KF875 MkII and KF-LAB MkIII
Karl Fischer Moisture in Oil Test Sets

- **Coulometric Karl Fischer titrimetry**
- **KF875 optimised for insulating oil with an SG of 0.875**
- **KF-LAB MkIII offers greater flexibility, versatility and sample data input**
- **KF-LAB MkIII analyses materials with an SG between 0.6 and 1.4, plus insulating oils with an SG of 0.875**
- **Both KF875 and KF-LAB MkIII are completely portable / battery powered**

DESCRIPTION

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

APPLICATION

Optimised 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 wa¬ter and in milligrams per kilogram (parts per million, ppm).

The KF-LAB MkIII 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 MkIII also has a default setting optimised for analysing 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 MkIII are portable and designed specifically for outdoor use. Both units are supplied as standard with a printer, low drift cell and rugged carry case. The flexible power options increase portability. Both units can be powered from the mains supply, from the internal rechargeable battery or via a 12V car adapter. This allows field-testing and laboratory testing with the same equipment, providing standardisation, and accurate on-site measurements to be made on freshly obtained oil samples, eliminating any time deterioration of the oil sample.

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 analysing known water content standards. The KF875 and the KF-LAB MkIII 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 syn¬chronised, 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).

KF-LAB MkIII includes free data capture and retrieval software.

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SPECIFICATIONS

	KF LAB Mk III	KF 875 Mk II
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	Possible: 1 µg – 200 mg water	
	Typical: 1 µg – 10 mg water	
Moisture range	1 ppm – 100%	1 ppm – 100 ppm
Max. sensitivity	0.1 µg	
Max. titration speed	2 mg per minute	
Max. current	400 mA	
Drift compensation	Automatically controlled	
Precision	10-100 µg ±3 µg, 100 µg – 1 mg ±5 µg, above 1 mg ±0.5%	
Method storage	10 programmable methods	Preset method
Sample ID number	User programmable	Not available
Display format	µg, mg / kg, ppm, %	mg / kg, ppm
Analogue output	Built-in printer	
Print format	µg + mg / kg, ppm, %	µg + 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

	KF LAB Mk III	KF 875 Mk II
Statistics	Up to 99 runs User programmable	Preset up to 99 runs
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 and 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 V AC, 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 and 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)	

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REAGENTS

For most routine applications 100ml of Formula "A" (anode reagent) and 5ml of Formula "C/CG" (cathode reagent) are used. One filling can be used for multiple tests depending on the amount of water titrated, exposure to sunlight and the volume available in the cell.

Reagents and other consumables chemicals for coulometric Karl Fischer Titration are available from many sources throughout the world.

Megger recommends the use of Honeywell™ Fluka™ reagents:

Honeywell Fluka 34840-50ML 50ml
10 x 5ml ampoules

HYDRANAL™ – Coulomat CG, Reagent for coulometric KF titration (catholyte solution), Honeywell Fluka™

Honeywell Fluka 34807-500ML 500ml
1 x 500ml bottle

Coulomat A, Honeywell™ Fluka™ HYDRANAL™ (anode solution)

HYDRANAL™ water standards

Honeywell Fluka 34828-40ML 40ml

HYDRANAL™ – Water Standard 1.0, Standard for Karl Fischer titration (water content 1 mg/g = 0.1%), verified against NIST SRM 2890 & NMIJ CRM 4222, Honeywell Fluka™

Honeywell Fluka 34847-40ML 40ml

HYDRANAL™ – Water Standard 0.1, Standard for Karl Fischer titration (water content 0.1 mg/g = 0.01%), verified against NIST SRM 2890 & NMIJ CRM 4222, Honeywell Fluka™

For more information about Honeywell Fluka click here, or scan the QR code

ORDERING INFORMATION

Description	Part number
KF-LAB Mk II Laboratory Coulometric Karl Fischer Test Set	6111-774
KF875 Coulometric Karl Fischer Test Set for insulating oil	6111-636
Included accessories	
Titration Vessel	6121-527
Detector electrode	6121-528
Generator electrode	6121-529
Drying tube	6121-530
Carrying Case	6121-584
Power Pack	6121-585
Car adapter	6121-586
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
Thermal paper roll	6121-576

Description	Part number
Optional accessories	
Electrode lead	2008-229

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