

Highly Integrated Analog Front-Ends with 24-bit Converter Cores Achieve Industry's Best Combination of Low Power and Noise Performance

NORWOOD, Mass.--(BUSINESS WIRE)-- [Analog Devices, Inc.](http://www.analog.com) introduced two analog front-end (AFE) devices with integrated 24-bit sigma-delta converter cores that deliver the industry's best combination of low-power, low-noise and signal chain integration. The AD7124-4 and AD7124-8 AFEs connect directly to all standard industrial signal sources and sensor inputs, while reducing power requirements by 40 percent over comparable devices. The best-in-class power performance suits the new AFEs for an array of industrial and instrumentation applications including low power portable equipment. The high degree of integration of the AD7124-4 (four differential and seven pseudo-differential inputs) and the AD7124-8 AFEs (eight differential and 15 pseudo-differential inputs) simplifies design architecture and shortens the design cycle by providing the flexibility to support easily multiple types of sensor inputs, including resistance temperature detectors, thermocouples, voltage/current inputs and current bridges. Enabling the highest system channel density of any comparable products, the new AFEs allow designers to reduce PCB footprint or apply the space savings to expand monitoring and connectivity functions within the same board area.

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<http://www.businesswire.com/news/home/20150727005030/en/>

- Download data sheet, view product page, order samples and evaluation boards:
<http://www.analog.com/AD7124-4>
<http://www.analog.com/AD7124-8>
- Connect with engineers and experts on EngineerZone®, an online technical support community:
https://ez.analog.com/community/data_converters/precision_adcs
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The AD7124-4 and AD7124-8 incorporate a fully integrated signal chain with a 24-bit sigma-delta A/D converter, programmable gain amplifier (PGA), precision reference, reference buffers, current sources, temperature sensor and excitation sources on a single chip. Integrated diagnostic features support SIL compatibility and reduce the need for discrete diagnostic components saving valuable PCB area.

The AD7124-4 and AD7124-8 offer three user-selectable power modes that allow system designers to optimize throughput rate versus required noise performance. In the lowest power mode (255 μ A) the converter delivers 21.7 noise free bits at low sampling rates. The user-selectable power modes allow designers of programmable-logic controllers, process controllers, transmission systems and other industrial and instrumentation equipment to develop a single platform by precisely matching power/performance requirements for each use case.

AD7124-4/AD7124-8 Features

- RMS Noise (gain = 128)
 - 255 μ A typ (24 nV rms at 1.17 Hz) in Low Power Mode
 - 355 μ A typ (20 nV rms at 2.34 Hz) in Mid Power Mode
 - 930 μ A typ (23 nV rms at 9.4 Hz) in Full Power Mode
- Output data rate:
 - 9.38 sps to 19,200 sps (Full Power Mode)
 - 2.34 sps to 4,800 sps (Mid Power Mode)
 - 1.17 sps to 2,400 sps (Low Power Mode)
- Rail to Rail Analog Inputs for gains
- 10 ppm/°C integrated 2.5 V buffered reference (AD7124-4)
- Flexible & per channel programmable digital filters
- Enhanced filters for simultaneous 50 Hz and 60 Hz rejection

- On-chip diagnostics
- -40°C to +105°C Operating Temperature Range

Pricing, Availability and Complementary Components

Product	Description	Price Each In 1,000 Quantities	Packaging	Availability
AD7124-4	4 Differential/7 Pseudo Differential Inputs	\$5.32	5mm x 5 mm 32-lead LFCSP 24-lead TSSOP	NOW
AD7124-8	8 Differential/15 Pseudo Differential Inputs	\$5.84	5mm x 5 mm 32-lead LFCSP	NOW
EVAL-AD7124-4SDZ	Evaluation Board	\$59.00 per unit		NOW
EVAL-SDP-CB1Z	Evaluation Controller Board SDP	\$99.00 per unit		NOW

For low-power digital isolation requirements, the [ADuM1441](#) micropower quad-channel digital isolator is recommended.

About Analog Devices

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