PiezoMeter System PM100 Technical Specification

Piezoelectric d_{33} Testing System
Measuring d_{33} in two ranges, with 0.1pC/N resolution

Piezoelectric Tests

d_{33} - High Range

d_{33} range: 10 to 1000 pC/N
Accuracy: ± 2% ± 1 pC/N
Loading: 1.0uF

d_{33} - Low Range

d_{33} range: 1 to 100 pC/N
Accuracy: ± 2% ± 0.1 pC/N
Loading: 1.0uF

d_{31} & d_{15}

Adapters are available for various sample geometries, and supplied separately.

Polarity

Sample polarity is indicated for both measurement ranges.

Test Frequency

Frequency Range: 30 Hz to 300 Hz
Setting: 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.

Force amplitude

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).

General Operation

Response Time

d_{33} Only: 5s to 1% of final reading

Sample Size

Maximum dimensions:

50 mm in polarisation direction.

68 mm perpendicular (i.e. maximum diameter of a symmetrically supported disc is 136 mm)

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.

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.

Data Storage

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.

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.

Remote Operation

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.

Remote control software for Windows, supplied separately.

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.

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).

Power supply

220-240V a.c. 50-60Hz 0.5A or
100-120V a.c. 50-60Hz 1A
(Specify with order).

Temperature Limits

Storage:	0°C to 50°C
Operating:	10°C to 40°C
System calibrated:	25°C

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.

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

European Union, UK and EEA:

Piezotest Ltd.
Unit 204, 2 Old Brompton Road
London SW7 3DQ
UNITED KINGDOM

Tel: +44 (0)20 7748 2248 Fax: +44 (0)20 7748 2249
e-mail:
sales@piezotest.com

Asia Pacific & Global:

Piezotest Pte. Ltd.
10 Anson Road
#31-10 International Plaza
(S) 088834
SINGAPORE

Tel: +65 6714 6631 Fax: +65 6714 6632
e-mail:
sales@piezotest.com