BRAND®

Titrette®

Titration directly from the bottle with Class A precision

BRAND. For lab. For

+ Precise titration within Class A error limits
+ Simple and efficient operation
+ Compact and robust

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Titrette®
27.25
50 ml
class A precision
BRAND

Get to know the Titrette®

Precise

Titration requires a high degree of precision. The Titrette® is the first bottle-top burette to operate within Class A error limits for glass burettes. The digital display of the dispensed volume facilitates accurate reading of the volume and prevents reading errors, which also contributes to precision and process reliability.

Easy to use and efficient

The Titrette® bottle-top burette makes routine titration operations noticeably easier and more efficient. The large, textured hand wheels are easy to turn. The gear ratio allows you to fill the instrument quickly yet dispense liquids drop by drop slowly and sensitively with microliter precision up to 20 µl. Many additional functions make your work easier. No switching is required between filling and titrating. Due to the rotation direction of the hand wheels, the instrument automatically detects whether you are filling or titrating. If the instrument has not been fully primed, you can interrupt titration by pressing the *Pause* button. Press the *Pause* button again to resume titration. The titrating tube can be adjusted horizontally and vertically. This provides flexibility when positioning the instrument, e.g., when using a magnetic stirrer or different bottle sizes.

Light and compact

The Titrette® is light and compact, and thanks to its robust design it can also be used where space is limited, with no power connection required. The compact design and low weight ensure high stability. The instrument can be disassembled in a matter of minutes – for cleaning, to replace the dispensing unit or to replace the batteries. And with Easy Calibration technology, you can make calibration adjustments on the instrument quickly and easily without any tools. Discover how easy and efficient precision titration can be with the Titrette® bottle-top burette.

Titrette®

Nominal volumes:
10 ml, 25 ml und 50 ml

- + Complies with the error limits for Class A glass burettes in accordance with DIN EN ISO 385 and ASTM 287
- + Can be calibrated easily and without tools, with Easy Calibration technology
- + Suitable for many types of titration media (max. concentration 1 mol/l)
- + Amber inspection window (included) protects light-sensitive media
- + Optional RS232 interface for transmitting data directly to a PC

Overview:
The advantages of the Titrette®

The control elements of the Titrette® bottle-top burette have an intuitive layout. Separate buttons for *On/Off* and *Pause*; *Clear* button for clearing the display and selecting functions.

Easy-grip hand wheels and smooth precision gears for fast as well as drop-by-drop titration make handling especially simple and reliable.

Large *Clear* button

For clearing the display and starting a new titration

Precision

Compliance with class A error limits for glass burettes

Titrating tubes

Horizontally and vertically adjustable

Telescopic filling tube

Height-adjustable for different bottle sizes

Optional PC interface

For direct data transfer

Digital display

For simple and precise reading

Simple titration via hand wheel

Fast or drop-by-drop

MyProduct documentation

Scan the QR code and request certificates and documents for your individual product online.

Valve block

Freely rotating (bottle thread GL 45)

Titration media

Wide range of use due to high-quality media-contact materials (borosilicate glass, platinum-iridium, Al_2O_3, ETFE, PFA, FEP and PTFE)

USER TIP
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Additional electronic functions for efficient work

Precise working within the Class A error limits

Can be disassembled and cleaned in a matter of minutes

Light protection window for light-sensitive media

Simple, easy, and efficient titration

With the Titrette® bottle-top burette, you can titrate with fingertip sensitivity drop-by-drop with high accuracy.

Switching between *filling* and *titration* not necessary. The instrument is light-weight, compact and can be disassembled for cleaning and maintenance in the lab.

Light-weight and compact

All components move within the housing, reducing headroom requirements. The compact and lightweight design ensures good stability. The titrating tube can be adjusted horizontally and vertically. This provides flexibility when positioning the instrument, e.g., when using a magnetic stirrer or different bottle sizes.

No switching needed

To change between filling and titration, no switching is needed. The instrument automatically detects whether you are *filling* or *titrating* by the direction of hand wheel rotation greatly reducing the risk of handling errors. Pressing the *Pause* button allows you to interrupt the titration if priming was incomplete. Simply push the button again to resume titration.

Drop by drop

The large, easy-grip hand wheels are conveniently easy to turn. With the optimized gear ratio, you can fill the device quickly and titrate drop-wise with great sensitivity.
The drop size for the 10 ml instrument is approx. 20 µl, and for the 25 and 50 ml instruments approx. 30 µl.

Ordering information

Titrette®

Items supplied: Titrette® bottle-top burette, for threaded bottles GL 45, DE-M marking, supplied with performance certificate, telescoping filling tube (170 – 330 mm), recirculation tube, 2 batteries (AAA/UM4/LR03), 3 PP bottle adapters (GL 32, S 40, NS 29/32), 2 amber colored light shield inspection windows.

Volume	Standard Cat. No.	with RS 232 interface* Cat. No.
10 ml	4760141	4760241
25 ml	4760151	4760251
50 ml	4760161	4760261

* Additionally included: 2 m interface cable (Sub-D plug connector, 9-pin), one CD (driver software and open RS232 communication protocol). The CD also includes an example application in XLS-file format, as well as a special operating manual.

Note: When ordering instruments with DAkkS calibration certificates, the prefix 'DAkkS' must be added to the order number, e.g., DAkkS 4760 161.

Storage conditions: Store the instrument and accessories at dry conditions. Storage temperature: -20 °C to +50 °C; Relative air humidity: 5 % to 95 %

PC interface (optional)

The instrument is available with an optional RS 232 communications interface.

Advantages compared to the standard configuration:

+ The titration results are automatically transmitted to the PC by double-clicking on the *Clear* key. This eliminates transcription errors while recording primary data, and complies with an important requirement of GLP.

+ With each data transfer, the burette sends the titrated volume, the serial number of the instrument, the nominal volume and the adjustment value, as well as the next scheduled calibration date. Thus, all raw data is collected and displayed together with actual date/time stamp from the PC.

+ The transmitted data is recognized as keyboard inputs by the PC. This universal input format ensures that the instrument is compatible with all PC applications that accept keyboard inputs. To connect the instrument to a USB interface, simply use a standard USB/RS 232 adapter.

Technical data

ERROR LIMITS Class A

Comparison of error limits

		Titrette® bottle-top burette				Bottle-top burettes acc. to DIN EN ISO 8655-3				Glass burettes Class A acc. to DIN EN ISO 385 and ASTM
Volume ml	Partial volume ml	A* ≤ ± %	µl	CV* ≤ %	µl	A* ≤ ± %	µl	CV* ≤ %	µl	EL** ± µl
	10	0.10	10	0.05	5	0.3	30	0.1	10	20
10	5	0.20	10	0.10	5	0.6	30	0.2	10	20
	1	1.00	10	0.50	5	3	30	1	10	20
	25	0.07	18	0.025	6	0.2	50	0.1	25	30
25	12.5	0.14	18	0.05	6	0.4	50	0.2	25	30
	2.5	0.70	18	0.25	6	2	50	1	25	30
	50	0.06	30	0.02	10	0.2	100	0.1	50	50
50	25	0.12	30	0.04	10	0.4	100	0.2	50	50
	5	0.60	30	0.20	10	2	100	1	50	50

* Error limits related to the nominal capacity (= maximum volume) indicated on the instrument, obtained when instrument and distilled water are equilibrated at ambient temperature (20 °C/68 °F) and with smooth operation.

** Error limit: EL = A + 2CV, according to DIN EN ISO 8655-6 Annex B (A = accuracy, CV = coefficient of variation, EL = error limit)

Note: If you need an official certification which confirms the error limits that are much stricter than those of DIN EN ISO 8655-3, we recommend a calibration certificate from an accredited calibration laboratory (e.g., the DAkkS laboratory at BRAND).

The titration volume is displayed in steps of 1 µl on instruments with 10 ml and 25 ml size and in steps of 2 µl for 50 ml size instruments. For titration volumes above 20 ml the display will automatically switch to steps of 10 µl.

Material and reagents

The instrument can be used for the following titration media (maximum concentration 1 mol/l):	
Acetic acid	Potassium bromide bromate solution
Alcoholic potassium hydroxide solution	Potassium dichromate solution
Ammonium iron (II) sulfate solution	Potassium hydroxide solution
Ammonium thiocyanate solution	Potassium iodate solution
Barium chloride solution	Potassium permanganate solution*
Bromide bromate solution	Potassium thiocyanate solution
Cerium (IV) sulfate solution	Silver nitrate solution*
EDTA solution	Sodium arsenite solution
Hydrochloric acid	Sodium carbonate solution
Hydrochloric acid in Acetone	Sodium chloride solution
Iodide Iodate solution*	Sodium hydroxide solution
Iodine solution*	Sodium nitrite solution
Iron (II) sulfate solution	Sodium thiosulfate solution
Nitric acid	Sulfuric acid
Oxalic acid solution	Tetra-n-butylammonium hydroxide solution
Perchloric acid	Triethanolamine in Acetone*
Perchloric acid in glacial acetic acid	Zinc sulfate solution
Potassium bromate solution	* Use light shield inspection window

When the instrument is properly handled, dispensed liquid will only come into contact with the following chemically resistant materials: borosilicate glass, Al_2O_3, ETFE, PFA, FEP, PTFE, platinum-iridium; PP (screw cap).

Limitations of use

Chlorinated and fluorinated hydrocarbons or chemical combinations which form deposits may make the piston difficult to move or may cause jamming. Compatibility of the instrument for a special application (e.g., trace material analysis) must be checked by the user. For additional information, please contact the manufacturer. The instrument is not autoclavable.

Operating limits

This instrument is designed for titrating liquids, observing the following physical limits:

+ +15 °C to +40 °C (59 °F to 104 °F) of instrument and reagent
+ Vapor pressure up to 500 mbar
+ Viscosity up to 500 mm^2/s
+ Altitude: maximum 3000 m above sea level
+ Relative humidity: 20 % to 90 %

USER TIP

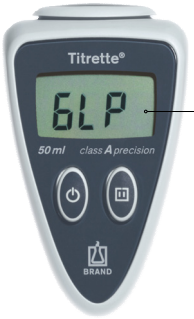
Functions that make your work easier

Four additional helpful electronic functions make your work easier. Hold down the *Clear* button to select the desired function:

+ Adjustment with Easy Calibration
+ Save power with Auto Power Off
+ Calibration schedule
+ Changing decimal place settings

Adjustment with Easy Calibration

With Easy Calibration technology, you can easily make calibration adjustments of the instrument at the push of a button. No tools needed. An adjustment may be necessary if the instrument has been in use for a longer period or if parts are replaced. To show that an adjustment has been carried out, a small **CAL** icon will be shown in the upper portion of the display.



Calibration schedule

To save a date for the next calibration, simply store it under **GLP**. The date can be called up each time the instrument is turned on. Hold the *on/off* button down for a little longer, and the letters GLP, along with the month and year of the calibration date, are shown.

Save power with Auto Power Off

The instrument switches off automatically after longer periods of inactivity. The current display value is stored, and returned to the display after the power is switched on again manually. Under **APO** (Auto Power Off), you can set the time until automatic power-off from 1 to 30 minutes.

Changing decimal place settings

For use as a micro-burette, you can switch the titrated volume display from 2 to 3 decimal places under **dP** (decimal point). Above 20.00 ml, the display automatically switches to 2 decimal places.

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