



US Patent 8,823,364 applies



## MODEL 142A INLINE STRAIN GAGE AMPLIFIER

### SPECIFICATIONS

- ♦ Low Noise Inline Strain Gage Amplifier
- ♦ User Selectable Gain Settings
- ♦ Includes Auto-Zero Function
- ♦ Small Rugged Package

### FEATURES

- ♦ Interface with 1/4 Bridge Strain Gages
- ♦  $\pm 1.5\text{mV}$  Auto-Zero Function
- ♦ x10, x50, x100, x200 & x500 Gain Settings
- ♦ Wide Bandwidth to 100kHz
- ♦ Regulated 5 Vdc Gage Excitation

### APPLICATIONS

- ♦ Static Force Testing
- ♦ Instrumentation Labs
- ♦ Load Monitoring
- ♦ Strain Measurement

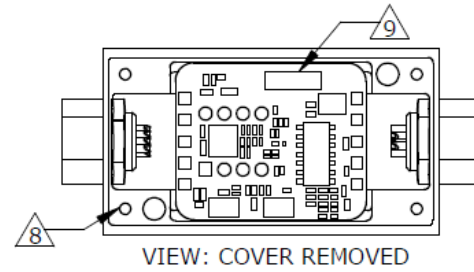
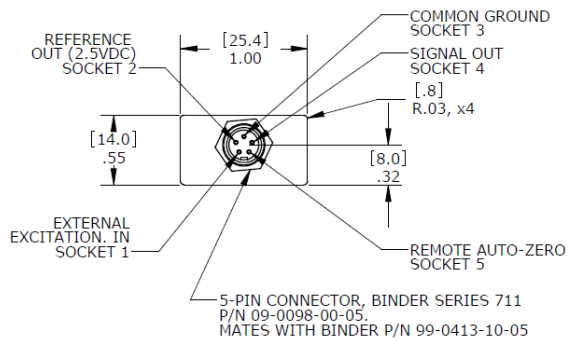
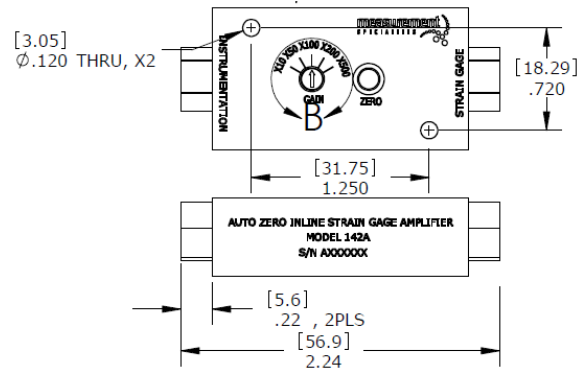
The **Model 142A** is a remote in-line strain gage amplifier designed to be used with 1/4 bridge strain gage instruments. The amplifier features five user selectable gain settings with a gain accuracy of  $\pm 0.5\%$  and offers a wide bandwidth to 100kHz.

The model 142A offers a unique patented auto-zero function that allows the operator to zero the offset voltage to within  $\pm 1.5\text{mV}$  either remotely or by pressing the on-board push button at the user's command, usually right before the taking of data. This feature removes any offset drift from the strain gauge for a more accurate measurement.

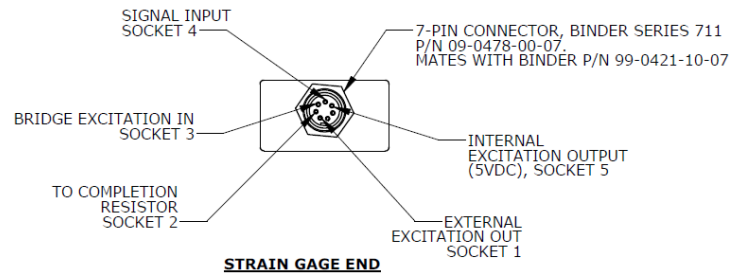
## PERFORMANCE SPECIFICATIONS

All values are typical at $\pm 24^{\circ}\text{C}$ unless otherwise stated. TEConnectivity reserves the right to update and change these specifications without notice.	
<b>DYNAMIC</b>	
Input Type	Uniaxial Strain Gage, 4 Wires, $\frac{1}{4}$ Bridge
Input Range (V)	0.5 to ( $V_{\text{exc}} - 0.6$ ), each input referenced to ground
User Selectable Gain Settings	x10, x50, x100, x200, x500
Bandwidth (-3dB)	DC to 100kHz
Noise ( $\mu\text{Vrms}/\sqrt{\text{Hz}}$ )	0.03 RTI + 2 RTO
Zero Output After Auto-Zero Actuation <sup>1</sup>	$\pm 1.5\text{mV}$ , referenced to 2.5V reference out
Input Range Limit for Auto-Zero Function	$\pm 10\text{Volts/gain}$
<b>ELECTRICAL</b>	
Input Excitation ( $V_{\text{dc}}$ ) <sup>2</sup>	5 to 30
Bridge Excitation ( $V_{\text{dc}}$ ) <sup>2</sup>	5 (regulated)
Reverse Polarity Protection	-20V, on excitation line
Quiescent Current (mA)	15, without bridge
Reference Out ( $V_{\text{dc}}$ )	$2.5 \pm 0.05$ , referenced to ground
Output Voltage Limit ( $V_{\text{pk}}$ )	$\pm 2$ , referenced to 2.5V reference out
Gain Accuracy (%)	0.5
Output Impedance ( $\Omega$ )	<50
Insulation Resistance ( $\text{M}\Omega$ )	>100 @ 50Vdc
<b>ENVIRONMENTAL</b>	
Operating Temperature ( $^{\circ}\text{C}$ )	-20 to +85
Storage Temperature ( $^{\circ}\text{C}$ )	-20 to +85
Environmental Protection	IP50
Vibration (g)	20 pk from 50Hz to 2000Hz
Shock (g)	2000 pk with 3.6ms Haversine pulse
<b>PHYSICAL</b>	
Case Material	Anodized Aluminum
Electrical Connector, Input	Binder Connector P/N 09-0478-00-07 (mates with Binder Connector P/N 99-0421-10-07)
Electrical Connector, Output	Binder Connector P/N 09-0098-00-05 (mates with Binder Connector P/N 99-0413-10-05)
Weight (grams)	34

## DIMENSIONS



VIEW: COVER REMOVED



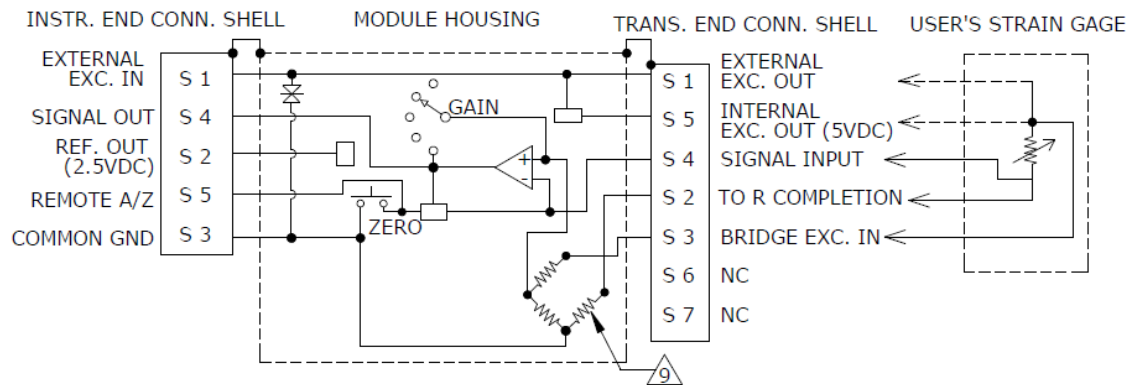
The model 142A is supplied with a 350-ohm completion resistor installed at the factory. This resistor can be replaced by the user with another value if required to match that of the strain gage.

Suggested metal film resistor: Vishay Dale PTF56 Series,  $\pm 0.1\%$ ,  $\pm 5\text{PPM}/^\circ\text{C}$ , 1/8W

Removable cover



## SCHEMATIC



## ORDERING INFO

PART NUMBERING    Model Number

Model 142A

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