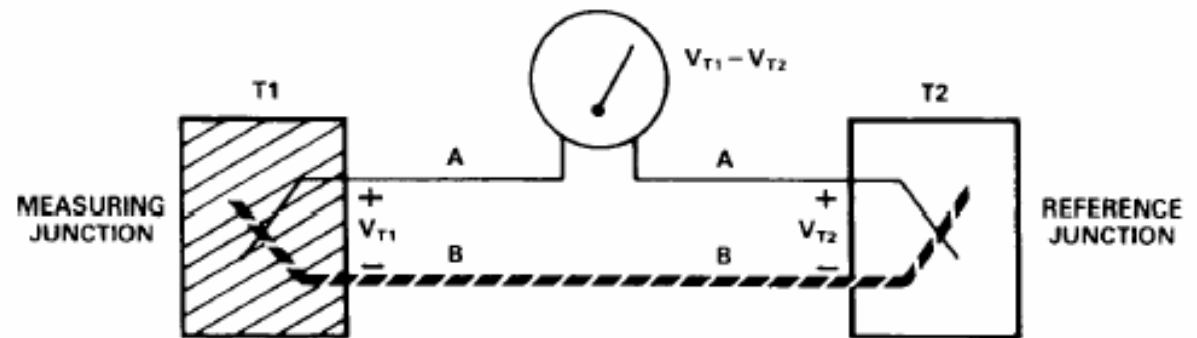# Thermocouples and Conditioning
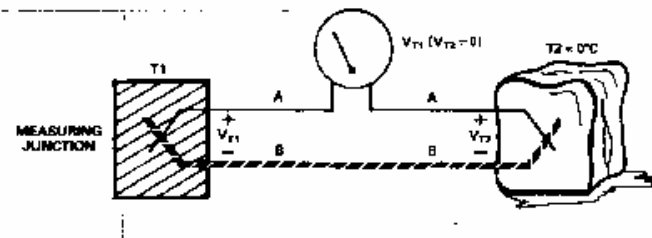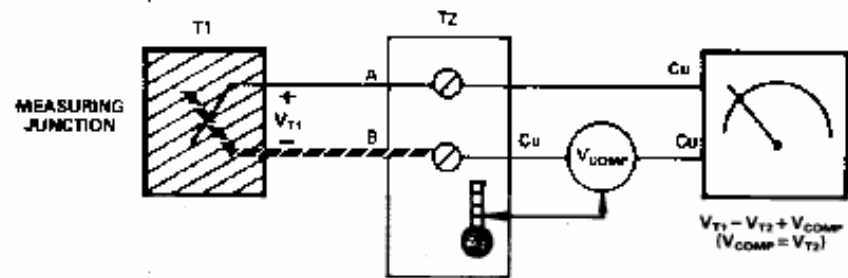
Nikhil Chopra

Introduction

- What is a thermocouple?
- V=K(T1- T2)
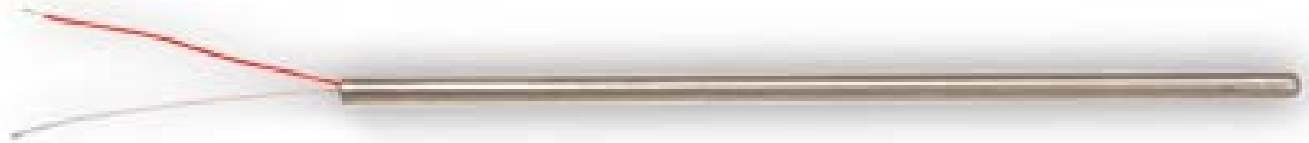- K is the **Seebeck** coefficient.

■ Freeze it!

■ Cold Junction Compensation.

- Thermocouples are quite cheap.
- Different kinds are B,E,J,K etc.

Signal Conditioning

- **Seebeck** coefficient is of the order of µV/ºC ….. Amplification Needed

- Cold Junction Errors removed

- Noise Suppression.

- I need some conditioning!

AD594/ AD595

- A signal conditioner IC.

- Output is now in mV/ºC

- Available from Analog Devices.

- Quite Cheap - $14.

FUNCTIONAL DIAGRAM