



916 Ti-Touch
915 KF Ti-Touch
917 Coulometer

Compact titrator
for routine analysis

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TRUST

Metrohm
means ...
Spectroscopy!



 **Metrohm**

TECHNICAL SPECIFICATIONS

	916 Ti-Touch with Rod stirrer	916 Ti-Touch with magnetic stirrer	915 KF Ti-Touch	917 Coulometer
Dosing element with Intelligent Exchange Unit/Dosing Unit with an integrated data chip	Max. 2 x 800 Dosino or 2 x 805 Dosimat			
Dosing steps per cylinder content	800 Dosino: 10,000 pulses; 805 Dosimat: 20,000 pulses			
Operation, dialog	Touch Control			
Stirrers, titration stand	Incl. 802 Rod stirrer additionally 1 x 801 Magnetic stirrer or 1 x 802 Rod stirrer or 1 x 803 KF Titration Stand	Built-in magnetic stirrer, additionally 1 x 801 Magnetic stirrer or 1 x 802 Rod stirrer or 1 x 803 KF Titration Stand		
Attachment of Dosimats, Dosinos, stirrers	2 MSB connectors (Metrohm Serial Bus, Daisy Chain)			
Attachment of Sample Changers (via USB)	1 Sample Changer (810, 814, 815)		885 Compact Oven Sample Changer	
	-		885 Compact Oven Sample Changer	
FDA Compliance	Yes			
Attachment of balances, printer, PC, PC keyboard, barcode reader	Via USB Slave Port, USB/RS-232 Converter (optional)			
Generation of forge-proof PDF reports without a PC	Yes			
USB flash drive for saving methods, results and PDF reports	Yes			
Ethernet interface to connect to a local network for data archiving or printing on network printers	Yes			
Temperature sensor	Pt1000 or NTC			
«iTrodes» – intelligent electrodes	Yes	-	-	-
GLP-compliant electrode test	Yes	-	-	-
I_{pol} and U_{pol} – integrated programmable polarizer	Yes			
Real-time curve display on the Touch Control (90 mm x 120 mm, high-resolution color display)	Yes			
DET Dynamic Equivalence-point Titration	Yes	-	-	-
MET Monotonic Equivalence-point Titration	Yes	-	-	-
SET Titration to a preset endpoint with automatic conditioning	Yes	-	-	-
STAT (enzymatic and pH-STAT titrations)	Yes	-	-	-
MAT Manual Titration	Yes	-	-	-
KFT Volumetric Karl Fischer Titration	-	-	Yes	-
KFC Coulometric Karl Fischer Titration	-	-	-	Yes
BRC Coulometric Bromine Index Titration	-	-	-	Yes
MEAS Measuring mode for pH, U/mV, T/°C	Yes	-	-	-
CAL Calibration with automatic buffer recognition	Yes	-	-	-
MEAS Measuring mode for I_{pol} , U_{pol} , T/°C	-	-	-	Yes
Method storage, sample data storage, result memory, data storage	Yes			
Dialog languages	German, English, Spanish, French, Chinese, Italian, Portuguese, Polish, Russian, Korean, Japanese			
Favorites for quick method access	14 (per user)			
Automatic titration start	-	-	-	Yes

Ti-Touch – the modern way to titrate

«Reduce to the max» – this is the Ti-Touch concept. The compact titrator from Metrohm offers maximum performance in routine analysis in the smallest possible space.

MAXIMUM SYSTEM INTEGRATION

Buret, stirrer and control module in one practical unit.

MAXIMUM DATA SECURITY AND NETWORK INTEGRATION – WITHOUT A PC!

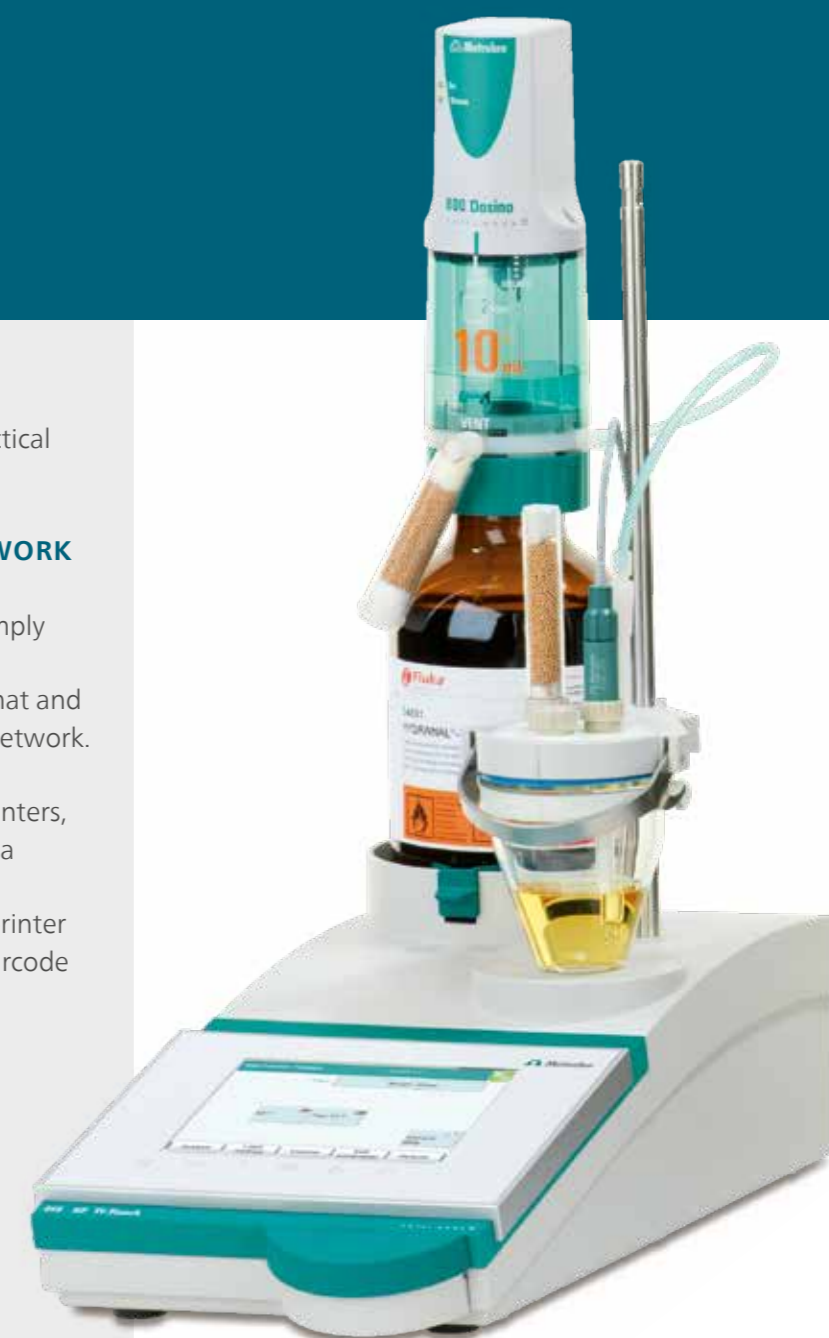
- FDA Compliance: All Ti-Touch models comply with FDA-regulation 21 CFR, Part 11.
- Generate forge-proof reports in PDF format and save them to a USB flash drive or to the network.
- Ethernet interface for direct access to the Intranet. Method Printing on network printers, method archiving and determination data storage directly in the LIMS.
- USB interface for direct connection to a printer (A4 or compact), a USB flash drive or a barcode reader.

MAXIMUM USER SAFETY

No-touch reagent replacement thanks to Dosino technology.

MAXIMUM EASE OF USE

14 short cut icons per user to start favorite methods at a single touch.



916 Ti-Touch – the compact titrator for potentiometric titration

The 916 Ti-Touch is the compact titrator designed for potentiometric titration. The instrument supports all titration modes: DET (dynamic equivalence point titration), MET (monotonic equivalence point titration), SET (titration to one or two specified endpoints), STAT (enzymatic and pH-STAT titrations), and MAT (manual titration).



SAVE AND PRINT DATA, ETC. – WITHOUT A PC

USB interface for printer, keyboard or barcode reader. Save methods and determination data directly to a USB flash drive for uploading again at a later date.

DIRECT ACCESS TO INTRANET AND LIMS – WITHOUT A PC

Ethernet interface: direct access to the Intranet and LIMS for method archiving and data management.

AFFORDABLE AUTOMATION

The 810 Sample Processor enables fully automated analysis for up to 24 samples.

PLUG-AND-PLAY OPERATION

All system components are recognized and registered automatically upon connection.

CONTACT-FREE REAGENT REPLACEMENT

No contact with reagents thanks to the 800 Dosino technology.

INTELLIGENT ROD STIRRER

The stirrer rotational speed adapts automatically.

INCORRECT RESULTS EXCLUDED

All system components (electrodes, exchange units, etc.) and measurement results are monitored and malfunctions area displayed – in plain text.

DATA TRANSFER TO NETWORK PRINTER OR USB STICK

Store determination data on a USB flash drive or in your network for direct importing from there into your LIMS.

PAPERLESS PDF REPORTS

Generate forge-proof PDF reports without a PC and save them to a USB flash drive or to the network.

PERSONALIZED TOUCHSCREEN FOR FAST METHOD START

Up to 14 methods per user can each be linked to a favorites icon. Standard methods start with a single tap on the touchscreen.

MORE EFFICIENCY THANKS TO 2 MSB CONNECTORS

Two installed Metrohm Serial Bus (MSB) ports permit the connection of a second titration stand complete with buret, e.g. for the sequential titration of total acidity and chloride.



915 KF Ti-Touch – the titrator for volumetric Karl Fischer titration

Just as with the 916 Ti-Touch, the 915 KF Ti-Touch Karl Fischer version is also an outstanding instrument: buret, stirrer and operating module are integrated in a single, compact system unit. This is not only practical but also and in particular saves a great deal of space on the laboratory table.



AFFORDABLE AUTOMATION

The 810 Sample Processor and the 885 Compact Oven Sample Changer enable fully automated analysis.

PAPERLESS PDF REPORTS

Generate forge-proof PDF reports without a PC and save them to a USB flash drive or to the network.

SAVE AND PRINT DATA, ETC. – WITHOUT A PC

USB interface for printer, keyboard or barcode reader. Save methods and determination data to a USB flash drive for uploading again at a later date.

PERSONALIZED TOUCHSCREEN FOR FAST METHOD START

Up to 14 methods per user can each be linked to a favorites icon. Standard methods start with a single tap on the touchscreen.

PLUG-AND-PLAY OPERATION

All system components are recognized and registered automatically upon connection.

CONTACT-FREE REAGENT REPLACEMENT

Contact with KF reagents is avoided with the Dosino technology. The moment of replacement is freely selectable.

KEEPING TRACK THANKS TO KF ICONS

KF icons show whether the instrument is still conditioning or if water determination can now be started.

DATA TRANSFER TO NETWORK PRINTER OR USB STICK

Store determination data on a USB flash drive or in your network for direct importing from there into LIMS.

«SAFETY STOP» PREVENTS THE CELL FROM OVERFLOWING

The electrode test and the «Safety Stop» parameter prevent cell overflow during conditioning. If, for example, the electrode is inadvertently not properly connected or the titration cell is very humid, conditioning will be discontinued after a certain time or after a certain volume of KF reagent has been added. This feature enhances work safety in your laboratory.



ACCESS THE ETHERNET AND LIMS – WITHOUT A PC

Direct access to the Intranet and LIMS for method archiving and data management.

INTEGRATED PUMP FOR MAXIMUM SAFETY

Thanks to the integrated pump, the titration cell can be emptied and filled again afterwards with fresh solvent at the push of a button.



917 Coulometer – the compact titrator for coulometry

The 917 Coulometer is the compact titrator for coulometric Karl Fischer titration. The operating module, stirrer, and pump for reagent exchange are combined into a single, space-saving, compact instrument.



AUTOMATION IS ALWAYS AN OPTION

Measurements can be easily automated with the 885 Compact Oven Sample Changer.

PAPERLESS PDF REPORTS

Generate forge-proof PDF reports without a PC and save them to a USB flash drive or to the network.

PERSONALIZED TOUCHSCREEN FOR FAST METHOD START

Up to 14 methods per user can each be linked to a favorites icon. Standard methods start with a single tap on the touchscreen.

REAGENT MONITORING FOR MAXIMUM SAFETY

The reagent is continuously monitored. Once self-defined criteria (number of added samples, amount of added water, etc.) are met, the user is prompted to replace the reagent.

INTEGRATED PUMP FOR OPTIMUM CONVENIENCE

The integrated pump enables the titration cell to be emptied and then refilled with fresh reagent at the touch of a button. Contact with reagents is completely avoided.

KEEPING TRACK WITH KF ICONS

KF icons show whether the instrument is still conditioning or if water content determination can now be started.

AUTOMATIC TITRATION START

No manual titration start required. The instrument automatically begins the titration after the sample has been added.

DATA TRANSFER TO NETWORK PRINTER OR USB STICK

Save determination data to a USB flash drive or to a network drive, from where it can be imported directly into your LIMS.

FDA compliance



885 Compact Oven Sample Changer

All members of the Ti-Touch family now fully comply with FDA-regulation 21 CFR, Part 11. This includes:

SOPHISTICATED USER ADMINISTRATION

Allocate access rights to each user in accordance with your company's security policy.

COMPLETE AUDIT TRAIL

Each action performed on a Ti-Touch Titrator is stored automatically in the Audit Trail. This means

that you can obtain a detailed record of which employee performed what action at what point in time.

COMPLETE TRACEABILITY

Who carried out a determination and when? What titrator was used? What alterations were made to the determination and by whom? All this is recorded permanently for each individual determination. The unique traceability of the Ti-Touch titrators leaves no question unanswered.

Fully automated thermal sample preparation for Karl Fischer titration

The 885 Compact Oven Sample Changer enables thermal digestion of samples for subsequent determination of the water content by Karl Fischer titration: The samples are heated in an oven to a temperature of 250 °C max. The contained moisture evaporates and is transferred by a constant stream of dry carrier gas into the titration cell where the analysis takes place. The benefit of this technique is that there is no contamination of the oven and the titration cell by the sample matrix; hence neither carry-over effects nor memory effects are an issue, which provides for reliable and reproducible results.

After weighing in the samples and sealing the vials they are placed on the rack of the sample changer and the analysis is started. Your samples are analyzed completely unattended.

HIGHLY FLEXIBLE

Karl Fischer titration can be performed either volumetrically or coulometrically. Both methods are possible utilizing the 885 Compact Oven Sample Changer and the 915 KF Ti-Touch or the 917 Coulometer, respectively.

STRAIGHTFORWARD OPERATION

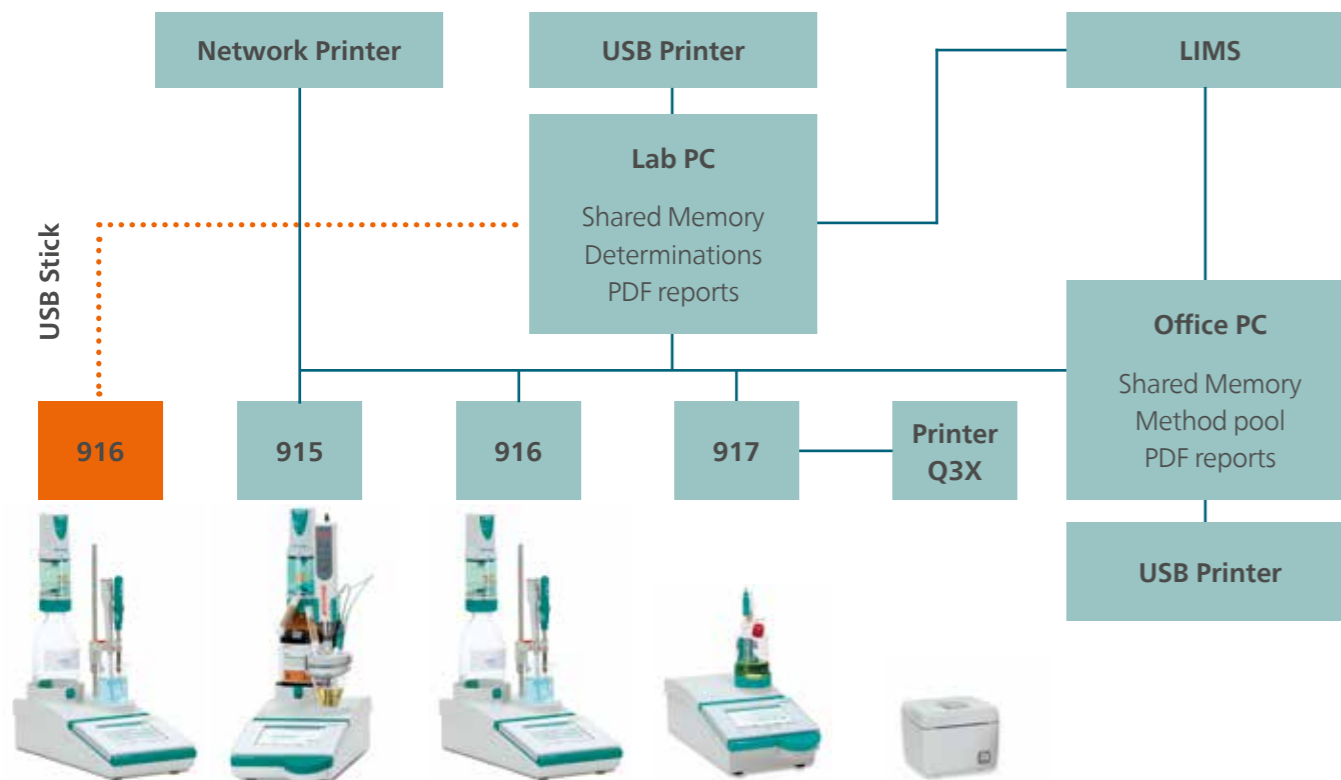
The 885 Compact Oven Sample Changer is controlled by your titrator via the USB interface.

RE-USABLE SAMPLE VIALS

Reusable sample vials with threaded caps are used with the 885 Compact Oven Sample Changer. Only the septum has to be replaced.

APPLICATIONS

- Petrochemical products
- Pharmaceuticals
- Plastics
- Battery materials and components
- Lyophilisates
- And many more



Integrate the Ti-Touch Family in your networked laboratory: automatically export PDF reports/determination files to your LIMS on your lab/office Computer, print on local or network printers, and share titration methods from a centralized network directory. Even data from instruments not connected to the network can be transferred via manual export to a USB memory stick.



810 Sample Processor

Automation safeguards quality results

The 810 Sample Processor adds an important element to your application – automation. Why automate your application? Most importantly, to safeguard the quality of your results: If you have to manage a high sample throughput, it is essential to ensure that each sample is processed with the same accuracy. Only this guarantees consistent, reproducible and, above all, precise results.

ANALYSE UP TO 24 SAMPLES COMPLETELY UNATTENDED

Straightforward automation for small to medium size sample series

PRECISE AND REPRODUCIBLE RESULTS

Use the integrated membrane pump to perform automated cleaning steps for better reproducibility

COMPREHENSIVE LIQUID HANDLING

Connect up to 3 additional burets for dosing applications

MINIMIZE EXPOSURE TO HAZARDOUS LIQUIDS

Add optional external pumps for safe disposal of hazardous waste solutions

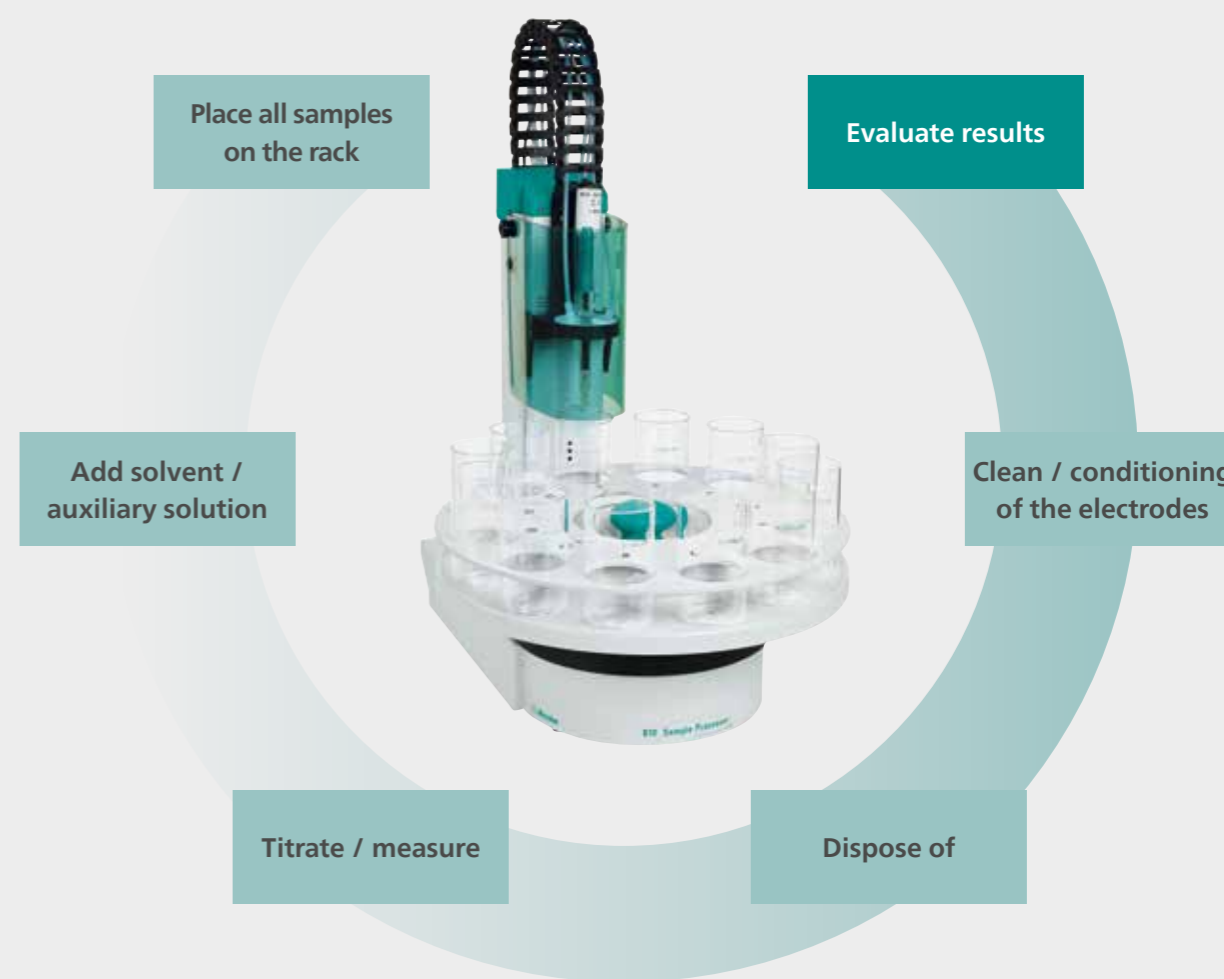


Work more comfortably

Your 810 Sample Processor is controlled with utmost precision. Once the methods have been saved on the easy-to-use Ti-Touch user interface, all you have to do is place your samples on the 810 Sample Processor and enter the sample data. Your samples are then analyzed fully automatically without any further intervention required.

Superior flexibility

The 810 Sample Processor comes with a built-in, space-saving membrane pump. However, it can be upgraded with external membrane or peristaltic pumps any time, if required.



AVAILABLE RACKS

The 810 offers a wide choice of sample racks for different sample beakers. Depending on the sample size between 12 and 24 beakers can be processed in a series unattended.

6.2041.310	12 × 250 mL	6.2041.370	14 × 200 mL
6.2041.320	16 × 150 mL	6.2041.380	14 × 8 oz
6.2041.340	24 × 75 mL	6.2041.470	22 × 120 mL



ORDERING INFORMATION

Instrument	
2.915.0110	915 KF Ti-Touch KF Ti-Touch All-inclusive package** for volumetric KF titrations
2.916.0020	916 Ti-Touch with Magnetic stirrer
916 Ti-Touch all-inclusive packages*	
2.916.2010	Salt Ti-Touch* All-inclusive package for the argentometric titration of chloride, etc.
2.916.3010	Oil Ti-Touch* All-inclusive package for the nonaqueous acid-base titration of oil products
2.916.4010	Food Ti-Touch* All-inclusive package for aqueous acid-base titration in foodstuffs, etc.
917 Coulometer	
2.917.0010	917 Coulometer with generator electrode with diaphragm
2.917.0110	917 Coulometer with generator electrode without diaphragm
2.917.1010	917 Coulometer with generator electrode with diaphragm and with 860 KF Thermoprep
2.917.1110	917 Coulometer with generator electrode without diaphragm and with 860 KF Thermoprep
2.917.2010	917 Coulometer mit Generatorelektrode with generator electrode with diaphragm and with 885 Compact Oven Sample Changer
2.917.2110	917 Coulometer with generator electrode without diaphragm and with 885 Compact Oven Sample Changer

*ready-to-use all-inclusive package contains 800 Dosino, 20 mL Dosing Unit, iConnect, i-Trode, 802 Rod stirrer.

**ready-to-use all-inclusive package contains 800 Dosino, 10 mL dosing unit, electrode, accessories for safe reagent replacement.



Optional accessories

2.800.0020	800 Dosino as additional buret for titration or addition of auxiliary solutions
2.805.0010	805 Dosimat as additional buret for titration or addition of auxiliary solutions
6.2061.010	Bottle holder for Dosino
2.801.0040	801 Magnetic stirrer compl.
2.810.0010	810 Sample Processor
2.885.0010	885 Compact Oven Sample Changer (via USB)
2.142.0100	Thermal printer Custom Q3X
6.3026.110	Intelligent exchange unit 1 mL
6.3026.150	Intelligent exchange unit 5 mL
6.3026.210	Intelligent exchange unit 10 mL
6.3026.220	Intelligent exchange unit 20 mL
6.3026.250	Intelligent exchange unit 50 mL
6.3032.120	Intelligent dosing unit 2 mL
6.3032.150	Intelligent dosing unit 5 mL
6.3032.210	Intelligent dosing unit 10 mL
6.3032.220	Intelligent dosing unit 20 mL
6.3032.250	Intelligent dosing unit 50 mL
6.2148.010	Remote Box MSB
6.2148.050	USB/RS-232 Converter
6.2151.030	Cable USB A – USB B / 0.6 m
6.2151.110	Cable USB B Mini – USB A / 1.8 m
6.2107.120	Manual Dosing Controller – Ti-Touch (for manual titration with 916-Ti-Touch)

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