

AMP-6 Signal Conditioning Amplifier for Heat Flux and Temperature



AMP-6 ADVANTAGES

- Isolated From Power Lines to Eliminate Ground Loops
- Captures the Full Range and Bandwidth of Heat Flux Signals
- Powered by long life 9-Volt Nickel-Cadmium Cells
- 12 Hours of Operation on One Battery Charge
- Input Cables & Battery Charger Included

Principles of Operation: The Amp-6 Signal Conditioning Amplifier is designed for use with the HFM series of Vattell Heat Flux Microsensors. Heat flux signals of the microsensor are amplified by a low noise, wide-band differential amplifier whose gain may be set at one of five discrete values between 1 and 5000. The Resistance Temperature Sensor (RTS) is driven by a constant current of 100 μ Amps. The resulting voltage is amplified by a low noise differential amplifier whose gain may be set at one of four discrete values between 1 and 500.

Construction: All signal connections are at the rear panel of the amplifier. A four-pin female Lemo connector is provided for leads from the Heat Flux Microsensor. Male BNC connectors are provided for amplified heat flux and temperature output signals. Batteries are recharged using a NiCd charger that uses 120V AC power. The amplifier has a power switch on the front panel. Gains for heat flux and temperature signals are selected by multiple position switches. Ten-turn potentiometers are provided for screwdriver adjustment of the heat flux amplifier offset and setting of the temperature reference point. A battery test switch, state of charge, and charging indicator allow checking of the battery state and monitoring of the recharge process.

Amp-6 Specifications

	Heat Flux Channel	Temperature Channel
Gain Settings	1, 100, 500, 1000, 5000	1, 100, 200, 500
Gain Accuracy %		
Gain = 1	± 0.6	± 0.6
Gain = 100	± 1.5	± 1.5
Gain = 200, 500	± 1.5	± 1.5
Gain = 1000	± 2.1	
Gain = 5000	± 3.6	
Bandwidth		
Gain = 1	1 MHz	1 MHz
Gain = 100	150 kHz	150 kHz
Gain = 200		100 kHz
Gain = 500	50 kHz	50 kHz
Gain = 1000	25 kHz	
Gain = 5000	5 kHz	
Input Impedance	$10^9 \Omega$	$10^9 \Omega$
Input Noise	0.2 μ Volts	0.2 μ Volts
Full Scale Output	6 Volts	6 Volts
Dimensions:		
Height = 1.7 inches Width = 7.5 inches Depth = 11 inches Weight = 46 oz.		