

Model ZJ-6B

Quasi-Static Piezo d_{33} / d_{31} Meter

The Model ZJ-6B quasi-static piezo d_{33} / d_{31} Meter is the special instrument for measuring piezoelectric constant d_{33} of various kind of piezoelectric materials, such as piezoelectric ceramics, crystals, and polymers. It also can be used for measuring equivalent piezoelectric constant d_{33}' of arbitrarily cut piezoelectric crystals, such as lithium niobate, quartz and tourmaline. The measurable d_{33} value is wide with fine resolution, high reliability, simple and convenient operation. The measurable specimen's size and shape are unrestricted, for example, disks, blocks, rings, tubes and semispherical shell, etc.; all of them can be measured. The measured value of d_{33} is displayed on a 4 1/2 digit meter directly.

In addition, ZJ-6B is provided with the adapter for measuring d_{31} of ceramic materials with suitable form and suitable size, such as tubes and rectangular bars,

So this instrument is indispensable to any laboratory concerned with assessment of materials, quality control in manufacture, research and development of piezoelectric materials.

The Model ZJ-6B is a new type of piezo Meter, and superior to Model ZJ-2 and ZJ-3B meter in following respects especially.

1. Make the Anti-EMI(electric magnetic interference) capability, stability and reliability more excellent.
2. Make the measurable maximum d_{33} value up to 4000pC/N.
3. ***The Force Head is made of stainless steel, so as to protect from rust.***
4. ***Provide the d_{31} adapter, d_{31} coefficient can be measured directly.***

Features

1. Directly measures the piezo d_{33} constant of piezo materials in the range of 2 to 4000 pC/N. The polarity of the tested specimen is also indicated.
2. Capable of evaluating a variety of ceramic size and shapes, discs, tubes, hemispheres etc., and single crystals and polymers for d_{33} measuring.
3. No technical expertise is required for measuring and only two operating controls: on/off switch and "zero"adjusting.
4. Capable of stable measurement in severe EMI environment.
5. Piezo voltage constant g_{33} and g_{31} are quickly obtained using the formula: $g_{33}=d_{33}/\epsilon_{33}^T$ and $g_{31}=d_{31}/\epsilon_{33}^T$, Here ϵ_{33}^T is the dielectric constant from the capacitance of the specimen measured with impedance meter or bridge.
6. The ZJ-6B Meter acceptable maximum height of specimen up to 80 mm between probes for d_{33} measuring.
7. Test monitor output allows an empirical evaluation of potential flaws and defects by viewing the output signal waveform.
8. ***The Force Head is made of stainless steel, so as to protect from rust.***
9. ***Improved the electronic circuit for protecting IC from discharge damage.***
10. ***Install d_{31} adapter (as a accessory) on the Force Head of the Meter, the d_{31} coefficient on piezoelectric ceramic tubes and bars can be measured directly.***

SPECIFICATIONS

For d_{33} :

range:	× 1 range:	20 to 4000 pC/N
	× 0.1 range:	2 to 400 pC/N
Accuracy:	× 1 range:	± 2% for d_{33} in 400 to 4000 pC/N (With optimum sizes and shapes) ± 5% for d_{33} in 20 to 400 pC/N (Generally feasible with care)
	× 0.1 range:	± 2% for d_{33} in 20 to 400 pC/N (With optimum sizes and shapes) ± 5% for d_{33} in 2 to 40 pC/N (Generally feasible with care)
Resolution:	× 1 range:	± 1 count up to ± 3 (1 pC/N)
	× 0.1 range:	± 1 count up to ± 3 (0.1 pC/N)

For d_{31} :

Range:	2 to 400 pC/N (for piezo ceramics)
Accuracy:	± 10% with most optional measurements
Resolution:	± 1 count up to ± 3 (1pC/N)

Dimension :

Force Head:	110 × 150mm
Electronic unit:	260 × 240 × 120mm

Weight :

Force Head:	~4kg
Electronic unit:	~2kg



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