

# Solid State Temperature Sensor

## Linear 1 Microamp per Kelvin Output

Model AD590JH

**\$8.00**

Each

- ✓ Linear Current Output
- ✓ Broad Range  $-55$  to  $150^{\circ}\text{C}$
- ✓ No Linearization Circuitry Required
- ✓ Versatile and Economical
- ✓ Fast Response

Two Styles Available

- ✓ Low-Cost Metal TO-52 Case
- ✓ Miniature Ceramic Flat Pack

Two Accuracies Available

- ✓ J for Low Cost
- ✓ K for Increased Accuracy

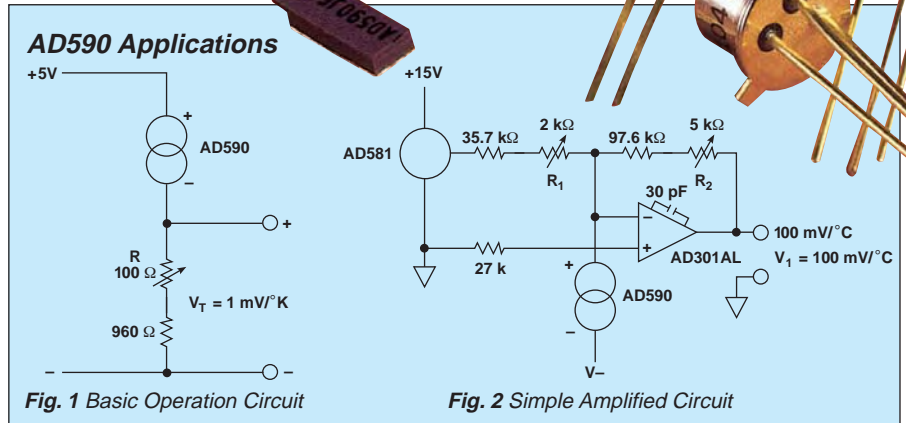
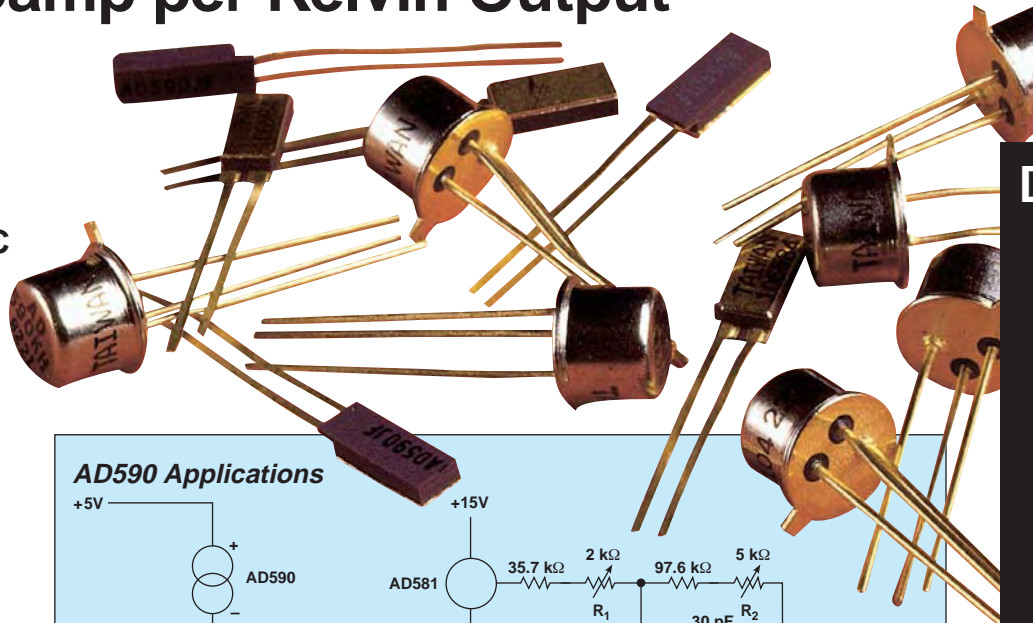
Applications

- ✓ Ideal for Fast Response Surface Measurements
- ✓ Sensors for Controllers and Meters
- ✓ Use in Custom-Made Probes
- ✓ Use on PC Boards for Accurate Measurement

The AD590 is a small temperature transducer that converts a temperature input into a proportional current output.

The advanced technology in the AD590 is especially suited for special temperature measurement and control applications between  $-55$  and  $150^{\circ}\text{C}$  when solid state reliability, linearity and accuracy are required. The AD590 can be used to determine minimum, average, and differential temperatures, in addition to being used for thermocouple cold junction compensation and temperature control applications. The size and responsiveness of the AD590 make it perfect for uses where size is a consideration, such as on PC boards or heat sinks.

Just power up and measure absolute temperature (Kelvin). No linearization, amplification or cold junction compensation is required (Fig. 1). To convert reading to  $^{\circ}\text{C}$ , subtract 273.15.

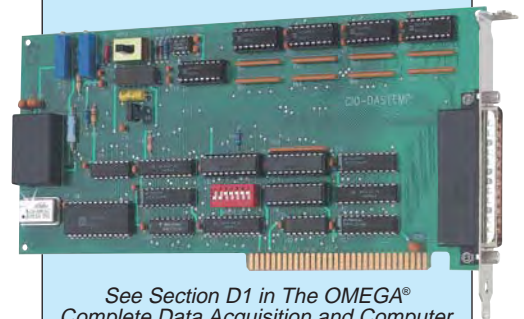


### Specifications

- Absolute Maximum Ratings**  
 Forward Voltage (E+ to E-): +44 V  
 Reverse Voltage (E+ to E-): -20 V  
 Breakdown Voltage (case to E+ or E-):  $\pm 200$  V  
 Lead Temperature:  $300^{\circ}\text{C}$   
 Voltage Range: +4 to +30 Vdc  
 Nominal Current Output at  $25^{\circ}\text{C}$  (298.2 K):  $298.2 \mu\text{A}$   
 Nominal Temperature Coefficient:  $1 \mu\text{A/K}$   
**Calibration Error:** J:  $\pm 5.0^{\circ}\text{C}$  maximum (K:  $\pm 2.5^{\circ}\text{C}$ )  
**Absolute Error:** w/o external  
**Calibration Adjustment:**  
 J:  $\pm 10.0^{\circ}\text{C}$  maximum (K:  $\pm 5.5^{\circ}\text{C}$ );  
 W/ $25^{\circ}\text{C}$  error set to zero J:  $\pm 3.0^{\circ}\text{C}$  maximum (K:  $\pm 2.0^{\circ}\text{C}$ )  
**Repeatability:**  $\pm 0.1^{\circ}\text{C}$  maximum  
**Long-Term Drift:**  $\pm 0.1^{\circ}\text{C/month}$  max.

Compatible Product  
**CIO-DAS-TEMP 32-Channel  
 Plug-In Board for IBM PCs**

**\$649**



See Section D1 in The OMEGA® Complete Data Acquisition and Computer Interface Handbook and Encyclopedia® or visit [omega.com](http://omega.com) for further details.

**ALL MODELS AVAILABLE FOR FAST DELIVERY!**

To Order (Specify Model Number)			
Model Number	Flat Pack	TO-52 Case	Linearity
AD590J	AD590JF \$21	AD590JH \$8	$\pm 1.5^{\circ}\text{C}$
AD590K	AD590KF \$22	AD590KH \$12	$\pm 0.8^{\circ}\text{C}$

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