



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**

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.

Monitoring Systems



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: 10-32 Microdot Connector

Power/Signal Output: Female BNC Connector

Weight: 3.5 oz (100 g) max.

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