



Instruments

Femto Amp Datasheet

The FemtoAmp attachment simply fits onto a standard Gill AC instrument to enable low current experiments without the need for further instrumentation. The range of currents measured goes down to Femto amps, making it ideal when working with paints and coatings, microelectrodes or any other experiment which requires low currents.



We believe an attachment for low currents is better than a separate low current instrument for a number of reasons...

- 1) **Wide current range:** When combined with our Gill AC your instrument will be able to measure from femto amps to 500mA.
- 2) **Low noise:** The FemtoAmp can be placed close to the cell, reducing unwanted noise which is particularly important at low currents. It also has the added advantage of being able to work within a faraday cage for extremely sensitive experiments.
- 3) **Flexibility:** The FemtoAmp can simply be detached from the GillAC leaving you with an instrument capable of higher currents. This kind of flexibility is ideal for corrosion or when you do more than just low current experiments.
- 4) **Low cost:** Despite fantastic performance an attachment makes low current experiments more affordable. A FemtoAmp does not have to be bought with a new Gill AC, attach it to existing instruments to spread the cost. Of course one instrument with an attachment will always cost less than having to buy another instrument.

Technical Specifications	
Control Amplifier	
Compliance Voltage	15 volts
Output Current	0.4 mA (500mA with Gill AC)
Unity Gain Bandwidths	1 MHz
Slew Rate	3v/μsec
Electrometer	
Input Impedance	>10TΩ
Input Current	<40fA
Bandwidth	250KHz
Voltage Measurement	
Full Scale Ranges	8V, 800mV, 80mV, 8mV
Resolution (24bits)	0.1mV, 10μV, 1μV, 0.1μV
DC Accuracy	0.1%
Offset Range	3V with 1mV resolution
Potentiostat	
Applied E Range	3V
Accuracy	0.1mV
Scan Ranges	3V
Resolution	22μV/bit
Drift	<10μV/°C
Noise and Ripple	<15μV
Rise Time	<2μsec
Galvanostat	
DC accuracy	0.1% full scale
ZRA Mode	
Effective Resistance	<0.1Ω
Power	<10W Total
Current Measurement – All	
Full Scale Ranges	0.4mA, 40μA, 4μA, 400nA, 40nA, 4nA, 400pA, 40pA
Resolution (24bits)	0.5fA
DC Accuracy	0.2%
Bandwidth	250KHz
A/D Converter	
Resolution	24bits
Accuracy	0.05% FS
Timing	1/50 sec to 60000 sec
Environment	
Operational Temperature	-25 to 100°C
Specification Temperature	25°C
EIS Measurement	
Frequency Range	1μHz to 100 kHz

