

PiezoMeter System PM200 Technical Specification

High Precision, Piezoelectric d_{33} Testing System
Measuring d_{33} in four ranges, with 0.01pC/N resolution

Piezoelectric Tests	General Operation	Remote Operation
d_{33} – Very High Range d_{33} range: 100 to 10,000 pC/N Accuracy: $\pm 2\% \pm 1$ pC/N Loading: 1.0uF	Response Time Typically 5 seconds to achieve 1% of final reading	The PiezoMeter may be controlled by a computer, equipped with Windows 10 or Windows 11. A free USB or 9-pin serial port is required. All PiezoMeter functions may be controlled.
d_{33} - High Range d_{33} range: 10 to 1000 pC/N Accuracy: $\pm 2\% \pm 1$ pC/N Loading: 1.0uF	Sample Size 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.
d_{33} - Low Range d_{33} range: 1 to 100 pC/N Accuracy: $\pm 2\% \pm 0.1$ pC/N Loading: 1.0uF	Maximum sample mass: 1 Kg with standard suspension. Different suspension mechanisms can be provided to special order for more massive samples or very thin or soft samples.	Remote Interface 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 PC serial file transfer cable (Null modem type, supplied). An adaptor is provided for USB operation.
d_{33} – Very Low Range d_{33} range: 0 to 10 pC/N Accuracy: $\pm 2\% \pm 0.01$ pC/N Loading: 0.1uF	Calibration 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.	Printer Interface 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).
d_{31} & d_{15} Adapters are available for various sample geometries, and supplied separately.	Data Storage The standard PM200 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.	Power supply 220-240V a.c. 50-60Hz 0.5A or 100-120V a.c. 50-60Hz 1A (Specify with order).
Polarity Sample polarity is indicated for both measurement ranges.	Stand-Alone Operation 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.	Temperature Limits Storage: 0°C to 50°C Operating: 10°C to 40°C System calibrated at 20°C
Test Frequency Frequency Range: 30 Hz to 300 Hz Setting: In steps of 1 Hz Accuracy: ± 0.1 Hz Calibration is at 110 Hz. Other frequencies may be used to tune away from system resonances with large samples.		Physical dimensions 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. 21kg.
Force amplitude Testing is by an oscillatory force, variable by user setting between 0.05 to 0.50 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).		

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

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