DUALSCOPE® MP0R
DUALSCOPE® MP0R-FP

Pocket Instruments with PC-Interface for Convenient and Fast Coating Thickness Measurement on Virtually all Metals

DUALSCOPE® MP0R Models

Description

The DUALSCOPE MP0R and MP0R-FP measuring instruments measure coating thicknesses easily, quickly, non-destructively and with the precision that is typical for all Fischer instruments.

Instrument properties

- 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. The display turns automatically, like a smart phone
- 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

- 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
- Two special measuring modes in accordance with the measurement regulations IMO PSPC (90/10-Rule) and SSPC-PA2

Applications

	Steel or iron substrates (Fe)	**Nonferrous metal substrates (NF)**
Examples	• Zinc, chromium, copper, paint, varnish and plastic coatings on steel, iron or cast iron (Fe)	• Paint, varnish or plastic coatings on aluminium, copper or brass • Anodized coatings on aluminium

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

Models

- DUALSCOPE MP0R: Probe integrated in the measuring instrument for single-handed operation
- DUALSCOPE MP0R-FP: Probe with cable (80 cm; 31.5 ") permanently connected to the instrument, for measurements on various specimen shapes

Evaluation

Statistics	Display of mean value, standard deviation, MIN, MAX and number of measurements per block
PC software included in the scope of supply	PC software FISCHER DataCenter with the following functionality: Transferring and archiving measurement data, comprehensive statistical and graphical evaluations, easy creation and printing of inspection reports

Measuring Modes

Standard (Std)	Standard measuring mode for simple, universal coating thickness measurements, all measurement functions are available.
IMO PSPC 90/10 (90.10)	90/10 rule stored in the instrument for coating thickness measurements according to the requirements of the "Performance Standard for Protective Coatings" of the International Maritime Organization (IMO PSPC).
SSPC-PA2 (SSPC)	Coating thickness measurement according to the test specification SSPC-PA2 of the Society for Protective Coatings (SSPC).

Measurement Functions

Block size	Adjustable between 2 and 20 single readings per block
Tolerance limits	Adjustable, depending on the selected measuring mode
Offset value	In the standard mode, the freely adjustable offset value is deducted automatically from the measured value. Thus, one obtains the thickness of the top coating if for instance the interim coating is known.
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	*Factory calibration* Each individual instrument is factory calibrated at several reference points with the greatest care to ensure the highest possible degree of trueness. *Corrective calibration (Adjustment)* Adaptation to the substrate material and the shape of the specimen and to a thickness value using a calibration foil. *Simple Calibration* 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.

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. 10,000 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 limit value violation	Acoustically through 2 short beeps and visually with a red lit LED
Display	• Graphic display with an automatically turning display in order to read the measurement results in many different instrument positions • 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
USB port	2.0 compatible, for connecting a PC
Data transfer	Single readings, mean values, group separator

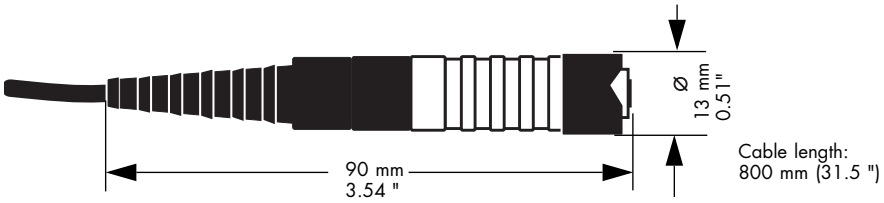
DUALSCOPE® MP0R Models

Admissible ambient temperature range during operation	0 .... +40 °C (+32 ... +104 °F)
Weight (incl. batteries)	MP0R: 137 g (4.8 oz) ; MP0R-FP: 184 g (6.5 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 ")

Probe of instrument MP0R-FP



Measurement Range	Steel or iron substrates (Fe)	Nonferrous metal substrates (NF)
	0 ... 2000 µm (78 mils)	0 ... 2000 µm (78 mils)

Trueness	Steel or iron substrates (Fe)	Nonferrous metal substrates (NF)
based on factory calibration standards of the Helmut Fischer GmbH	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	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

Repeatability Precision	Steel or iron substrates (Fe)	Nonferrous metal substrates (NF)
based on factory calibration standards of the Helmut Fischer GmbH, 5 single measurement readings on each standard	0 ... 50 µm: ≤ 0.25 µm 50 ... 2000 µm: ≤ 0.5 % of reading 0 ... 2 mils: ≤ 0.0098 mils 2 ... 78 mils: ≤ 0.5 % of reading	0 ... 100 µm: ≤ 0.5 µm 100 ... 2000 µm: ≤ 0.5 % of reading 0 ... 3.9 mils: ≤ 0.0195 mils 3.9 ... 78 mils: ≤ 0.5 % of reading

Ordering Data

605-097	DUALSCOPE MP0R, probe integrated in the measuring instrument
605-114	DUALSCOPE MP0R-FP, probe with cable (80 cm; 31.5 ") permanently connected to the instrument

Scope of Supply

Instrument case; protective instrument cover; lanyard; 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; USB cable; support CD with USB drivers, software program FISCHER DataCenter for convenient evaluating, documenting and archiving of the measurement data, software program PC-Datex for exporting the measurement data to an Excel spreadsheet

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