

Integrated Analog Front-end Simplifies Sensor Interfaces

NORWOOD, Mass.--(BUSINESS WIRE)-- [Analog Devices, Inc.](http://www.analog.com) today introduced a FET input AFE with an integrated ADC driver designed to interface directly with current mode sensors such as photo diodes and high output impedance voltage sensors. The ADA4350 integrates a FET input amplifier, switching network and ADC driver into a single package, which simplifies design and lowers power and PCB footprint by more than 50 percent compared to discrete implementations.

The ADA4350 features low-noise performance at low frequencies of $90\text{nV}/\sqrt{\text{Hz}}$ at 10 Hz and broadband noise of $5\text{nV}/\sqrt{\text{Hz}}$ at 100 kHz to maximize the signal-to-noise ratio of the sensor output. Wide dynamic range measurement for small, sensitive signals such as photons or electrons is enabled with the inclusion of integrated gain switching. The on-chip programmability of the ADA4350 allows designers to select external, optimized feedback components. With one chip, a single-ended or differential sensor current or voltage signal can be transformed to a high-speed, low-noise, single-ended or differential-output voltage.

- Download data sheet, view product page and order samples: <http://www.analog.com/ADA4350>
- Order the ADA4350 evaluation board: <http://www.analog.com/EVAL-ADA4350>
- Get questions answered by ADI engineers on EngineerZone®, ADI's online technical support community: <https://ez.analog.com/community/amplifiers>

In analytical measurement applications, light may need to be monitored over many decades of intensity. This requires a variety of gain switching networks that often incorporate multiple external amplifiers and analog switches, which increases the potential for system errors. The ADA4350 integrates the switching networks and input amplifier to minimize leakage and allow the switching network to select up to six externally configurable feedback networks. In test and measurement systems, the same high measurement accuracy must be maintained across the gain levels as the user adjusts the input range of the instrument. For measuring a wider dynamic range, the ADA4350 is an ideal choice because of its high-impedance/low- I_b input amplifier and serial port-controlled switch network. The device also reduces PCB footprint while significantly increasing channel count without thermal density restrictions.

ADA4350 FET Input AFE Features

- Low noise, low input bias current FET input amplifier
 - $90\text{nV}/\sqrt{\text{Hz}}$ at 10 Hz
 - $5\text{nV}/\sqrt{\text{Hz}}$ at 100 Hz
- Integrated gain switching
 - Switch leakage $\pm 1\text{pA}$ typ
- Integrated analog to digital converter driver
 - Differential and single-ended mode

Pricing, Availability and Complementary Components

Product	Production Availability	Price Each In 1,000 Quantities	Packaging
ADA4350	NOW	\$5.73	28-lead TSSOP

Complementary components for the ADA4350 include the [AD7960](http://www.analog.com) PULSAR® differential ADC, [ADR4540](http://www.analog.com) voltage reference, and [ADP7118](http://www.analog.com) and [ADP7182](http://www.analog.com) linear regulators.

About Analog Devices

Analog Devices (NASDAQ: ADI) designs and manufactures semiconductor products and solutions. We enable our customers to interpret the world around us by intelligently bridging the physical and digital with unmatched technologies that sense, measure and connect. Visit <http://www.analog.com>.

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