PROFILER® 140E

OFF-LINE THICKNESS GAUGE

NEW SYSTEM

Off-Line Film Thickness Gauging System

More PROFILER Systems Are Used for Off-Line Film Thickness Testing Than All Competitors Combined...

And Now Another New PROFILER, The 140E.

Winzen introduced the first PROFILER over 15 years ago. After acquiring Winzen, MOCON continued to improve on the original design of these industry standard gauges, culminating with the New PROFILER 140E.

The PROFILER 140E offers many new capabilities never before offered. The patented capacitance sensor technology and computer-controlled system have been enhanced to include...

- Color Graphics Capabilities
- Polar Graphic Profile for Blown Film Applications
- Data Summary Reports on Multiple Test Runs for SPC
- Coating Thickness Profile for Discrete Layer Evaluation
- Slope Graph for Tracking the Rate of Each Thickness Change
- Customized Operator Screen for Simplified Usage

High and low spots on a blown film die are easily pin-pointed with the new Polar Graphics Profiles.

The new operator set-up screen can be made as simple as you desire.

mocon®

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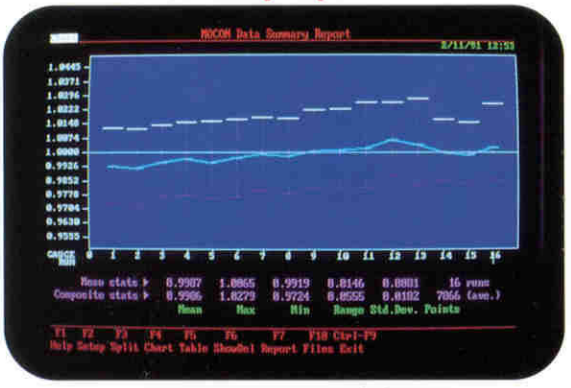
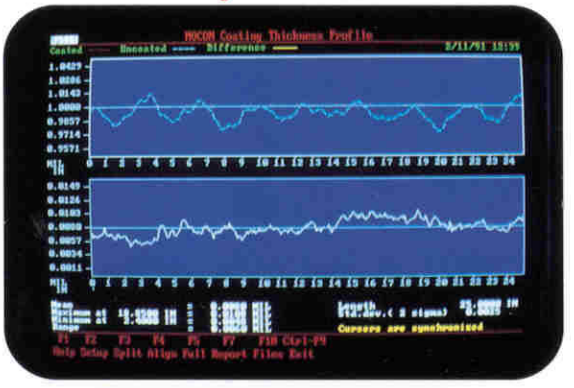
Optional Software Capabilities

Summary Report



No-nonsense SPC capabilities include an $\overline{X}$ and R chart on numerous test runs. Each test run (or sample) is depicted by a single verticle line. The top and bottom points of this line represent the upper and lower most gauge readings taken from this sample. Mean thickness is displayed as a series of dots connected by a line, while pertinent summary data is displayed below the screen. Data can be displayed in either table or chart form or a combination of both.

Coating Thickness Profile



Two test runs (ie. substrate and coated substrate) can be measured to automatically determine coating thickness. The top half of the screen graphs both the coated and uncoated substrate, while the bottom half of the screen graphs the coating itself. By using a different scale on the coating profile, much higher resolution is possible.

Operating Principle Offers Performance Advantage...

How it works...
The PROFILER System accurately measures thickness by electrical capacitance. The sensing element consists of two narrow plates which are separated to form a capacitor with the film to be measured as the dielectric. The patented sensor responds to even the most minute changes in capacitance due to film thickness variations. These changes are electronically converted into digital signals used by the computer to present real-time screen graphics and a variety of time saving and record keeping computations.

Calibration...
Since the PROFILER's patented sensor design registers thickness variations undetectable by traditional gauging methods, calibration becomes an important part of the testing procedure. By using a standard method such as weight per unit area or micrometry to determine the stated gauge of a single point on the film, the PROFILER can reference this point and give an **extremely accurate** profile of the entire sample from edge-to-edge. Calibrations are stored in the PROFILER's non-volatile memory for easy operator retrieval.

In May of 1986, MOCON acquired the PROFILER product line from Winzen International, and with it the exclusive rights to patented technology used in their unique form of capacitance gauging. Please beware of any companies claiming to be the "New Winzen" and offering sales and service on your Winzen equipment. They do not have the authorization to exploit any of the technology used to manufacture Winzen or MOCON PROFILER products.

Specifications

Measurement Method
Proprietary non-nuclear sensor measures capacitance changes due to material thickness variations.

Thickness Range
0.25 to 100 mils (6.4 to 2540 microns)

Resolution
Thickness:
Model 140E down to 0.001 mil (0.025 microns), or 0.01% of thickness, whichever is greater.

Linear:
Model 140E down to 0.2 mm, depending upon speed setting.

Repeatability
0.01 mil (0.25 microns) or 0.5% of material, whichever is greater.

Accuracy Statement: 0.5%

Important Note: Because capacitance film thickness gauges are indirectly measuring thickness, they can only be as accurate as the standard test method (weight per unit area, micrometer) used in calibration. Therefore, the repeatability of the capacitance gauge is a much more important measure of its performance. No competitive capacitance gauge is more repeatable than MOCON's PROFILER's, no matter what competitive sales literature may say.

Temperature Stability of New Sensor
Ten times better than previous and competitive models.

Stored Calibrations (per gap setting)
Model 140E approx. 120 per 360K disk possible

Film Speed Drive
60 and 300 cm/min

Analog Output
0 - 2 volts, scaled

Power Requirements
115 VAC ±10%, 60 Hz, 1A
All international voltages and frequencies available.

Environmental Requirements
(Needed to meet operational specifications)
Temperature: 18 to 30°C ±2°C
Humidity: 20 to 80% RH

(see "Site Preparation Instruction" sheet for more information about facilities required for operation.)

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