TFLAB 2020

EDDY CURRENT MEASUREMENT SYSTEM

HIGHLIGHTS

- Contact-free and realtime
- Multilayer characterization
- Manual mapping
- Encapsulated layers

Specifications

- 100µOhm/sq to 200KOhm/sq
- Up to 8'' wafer
- Conductive oxides or polymers
- Metal, nanowire or printed films

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TF series non-contact measurement systems contain a set of sensors that induce weak currents in conductive and semi-conductive layers. These induced currents, also called eddy currents, generate an electromagnetic field directly which is linked to the intrinsic parameters of the sample. Thus, without any contact, it will be able to characterize:

- Resistivity
- Thickness
- Anisotropy
- Permeability
- Permissivity

By modulating the emission frequencies of the initial magnetic field, we will be able to control its depth of penetration and therefore the thickness of the layer that we wish to measure. It is therefore possible to perform measurements of one or more layers simultaneously on a wide range of materials such as metals, glasses, thin coating layers, conductive films, electrode layers, papers and textiles. conductors, or even polymers.

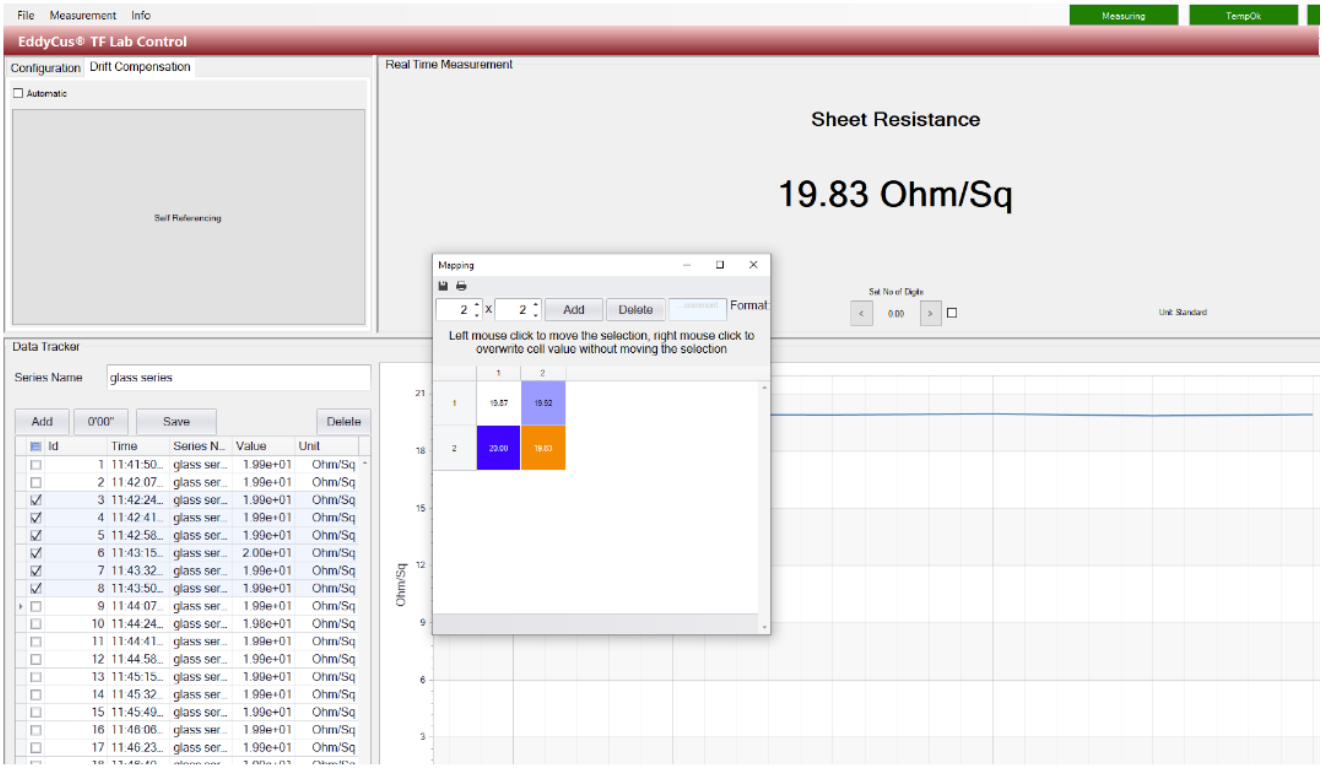
The technology is independent of surface characteristics or morphology. In addition, it does not require any type of contact or special preparation of the sample as for four-point tests, Hall effect or Van-der-Pauw measurements. The system does not require the placement of test structures and is unaffected by surface roughness, non-conductive encapsulations or passivation layers. Moreover, the measurement does not physically affect the thin film tested.

Eddy current instruments have a long life because they are free from any mechanical wear due to their non-contact nature. It also achieves high repeatability and high accuracies in an ultra-fast manner which ensures the quality of measurement of various thin layers.

Finally, these systems are often accompanied by a software part with various functions for recording and exporting data, thus allowing easy reading of the results in the form of a map, for example.

Measurement technology			Non-contact Eddy current sensor		
Substrates			Foils, Glass, Wafer etc..		
Substrate area			200x200 mm (open on three sides)		
Max. sample thickness / sensor gap			3 / 5 / 10 / 25 mm (defined by the thickest sample)		
Thickness measurement range of metal films			2 nm – 2 mm (in accordance with sheet resistance)		
Further available features			Sheet resistance measurement / metal thickness monitor		
Device dimension (w/h/d) / weight			290x140x445 mm / 10kg		
Config	*VLSR*	*LSR*	*MSR*	*HSR*	*VHSR*
	6 decades are measurable by one sensor, but with slightly affectd accuracy				
Range (Ohm/sq)	0.0001 – 0.1	0.01 - 10	0.1 - 100	10 – 2,000	1,000 – 200,000
Accuracy / Bias	± 1%			± 1% - ± 3%	± 3% - ± 5%
Repetability (2σ)	< 0.3%			< 0.5%	< 0.3%

Device control & Software:



- Very user friendly software
- Intuitive, touch display navigation
- Various data saving export options
- Real-time measurement of sheet resistance and layer thickness
- Software assisted manual mapping option

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