1-320

REMOTE CHARGE AMPLIFIER

Applications

- Test Cell Instrumentation
- Automotive R&D
- Aerospace Flight Testing
- Modal Analysis

Features

- Low Impedance Output
- Extremely Low Noise
- Optional Gains
- Wide Frequency Response
- Small Durable Packaging

Monitoring Systems

Description

The Type 1-320 Remote Charge Converter (RCC) is designed for use with single-ended piezoelectric transducers that do not have internal electronics. The 1-320 is available with fixed gains of 1.0 mV/pC or 10.0 mV/pC and are compatible with most vibration instrumentation systems like the CEC 8000 C-CATS.

The 1-320 converts a high impedance charge input signal to a low impedance proportional voltage. This RCC utilizes a standard 2-wire constant current source within a range of 4 to 20 mA and a compliance voltage of 20 to 36 VDC. These low noise devices offer a wide frequency response of 2 to 45 kHz.

RoHS COMPLIANT

ISO 9001:2000 AS9100 Certified

CEC Vibration Products • 746 Arrow Grand Circle • Covina, California 91722 • USA
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1-320 Remote Charge Amplifier

Performance Specifications

Transducer Input: pC charge transducer using a Microdot S-50 connector with shell as the signal ground.

Signal Output: mV/pC proportional to the pC charge input at a constant gain throughout the specified operating range. (See Table 1)

Power: 4 to 20mA constant current at a compliance voltage of 20 - 36 VDC.

Inputs

- **Type:** Single-ended piezoelectric transducer with one side connected to signal ground
- **Input Source Resistance:** 100 kΩ minimum
- **Input Source Capacitance:** 20,000 pF maximum

Outputs

- **Type:** Single-Ended with one side (BNC shell) connected to signal ground
- **Output Impedance:** 50 Ω maximum
- **Capacitance Load:** 100 nF maximum
- **DC Output Bias:** 12-16 V over operating range
- **Signal Output:** 10 V pk-pk maximum

Transfer Characteristics

- **Gain Accuracy:** ±2.5% at 1000 pF and 100 Hz reference frequency ±1% throughout operating range
- **Frequency Response:**
  -3db 2 Hz
  -5% 5 Hz
  -5% 45 kHz
- **Warm Up Time:** 30 seconds

Dimensions: Overall Length is 3.30” (83.83mm) Diameter is 0.75” (19.05mm)

Case: Stainless Steel (with optional Teflon sleeve as isolation)

Transducer Input: Microdot S-50

Power/Signal Output: Male BNC

Weight: 2.7 oz (76.545 g)

Temperature: Operating: -25° to +100° C
Storage: -65° to +125° C

Humidity: 0 - 95 % RH non-condensing

Ordering Information

In keeping with CEC’s policy of continuing product improvement, specifications may be changed without notice.

TABLE 1

Variation	Gain	Input
1-320-0001	1 mV/ pC	Single-Ended
1-320-0002	10 mV/ pC	Single-Ended

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