

# 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.

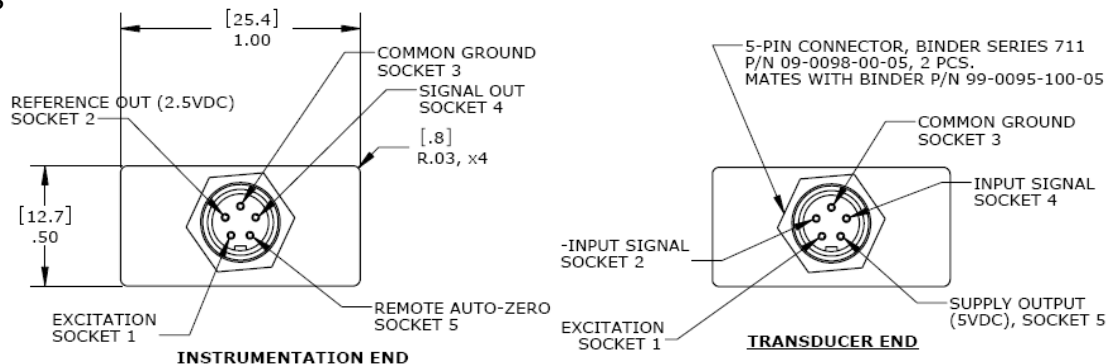
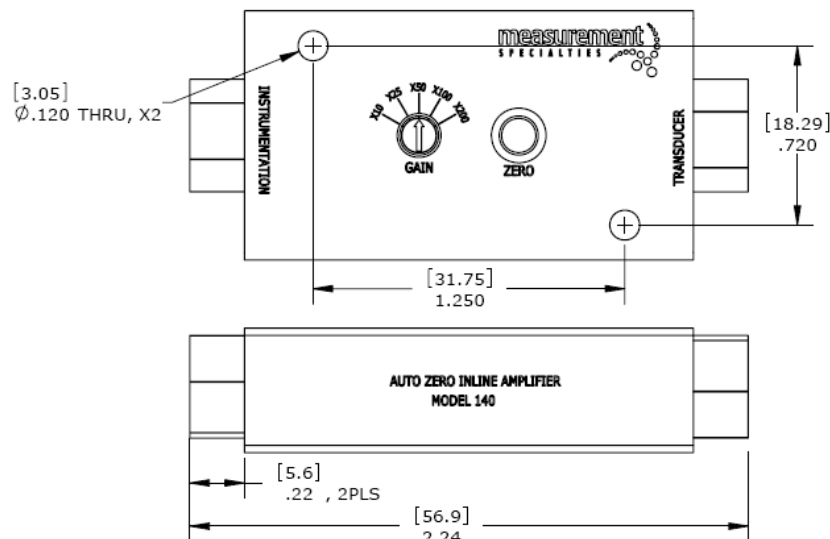
## dimensions

### 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 <sup>1</sup>	$\pm 1.5\text{mV}$ , referenced to 2.5V reference out
Input Range Limit for Auto-Zero Function	$\pm 10\text{Volts/gain}$

#### ELECTRICAL

Excitation Voltage (Vdc)	5 to 30
Reverse Polarity Protection	-20V, on excitation line
Quiescent Current (mA)	15
Reference Out (Vdc)	$2.5 \pm 0.05$ , referenced to ground
Output Voltage Limit (Vpk)	$\pm 2$ , referenced to 2.5V reference out
Gain Accuracy (%)	0.5
Output Impedance ( $\Omega$ )	<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

<sup>1</sup> 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.

<sup>2</sup> Supply Out:  $5.00 \pm 0.10$  Vdc, <150 mamps current source, >5.2 Vdc excitation required.

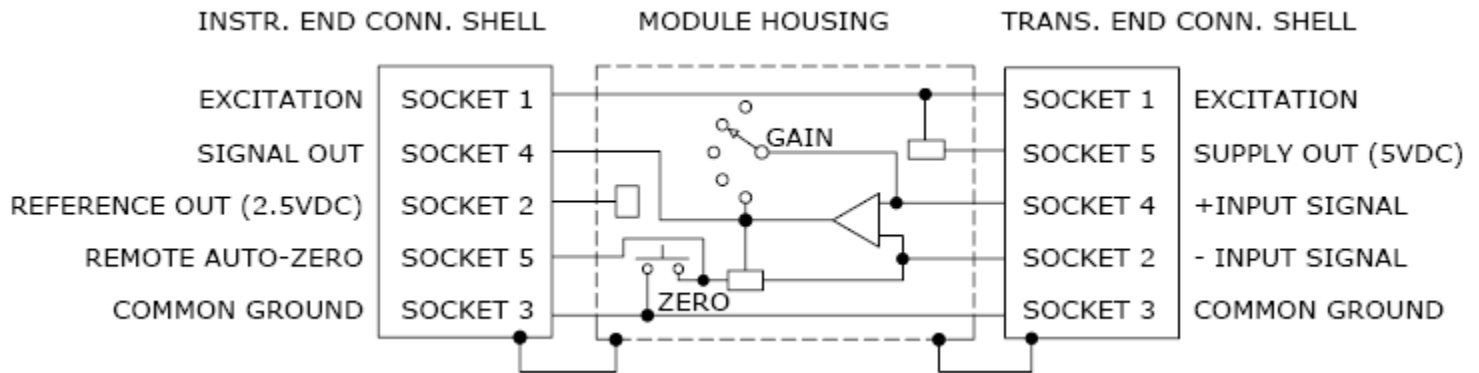
<sup>3</sup> Excitation and common ground are direct connections from instrumentation end to transducer end.

**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

北京汇润科贸有限公司  
 电话：+ 86 010 6478 7697  
 直线：133 8128 1890  
 传真：+ 86 010 5894 9029  
 邮箱：[sales@aq315.com](mailto:sales@aq315.com)  
<http://www.aq315.com>