



MODEL 140A INLINE AMPLIFIER

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

The Model 140A is a remote in-line DC amplifier designed to be used with bridge-type mV output transducers. 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 140A offers a unique patented auto-zero function that allows the operator to zero the transducer 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 sensor for a more accurate measurement.

APPLICATIONS

- Pressure and Level Indication
- Static Acceleration Testing
- Instrumentation Labs
- Load Monitoring
- Strain Measurement

FEATURES

- Interface with mV Output Sensors
- $\pm 1.5\text{mV}$ Auto-Zero Function
- x10, x25, x50, x100 & x200 Gain Settings
- Wide Bandwidth to 100kHz
- 5 to 30Vdc Excitation Voltage

US Patent No. 8.823,364 B2 applies

PERFORMANCE SPECIFICATIONS

All values are typical at $\pm 24^{\circ}\text{C}$ and 12Vdc excitation unless otherwise stated. TE reserves the right to update and change these specifications without notice.

PARAMETERS

DYNAMIC

| | |
|---|--|
| Input Type | Differential |
| Input Range (V) | 0.5 to $(V_{exc} - 0.6)$, each input referenced to ground |
| User Selectable Gain Settings | x10, x25, x50, x100, x200 |
| Bandwidth (-3dB) | DC to 100kHz |
| Noise ($\mu\text{V}_{\text{rms}}/\sqrt{\text{Hz}}$) | 0.03 RTI + 2 RTO |
| Zero Output After Auto-Zero Actuation ¹ | $\pm 1.5\text{mV}$, referenced to 2.5V reference out |
| Input Range Limit for Auto-Zero Function | $\pm 10\text{Volts/gain}$ |

ELECTRICAL

| | |
|--|--|
| Excitation Voltage (Vdc) | 5 to 30 |
| Reverse Polarity Protection | -20V, on excitation line |
| Quiescent Current (mA) | 15 |
| 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 ($\text{M}\Omega$) | >100 @ 50Vdc |

ENVIRONMENTAL

| | |
|--|------------------------------------|
| Operating Temperature ($^{\circ}\text{C}$) | -20 to +70 |
| Storage Temperature ($^{\circ}\text{C}$) | -20 to +70 |
| Environmental Protection | IP50, Silicone Potted |
| 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 09-0478-00-07 (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 |

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 $\pm 1.5\text{mV}$ limit.

² Supply Out: 5.00 ± 0.10 Vdc, <150 mamps current source, >5.2 Vdc excitation required.

³ Excitation and common ground are direct connections from instrumentation end to transducer end.

SUPPLIED ACCESSORIES

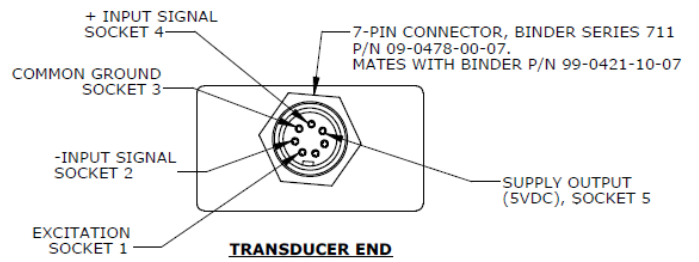
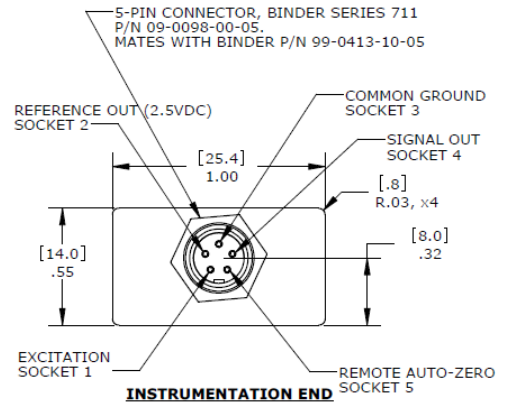
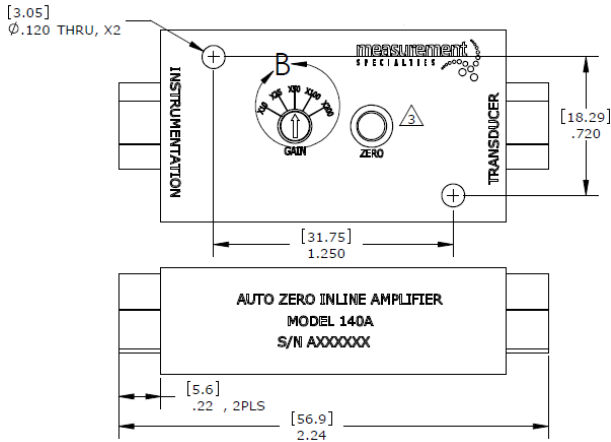
| | |
|-----------|---|
| AC-G04393 | 1x Mating Connector Plug (Binder Connector P/N 99-0413-10-05) |
| AC-G05314 | 1x Mating Connector Plug (Binder Connector P/N 99-0421-10-07) |

OPTIONAL ACCESSORIES

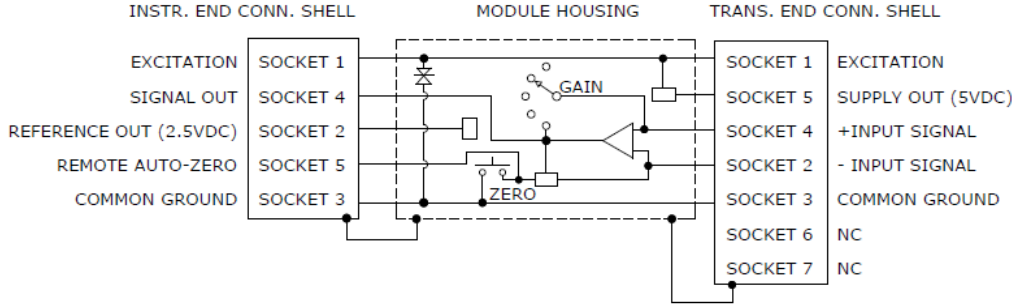
| | |
|---------|--|
| 379-XXX | Cable Assembly, 5x #30 AWG, (XXX designates length in inches, 10ft standard) |
|---------|--|

MODEL 140A INLINE AMPLIFIER

DIMENSIONS



SCHEMATIC



ORDERING INFORMATION

Part Number

140A

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