

Lock-In Preamplifier

*SR551 — High impedance
preamplifier*



The SR551 High Impedance Preamplifier works with SRS lock-in amplifiers to measure voltages from sources with moderate to high source impedance. The preamplifier is designed for source impedances of up to gigaohms with little error from resistive loading, due to its exceptionally high 1 TΩ input impedance.

The SR551 operates with a fixed voltage gain of $\times 10$, amplifying signals from DC to 1 MHz. Power and control signals are brought from an SRS lock-in amplifier by a 9-pin cable (included). The SR551 may also be operated independently by applying appropriate power supply voltages (± 20 VDC).

- >1 TΩ input impedance
- Gain of $\times 10$

- Single-ended and differential inputs
- 1 MHz bandwidth
- 12 nV/ $\sqrt{\text{Hz}}$ at 1 kHz voltage noise
- Powered by SRS lock-in amplifiers

SR551 Specifications

Input impedance	>1 TΩ
Inputs	Single-ended or differential
Input range	-4 V to +4 V
Gain	$\times 10$
Gain accuracy	± 0.5 % at 1 kHz
Gain stability	± 25 ppm/ $^{\circ}\text{C}$ (0°C to 40°C)
Bandwidth	1 MHz (-3 dB)
Input bias current	<1 pA
Input voltage noise	12 nV/ $\sqrt{\text{Hz}}$ at 1 kHz (typ.)
Input current noise	0.6 fA/ $\sqrt{\text{Hz}}$ at 1 kHz (typ.)
CMRR	>90 dB at 1 kHz
Input offset voltage	<500 μV
Vos drift	3 $\mu\text{V}/^{\circ}\text{C}$ (0°C to 40°C) (typ)
Output	8 Vp (max), balanced differential 10 mA (max), 50 Ω
Power	Supplied by SRS Lock-In Amplifier “Preamp Power” via control cable
Dimensions	3.0” \times 1.3” \times 5.1” (WHL)
Weight	1 lbs.
Temperature range	0°C to 40°C
Warranty	One year parts and labor on defects in materials and workmanship

Ordering Information

SR551 Lock-in preamplifier