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GRINDOSONIC MK7

High-precision measuring device for the non-destructive determination of mechanical material properties using the impulse resonance method

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Resonance-based material testing with precision and speed. GrindoSonic® MK7 enables fast and reliable assessment of properties such as elastic modulus, shear modulus, and damping – regardless of the sample's shape and size. Thanks to its intuitive software and flexible application options, the MK7 is ideally suited for use in industry, research, and quality assurance.

Non-contact. Fast. Insightful.
The GrindoSonic® MK7 is the core of non-contact material testing using impulse excitation – a technology that combines highest precision with impressive speed. With just a single tap, the test piece is set into vibration. The resulting resonance frequencies and damping values reveal everything about the material's elastic properties: Elastic modulus, shear modulus, Poisson's ratio, damping, porosity, and more. This method – known as the Impulse Excitation Technique (IET) – is standardized internationally (e.g., ASTM E1876, C1259, C215) and enables fully automatable, non-destructive testing from the laboratory to the production line.

Testing technology that makes a difference
Whether in materials development, microcrack detection, or end-of-line quality control – the GrindoSonic® MK7 impresses with fast results, high repeatability, and intuitive operation. It sets new standards in quality assurance and material research – entirely without destroying the test specimen.

Core Technology: Impulse Excitation
One precise tap is all it takes: the sample begins to resonate, and the system analyzes frequency and damping – non-contact, reproducible, and compliant with standards. The collected data enables not only the assessment of material states but also the early detection of aging, damage, or production deviations.

About GrindoSonic
GrindoSonic is an internationally established company specializing in non-destructive materials testing using resonance analysis. For over 50 years, GrindoSonic has provided precise and reliable testing systems for the rapid determination of mechanical material properties such as elastic modulus and damping. Customers worldwide from aerospace, automotive, and research sectors trust the quality and versatility of GrindoSonic technology.

YOUR ADVANTAGES AT A GLANCE

Non-destructive testing: Based on impulse excitation and resonance analysis

Broad material applicability: Suitable for metals, ceramics, polymers, composites, etc.

Highest accuracy: System accuracy better than 0.005%

Very high resolution: Measurement resolution down to 0.1 ppm

Automatable & inline-capable: Can be integrated into production lines with >1000 tests/hour

High-temperature capability: Measurements possible up to 1600 °C

Early defect detection: Capable of identifying microcracks and property changes at an early stage

TECHNICAL INFORMATION

FREQUENCY RANGE:	20 Hz – 150 kHz
FREQUENCY FILTER BANDS:	8 × 8th order band pass analog filters 4 × programmable digital filters
SYSTEM ACCURACY:	Absolut accuracy greater than 0,005 %
MEASUREMENT RESOLUTION:	1/10.000.000 (0,1 ppm)
SYSTEM REPEATABILITY:	3/10.000.000 (0,3 ppm)
SAMPLE FREQUENCY:	10 kHz – 1 MHz
NUMBER OF SAMPLES:	1k – 524k
DISPLAY:	7-inch multicolor touch screen
DATA STORAGE:	10 GB (optional up to 58 GB), stored as .csv files
NETWORK CONNECTION :	Ethernet cable
POWER SUPPLY:	100–240 VAC / 50–60 Hz / max. 42 W
PROTECTION CLASSIFICATION:	IP 50

NORMS

ASTM E1876: Specifies the standardized use of the Impulse Excitation Technique (IET) to determine dynamic material properties such as Young's modulus, shear modulus, and Poisson's ratio.

ASTM C1259: Is an IET standard tailored specifically for advanced and technical ceramics.

ASTM C215: Describes how to determine the fundamental resonant frequencies of concrete specimens (beams, cylinders, etc.).

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