

ENCORE ELECTRONICS

ENC1537, ENC1537-002

Transducer Simulator

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ENC1537 Transducer Simulator

The ENC1537 is a handheld, battery powered signal source designed to simulate the output of a differential charge-mode pressure transducer. The front panel consists of a power toggle switch and indicator, and an output connector. This connector will mate with cabling typically attached to the pressure transducer.

Encore part number ENC1745 is a bundle with ENC1537-002 and an extra cable terminating in two pins, for connection to a differential charge amplifier.

After attaching the simulator to a differential charge amplifier through existing shielded wiring, connect the large alligator clamp to a suitable chassis ground point. Turn on the simulator. The red power indicator will light, indicating sufficient battery power to operate the unit. When the power lamp goes out, the battery should be replaced, even if the unit appears to be operating.

To replace the battery, remove the eight screws on the perimeter of the cover, and remove the electronics from the blue case. Replace the battery with a standard 9V alkaline battery.

For the ENC1537 only : if any of the circuit boards is removed, make sure it goes back in the proper place. Each of the four boards produces a frequency at a specific amplitude. Each board has its frequency written on it, and each mainboard socket has a matching frequency.

Monitor the voltage output of the differential charge amplifier (such as the Encore ENC1492A) with an instrument capable of performing an FFT, or otherwise measuring independent amplitudes of four simultaneous sinewaves. An RMS voltmeter will not produce a useful reading. The ENC1537 produces the following frequencies:

- 18.8Hz at 100mVp-p
- 112Hz at 200mVp-p
- 138Hz at 300mVp-p
- 300Hz at 100mVp-p

The ENC1537-002 adds two more frequencies:

- 1100Hz at 100mVp-p
- 4950Hz at 100mVp-p

If your instrumentation reads amplitude scaled in dB or psi, apply the appropriate scaling factor to convert from mV peak-to-peak into dB or psi. In any case, the 18.8Hz tone and 300Hz tone should be the same amplitude, while the 112Hz tone should be twice as large (+6dB), and the 138Hz tone should be three times the amplitude (+9.5dB). Note that a difference between the signal frequency and the FFT bin frequency will cause a decrease in apparent signal amplitude. Choice of FFT window (Hanning, Hamming, Rectangular, etc.) will also affect signal measurement and resolution.