

## DENVER INSTRUMENT Coulometric Karl Fischer Titration Systems

### Combine a controller with a titration module to form a titration system

- Modular system lets you perform up to four independent titrations simultaneously with just one controller
- Advanced controller measures conductivity, ion, pH, mV, and temperature

These titration systems perform coulometric Karl Fischer titrations on samples containing mere micrograms of moisture content. Determine water content in petrochemicals, pesticides, detergents, foods, pharmaceuticals, chemicals, solvents, and more.

Microprocessor-based system guides you through every step with easy-to-understand prompts. Use the sealed keypad to enter parameters including sample identification, introduction time, endpoint persistence interval or endpoint slope control, solvent blank, and stirrer speed.

Systems compensate for drift during titration and continuously monitors the Karl Fischer electrode. If the Karl Fisher reagent is exhausted, controller displays a warning. Upon completion of titration, the controller calculates the result and displays total weight of water in the sample in  $\mu\text{g}$ , mg, ppm, or the percentage of moisture in the sample.

Before and between titrations, the built-in software automatically zeros the titration cell and prompts you to enter the sample weight values manually or to transmit the weight values via output from a balance. For compatible balances, see our "Balances" section on pages 74-127.

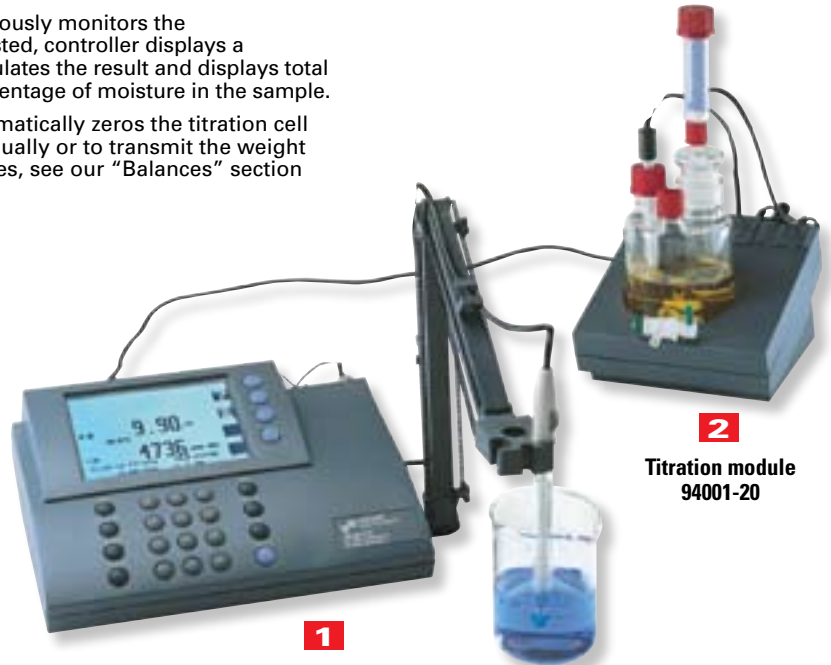
### 1 Titration Controllers

**Basic Controller** prompts you through all the titration steps, gives detailed help at the push of a button, and accepts entries from a sealed keypad.

**What's included:** a 6-ft cord with two-prong plug.

**Advanced Controller** can perform up to four independent titrations (order titration modules separately at right). Follow titrations with icons on the LCD while measuring samples in other modes. Controller displays up to three electrode inputs while you wait for titrations to complete. Document results on computer or printer via RS-232 or analog output.

**What's included:** a pH glass-body combination electrode with ATC, electrode support arm, and 6-ft cord with two-prong plug.



1  
Advanced controller  
94001-10

2  
Titration module  
94001-20

### Specifications & Ordering Info



**Range:** 10  $\mu\text{g}$  to 20 mg  $\text{H}_2\text{O}$   
**Resolution:** 0.1  $\mu\text{g}$   
**Accuracy:**  $\pm 2 \mu\text{g}$  or  $\pm 0.5\%$   
**Rate:** 3500  $\mu\text{g H}_2\text{O}/\text{min}$   
**Capacity:** 1000 mg  $\text{H}_2\text{O}$  (for single charge reagents)  
**Alarm:** high/low set points for all modes  
**I/O:** RS-232, serial network  
**Display:** LCD, 4 $\frac{3}{4}$ "W x 3 $\frac{5}{8}$ "H, backlit; full-screen graph;  $\frac{3}{4}$ "H single channel,  $\frac{5}{16}$ "H four channel;  $\frac{1}{8}$ "H time, date, and temperature  
**Units displayed:** %, ppm,  $\mu\text{g}$ , mg  
**Dimensions:** 8"L x 10 $\frac{1}{8}$ "W x 3 $\frac{1}{2}$ "H

**Endpoint:** 0 to 99 seconds persistence; 0 to 9.9  $\mu\text{g}/\text{sec}$  programmable slope control

**Advanced Controller only**  
**Conductivity:** 0 to  $3 \times 10^5 \mu\text{S}/\text{cm}$  in five sub-ranges; also calculates salinity, resistivity, and TDS  
**Ion:**  $1.00 \times 10^{-9}$  to  $9.99 \times 10^9$  with a direct readout in any unit  
**pH:** -2 to 20 pH, with selectable resolution up to 0.001 pH  
**mV:**  $\pm 1800.0 \text{ mV}$  absolute or relative  
**Temperature:** -5.0 to 105.0°C; reads out directly in °C, °F, or K

Catalog number	Input	Output	Power	Price
<b>Basic controller</b>				
K-94001-00	RS-232	RS-232	115 VAC	
K-94001-05			230 VAC	
<b>Advanced controller</b>				
K-94001-10	RS-232, two BNC/pin, two ATC, dual ATC/conductivity	RS-232, two buffered electrode outputs to analog recorder	115 VAC	
K-94001-15			230 VAC	

### 2 Titration Module

Control up to four modules with either of the controllers described at left. Module receives commands for stirrer operation, transfer of weights, to test reagents, and to autozero moisture content of the titration cell. Then the module automatically titrates to completion and signals controller when finished.

**What's included:** titration cell, controller-module interface cable, power supply, and manual. Titration cell includes cell body, dual platinum Karl Fischer electrode, generator electrode assembly, desiccant chamber, injection septum, and stir bar.

### Ordering Information

Catalog number	Description	Power	Price
K-94001-20	Titration module	115 VAC	
K-94001-25		230 VAC	

### Accessories

- K-94001-61 Replacement dual platinum Karl Fischer electrode
  - K-94001-52 Replacement titration cell body
  - K-94001-54 Replacement titration cell generator electrode assembly
  - K-94001-56 Replacement titration cell injection septum.
- Pack of 10