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Data Sheet

August 13, 2026

STANFORD RESEARCH SYSTEMS

Stanford Research SR554 Transformer Preamplifier

Stanford Research Systems SR554 Transformer Preamplifier The SRS SR554 is a transformer-coupled low-noise preamplifier optimized for source impedances from 0.05 ohm to 1 kOhm. Input noise is 0.1 nV/sqrt(Hz). In bypassed mode it is a passive 100:1 transformer (gain 100) and needs no power. In non-bypassed mode a buffer (gain of 5) raises overall gain to 500 and provides less than 1 ohm output impedance; +/-20 VDC is then required. Isolation exceeds 40 dB from DC to 500 MHz. SRS lock-in preamp connectors can power the buffer. The SRS SR554 is a transformer-coupled low-noise preamplifier optimized for source impedances from 0.05 ohm to 1 kOhm. Input noise is 0.1 nV/sqrt(Hz). In bypassed mode it is a passive 100:1 transformer (gain 100) and needs no power. In non-bypassed mode a buffer (gain of 5) raises overall gain to 500 and provides less than 1 ohm output impedance; +/-20 VDC is then required. Isolation exceeds 40 dB from DC to 500 MHz. SRS lock-in preamp connectors can power the buffer. Low-temperature synchronous detection where the sample must be isolated from the lock-in; low-impedance voltage noise measurements; cryogenic and SQUID-adjacent transformer front-ends; general 0.1 nV/sqrt(Hz) preamplification from 0.1 Hz to 40 kHz.



MODEL

**Stanford Research
Systems SR554**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

SR554

LISTING

**[https://aumictechlabs.c
om/products/sr554-2/](https://aumictechlabs.com/products/sr554-2/)**

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Stanford Research Systems SR554 Transformer Preamplifier delivers ultra-low-noise amplification for precision measurement applications requiring exceptional common-mode rejection and gain stability. Built around a transformer-coupled input architecture, the SR554 provides galvanic isolation exceeding 40 dB from DC to 500 MHz while operating across source impedances of 0.05 Ω to 1 k Ω . Two operational modes accommodate different measurement demands: bypassed mode supplies 100 $\times$ gain through the passive transformer alone, while non-bypassed mode adds a buffer amplifier to achieve 500 $\times$ gain with low output impedance.

Technical Specifications

Input noise: 0.1 nV/ $\sqrt{\text{Hz}}$ Bandwidth: 0.1 Hz to 40 kHz Gain: 100 $\times$ (bypassed); 500 $\times$ (non-bypassed) Gain accuracy: 5% (fixed source resistance) Gain stability: 100 ppm/ $^{\circ}\text{C}$ Common-mode rejection ratio: >120 dB below 1 kHz, 140 dB @ 100 Hz, up to 160 dB below 10 Hz Common-mode range: Primary floats to ± 100 VDC Input impedance: 0.5 Ω (transformer + buffer); >5 k Ω (transformer only) Maximum input: 14.0 mV RMS transformer+buffer; 350 mV RMS transformer only Maximum output: 100 Vpp transformer only; 20 Vpp transformer+buffer

Key Features

Transformer isolation provides DC blocking and EMI rejection across wide frequency span Selectable gain configurations optimize for signal conditioning or direct buffering Floating primary accommodates high common-mode voltages Differential and single-ended input/output connectivity Compact form factor: 3.75" $\times$ 3.0" $\times$ 7.5" (W $\times$ H $\times$ L); 4 lbs

Typical Applications

Low-temperature synchronous detection, high-impedance source conditioning, common-mode noise rejection in differential measurements, isolated signal pre-amplification for lock-in detection systems.

Compatibility & Integration

Operates as a front-end instrument for SRS lock-in amplifiers (SR510, SR530, SR810, SR830, SR850, SR124) via control cable, or standalone with external ± 20 VDC supply (100 mA).

Features & description

From manufacturer datasheet

Features

- Transformer turns ratio 100; overall gain 100 (passive) or 500 (with buffer)
- 0.1 nV/sqrt(Hz) noise; CMRR greater than 120 dB below 1 kHz
- Primary can float to +/-100 VDC
- Single-ended or differential input and output
- Passive bypassed mode requires no external power
- Powered by SR510, SR530, SR810, SR830, SR850, or SR124 preamp jack, or external +/-20 VDC

SR554 Characteristics / Specifications

PARAMETER	VALUE
Model	SR554
Manufacturer	Stanford Research Systems
Instrument Type	Transformer Coupled Lock-In Preamplifier
Alias	SR554; SRS SR554
Input Mode	single-ended or differential
Input Noise	0.1 nV/sqrt(Hz)
Recommended Source Impedance	0.05 ohm to 1 kOhm
CMRR	greater than 120 dB below 1 kHz
Common Mode Range	primary can float to +/-100 VDC
Transformer Gain	100x (transformer only, bypassed)
Buffered Gain	500x (transformer and buffer, non-bypassed)
Buffer Voltage Gain	5
Frequency Response	0.1 Hz to 40 kHz
Isolation	greater than 40 dB, DC to 500 MHz
Output Mode	single-ended or differential
Maximum Output Transformer Only	100 Vpp
Maximum Output With Buffer	20 Vpp
Output Impedance Transformer Only	greater than 5 kOhm
Output Impedance With Buffer	less than 1 ohm
Bypassed Mode Power	none required
Buffered Mode Power	+/-20 VDC
Lock In Power Sources	SR510, SR530, SR810, SR830, SR850, or SR124 via control cable
Dimensions	3.75 in x 3 in x 7.5 in (WHD)
Weight	4 lbs
Turns Ratio	100

PARAMETER	VALUE
Isolation Bandwidth	DC to 500 MHz at greater than 40 dB
Float Voltage	+/-100 VDC on primary
Output Impedance Passive	greater than 5 kOhm (matches high-Z lock-in inputs)
Output Impedance Active	less than 1 ohm (drives 50 ohm-class loads more easily) Notes Specs from SRS SR554 catalog. Confirm bypassed versus buffered mode and whether the lock-in preamp cable or external +/-20 V is used. Transformer-only mode is passive and galvanically isolating.
Bandwidth	DC to 500 MHz at greater than 40 dB

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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NIST-traceable calibration · SAM registered ·
30-day returns
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.