



The first address for Titration

TITRONIC® 300 and TitroLine® 5000

DOMINIQUE BOUTIN

SI Analytics

a xylem brand

Selection table titration – piston burettes TITRONIC®

and automatic titrators TitroLine®

The most important features of titrators TitroLine® and piston burettes TITRONIC® at a glance

Application	TITRONIC® 300	TITRONIC® 500	TitroLine® 5000	TitroLine® 6000	TitroLine® 7000	TitroLine® 7500 KF	TitroLine® 7500 KF trace	TitroLine® 7750
Intelligent interchangeable units (5, 10, 20 and 50 ml)	1)	■	1)	■	■	■	■	■
Manual titration	■	■	■	■	■	—	—	■
Dosing	■	■	■	■	■	■	—	■
Solutions preparation (manually or automatically with connected balance)	—	■	—	■	■	■	—	■
Automatic titration (independent with external software)	2)	2)	■	■	■	■	■	■
pH/mV titrations, aqueous* (Alkalinity, hydrochloric acid, citric acid, Kjeldahl...)	—	—	■	■	■	—	—	■
pH/mV titrations, non aqueous* (TAN/TBN, FFA, titrations with perchloric acid...)	—	—	—	—	■	—	—	■
Redox titrations (iodometry, permanganometry...)	—	—	■	■	■	—	—	■
Redox titrations (COD)	—	—	■	■	■	—	—	■
Halogenide titrations (chloride, „salt“...)	—	—	■	■	■	—	—	■
Hydrogen sulphide and mercaptans	—	—	—	—	■	—	—	■
Sulphurous acid in wine and beverages	—	—	—	■	■	—	—	■
Bromine number	—	—	—	■	■	■	■	■
pH-stat-applications (enzyme kinetics, soil samples, biotechnology)	—	—	—	—	■	—	—	■
Water analysis according to KF Volumetric method (10 ppm - 100 %)	—	—	—	—	—	■	—	■
Water analysis according to KF Coulometric method (1 ppm - 5%)	—	—	—	—	—	—	■	—
Applications with sample changer	—	—	—	—	■	—	—	■
Applications with TitrSoft	■	■	—	—	■	■	■	■

1) 20 and 50 ml dosing unit usable (no intelligent interchangeable units)
2) Can be used as titration and dosing burette in automatic titration systems

New from SI Analytics: TITRONIC® 300 and TitroLine® 5000

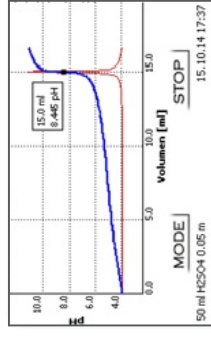
The new Titration instruments

The new piston burette TITRONIC® 300 and the automatic Titrator TitroLine® 5000 from SI Analytics, as successor of the very successful burette TITRONIC® universal and the titrator TitroLine® easy, convince with the well known easy handling and innovative features.

TITRONIC® 300
piston burette



Online titration curves:
(TitroLine® 5000 only)



- ▶ Visibility: Full color display, including online curves that can be easily viewed from a distance and at extreme angles
- ▶ Includes two USB and two RS232 ports for expansion and connection of devices such as USB keyboard, USB-storage device, balance, PC and additional SI Analytics peripherals
- ▶ Exports the results as PDF and CSV to a memory stick/USB device
- ▶ Transfer of methods via USB device
- ▶ Standard methods
- ▶ Daisy-chain capability

Advantages
TitroLine® 5000
TITRONIC® 300

TitroLine® 5000
titrator



Standard methods:

Default method	dos
Alkalinity (p+m)	ESC
Chloride in %	
Chloride in mg/l	
COD Blank	
COD Sample	
COD Titer	
Dosing method	
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50 ml NaOH 0.1 m	
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TITRONIC® 300 - the new piston burette from SI Analytics

The TITRONIC® 300 is a perfect motor-driven burette for manual titration and precise dosing instrument for dispensable liquids, solvents and titrating agents. However, the TITRONIC® 300 is not only first-rate as a stand-alone instrument, it also thrives as the heart of a computer-controlled dosing or titrating system.

Manual Titration

It is true that the automatic titration is gaining ground, but 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.

Titration manually, perfectly dosing

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.



TitroLine® 5000 - the new automatic Titrator from SI Analytics

The predecessor of the TitroLine® 5000, TitroLine® easy, has always been the first choice if you where looking for a very easy-to-use automatic titrator for any 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:

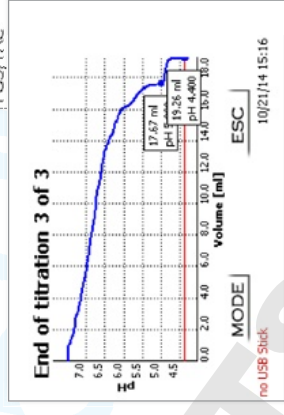
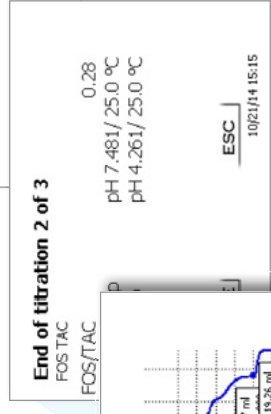
- ▶ High resolution pH/mV-measurement: input for pH-, ORP-, silver- and further mV-electrodes
- ▶ Pt 1000 and NTC 30 temperature measurement: input for automatic temperature compensation
- ▶ Pre-installed standard methods for FOS/TAC, alkalinity, total acidity in drinks, chloride etc.
- ▶ Linear and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



The easiest titration ever...

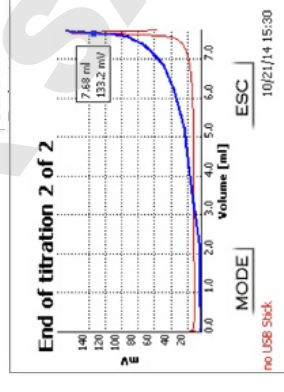
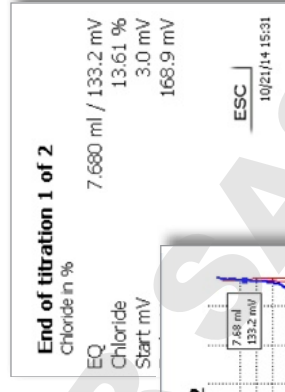
Typical applications of water/wastewater and environmental analysis

- ▶ pH-value, alkalinity (p+m-value)
- ▶ FOS/TAC (see titration curve and result screen as example)
- ▶ Total Kjeldahl nitrogen
- ▶ Permanganat: 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

Features	
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 °

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

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, 1l

Specifications - TitroLine® 5000

Features	
Measurement input pH/mV:	pH/mV-input with Electrode socket according to DIN 19 262 or additional with BNC socket insert (Z 840)
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 °

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

Accessories - TitroLine® 5000

Type-No.	Order-No.	Description
TZ 3835	285220410	USB-keyboard
TZ 3830	285220420	USB-HUB
TZ 3803	285220590	Reagent bottle, amber, 1l

What can Xylem do for you?

We're 12,700 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

For more information on how Xylem can help you, go to www.xyleminc.com

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