ (0.07°F) when meter and probe are calibrated together	Battery Life	8 hours
		Recharge time	8 hours



700M THERMISTOR METER INTERCHANGEABLE PROBES

Probe Description

LN0250 Flexible Immersion Probe Vinyl sheath and .135" diameter epoxy tip. Small and flexible. 3.6 Second response time*.

LN0252 Button Surface Probe Solid .375" diameter button can be attached with pressure sensitive adhesive tape or epoxy. Stainless steel contact surface. 1.1 Second response time*.

LN0253 Screw-In Immersion Probe For measurements in pipes, vessels or reactors. 3.6 Second response time*. Stainless steel shank with 1/8" NPT fitting, 6" standard stem length, 12" option, order **LN0253-12**.

LN0255 Immersion Probe For liquid and semi-solids. Stainless steel. For foods, chemical, pharmaceutical and laboratory work. 0.1°C interchangeability, 6" long stem, .125" diameter. For 12" length option, order **LN0255-12**. 1.0 Second response time*.

LN0255A Immersion Probe With .05°C interchangeability, 6" shank, .250" diameter. For 12" length option, order **LN0255A-12**.

*Response time is based on 63% in water moving at 3 feet per second.

Probes are supplied with 5 foot cord
and plug to connect with meter



LN0255 Immersion Probe

LN0250 Flexible Immersion Probe

LN0252 Button Surface Probe

LN0253 Screw-In Immersion Probe

Calibration Services Available

(800)668.3979 www.bestobell.com

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Wahl designs and manufactures to the most stringent quality standards. We provide certified, traceable calibration data in support of companies whose requirements include meeting ISO 9001:2008, FAA and FDA quality standards. Calibrations to both IPTS-68 and ITS-90 are available. Choose from two levels of calibrations services to meet your quality system requirements.

CALIBRATION SERVICES

STANDARD CERTIFICATION: Unit is calibrated to factory specifications using NIST traceable equipment. Unit is provided with:

Certificate of Conformance - Statement that our product meets published specifications. Included on the packing list with each shipment.

"Long Form" Certificate of Conformance - Available upon request.

Calibration Sticker - (or tag) Advising you of the date your instrument(s) was/were calibrated, and the suggested date for its next calibration. This is provided with most products at time of purchase, and when you return a product for calibration.

NIST TRACEABLE TEST REPORT: Unit is calibrated to factory specifications using NIST Traceable equipment. Unit is provided with:

NIST Traceable Test Report - Our Quality Management System is certified to conform to ISO9001:2008. We maintain a calibration system in conformance with ANSI/NCSS Z-540 and MIL-STD-45662A.



"As Received" and "As Left" Data with Out-of-Tolerance conditions noted.

Calibration Sticker (see above).

REPAIR AND OTHER SERVICES

REGISTER YOUR PRODUCT: Registration is fast and easy. In about a minute you can register your product for Warranty Protection and our Calibration Reminder Service to keep your QC Program in compliance. Go to www.palmerwahl.com/register.

REPAIR SERVICES: Palmer Wahl offers repair and calibration services on most products we sell. Contact Customer Service for pricing, and an RMA. Please see note below.

Detailed Repair Report - Available upon request, this report provides details of evaluation and repairs made.

Custom Points - Palmer Wahl will calibrate your instruments at your specified temperature or pressure points.

Special Requests - When calibrating your instrument, our experienced personnel will help you to achieve the level of quality that you need in your facility.

Note: You must have a **Return Merchandise Authorization Number**, (RMA) before returning a product for repair or calibration. To obtain an RMA, please call Customer Service at 1-800-421-2853 or go to www.palmerwahl.com and click on: Service > Product Return Request.

Palmer Pressure Gauges are available from:

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SINCE 1953

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salesdesk@bestobell.com
1-800-668-3979
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ventes@bestobell.com
1-877-331-1225

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166 North Side Road
Riverport, NS B0J 2W0
dmossman@bestobell.com
902-529-0355

Palmer Wahl Warranty

Manufacturer warrants all products listed in this catalog to be free from defects in material or workmanship under normal use and service. The Manufacturer agrees to repair or replace any product which upon examination is revealed to have been defective due to faulty workmanship or material if returned to our factory, transportation charges prepaid, within the product specific warranty period stated in the catalog by the manufacturer. This warranty is in lieu of all other warranties, expressed or implied and of all obligations or liabilities on its part for damages including but not limited to consequential damages, following the use or misuse of instruments sold by the Manufacturer. No agent is authorized to assume for manufacturer any liability except as set forth above.

Why you need to Calibrate your Instruments

- Increase customer satisfaction with consistent products.
- Comply with quality standards.
- Improve product quality.
- Ensure traceability throughout your entire manufacturing process.
- Palmer Wahl can calibrate your equipment for you. We also offer a complete line of Calibrators to integrate all the necessary functions for adjustment and maintenance of your process.
- Our products and services are easy to use and Palmer Wahl is there to help, every step of the way.