Instrument series for measuring coating thickness and surface profile height

DELTASCOPE® FMP30

ISOSCOPE® FMP30

DUALSCOPE® FMP40

DELTASCOPE® FMP10

ISOSCOPE® FMP10

DUALSCOPE® FMP20

FISCHER®

Coating Thickness   Material Analysis   Microhardness   Material Testing

Description

These hand-held instruments measure coating thickness easily, quickly, non-destructively and with the precision that is typical for all FISCHER instruments. Over 70 probes can be connected to FMP10 to FMP40. Thus, you can solve even the most sophisticated measurement tasks.

Measurement range, trueness and repeatability precision depend on the connected probe. This information can be found in the corresponding probe data sheets.

Models

	DELTASCOPE FMP10	ISOSCOPE FMP10	DUALSCOPE FMP20	DELTASCOPE FMP30	ISOSCOPE FMP30	DUALSCOPE FMP40
Basic feature scope see page 3	Basic models with Basic feature scope			Extended models with extended feature scope as several measurement memories, allocation of measurement readings in blocks, specification limit monitoring, various measuring modes (automatic measurement, measurements according to IMO PSPC, SSPC-PA2, …)		
Extended feature scope see page 4						

Applications
(Examples)

	DELTASCOPE FMP10	ISOSCOPE FMP10	DUALSCOPE FMP20	DELTASCOPE FMP30	ISOSCOPE FMP30	DUALSCOPE FMP40
Base material steel or iron (Fe)						
• Zinc, chromium, copper coatings on steel or iron (NF/Fe)	✓		✓	✓		✓
• Paint, varnish or plastic coatings on steel or iron (Iso/Fe)						
Base material nonferrous metal (NF)						
• Paint, varnish or plastic coatings on aluminium, copper or brass (Iso/NF)		✓	✓		✓	✓
• Anodized coatings on aluminium (Iso/NF)						
Duplex coatings varnish/Zn/Fe (Zn > 70 µm (0.03 "))			✓			✓
Surface profile hight according to ASTM 4471	✓	✓	✓	✓	✓	✓

Memory

	DELTASCOPE FMP10	ISOSCOPE FMP10	DUALSCOPE FMP20	DELTASCOPE FMP30	ISOSCOPE FMP30	DUALSCOPE FMP40
Storable applications	1			up to 100		
Measurement readings	max. 1000 readings			max. 20.000 readings		

Evaluation

	DELTASCOPE FMP10	ISOSCOPE FMP10	DUALSCOPE FMP20	DELTASCOPE FMP30	ISOSCOPE FMP30	DUALSCOPE FMP40
Final result, total evaluation across all stored readings	✓	✓	✓	✓	✓	✓
Block result, statistical characteristics of a measurement block				✓	✓	✓
Histogram, graphical presentation				✓	✓	✓

Data transfer
Bidirectional data exchange with PC

	DELTASCOPE FMP10	ISOSCOPE FMP10	DUALSCOPE FMP20	DELTASCOPE FMP30	ISOSCOPE FMP30	DUALSCOPE FMP40
Single readings, final result	✓	✓	✓	✓	✓	✓
during and after measurement	✓	✓	✓	✓	✓	✓
Remote control	✓	✓	✓	✓	✓	✓
Group separator, block result				✓	✓	✓
Printer directly connectable at the instrument				✓	✓	✓

Basic feature scope	DELTASCOPE FMP10	ISOSCOPE FMP10	DUALSCOPE FMP20	DELTASCOPE FMP30	ISOSCOPE FMP30	DUALSCOPE FMP40

Measurement features

Continuous display value	Measurement with "free-running" display for continuous value display during scanning the surface, e.g. in the manufacture of tanks and containers
Single reading measurement	Reading capture each time when placing probe on surface
Measurement capture	• Automatic measurement capture when placing probe on surface
	• Manual measurement capture by pressing an instrument key
	• Up to 2500 ms delayed measurement capture
	• Fast measurement trigger ca. 0.2 s by using "free-running" display
Audible signal for measurement capture	Audible signal reports each measurement capture
Adjust the measuring system to application	
Normalization	Adaptation to the substrate material and the shape of the specimen
Corrective calibration	Adaptation to the substrate material and the shape of the specimen and to 1 or 2 thickness values by use of calibration foils.
Corrective calibration on coating	Adaption to the coating and substrate material in one step by use of one calibration foil. Nevertheless, this kind of calibration supplies only a lower accuracy as specified in the probe data sheets.
User master calibration	Adaptation to the base material and the shape of the specimen and to 4 to 8 thickness values by use of calibration foils.
Checking current calibration state and measuring system accuracy for one application	Control whether the mean value of check measurement matches the reference value from corrective calibration within the scope of measurement uncertainty (according ISO/IEC Guide 98-3).
Unit of measurement	Selectable µm or mils
Measured variable	Selectable coating thickness value, count rate, simultaneous display of coating thickness and probe count rate in air or simultaneous display of probe count rate on coating and in air
Restricted operating mode	The Functions "Normalization", "Calibration", "Menu" and "Delete" can be locked

General features

Language	Selectable de, us/gb, fr, it, es, pl, cz, tr, se, br, cn, jp, kp, ru
Factory calibration	Each individual instrument is factory calibrated at several reference points with the greatest care to ensure the highest possible degree of trueness.
Display	• Dimensions: 44 mm x 57 mm (L x W; *1.7 " x 2.2 "*), graphical backlit TTF display
	• Selectable contrast, brightness and automatic device turn OFF after n seconds
Connectors	• Probe socket
	• USB, 2.0 compatible, mini-AB, for connecting to a PC
Power supply, power data	• 4 batteries, LR6, AA, 1.5 V
	• Power consumption with unlit display: 0.3 W
	• Power consumption with lit-up display: 0.5 W
	• Automatic device turn OFF after ca. 5 min or non-stop operation
Instrument unit	• Dimensions: 170 mm x 90 mm x 35 mm (L x W x H; *6.6 " x 3.5 " x 1.4 "*)
	• Weight: 340 g (*12 oz*) (without probe and batteries)
	• Sliding cover to protect keys and for key lock
Ambient and storage environments	• Ambient temperature range during operation: 0 … +40 °C (*+32 … +104 °F*)
	• Storage temperature range: 5 … +60 °C (*+41 … +140 °F*)
	• Relative humidity range: 30 … 90 %RH, non-condensing

Extended feature scope

			DELTASCOPE FMP30	ISOSCOPE FMP30	DUALSCOPE FMP40

Measurement features

Storing readings block wise	Adjustable between 2 and 20 single readings per block
Specification limit monitoring	Limit values adjustable
Outlier control	Select test method (Grubbs Test, preset standard deviation determined from test measurement)
Offset value	The freely adjustable offset value is automatically deducted from the measured value.
Area measurement	Mean value is displayed after scanning surface by probe. This measuring mode is advantageous to determine quickly the coating thickness within the scanned area.
Matrix mode	Matrixs are built by a combination of application and measurement block memories. This means that several automobile components (blocks) can be measured automatically, in succession, by a predefined sequence for 3 different auto types (applications), for example. Before measuring each auto component (fender, hood, etc.) — the manually opening of the corresponding application (automobile type) and block (auto component) is no longer required.
Measurement defined by directives	The instrument features stored measurement specifications for the following directives: SSPC-PA2, IMO PSPC, QUALANOD, QUALICOAT and user specific part definition with number of measurements per measuring spot and number of measuring spots per specimen.
Display only mean value of i single readings	In case of rough surfaces or various material texture — its advantageous to create a mean value from several measurements and store it as measurement value.
Automated measurement	Automatic measurement capture every n seconds; Adjustable number of measurements for a time interval

Instrument features

Analog Display, engage	When making measurements in the "free-running" display mode — the analog display facilitates a quick recognition coating thickness changes.
Application linking	This function minimizes calibration as only one normalization or one corrective calibration is needed for several different (similar) applications. Linked applications use the same measurement probe and use the same normalization and/or corrective calibration together.
Date and time	Setting of date, date format and time for measurement recording and evaluation.
Printing	Printer can be connected to the USB interface. Printing of single readings, block result, final result and histogram
Electrical power supply via AC adapter	The FMP30 and FMP40 are battery and AC adapter powered

Ordering information

	DELTASCOPE FMP10	ISOSCOPE FMP10	DUALSCOPE FMP20	DELTASCOPE FMP30	ISOSCOPE FMP30	DUALSCOPE FMP40
Order number	605-021	605-027	605-023	605-022	605-028	605-024

Scope of delivery

	DELTASCOPE FMP10	ISOSCOPE FMP10	DUALSCOPE FMP20	DELTASCOPE FMP30	ISOSCOPE FMP30	DUALSCOPE FMP40
				Carrying case		
Measurement instrument, carrying strap; 4 batteries; printed guidelines; USB interface cable; support CD with USB drivers, operator's manual, software program FISCHER DataCenter to evaluate, record and archive measurement data in a comfortable way, software program PC-Datex to transfer measurement data into Excel sheets						

Optional Accessories/ Spare parts

	DELTASCOPE FMP10	ISOSCOPE FMP10	DUALSCOPE FMP20	DELTASCOPE FMP30	ISOSCOPE FMP30	DUALSCOPE FMP40
Carrying case for measurement instrument and accessory	604-148					
Adapter E-probe/F-socket, connecting E-probes to measurement instrument	604-214					
NiMH battery Set FMP with 4 NiMH-Akkus, Mignon, AA, LR6, 1.5 V, 2100 mA	604-295					
NiMH battery charger, Mignon, AA, LR6, 1.5 V, 2100 mA	604-335					
Support stand V12 BASE, with manual probe lowering device. Measurements with support stand provides a higher measurement accuracy. The supplied stop device simplifies the specimen positioning.	604-420					
Support stand V12 MOT, with motorized probe lowering device for top repeatability. Controlled directly by stand keys. The supplied stop device simplifies the specimen positioning.	604-374					
Protective cover for measurement instrument	604-149					
Calibration foils, Calibration foil sets	For calibration measurement system a broad assortment of calibration foils is available from FISCHER. On your request FISCHER issues a Factory Certificate for your calibration foil.					
Module COM FMP30/40, additional RS232 interface with Sub-Min-D socket for data transfer (must be mounted in factory)				604-500		
Interface connection set for module COM FMP30/40				602-341		
Module Bluetooth® FMP30/40, additional interface for wireless data transfer (must be mounted in factory)				604-480		
AC adapter				604-290		

Probes

A probe must have specific properties for each field of application to attain best measurement results. Please feel free to contact our professionals at FISCHER to assist in finding the right probe for your individual need.

www.helmut-fischer.com

☐ **Coating Thickness** ⊞ Material Analysis ▽ Microhardness Q Material Testing