



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 FP07

Thermometrics Fastip Probe Thermistor



The NTC Type FP Series Fastip Thermoprobes consist of small diameter glass-coated thermistor beads hermetically sealed at the tips of shock resistant glass rods. The small bead thermistor has a very thin glass coating which allows for relatively flat frequency response for flow applications. As much of the bead as possible is exposed at the tip of the glass rod to provide the fastest response times. The units are rugged and unaffected by severe environmental exposures, including high density nuclear radiation.

The NTC Type FP Series Fastip Thermoprobes are ideally suited for high speed measurement and control of fluid temperatures, fluid level or flow. They offer the ease of handling associated with large glass probe thermistors as well as ultra-fast response times of small glass coated bead thermistors. These units exhibit relatively flat response to flow input from 200 Hz to 1000 Hz.

Features

- Ultra-Fast Response Time
- Rugged, Unaffected by Severe Environmental Exposures
- Relatively Flat Frequency Response
- Ease of Handling

Applications

- Sub-Sea Monitoring
- High Speed Fluid Temperature Measurement & Control
- Industrial

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Type FP07 Specifications

Thermal and Electrical Properties

The following table lists the thermal and electrical properties for all large ruggedized thermobeads. All definitions and test methods are per MIL-PRF-23648.

Thermistor Type		FP07	
Maximum Diameter		0.085 in. (22 mm)	
Body Length		0.5 in. (12.7 mm)	
Lead Wires			
Nominal Diameter		0.012 in. (0.30 mm)	
Lead Length		0.875 in. (22 mm)	
Lead Material		Tinned dumet	
Material System			
Code Letter	R vs T Curve	25/125 Ratio	Nominal Resistance Range (Ω) @ 77°F (25°C)
E	0	5.0	-
A	1	11.8	300 to 600
A	2	12.5	680 k to 1.6 k
A	3	14.0	1.6 k to 3.6 k
A	4	16.9	3.6 k to 6.8 k
A	5	19.8	6.8 k to 27 k
A	6	22.1	-
A	7	22.7	27 k to 75 k
B	8	29.4	75 k to 130 k
B	9	30.8	130 k to 240 k
B	10	32.3	240 k to 360 k
B	11	35.7	360 k to 820 k
B	12	38.1	820 k to 13 M
B	13	45.0	1.3 M to 3.3 M
B	14	48.1	3.3 M to 6.8 M
B	15	56.5	6.8 M to 10 M
D	16	75.6	-
D	17	81.0	-

Resistance vs temperature characteristics: The nominal resistance range for the zero-power resistance at 77°F (25°C) is shown for each thermobead type and each available material system. Each material system is denoted by an ordering code letter, a referenced curve number and the nominal 77°F/257°F (25°C/125°C) resistance ratio.



NTC Type FP07 Dimensions

Thermistor Time Constant	FP07
Still Air at 77 °F (25°C)	0.10 sec
Plunge into Water	7 msec
Dissipation Constant	
Still Air at 77 °F (25°C)	0.05 mW/°C
Still Water at 77 °F (25°C)	0.25 mW/°C
Power Rating (in air)	
Maximum Power Rating	0.006 Watts

Ordering Information

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

Code	Model Number
FP	07
	Code D
	Probe Length
	0.5 (12.7 mm)
	(Other lengths available on special order)
	Code X
	Material System Code
	See Thermal and Electrical Properties table
	Code 103
	Zero Power Resistance
	See note below*
	Code
	Tolerance @ 77°F (25°C)**
	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)
FP	___ ___ ___ ___ ___ Typical model number

*The zero-power resistance at 77°F (25°C), expressed in ohms (Ω), is identified by a three digit number. The first two digits represent significant figures and the last digit specifies the number of zeros to follow. Example: A Fastip probe with a 7 msec response time in water, 10 kΩ ±25% at 77°F (25°C) would be coded FP07DA103N.

**Special tolerances are available on request. To specify a non-standard tolerance, use the letter 'S' followed by the desired tolerance (i.e., S7 = ±7%).

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