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



- **■** Coulometric Karl Fischer titrimetry
- KF875 optimised for insulating oil with an SG of 0.875
- KF-LAB MkII offers greater flexibility, versatility and sample data input
- KF-LAB MkII 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 MkII are completely portable / battery powered

DESCRIPTION

Over 20 years' experience has led to the development of the Megger KF875 and KF-LAB Mkll Coulometric Karl Fischer Test Sets designed to determine moisture in oil, to provide highly accurate results onsite. The KF875 and KF-LAB Mkll 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 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 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 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 analysing 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 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).

The KF875 and the KF-LAB MkII include rechargeable battery power - allows accurate on-site measurements to be made on freshly obtained oil samples, 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 standardisation.

 $\ensuremath{ \text{KF-LAB Mk II}}$ includes free data capture and retrieval software.

Megger.

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SPECIFICATIONS

| | KF LAB MkII | KF 875 | |
|-------------------------------|---|---------------------------------------|--|
| The section of the section of | | 111 070 | |
| 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 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 | Volume/density | |
| | Weight/dilution ratio | Preset values | |
| | Volume/volume | | |
| | Volume/density | | |
| | User | | |
| | programmable | | |
| Statistics | Up to 99 runs | Preset up to 99 | |
| | User programmable | 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 con- trols | 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 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) | |

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 Fiscer Titration are available from many sources throughout the world.

Megger recommends the use of Honeywell $^{\text{TM}}$ Fluka $^{\text{TM}}$ reagents:

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

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

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 $^{\text{TM}}$ - 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 $^{\text{TM}}$

Honeywell Fluka 34847-40ML 40ml

HYDRANALTM - 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 FlukaTM

https://www.fishersci.co.uk/gb/en/brands/IUS4CADX/honeywell-fluka.html

| ORDERING INFORMATION | | | | |
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| Description Part number | Description | Part number | | |
| KF-LAB Mkll Laboratory Coulometric Karl Fischer Test Set 6111-774 | Optional accessories | | | |
| | Titration Vessel | 6121-527 | | |
| KF875 Coulometric Karl Fischer Test Set for insulating oil 6111-636 | Detector electrode | 6121-528 | | |
| Included accessories | Generator electrode | 6121-529 | | |
| | - Drying tube | 6121-530 | | |
| Titration Vessel | - Carrying Case | 6121-537 | | |
| Detector electrode | - Power Pack | 6121-585 | | |
| Generator electrode | - Car adapter | 6121-539 | | |
| Drying tube | - Injection septa (10) | 6121-531 | | |
| Carrying Case | - Glass syringe (1 ml) | 6121-532 | | |
| Power Pack | - Luer needle | 6121-533 | | |
| Car adapter | - Bottle of molecular sieve | 6121-534 | | |
| Injection septa (10) | | | | |
| Glass syringe (1 ml) | - Stirrer bar | 6121-535 | | |
| Luer needle | - Funnel | 6121-536 | | |
| Bottle of molecular sieve | | | | |
| Stirrer bar | - | | | |
| Funnel | _ | | | |
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SALES OFFICE

Megger Limited Archcliffe Road Dover CT17 9EN England T +44 (0) 1304 502101 E UKsales@megger.com

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