FEATURES

Guaranteed Nonlinearity: ±0.003% FSR max

35μs Maximum Conversion Time

Small Size 2" X 2" X 0.4"

Wide Power Supply Operation: ±12V to ±17V

APPLICATIONS

Process Control Data Acquisition

Seismic Data Acquisition

Nuclear Instrumentation

Medical Instrumentation

Pulse Code Modulation Telemetry

Industrial Scales

Robotics

GENERAL DESCRIPTION

The ADC1140 is a low cost 16-bit successive-approximation analog-to-digital converter having a 35μS maximum conversion time. This converter provides high accuracy, high stability and low power consumption all in a 2" X 2" X 0.4' module.

High accuracy performance such as integral and differential nonlinearity of ±0.003% FSR max are both guaranteed. Guaranteed stability such as differential nonlinearity TC of ±2ppm/ °C maximum, offset TC of ±30μV/°C maximum, gain TC of ±12ppm/°C maximum and power supply sensitivity of ±0.002% of FSR/% Vs are also provided by the ADC1140.

The ADC1140 makes extensive use of both integrated circuit and thin-film components to obtain excellent performance, small size and low cost. The internal 16-bit DAC incorporates proprietary thin-film resistor technology and proprietary CMOS current-steering switches. A low noise reference, low power comparator, and low power successive approximation register are also used to optimize the ADC1140's design (shown in Figure 1).

The ADC1140 can operate with power supplies ranging from ±l2V to ±l 7V and has provisions for a user supplied external reference. Four analog input voltage ranges are selectable via pin programming; ±5V, ±10V, 0 to +5V and 0 to +10V. Bipolar coding is provided in the offset binary and two's complement formats with unipolar coding displayed in true binary.
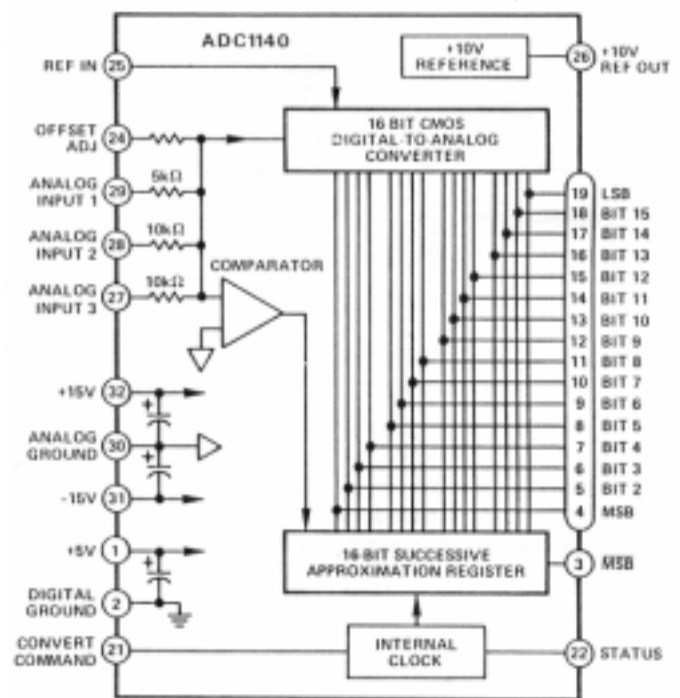

Figure 1. ADC1140 Functional Block Diagram

ⓘintronics

1400 Providence Highway, Building #2
Norwood, MA 02062
Phone (781) 551-5500
FAX (781) 551-5555
www.intronicspower.com