







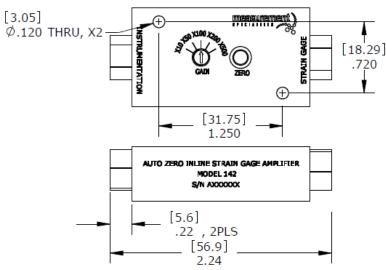
Low Noise Inline Strain Gage Amplifier User Selectable Gain Settings Includes Auto-Zero Function Small Rugged Package

The Model 142 is a remote in-line strain gage amplifier designed to be used with ¼ bridge strain gage instruments. The amplifier features five user selectable gain settings with a gain accuracy of ±0.5% and offers a wide bandwidth to 100kHz. The model 142 offers a unique patented autozero function that allows the operator to zero the offset voltage to within ±1.5mV 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 gage for a more accurate measurement.



US Patent 8,823,364 applies

dimensions



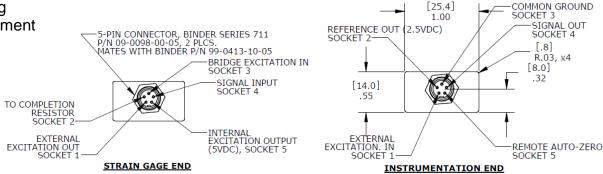
FEATURES

- Interface with ¼ Bridge Strain Gages
- ±1.5mV 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







Model 142 Inline Strain Gage Amplifier

performance specifications

All values are typical at ±24°C unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice.

Parameters DYNAMIC

Input Type Uniaxial Strain Gage, 4 Wires, 1/4 Bridge

0.5 to (Vexc - 0.6), each input referenced to ground Input Range (V)

User Selectable Gain Settings x10, x50, x100, x200, x500

Bandwidth (-3dB) DC to 100kHz Noise (nV/√Hz) 30 RTI + 2000 RTO

Zero Output After Auto-Zero Actuation¹ ±1.5mV, referenced to 2.5V reference out

Input Range Limit for Auto-Zero Function ±10Volts/gain

ELECTRICAL

Input Excitation (Vdc)² 5 to 30 Bridge Excitation (Vdc)² 5 (regulated)

Reverse Polarity Protection -20V, on excitation line Quiescent Current (mA) 15, without bridge

Reference Out (Vdc) 2.5 ±0.05, referenced to ground Output Voltage Limit (Vpk) ±2, referenced to 2.5V reference out

Gain Accuracy (%) 0.5 Output Impedance (Ω) < 50

Insulation Resistance (M Ω) >100 @ 50Vdc

ENVIRONMENTAL

Operating Temperature (°C) -20 to +70 Storage Temperature (°C) -20 to +70 **Environmental Protection** IP50

Vibration (g) 20 pk from 50Hz to 2000Hz

Shock (g) 2000 pk with 3.6ms Haversine pulse

PHYSICAL

Case Material Anodized Aluminum

Electrical Connector, Input Binder Connector P/N 09-0098-00-05 (mates with Binder Connector P/N 99-0413-10-05) Electrical Connector, Output Binder Connector P/N 09-0098-00-05 (mates with Binder Connector P/N 99-0413-10-05)

Weight (grams)

Supplied accessories: AC-G04393 2x Mating Connector Plug (Binder Connector P/N 99-0413-10-05)

Optional accessories: 379-XXX Cable Assembly, 5x #30 AWG, (XXX designates length in inches, 10ft standard)

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¹ Auto-zero can be actuated using pushbutton or grounding remote auto-zero pin for minimum 2 sec. Multiple actuations may be required to achieve the ±1.5mV limit.

The strain gage can be powered using external gage excitation voltage (through Socket 1 of connection) without using the on-board voltage regulator

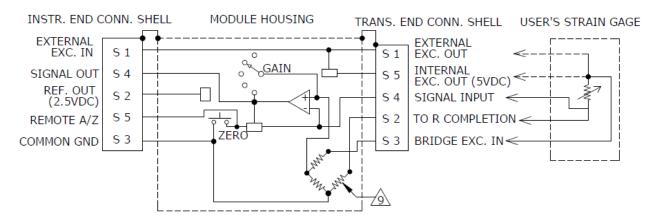
Supply Out: 5.00 ±0.10 Vdc, <150 mamps current source, >5.2 Vdc excitation required.

⁴ Excitation and common ground are direct connections from instrumentation end to transducer end.



Model 142 Inline Strain Gage Amplifier

schematic





The model 142 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, ±0.1%, ±5PPM/°C, 1/8W

ordering info

PART NUMBERING Model Number

Model 142