

## 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.

**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.

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TABLE 1

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