

Primary Standard Thermometry Bridges

F900 & F18

In world class metrology, the most important consideration is the quality of the fundamental measurement. ASL's F900 and F18 AC bridge technology represents the peak of performance in resistance thermometer measurement and exploits the inherent advantages of AC bridge technology to maintain repeatable measurements of the highest precision under practical operating conditions.

The Models F900 and F18 are designed specifically for resistance thermometry to provide you with the best possible accuracy. The 25Hz or 75Hz operating frequency provides fast, continuous measurement with high immunity to thermal emfs and supply frequency noise sources. Practical measurements involve cables, connectors and imperfect operating environments, the F900 and F18 achieve their full specification under a wide range of real operating conditions.

Key features

- Accuracy: $<\pm 20$ ppb ($\pm 5\mu\text{K}$) F900*
 $<\pm 0.1$ ppm ($\pm 25\mu\text{K}$) F18*
 - Resolution: 0.5ppb (0.125 μK) F900*
0.1ppm (25 μK) F18*
 - Fast measurement time (2 seconds balance)
 - Differential and absolute measurement
 - Warm up time <30 seconds
 - Traceable to international standards
- * 25.5 Ω SPRT referenced to a 25 Ω reference resistor



F900





asl

a brand of Elektron Technology

asl.1

Primary Standard Thermometry Bridges F900 & F18

Specification

Bandwidth:		F900	Selectable: 0.5, 0.2, 0.1, 0.05, 0.02, 0.01, 0.005, 0.002, 0.001 Hz
		F18	Selectable: 0.5, 0.1 or 0.02 Hz
External Standard		AC/DC standard resistor or resistance thermometer	
Sensor current		0.1, 0.2, 0.5, 1, 2, 5, 10, 20, 50ma or $\times \sqrt{2}$ any value	
Sensor current frequency		User selectable frequencies: 25 or 75 Hz with 50 Hz supply 30 or 90 Hz with 60 Hz supply Phase locked to supply frequency	
Bridge balancing modes	Automatic	via full self balance algorithm	
	Manual	via front panel switches and analogue meter.	
Self check modes	Zero	verifies bridge zero accuracy	
	Unity	verifies bridge slope accuracy	
Lead connections		True four wire connections for resistance thermometer (Rt) and standard resistor (Rs). Accuracy is unaffected by series lead resistance, permitting measurements with long cables (100 metres for 25.5 ohm SPRT referenced to a 25 ohm resistor)	
Quadrature balance		Eliminates effects of thermometer, resistor and cable reactance	
Active input guard		Eliminates effects of leakage from any terminal to ground	
Analogue output		Null balance: $\pm 10v$ (unfiltered) Programmable: 0-10v (3 scale ranges)	



F18

