

# FISCHERSCOPE® MMS® Automation

Automated measuring and testing



## At the heart of your manufacturing

**Fully automated production offers numerous advantages: faster fabrication, better quality and transparent processes. That's why more and more industries are turning to automation. But converting this vision into reality requires a powerful and fully integrated measuring system with interfaces to all control units.**

The FISCHERSCOPE® MMS® Automation forms the basis for automated quality control in a wide range of applications. Designed for flexibility, it's modular in build: By installing up to four modules, it's possible to accomplish a variety of measuring tasks in the fields of layer thickness and electrical conductivity.

The measuring system consists of three main parts. The measured values are recorded using (1) probes mounted on a robot arm, for example. The probe signals are transmitted to the (2) base unit via a (3) digitizing unit – the MMS module.

The base unit is mounted in the control cabinet and is responsible for monitoring the measurement. It communicates with higher-level units via an RS-232 interface.



### Features

- Modular measuring system for conductivity and layer thickness
- Can be fully remote-controlled
- Module and probe are mounted directly on the robot (shielded from environmental influences)
- Connection between module and base unit via cable suitable for drag chains up to 30m long
- Communication with control units via RS-232 interface



### The right equipment for your application

Thanks to its modular design, the FISCHERSCOPE MMS Automation can be tailored to your needs and expanded at any time. A total of five different modules are available.

#### PERMASCOPE®

PERMASCOPE is the versatile module for measuring layer thickness. It combines two measuring methods: the magnetic-inductive and the eddy-current method. Typical applications:

- Electrically insulating layers on different metals, e.g. paint on steel or aluminum
- Electrically conductive, non-magnetizable layers on ferrous metals, e.g. zinc, copper or chrome on steel
- Weakly conductive layers on highly conductive metals, e.g. chrome and electroless nickel on copper or aluminum

#### NICKELSCOPE®

NICKELSCOPE is based on the Hall effect and exploits the different magnetizabilities of coating and base materials for thickness measurement. Typical applications:

- Electroplated nickel layers on non-ferrous metals and insulating base materials
- Non-magnetic layers such as copper, aluminum or lead on steel or iron

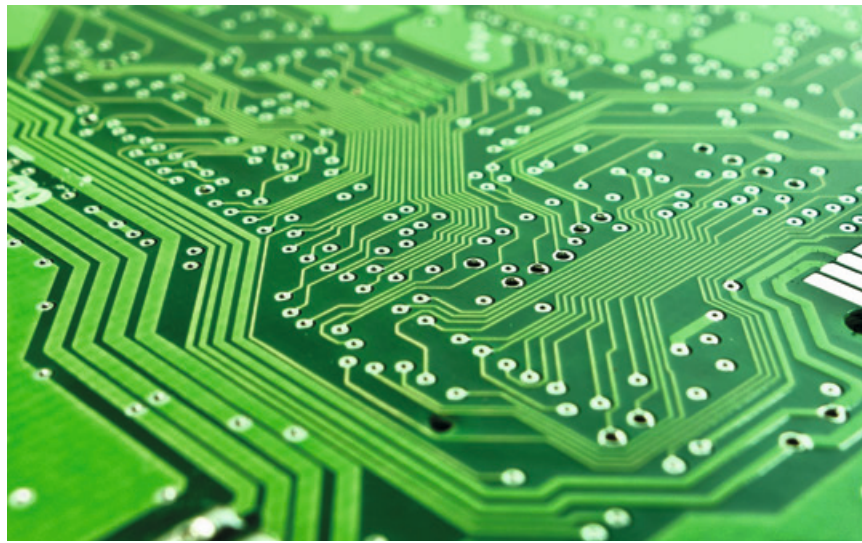
#### SR-SCOPE

SR-SCOPE is a special module for the electronics industry. It uses the micro-resistance method and is suitable for measuring the thickness of individual copper layers on multilayer printed circuit boards – without influences from deeper layers.

#### SIGMASCOPE®

SIGMASCOPE determines the electrical conductivity of metals and can be used either for coating thickness measurement or for identifying non-ferrous metals. Typical applications:

- Measuring copper layers on printed circuit boards
- Inspecting aluminum alloys in incoming goods



*On multilayer PCBs, before applying the solder resist, the thickness of the copper layers can be measured with SR-Scope modules – simultaneously with up to 4 probes*

#### I/O

If measurements must be synchronized with other processes, the temporal precision of PLC units is insufficient. When this is the case, the MMS Automation can be controlled via a digital I/O module.



*Specialized probes make it possible to solve a wide variety of measurement tasks*

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Global Application  
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