


INST Amp Single $\pm 20V$ 14-Pin PDIP Tube

Manufacturer:	Texas Instruments, Inc
Package/Case:	DIP
Product Type:	Amplifier ICs
RoHS:	RoHS Compliant/Lead free 
Lifecycle:	Active



Images are for reference only

[Inquiry](#)

General Description

The PGA309 is a programmable analog signal conditioner designed for bridge sensors. The analog signal path amplifies the sensor signal and provides digital calibration for zero, span, zero drift, span drift, and sensor linearization errors with applied stress (pressure, strain, etc.). The calibration is done via a One-Wire digital serial interface or through a Two-Wire industry-standard connection. The calibration parameters are stored in external nonvolatile memory (typically SOT23-5) to eliminate manual trimming and achieve long-term stability.

The all-analog signal path contains a 2x2 input multiplexer (mux), auto-zero programmable-gain instrumentation amplifier, linearization circuit, voltage reference, internal oscillator, control logic, and an output amplifier. Programmable level shifting compensates for sensor dc offsets.

The core of the PGA309 is the precision, low-drift, no 1/f noise Front-End PGA (Programmable Gain Amplifier). The overall gain of the Front-End PGA + Output Amplifier can be adjusted from 2.7V/V to 1152V/V. The polarity of the inputs can be switched through the input mux to accommodate sensors with unknown polarity output. The Fault Monitor circuit detects and signals sensor burnout, overload, and system fault conditions.

For detailed application information, see the PGA309 User's Guide (SBOU024) available for download at www.ti.com.

Key Features

Complete Bridge Sensor Conditioner

Voltage Output: Ratiometric or Absolute

Digital Cal: No Potentiometers/Sensor Trims

Sensor Error Compensation
Span, Offset, and Temperature Drifts

Low Error, Time-Stable

Sensor Linearization Circuitry

Temperature Sense: Internal or External

Calibration Lookup Table Logic
Uses External EEPROM (SOT23-5)

Over/Under-Scale Limiting

Sensor Fault Detection

+2.7V TO +5.5V Operation

-40°C to +125°C Operation

Small TSSOP-16 Package

APPLICATIONS

Bridge Sensors

Remote 4-20mA Transmitters

Strain, Load, and Weigh Scales

Automotive Sensors

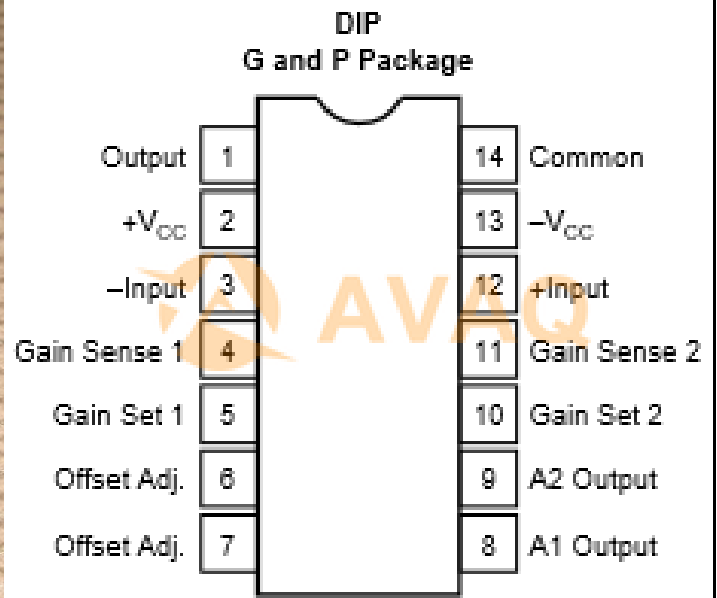
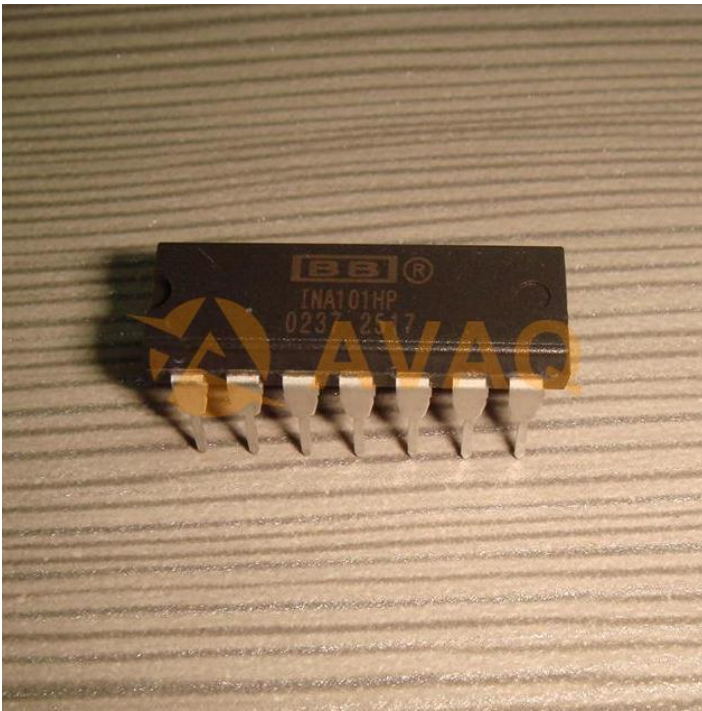
APPLICATIONS

Hardware Designer's Kit (PGA309EVM)
Temperature Eval of PGA309 + Sensor

Full Programming of PGA309

Sensor Compensation Analysis Tool

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Recommended For You

INA823DT

Texas Instruments, Inc

SOP8

INA333AIDRGR

Texas Instruments, Inc

SON-8

INA101AM

Texas Instruments, Inc

CAN10

INA141UA

Texas Instruments, Inc

SOP8

INA111AP

Texas Instruments, Inc

DIP8

INA101AG

Texas Instruments, Inc

DIP

INA116UA

Texas Instruments, Inc

SOP16

INA333AIDRGT

Texas Instruments, Inc

SON8

INA101SM

Texas Instruments, Inc

CAN10

INA129PA

Texas Instruments, Inc

DIP8

INA101CM

Texas Instruments, Inc

CAN10

INA141PA

Texas Instruments, Inc

DIP

TLV2254IN

Texas Instruments, Inc

DIP-14

TLV2464IN

Texas Instruments, Inc

DIP14

INA2126UA

Texas Instruments, Inc

SOP16