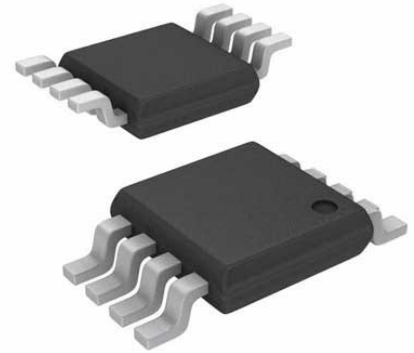


## Sensor and Detector Interface 36V 8-Pin MSOP Tube



Images are for reference only

[Inquiry](#)

**Manufacturer:** [Analog Devices, Inc](#)

**Package/Case:** MSOP8

**Product Type:** Drivers

**RoHS:** RoHS Compliant/Lead free 

**Lifecycle:** Active

## General Description

The AD8494/AD8495/AD8496/AD8497 are precision instrumentation amplifiers with thermocouple cold junction compensators on an integrated circuit. They produce a high level (5 mV/°C) output directly from a thermocouple signal by combining an ice point reference with a precalibrated amplifier. They can be used as standalone thermometers or as switched output setpoint controllers using either a fixed or remote setpoint control.

The AD8494/AD8495/AD8496/AD8497 can be powered from a single-ended supply (less than 3 V) and can measure temperatures below 0°C by offsetting the reference input. To minimize self-heating, an unloaded AD849x typically operates with a total supply current of 180  $\mu$ A, but it is also capable of delivering in excess of  $\pm$ 5 mA to a load.

The AD8494 and AD8496 are precalibrated by laser wafer trimming to match the characteristics of J type (iron-constantan) thermocouples; the AD8495 and AD8497 are laser trimmed to match the characteristics of K type (chromel-alumel) thermo-couples. See Table 1 on the data sheet for the optimized ambient temperature range of each part.

The AD8494/AD8495/AD8496/AD8497 allow a wide variety of supply voltages. With a 5 V single supply, the 5 mV/°C output allows the devices to cover nearly 1000 degrees of a thermo-couple's temperature range.

The AD8494/AD8495/AD8496/AD8497 work with 3 V supplies, allowing them to interface directly to lower supply ADCs. They can also work with supplies as large as 36 V in industrial systems that require a wide common-mode input range.

### Product Highlights

Complete, precision laser wafer trimmed thermocouple signal conditioning system in a single IC package.

Flexible pinout provides for operation as a setpoint controller or as a standalone Celsius thermometer.

Rugged inputs withstand 4 kV ESD and provide over-voltage protection (OVP) up to  $V_S \pm 25$  V.

Differential inputs reject common-mode noise on the thermocouple leads.

Reference pin voltage can be offset to measure 0°C on single supplies.

Available in a small, 8-lead MSOP that is fully RoHS compliant.

## Key Features

Easy to use  
Pretrimmed for K type thermocouples  
Internal cold junction compensation  
High impedance differential input  
Standalone 5mV/°C thermometer  
Reference pin allows offset adjustment  
Thermocouple break detection  
<1mW Power at VS = 5V

## Application

K type thermocouple temperature measurement  
Setpoint controller  
Celsius thermometer  
Universal cold junction compensator  
White goods (oven, stove top) temperature measurements  
Exhaust gas temperature sensing  
Catalytic converter temperature sensing

## Recommended For You

---

### AD595AQ

Analog Devices, Inc  
CDIP14

### ADT7301ARTZ-REEL7

Analog Devices, Inc  
SOT23-6

### AD597AH

Analog Devices, Inc  
CAN

### AD7416ARMZ

Analog Devices, Inc  
MSOP8

### AD7416ARZ

Analog Devices, Inc  
SOP8

### AD594AD

Analog Devices, Inc  
DIP

### AD597ARZ

Analog Devices, Inc  
SOP8

### AD7417ARZ

Analog Devices, Inc  
SOP16

### AD7417BRZ

Analog Devices, Inc  
SOP16

### AD7417ARUZ

Analog Devices, Inc  
TSSOP16

### ADT7301ARMZ

Analog Devices, Inc  
MSOP8

### AD7418ARMZ

Analog Devices, Inc  
MSOP8

### ADT7302ARMZ

Analog Devices, Inc  
MSOP8

### ADT7302ARTZ-REEL7

Analog Devices, Inc  
SOT23-6

### ADT7301ARTZ-500RL7

Analog Devices, Inc  
SOT-23-6