

Lock-In Preamplifier

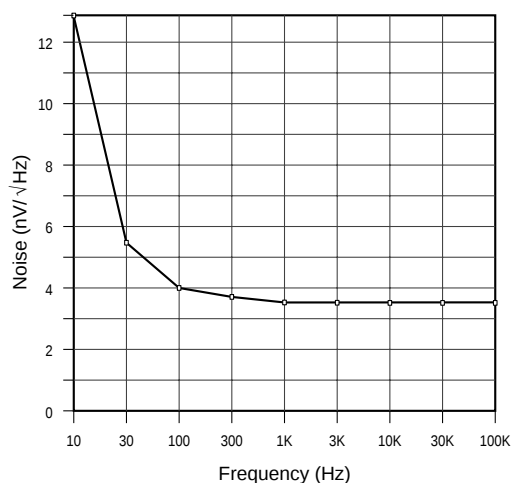
SR550 — FET input preamplifier



The SR550 Voltage Preamplifier is designed to work with SRS lock-in amplifiers. Preamplifiers provide gain close to the experimental detector, before the signal-to-noise ratio is permanently degraded by cable capacitance and pickup. The SR550 minimizes noise and pickup in the connecting lines and reduces measurement time in noise limited experiments. Power and control signals are brought from the lock-in by a 9-pin cable. The SR550 may also be operated independently by applying appropriate biasing (± 20 VDC, +5 VDC).

- **3.6 nV/ $\sqrt{\text{Hz}}$ input noise**
- **FET input, 100 M Ω input impedance**
- **Gain of 1, 2, 5 or 10**
- **Single-ended and differential inputs**
- **AC coupled input**
- **Powered by any SRS lock-in amplifier**
- **High common mode rejection**

SR550 Specifications



SR550 noise plot

Input impedance	100 M Ω + 25 pF
Inputs	Single-ended or differential
Maximum input	250 mVrms for overload
	100 VDC, 10 VAC damage threshold
Noise (typ.)	3.6 nV/ $\sqrt{\text{Hz}}$ at 1 kHz
	4.0 nV/ $\sqrt{\text{Hz}}$ at 100 Hz
	13 nV/ $\sqrt{\text{Hz}}$ at 10 Hz
Coupling	AC (0.016 Hz)
CMRR (1 V input)	110 dB at 100 Hz
	110 dB at 1 kHz
	90 dB at 10 kHz
Gain settings	1, 2, 5, 10 (automatically set by SR510 or SR530 lock-in)
Full-scale sensitivity	10 nV to 200 mV
Gain accuracy	2 % (2 Hz to 100 kHz)
Gain stability	100 ppm/ $^{\circ}\text{C}$
Outputs	A (signal, 600 Ω , single-ended)
	B (shielded ground)
Maximum output	7 Vpp
Power	Supplied by SR510, SR530, SR810, SR830 or SR850 via connector cable
Mechanical	3.0" $\times$ 1.3" $\times$ 5.1" (WHD)
Weight	1 lbs.
Warranty	One year parts and labor on defects in materials and workmanship

Ordering Information

SR550 Lock-in preamplifier