

# Doric 450

## Series Digital Handheld Thermometers



### Doric 450

The Doric 450 Series digital thermometers are among the most accurate, reliable, and convenient handheld instruments ever developed. Using a unique, patented noise-reduction circuit, the Series 450 achieves the high repeatability and accuracy of line-powered benchtop units.

A custom-designed dual integrated circuit set gives you a single instrument with wider temperature ranges, higher resolutions, and longer performance than other handheld thermometers. Data hold freezes the displayed reading for safe viewing away from hazardous measurement locations.

Battery life is unsurpassed, with a single 9V battery providing more than 2000 hours of use. An externally available zero pot, conveniently located at the back of the instrument, lets you match ice point calibrations to specific probes for even greater system accuracy. The 450s are available in thermocouple, RTD, or thermistor configurations. Please specify when ordering.

### Key Features

- $\pm 0.1\%$  Accuracy
- $1^\circ/0.1^\circ$  Switchable
- $0.1^\circ$  Resolution to  $399.0^\circ\text{F}$ ,  $203.0^\circ\text{C}$
- 2000 Hour Battery Life
- Compatible with Sensor Types:
  - Thermocouples J, K, T, E
  - Platinum RTD  $100\Omega$  0.00385
  - Thermistor YSI 400
- $^\circ\text{F}/^\circ\text{C}$  Switchable on Front Panel
- Large (0.3") LCD Display is Easy to Read in All Light Conditions
- Data Hold

### General Specifications

Display:	0.3" (8mm) LCD	
Resolution:	$1^\circ/0.1^\circ\text{F}$ and $^\circ\text{C}$	
Linearization:	100% digital in custom ASIC	
Reference Junction Tracking:	$\pm 0.03^\circ/\text{C}$ , $5-45^\circ\text{C}$ ; $\pm 0.05^\circ/\text{F}$ , $41-113^\circ\text{F}$	
Operating Temperature Range:	$0-50^\circ\text{C}/32-122^\circ\text{F}$	
Battery Type/Life:	9V NEDA #1604 (included); Thermocouple, 2000 hours; RTD, 500 hours; Thermistor, 1200 hours	
Size (H x W x D):	5.7" x 3.3" x 1.8" (144mm x 85mm x 45mm)	
Weight:	9 oz. (255 g)	
Thermocouple Accuracy:	$1^\circ\text{C}$ Range, $\pm 0.1\%$ rdg, $\pm 0.8^\circ\text{C}$ $0.1^\circ\text{C}$ Range, $\pm 0.1\%$ rdg, $\pm 0.3^\circ\text{C}$	$1^\circ\text{F}$ Range, $\pm 0.1\%$ rdg, $\pm 1.4^\circ\text{F}$ $0.1^\circ\text{F}$ Range, $\pm 0.1\%$ rdg, $\pm 0.45^\circ\text{F}$
RTD Accuracy:	$1^\circ\text{C}$ Range, $\pm 0.1\%$ rdg, $\pm 0.8^\circ\text{C}$ $0.1^\circ\text{C}$ Range, $\pm 0.1\%$ rdg, $\pm 0.25^\circ\text{C}$	$1^\circ\text{F}$ Range, $\pm 0.1\%$ rdg, $\pm 1.4^\circ\text{F}$ $0.1^\circ\text{F}$ Range, $\pm 0.1\%$ rdg, $\pm 0.45^\circ\text{F}$
Thermistor Accuracy:	$0.1^\circ\text{C}$ Range, $\pm 0.1\%$ rdg, $\pm 0.25^\circ\text{C}$	$0.1^\circ\text{F}$ Range, $\pm 0.1\%$ rdg, $\pm 0.45^\circ\text{F}$

### Model 450K Temperature Instruments, Probes, and Accessories

Model	Description	Temp. Rating	Application	Indicating Time*
TP254	K-type Immersion Probe. An immersion probe with iconel sheath and wooden handle.	2012°F (1100°C)	Liquids	
TP255	K-type Thermocouple Wire. A 4-foot long thermocouple wire with industry standard miniature connector plug attached.	392°F (200°C)	Surface/Air	
MH100K	Master Probe Handle. Extension probe handle. High temperature rated with 4-foot armored covered leadwire. For use with TP110K, TP112K, TP120K and TP130K probes.	N/A	Option handle	N/A
TP110K	Immersion Probe. A general purpose immersion sensor with grounded junction for fast response. Stainless steel sheath. For use with Model MH100K Probe Handle.	1200°F (650°C)	Liquids	10 seconds
TP112K	Piercing Probe. Sharp, knife-edge stainless steel sensor for measuring semi-solid materials such as meats, plastics, rubber. For use with Model MH100K Probe Handle.	800°F (425°C)	Liquids Semi-solid	6 seconds
TP120K	Surface Probe. Heavy duty, fast response sensor for surface measurements of hot plates, furnaces, molds, etc. Stainless steel sheath. For use with Model MH100K Probe Handle.	1200°F (650°C)	Surface	6 seconds
TP130K	Air Probe. Exposed junction air sensor with radiation protection shield. Suitable for all air/gas measurements. For use with Model MH100K Probe Handle.	1200°F (650°C)	Air/gas	45 seconds
TP126K	Low Mass Surface Probe. Mini-tip sensor, stainless steel sheath, ideally suited for small spot surfaces in electronics, laboratory biological applications, and other surface measurements where fast response is necessary. Includes 4-foot, 28-gauge leadwire and standard mini-connector.	800°F (425°C)	Surface	5 seconds
TP114K	Hypodermic Probe. Small diameter piercing probe with grounded knife edge tip, for laboratory measurements. Includes 4-foot, 28-gauge leadwire and standard mini-connector.	600°F (315°C)	Liquids Penetration	2 seconds
TP128K	Attachable Probe. Small metal disc sensor for securing to fixed surfaces. Supplied with 6-foot, 24-gauge leadwire and standard mini-connector.	1500°F (815°C)	Surface	5 seconds

### Model 450PT Temperature Instruments, Probes, and Accessories

Model	Description	Temp. Rating	Application	Indicating Time*
TP110P	Immersion Probe. Wide range, long reach for all immersion applications such as baths, liquids, semi-liquids.	-238° to +1112°F (-150°C to +600°C)	Liquids	20 seconds
TP112P	Piercing Probe. Sealed, rugged for fast response in penetrating applications such as food processing, plastics, sciences.	-58°F to +500°F (-50° to +260°C)	Penetration liquids and semi-solids	20 seconds
TP120P	Surface Probe. Heavy-duty, ideal for wet and dry surfaces, metallic or non-metallic.	-58° to +1112°F (-50°C to +600°C)	Surface	10 seconds
TP130P	Air Probe. Fast response air and gas measurements. Long reach for duct, oven, and ambient measurements safety.	-58° to +500°F (-50° to 260°C)	Air/gas	30 seconds

### Model 450TH Temperature Instruments, Probes, and Accessories

Model	Description	Temp. Rating	Application	Indicating Time*
TP401TH	General Purpose. Esophageal or rectal temperature in humans and animals. Often buried for subsoil readings. Used for air where fast response is not required. Most rugged probe. Vinyl tip and lead.	212°F (100°C)	Liquids	35 seconds
TP403TH	Tubular Immersion. For rugged duty in liquid immersion. Fast response oral or rectal. Stainless steel.	212°F (100°C)	Liquids	15 seconds
TP409TH	Attachable Surface Temperature. Tape on skin or flat surfaces. Good for heat loss and compression efficiency study of piping systems. Stainless steel cup, epoxy-backed.	212°F (100°C)	Surface	5 seconds

\*Indicating Time 99%

### Ordering Guide

Model	Description	Connection Type
450K	K Thermocouple meter	Standard sub-mini thermocouple
450J	J Thermocouple meter	Standard sub-mini thermocouple
450E	E Thermocouple meter	Standard sub-mini thermocouple
450T	T Thermocouple meter	Standard sub-mini thermocouple
450PT	Platinum RTD meter	3-pin TA3M
450TH	Thermistor meter	1/4" phone jack