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Data Sheet 5.85-72/1

Karl Fischer Moisture in Oil Test Set, Type KF-LAB MkII

Application

Karl Fischer moisture in oil test sets operating with the coulometric method are widely used for measuring the water content of samples including electrical insulating oils, transformer oils, insulating liquids, petroleum products, silicone oil and organic liquids.

Description

Karl Fischer titration is a well-established method to measure the water content of samples. The KF-LAB MkII uses the coulometric principle, whereby the water present in the sample is coulometrically titrated to a predefined end point. The water content of the sample is determined by measuring the amount of electric charge necessary for electrolysis to produce the required iodine. This is an absolute technique which does not require calibration of the reagents.

The KF-LAB MkII automatically selects the appropriate titration speed dependent on the amount of water present in the sample. The titration speed is reduced as the end point is approached, and when the titration is completed the instrument prints out and displays the results.

The KF-LAB MkII allows the titration of samples with a range of specific gravities from 0.60 to 1.40 and also permits the use of different sample sizes. It also has a default setting optimized for analyzing insulating oils with a specific gravity of 0.875. This means it can be used to measure the water content in a variety of different materials but is also easy to set up for transformer insulating oils.

Advantages

The KF-LAB MkII is a portable instrument with built-in battery, complete with integral printer and carrying case. Its efficient, user-friendly design and portability make the KF-LAB MkII unique from other such titration analysis instruments. The easy operation, high performance and small footprint provide the versatility required by the laboratory.

The printer may be disabled if not required and results can be calculated in ppm, mg/kg, % and micrograms. For extra flexibility, the results may be calculated based on the weight of the sample or based on the volume and specific gravity of the sample.

At the heart of the KF-LAB MkII is a patented Automatically Compensated Errors (ACE) control system that guarantees that the electrolysis current produced and the count rate displayed are always correctly synchronized, regardless of changes to the electrolysis cell resistance.

The unique low drift cell glassware design is easy to use and robust. It does not require PTFE sleeve or grease to ensure a good seal.

Table 1: Technical Data

Technical Data	**unit**	Type **KF-LAB MkII**
Performance		
Measurement Range	g	1µ to 10m (water)
Moisture Range	ppm	1 to 100
Max. sensivity	µg	0.1
Max. titration speed	mg/min	2
Precision		
10 to 100µg	µg	±3
100µg to 1mg	µg	±5
>1mg	%	0.5
Features		
Intended Use		Mobile
Calculation modes		
Weight / weight		Yes
Weight / dilution ratio		Yes
Volume / volume		Yes
Volume / density		Yes
User programmable		Yes
Real time clock		Yes
Timer		Yes
Display		backlight LCD
Memory		No
Interface		No
Internal printer		Yes
Battery		Yes
Dimension and weights		
Length	mm	245
Width	mm	250
Height	mm	120
Weight	kg	3
Normal operating conditions		
Rated power supply voltage	V(AC)	100 to 240
Frequency	Hz	50 to 60
Rated power supply voltage	V(DC)	12
Battery life	h	8
Accessories		
Titration vessel		Yes
Detector electrode		Yes
Generator electrode		Yes
Drying tube		Yes
Power pack		Yes
Car adapter		Yes
Injection septa		Yes
Glass syringe		Yes
Luer needle		Yes
Bottle of molecular sieve		Yes
Stirrer bar		Yes
Funnel		Yes
Rugged case		Yes
Optional Accessories		
Hydranal coulomat A anode reagent;	ml	500
Hydranal coulomat CG cathode reagent;	ml	25