

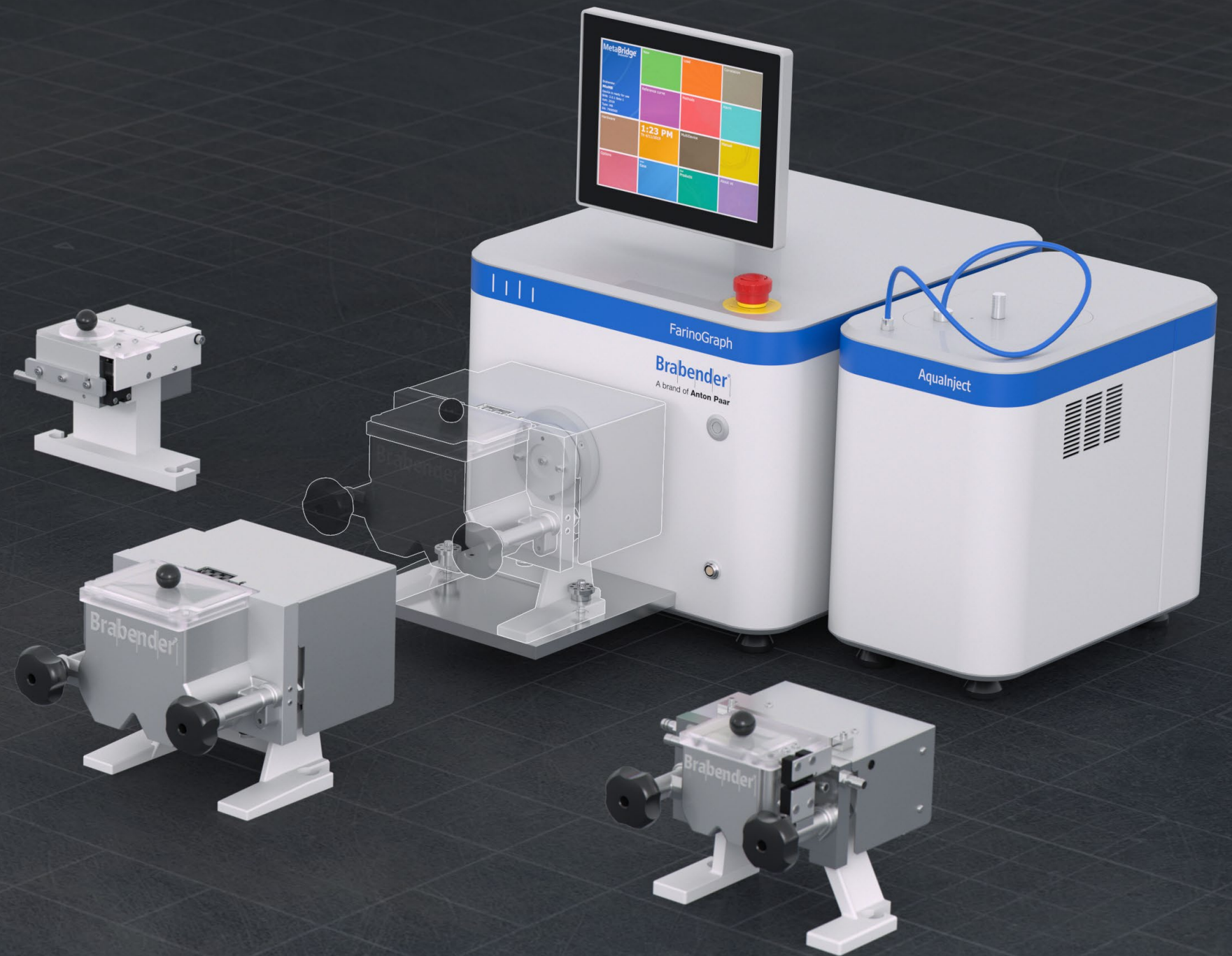
# Absorption and **Dough Mixing Analyzer**

**Brabender: FarinoGraph**



# The FarinoGraph: Connecting the World of Flour

The FarinoGraph is the world industry standard when it comes to determining the water absorption of flour and the rheological properties of dough. With thousands of satisfied users across the globe, it's the most reliable flour and dough quality analyzer on the market. Now in a brand-new version with optimized and simplified workflows, it has flexible attachments for additional applications and pre-installed software that makes data access easier than ever before. "Farino" is the friend you can rely on to always position your business one step ahead. Farino: high-tech for the world, made in Germany.



FIND OUT MORE



[www.anton-paar.com/  
apb-farinograph](http://www.anton-paar.com/apb-farinograph)

## Standards: Connecting the world of flour

- Cover all of the main national and international standards for flour, water absorption, and dough rheology (ICC, AACCI, ISO, etc.)
- Ensure certainty on grain, flour, and dough quality along the entire value chain
- Communicate in the worldwide recognized language for flour analysis: Brabender/FarinoGraph Units (BU/FU)

## MetaBridge: The operating software

- Harness the power of time-saving features, from smart stop criteria for measurements to AI prediction of curves
- Access measurements from any device, at any time - even on the go
- Share data with colleagues or systems like LIMS and ERP

## Mixer attachments and modules: Flour analysis flexibility

- A mixer for many sample sizes
- Seven specialized attachments for diverse applications ranging from gluten-free to sponge dough
- Automated precision water titration with Aqualject module, cutting manual titration efforts

## Unlock advanced software features for optimal flour analysis

- Correlation add-ons for the comparison and statistical evaluation of measurements
- EvaluationEditor add-on for customized data evaluation
- MultiDevice add-on to connect several instruments for seamless data flow and zero transcription error

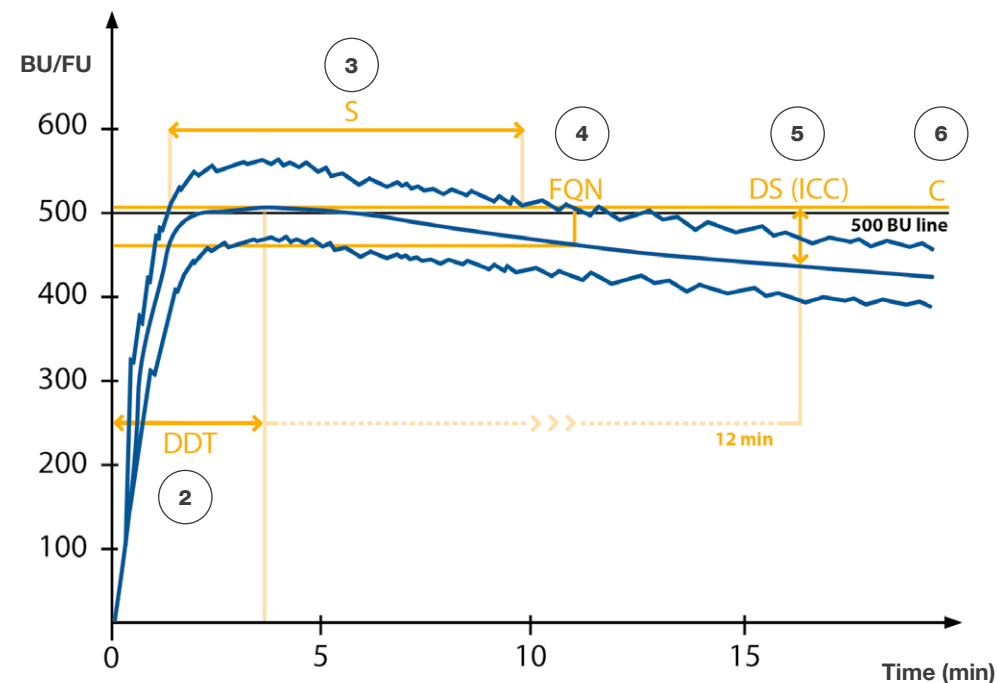


# Cracking the Flour Code

## Farinogram's crucial insights

In the world of milling and baking, the Farinogram is the measuring graph icon, connecting users globally with a universal understanding of flour and dough quality. It shows the most important flour characteristics by measuring the torque increase over time when titrating water to the flour. The result: Universal, established, and renowned Brabender parameters are always at hand.

- 1 **Water Absorption (WA)**  
The more water flour can absorb, the higher the dough yield and the commercial benefit. It's critical for the intended use of the flour.
- 2 **Dough Development Time (DDT)**  
Describes the time from the start of water addition until the maximum consistency (torque peak) is reached.
- 3 **Dough Stability (S)**  
The longer the stability of the dough, the higher the fermentation and kneading tolerance of the dough.
- 4 **FarinoGraph Quality Number (FQN)**  
An established Brabender parameter, it's used to conveniently describe the characteristics of flour in just one figure.
- 5 **Degree of Softening ( $DS_{ICC}$ )**  
Calculated 12 minutes after the dough has reached maximum consistency (torque peak), it represents the break-down of gluten through extended mixing.
- 6 **Consistency (C)**  
Is the highest torque of the mean value curve. This must be at 500 BU  $\pm$ 20 BU for a valid measurement.



# The New FarinoGraph

## Peak flour and dough analysis

### Ready to use with the smallest footprint

- Even-more-powerful, built-in computer
- Built-in 10.4" touchscreen with speaker
- Pre-installed MetaBridge software



### Improved sensor technology for increased repeatability

- The temperature probe is now directly embedded in the mixer for direct measuring of the flour
- Additional sensor for air temperature, humidity, and air pressure available to ensure the necessary environment parameters
- The new FarinoGraph can now also monitor the thermostat temperature

### 40 % more power for the hardest doughs

- Improved, higher torque range up to 28 Nm (compared to 20 Nm of older generations) for endless possibilities.
- Measure a wider range of doughs, even hard ones used in cookies, crackers, pasta, etc.



### Newly compatible attachments

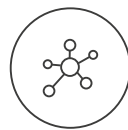
- Measure all your samples with one main device: 10 g mixer and Planetary Mixer P600 are now fully compatible
- Automatic titration for everyone: AqualInject can now be used with both 50 g and 300 g mixers

# MetaBridge

Your flour quality control companion

The MetaBridge operating software ensures intuitive instrument operation while leveraging the power of unique features like AI prediction and correlation curves.

It's your gateway to streamlined standards implementation and real-time flour quality control.



## Optimized workflows

- Brabender lives and shapes standards. Many of the well-known ISO, ICC, and AACCI standards are directly usable
- Our optimized workflows avoid common errors to ensure a smooth process in the laboratory
- You're completely flexible and can adapt the predefined methods and evaluation to your individual requirements at any time



## MetaBridge Connect

- Easy access to your measurement data via a web browser within the company network
- MetaBridge devices exchange information to optimize your work in the laboratory, letting you automatically exchange sample names and other parameters
- Our customer service team is happy to help via the built-in feedback and remote maintenance function



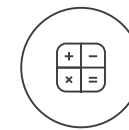
## Data sharing

- Standard data exports in typical formats such as Excel, CSV, PDF
- Built-in mailing function for a quick exchange with colleagues and customers
- Support of third-party systems (e.g., LIMS, ERP) via Brabender WebAPI, shared network folders, or OPCUA



## Comparison and correlation

- The reference curve feature lets you monitor material quality in real time and receive automatic feedback on whether or not specifications have been met
- Compare a multitude of measurements with the correlations add-on feature to obtain an optimal understanding of your materials



## EvaluationEditor

- This add-on feature lets you create your own evaluations and perform them automatically after your measurement
- Additional evaluation points can give you a deeper analytical understanding of your measurement



# Aqualnject and Other Attachments

Aqualnject is an automatic water dosing system that's perfectly integrated into the process flow of the FarinoGraph and makes daily work and water titration much easier. Precisely control the water amount dosed and stored into the software. Eliminate burettes from the laboratory and avoid glass breakage. Ensure constant water temperature with integrated temperature control. Meet all requirements of national and international standards, such as ICC, AACCI, ISO, etc. Aqualnject is optimized for the FarinoGraph but universally applicable in the laboratory.

The FarinoGraph also offers a wide selection of additional attachments to measure different samples and sample sizes, and to determine additional parameters.



## Brabender: FarinoGraph

⊕ Aqualnject

⊕ Measuring Mixer S300

⊕ Measuring Mixer S50

⊕ Measuring Mixer S10

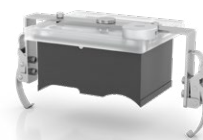
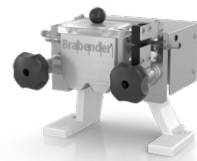
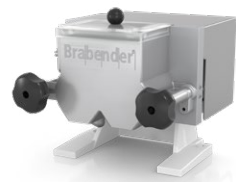
⊕ FarinoAdd-S300

⊕ FarinoAdd-S50

⊕ Planetary Mixer P600

⊕ Hardness and Structure Tester

⊕ ClimateLogger



### Measuring Mixer S300

- For standard Farinograph test (300 g) in line with ICC, AACCI, ISO
- Built-in temperature probe
- Knead doughs for ExtensoGraph tests
- Removable blades

### Measuring Mixer S50

- For standard FarinoGraph test (50 g flour) in line with ICC, AACCI, ISO
- Removable blades
- Sample preparation for the Micro-ExtensoGraph tool

### Measuring Mixer S10

- For standard FarinoGraph test involving small sample quantities (10 g)
- Suitable for breeders and R&D purposes

### FarinoAdd-S300

- Upgrade kit for the measuring Mixer S300
- Test the quality of gluten-free flours

### FarinoAdd-S50

- Upgrade kit for the measuring Mixer S50
- Test the quality of gluten-free flours

### Planetary Mixer P600

- For, e.g., rye doughs and sponge batters
- Kneading hook, K-stirrer, and balloon whisk

### Hardness and Structure Tester

- Test the hardness of cereals such as wheat, barley, malt, etc.
- Obtain useful information on condition and dryness to improve your milling process

### ClimateLogger

- Recording of ambient temperature, air pressure, and humidity
- Safeguarding of the laboratory conditions specified in standards

# Applications

Use our modular attachments and open up an even wider range of applications.

## Gluten-free doughs

Attach the FarinoAdd-S300/FarinoAdd-S50 and analyze the water absorption and rheological characteristics of gluten-free doughs.

## Production dough measurement

Determine the quality of doughs in production and evaluate flour formulations with additives such as emulsifiers, enzymes, or hydrocolloids.

## High-speed measurements

Don't rely only on standard methods. Create your own methods and significantly speed up time-to-result.

## Hardness tester for malt and wheat

Optimize your milling process and increase your yield. In combination with a mash test, attain information on the solubility of the malt for a better understanding of your brewing process.

## Sponge dough evaluation

Investigate the liquid absorption of sponge doughs and/or a change in the recipe and its influence on the consistency of, e.g., sponge using the Planetary Mixer P600 attachment.

## Viscosity of margarine

Measure the viscosities of margarines at temperatures of, e.g., 20 °C/25 °C to gain more knowledge about the processing properties or to check quality in the incoming goods department.



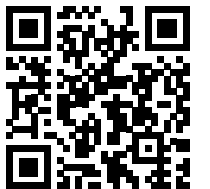
## Brabender: FarinoGraph



<b>Speed</b>	0 min <sup>-1</sup> to 200 min <sup>-1</sup>			
<b>Torque</b>	28 Nm			
<b>Power supply</b>	- 230 V (184 V to 264 V) +N+PE / 50/60 Hz (45 Hz to 66 Hz) / 4.3 A; 1 kW - 115 V (88 V to 126 V) +PE / 50/60 Hz (45 Hz to 66 Hz) / 8.7 A; 1 kW			
<b>Dimensions (W x H x D)</b>	430 mm x 630 mm x 740 mm			
<b>Weight</b>	- Without measuring mixer: 56 kg - With measuring mixer S300: 74 kg			
<b>Interfaces</b>	4x USB, 1x HDMI, 2x Ethernet			
<b>Standards</b>	AACCI 38-20.01 AACCI 54-22.01 AACCI 54-28.02 AACCI 54-29.01 AACCI 54-21.01 AACCI 54-21.02 AACCI 54-10.01 ICC-Standard Nr. 114/1 ICC-Standard Nr. 115/1 ISO 5530-1 ISO 5530-2	CEN EN ISO 5530-1 CEN EN ISO 5530-2 DIN EN ISO 5530-1 DIN EN ISO 5530-2 NF V03-717-1 NF V03-717-2 NF-EN ISO 5530-1 NF-EN ISO 5530-2 CCAT 16 GB/T 14614 GB/T 14615	GB/T 35994 OENORM EN ISO 5530-1 OENORM EN ISO 5530-2 SN EN ISO 5530-1 SN EN ISO 5530-2 BS EN ISO 5530-1 BS EN ISO 5530-2 UNE-EN ISO 5530-1 UNE-EN ISO 5530-2	GOST ISO 5530-1 GOST ISO 5530-2 AGSA 06-01 AGSA 06-02 CCAT 03 CCAT 04 TCVN 7848-1 TCVN 7848-2

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Compliant.  
**Qualified.**

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Our well-trained and certified technicians are ready to keep your instrument running smoothly.



Maximum uptime



Warranty program



Short response times



A global service network

