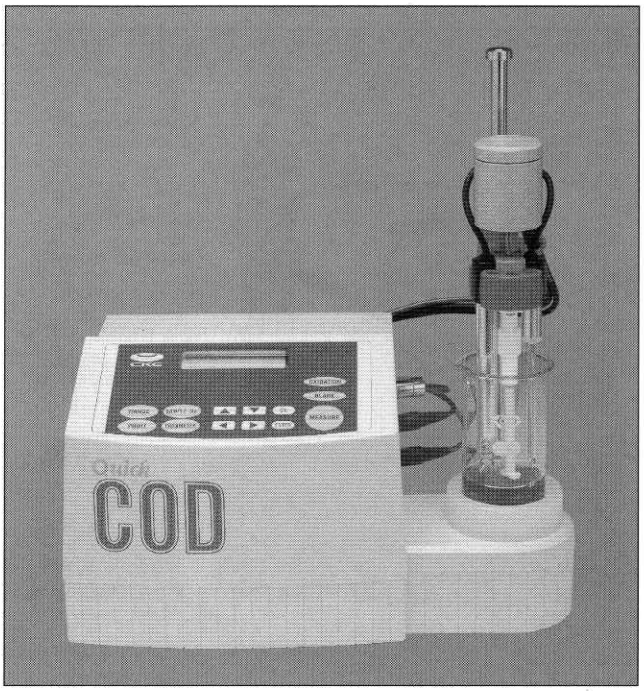
Quick Coulometric Titration COD Meter

Quick COD

Model HC-607



A COD Meter with Quick, Accuracy and Ease of Use

The Quick coulometric titration COD meter is the culmination of 30 years of technology and performance that reduces measurement times by wide margins.

■ **Feature #1**

Simplified blank measurements
A revision of the electrode material frees the user from performing multiple blank measurements and both speeds up and stabilizes measurement operations.

■ **Feature #2**

Electrode holder slides on its arm at a single touch
Greater efficiency and smoother operation from sliding the electrode block on its arm at a single touch.

■ **Feature #3**

Safer and more reliable electrode mounting and unmounting
Electrode efficiency improved and contact defects reduced with integrated structure combining electrodes and leads. Electrode mounting and unmounting is also simpler, safer and more reliable.

■ **Feature #4**

Timer countdown for oxidative decomposition
The countdown timer notifies the user that oxidation is nearing completion, in addition to a bell signalling completion, releasing the user from attending the process.

■ **Feature #5**

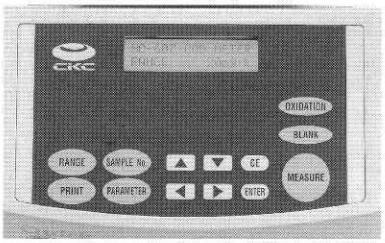
Coulometric titration's strengths with colored samples

■ **Feature #6**

Secondary differential on detection of titration endpoint for high-precision measurements

■ **Feature #7**

User-friendly control panel with touch-key input and dialog interface



Main Functions

■ **Auto-checking of readings**
Built-in function automatically checks readings for residual potassium Permanganate

■ **More reliable endpoint detection**
Endpoint detection with secondary differential for accurate electric potential readings

■ **User setting measurement ranges**

■ **Processing function for measured results**
Daily measured data is processed (averages, standard deviation and coefficient of variation) of daily readings and data management

■ **Data storage space for readings**
Storage space for data for 99 samples

■ **Automatic JIS method conversion**
Enter JIS coefficients for Y=a+bX values for automatic JIS conversions

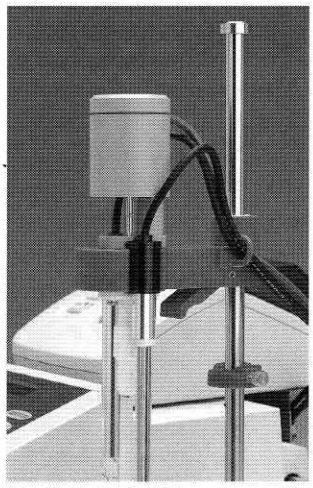
■ **PC data uploads**
Optional Quick COD software allows reading data into spread-sheets and simple creation of reading reports

■ **Automatic blank value compensation**

■ **Screen output of errors**
High blanks, high titrations, invalid titrations (lacking endpoints), defective electrode connections and normal value range evaluation

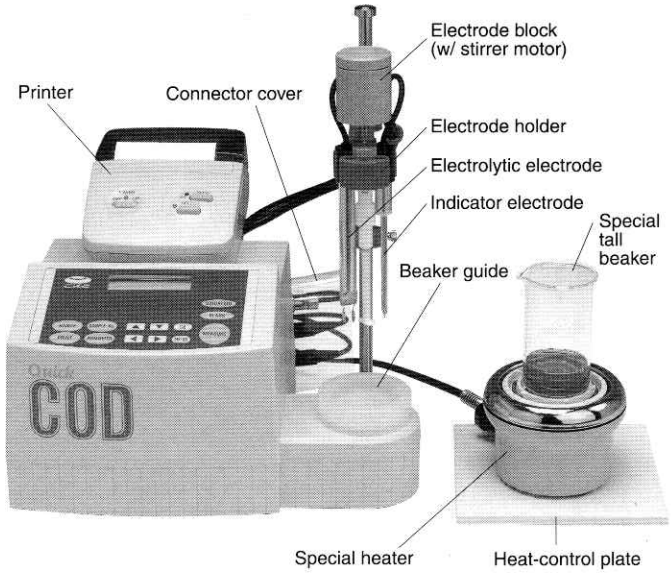
```
      *** SYSTEM PARAMETER ***
SAMPLE No.                    1
RANGE                      10mg/L
SAMPLE                     20.0mL
RESULT DISP FORM              X
CONV.Y        a= 1.00 b=     0.0
OXIDATION TIME          5min00sec
NOMAL MEASURE          20 -  70%
BLANK OVER            -30 -  30%
BLANK REVISE                3.5
COMMUNICATION           PRINTER
RESULT OUT FORM X            ON
RESULT OUT FORM YorC        OFF
MEASURE TIME              150sec
MEASURE UNIT                mg/L


*** HC-807 ANALYTICAL RESULTS ***
  DATE   02/06/26 13:31
  S-No   X(mg/L)            RANGE
     1      0.04               10
     2      0.11               10
     3      0.02               10
     4      0.08               10
     5      0.04               10


*** HC-807 ANALYTICAL RESULTS ***
  DATE   02/06/26 14:52
  S-No   X(mg/L)            RANGE
     6      0.4                20
     7      0.0                20
     8      0.0                20
     9     4.63                10
    10     4.80                10
    11     4.78                10
    12     48.4               200
    13     48.2               200
    14     44.1               200
    15     95.8               200
```

(Sample printer output)



(Electrode holder slides on arm with single touch)

Quick COD



Principle of Measurement

Coulometric Titration

Coulometric titration consists of performing electrolysis to generate a product to react Quickly and quantitatively with the substance being analyzed and electrically finding the endpoint of the secondary chemical reaction between the product of electrolysis and the subject of analysis. The assay is taken from the amount of electricity (current x time) consumed up to the reaction endpoint. COD readings taken with the HC-607 are quantified by coulometric titration of residual potassium permanganate after heating organic matter present in the sample treated with a dose of potassium permanganate of known quantity. Fe^{3+} ions in reagent solution B is reduced to Fe^{2+} by means of electrolysis to react with the residual potassium permanganate. Electrolysis continues until the potassium permanganate is consumed, the reaction endpoint is detected by the indicator electrode and meter operation then stopped. The amount of residual potassium permanganate is quantified from the quantity of electricity consumed in electrolysis and the COD value (mg/L) displayed by the meter.

Specifications

Principle of measurement	Coulometric titration
Measurement method	Acid or dichromatic titration, based on JIS K-0101 and K-0102
Final detection method	Electric potential difference (secondary differential)
Measuring range	7 ranges: 10, 20, 40, 100, 200, 400 and 1000 mg/L, and user-defined settings from 0-2000 mg/L
Reproducibility	±2% FS (acid titration)
Minimum reading	0.01 mg/L (in 0-10 mg/L range)
Display	16-character, 2-line LED (backlit)
End Measurement	Automatic electrolysis stoppage and buzzer sounded
Oxidation timing	0'00" - 9'59" digital timer
End Oxidation	Buzzer sounded
Calculations	Y=a+bX conversion, automatic zero adjustment, statistical calculations and normal value range evaluation
Conversion formula	Y=a+bX a = -500.0 to +500.0 b = 0 to 9.99
Error display	Blank over, titration over, invalid titrations (lacking endpoints), defective electrode block connections and normal value range evaluation
External output	RS-232C, 1 port standard (switched between host output and printer)
Dimensions	310 (W) x 270 (D) x 300 (H) mm
Weight	Approx. 5 kg
Power source	AC100V, 50/60Hz
Power consumption	Approx. 100 VA

Configuration

Item	Acid Method	Dichromate Method	Description
① Quick COD HC-607	1 unit	1 unit	Main unit, electrode holder, electrolytic electrode, indicator electrode, PVC rod, plug adapter, power cord, beaker guide, printer fittings, connector cover, 2 fuses
② Reagent solution A	1 bottle	—	100 mL
③ Reagent solution B	2 bottles	—	500 mL
④ Reagent solution G	—	2 bottles	500 mL
⑤ Reagent N/80 potassium dichromate solution	—	1 bottle	500 mL
⑥ Special tall beakers	3	3	
⑦ Special heater	1 unit	1 unit	
⑧ Safety band	1	1	
⑨ Watch glass	1	—	
⑩ Cooling vessel	—	1	
⑪ Emery	1 pouch	1 pouch	25 g
⑫ Heat-control plate	1	1	150x150mm
⑬ Printer	1 unit	1 unit	*w/ printer configuration

ISO 9002 Certified

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