

DUALSCOPE[®] MPO

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



Description

Instrument properties	<p>The DUALSCOPE MPO measuring instrument measures coating thicknesses easily, quickly, non-destructively and with the precision that is typical for all Fischer instruments.</p> <ul style="list-style-type: none"> • Ideal for onsite applications due to the compact size, the light weight and the robust and durable instrument design • Intuitive operation of the menu navigation and graphic display. • Second display for reading the measurement results directly on the top side of the instrument, e.g., for measuring overhead • Different languages are selectable • Manufacturer's certificate, included in the scope of supply
Generating measurements	<ul style="list-style-type: none"> • The specimen's shape and permeability have a comparatively low influence on the measurement results • Patented conductivity compensation for measurements on non-magnetic substrate materials

Applications

	Steel or iron substrates (Fe)	Nonferrous metal substrates (NF)
Examples	<ul style="list-style-type: none"> • Zinc, chromium, copper, paint, varnish and plastic coatings on steel, iron or cast iron (Fe) 	<ul style="list-style-type: none"> • Paint, varnish or plastic coatings on aluminium, copper or brass • Anodized coatings on aluminium
The instrument is applicable for measurements both on smooth and rough surfaces		

Evaluation

Statistics	Display of mean value, standard deviation, MIN, MAX and number of all measurements stored in the instrument memory
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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>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> <p><i>Simple Calibration</i></p> <p>Adaption to the coating and substrate material in one step using a coated reference part with a coating thickness higher than 200 μm (7.87 inches). Nevertheless, this kind of calibration supplies only a lower accuracy as specified in the sections Trueness and Repeatability Precision.</p>

General Features

Measuring method	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: Hard metal
Data memory	Max. 1000 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	<ul style="list-style-type: none"> • Graphic display, in addition to the measurement reading the mean value and the standard deviation or the number of measurement reading can also be displayed • LCD display on the top side of the instrument, e.g., for reading the measurement value for measuring overhead
Languages	Many different display languages are selectable: German, English and several other European and Asian languages
Admissible ambient temperature range during operation	0 ... +40 °C (+32 ... +104 °F)
Weight (incl. batteries)	137 g (4.8 oz)
Power supply	2 Batteries, LR6, AA, 1.5 V

Dimensions

Instrument	Width: 64 mm (2.52 "); Depth: 28 mm (1.10 "); Height: 85 mm (3.35 ")
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Measurement Range

Steel or iron substrates (Fe)

0 ... 2000 µm (78 mils)

Nonferrous metal substrates (NF)

0 ... 2000 µm (78 mils)

Trueness

based on Fischer factory calibration standards

Steel or iron substrates (Fe)

0 ... 75 µm: ≤ 1.5 µm
75 ... 1000 µm: ≤ 2 % of reading
1000 ... 2000 µm: ≤ 3 % of reading

0 ... 2.9 mils: ≤ 0.06 mils
2.9 ... 39 mils: ≤ 2 % of reading
39 ... 78 mils: ≤ 3 % of reading

Nonferrous metal substrates (NF)

0 ... 50 µm: ≤ 1 µm
50 ... 1000 µm: ≤ 2 % of reading
1000 ... 2000 µm: ≤ 3 % of reading

0 ... 2 mils: ≤ 0.039 mils
2 ... 39 mils: ≤ 2 % of reading
39 ... 78 mils: ≤ 3 % of reading

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Repeatability Precision

based on Fischer factory calibration standards, 5 single measurement readings on each standard

Steel or iron substrates (Fe)

0 ... 50 μm : $\leq 0.25 \mu\text{m}$
50 ... 2000 μm : $\leq 0.5 \%$ of reading
0 ... 2 mils: ≤ 0.0098 mils
2 ... 78 mils: $\leq 0.5 \%$ of reading

Nonferrous metal substrates (NF)

0 ... 100 μm : $\leq 0.5 \mu\text{m}$
100 ... 2000 μm : $\leq 0.5 \%$ of reading
0 ... 3.9 mils: ≤ 0.0195 mils
3.9 ... 78 mils: $\leq 0.5 \%$ of reading

Ordering Data

605-360

DUALSCOPE MPO, probe integrated in the measuring instrument

Scope of Supply

Instrument case; instrument encased in an impact protective cover; 2 batteries; metal plates NF/FE and ISO/NF for testing purposes; calibration foil (foil thickness about 75 μm (2.95 inches)); operator's manual; manufacturer's certificate

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