

Model 140 Inline Amplifier



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



The **Model 140** 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 140 offers a unique auto-zero function (patent pending) 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.

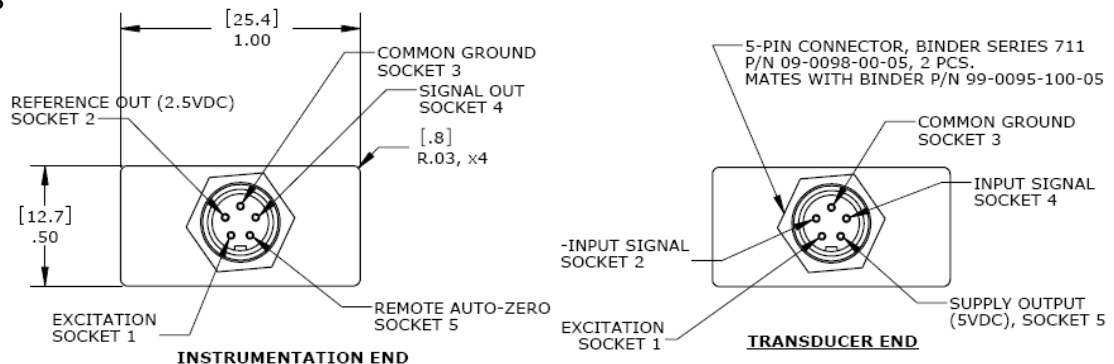
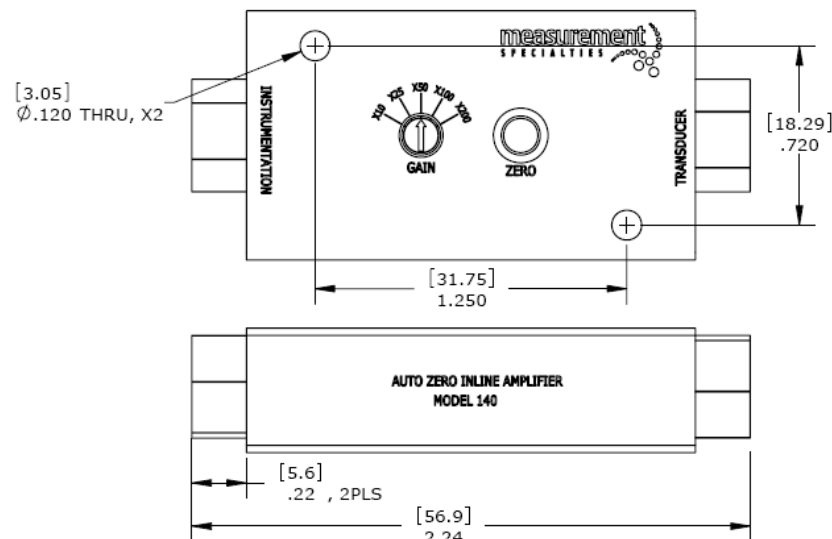
dimensions

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

APPLICATIONS

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



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performance specifications

All values are typical at $\pm 24^{\circ}\text{C}$ and 12Vdc excitation unless otherwise stated. Measurement Specialties 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 ($\text{nV}/\sqrt{\text{Hz}}$)	17 RTI + 2000 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
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 99-0095-100-05)
Electrical Connector, Output	Binder Connector P/N 09-0098-00-05 (mates with Binder Connector P/N 99-0095-100-05)
Weight (grams)	33

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.

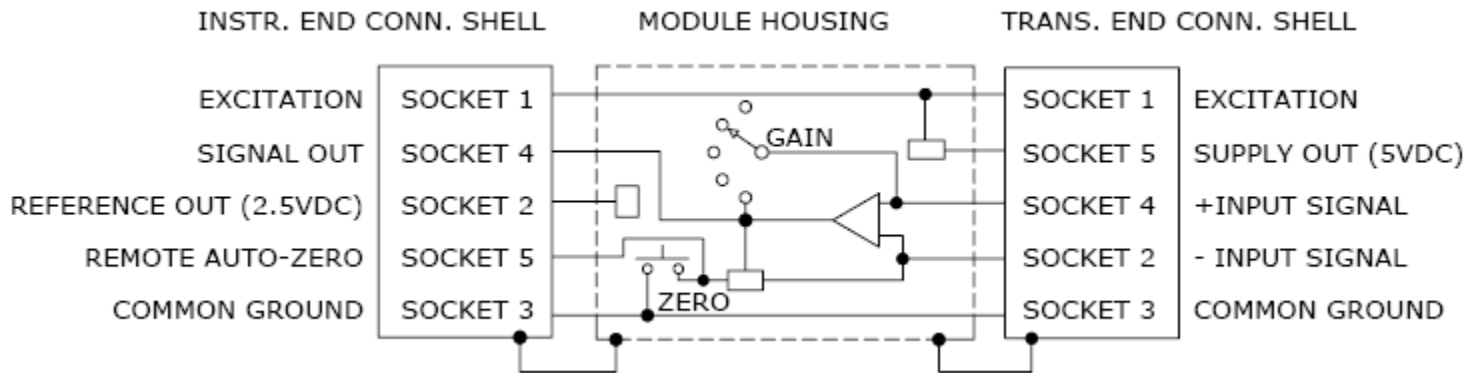
³ Excitation and common ground are direct connections from instrumentation end to transducer end.

Optional accessories:	379-XXX	Cable Assembly, 5x #30 AWG, (XXX designates length in inches, 10ft standard)
	AC-G04239	Mating Connector Plug (Binder Connector P/N 99-0095-100-05)

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schematic



ordering info

PART NUMBERING Model Number

Model 140

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