



MAGNATEST D

Magneto-inductive testing of metallic components for material properties



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Processor-controlled compact unit with maximum performance. The MAGNATEST D is a powerful system for nondestructive magneto-inductive testing of metallic components. Differences in magnetic and electrical material properties can be reliably detected – from alloy composition and heat treatment to microstructure, strength, hardness, and case hardness.

Testing is performed as standard in single-coil absolute mode without the need for a reference coil. The impressed excitation current ensures a constant magnetic field strength, while high excitation currents enable even small differences in material properties to be reliably detected. Depending on the application, single-frequency and multi-frequency testing as well as fundamental and harmonic analysis are available.

By combining different test frequencies and magnetizing field strengths, different material properties can be evaluated while minimizing interfering influences. Harmonic analysis provides additional information about the material condition and helps reduce effects caused by temperature fluctuations or incorrect positioning of the test part. This supports high repeatability and long-term stability of the test results.

From manual testing in the materials laboratory to fully automated quality control in production, the MAGNATEST D can be flexibly integrated into different testing processes and higher-level systems. Part statistics, histogram displays, and test data export support transparent documentation and evaluation of test results. A wide range of test coils and probes enables adaptation to different component geometries and testing tasks. For applications involving multiple test coils, the system can also be expanded with the MULTIPLEXER

YOUR ADVANTAGES AT A GLANCE

Reliable material testing: Detect differences in alloy composition, heat treatment, microstructure, hardness, and other material properties nondestructively.

Single-coil absolute mode: Perform testing without an additional reference coil; two-coil differential mode is optionally available via an adapter.

High test sensitivity: Use high excitation currents to reliably detect even small differences in material properties.

Flexible test frequencies: Perform single-frequency and multi-frequency testing across a wide frequency range from 2 Hz to 128 kHz.

Powerful harmonic analysis: Gain additional information about the material condition while reducing interfering influences on the test result.

For laboratory and production: Perform both manual testing tasks and fully automated quality control in production lines.

Flexible system integration: Integrate the system into automated testing processes and higher-level systems via digital I/Os and Ethernet interfaces.

Adaptable to the testing task: Use different test coils and probes and optionally expand the system with the MAGNATEST D MULTIPLEXER.

TECHNICAL INFORMATION

TEST FREQUENCY:	2 Hz to 128 kHz in 17 steps
THROUGHPUT:	— Depending on test frequency — approx. 10 parts/s at 1 kHz
TRIGGER:	Manual, external, internal, crosshair, sequential
SORTING THRESHOLDS:	Circle, ellipse, rectangle, box regression
SORTING TEST:	Group analysis
DEFINABLE GROUPS:	6
SORTING GROUPS:	8
EXCITATION:	Single-frequency, multi-frequency
OUTPUT AMPLIFIER:	Current-controlled; max. 4 A, max. 36 V
TESTING:	— Single-coil absolute mode — two-coil differential mode via adapter
EVALUATION:	Fundamental wave; harmonics up to the 11th harmonic at test frequencies up to 8 kHz
INPUTS:	8, galvanically isolated
OUTPUTS:	8, galvanically isolated
INTERFACES:	— 1× serial — 3× USB — 1× PS/2 — 2× Ethernet — 1× DisplayPort
DIMENSIONS (H × W × D):	— 4 HU: 177 × 481 × 410 mm — 6 HU: 289 × 463 × 449 mm
WEIGHT:	— 4 HU: approx. 18 kg — 6 HU: approx. 19.3 kg
OPERATING TEMPERATURE:	0 to +50 °C
RELATIVE HUMIDITY:	8 – 80%, non-condensing



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