

# Model 130 Inline Charge Converter



Low Noise Charge Converter  
Optional Gain Settings  
Small Rugged Package  
Male or Female BNC Options



The **Model 130 series** are remote in-line charge converters designed to be used with piezoelectric accelerometers. The low noise charge converters feature three fixed gain options that convert the high impedance charge output from the accelerometer to a low impedance voltage output. The model 130 series features broad bandwidth to 30kHz and 10Vpeak linear output. The units are powered by a constant current of 4 to 20mA.

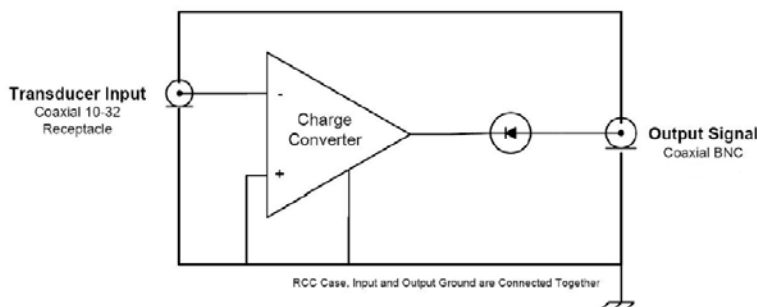
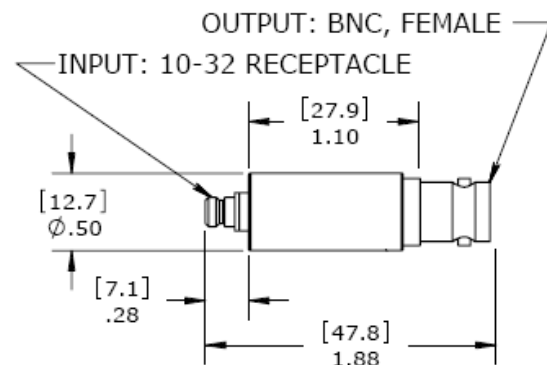
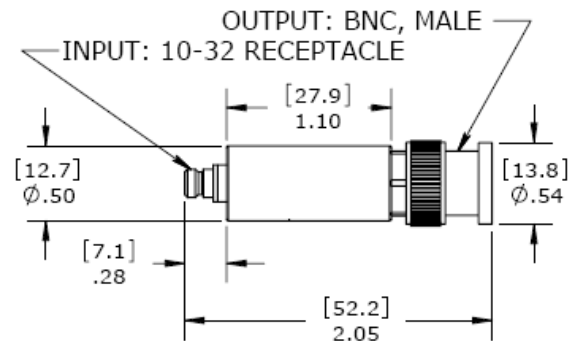
## FEATURES

- Interface with Charge Transducers
- BNC Male & Female Options
- 0.1, 1.0 & 10mV/pC Gain Options
- Wide Bandwidth
- Low and High Pass Filters

## APPLICATIONS

- Instrumentation Labs
- PE Accelerometer Testing
- High Temperature Testing
- Vibration Monitoring

## Layout



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All values are typical at  $\pm 24^{\circ}\text{C}$  and 4mA excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice.

## Parameters

### DYNAMIC

|                                       | -0.1       | -001       | -010       | Notes        |
|---------------------------------------|------------|------------|------------|--------------|
| Dash Number                           | -0.1       | -001       | -010       |              |
| Gain (mV/pC)                          | 0.1        | 1          | 10         |              |
| Frequency Response (Hz)               | 0.5-20,000 | 0.5-20,000 | 0.5-20,000 | $\pm 5\%$    |
| Upper Cutoff Frequency (Hz)           | 30,000     | 30,000     | 30,000     | -3dB         |
| Broadband Noise ( $\mu\text{V rms}$ ) | 19         | 25         | 32         | 1Hz to 10kHz |
| Broadband Noise ( $\mu\text{V rms}$ ) | 25         | 32         | 40         | 1Hz to 30kHz |

### ELECTRICAL

|                                |   |
|--------------------------------|---|
| Source Resistance ( $\Omega$ ) | >1000,000   |
| Source Capacitance (nF)        | <5  |
| Resistive Load ( $\Omega$ )    | <50   |
| Capacitance Load (pF)          | <100  |
| Bias Voltage (Vdc)             | 8 to 12   |
| Output Voltage (Vpp)           | 10  |
| Compliance Voltage (Vdc)       | 18 to 30  |
| Excitation Current (mA)        | 4 to 20   |
| Gain Accuracy (%)              | $\pm 2.5$ at 1nF source capacitance and 100Hz ref frequency   |
| Gain Stability (%)             | $\pm 1.0$ referred to $+25^{\circ}\text{C}$ at 100Hz from $-40^{\circ}\text{C}$ to $+100^{\circ}\text{C}$ |

### ENVIRONMENTAL

|  |                                   |
|--|-----------------------------------|
| Operating Temperature ( $^{\circ}\text{C}$ ) | -40 to +100                       |
| Storage Temperature ( $^{\circ}\text{C}$ )   | -54 to +125                       |
| Humidity                                     | Environmentally Sealed            |
| Vibration (g)                                | 20 pk from 50Hz to 2000Hz         |
| Shock (g)                                    | 100 pk with 3.6ms Haversine pulse |

### PHYSICAL

|                              |  |
|------------------------------|--|
| Case Material                | Stainless Steel with clear FEP sleeve for electrical isolation |
| Electrical Connector, Input  | 10-32 Coaxial Receptacle                                       |
| Electrical Connector, Output | BNC Male for M Option, BNC Female for F Option                 |
| Weight (grams)               | 20.1 for M Option, 24.7 for F Option                           |

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## ordering info

PART NUMBERING Model Number+Gain+Output Connector Option

130-GGG-X

I | I \_\_\_\_\_ Output Connector Option (M for BNC Male, F for BNC Female)  
I \_\_\_\_\_ Gain (0.1 Gain = 0.1mV/pC, 001 Gain = 1mV/pC, 010 Gain = 10mV/pC)

Example: 130-010-M

Model 130, 10mV/pC Gain, BNC Male Connector