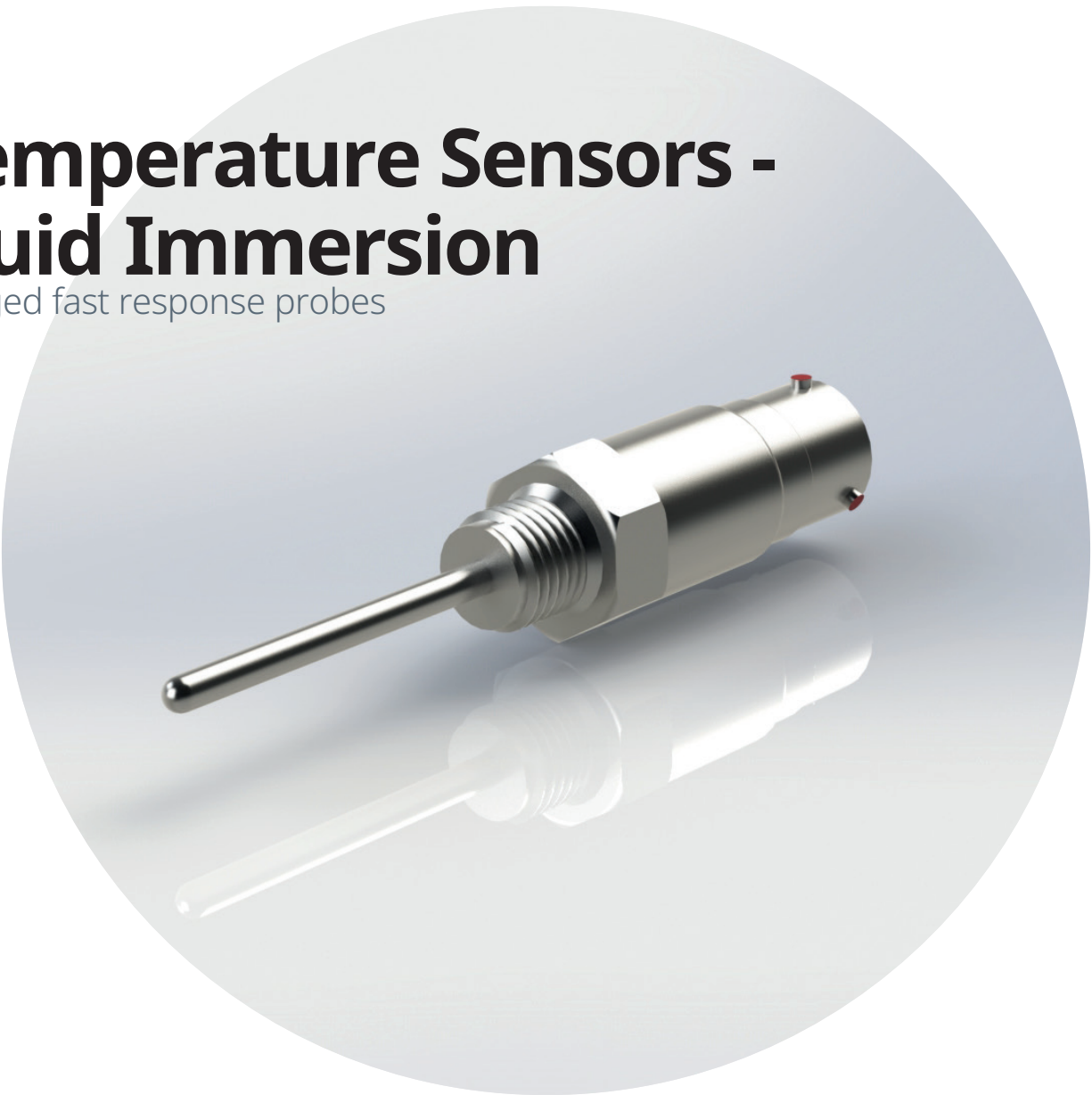


ULTRA.



Temperature Sensors - Fluid Immersion

Rugged fast response probes



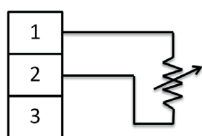
Key features

- Rugged design
- Corrosion resistance designs
- Flexible design on probe length, connector choice, threads, and additional features

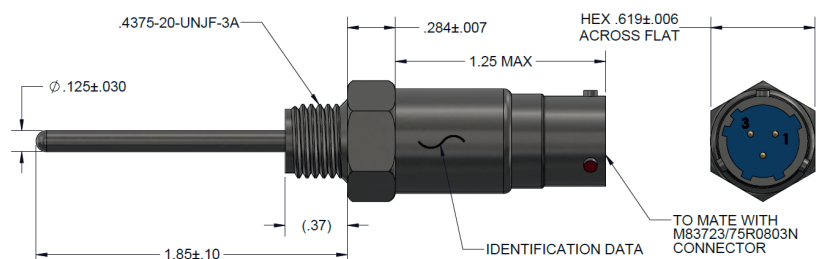
Overview

Ultra's fluid immersion temperature sensors are fast-response probes that are immersed in a closed system of liquid, air or gas. Examples include engine oil, air flow or exhaust gas.

The probes are extremely rugged and are available with hermetically sealed housings.



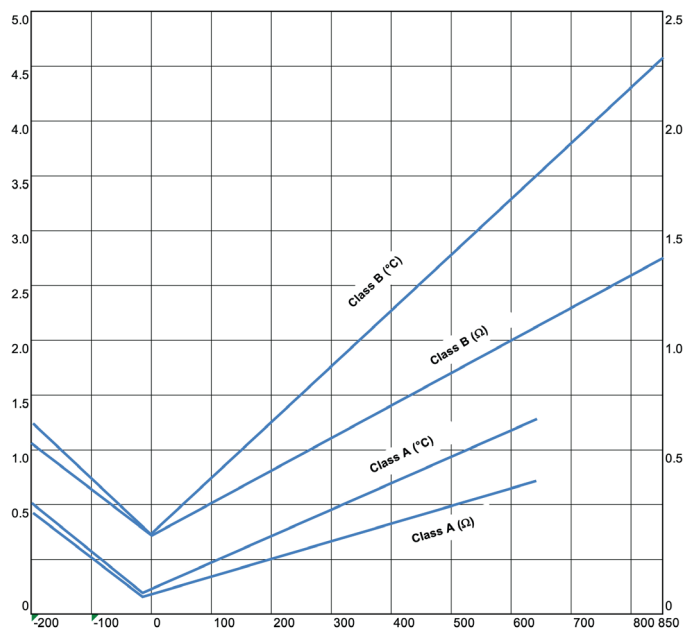
Wiring Diagram



Model	Features	Temperature Range	Size	Sensing Element	Typical Applications
A9506	Fast response; hermetically sealed all welded construction; integral electrical connector	-196° to 260°C	Sheath diameter of .125"; immersion length of 1.85"	100 ohm wire-wound platinum	Aircraft environment control, fuel and hydraulic system monitoring, gearbox lube systems, outside air temperature
A9580	Dual redundant sensing element; heavy duty construction; pigtail lead wire design	-196° to 400°C	250" sheath dia.; 2.35" immersion length; 15" leads	Two 100 ohm wire-wound platinum RTD, electrically isolated	Turbine engine fuel controls and other fluid measurement applications requiring sensor redundancy
Axxxx	Call Ultra sales team for applications from -200(degree symbol) C to 750(degree symbol) C				

Tolerances for 100 Ω RTD

Temperature (°C)	Tolerance			
	Class A		Class B	
	(± °C)	(± Ω)	(± °C)	(± Ω)
-200	0.55	0.25	1.30	0.56
-100	0.35	0.14	0.80	0.32
0	0.15	0.06	0.30	0.12
100	0.35	0.13	0.80	0.30
200	0.55	0.20	1.30	0.48
300	0.75	0.27	1.80	0.64
400	0.95	0.33	2.30	0.79
500	1.15	0.38	2.80	0.93
600	1.35	0.43	3.30	1.06
650	1.45	0.46	3.60	1.13
700	-	-	3.80	1.17
800	-	-	4.30	1.28
850	-	-	4.60	1.34



Thermocouple, Temperatures and Tolerances

Wire Type	Temp Range	Standard Tolerance	Special Tolerance
J	32 to 1400 °F	+/-4 °F or 0.75%	+/-2 °F or 0.4%
K	32 to 2300 °F	+/-4 °F or 0.75%	+/-2 °F or 0.4%
N	32 to 2300 °F	+/-4 °F or 0.75%	+/-2 °F or 0.4%
R	32 to 2700 °F	+/-2.7 °F or 0.25%	+/-1.1 °F or 0.1%
S	32 to 2700 °F	+/-2.7 °F or 0.25%	+/-1.1 °F or 0.1%
B	1472 to 3092 °F	+/-0.5%	+/-0.25%
C	800 to 4200 °F	+/-1%	+/-1%
E	-328 to -274 °F	+/-1%	Not established
	-273 to 32 °F	+/-3.1 °F	Not established
	33 to 644 °F	+/-3.1 °F	+/-1.8 °F
	645 to 1652 °F	+/-0.5%	0.4%
F	-328 to -89 °F	+/-1.5%	Not established
	-90 to 32 °F	+/-1.8%	Not established
	33 to 271 °F	+/-1.8%	0.9 °F
	271 to 700 °F	+/-0.75%	0.4%



Ultra Energy

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Ultra reserves the right to vary these specifications without notice.

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