

# KFCT -3934

## Karl Fischer Coulometric Titrator



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**Analytical Technologies Limited**

An ISO 9001 Certified Company

[www.analyticalgroup.net](http://www.analyticalgroup.net)

## ►► Karl Fischer Coulometric Titrator

The KFCT-3934 is a Karl Fischer coulometric titrator with high accuracy, great flexibility and repeatability.

The titrator is designed to perform titrations for a variety of applications, allowing the user to obtain both good results and high-speed analysis. The KFCT-3934 analyzes for water content ranging from 1 ppm to 5%. This powerful titrator effectively monitors the KF reaction, detects the endpoint, and performs all necessary calculations and graphing.

- Small footprint, requires minimal bench space
- Casing made with strong, chemically resistant plastic
- Powerful built-in algorithms for termination criteria based on fixed mV endpoint or absolute/relative drift
- Sample analysis averaging and statistical data
- Minimized water vapor entry with the sealed solvent system
- Balance interface for automatic weighing
- Support for 100 titration methods
- User-customizable reports
- Clearly displayed warning and error messages

## ►► Coulometric Reagent System

### Precision Iodine Generation

ATL's dosing algorithm allows for an extremely small amount of iodine necessary for the Karl Fischer reaction to be generated electrolytically using a pulsed current up to 400 mA delivering titrant accurately and precisely.



## ►► Titration and Solvent System

- **Chemically Resistant Titration Vessel and Tubing**

The glass titration cell and PTFE tubing is designed to withstand the harsh solvents and reagents involved in Karl Fischer reactions.

- **Sealed Solvent System**

Ground glass joints completely seal the glass titration cell minimizing exposure to ambient humidity, keeping the system dry, and reducing reagent consumption while saving time between titrations. Solvent may be exchanged in a matter of seconds with a quick fitting adjustment.

- **Molecular Sieve Desiccant**

High efficiency molecular sieve desiccant helps maintain low and stable drift rates within the titration cell while preventing the ingress of ambient humidity into the sealed solvent system.

- **Digital built-in stirrer**

Automatic, integrated magnetic stirrer adjustable from 200-2000 RPM with optical feedback for automatic speed control.

## ►► Titrator Capabilities

- **Dynamic Titrant Dosing**

The titration speed feature allows for timely and accurate titration results by relating the amount of iodine generated to the mV response from the Karl Fischer reaction.

- **Drift Rate Compensation**

The KFCT-3934 automatically adjusts the titration calculation to account for the effects of any ambient humidity entering the titration cell. This provides a more accurate result by correcting for water not present in the actual sample.

- **Titration Results Averaging**

Successive results from a titration method may be averaged with recording of the standard deviation.

- **Selectable Endpoint Criteria**

The KFCT-3934 employs a dual platinum pin electrode for bivalentammetric endpoint determination. Users may choose termination criteria based on mV stability times or drift rates.

- **Multistage Cell Preparation**

A pre-titration stage eliminates residual water present in the solvent and the cell, providing a reliable baseline start to analysis. Standby mode then keeps the solvent dry between titrations and when the titrator is not in use.

## ►► Interface & Display

- **Detailed Titration Graphs**

A real-time titration curve can be displayed during each titration; this feature is useful when new methods are tested or when a procedure requires optimization.

- **Interactive Color Display**

A large, color LCD screen clearly shows the chosen titration method along with results, units, drift rate, and mV value.

- **Simple and Quick Navigation**

Virtual key selections present on the display allow for simple and quick navigation between screens and menus without getting lost in a nest of information.

## ►► Data & Storage

- **Customizable Titration Reports**

Each titration report is fully customizable so users can ensure they are storing and filing the appropriate data required for their application and procedures.

- **Flexible GLP Management**

All necessary GLP (Good Laboratory Practice) information can be recorded with each sample including: sample identification, company and operator name, date, time, electrode ID codes, and calibration information.

- **Effortless Data Transfer**

Data can easily be transferred to a USB flash drive or PC with the application software. The USB port allows for the transfer of titration methods, titration reports, and software upgrades via USB flash drive.

## ►► Methods of Analysis

- **Customizable Methods**

The KFCT-3934 can store up to 100 user-defined or standard titration methods. Each method may be customized and optimized for performance based on application and user requirements.

## ►► Titration Method Support

Onsite installation, training, and customization is available from one of our Applications or Service experts. ATL offers continued support via phone or webinar for any questions you might have along the way.



### **Fritted (Diaphragm) Generator**

- Anode/anolyte and cathode/catholyte separated by glass diaphragm
- Prevents anode-generated iodine from being reduced to iodide at the cathode
- Ideal for extremely low water content, high accuracy demand, nitrogenous compounds and easily reduced samples

## ►► Connectivity and Functionality

### **Configurable Balance Interface**

Sample size may be automatically entered from any laboratory analytical balance with a serial output saving time and labor.

### **Multiple Peripherals**

Users can print reports directly from the titrator using a standard parallel printer. An external monitor and keyboard may be attached for added versatility, as well as an analytical balance for automatic sample mass entry for titrations.

## ►► Versatile Data Management

- Easily incorporate into any existing GLP data management program:

Easily record all necessary GLP information with every sample, such as sample identification, company and operator name, date, time, electrode ID codes and calibration information

- Data can be transferred to a PC using ATL PC software
- Easy transfer of methods, reports and software upgrades via a USB flash drive
- Users can print reports of analyses directly from the titrator using a standard parallel printer
- A keyboard can be attached for added versatility



### Fritless (No Diaphragm) Generator

- Uses one easy-to-replace Karl Fischer reagent
- Lower and more stable drift rates
- Easier cleaning of generator cell

## ►► Specifications

### KFCT-3934

Measurement	Range	1 ppm to 5%
	Resolution	0.1ppm
	Result Units	%, ppm, mg/g, µg/g, mg, µg, mg/mL, µg/mL, ppt, mgBr/100g, gBr/100g, mgBr, gBr
	Sample Type	liquid or solid (external dissolution or extraction)
Determination	Pre Titration Conditioning	automatic
	Background Drift Correction	automatic or user-selectable value
	Endpoint Criteria	fixed mV persistence, relative drift stop, or absolute drift stop
	Dosing	dynamic with 3 speed settings
	Result Statistic	mean, standard deviation
Titration Vessel	Type	borosilicate glass with standard taper glass joint connections
	Operating Volume	100 to 200 mL
	Septum	silicone rubber
	Septum Cap Thread	GL-18
	Reagent Port	standard Taper 19
Detector Electrode	Type / Connection	dual platinum pin, polarization electrode / BNC connector
	Glass Connection	standard Taper 14/20
	Polarization Current	1, 2, 5, or 10 µA
	Voltage Range	2 to 1100 mV
	Voltage Resolution	0.1 mV
	Accuracy (@25°C/77°F)	±0.1%
Generator Electrode	Type	diaphragm or diaphragm-less
	Electrode Type Detection	automatic
	Electrical Connection	5-pin connector with detachable cable
	Glass Connection	standard Taper 29/12
	Maximum Current	400 mA
	Current Control	automatic or Fixed (400 mA)
Stirrer	Type	magnetic, electronic regulated, digital stirrer
	Speed	200 to 2000 RPM
	Resolution	100 RPM
	External Stirrer	4-pin mini DIN connection allows for the control of an external stirring apparatus
Reagent Handling System	Type	sealed system with integrated diaphragm air pump
	Desiccant Type	molecular sieves
	Bottle Thread Type	GL-45
	Glass Connection	standard taper 19 (using supplied adapter)
	Reagent/Waste Tubing	PTFE

Additional Specifications	Display	5.7" graphical color display with backlight
	Peripheral Devices	PC (USB standard B); flash drive (USB standard A); analytical balance (DB-9 Socket); printer (DB-25 Socket); keyboard (6-pin Mini DIN)
	Languages	English, Portuguese, Spanish, and French
	Power Supply / Power Draw	100-240 Vac, 50/60 Hz / 0.5 Amps
	Enclosure Material	ABS/PC and stainless Steel
	Keypad	polyester
	Operating Environment	10 to 40 °C (50 to 104 °F); up to 80 % RH
	Storage Environment	-20 to 70 °C (-4 to 158 °F); up to 95 % RH
	Dimensions	315 x 205 x 375 mm (12.4 x 8.1 x 14.8 ")
	Weight	approx. 4.3 kg (9.5 lbs.) with 1 pump, stirrer and sensors



## HPLC Servicing, Validation, Trainings and Preventive Maintenance :

**HPLC Servicing** :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

**Trainings** :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

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Water purification  
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## Regulatory compliances



## Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:



# Analytical Foundation

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2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.



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