

DUALSCOPE® MP0

Pocket Instrument for Simple and Fast
Coating Thickness Measurement on
Virtually all Metals



Description

The DUALSCOPE MP0 instruments measure coating thicknesses easily, quickly, non-destructively and with the precision that is typical for all Fischer instruments.

The specimen's shape and permeability have comparatively low influence on the measurement results. The instruments feature a patented conductivity compensation for non-magnetic substrate materials.

The compact size, the robust and durable instrument design and light weight make the instruments ideal for onsite applications. Two LCD displays allow for reading the measurements in various measuring positions. Furthermore, each instrument is being delivered with a manufacturer's certificate.

Applications

Examples

Steel or iron substrates (Fe)

- Zinc, chromium, copper, paint, varnish and plastic coatings on steel, iron or cast iron (Fe)

Nonferrous metal substrates (NFe)

- Paint, varnish or plastic coatings on aluminum, copper or brass
- Anodized coatings on aluminum

The instruments are applicable for measurements both on smooth and rough surfaces.

Evaluation

Statistics

Display of mean value, standard deviation, MIN, MAX and number of measurements per block

General Features

Measuring methods

Magnetic induction method (ISO 2178, ASTM D7091, Measurement of non-magnetic coatings on magnetic substrates);
Eddy current method (ISO 2360, ASTM D7091, Measurement of non-conductive coatings on non-magnetic substrate metals);
Automatic selection of the measuring method corresponding to the substrate material

Probe

Probe tip radius: 2 mm (78 mils); probe tip material: Carbide

Data memory

Max. 1,000 individual readings; the contents of the memory is retained even without batteries

Measuring frequency

More than 70 measurements per minute

Measurement acquisition

Automatic upon placement of the probe; indication of the measurement with a beep visually with a green lit LED

Display

Two LCD displays for reading the measured values even in difficult instrument positions, e. g., overhead

Admissible ambient temperature range during operation

0 +40 °C (32 ... +104 °F)

Weight (incl. batteries)

137 g (4.8 oz)

Dimensions (W x D x H)

Width: 64 mm (2.5 "); depth: 28 mm (1.1 "); height: 85 mm (3.35 ")

Power supply

Batteries, LR6, AA, 1.5 V

Measurement Functions

Units of measurement	Selectable μm or mils
Continuous display mode	Measurement in "continuous display mode" for continuous sampling of the surfaces, e.g., in the manufacture of tanks and containers
Normalization	Adaptation to the substrate material and the shape of the specimen
Calibration	<p><i>Factory calibration</i></p> <p>Each individual instrument is factory calibrated at several reference points with the greatest care to ensure the highest possible degree of trueness.</p> <p><i>Corrective calibration (Adjustment)</i></p> <p>Adaptation to the substrate material and the shape of the specimen and to a thickness value using a calibration foil</p>

Measurement Range

Steel or iron substrates (Fe)	Nonferrous metal substrates (NFe)
0 ... 2000 μm (78 mils)	0 ... 2000 μm (78 mils)

Trueness

	Steel or iron substrates (Fe)	Nonferrous metal substrates (NFe)
based on Fischer Standards	<p>0 ... 75 μm: $\leq 1.5 \mu\text{m}$</p> <p>75 ... 1000 μm: $\leq 2 \%$ of reading</p> <p>1000 ... 2000 μm: $\leq 3 \%$ of reading</p> <p>0 ... 2.9 mils: ≤ 0.06 mils</p> <p>2.9 ... 39 mils: $\leq 2 \%$ of reading</p> <p>39 ... 78 mils: $\leq 3 \%$ of reading</p>	<p>0 ... 50 μm: $\leq 1 \mu\text{m}$</p> <p>50 ... 1000 μm: $\leq 2 \%$ of reading</p> <p>1000 ... 2000 μm: $\leq 3 \%$ of reading</p> <p>0 ... 2 mils: ≤ 0.039 mils</p> <p>2 ... 39 mils: $\leq 2 \%$ of reading</p> <p>39 ... 78 mils: $\leq 3 \%$ of reading</p>

Repeatability Precision

	Steel or iron substrates (Fe)	Nonferrous metal substrates (NFe)
based on Fischer Standards	<p>0 ... 50 μm: $\leq 0.25 \mu\text{m}$</p> <p>50 ... 2000 μm: $\leq 0.5 \%$ of reading</p> <p>0 ... 2 mils: ≤ 0.0098 mils</p> <p>2 ... 78 mils: $\leq 0.5 \%$ of reading</p>	<p>0 ... 100 μm: $\leq 0.5 \mu\text{m}$</p> <p>100 ... 2000 μm: $\leq 0.5 \%$ of reading</p> <p>0 ... 3.9 mils: ≤ 0.0195 mils</p> <p>3.9 ... 78 mils: $\leq 0.5 \%$ of reading</p>

Ordering Data

604-554	DUALSCOPE MP0, probe integrated in the measuring instrument
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Scope of Supply

Instrument case; protective instrument cover; 2 batteries; metal plates NF/FE and ISO/NF for testing purposes; calibration foil; operator's manual; manufacturer's certificate

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