SIM910, SIM911

Технические характеристики

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Small Instrumentation Modules

SIM910 and SIM911 — Low noise voltage preamplifiers

- 4 nV/√Hz input noise (SIM910)
- 1.8 nV/√Hz input noise (SIM911)
- Low output noise
- 1 MHz bandwidth
- Selectable gain from 1 to 100
- AC or DC coupled
- Differential or single-ended input
- 85 dB CMRR

SIM910 JFET and SIM911 BJT Voltage Preamplifiers

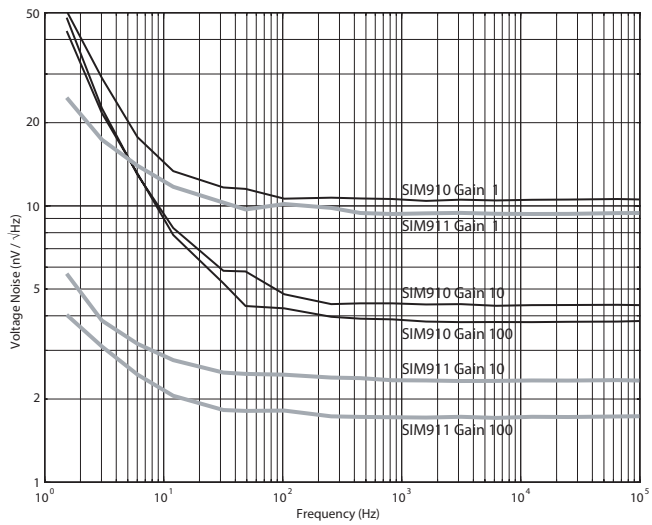
The SIM910 and SIM911 are low-noise, programmable preamplifiers which are ideal for a wide range of small signal applications. The primary differences between the two models are their input impedance and input noise. The SIM911 has a bipolar junction transistor front-end, offers lower input noise, and has a 100 kΩ front-end impedance. The low bias current and 100 MΩ input impedance of the SIM910, which has a JFET front-end, make it a better choice for use with high impedance sources.

Both modules maintain very low output noise resulting in exceptional overall noise performance—even at low gain levels. The bandwidth of these preamplifiers is independent of gain setting so waveforms do not change shape as the gain is varied. Dual parallel outputs (one front and one rear) provide flexibility in cabling.

Inputs can be configured as differential (A – B), single-ended (A), or internally grounded, and can be either AC or DC coupled. Additionally, the BNC input shields can be floated, avoiding spurious ground loops when measuring remote signals.

The digital control circuitry in the SIM910/911 is designed with a special clock-stopping architecture in which the microcontroller is turned on only when settings are being changed. This guarantees that no digital noise can contaminate low-level analog signals. Settings may be changed from the front panel or through the remote interface. All instrument settings can also be queried via the remote interface. The module generates a status signal to alert the user of an overload condition. Both the SIM910 and SIM911 can be operated outside the SIM mainframe by powering them with their required DC voltages.

Frequency range	DC to 1 MHz
Gain	1 to 100 (1-2-5 sequence)
Gain accuracy	±0.5 % (DC to 100 kHz), ±5 % (<1 MHz)
Gain stability	200 ppm/°C
Input noise (typ.)	
SIM910	4 nV/√Hz @ 1 kHz
SIM911	1.8 nV/√Hz @ 1 kHz
Input impedance	
SIM910	100 MΩ // 35 pF
SIM911	100 kΩ // 35 pF
Input bias current	
SIM910	0.5 pA (typ.), DC coupled
SIM911	4 µA (typ.), DC coupled
AC coupling (–3 dB)	
SIM910	16 mHz
SIM911	0.7 Hz
Input selection	A, A–B or GND
Input coupling	AC or DC
Input shields	Floating or ground
Maximum input	±1 V differential ±5 V common mode
Maximum output	±10 V
CMRR	85 dB @ 1 kHz
Operating temperature	0 °C to 40 °C, non-condensing
Interface	Serial via SIM interface
Connectors	BNC (3 front, 1 rear) DB15 (male) SIM interface
Power	Powered by SIM900 Mainframe, or by user-provided DC power supply (±15 V and +5 V)
Dimensions	1.5" × 3.6" × 7.0" (WHD)
Weight	1.5 lbs.
Warranty	One year parts and labor on defects in materials and workmanship



SIM910 & SIM911 rear panels

Ordering Information

SIM910	JFET preamplifier
SIM911	BJT preamplifier

Small Instrumentation Modules

SIM900 Series — Product overview

SIM900 Series

- SIM mainframe
- Analog PID controller
- AC Resistance bridge
- Bessel / Butterworth filters
- Preamplifiers
- Temperature monitors
- Analog signal conditioning
- Isolated voltage source
- Octal 4-wire multiplexer
- Quad digital voltmeter
- Rubidium frequency standard

SIM — Small Instrumentation Modules — is a compact test and measurement platform for a wide range of applications. Unlike other modular systems, SIM offers complete front-panel as well as remote operation, allowing you to choose between manual and computer control. Up to eight instruments share the same mainframe which provides power, clock synchronization, communications, and module status. For additional versatility, you can cascade mainframes or other RS-232 instruments, and even operate modules outside the mainframe.

With SIM, you configure precision measurement and control systems, achieving the exact functionality you need while avoiding the cost of unnecessary features.

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