Anton Paar

DMA 35
DMA 35 Ex
DMA 35 Ex Petrol
DMA 35 Ampere

Portable density and concentration meter

More than 50 years of experience in your hand

DMA 35 is your portable digital meter for determining density, specific gravity, and concentration directly at the sampling location. It is prepared to withstand the knocks and spills of outdoor use. **DMA 35 Ex** and **DMA 35 Ex Petrol** for use in hazardous areas are the only intrinsically safe portable density meters on the market and are certified according to the latest EU Directive 2014/34/EU. **DMA 35 Ampere** is the ideal solution for measuring the specific gravity of sulfuric acid in lead-acid batteries.

Anton Paar is the pioneer and market leader in the field of density and concentration measurement. Our renowned DMA density meters based on the oscillating U-tube principle have been advanced over decades in direct response to customers' needs.

Go digital – the benefits of digital density measurement

The DMA 35 digital density meter …

… replaces all glass hydrometers in your workplace
DMA 35 covers scores of different concentration units and product-specific parameters, whereby each unit will cover the whole measuring range relevant for your application.

… delivers quick results
You measure directly out of the storage container, with no need to transport the sample to the lab. DMA 35 displays the concentration or temperature-compensated density result within a few seconds.

… does not waste any sample
You need only 2 milliliters of sample for your measurement - which is especially relevant for samples that cannot be poured back into the storage tank to avoid contamination.

… ensures perfect traceability of results
Measurements are allocated to a sample name, stored and ready to be printed or exported to a computer. There is no chance of making an error.

In short, DMA 35 saves you time and effort by replacing your old measuring methods and delivers the values you need at the push of a button.

Groundbreaking features – utmost convenience

Fastest filling – for a huge variety of samples

Filling is performed with the manual pump and ten times faster than with comparable instruments. You can then measure a great variety of samples: from fermenting beer and wine to fuels or acids. The smart oscillator placement makes sure that gas bubbles move to where they can't affect your result: outside the measuring cell.

Perfect traceability – for comprehensive data control

Especially when handling many different samples, the automatic sample identification via RFID speeds up your your measuring process tremendously. The sample ID and measuring method to be used for the next measurement are simply read from the RFID tag. More than 1000 data points are stored in the instrument's memory. The RFID interface and a Bluetooth® interface for convenient data handling in the field are integral parts of the instrument.

Intrinsically safe – for use in hazardous locations

An ATEX-certified instrument is a must-have if samples are flammable and ensures safety if measurements are carried out in explosive atmospheres. Anton Paar is the only provider of intrinsically safe portable density meters. DMA 35 Ex is particularly suitable for measuring chemicals, whereas the special housing of DMA 35 Ex Petrol makes it ideal for the petroleum industry. It fully complies with the IP 559 and ASTM D7777 standards.

Measurements in the field – for quick reactions

Your sample is filled directly from the container using the built-in pump at temperatures up to 100 °C (e.g. hot wort). Start your measurement via gesture control so that one hand is free to hold you steady when measuring hard-to-reach samples. Operation is easy, for both left- and right-handed users. Your measurement is finished in a few seconds and DMA 35 warns you if the product you measured is out of your accepted tolerance range.

Unbeaten usability – for measuring challenging samples

For filling highly viscous or expensive samples, the instrument is put in a stable position on the table and filled with a syringe. The lock-function of the pump prevents any carryovers of sample or cleaning liquid and the screen rotates depending on the instrument position. Enjoy how your handheld device turns into a mini benchtop instrument. But there is more: the influence of the viscosity on your density result is automatically corrected.

Robust housing, replaceable cell – for a long working life

With protection class IP54 the instrument withstands the rough conditions of industrial and field applications. It is operated via capacitive keys suitable for use with or without gloves and the display is protected by a robust hard-glass front. The measuring cell has an additional rubber protection. If your instrument nevertheless suffers from a cell rupture by mischance, you can simply replace the measuring cell thanks to a patented design.

Applications

Food and beverage industries

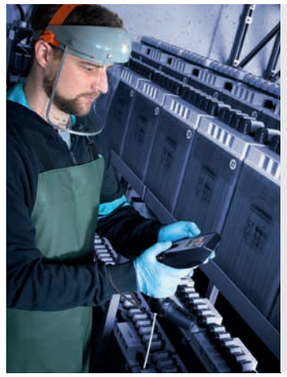
Besides determination of the extract content in beer wort or sugar content in grape juice, DMA 35 is also used to monitor the fermentation process of beer and wine.

It is used to measure, for example:
- the sugar content in fruit juices, syrups, soft drinks
- the alcohol content in spirits
- the density of milk and dairy products
- the density or concentration of preserving fluids

Pharmaceutical and cosmetics industries

Having DMA 35 at hand during intake control makes sure the raw materials delivered are of the quality and type expected. Intermediate products are quickly checked for their quality directly at the production line.

Typical samples include:
- infusion solutions
- serums
- personal care products
- ethanol



Chemistry and machinery production

In chemical production the instrument gives information about the mixing ratio at hand. Flammable chemicals are safely measured with the intrinsically safe DMA 35 Ex.

It is also used to measure, for example:
- the concentration of etching baths in electronics production
- the density of coatings
- the concentration of cooling agents

DMA 35 Ampere determines the concentration of sulfuric acid in lead-acid batteries during production and for maintenance purposes.

Petroleum industry

Petroleum products have a long way to go from the drill hole to their final destination. While they pass through the refinery, are transported via pipelines and tankers, stored in terminals, and run through blending procedures, the ATEX-certified DMA 35 Ex Petrol is ready for quick quality and type inspections throughout the whole process.

Typical samples include:
- crude oil
- diesel and gasoline fuels
- lubricants
- nitromethane

Technical specifications	
Measuring principle	Oscillating U-tube principle (U-tube made of borosilicate glass)
Patents granted	Smart connection of measuring cell: AT516421 (B1), EP3015847 (B1)
Other special functions	- Viscosity correction for reliable measurements, also on highly viscous samples - Gesture control for easy one-hand measurements - Identification of results outside your specified limits
Measuring range	Density: 0 g/cm³ to 3 g/cm³
	Temperature: 0 °C to 40 °C (32 °F to 104 °F)
Sample temperature range	0 °C to 100 °C (32 °F to 212 °F)
Accuracy*	Density: 0.001 g/cm³
	Temperature: 0.2 °C (0.4 °F)
Repeatability, s.d.**	Density: 0.0005 g/cm³
	Temperature: 0.1 °C (0.2 °F)
Reproducibility, s.d.**	Density: 0.0007 g/cm³
Resolution	Density: 0.0001 g/cm³
	Temperature: 0.1 °C (0.1 °F)
Ambient temperature	Standard version, Ampere version: -10 °C to +50 °C (14 °F to 122 °F)
	Ex and Ex Petrol version: -10 °C to +40 °C (14 °F to 104 °F)
Output parameters	Density, specific gravity, alcohol concentration, sugar/extract concentration, API functions, H_2SO_4 concentration, ten programmable custom-specific measuring units
Sample volume	2 mL
Sample filling	Via manual filling pump or syringe in one second
Dimensions (L x W x H)	245 mm x 103 mm x 126 mm (9.6 in x 4 in x 5 in)
Internal storage	1024 measured results, 250 sample IDs, 30 measuring methods
Power supply	Three 1.5 V LR06 AA alkaline batteries
Weight	660 g (23.3 ounces)
Interfaces	Bluetooth®, RFID (included by default; no extra charge)
Protection class	IP54 (dust- and splash-proof)
Intrinsic safety of Ex and Ex Petrol versions	Ⓔx II 2 G Ex ib IIB T4
Scope of supply	Portable density meter, filling tube, adapter for syringe filling, syringes, transportation suitcase, rubber protection for measuring cell, three batteries, Allen key, instructions
Available options	Elongated filling tube, Portable Bluetooth® printer, Bluetooth® USB adapter, Wristband, ISO calibration, Carrying strap, Rubber protection for operating panel

* Viscosity < 300 mPa·s, density < 2 g/cm³
** According to ISO 5725
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