

# PiezoMeter System PM100 Technical Specification

## Piezoelectric $d_{33}$ Testing System

Measuring  $d_{33}$  in two ranges, with 0.1pC/N resolution

<b>Piezoelectric Tests</b>	<b>General Operation</b>	<b>Remote Operation</b>
<b><math>d_{33}</math> - High Range</b> $d_{33}$ range: 10 to 1000 pC/N Accuracy: $\pm 2\% \pm 1$ pC/N Loading: 1.0uF	<b>Response Time</b> $d_{33}$ Only: 5s to 1% of final reading	The PiezoMeter may be controlled by a computer, equipped with Windows 98, Windows 2000, or Windows XP. A free serial port is required. All PiezoMeter functions may be controlled.
<b><math>d_{33}</math> - Low Range</b> $d_{33}$ range: 1 to 100 pC/N Accuracy: $\pm 2\% \pm 0.1$ pC/N Loading: 1.0uF	<b>Sample Size</b> Maximum dimensions: 50 mm in polarisation direction. 68 mm perpendicular (i.e. maximum diameter of a symmetrically supported disc is 136 mm)	Remote control software for Windows, supplied separately.
<b><math>d_{31}</math> &amp; <math>d_{15}</math></b> Adapters are available for various sample geometries	Maximum sample mass: 1 Kg with standard suspension.	<b>Remote Interface</b> Industry standard RS-232C interface, configured as data terminal equipment (DTE) using 9 pin D-connector. RS-232 parameters: 9600 baud, 1 stop bit, no parity. Connection is by a standard PC serial file transfer cable (supplied).
<b>Polarity</b> Sample polarity is indicated for both measurement ranges.	Different suspension mechanisms can be provided to special order for more massive samples or very thin or soft samples.	<b>Printer Interface</b> Industry standard parallel printer interface, using 25 pin D-connector, configured as for a standard PC. Connection is by a standard PC printer cable (supplied).
<b>Test Frequency</b> Frequency Range: 30 Hz to 300 Hz Setting: steps of: 1 Hz Accuracy: $\pm 0.1$ Hz Calibration is at 110 Hz. Other frequencies may be used to tune away from system resonances with large samples.	<b>Calibration</b> The system is supplied fully calibrated and tested. $d_{33}$ calibration may be checked using the reference sample provided. In normal use, recalibration is recommended annually. Calibration may be carried out to customer supplied reference samples using the remote interface.	<b>Power supply</b> 220-240V a.c. 50-60Hz 0.5A or 100-120V a.c. 50-60Hz 1A (Specify with order).
<b>Force amplitude</b> Testing is by an oscillatory force of approximately 0.25 N Static force of approximately 10 N used to grip the sample. This may be different for force head units with non-standard suspension (see section on 'Sample Size' below).	<b>Data Storage</b> The standard PM100 will store up to 100 measurements. All results are numbered and stored along with the test frequency and the measurement range in use. Data is retained when the PiezoMeter is switched off.	<b>Temperature Limits</b> Storage: 0°C to 50°C Operating: 10°C to 40°C System calibrated: 25°C
	<b>Stand-Alone Operation</b> 40 character by 4 line alphanumeric liquid crystal display showing sample number, $d_{33}$ , test frequency and operation mode. Simple key pad to control all PiezoMeter functions for stand-alone operation. Printing facility when used directly with standard PC printer, providing tabulated output and statistical analysis.	<b>Physical dimensions</b> Electronics unit: 350 x 230 x 90 mm. Force unit: 145 x 150 x 175 mm. Total Unpacked Weight: Approx. 13 Kg. Total Packed Weight: Approx. 20kg.

For more details, or to arrange a demonstration, contact :-

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