Twelve Channel Strain Gage Amplifier Box

Model SGA12A-PS

- Ideal for use with MSC 3D Load Cells
- Highly accurate bridge excitation
- Provides high level voltage signal output
- Precision low noise differential amplifier
- Electronic remote bridge excitation On/Off capability
- Remote shunt calibration capability
- Contains internal power supply
- Also available as 3, 6, or 9 channel units
- Wide input voltage range

Description

The Michigan Scientific *SGA12A-PS Strain Gage Amplifier Box* is ideal for use with up to four of MSC's wide variety of three directional load cells. The *SGA12A-PS* provides highly accurate excitation voltage to the load cell, a stable differential amplifier, and a remotely activated shunt resistor for system span verification. The result is an accurate high level voltage output signal. The shunt calibration can be easily invoked with the flip of a switch. An internal DC power control unit powers the amplifiers and controls excitation to strain gauge bridges.

MSC will select the appropriate amplifier gain and shunt resistors for use with your selected load cell. The fixed precision resistors are factory installed.

The standard *SGA12A-PS* is comprised of twelve independent miniature strain gage amplifiers. MSC can customize the amplifier box to any number of channels desired.

Controls

Power	Activates the Amplifier Control Unit.	Power Switch On Off
Bridge Excitation:	When used with a modular strain gauge spinning amplifier, this turns the excitation to the bridge on or off without turning off the amplifier. This is done by inverting the polarity of the ± 15 V supply pins.	Bridge Kill Excitation On Off
Shunt	Rocker Switch must be held in the positive or negative position to record the positive or negative shunt calibration.	Shunt Rocker Switch + Shunt Hold - Shunt Hold

8500 Ance Road
Charlevoix, MI 49720
Tel: 231-547-5511
Fax: 231-547-7070
07-13-21
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

Twelve Channel Strain Gage Amplifier Box

Specifications

PARAMETER		SPECIFICATION
BRIDGE EXCITATION		
Type		DC Constant Voltage (Bipolar excitation)
Magnitude		±5 V (10 Volts total) ±2.5 V (5 Volts total)
Accuracy		0.40 %
Temperature Coefficient		0.0005 %/°C Max (0.00028 %/°F)
Current Limit		84 mA per channel (10 Volt Excitation)
REMOTE CALIBRATION		Positive & Negative shunt calibration
Shunt Resistance		100 KW and 1 MW
Shunt accuracy		0.1 %
GAIN		
Range		100 & 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		±10 V 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	40 kHz
Slew rate		4 V/µs
Settling Time to 0.01%	@ Gain=100	9 µs
POWER REQUIREMENTS		
Voltage		10 to 36 Vdc
Current		
	Normal Operation	±45 mA plus Bridge Load (12 channels)
	Shunt Operation	±60 mA plus Bridge Load (12 channels)
ENVIRONMENT		
Specification		-25 to +70 °C (-13 to +158 °F)
Operation		-50 to +100 °C (-58 to +212 °F)

Electrical Connections

Inputs				**Outputs**
3 Pin Male Connector PT02E-8-3P*		13 Pin Female JT02RE		Signal Breakout
Pin	Function	Load Cells	Channels	26 - D-sub connector
A B C	+10 to +36 Vdc DC Input Ground N/C	1 2 3 4	x,y,z x,y,z x,y,z x,y,z	** Refer to signal breakout sheet
*Merge connectors are provided with new units				

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

07-13-21
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