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 measuring 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.
Two special measuring modes with appropriate pre-settings facilitate the measurement of corrosion protection coatings in accordance with the measurement regulations IMO PSPC (90/10-Rule) and SSPC-PA2.
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.
With the FISCHER DataCenter software, included in the delivery, measurement data can be transferred to the PC and evaluated easily and quickly. Customized inspection reports can be created, printed and archived. Furthermore, each instrument is be delivered with a manufacturer's certificate.

Applications

	Steel or iron substrates (Fe)	**Nonferrous metal substrates (NFe)**
Examples	• Zinc, chromium, copper, paint, varnish and plastic coatings on steel, iron or cast iron (Fe)	• 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.

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 delivery	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

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: Carbide
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	Two LCD displays for reading the measured values even in difficult instrument positions, e.g., overhead
USB port	2.0 compatible, for connecting a PC
Data transfer	Single readings, mean values, group separator
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)
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

DUALSCOPE® MP0R Models

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	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 (NFe)
based on Fischer Standards	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

604-555	DUALSCOPE MP0R, probe integrated in the measuring instrument
604-556	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; 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

Helmut Fischer GmbH Institut für Elektronik und Messtechnik, 71069 Sindelfingen, **Germany**, Tel. +49 70 31 30 30, mail@helmut-fischer.de
Fischer Instrumentation (GB) Ltd, Lymington/Hampshire SO41 8JD, **England**, Tel. +44 15 90 68 41 00, mail@fischergb.co.uk
Fischer Technology, Inc., Windsor, CT 06095, **USA**, Tel. +1 (860) 683 07 81, info@fischer-technology.com

Helmut Fischer AG, CH-6331 Hünenberg, **Switzerland**, Tel. +41 41 785 08 00, switzerland@helmutfischer.com
Fischer Instrumentation Electronique, 78180 Montigny le Bretonneux, **France**, Tel. +33 1 30 58 00 58, france@helmutfischer.com
Helmut Fischer S.R.L., Tecnica di Misura, 20128 Milano, **Italy**, Tel. +39 0 22 55 26 26, italy@helmutfischer.com
Fischer Instruments, S.A., 08018 Barcelona, **Spain**, Tel. +34 9 33 09 79 16, spain@helmutfischer.com
Helmut Fischer Meettechniek B.V., 5627 GB Eindhoven, **The Netherlands**, Tel. +31 40 248 22 55, netherlands@helmutfischer.com
Fischer Instruments K.K., Saitama-ken 340-0012, **Japan**, Tel. +81 4 89 29 34 55, japan@helmutfischer.com
Fischer Instrumentation (Far East) Ltd, Kwai Chung, N.T., **Hong Kong**, Tel. +852 24 20 11 00, hongkong@helmutfischer.com
Fischer Instrumentation (S) Pte Ltd, Singapore 658065, **Singapore**, Tel. +65 62 76 67 76, singapore@helmutfischer.com
Nantong Fischer Instrumentation Ltd, Shanghai 200333, **P.R. China**, Tel. +86 21 32 51 31 31, china@helmutfischer.com
Fischer Measurement Technologies (India) Pvt. Ltd, Pune 411036, **India**, Tel. +91 20 26 82 20 65, india@helmutfischer.com

www.helmut-fischer.com

902-001 04-2011-1