

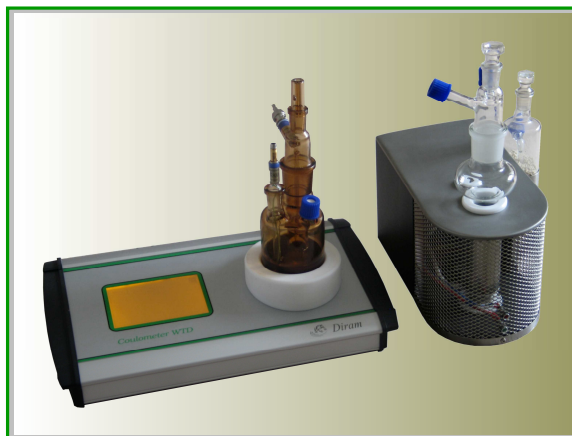
Coulometer WTD for water determination

Features

- K. Fischer coulometric method
- Microprocessor controlled
- Serial interface USB

Applications

- Organic solvents
- Raw materials
- Oils, lubricants
- Salts



Water determination method employs the titration approach of Karl Fischer with coulometric generation of the titrant (iodine). Coulometer WTD is a microprocessor controlled device and all his functions are fully automated. The set consists of the electronic equipment itself and a glass titration vessel into which the analyzed sample is introduced. One filling of the vessel is enough for making number of analyses up to the total amount of water cca 0.2g and the solution usability is limited by its dilution. The vessel can work with or without a diaphragm, separating generating and auxiliary electrodes. The coulometric method employed allows to determine very small or even trace amounts of water in organic acids, alcohols, esters, ethers, hydrocarbons and many other organic solvents. Good examples of direct determination of water content performed by injection of samples into the titration vessel are analyses of some oils (e.g. transformer, turbine or compressor). The instrument can also serve for determination of water content in gases after the certain volume of gas has been introduced into the vessel. The direct approach is generally not applicable when analysing substances are not soluble or react with the generated

titrant. In such cases it is usually possible to carry out analyses with instrument in combination with a drying oven.

Technical specifications	
Coulometer WTK	
Range	1 ppm to 5 % H ₂ O
Determination error	0.5% above 1mg H ₂ O
Indication current	1 to 25 μ A
Generation current	max. 300 mA
Sample weight	0,02 až 2 g
Units	μ g ; ppm ; %
Keyboard	touch screen
Display	graphic LCD
Power	230 V AC, 35 W
Dimensions	340x190x60 mm
Weight	1,6 kg
Titration vessel	volume 200 ml, with a diaphragm or without
Oven	
Temperature	up to 300°C
Sample weight	0,1 až 10 g
Power	230 V AC, 140 W
Dimensions	120x140x240
Weight	3,5 kg

titrant. In such cases it is usually possible to carry out analyses with instrument in combination with a drying oven.

Coulometer WTD combined with a drying oven: The sample which is to be analysed is heated in the oven at a temperature ensuring release of all present water (the heating time and temperature are adjustable). The vapours of released water are transferred by a carrier gas into the titration vessel and selectively determined. The built-in air pump permits to work with a predried air as a carrier gas or a suitable compressed inert gas can be employed for this purpose. The described method is suitable for water determination in some solid materials and some substances which react with iodine and as such rule out the possibility of direct determination. The above combination of coulometer with a drying oven serves well for water determination in drugs, sugars, various preparations, powdered extracts, cereals, etc., and is useful e.g. for water determination in some engine or compressor oils, containing additives reacting with iodine.



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