

T H E R M O M E T R I C S  
A C O M M I T M E N T T O E X C E L L E N C E

# NTC Type HTP Series

## High Temperature Probes



### Applications

- Temperature measurement and control
- Temperature compensation
- Controlled temperature soldering stations
- Process oven control

A rugged high temperature bead thermistor (Type HTBR55) is available on special order

### Description

The NTC Type HTP Series high temperature probe consists of a bead thermistor hermetically sealed in the tip of a shock resistant glass rod. These units are rugged and unaffected by severe environmental exposures, including high density nuclear radiation.

### Data

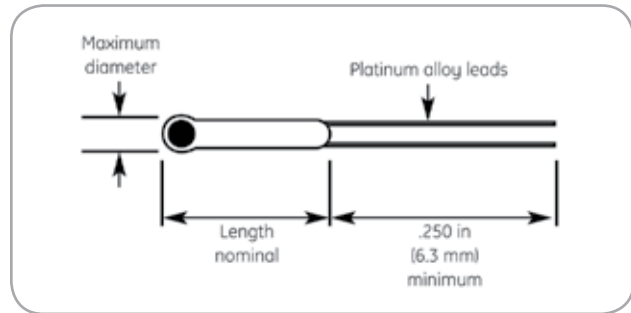
All NTC Type HTP Series high temperature probes are aged at 842°F (450°C) for extended periods of time. As such, they exhibit excellent stability for all temperatures at or below 842°F (450°C). Intermittent operations at temperatures up to 1112°F (600°C) is permissible. When additional preconditioning is specified, compliance with the performance requirements of MIL-PRF-23648 can be guaranteed.

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# Type HTP Series Specifications

## Thermal and Electrical Properties

The following table lists the thermal and electrical properties for all high temperature probes. All definitions and test methods are per MIL-PRF-23648.



NTC Type HTP Series dimensions

**Table A**

### Probe Length Options

Thermistor Type	HTP60	HTP65	HTP85	HTP100
Maximum Diameter	0.060 in (1.5 mm)	0.065 in (1.7 mm)	0.085 in (2.2 mm)	0.100 in (2.5 mm)
Standard Length Code "B"	0.250 in (6.3 mm)	0.250 in (6.3 mm)	0.250 in (6.3 mm)	0.250 in (6.3 mm)
Length Codes Available (special order only)	"A", "C", "D"	"A", "C", "D"	"A", "C", "D"	"A", "C", "D"

### Lead-Wires

Nominal Diameter	0.008 in (0.20 mm)	0.008 in (0.20 mm)	0.008 in (0.20 mm)	0.008 in (0.20 mm)
Minimum Lead Length	0.250 in (6.3 mm)	0.250 in (6.3 mm)	0.250 in (6.3 mm)	0.250 in (6.3 mm)
Lead Material	Platinum Alloy	Platinum Alloy	Platinum Alloy	Platinum Alloy

### Thermal Time Constant

Still Air at 77°F (25°C)	12 seconds	13 seconds	16 seconds	22 seconds
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### Dissipation Constant

Still Air at 77°F (25°C)	0.60 mW/°C	0.65 mW/°C	0.80 mW/°C	1.0 mW/°C
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### Resistance Range at 257°F (125°C) ohms (S)

Maximum Power	100 k to 2 M	100 k to 2 M	100 k to 2 M	100 k to 2 M
Rating	0.060 Watts	0.065 Watts	0.075 Watts	0.100 Watts

## Data

**Table B**

Temp °F (°C)	RT/R125	Temp °F (°C)	RT/R125
257 (125)	1.00000	572 (300)	0.00793
302 (150)	0.41087	617 (325)	0.00487
347 (175)	0.18272	662 (350)	0.00310
392 (200)	0.08720	707 (375)	0.00203
437 (225)	0.04430	725 (400)	0.00138
482 (250)	0.02380	797 (425)	0.00096
527 (275)	0.01344	842 (450)	0.00068

# Type HTP Series Specifications

## Ordering Information

The code number to be ordered may be specified as follows:

### HTP High Temperature Probe

↓	<b>Code</b>	<b>Diameter</b>							
	60	60 mils							
	65	65 mils							
	85	85 mils							
	100	100 mils							
	↓	<b>Code</b>	<b>Probe Length*</b>						
		A	0.125 in (3.17 mm)						
		B	0.25 in (6.35 mm) standard						
	↓	<b>Code</b>	<b>Material System</b>						
		D	--						
↓	<b>Code</b>	<b>Resistance RT @ 257°F (125°C)**</b>							
	514	510 kS							
	754	750 kS							
	105	1.0 MS							
	155	1.5 MS							
↓	<b>Code</b>	<b>Tolerance***</b>							
	F	1							
	G	2							
	J	5							
	K	10							
	L	15							
	M	20							
	N	25							
	P	30							
	Q	40							
R	50								
S	Non-standard (consult factory)								

HTP - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ Typical model number

\*The nominal standard value for the zero-power resistance at 257°F (125°C).

\*\*The zero-power resistance at 77°F (25°C), expressed in  $\Omega$ , is identified by a three digit code number. The first two digits represent significant figures, and the last digit specifies the number of zeros to follow. Example: 0.06 in (1.5 mm) maximum diameter x 1/4 in (6.35 mm) long glass probe with a zero-power resistance at 257°F (125°C) of 510 k and a tolerance of  $\pm 20\%$  would be specified as HTP60BD514M.

\*\*\*Special tolerances are available on request. Consult the factory for special resistance tolerances, non-standard resistances and/or non-standard temperatures.

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