RTD Meters
392AHP Series

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 ±0.1°F/C at 32°F (0°C)
- System Accuracy ±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

392HPC Meter


392HP Probe Connector

APPLICATIONS

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

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.

MADE IN THE USA · TRACEABLE TO NIST · THREE YEAR 3 WARRANTY

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

5-POINT NIST TRACEABLE RTD CALIBRATORS

Assures System Reliability Before Every Measurement

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

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170 Years of Continued Innovation

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 ±0.1°F/C ±1 digit at 32°F (0°C)
- System accuracy ± 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, NIST Certificate included

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

10786-NIST Certificate of NIST Traceability with Test Data.

MADE IN THE USA · TRACEABLE TO NIST · THREE YEAR 3 WARRANTY

Calibration Services Available

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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**	**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 **392AMX** Red, 0.4" high LCD	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		
Power	**11681-1** 6.25 V NiCad Battery	**11681-1** 6.25 V NiCad Battery	**9V** Alkaline battery (NEDA 1604A)
Battery Life	**6** hours. per charge	**392AM** **8** hours per charge **392AMX/392** **10** hours per charge	**8** 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	**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.

THREE YEAR 3 WARRANTY

TRACEABLE TO NIST

MADE IN THE USA

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 ±0.2°F at ice point, ±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

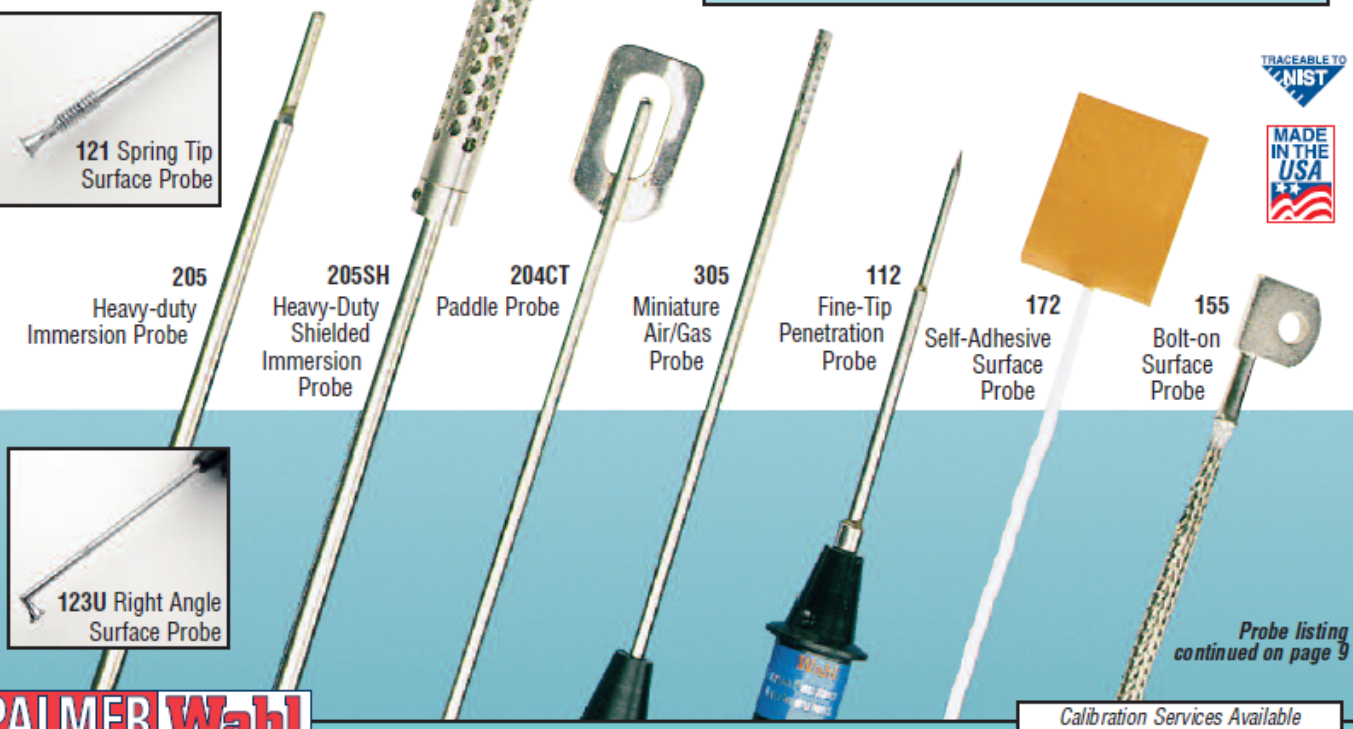
Look for the "Wahl Tested Certified" calibration tag on every probe.

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.

121 Spring Tip Surface Probe

TRACEABLE TO NIST

MADE IN THE USA



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

123U Right Angle Surface Probe

Probe listing continued on page 9

Calibration Services Available

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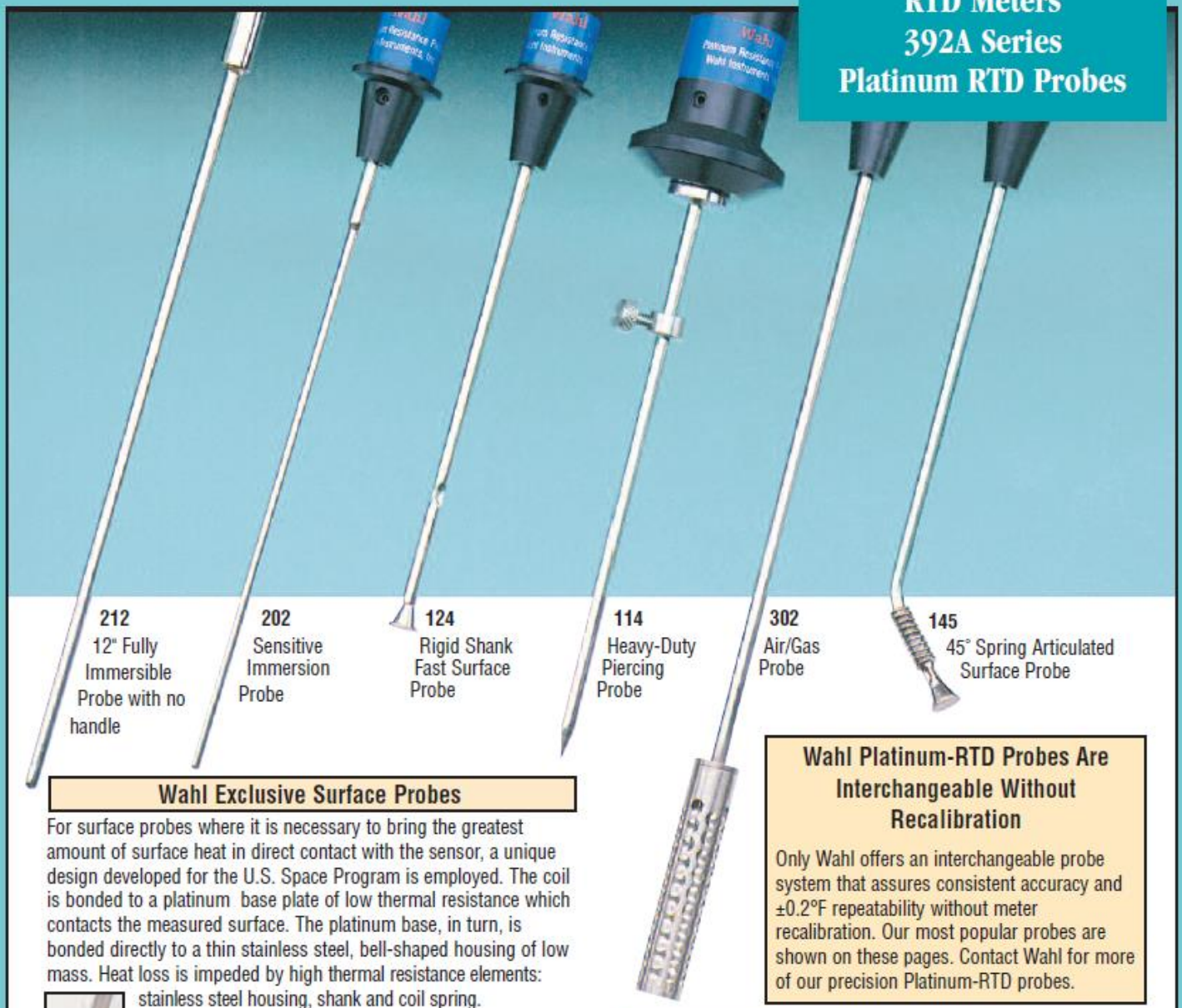
170 Years of Continued Innovation

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.

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].

Calibration Services Available

Wahl Platinum-RTD Probes Are Interchangeable Without Recalibration

Only Wahl offers an interchangeable probe system that assures consistent accuracy and ±0.2°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

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

TRACEABLE TO NIST

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