848 Titrino plus
877 Titrino plus

Potentiometric titration – easy – safe – precise

Metrohm

Easy, safe and precise – the 848 and 877 Titrino plus

The Titrino plus range is Metrohm's entry class in potentiometric titration. Its price-performance ratio borders on the incredible. The Titrino plus range of instruments offers significantly more than what you would expect from this price segment: large live display with titration curve, «Plug & Play» functionality of Exchange Unit, stirrer and USB printer, high-resolution measuring interface, operation via mouse-click. The instrument dialog is tailored for routine users and makes operation of the Titrino plus instruments so easy that the familiarization period is very short. Add to this their robustness, which makes them the ideal titrators for daily routine determinations.

Metrohm's 848 Titrino plus not only looks good, it also supplies precise measuring results – fast and simply.

The advantages of the new Titrino plus at a glance

- **Easy installation**
  Installation of the Titrino plus couldn't be easier. As soon as they are connected, Exchange Unit, stirrer and USB compact printer are automatically recognized and configured.
- **Maximum precision thanks to the new measuring input**
  Just as the Titrando, our high-end titrator, the Titrino plus is also equipped with a high-resolution measuring interface that guarantees highly precise results.
- **Graphic display with live curve**
  The large display allows for fast and comfortable editing of all the parameters needed for routine operation. After the start, a glance at the live titration curve is all that's needed to keep you informed about the status of the current determination.
- **Mouse or keyboard – choose your favorite!**
  The Titrino plus is the first titrator that can be controlled either via mouse or keyboard.

Everything at a glance – the large display of the 848 Titrino plus.

plus
• Easy installation
• Intelligent Exchange Unit with titrant surveillance function
• Maximum precision thanks to high-resolution measuring interface
• Live curve
• Optional USB compact printer
• Automation with 869 Compact Sample Changer

Built-in intelligence facilitates titration

Intelligent Exchange Unit means more comfort
The chip of the intelligent Metrohm Exchange Unit automatically provides the titrator with all the data (cylinder volume, type of reagent, validity of titer, etc.) that is necessary to carry out an error-free titration. This means that you always titrate under optimal conditions and, for example, do not have to repeat measurements because the determination has been carried out with an invalid titer.

«Plug & Play» stirrer
A magnetic or rod stirrer connected to the Titrino plus is immediately recognized and configured. The stirring speed is stored in the method, which guarantees excellent reproducibility.

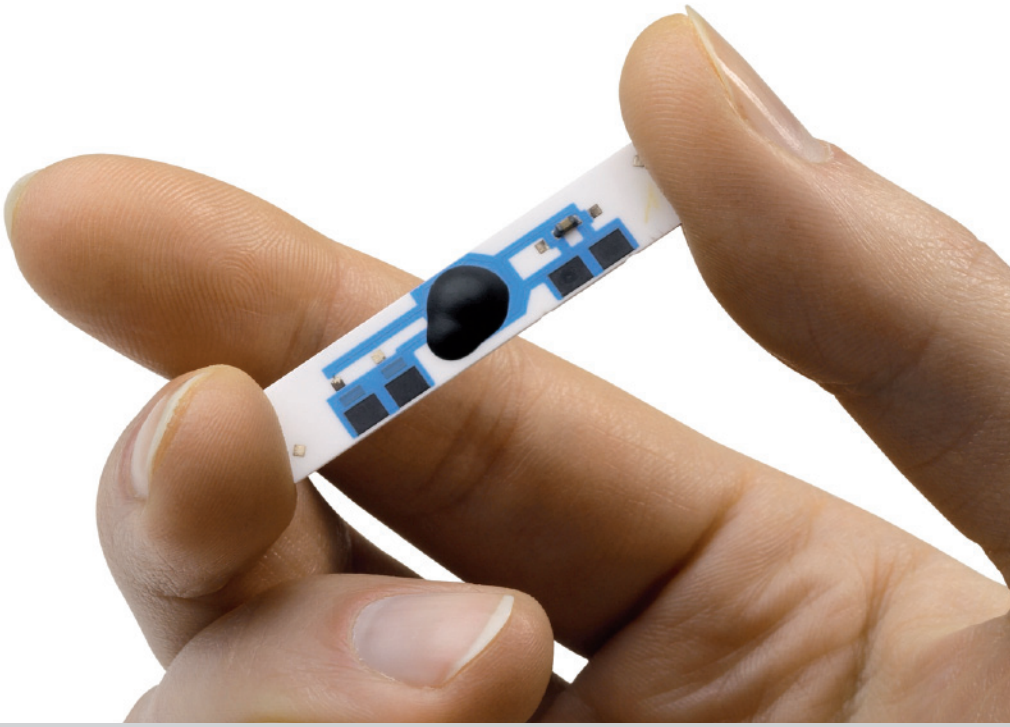
USB interface
The USB interface of the Titrino plus accepts a large variety of instruments. With a USB hub, various instruments can be connected simultaneously:

- Keyboard or mouse
- USB compact printer or commercial DIN-A4 USB printer
- USB stick for method and data backup

plus

The Titrino plus is the ideal titrator for routine applications such as:

- Aqueous and non-aqueous acid/base titrations
- Redox titrations (e.g. iodometry, permanganometry, cerimetry)
- Precipitation titrations (e.g. with $AgNO_3$)
- Complexometric titrations (e.g. with EDTA)
- Photometric titrations with the Spectrosense 523 nm or 610 nm
- Titrations with polarizable electrodes (I_{pol}, U_{pol})



The Exchange Unit's data chip stores all the relevant titrant data.

The principal Titrino plus features at a glance

	848 Titrino plus	877 Titrino plus
Dosing element	Exchange Unit	
Intelligent Exchange Unit with integrated data chip	•	
Steps per cylinder volume	10’000	
Operation, dialog	Keyboard and mouse	
Dialog language	English, German, Spanish, French, Italian, Portugese	
Stirrer, titration stand	801 Magnetic Stirrer or 802 Rod Stirrer	
pH calibration (5-point)	•	
Endpoint titration (SET) with conditioning	•	
Monotonic equivalent point titration (MET)	•	
Dynamic equivalent point titration (DET)	•	–
Connection of balance, printer, USB keyboard, USB mouse, USB stick and barcode reader	Via 1 USB Slave Port, RS 232/USB Box (option)	
Graphic display with live curve	•	
Comprehensive GLP/GMP functions	•	
Method and result export to USB stick	•	
PC/LIMS report	RS 232/USB Box (option) and USB stick	
Balance connection	RS 232/USB Box (option)	
Sample changer connection via Remote	•	
Manual operation	Measuring, dosing, stirring	

Automation with the 869 Compact Sample Changer

The 869 Compact Sample Changer allows fast and easy automation of Titrino applications. With the 869 Compact Sample Changer you can perform multiple determinations comfortably and without having to carry out many preliminary steps. Twelve positions are available for carrying out different titrations fully automatically and for rinsing or conditioning the electrode between determinations. To keep titrant and solvent consumption at a minimum, 120-mL beakers made of PP are used as standard.

Three different method templates serve to set up and store application-specific methods. The fact that only four parameters have to be set deserves special mention. Via the USB (OTG) connection, the method can be printed out or saved electronically. Communication between Compact Sample Changer and Titrino plus occurs via remote signals – an additional control box or a PC is not required. The sample data is entered into the sample data table of the Titrino plus. After the start, the Compact Sample Changer processes the samples according to the sample data table. The start position can be freely selected, which means that urgent samples can be preferentially determined at any time.

The titration head of the sample changer accommodates an 802 Rod Stirrer and two additional electrodes. The rod stirrer is directly connected to and controlled by the instrument. Titrant and auxiliary solutions are added by means of the pre-installed buret tips.

The 869 Compact Sample Changer can be retrofitted with rinsing and aspiration accessories by means of the 843 Pump Station.

plus

The advantages of the 869 Compact Sample Changer:

- Economic automation
- Space savings
- Three different method templates
- Easy operation thanks to minimal method programming
- 12 positions on sample changer

The 848 Titrino plus with the 869 Compact Sample Changer. Impossible to make routine analysis any simpler and more comfortable!

Ordering information

2.848.0010 Titrino plus with one measuring interface (titration modes SET, MET, DET)
2.877.0010 Titrino plus with one measuring interface (titration modes SET, MET)

Optional accessories

2.801.0040 801 Magnetic stirrer with support rod
2.804.0040 804 Titration Stand with support rod
2.802.0040 802 Rod Stirrer for 804 Titration Stand
2.869.0010 869 Compact Sample Changer for up to 11 samples (max. 120 mL)
2.141.0100 Compact USB thermal printer including cable
6.2151.110 Cable USB Mini (OTG) – USB A, 1.8 m
6.2151.120 Cable USB Mini (OTG) – USB B, 1.8 m
6.2141.230 Remote cable Compact Sample Changer – Titrino plus/Pump Station
6.2723.310 Protective cover for the Titrino Plus

Software

6.6063.102 ***tiBase*** full
6.6063.103 ***tiBase*** multi (3 licenses)

Intelligent Exchange Units equipped with data chip, including accessories and two buret tips, one of them with micro outlet valve.

6.3026.110 Buret volume 1 mL
6.3026.150 Buret volume 5 mL
6.3026.210 Buret volume 10 mL
6.3026.220 Buret volume 20 mL
6.3026.250 Buret volume 50 mL

Options for connecting a balance

6.2148.030 RS 232/USB Box
6.2151.030 Cable USB A – USB B

Application-specific packages for the 848 Titrino plus

These packages contain everything you need for the most frequently used analyses in the application area concerned. In addition to detailed descriptions of the analytical methods you receive the complete accessories for your titrations.

2.848.1010 **Food/Beverage Titrino plus,** including combined "Ecotrode plus" pH glass electrode, buffers and electrolyte solutions, USB stick with all methods and the "Food PAC" and "Wine PAC" application collections

2.848.2010 **Salt Titrino plus,** including Ag Titrode for precipitation titrations with $AgNO_3$ and USB stick with various methods for chloride determination, e.g. in foods, drinking water, petroleum products, etc.

2.848.3010 **Oil Titrino plus,** including combined "Solvotrode" pH glass electrode for non-aqueous acid/base titrations, electrolyte solutions, USB stick with all methods and the "Oil PAC" application collection

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