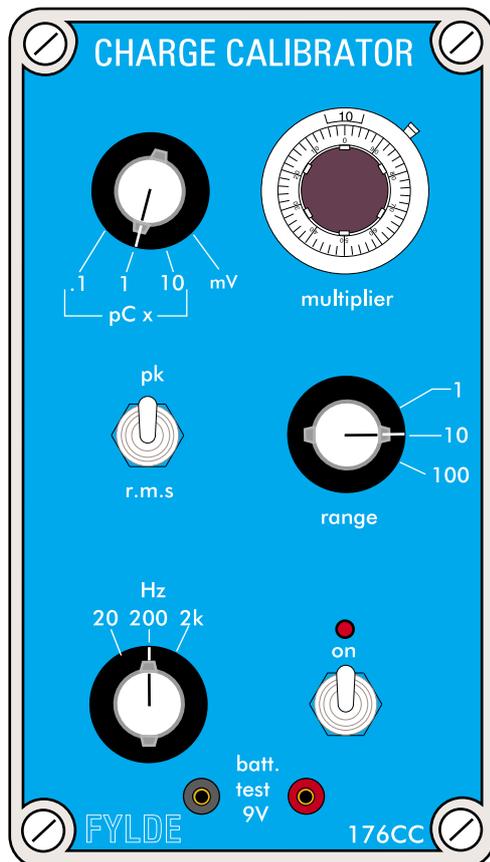


FE-176 - CC Charge Calibrator



A battery hand held calibration instrument specifically intended for piezo electric measuring systems.

The instrument is able to function as a simulator of charge type signals and may be substituted for accelerometers in vibration measurement with a choice of three decade related frequencies.

The calibrator will also generate low impedance voltage output levels, to enable the checking and calibration of voltage amplifiers etc.

The waveform generated by the calibrator is a pure sinewave, and the output is indicated in pico-coulombs over the ranges extending from 1 pC to 11,000 pC Peak or RMS.

Transducer sensitivity matching is achieved by means of a range switch and calibrated ten turn dial. Sensitivity is virtually independent of input cable length.

The calibrator has auto switch off to conserve battery life, with Microdot and BNC output connectors.

SPECIFICATION**FE-176-CC**

Calibration	Signal Ranges Multiplier Pico-Coulomb Capacitors	1pC - 10pC - 100pC x1 to x11 by 10 turn dial. x1, x0.1, x10. 1000pF, 100pF, 0.01 μ Fd.
Accuracy of	Ranges Multiplier	$\pm 1\%$. $\pm 0.2\%$.
Frequency	Ranges Distortion Accuracy	20Hz - 200Hz - 2000Hz. <0.05%. $\pm 1\%$.
Output	Units Connectors	Switchable to Peak or RMS. BNC and microdot.
Power	Source Switch	9V PP3 dry battery. Push button start. Unit remains operative for 3 minutes.
Temperature	Range	0 - 50°C.
Dimensions		12.5cm x 6cm x 8cm deep.
Weight		360g.

General Principles

The Charge Calibrator consists of a sine wave oscillator which is highly stable in amplitude, whilst having low distortion and very good frequency stability. The oscillator voltage is adjusted by a Peak/RMS switch to give a correspondingly decreased output on the 'peak' setting.

The oscillator output is attenuated from the peak/RMS section via the 10 turn multiplier potentiometer. The dial of the 10 turn potentiometer is arranged to traverse 1 to 11 thus allowing a degree of overlap between ranges.

After buffering, the potentiometer output is attenuated in the fixed range setting switch developing the three alternatives of 1-11, 10-110 and 100-1100 pico-coulombs via an output 1000pF capacitor.

Alternative capacitors of 100pf and 0.01mFd capacitors allow the output charge signals to be increased or decreased by up to a factor of 10 above and below these ranges.

Direct output as a millivolt ac signal is also provided in the 'millivolt' setting of the output switch via a 0.1 μ Fd capacitor.

The power ON switch (push button) maintains the power to the oscillator for a period of 3 minutes with provision to re-establish a succeeding 3 minutes on a further activation of the push button.