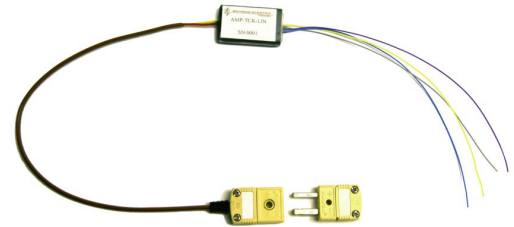


# Linearizing Thermocouple Amplifier

## Model AMP-TC\*-LIN

- Nonlinear thermocouple input signal is converted to linear output voltage (ie.  $0^{\circ}\text{C}=0\text{v}$ ,  $200^{\circ}\text{C}=2\text{v}$ , etc.)
- Input signal is amplified to 10mV per degree Celsius over entire input range
- Cold junction compensation
- Units available in K and J-type
- Signal bandwidth, 10 Hz
- Input signals can be grounded or isolated

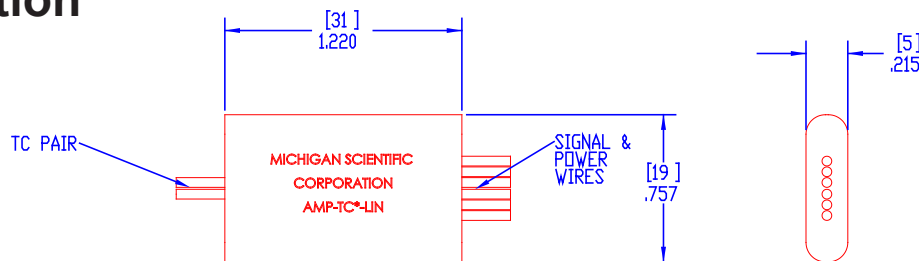


### Description

The *Linearizing Thermocouple Amplifier* is designed to provide cold junction compensation, amplification and linearization of thermocouple sensors. These amplifiers may be used in conjunction with Michigan Scientific slip rings. Although all Michigan Scientific slip ring assemblies are manufactured with instrumentation quality rings and brushes, superior data accuracy is achieved by locating the thermocouple amplifier on the rotating side of the slip ring. This configuration greatly improves signal quality because the amplifier is located closer to the sensor, which reduces errors due to temperature gradients across dissimilar metals in the slip ring and magnetic interference.

Amplifiers are available for K and J thermocouples. For more channels, more than one amplifier may be used with a single control unit. The amplifiers can be adhered, potted or strapped to many different types of parts. Some Michigan Scientific slip rings are available with the amplifiers built into the rotor.

### Configuration



#### NOTES:

- [1] POWER AND OUTPUT LEADS ARE 7', BUT CAN BE SPECIFIED BY CUSTOMER
- [2] TC INPUT WIRES CAN BE SPECIFIED WITH/WITHOUT OMEGA MINIATURE TC CONNECTORS
- [3] OTHER CONFIGURATIONS ARE AVAILABLE. CHECK WEBSITE FOR DETAILS
- [4] DIMENSIONS ARE IN INCH (mm)

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# Linearizing Thermocouple Amplifier

## Specifications

PARAMETER	SPECIFICATION
<b>INPUT</b>	
Range K-type	-80°C to 1000°C
Range J-type	0°C to 750°C
<b>OUTPUT</b>	
Range	±10V Max
Sensitivity	10mV/°C
Capacitive Load	10 nF
<b>TEMPERATURE ERROR</b>	
Includes errors due to cold junction compensator	
-40°C to +70°C Case Temperature	± 3°C Max
-40°C to +110°C Case Temperature	± 5°C Max
<b>DYNAMIC RESPONSE</b>	
Frequency Response -3dB	10 Hz
Slew rate	0.00025 V / μs
Settling Time 1%	80 ms
<b>POWER REQUIREMENTS</b>	
Voltage	±15 VDC
Quiescent Current	± 10 mA
<b>ENVIRONMENT</b>	
Specification	-40°C to +70°C
Operation	-40°C to +125°C
<b>Mechanical (without connectors)</b>	
Weight	9.2g (0.324 oz)
Overall Length	30.99 mm (1.220 in)
Overall Height	5.46 mm (0.215 in)
Overall Width	19.23 mm (0.757 in)