
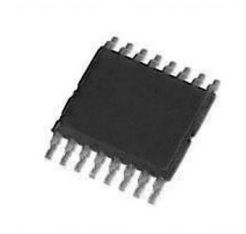


## 4-Channel Single ADC Delta-Sigma 2ksps 16-bit Serial (5-Wire, 4-Wire, 3-Wire, SPI) Automotive 16-Pin TSSOP T/R

<b>Manufacturer:</b>	<a href="#">Texas Instruments, Inc</a>
<b>Package/Case:</b>	TSSOP16
<b>Product Type:</b>	Data Conversion ICs
<b>RoHS:</b>	RoHS Compliant/Lead free 
<b>Lifecycle:</b>	Active



Images are for reference only

[Inquiry](#)

### General Description

The ADS1120-Q1 is a precision, 16-bit, analog-to-digital converter (ADC) that offers many integrated features to reduce system cost and component count in applications measuring small sensor signals. The device features two differential or four single-ended inputs through a flexible input multiplexer (MUX), a low-noise, programmable gain amplifier (PGA), two programmable excitation current sources, a voltage reference, an oscillator, a low-side switch, and a precision temperature sensor.

The device can perform conversions at data rates up to 2000 samples-per-second (SPS) with single-cycle settling. At 20 SPS, the digital filter offers simultaneous 50-Hz and 60-Hz rejection for noisy industrial applications. The internal PGA offers gains up to 128 V/V. This PGA makes the ADS1120-Q1 ideally-suited for applications measuring small sensor signals, such as resistance temperature detectors (RTDs), thermocouples, thermistors, and bridge sensors. The device supports measurements of pseudo- or fully-differential signals when using the PGA. Alternatively, the device can be configured to bypass the internal PGA while still providing high input impedance and gains up to 4 V/V, allowing for single-ended measurements.

Power consumption is as low as 120  $\mu$ A when operating in duty-cycle mode with the PGA disabled. Communication to the device is established through a mode 1 SPI-compatible interface. The ADS1120-Q1 is offered in a TSSOP-16 package and is specified over a temperature range of  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ .

## Key Features

AEC-Q100 qualified for automotive applications  
Temperature grade 1: -40°C to +125°C, T<sub>A</sub>

Functional Safety-Capable  
Documentation available to aid functional safety system design

Wide supply range: 2.3 V to 5.5 V

Programmable gain: 1 V/V to 128 V/V

Programmable data rates: 5 SPS to 2 kSPS

16-bit, noise-free resolution at 20 SPS

Simultaneous 50-Hz and 60-Hz rejection at  
20 SPS with single-cycle settling digital filter

Two differential or four single-ended inputs

Dual-matched programmable current sources:  
50 µA to 1.5 mA

Internal 2.048-V reference: 5 ppm/°C (typ) drift

Internal 2% accurate oscillator

Internal temperature sensor:  
0.5°C (typ) accuracy

SPI-compatible interface (mode 1)

## Recommended For You

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### ADS8326IDGKT

Texas Instruments, Inc  
MSOP8

### ADS7816U

Texas Instruments, Inc  
SOP8

### ADS1110A0IDBVR

Texas Instruments, Inc  
SOT23-6

### ADS1015BQDGSRQ1

Texas Instruments, Inc  
VSSOP-10

### ADS7805UB

Texas Instruments, Inc  
SOP28

### ADS774KU

Texas Instruments, Inc  
SOP28

### ADS7846E

Texas Instruments, Inc  
SSOP16

### ADS8344NB

Texas Instruments, Inc  
SSOP20

### ADS1254E

Texas Instruments, Inc  
SSOP20

### ADS7842E

Texas Instruments, Inc  
SSOP28

### ADS1282IPW

Texas Instruments, Inc  
TSSOP-28

### ADS7843E/2K5

Texas Instruments, Inc  
SSOP16

**ADS1226IRGVT**

Texas Instruments, Inc

QFN16

**ADS825E**

Texas Instruments, Inc

SSOP28

**ADS7825U**

Texas Instruments, Inc

SOP28