



# The first address for Titration

TITRONIC® 300 and TitroLine® 5000

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<br>(manually or automatically with connected balance)             | —             | ■             | —               | ■               | ■               | ■                  | —                        | ■               |
| Automatic titration (independent with external software)                                | 2)            | 2)            | ■               | ■               | ■               | ■                  | ■                        | ■               |
| pH/mV titrations „aqueous“<br>(Alkalinity, hydrochloric acid, citric acid, Kjeldahl...) | —             | —             | ■               | ■               | ■               | —                  | —                        | ■               |
| pH/mV titrations „non aqueous“<br>(TAN/TBN, FFA, titrations with perchloric acid...)    | —             | —             | —               | —               | ■               | —                  | —                        | ■               |
| Redox titrations (iodometry, permanganometry....)                                       | —             | —             | ■               | ■               | ■               | —                  | —                        | ■               |
| Redox titrations (COD)  | —             | —             | ■               | ■               | ■               | —                  | —                        | ■               |
| Halogenide titrations (chloride, „salt“...)   | —             | —             | ■               | ■               | ■               | —                  | —                        | ■               |
| Hydrogen sulphide and mercaptans  | —             | —             | —               | —               | ■               | —                  | —                        | ■               |
| Sulfurous acid in wine and beverages  | —             | —             | —               | ■               | ■               | —                  | —                        | ■               |
| Bromine number  | —             | —             | —               | ■               | ■               | ■                  | ■                        | ■               |
| pH-stat-applications<br>(enzyme kinetics, soil samples, biotechnology)                  | —             | —             | —               | —               | ■               | —                  | —                        | ■               |
| Water analysis according to KF Volumetric method<br>(10 ppm - 100 %)                    | —             | —             | —               | —               | —               | ■                  | —                        | ■               |
| Water analysis according to KF Coulometric method<br>(1 ppm - 5 %)                      | —             | —             | —               | —               | —               | —                  | ■                        | —               |
| Applications with sample changer  | —             | —             | —               | —               | ■               | —                  | —                        | ■               |
| Applications with TitriSoft   | ■             | ■             | —               | —               | ■               | ■                  | ■                        | ■               |

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

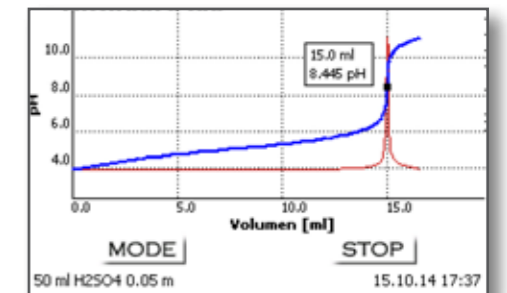
#### The new Titration instruments

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)



TitroLine® 5000  
titrator

#### Standard methods:

|                       |                |
|-----------------------|----------------|
| <b>Default method</b> |                |
| Alkalinity (p+m)      |                |
| Chloride in %         |                |
| Chloride in mg/l      |                |
| COD Blank             |                |
| COD Sample            |                |
| COD Titer             |                |
| Dosing method         | dos ▼          |
| ▲ V                   | OK ESC         |
| 50 ml NaOH 0.1 m      | 10/20/14 11:54 |



- ▲ 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



# TITRONIC® 300 - the new piston burette from SI Analytics

# Titration 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. 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.

## 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.

**Titration is running**  
man Titration HCl

**2.408 ml**

**Speed 3**  
Stop  
20 ml

**Device is filling**  
man Titration HCl

Consumption HCl 2.950 ml  
5.09 %

Back ESC  
Printing...! 10/20/14 18:49



**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     |

50 ml NaOH 0.1 m

**Dose**  
dose 12 ml

**5.019 ml**  
**12.000 ml**

STOP ESC  
50 ml NaOH 0.1 m 10/20/14 12:13

# 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 were 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:

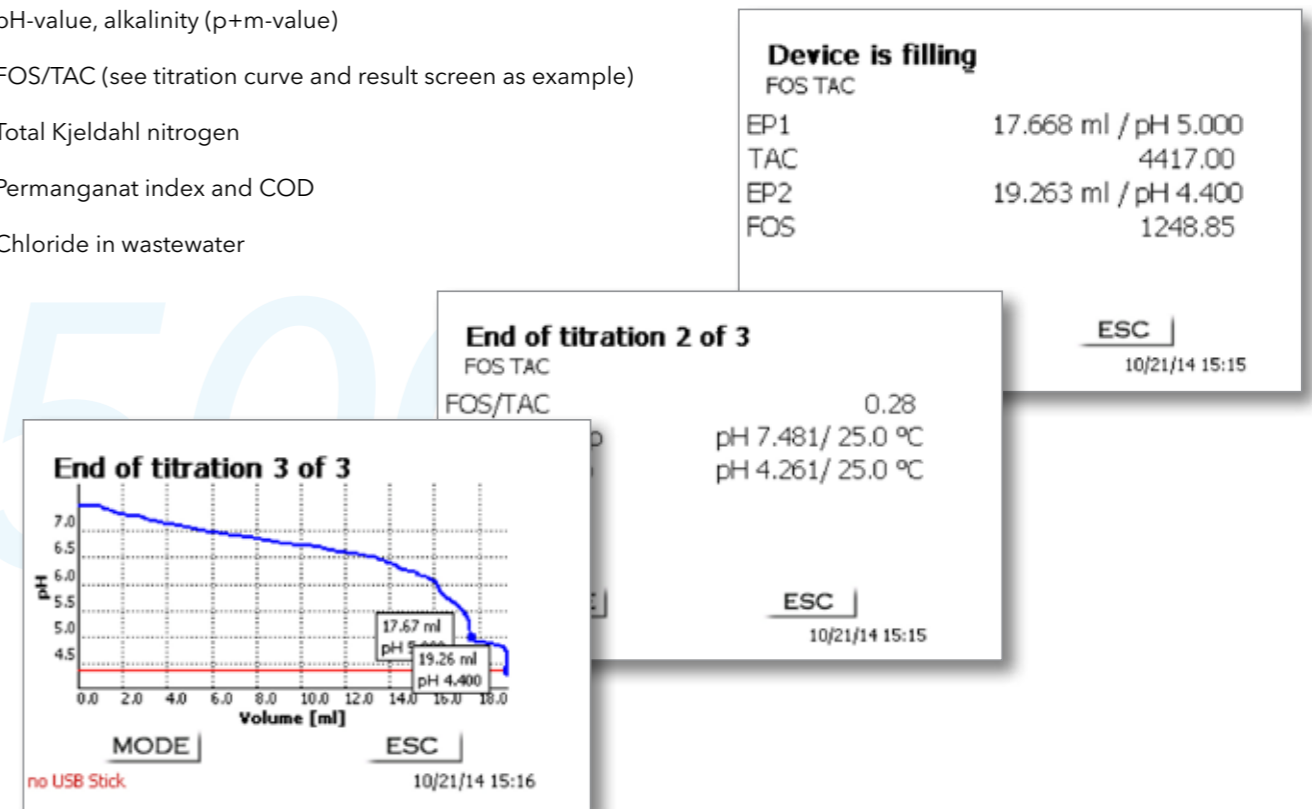
- ▶ High resolution pH/mV-measurement input for pH-, ORP-, silver - and further mV-electrodes
- ▶ Pt 1000 and NTC 30 temperature measurement input for automatic temperature compensation
- ▶ Pre-installed standard methods for FOS/TAC, alkalinity, total acidity in drinks, chloride etc.
- ▶ Linear and dynamic 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...

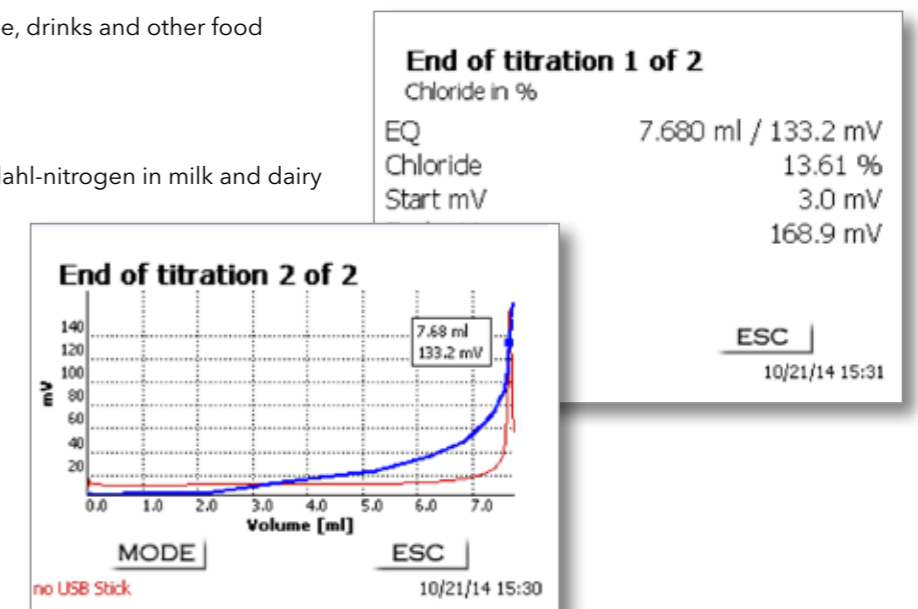
### Typical applications of water/wastewater and environmental analysis

- ▶ 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 | <b>TITRONIC® 300 without magnetic stirrer</b><br>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 | <b>TITRONIC® 300 without magnetic stirrer</b><br>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 | <b>TITRONIC® 300 with magnetic stirrer</b><br>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 | <b>TITRONIC® 300 with magnetic stirrer</b><br>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 | <b>Magnetic stirrer</b>          |
| TZ 3835  | 285220410 | <b>USB-keyboard</b>              |
| TZ 3830  | 285220420 | <b>USB-HUB</b>                   |
| TZ 3803  | 285220590 | <b>Reagent bottle, amber, 1l</b> |

## 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 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 ° |

## Ordering information - TitroLine® 5000

| Type-No.      | Order-No. | Description   |
|---------------|-----------|---|
| TL 5000/20 M1 | 285225760 | <b>TitroLine® 5000 with 20 ml dosing unit</b><br>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 | <b>TitroLine® 5000 with 50 ml dosing unit</b><br>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 | <b>TitroLine® 5000 with 20 ml dosing unit</b><br>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 | <b>TitroLine® 5000 with 50 ml dosing unit</b><br>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 | <b>TitroLine® 5000 with 20 ml dosing unit</b><br>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 | <b>USB-keyboard</b>              |
| TZ 3830  | 285220420 | <b>USB-HUB</b>                   |
| TZ 3803  | 285220590 | <b>Reagent bottle, amber, 1l</b> |