

## **KF875 and KF-LAB MkII**

# **Karl Fischer Moisture in Oil Test Sets**



- **Coulometric Karl Fischer titrimetry**
- **KF875 optimized for insulating oil with an SG of 0.875, completely portable**
- **KF-LAB MkII offers greater flexibility, versatility and sample data input than the KF875; also completely portable**
- **KF-LAB MkII analyzes materials with an SG between 0.6 & 1.4, plus insulating oils with an SG of 0.875**

### **DESCRIPTION**

Over 20 years experience has led to the development of the Megger KF875 and KF-LAB MkII Coulometric Karl Fischer Test Sets designed to determine moisture in oil, to provide highly accurate results on-site. The KF875 and KF-LAB MkII are highly portable instruments, complete with integral printer and carrying case, are easy to use and provide highly accurate results.

### **APPLICATION**

Optimized for testing insulating oils with a specific gravity of 0.875, the Megger KF875 simply requires the operator to press one button and inject a 1ml sample into the test cell. The simple 'one touch' operation makes the KF875 so easy to use that it requires no specialist knowledge or training to use it effectively. Results are presented on the instrument display and on the integral printer in both micrograms of water and in milligrams per kilogram (parts per million, ppm).

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. The KF-LAB MkII also has a default setting optimized for analyzing insulating oils with an SG of 0.875. This means it can be used to measure water content in a variety of different materials but is also easy to set up for transformer insulating oils.

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.

### **FEATURES AND BENEFITS**

- **The KF875 and KF-LAB MkII are highly portable and designed specifically for outdoor use** - both units are supplied as standard with a printer, low drift cell and rugged carry case. Portability is further enhanced with flexible power options - both units can be powered from the mains supply, from the internal rechargeable battery or via a 12V car adapter.
- **Each unit eliminates inaccuracies with ACE Control System** - some Coulometric Karl Fischer sets are susceptible to inaccuracies due to changes in electrolysis cell resistance, which requires frequent checking of the titrator efficiency by analyzing known water content standards. The KF875 and the KF-LAB MkII remove this need by using the patent pending ACE (Automatically Compensated Errors) Control System. This guarantees that the electrolysis current produced and the count rate displayed are always correctly synchronized, regardless of changes to the electrolysis cell resistance.
- **Each unit uses Karl Fischer coulometric titrimetry** - the industry standard method for determining moisture content (ASTM D1533, BS EN 60814:1998, IEC60814:1997).
- **The KF875 and the KF-LAB MkII include rechargeable battery power** - allows accurate on-site measurements to be made on oil samples freshly obtained, eliminating any time deterioration of the oil sample.
- **The KF875 and the KF-LAB MkII may be powered by internal rechargeable batteries or from the supply** - allows field-testing and laboratory testing with the same equipment, providing standardization.
- **KF-LAB Mk II** includes free data capture and retrieval software.

	<b>KAF LAB MkII</b>	<b>KF 875</b>
Titration method	Coulometric Karl Fischer Titration	
Electrolysis control	Patented "ACE" control system	
End point detection	AC polarisation	
End point indication	Visual display/ print out/ acoustic beep	
Type of sensor	Two pin platinum electrode	
Measuring range	1 $\mu\text{g}$ - 10 mg water	
Moisture range	1 ppm - 100%	1 ppm - 100 ppm
Max. sensitivity	0.1 $\mu\text{g}$	
Max. titration speed	2 mg per minute	
Max. current	400 ma	
Drift compensation	Automatically controlled	
Precision	10-100 $\mu\text{g}$ $\pm 3 \mu\text{g}$ , 100 $\mu\text{g}$ - 1 mg $\pm 5 \mu\text{g}$ , above 1 mg $\pm 0.5\%$	
Method storage	10 programmable methods	Preset method
Sample ID number	User programmable	Not available
Display format	$\mu\text{g}$ , mg/kg, ppm, %	mg/kg, ppm
Analogue output	Built-in printer	
Print format	$\mu\text{g}$ + mg/kg, ppm, %	$\mu\text{g}$ + mg/kg, ppm
Data logging	USB, RS232 and results manager software	RS232 and results manager software
Indicator housing	N/A	
Probe housing	N/A	
Calculation modes	Weight/weight Weight/dilution ratio Volume/volume Volume/density User programmable	Volume/density Preset values
Statistics	Up to 99 runs	Preset up to 99 runs
	User programmable	
Start delay time	0-30 mins. selectable	Preset
Min. titration time	0-30 mins. selectable	Not available
Language	English, Francias, Espanol, Portugues, Deutsch, Magyar	English
Stirrer speed	Microprocessor controlled	
Calendar / clock	Analysis time & date print out	
Keypad/user controls	Non tactile membrane/display prompted menu	
Display	40 character alphanumeric backlit display	
Printer	42 character high speed thermal printer	
Carry case	Standard	
Power supply	90-264 VAC, 47-63 Hz 12 V DC car adapter/internal battery	
Power consumption	45 W	
Battery life	8 hours running time	
Battery charging	14 hours after average use	
Battery low	Display & print out indication	
Humidity	5% to 95% RH	
Storage temperature	-10 to +85 °C	
Dimensions	250 x 245 x 120 mm	
Weight	3 kg (without carry case)	

## Reagents

Reagents and other consumable chemicals for coulometric Karl Fischer Titration are available from many different suppliers throughout the world.

Megger recommends the use of:

Part numbers for “Hydranal coulomat” Reagents are:

Part no.	Description
RH-34807	Hydranal coulomat A anode reagent - 500 ml bottle
RH-34840-25	Hydranal coulomat CG cathode reagent - 1 x 25 ml vial
RH-34840-50	Hydranal coulomat CG cathode reagent - 1 x 10 pack of 50 ml ampoules

Part numbers for “Hydranal” water standards are:

Part no.	Description
RH-34828	Hydranal water standard 1.00 - 10 pack of 4 ml ampoules
RH-34847	Hydranal water standard 0.10 - 10 pack of 4 ml ampoules

Details of a local agent where these products can be obtained are available on the Sigma-Aldrich website [www.sigmaaldrich.com](http://www.sigmaaldrich.com)

## ORDERING INFORMATION

Item (Qty)	Cat. No.
KF-LAB MkII Laboratory Coulometric Karl Fischer Test Set	6111-774
KF875 Coulometric Karl Fischer Test Set for insulating oils	6111-636
<b>Supplied Accessories (also available as spare items)</b>	
Titration Vessel	6121-527
Detector electrode	6121-528
Generator electrode	6121-529
Drying tube	6121-530
Carrying Case	6121-537
Power Pack	6121-585
Car adapter	6121-539
Injection septa (10)	6121-531
Glass syringe (1 ml)	6121-532
Luer needle	6121-533
Bottle of Molecular sieve	6121-534
Stirrer bar	6121-535
Funnel	6121-536

### UK

Archcliffe Road, Dover  
CT17 9EN England  
T (0) 1 304 502101  
F (0) 1 304 207342

### UNITED STATES

4271 Bronze Way  
Dallas, TX 75237-1019 USA  
T 1 800 723 2861  
T 1 214 333 3201  
F 1 214 331 7399

### OTHER TECHNICAL SALES OFFICES

Norristown USA, Toronto  
CANADA, Mumbai INDIA, Trappe  
FRANCE, Sydney AUSTRALIA,  
Madrid SPAIN and the Kingdom of  
BAHRAIN.

### ISO STATEMENT

Registered to ISO 9001:2008 Cert. no. Q 09250  
Registered to ISO 14001:2004 Cert. no. EMS 61597  
**KF875\_KFLABMK2\_DS\_en\_V14**  
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