

MicroSCAN - FX110 Spin Finish Measurement

Accurate measurement of spin finish level in all filament extrusion processes is critical, yet today's laboratory techniques have major shortcomings, in measurement accuracy, their inability to measure short term variation as well as the lag time between manufacturing and testing.

The **MicroSCAN** provides a revolution in Spin Finish measurement by providing an at line technique for accurate measurement of both:

- Mean Level Spin Finish
- Short Term Spin Finish Variation

Historically at line measurements have been considered to be less accurate than laboratory tests, but the **MicroSCAN** has been shown in production tests by one of the industry's key companies to be **80% MORE ACCURATE** than laboratory tests in measuring mean spin finish levels. In addition the **MicroSCAN** offers further substantial benefits in comparison to Laboratory testing:

Identification of short term faults

these result from faulty pumps/applicators which cause significant problems in downstream processes yet cannot be identified in the laboratory tests

Faster Feed Back

Immediate identification of faulty threadlines

Lower Testing Costs

With a 5 second measurement time a single technician can realistically test well over 100 threadlines per hour using the **MicroSCAN**

Much Lower Capital Costs

A single **MicroSCAN** has substantially greater measurement capacity than an NMR yet is a fraction of the cost

As a result of these benefits, using the **MicroSCAN** for Spin Finish Measurement provides:

- Reduced Off Quality – due to the faster feedback.
- Improved Downstream Process Performance - due to both the elimination of short term faults and reduced off quality
- Monitoring of daily trends to allow maintenance cycles to be fully optimised.



MicroSCAN Method of Measurement

Spin Finish measurements are made using the **MicroSCAN** together with the **FO110** Spin Finish / Oil Probe. The **FO110** probe measures the combined conductance of the Yarn and the spin finish at a frequency of 1Khz. The conductance data is converted directly in percentage spin finish via a calibration file that is simply developed ONCE for each process. This method of measurement provides excellent accuracy and reproducibility of both short term and long term data.

The **FO110** probe is designed to be very simple to use, once the Setpoint and Data files are set up in the **MicroSCAN** the recording of measurements is fully automatic and the user does not need to look at the instrument. The technician simply inserts the probe in the threadline and touches the trigger button on the probe, initiating the data acquisition sequence. During the data acquisition sequence the LED remains on indicating that the probe should continue to be held in the yarn. On completion of a measurement the LED goes off indicating that the probe can be removed for the yarn.

For each measurement the Mean, Min, Max and CV of the Spin Finish level are calculated and stored in non volatile memory on the **MicroSCAN**, data can then be viewed and printed as described overleaf.



MicroSCAN FEATURES

The **MicroSCAN** is an ultra portable, battery powered data acquisition unit designed specifically for intensive AT-LINE QC applications. The user interface of the **MicroSCAN** is a touch screen providing access to generate set point and data files and control the Data Acquisition sequence.

The Interlace Application incorporates state of the art data analysis routines, which together with ISO calibration provides extremely accurate measurements with a range of statistical data. The summary data is presented on the screen with the facility to download to the **MicroSCAN** PC Centre, which provides tabular and graphical summary formats and print options.

Up to 15 setpoint files and 20 data files can be stored in the **MicroSCAN**. During acquisition samples are automatically numbered, and up to 500 readings can be stored in each data file.

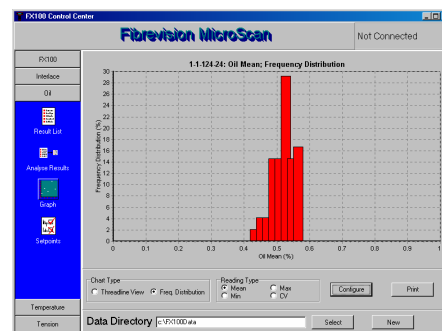
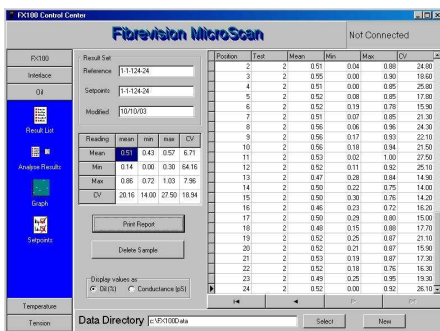
Each **MicroSCAN** has the capability to operate with two different types of probes, providing further At-Line QC potential. The other probes available include:

- Interlace
- Tension
- Yarn Temperature

MicroSCAN PC Centre

For printing and long term storage of data from the MicroScan, a Windows Based PC application is provided with each **MicroSCAN**. This allows the **MicroSCAN** to be connected by a standard RS232 serial link to the PC and for data to be automatically transferred. In addition to data presentation and printing facilities within the standard PC application data can be exported for analysis in spreadsheets and databases.

The PC link is also used to download software to the **MicroSCAN**.



MicroSCAN SPECIFICATION

Power Supply	4 NiMH rechargeable cells providing up to 6 hours continuous use.	
Internal Memory	Non Volatile memory (data is not lost when batteries are changed) - stores up to 15 setpoint files and 20 data files for each application, each data file can hold up to 500 records.	
User Interface	Touch Screen	
Applications	Two applications can be used on a single MicroSCAN (See Above)	
Data Output	Via PC application, with custom database for data presentation and printing. Facility for data export in format suitable for spreadsheets and data bases	
Calibration	MicroSCAN and Probes are supplied calibrated to ISO standards, a recalibration service is available. Optical probes include condition monitoring.	
Scope of Supply	FX110 MicroSCAN , 8 NiMH batteries, Battery Charger, PC software, Link Cable to PC, Operating Manual,	
FO110 Spin Finish Probes	Conductance Range	0 to 400nSiemens
	Accuracy	Better than 1%.
	Sampling Frequency	Up to 1kHz