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Titration

TITRATORS WITHOUT INTERCHANGEABLE MODULES; FOR SINGLE USE



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SI Analytics

a **xylem** brand

2. Burettes and Titrators for single applications

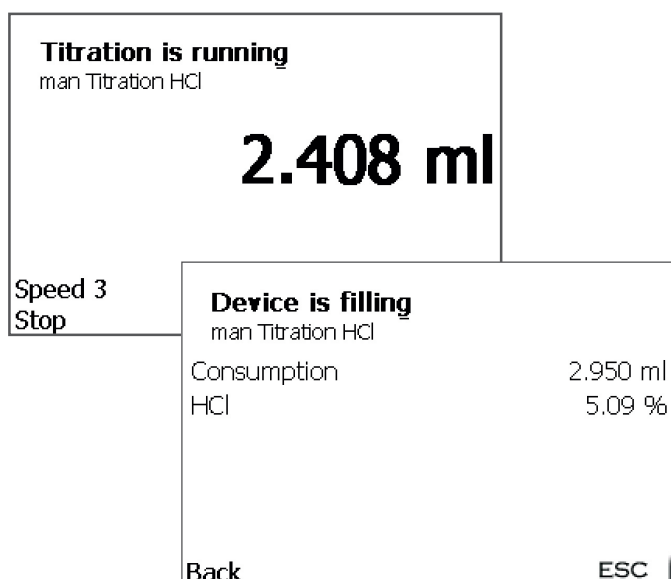
TITRONIC® 300 - Titrating manually, perfectly dosing

The TITRONIC® 300 is a perfect motor-driven burette for manual titration and precise dosing instrument for dispensable liquids, solvents and titrating agents.

The TITRONIC® 300 is not only a stand-alone device, but also shows its strengths in the computer-controlled Manual Titration

While automatic titration is gaining ground, manual titration remains one of the standard cost-effective applications in the lab, wherever high precision and flexibility are required.

- Titration with hand controller (mouse).
- Titration rate can be adjusted in five different steps to optimize the titration speed and accuracy.
- Automatic calculation of results in different units and exportation to a printer or USB memory device.
- Automatic weight recording when a balance is connected. „Daisy Chain“ network. Up to 16 devices can be connected one behind the other.



Titration is running
man Titration HCl

2.408 ml

Speed 3
Stop

Device is filling
man Titration HCl

Consumption	2.950 ml
HCl	5.09 %

Back ESC



Dosing

Beside the titration, there are various routine dosing tasks that must be performed in the lab. A piston burette is the ideal device for precise dosing tasks:

- Adjustable dosing and filling rate for each method.
- Adjustable filling between each dose step.
- The intelligent filling function checks if a dosing step is feasible without filling in advance. This reduces faulty operations during a serial dosing process.

Benefits TitroLine®/TITRONIC®

- ★ High visibility, full color display that can be easily viewed from a distance and at extreme angles
- ★ Standard methods for manual titrations and dosing
- ★ Export the results as PDF or CSV
- ★ USB-A and -B and RS232 interfaces for connection of keyboard, printer, PC, bar code reader, USB storage media and laboratory balance

Edit dosing parameter
dose 12 ml

Dosing volume	12.000 ml
Dosing speed	100.00 %
Dosing speed	100 ml/min
Filling speed	30 s
Automatic filling	always

^ v

Dose
dose 12 ml

5.019 ml
12.000 ml

STOP ESC

TitroLine® 5000 - The easiest titration ever...

The TitroLine® 5000 is the first choice if you are looking for a very easy-to-use automatic titrator for an application. A special training or a deeper knowledge of automatic titration was not necessary to get precise and quick results. That and much more is exactly what the new TitroLine® 5000 stands for:

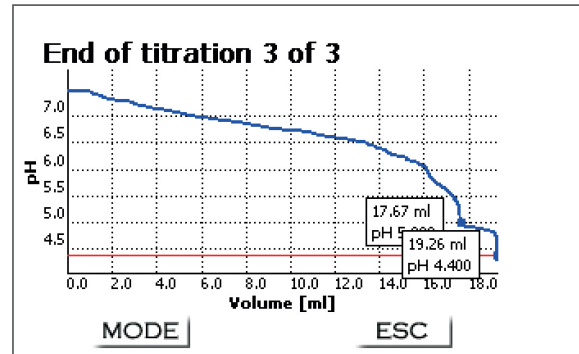
- High resolution pH/mV-measurement input for pH-, ORP-, silver - and further mV-electrodes
- Pt 1000 and NTC 30 temperature measurement input for automatic temperature compensation
- Pre-installed standard methods for FOS/TAC, alkalinity, total acidity in drinks, chloride etc.
- Linear and dynamic titration to equivalence points
- Titration to pH and mV-end points
- Same manual titration and dosing function as the piston burette TITRONIC® 300



TitroLine® 5000

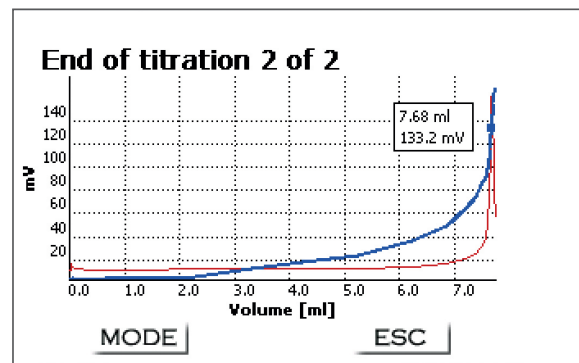
Typical applications of water/wastewater and environmental analysis

- pH-value, alkalinity (p+m-value)
- FOS/TAC (see titration curve and result screen as example)
- Total Kjeldahl nitrogen
- Permanganate index and COD
- Chloride in wastewater



Typical applications of food analysis

- Salt content (chloride, sodium chloride, see titration curve as example)
- pH-value, total acidity in wine, drinks, and other food products
- Ascorbic acid
- Protein determination (Kjeldahl nitrogen in milk and dairy products)
- Iodine and peroxide value



Specifications TITRONIC® 300

Interfaces:	1 x USB-A and 1 x USB-B, 2 x RS-232-C
Stirrer connection:	TM 50, power supply directly through piston burette
Keyboard:	The unit is operated using the keys on the device itself, the controller TZ 3880 and optional PC-keyboard (USB)
Display:	Graphics-capable TFT display
Volume display:	0000.000...9999.999 ml
Display resolution:	0.005-0.025 ml (depending on dosing unit)
Dosing speed:	Max. 100 ml/min (with 50 ml unit)
Filling speed	Min 30 s to 999 s adjustable (time according to the cylinder volume)
Dosing units:	20 ml or 50 ml dosing unit, interchangeable
Burette resolution:	8000
Dosing accuracy:	Systematic error 0.15 %, random error 0.05 % in compliance with EN ISO 8655-6
Power supply:	100 -240 V~; 50/60 Hz, power input 30 VA
Conformity:	ISO 8655, part 6
CE-mark:	EMC: 2004/108/EG; safety EG- Directive 2006/95
Dimensions	135 x 310 x 205 mm (W x H x D), including dosing unit, without stirrer
Weight:	2 kg (without stirrer)
Ambient conditions	Ambient temperature: + 10 ... + 40 °C for operation and storage. Humidity according to EN 61 010, Part 1: Max. relative humidity 80 % for temperatures up to 31 °C, linear decrease down to 50 % relative humidity at a temperature of 40 °C

Ordering information TITRONIC® 300

Type No.	Order No.	Description
T 300/20 M1	285225800	TITRONIC® 300 without magnetic stirrer TITRONIC® 300 basic unit with ready to use assembled 20 ml dosing unit, manual controller, titration clamp, stand rod and power supply 100-240 V
T 300/50 M1	285225810	TITRONIC® 300 without magnetic stirrer TITRONIC® 300 basic unit with ready to use assembled 50 ml dosing unit, manual controller TZ 3880, titration clamp, stand rod and power supply 100-240 V
T 300/20 M2	285225820	TITRONIC® 300 with magnetic stirrer TITRONIC® 300 basic unit with ready to use assembled 20 ml dosing unit, magnetic stirrer TM 50, manual controller, titration clamp, stand rod and power supply 100-240 V
T 300/50 M2	285225830	TITRONIC® 300 with magnetic stirrer TITRONIC® 300 basic unit with ready to use assembled 50 ml dosing unit, magnetic stirrer TM 50, manual controller, titration clamp, stand rod and power supply 100-240 V

Accessories TITRONIC® 300 and TitroLine®

Type No.	Order No.	Description
TM 50,	285225840	Magnetic stirrer
TZ 3835	285220410	USB keyboard
TZ 3830	285220420	USB hub
TZ 3803	285220590	Reagent bottle, amber, 1 L

Specifications TitroLine® 5000

Measurement input pH/mV:	pH/mV-input with Electrode socket according to DIN 19 262 or additional with BNC socket insert (Z 860)
Measurement input temperature.:	Pt 1000/NTC 30: (socket 2 x 4 mm)
Interfaces:	1 x USB-A and 1 x USB-B, 2 x RS-232-C
Stirrer connection:	TM 50 power supply directly through piston burette
Keyboard:	The unit is operated using the keys on the device itself, the controller TZ 3880 and optional PC-keyboard (USB)
Display:	Graphics-capable TFT display
Volume display:	0000,000...9999,999 ml
Display resolution:	0.005-0.025 ml (depending on dosing unit)
Dosing speed:	Max. 100 ml/min (with 50 ml unit)
Filling speed:	Min 30 s to 999 s adjustable (time according to the cylinder volume)
Dosing units:	20 ml or 50 ml dosing unit, interchangeable
Burette resolution:	8000
Dosing accuracy:	Systematic error 0.15 %, random error 0.05 % in compliance with EN ISO 8655-6
Power supply:	100 -240 V~; 50/60 Hz, power input 30 VA
Conformity:	ISO 8655, part 6
CE-mark:	EMC: 2004/108/EG; safety EG- Directive 2006/95
Dimensions:	135 x 310 x 205 mm (W x H x D), including dosing unit, without stirrer
Weight:	2.3 kg (without stirrer)
Ambient conditions:	Ambient temperature: + 10 ... + 40 °C for operation and storage. Humidity according to EN 61 010, Part 1: Max. relative humidity 80 % for temperatures up to 31 °C, linear decrease down to 50 % relative humidity at a temperature of 40 °C

Ordering information TitroLine® 5000

Type No.	Order No.	Description
TL 5000/20 M1	285225760	TitroLine® 5000 with 20 ml dosing unit Basic unit without electrode, with ready to use assembled 20 ml dosing unit, manual controller, titration clamp, stand rod, magnetic stirrer TM 50 and power supply 100-240 V
TL 5000/50 M1	285225770	TitroLine® 5000 with 50 ml dosing unit Basic unit without electrode, with ready to use assembled 50 ml dosing unit, manual controller, titration clamp, stand rod, magnetic stirrer TM 50 and power supply 100-240 V
TL 5000/20 M2	285225780	TitroLine® 5000 with 20 ml dosing unit Basic unit with pH electrode and buffer set, with ready to use assembled 20 ml dosing unit, manual controller, titration clamp, stand rod, magnetic stirrer TM 50 and power supply 100-240 V
TL 5000/50 M2	285225790	TitroLine® 5000 with 50 ml dosing unit Basic unit with pH electrode and buffer set, with ready to use assembled 50 ml dosing unit, manual controller, titration clamp, stand rod, magnetic stirrer TM 50 and power supply 100-240 V
TL 5000/20 M3	285225850	TitroLine® 5000 with 20 ml dosing unit Basic unit with Ag-electrode, with ready to use assembled 20 ml dosing unit, manual controller, titration clamp, stand rod, magnetic stirrer TM 50 and power supply 100-240 V
TL 5000/20 Acidity set	285227750	TL 5000 Set for acid-base titrations, includes: TL 5000/20 M 1, with pH combination electrode A 7780 NTC30 DIN N, pH-buffer set L 4895, USB keyboard TZ 3838, USB hub TZ 3830, USB stick TZ 3836 and 1 L amber reagent bottle TZ 3803
TL 5000/20 Salt set	285227760	TL 5000 Set for salt/chloride titrations, includes: TL 5000/20 M 1, with Ag combination electrode AgCl 62 RG, cable L 1 A, USB keyboard TZ 3838, USB hub TZ 3830, USB stick TZ 3836 and 1 L amber reagent bottle TZ 3803
TL 5000/20 Redox set	285227770	TL 5000 Set for redox titrations, includes: TL 5000/20 M 1, with Pt combination electrode Pt 62 RG, cable L 1 A, USB keyboard TZ 3838, USB hub TZ 3830, USB stick TZ 3836 and 1 L amber reagent bottle TZ 3803