

# Modular Spinning Thermocouple Amplifier

## Model AMP-TC

- Available with 2 or 3 thermocouple amplifier channels
- Cold junction compensation
- High level voltage signal output
- Signal is equal to 10 mV per degree C
- Units available in all thermocouple types
- Input signal can be grounded or isolated
- Pilots on SR series slip ring rotors
- Amplifiers are stackable for multi-channel use



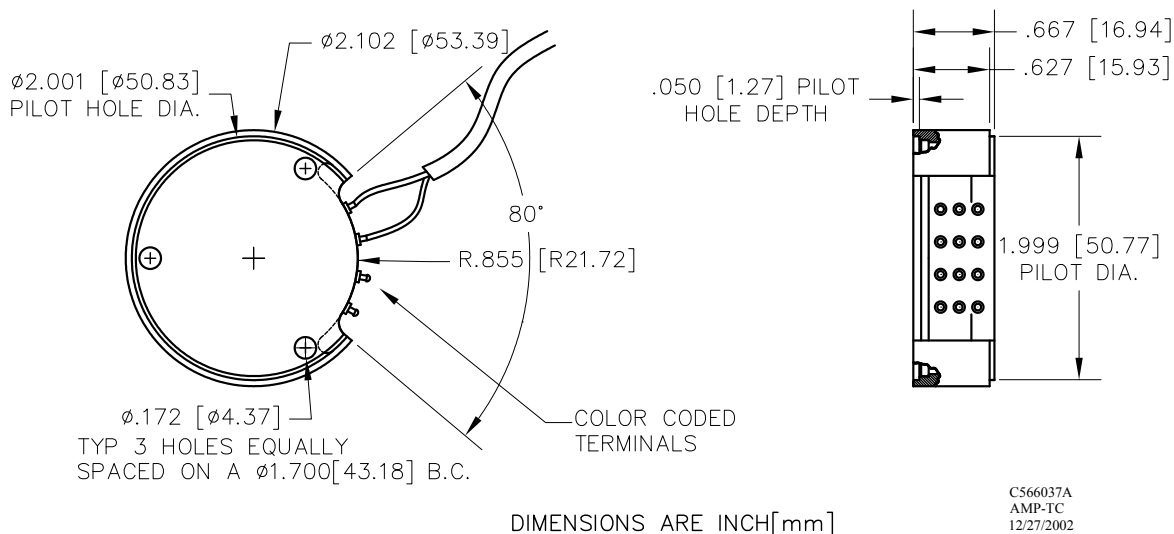
## Description

The *Modular Spinning Thermocouple Amplifiers* are designed to mount on the rotor (spinning side) of all Michigan Scientific SR series slip rings. Superior data accuracy is achieved by locating precision amplifiers 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 long lead wires, connector resistance variations, electro-magnetic interference, and temperature gradients across slip ring contacts.

These *Modular Spinning Thermocouple Amplifiers* provide amplification for two or three thermocouple channels. For applications that require more than three channels, the amplifiers may be stacked or arrayed around an adapter plate.

Refer to the literature in the Technical Notes section for wiring schematics of these amplifiers.

## Configuration



8500 Ance Road  
Charlevoix, MI 49720  
Tel: 231-547-5511  
Fax: 231-547-7070

**MICHIGAN SCIENTIFIC**  
corporation  
<http://www.michsci.com>  
Email: [miscinfo@michsci.com](mailto:miscinfo@michsci.com)

321 East Huron Street  
Milford, MI 48381  
Tel: 248-685-3939  
Fax: 248-685-5406

4/13/13

Rev. A

# Modular Spinning Thermocouple Amplifier

## Specifications

PARAMETER	SPECIFICATION
<b>OUTPUT</b>	Output is not linearized over temperature, if necessary, the output may be linearized externally
Range	±10V Max
Sensitivity @ 25°C TC Temperature	10mV/°C
Capacitive Load	1000 pF Max
<b>TEMPERATURE ERROR</b>	Includes errors due to nonlinearity over temperature in cold junction compensation
Initial @ 25°C Case Temperature	± 1°C Max
-25°C to +85°C Case Temperature	± 2°C Max
-55°C to +125°C Case Temperature	± 5°C Max
<b>NOISE</b>	Referred to input of amplifier
0.01 - 10Hz	0.8 µV p-p
<b>DYNAMIC RESPONSE</b>	
Frequency Response -3dB	1.56 kHz ( <i>Higher bandwidths available</i> )
Slew Rate	0.4 V/ µs
Settling time 0.1% / 0.01%	40 µs/ 50 µs
<b>POWER REQUIREMENTS</b>	
Voltage	±15 VDC
Current	±10 mA Max Total (2 channels) ±15 mA Max Total (3 channels)
<b>ENVIRONMENT</b>	
Specification	-25°C to +85°C (-13°F to +185°F)
Operation	-55°C to +125°C (-67°F to +257°F)

8500 Ance Road  
Charlevoix, MI 49720  
Tel: 231-547-5511  
Fax: 231-547-7070  
4/13/13

**MICHIGAN SCIENTIFIC**  
corporation

<http://www.michsci.com>  
Email: [mscinfo@michsci.com](mailto:mscinfo@michsci.com)

321 East Huron Street  
Milford, MI 48381  
Tel: 248-685-3939  
Fax: 248-685-5406