FOERSTER

SIGMATEST

Portable conductivity meter for fast and reliable testing of non-ferromagnetic metals

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Accurate conductivity measurements for reliable material verification. SIGMATEST measures the electrical conductivity of non-ferromagnetic metals quickly, precisely and nondestructively. Five test frequencies from 60 to 960 kHz enable measurements across a wide range of material thicknesses – from solid components to very thin workpieces. Automatic temperature compensation standardizes measured values to 20 °C, ensuring comparable results even under changing temperature conditions.

Typical applications include quality assurance and material verification, monitoring of heat treatment processes, alloy identification and sorting, and the assessment of heat damage in aviation. The measurement quality meets the requirements of Boeing (BAC 5651) and Airbus.

Two operating modes are available for different testing tasks: Touch mode captures individual readings, while Continuous mode enables continuous surface testing with real-time display. Up to 50 measurements per second support efficient testing, and measurement data can be stored and documented directly on the device.

Geometric and temperature-related influences can also be compensated. Correction factors can be stored for measurements on concave or convex surfaces. Temperature is measured either by the sensor integrated into the probe or by an optional external temperature sensor; application-specific temperature coefficients can also be stored. An external sensor is particularly useful when the temperatures of the test object and probe differ.

Calibration data is stored directly in each probe. When connected, SIGMATEST automatically recognizes the probe and applies the corresponding calibration curve. This enables quick switching between 5 mm, 8 mm and 14 mm probes without manual settings.

YOUR ADVANTAGES AT A GLANCE

Versatile conductivity measurement: Five test frequencies from 60 to 960 kHz for a wide range of material thicknesses

Fast testing: Up to 50 measurements per second in Touch or Continuous mode

Automatic temperature compensation: Standardization of measured values to 20 °C using an internal or external temperature sensor

Measurement through coatings: Lift-off up to 0.75 mm for measurements through paint, coatings and thin protective layers

Automatic probe recognition: Stored calibration data and automatic selection of the corresponding calibration curve

Efficient data management: Virtually unlimited storage on an SD card and Ethernet interface for system integration

High quality standards: Meets Boeing (BAC 5651) and Airbus requirements

Designed for industrial use: Robust device design and multilingual user interface for production and service applications

TECHNICAL INFORMATION

MEASURING RANGE:	0.5 to 65 MS/m or 1 to 112 % IACS
ABSOLUTE ACCURACY:	+/- 0.7 % of measured value @60 kHz, 14 mm probe
RESOLUTION:	+/- 0.1 % of measured value
AUTOMATIC DISTANCE COMPENSATION:	Up to 750 µm (0.03 inch)
OPERATING FREQUENCIES:	60 / 120 / 240 / 480 / 960 kHz
LCD DISPLAY:	240 x 320 pixel
POWER SUPPLY:	5V DC / 3000 mA
OPERATING TIME PER SET OF BATTERIES:	4 h
OPERATING VOLTAGE:	Power supply and battery charger adaptable to the operating voltage in any country
INTERFACES:	10 pin LEMO connector, SD card slot, Ethernet RJ45 100 Mbit/s
TEMPERATURE RANGE:	0 °C to +40 °C (32 °F to 104 °F)
HUMIDITY:	5 % to 85 %
DIMENSION:	211 × 102 × 40 mm
WEIGHT:	0.62 kg
WIDTHS OF THE PROBE HEAD	5 mm, 8 mm, 14 mm

NORMS

DIN 50994: Specifies a non-destructive method for measuring the electrical conductivity of metallic coatings, especially non-magnetic coatings on metallic substrates.

DIN EN 2004-1:1993-09: Specifies a non-destructive method for determining the electrical conductivity of wrought aluminium alloys, mainly for aerospace applications.

DIN EN 2004-7:2017-10: Specifies reference blocks and their production and calibration methods for calibrating eddy current equipment used to determine the electrical conductivity of wrought aluminium and aluminium alloys. Used in conjunction with DIN EN 2004-1.

ASTM E 1004: Specifies a non-destructive eddy current method for determining the electrical conductivity of nonmagnetic metals.

MIL STD 1537C: Specifies procedures for verifying the heat treatment of aluminium alloys by measuring electrical conductivity using the eddy current method. The method is intended to be used in conjunction with hardness testing for non-destructive verification of material condition.

AITM 6-6008: Specifies a non-destructive method for determining the electrical conductivity of metallic materials using the eddy current method for aerospace manufacturing and quality assurance.

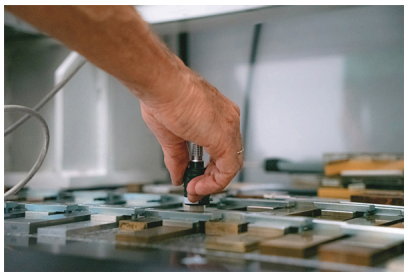
ACCESSORIES

SIGMATEST PROBES
Flexible conductivity probes for precise testing of non-ferromagnetic metals

COIN TESTING STATION
Reproducible positioning for precise conductivity measurements

SIGMATEST POWER KIT
Extended Operating Time for Mobile Conductivity Measurements

REFERENCE STANDARD CONDUCTIVITY MEASUREMENT
Reference standards for checking and setting up conductivity measurement



RECALIBRATION OF MOBILE PRODUCTS
Recalibration guarantees the accuracy and quality of your test and measurement values

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The FOERSTER Group is represented by subsidiaries and representatives in over 60 countries worldwide. You can find a complete overview on our website.

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