LEPTOSKOP-probes
For each measuring task the right solution

Typical application

The LEPTOSKOP 2042 works with external, exchangeable probes, which are designed either for Fe- or NFe-base material. With the help of the following overview it is possible to find the appropriate probe for your measuring task.

Even if the measuring task is getting more difficult our experts will assist and consult you to find the best probe for your individual requirement.

Measuring methods

Magnet-inductive method (EN ISO 2178) for all non-ferrous coatings on ferrous substrate (Fe) e.g. paint, lacquer, powder lacquer, enamel, plastics, zinc, chromium, copper, on e.g. iron and steel.

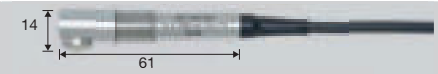
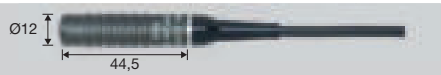
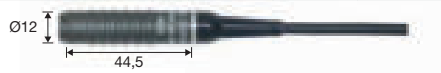
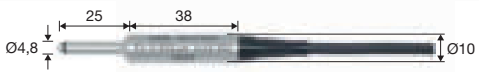
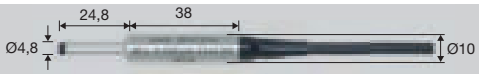
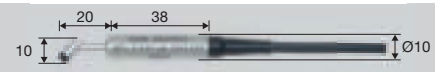
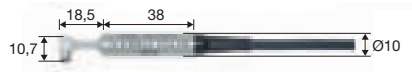
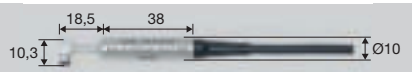
Eddy current method (EN ISO 2360)
for all non-conducting coatings on (electrically) conductive base material (NFe) e.g. lacquer, paint, powder lacquer, anodized surface, plastics, on e.g. aluminium, copper, brass.

Criteria for an optimal probe selection

- The material combination of coating and substrate. This determines the measuring method.
- The coating thickness. It is substantial for the required measuring range of the probe.
- The geometrical shape and the size of the test item. They determine the probe type: Standard-, micro-, two pole- or special probe; straight or angled.

We also offer special probes for individual measuring tasks.

For each measuring task the right solution:

Probes (dimensions in mm)	Probe Type	Measuring Range	order no.
	probe Fe 0°	0 – 3.000 µm	2442.100
	probe Fe 90°	0 – 3.000 µm	2442.110
	probe Fe S 0°	0,5 – 20 mm	2442.120
	probe NFe 0°	0 – 1.000 µm	2442.130
	probe NFe S 0°	0 – 3.750 µm	2442.140
	two-pole probe Fe	0,5 – 12,5 mm	2442.200
	micro probe Fe 0°	0 – 500 µm	2442.300
	micro probe NFe 0°	0 – 500 µm	2442.310
	micro probe Fe 45°	0 – 500 µm	2442.320
	micro probe NFe 45°	0 – 500 µm	2442.330
	micro probe Fe 90°	0 – 500 µm	2442.340
	micro probe NFe 90°	0 – 500 µm	2442.350

We will assist you with your individual measuring task and offer you the adequate special probe.

LEPTOSKOP® 2042
Accessories

Accessories for LEPTOSKOP 2042

Accessories	Description		order no.
PC-software: STATWIN 2002	This software enables the transfer, analysis, storage and archiving of measured data with the PC. STATWIN takes over the complete index and file structure from the instrument. With the help of the export function it is possible to transfer the measured data to other programs (e.g. MS Excel). For detailed information we recommend our separate product information for STATWIN 2002.		2904.001
PC-software: EasyExport	This software enables the export of single measurements or whole data files into Windows-programs. Via the PC-interface it is possible to transfer the measured data of the KARL DEUTSCH instruments according to your demand into different applications (word processing, spreadsheet analysis, data base, ERP and QM software a.m.m.). For detailed information we recommend our separate product information sheet for EasyExport.		2905.001
Reference blocks	According to the application we offer ferrous (iron) and non ferrous (aluminium) reference blocks.	Reference block Fe, small Reference block Fe, large (for two pole probe and standard probe Fe S 0°) Reference block NFe	2815.001 2815.002 2815.003
Calibration foils Calibration block	Foils with precise thickness for reliable and accurate calibration of the LEPTOSKOP. Depending on the measuring range there are different foil sets deliverable.	Foil set 0 up to 1250 µm (6 ea) Foil set 1250 up to 4750 µm (3 ea) Foil set 0,5 up to 12,5 mm (4ea) Precision calibration foil set (6 ea) 0 – 1250 µm Plastics calibration block, 15 mm thick	2715.001 2715.004 2715.002 2715.003 2715.151
Probe Positioning device	It can be used for all Fe- and NFe-micro probes and comes with a pneumatically damped wire-operated manipulator for highly accurate repetitive positioning. Corresponding fixtures are also included for the 0°-, 45°- and 90°-micro probes.		2820.002
Positioning aid for micro probes	These aids help to avoid wrong measuring data caused by inclination or twisting of the probes during measurement.	Positioning aid 0°: Positioning aid 45°: Positioning aid 90°:	2998.001 2998.002 2998.003
Probe holder	300 mm length for probe Fe 90° / two-pole probe Fe		2808.001
Mobile thermal printer	RS232, incl. mains-/charging adapter (230 V); connection of the printer to the LEPTOSKOP 2042 via “PC-cable” for RS232 interface (order nr. 1657.311)		6010.201
PC-cable	Cable for connecting the LEPTOSKOP 2042 to a PC/laptop/printer with serial interface For RS232 interface For USB interface (incl. driver-CD)		 1657.311 1657.312
Battery set Charger unit	NiMH-rechargeable battery set, 2 x 1.2 V (size AA, with enhanced capacity: 2000 mAh min.) Charger unit 230 V for up to 4 NiCd/NiMH-rechargeable batteries (4 x AA)		6016.001 6015.001
Protective bag	Leather case with viewing window for display and keypad, mechanical protection and handling of the instrument if used without rubber holster.		4825.001
Technical literature	NDT – compact and understandable No. 12 “Coating Thickness Measurement” (included with scope of supply)		6607.121

STATWIN 2002-operating interface

PC-software: EasyExport

Calibration foil sets and reference blocks

Probe positioning device

Positioning aid for micro probes

Mobile thermal printer

LEPTOSKOP® 2042
Technical data

Technical data LEPTOSKOP 2042	
Display	Approx. 48 mm x 24 mm, back light illumination
Measuring methods	Fe-measuring: magnet-inductive method (EN ISO 2178) NFe-measuring: eddy current method (EN ISO 2360)
Measurement range	0 – 20000 µm, depending on probe used
Calibration	• Zero calibration • Single and multi-point calibration with foils on uncoated base material • Calibration on coated material (Fe), if no uncoated material is available • Factory calibration • Loading and saving of customized calibrations
Measuring uncertainty (after calibration)	For coatings < 100 µm: 1 % +/- 1 µm For coatings > 100 µm: 1 to 3 % +/- 1 µm For coatings > 1000 µm: 3 to 5 % +/- 10 µm For coatings > 10000 µm: 5 % +/- 100 µm
Interface	USB/RS232 via adaptor cable
Measurement units	µm, mm, mils or inch
Storage	Up to 140 files, 999 measured values per file, Overall: max. 9999 measured values less approx. 100 measured values per generated file
Statistics	Minimum, maximum, arithmetic mean, number of data, standard deviation Limit value monitoring Local coating thickness and average coating thickness according to EN ISO 2808
Date and time	Real-time clock, battery backed
Power supply	2 x AA-batteries, USB or mains adapter respectively
Operating hours	• Approx. 90 hrs. with backlight off (with alkali-manganese-primary cells) • Approx. 45 hrs. with backlight on (with alkali-manganese-primary cells)
Battery level indicator	4-stage battery level indicator An audible warning signal occurs approx. 2 to 4 hours before undervoltage condition automatic shut-off at undervoltage
Operating temperature	0 °C to +45 °C
Storage temperature	-20 °C to +60 °C without batteries 0 °C to +45 °C with batteries
Housing dimensions and weight	81 mm x 121 mm x 32 mm, approx. 150 g (with batteries, without rubber holster)
Dust and humidity protection	Protection class IP 40 (protection against intrusion of particles > 1 mm)
Probe electronic	Active probe with built-in microprocessor and signal processing

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