

DUALSCOPE® FMP100

The most powerful and user-friendly solution
for measuring coating thickness



Portable instrument for measuring coating thickness DUALSCOPE® FMP100

The portable DUALSCOPE FMP100 instrument is the perfect solution for professional quality assurance. Unique on the market, this powerful hand-held device for measuring coating thickness is equipped with the following outstanding features:

- Windows™ CE operating system with graphical user interface and a user-definable file and folder structure
- High-resolution touchscreen with virtual keypad that can be operated using a stylus or finger
- Large memory for several thousand measuring applications with different calibrations
- Extensive evaluation and statistics functions with supporting graphical presentation options
- Wide selection of high-precision probes including many specialised probes for even the most sophisticated measurement applications

With the optionally available inspection plan management software, FISCHER DataCenter IP, this professional measurement instrument turns into multi-functional data terminal, opening up a whole new dimension in metrology. With the help of visually-aided operator guidance, individual inspection plans created on a PC can be executed step-by-step on the instrument – and the results evaluated conveniently at the PC.



Measurement of auto body paint thickness using the dual probe FD13H



The inspection plan, created on a PC, is loaded up onto the instrument. The instrument shows the measurement spots directly on the specimen and the number of the required measurements.



Graphic display screen with menu-driven interface and touchscreen operation here with a stylus

The FMP100 instrument rises to the challenge of sophisticated and ever-changing measurement applications. It can be used for quality control, in continuous production, for incoming inspections or in the lab, on random samples or entire series. Extensive software functions also make it very well suited for statistical monitoring of processes. Regardless of purpose – whether used in automotive, for electroplating or anodising, measuring heavy duty anti-corrosive layers or the finest of coatings – this flexible instrument always meets the highest standards for precision and trueness.

Instrument features

- Windows™ CE operating system with large touchscreen display
- Individually customisable user interface
- Very simple calibration via operator guidance
- Clear management of measuring applications through user-definable file and folder structure
- Memory adequate for thousands of measuring applications and several thousand readings
- USB communication and printer port
- Can be set to various European and Asian languages
- Various display screens for measurement acquisition, e.g. with concurrent "original value chart" for immediate process visualisation



Graphical display of the measurements with the set specification limits. The histogram of the measurements is additionally shown on the right display site.

Measurement acquisition

- Automatic probe and substrate material recognition
- Individual measurement acquisition
- Averaging of measurement data: Only the mean value of multiple readings is stored
- Measurement acquisition via surface area measurement: Individual readings are captured continually until the probe is lifted, at which point a mean value is generated
- Measurement with "tracking display" for continuous surface sampling
- Outlier rejection function for the automatic elimination of erroneous measurements
- Matrix measurement mode for interrelated multi-point measurements



Measurements of anodised aluminum on a façade



Measurement of paint coating thickness

The **DUALSCOPE FMP100** uses both the magnetic induction method (DIN EN ISO 2178) and the eddy current method (DIN EN ISO 2360). It can measure the following coating/substrate systems:

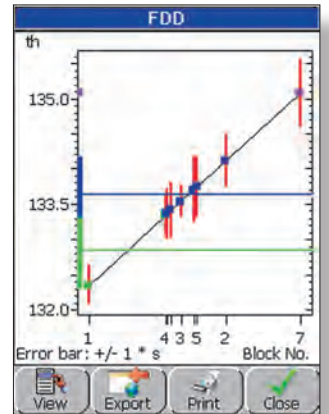
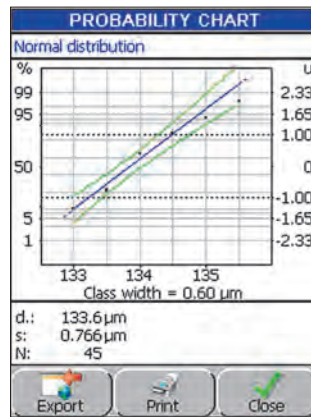
- Non-magnetisable coatings on iron and steel (F)
- Insulation coatings on nonferrous metals (NF)
- Duplex coatings (paint/hot-dip galvanised coatings) on steel (heavy duty corrosion protection), whereby paint and zinc coatings are measured simultaneously and displayed separately.

Additional applications are provided by the **DUALSCOPE® H FMP150**. Compared to the FMP100, the FMP150 can also measure with a third method, the magnetic method. This enables further measurement options:

- Thick metal or protection coatings on steel or iron
- Nickel coatings on nonferrous heavy metals or insulation materials.

Evaluation and Statistics

Evaluation options available for the DUALSCOPE FMP100 instrument include block and final results, histogram, sum frequency, FDD (Factory Diagnosis Diagram) and matrix evaluation. This allows the measured values to be evaluated according to the user's requirements. The various graphical representations provide a clear overview of the measured test series, facilitating the comparison of individual measurement data or groups thereof. Production processes can be evaluated in one glance and differences between shipments can be pinpointed quickly during incoming inspection.



Typical examples of evaluation options, as viewed on the high-resolution colour displays of the DUALSCOPE FMP100

Evaluation and statistical functions

- Display of important statistical characteristics such as mean value, standard deviation, min, max, and range
- Statistics of the most important characteristics displayed in block and final results, analysis of variance (ANOVA) values
- Graphical representation as histogram or sum frequency chart
- Input option for process tolerance limits and calculation of the associated process capability indices c_p and c_{pk}

Factory Diagnosis Diagram (FDD®) for visualising process quality

FISCHER's patented Factory Diagnosis Diagram (FDD®) offers the user a means of visual evaluation by providing a compact overview of the process. An easy-to-interpret diagram provides a distribution graph of production parameters, such as coating thickness. The use of colour enables the user to quickly identify areas for optimising production processes without having to run separate statistical calculations.

Print form generation

The FMP100 instrument allows the generation of simple print forms using drag and drop. Via USB, these print forms can then be printed directly from the instrument or transferred to a PC as pdf files. In addition, the FISCHER DataCenter provides a convenient software solution for creating individual test reports on a PC.

FISCHER DataCenter Software (including shipment)

The PC software FISCHER DataCenter can be used to transfer measurement data via USB to a PC, where they can be managed and archived. In addition, the measurement data can be analysed on the PC using versatile evaluation and statistical functions such as histogram, sum frequency, etc. Various chart and table presentation options are available for this purpose.

The DataCenter software allows for the design and creation of individual reports using one's own logos, images and graphics. Using the drag and drop function, it is possible to integrate measurement data, statistical data and graphs, as well as to create report templates based on scanned forms.



Evaluation at the PC with the PC software FISCHER DataCenter.
Presentation of the measurements in the Factory Diagnosis Diagram (FDD).

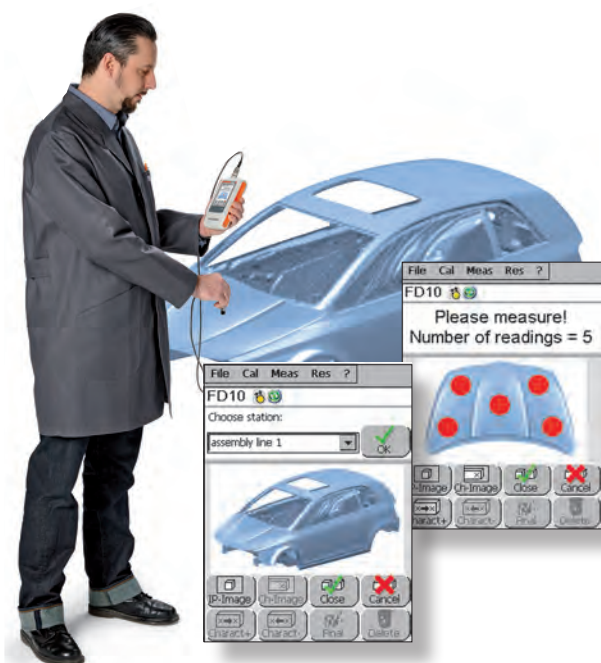
Optional PC software FISCHER DataCenter IP and IP-Multi (optional accessory)

With the optionally available FISCHER DataCenter IP and IP-Multi software, inspection plans can be created on a PC and loaded onto one (IP) or many (IP-Multi) instruments. The operator is then guided step-by-step through the measurement sequence

of the inspection plan, assisted by stored images, sketches and technical drawings. For instance, the measurement spots can be shown directly on the specimens. Freely definable selection and entry fields are available for querying, for example, serial or order numbers during inspection plan processing.

Attribute lists can also be stored to facilitate the user's entries. Once data acquisition is complete, the data are returned to the PC where they can be evaluated thoroughly and easily, thereby readying the instrument for new measurements.

When directly connected to the PC software, the classic measurement device is thus transformed into a mobile data terminal that ensures reliable and convenient user guidance as well as correct and dependable acquisition of complex data.



Versatile Probes Program and Ordering Information

Probe program

The extensive selection of FISCHER probes is as versatile as the measurement applications of our customers. A probe needs specific properties for each field of application for achieving best results with a high accuracy. Over 70 probes can be connected to the instruments FMP100 and FMP150. Thus, you can solve even the most sophisticated measurement tasks.

Probe selection based on several criteria

- Material combination of coating and base material
- Thickness of coating and base material
- Dimension of the measurement area
- Shape of the specimen
- Surface condition of the measurement area

Call us

We are happy to consult you on the matter of choosing the right probe for your individual application.



Ordering information

DUALSCOPE® FMP100
DUALSCOPE® H FMP150

Order no.

604-140
604-518

Standard content of instrument shipment

- Instrument
- Short form operator's manual, print version
- Support CD with evaluation and archiving software DataCenter, USB drivers and operator's manual
- AC adapter MPG
- Carrying strap FMP
- USB interface cable FMP/ PC
- Battery set FMP (Alkaline)
- Protective cover for instrument
- Carrying case

Optional accessories

	Order no.
Software FISCHER Data Center IP	604-576
Software FISCHER Data Center IP Multi	604-577
Adapter E-probe/F-socket	604-214
AC adapter MPG	603-233
Power unit MPG	604-144
Charger AA/Mignon	604-335
Measurement stand V12 BASE	604-420
Measurement stand V12 MOT (motor-driven)	604-374
Bluetooth Module for wireless data transfer	604-695
COM Module, serial RS232 interface	604-696
Interface connection set for COM Module	602-341
Protective cover for instrument	604-149

Service worldwide

FISCHER has established a tightly-linked global network of service partners with highly qualified staff. Offering fast help, repairing and the availability of leasing and rental units, FISCHER supports you in every respect concerning your instruments and their use.

Calibration and certification

On your request Fischer issues a Quality Inspection Certificate for your probe and instrument according to DIN 55350-18. A broad assortment of calibration foils is available from FISCHER. On your request FISCHER issues a Factory Certificate for your calibration foil.



Application laboratories

More and more, demanding applications require highly qualified application advice. FISCHER addresses this need with its application laboratories located around the world (Germany, Switzerland, China, USA).



Measuring on a customer's specimen in a FISCHER application laboratory

User on-site training

With our training program we make your employees fit on-site for your measuring task. Our trainer takes account of your individual requirements and wishes.



User training for the DUALSCOPE® FMP100 on-site at the customer's

Seminars

Because we want you to receive maximum benefit from our products, FISCHER's experts are happy to share their application know-how. The seminars not only teach metrological basics but also hand-on experience in small groups to put the theory into practice.



A FISCHER seminar teaches metrological basics and practical knowledge in small groups

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