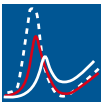


SPECTANO 100

Dielectric analysis of solid and liquid materials



Two measurement methods - one device

Polarization and depolarization current measurement (PDC) and frequency domain spectroscopy (FDS) in one device



Versatile application

The device enables floating measurement for integration in grounded application systems



Cost effective and powerful

Compact all-in-one system with up to 200 V_{peak} output – no external booster needed.



Flexible and easy integration

Adapters and temperature resistant cables enable connection of all common test cell topologies



Faster results

Test time reduced up to 75% by combined time and frequency domain measurement



Easy data exchange

No license required to simplify data exchange and parallel analysis on several PCs



SPECTANO 100

The SPECTANO 100 helps you to analyze the dielectric properties of liquid and solid materials. Dielectric properties are very important to understand the relationship between the structure and characteristics of materials. Usually material test systems are divided into two categories:

- Time-domain systems to determine the polarization phenomena (PDC) and
- Frequency Domain Spectroscopy (FDS) system for more detailed electrical properties analysis within the material

The SPECTANO 100 combines the PDC and the FDS method in one device. In combination with its wide output voltage range from 100 mV_{peak} to 200 V_{peak} it enables you to analyze all important dielectric material parameters like permittivity, dielectric loss, capacitance and impedance.

Your benefits

Measurement time reduction

PDC measurements can be accomplished in a short time but are limited to low frequencies. FDS measurements are feasible for high frequencies but take very long at low frequencies. The SPECTANO 100 transforms the time domain current into frequency domain data for subsequent evaluation. This reduces the measurement time up to 75 % compared to exclusive FDS measurements.

Frequency band

100 μ Hz to 1 kHz

100 μ Hz to 1 kHz

FDS (only)

PDC + FDS

Test duration

11 h

3 h



Reduced equipment cost

The SPECTANO 100 is a light-weight all-in-one system. The max. 200 V_{peak} output in time- and frequency domain allows measurements without the need of an additional voltage booster.

Easy integration

Optional adapters allow a flexible connection to all major types of material test cells. The temperature resistant cables and adapters allow to connect the SPECTANO 100 test cells located in a temperature controlled environment. The simple connection together with the intuitive SPECTANO 100 Software reduces system learning time.

Multiple setups and potential free measurements

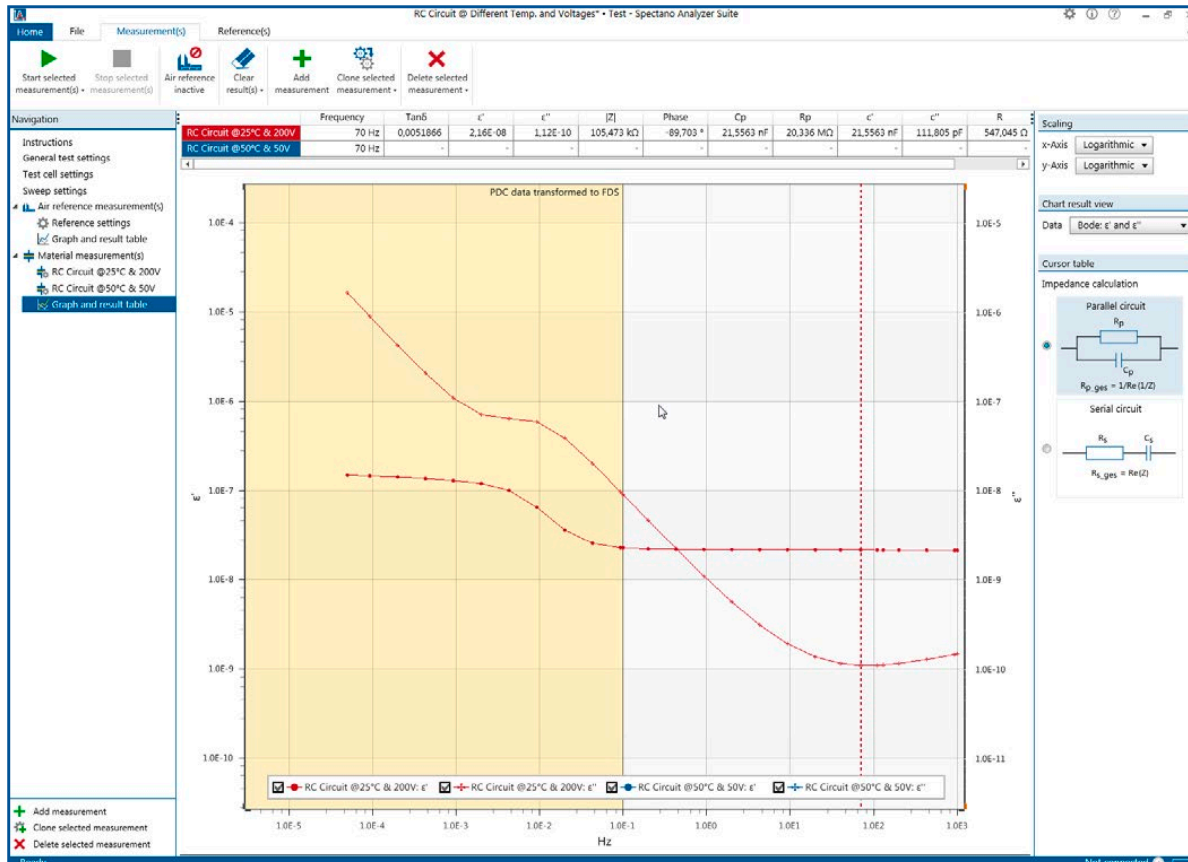
The SPECTANO 100 device and its cables and adapters allow floating measurements for implementation in grounded application systems and multiple measurement setups like measurements with high voltages.

Increased efficiency

The SPECTANO 100 Analyzer Suite provides different pre-measurements to check the setup before starting a measurement. Errors in the system or settings can be detected immediately and not at the end of a measurement of several hours. This ensures an optimum use of time and resources.

SPECTANO 100 Analyzer Suite

The SPECTANO 100 Analyzer Suite (SAS) enables you to benefit from the full potential of the SPECTANO 100. The SAS offers an easy-to-use graphical user interface that guides you step by step through your measurement task to ensure reliable and reproducible measurement results.



Key benefits of the SPECTANO 100 Analyzer Suite

Automatic calculation of vacuum capacity C_0 and permittivity ϵ taking different test cell topologies into consideration.

Automatic compensation of parasitic capacitances (e.g. stray capacitances) based on an air reference measurement.

Sophisticated measurements by flexible measurement sequence programming.

This feature allows to execute different measurements in one test file and to add waiting times between measurements.

Easy analysis and visualization of results allows you to extract all required results and parameters from your measurements or compare different measurements using a variety of analysis features. The SAS offers a high variety of charts (like time domain, frequency domain or Cole-Cole plots) that will allow to visualize your results just the way you need them.

Preparation time reduction by copying previously used settings to new measurements.

Easy data exchange as the SAS does not require a license and can be installed on as many PCs as you like. This enables you to easily share and analyze data together with customers or colleagues working at different locations.

Use Cases & Applications

The SPECTANO 100 allows to

Characterize the insulation, polarization or dielectric loss of solid and liquid materials such as:	Achieve information on:
<ul style="list-style-type: none"> Electrical insulation paper/cellulose Nanomaterials (Nano-composites) Dielectric components Epoxy resins Polymers Insulation Oils Display technologies like glasses or polymers Thin films 	<ul style="list-style-type: none"> Dielectric properties Material aging Material structure Space charges in multilayer insulation Surface or film thickness of coatings Curing processes

Technical Data

Time Domain Current Measurement (PDC)

Frequency range	20 μ Hz to 100 mHz
Measurement voltage	max. 200 V
Measurement current	max. 10 mA
Input resistance	2 k Ω

Frequency Domain Spectroscopy (FDS)

Measurement voltage	max. $\pm 200 V_{peak}$
Measurement current	max. $\pm 50 mA_{peak}$
Frequency range	5 μ Hz to 5 kHz

General

Dimensions	260 x 50 x 256 mm
(w x h x d)	10.25 x 2 x 10.5 inch
Weight	2.3 kg / 5 lb

System Requirements

Operating system	Windows 7 SP1, 8, 10 or higher
CPU	Current Intel or ADM CPU
RAM	min. 2 GB
Interface	USB 2.0 or higher

Power Supply

AC supply voltage	100 V to 240 V _{AC}
AC supply frequency	50 Hz to 60 Hz
AC supply power	max. 45 W
Input voltage	10 V to 24 V _{DC}
Input power	24 W

Order numbers

SPECTANO 100 Dielectric Material Analyzer	OL000400
Triaxial to 4 mm plug adapter cable set (-40 ° to +80 °C)	OL000451
Triaxial to BNC connector adapter cable set (-55 °C to +250 °C)	OL000452

Product specifications and descriptions in this document are subject to change without notice.

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V2 - 1606