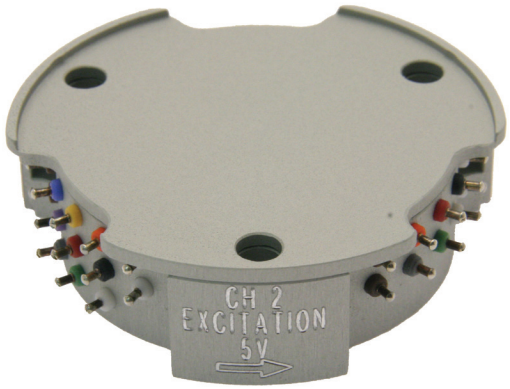
Model AMP-SG2-U2 Series

- Two channel modular amplifier
- Highly accurate bridge excitations
- Provides high level voltage signal outputs
- Externally adjustable shunt resistances
- Externally adjustable gains
- Precision low noise differential amplifiers
- Remote bridge excitation On/Off capability
- Remote shunt calibration capability

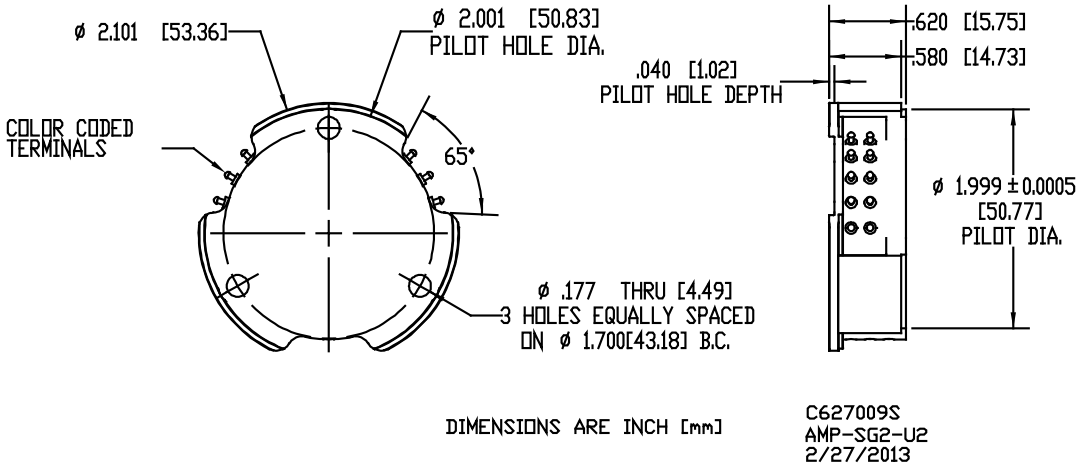


Description

The *Modular Spinning Strain Gage Amplifier* is designed to mount on the rotor (spinning side) of all Michigan Scientific SR series slip rings. Superior data accuracy is achieved by locating the signal 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 long lead wires, connector resistance variations, and electro-magnetic interference.

These *Modular Spinning Strain Gage Amplifiers* incorporate a precision low drift bridge excitation supply, a stable differential amplifier, and a remotely activated shunt calibration resistor for system span verification. Each amplifier module provides strain gage bridge excitation and amplification for two channels. For more than two channels, the amplifiers may be stacked or arrayed around an adapter plate.There is also a three channel amplifier, *AMP-SG3-U2*. Refer to the literature in the Technical Notes section for a wiring schematic of an individual amplifier and recommended wiring techniques when using multiple amplifiers..

Drawing



8500 Ance Road
Charlevoix, MI 49720
Tel: 231-547-5511
Fax: 231-547-7070
03-15-20
Rev. A

MICHIGAN SCIENTIFIC corporation
http://www.michsci.com
Email: mscinfo@michsci.com

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

Strain Gage Amplifiers

Specifications

PARAMETER		SPECIFICATION
BRIDGE EXCITATION		
Type		DC Constant Voltage (Bipolar excitation)
Magnitude		AMP-SG2-U2-5 ±2.5 V (5 volts total) AMP-SG2-U2-10 ±5.0 V (10 volts total)
Accuracy		0.40%
Temperature Coefficient		0.0005 %/°C Max (0.00028 %/°F)
Current Limit		AMP-SG2-U2-5 42 mA AMP-SG2-U2-10 84 mA
REMOTE CALIBRATION		Positive & negative shunt Calibration
Shunt Resistance	internal value	100KΩ and 1MΩ
	external value	100kΩ Through 1MΩ
Shunt accuracy	@ 100kΩ	0.1%
	@ 1MΩ	0.1%
GAIN		
Range	with external jumper	100 & 2000 V/V
	w/ external resistor	100 through 2000 V/V
Accuracy	@ 25°C, Gain =100	±0.05 % typ (±0.50 %max)
	@ 25°C, Gain =1000	±0.50 %typ (±1.0 %max)
Temperature Coefficient		0.0025 %/°C (0.0014 %/°F)
OUTPUT		
Range		±10V Max
Capacitive Load		1000 pF Max
VOLTAGE OFFSET		Referred to input of amplifier
Initial	@ 25°C	±10 µV typ (±50 µV max)
Temperature Stability		±0.1 µV / °C typ (±0.25 µV / °C max)
Time Stability		±0.1 µV / month
DC CMRR		160 dB
Noise	rti 0.01 - 10 Hz	0.7 µV p-p
DYNAMIC RESPONSE		
Frequency Response -3dB	@Gain=1000	20 kHz
	@ Gain=100	20 kHz
Slew rate		4 V/ µs
Settling Time to 0.01% @ Gain=100		9 µs
POWER REQUIREMENTS		
Voltage	@ 25°C	±15 VDC
Current		±30 mA plus Bridge Load (+20 mA additional during shunt calibration)
ENVIRONMENT		
Specification		-40 to +85°C (-40 to +185°F)
Operation		-40 to +125°C (-40 to +257°F)
MECHANICAL		AMP-SG2-U2
Weight		51.3 G (1.81 Oz)

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