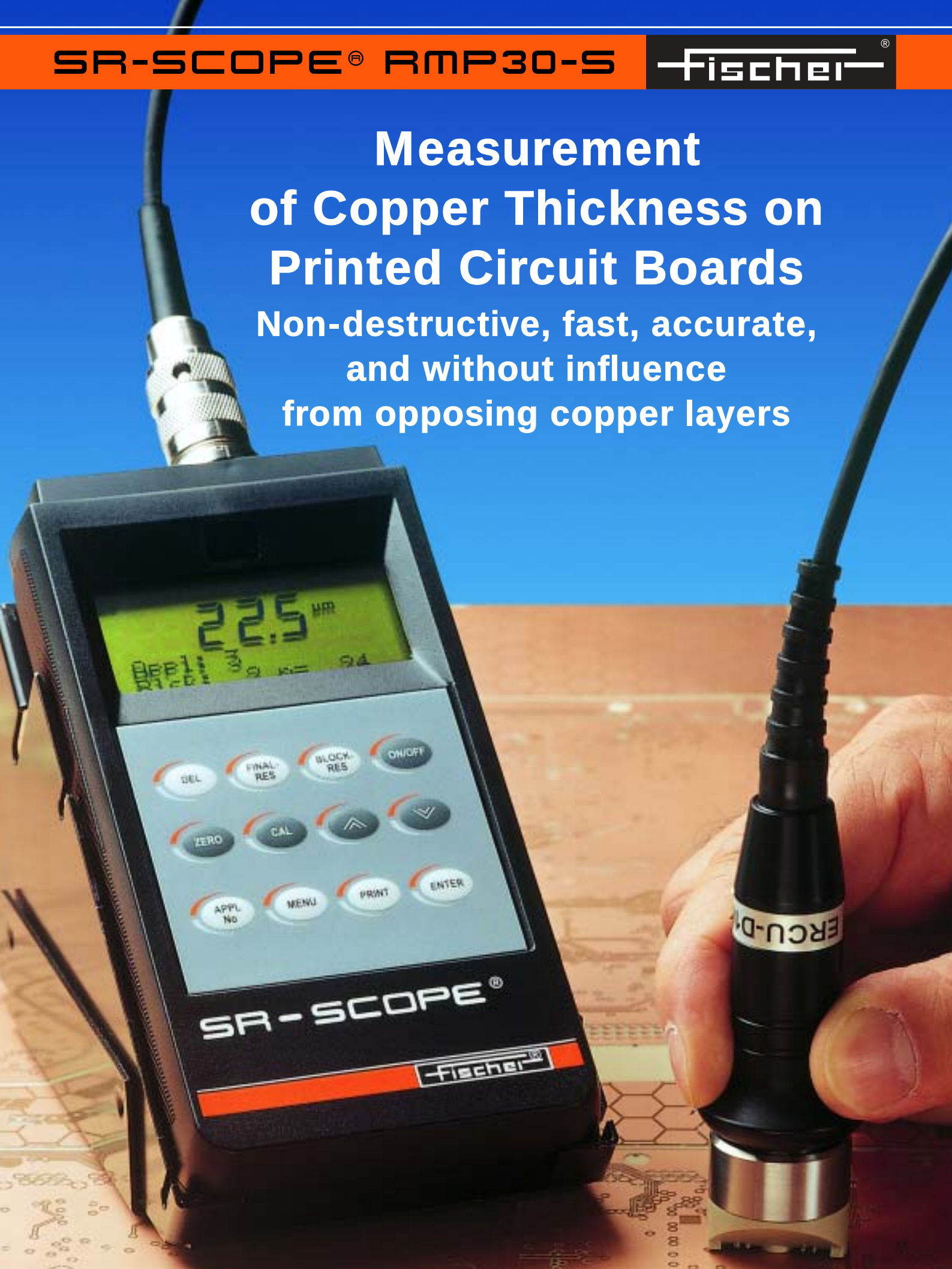
SR-SCOPE® RMP30-S

fischer®

Measurement of Copper Thickness on Printed Circuit Boards

Non-destructive, fast, accurate, and without influence from opposing copper layers



Method, Features, Application, Data

Measurement method

Electrical 4-point resistance method. A DC current is introduced into the copper coating using the two outer contact pins (figure top right). The two inner contact pins are used to tap the electrical potential generated by the current flow. This potential is converted to an equivalent copper thickness via a calibration characteristic. The measurement is not affected by isolated copper coatings opposite of one another.

Features

- Hand-held instrument with large LCD display for measurements and characteristic statistical values as well as lines of text for operating information.
- Battery or line operation.
- Automatic probe recognition.
- Automatic measurement upon placement of probe.
- Specification limits.
- Acoustic signals for measurement accept and limit violation.
- Lockable keyboard.
- Automatic power off.
- Storage of a maximum of 10,000 measurements in up to 100 applications, divided into a maximum of 1,000 blocks.
- Statistical evaluation.
- Outlier monitoring.
- Calibration with certified Cu/Iso standards provides traceability of measurement results.
- Unit of measurement switchable between µm and mils.
- 8 display languages selectable.
- RS232 interface.

Application

The SR-SCOPE®, measures the thickness of copper coatings on the top side of pc-boards according to the final draft of standard EN 14571:2004. It is particularly well suited for measurements on multi-layers or on thin laminates, because, due to the measurement method, copper layers that are located opposite of one another do not influence each other.

Technical data

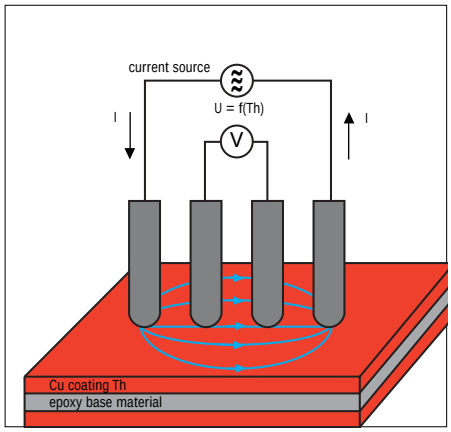
Measurement range of the probes:
ERCU N
Range I: 0.1 – 10 µm (4 – 400 µ")
Range II: 5 – 120 µm (0.2 – 4.8 mils)
Repeatability precision s[(1)]:
0.75µm (30 µ") ≤ s ≤ 4.5% of reading

ERCU-D10
Range I: 0. 1 – 10 µm (40 – 400 µ")
Range II: 5 – 200 µm (0.2 – 8 mils)
Repeatability precision s[(1)]:
0.25µm (10 µ") ≤ s ≤ 1.5% of reading

[(1)] *dependent on range*

Order information

Product	*Order No.*
SR-SCOPE® RMP30-S	603-714
PROBE ERCU N	603-220
PROBE ERCU-D10	603-387
KAL-N ERCU Cu/Iso 5µm	603-175
KAL-N ERCU Cu/Iso 12µm	603-176
KAL-N ERCU Cu/Iso 18µm	603-177
KAL-N ERCU Cu/Iso 35µm	603-178
KAL-N ERCU Cu/Iso 70µm	603-179
KAL-N ERCU Cu/Iso 105µm	603-180
KAL-N ERCU Cu/Iso 140µm	603-668
MEAS. STAND V12	603-729
ERCU-SP277	
SUPPORT FOR PORTABLE INSTRUMENTS	600-025
INTERFACE	602-341
CONNECTION SET MP	
SOFTWARE PC-DATEX	602-465
SOFTWARE PC-DATACC	603-028



Principle of the electr. resistance method for coating thickness measurements.

Measurement probe ERCU N for small measurement areas.


Measurement probe ERCU-D10 for large measurement areas.

 Subject to changes 902-070 Printed in Germany 11/04

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