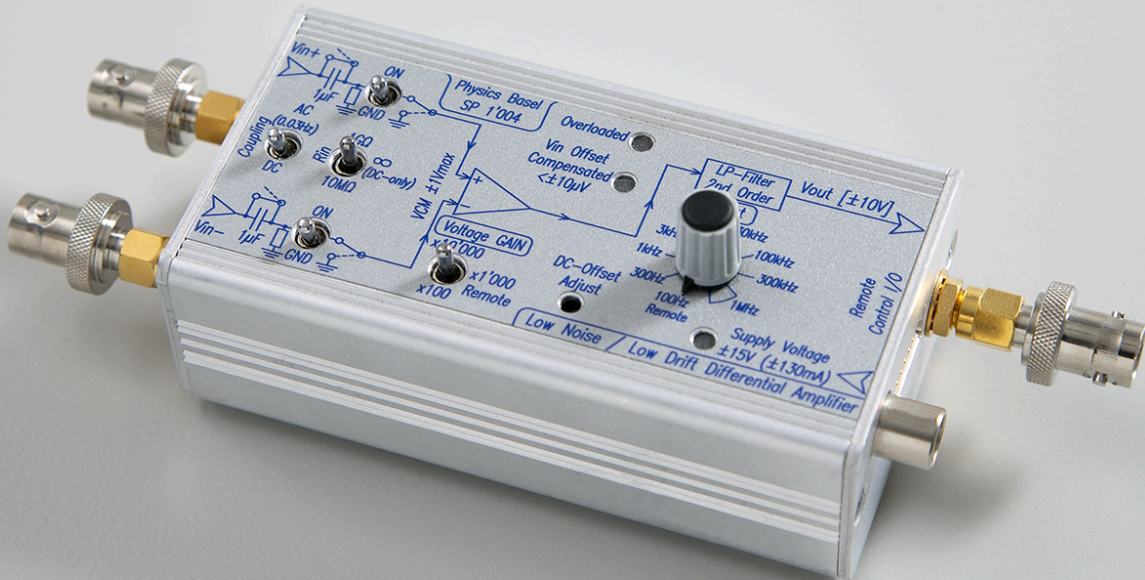




Basel Precision Instruments



Low-Noise Low-Drift Differential Amplifier

ultra-low-noise, true differential, stabilized feedback

- Ultra-low voltage noise: **1 nV/ $\sqrt{\text{Hz}}$ @ 1 kHz**
- Ultra-low current noise: **6 fA/ $\sqrt{\text{Hz}}$ @10 Hz**
- The only available differential amplifier with actively stabilized input voltage: **drift <math><math>< 0.3 \mu V/^{\circ}C</math></math>**
- A floating instrument: **avoids ground loops**
- Small and light for **mounting directly on the breakout box**
- Adjustable low-pass filter from 100 Hz to 1 MHz
- Variable gain: from 10^2 to 10^4



Model	SP1004
Input Voltage	stable, low drift and low noise input voltage offset compensated
	noise: 6.5 nV/√Hz @ 1 Hz 1.8 nV/√Hz @ 10 Hz 1.0 nV/√Hz @ f > 1 kHz
	feedback stabilized drift 0.3 μV/K @25°C
Input Current	stable and low input current noise
	noise: 6 fA/√Hz @10 Hz & ∞ input resistor 12 fA/√Hz @1 kHz & ∞ input resistor
Gain	three decades 10 ² to 10 ⁴ - remote controllable
Filtering	integrated low-pass filter 100 Hz to 1 MHz - remote controllable
Bandwidth	1 MHz maximum
Input Coupling	DC or AC (0.03 Hz)
Input Resistor	selectable: 10 MΩ, 10 GΩ or ∞ (DC only)
Common-Mode	±1 V input common-mode voltage range high common-mode rejection ratio: > 100 dB @100 Hz
Dimensions, weight	small size, low weight, mountable directly on breakout box 122 x 55 x 35 mm, 290 gr

Table shows typical specs

Applications

- Sensitive voltage measurements at cryogenic temperatures
- Low-drift DC differential voltage measurements
- Precise DC and AC current measurements by using a shunt-resistor
- General purpose DC and AC low-noise laboratory preamplifier

Measured Input Noise Voltage Density and Integrated Noise Voltage (gain = 1'000)

