

Intelligent Solutions for the **Beverage Industry**

Process Systems and Integration



Take Your Production to the **Next Level**

We leverage decades of process instrumentation experience to deliver intelligent engineering solutions across industries. Flexible, fast, and accurate; these are ideal for both the industrial and craft brewing industries. No matter the material – low-viscosity fluids, liquid gases, higher-viscosity media – we offer process monitoring, analysis, and control solutions that maximize quality and optimize efficiency. They're customizable too: We'll fit them into the spaces you have in no time.

Uncompromising quality standards

→ Our concentration sensors are the best in the world. They're the reason our systems can measure and analyze quality control parameters with extraordinary speed and precision.

Powerful price-performance ratios

→ Our process solutions offer efficiency-optimizing automation. We unite instruments and process systems in single packages at great price-performance ratios. Commissioning times for the skid-mounted process modules tested in our factory are low – so are integration costs.

Support beyond start-to-finish

→ Our experts take care of every purchase project beyond start-to-finish. Extensive field service plus premium post-purchase support ensures the benefits of a purchase are projected far into the future. Service and assistance are available directly from one of 86 service points worldwide.

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www.anton-paar.com/apb-process-systems



Flex-Blend 3000 Series: Unleash Your Creativity

CRAFT BREWING

The Flex-Blend 3500 Carbonating Unit

- Automatic, skid-mounted carbonating system tailored for craft producers
- Efficient CO₂ injector
- Pump with variable speed drive for stable pressure control

Flex-Blend 3600 Blending and Carbonating Unit

- Automatic, skid-mounted blending and carbonating system tailored for craft producers
- Efficient CO₂ injector
- Pump with variable speed drive for stable pressure control
- ABV Trimming / OE optimization and/or HG Blending
- Optimized recipe management for an unlimited number of product types, which avoids product loss and ensures minimal changeover time

Options

- Additional Alcohol/Extract Sensor without Blending
- Oxy 5100 – minimized consumables for dissolved oxygen measurement
- Nitrogenating capabilities – addition of Carbo 5100 sensor for N₂ determination
- SCADA Interface via Fieldbus
- Adjunct dosing pump
- Davis 5 Data Acquisition and Visualization Software - Quality assurance and tracking



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[www.anton-paar.com/
apb-flex-blend-3000](http://www.anton-paar.com/apb-flex-blend-3000)

Flex-Blend 3000 Series:

Ensured Performance

CRAFT BREWING

Top price-performance ratio

Our sensors ensure continuous, accurate measurements, e.g., ± 0.02 % ABV, for excellent quality control. The Flex-Blend 3000 series provides the fastest continuous measurement of concentration values on the market (one second measuring cycles), for rapid, precise control of ABV, OE, and CO₂. The all-in-one package includes our Beer Monitor 5600, with all sensors, at an unbeatable price (approx. 30 % less than if purchased separately).

Tried-and-tested, straightforward implementation and quick commissioning

The Flex-Blend Factory Acceptance Test (FAT) covers full potential production spectrums, minimizing implementation effort and risk, and shortening production ramp-ups for any systems purchased. Customers can attend FAT in person or online.

Minimum space requirements

The Flex-Blend 3000 series fits anywhere – even in very small spaces. The inline solution without tanks reduces product losses to a minimum, even for small production batches.

Simple, powerful multiproduct management

Intelligent recipe management via integrated PLC with a touchscreen that simplifies handling of multiple products and production batches. Recipe-specific management of calibration data and controller settings improves batch-to-batch QC parameter continuity, reducing waste, and boosting productivity. Calibrating the Flex-Blend 3000 series' system with reference values measured by our laboratory instrumentation ensures production is never out-of-spec.

Extended warranty and spare parts

The Flex-Blend 3000 series is covered by a three-year warranty according to Anton Paar's General Terms of Delivery. All components and spare parts of the Flex-Blend 3000 series are available from Anton Paar's stock.

Parameter	Specification
Products	Beer and beverages, viscosity 0.5 mPa.s to 10 mPa.s
Available line diameters	DN25 / OD 1" to DN50 / OD 2"
Available nominal flow rate (capacity)	20.0 hl/h (8.8 US gpm) to 144.0 hl/h (63.4 US gpm)
Blending and mixing ratios and ranges ¹⁾	ABV Trimming / OE Optimization: 1.0 to 25 % DAW/Beer HGB Blending: 15 % DAW/Beer to 60 % DAW/Beer
Blending and mixing accuracy (offset) ^{1) 2) 3) 4)}	± 0.05 % ABV (standard deviation) ± 0.1 °Plato (standard deviation) ± 0.05 °Brix (standard deviation)
Control range CO ₂ (CO ₂ added) ¹⁾	Single control valve: 1.0 g/L to 6.0 g/L / 0.5 vol to 3.0 vol Dual control valve: 0.2 g/L to 6.0 g/L / 0.1 vol to 3.0 vol
CO ₂ Dosing accuracy (offset) ^{1) 2) 3) 4)}	± 0.15 g/L (± 0.075 vol) (standard deviation)
Control range N ₂ ¹⁾	20 mg/L to 80 mg/L (N ₂ addition)
Measuring range and accuracy CO ₂ ²⁾	0 g/L to 12 g/L / ± 0.05 g/L
Measuring range and accuracy alcohol ²⁾	0 % w/w to 12 % w/w (% weight/weight) / ± 0.02 % w/w 0 % v/v to 15 % v/v (% volume/volume at 20 °C / 68 °F)
Measuring range and accuracy real extract ²⁾	0 °Plato to 12 °Plato / ± 0.02 % w/w
Measuring range and accuracy original extract ²⁾	0 °Plato to 35 °Plato / ± 0.04 % w/w
Measuring range and accuracy Brix ²⁾	0 °Brix to 50 °Brix / ± 0.02 °Brix
Measuring range and accuracy O ₂ ²⁾	0 ppb to 2,000 ppb; $\leq \pm 1.0$ ppb or ± 3 % (the higher value is applicable)
Measuring range and accuracy N ₂ ²⁾	0 mg/L to 100 mg/L ± 10 mg/L

1) ... at nominal flow rate

2) ... at stabilized flow/pressure conditions at the product in and outlet and product-specific adjustment with a lab reference instrument

3) ... at stable concentration values (CO₂, ABV, Brix, Gravity) at the Flex-Blend inlet

4) ... after settling time

Trademarks

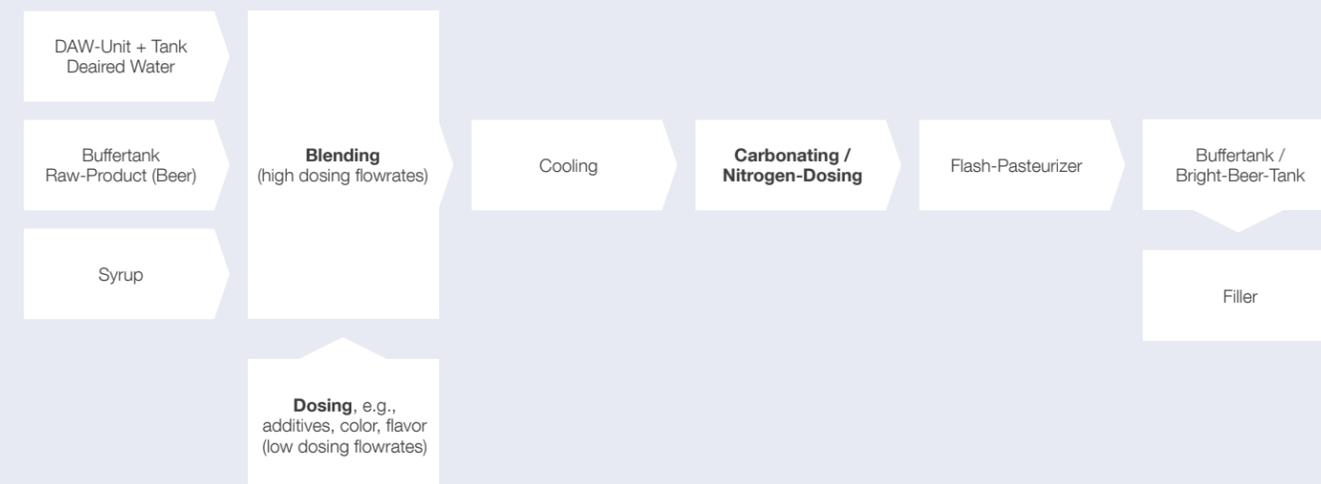
Flex-Blend (17985571)

Flex-Blend 7000 Series: Modular Process Control

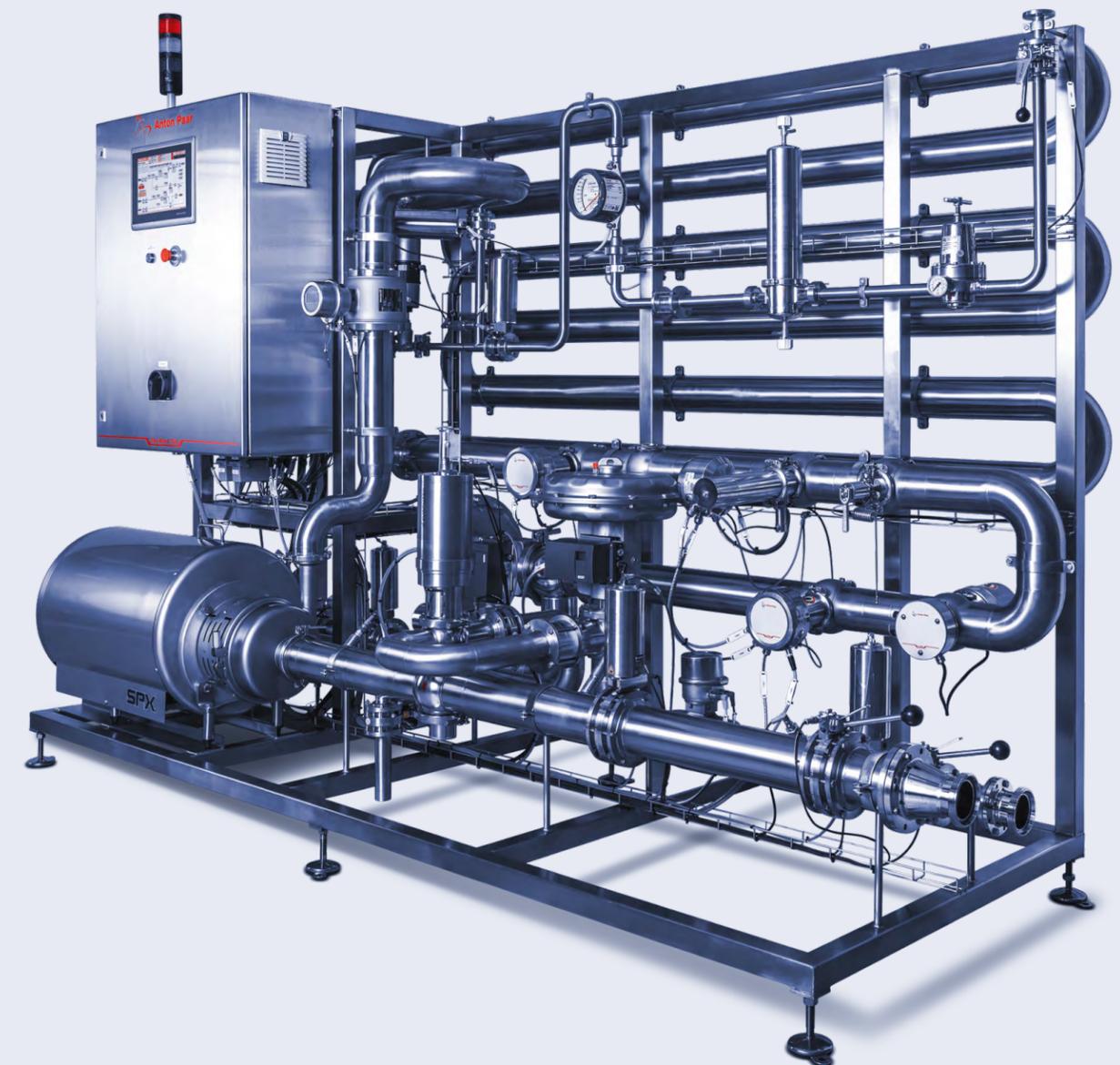
INDUSTRIAL BEVERAGE PRODUCTION

Modular, extendible, and highly integrated

The Flex-Blend 7000 series is a modular, inline blending, carbonating, and dosing solution that is based on well proven reference modules. According to your requirements, these modules can be integrated into your production line.



Integrate any Flex-Blend 7000 series' module into any comprehensive system – the blender, carbonator, flavor dosing, buffer tanks, and water deaeration systems are synchronized and operated by a single human machine interface (HMI). Set up the Flex-Blend 7000 series to interact with a supervisory control system for remote operation, or let it control adjoining process systems.



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[www.anton-paar.com/
apb-flex-blend-7000](http://www.anton-paar.com/apb-flex-blend-7000)

Flex-Blend 7000 Series: Market-Leading Accuracy

INDUSTRIAL BEVERAGE PRODUCTION

Flexible, tailored to your needs

We'll optimize Flex-Blend 7000 so it fits perfectly into your plant layout. In order to ensure smooth and efficient operation and maintenance, we use critical components of your preferred brands.

Preconfigured, factory-tested system

The Flex-Blend 7000 series' electrical and mechanical components are combined in a single compact, skid-mounted system. It's preconfigured, wired, and factory-tested when delivered. Comprehensive factory testing guarantees minimal implementation effort and risk, as well as short production ramp-up times.

Direct control of mixing ratios and concentrations

The Flex-Blend 7000 series directly controls mixing and dosing over a wide operating range – with market-leading accuracy, e.g., ± 0.02 % ABV – so you can respond quickly to process variations and disturbances. Flex-Blend utilizes an optimized controller structure and control valve design to directly control concentrations via adjustment of the amount of injected CO₂, added water, and mixing ratios.

Top quality across the whole production process

Our Beverage Monitor 5600, with optical Carbo 6100/6300 CO₂ sensors, is part of the Flex-Blend 7000 series. The short measuring and response times of the sensors, e.g., four seconds for the Carbo series, are the basis for fast and precise controlling of mixing and dosing.

Minimal maintenance, low operating costs

The Flex-Blend 7000 series' sensors don't require maintenance. For parts that wear down (e.g., elastomers), all you have to do is check and replace them occasionally. Since valves and pumps are easily accessible, maintenance is minimal.

Parameter	Specification
Products	Beer and beverages, viscosity 0.5 mPa.s to 10 mPa.s
Available line diameters	DN25 / OD 1" to DN125 / OD 5"
Available nominal flow rate (capacity)	20 hl/h to 1,100 hl/h (8.8 US gpm to 485.0 US gpm)
Blending and mixing ratios and ranges	According to customer requirements with single or dual control valve arrangement
Blending and mixing accuracy (offset) ^{1) 2) 3) 4)}	± 0.05 % ABV (standard deviation) ± 0.1 °Plato (standard deviation) ± 0.05 °Brix (standard deviation)
Control range CO ₂	According to customer requirements with single or dual control valve arrangement
CO ₂ Dosing accuracy (offset) ^{1) 2) 3) 4)}	± 0.15 g/L (± 0.075 vol) (standard deviation)
Measuring range and accuracy CO ₂ ²⁾	0 g/L to 12 g/L / ± 0.05 g/L
Measuring range and accuracy alcohol ²⁾	0 % w/w to 12 % w/w (% weight/weight) / ± 0.02 % w/w 0 % v/v to 15 % v/v (% volume/volume at 20 °C / 68 °F)
Measuring range and accuracy real extract ²⁾	0 °Plato to 12 °Plato / ± 0.02 °Plato
Measuring range and accuracy original extract ²⁾	0 °Plato to 35 °Plato / ± 0.04 °Plato
Measuring range and accuracy Brix ²⁾	0 °Brix to 50 °Brix / ± 0.02 °Brix
Measuring range and accuracy O ₂ ²⁾	0 ppb to 2,000 ppb; $\leq \pm 1.0$ ppb or ± 3 % (the higher value is applicable)

1) ... at nominal flow rate

2) ... at stabilized flow/pressure conditions at the product in and outlet

3) ... at stable concentration values (CO₂, ABV, Brix, Gravity) at the Flex-Blend inlet

4) ... after settling time

Trademarks

Flex-Blend (17985571)

Animo Series: Preconfigured for Production Line Traceability

INDUSTRIAL BEVERAGE PRODUCTION

CRAFT BREWING

The Animo series: for inline multiparameter beer analysis

- Animo 5100: Skid-mounted or pipe-assembled system
- Animo 3100 Mobile: Mobile unit for craft producers



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www.anton-paar.com/apb-animo

Real-time process monitoring

Our process analyzers don't require time-consuming, on-site adjustments because all of our systems are delivered with factory preconfigurations. The integrated mPDS 5 evaluation unit enables data exchange, remote control, and diagnosis via the fieldbus of your choice.

Desktop production quality tracing

Davis 5 performs statistical evaluation and traceability of production line performance and product quality directly from a desktop computer. It traces calibration and adjustment activities, along with data, to deliver proof of measuring quality. Saving you a step, it also transfers laboratory reference values to the process instruments automatically.

Accurate alcohol and extract measurement

The integrated L-Com 5500 is a stable combined density and sound velocity sensor that automatically compensates for process variations and changing environmental conditions. It ensures drift-free and reliable measuring results during filler stops and product changeovers.

Drift- and maintenance-free CO₂ measurement

The integrated Carbo 6300 inline CO₂ sensor doesn't require any maintenance because of its optical measurement concept. The gas-tight sealed sensor unit provides long-term stability and guarantees there's no drift during CIP.

Flexibility for craft brewing, with mobile unit

The Animo 3100 Mobile is insertable into any typical craft brewer process system connection. The Animo 3100 Mobile package includes the Beer Monitor 5600, the Oxy 5100 inline oxygen sensor, and the Davis 5 data recording and analysis software, at a top price-performance ratio.

Parameter	Range	Accuracy
Alcohol	0 % w/w to 12 % w/w 0 % v/v to 15 % v/v	±0.02
Real extract	0 °Plato to 12 °Plato	±0.02 °Plato
Original extract	0 °Plato to 35 °Plato	±0.04 °Plato
Dissolved CO ₂ concentration	0 Volumes to 6 Volumes 0 g/L to 12 g/L	0.025 Vol. 0.05 g/L
Dissolved O ₂ concentration	0 ppb to 2,000 ppb optional 0 ppm to 22.5 ppm (0 - 50 %)	≤±1 ppb or ±3 % (the larger value is valid) ≤±0.1 % O ₂ or ±3 % (the larger value is valid)
Conductivity	Range (adjustable): <10 mS/cm 10 mS/cm to 100 mS/cm 100 mS/cm to 999 mS/cm	Resolution: 1 μS/cm 10 μS/cm 100 μS/cm
Temperature	-3 °C to +145 °C	±0.1 °C
Pressure	0 bar to 16 bar absolute	±0.1 bar
Flow	v = 0.01 m/s to 10 m/s with the specified measuring accuracy	±0.5 % of reading ±1 mm/s
Color (optional)	0 EBC to 30/150 EBC (depending on optical path length)	Reproducibility: ±1 % transmission

Trademarks

Animo (17873939)

Davis 5: Quality Parameters at a Glance

INDUSTRIAL BEVERAGE PRODUCTION

CRAFT BREWING

Real-time documentation

Davis 5 for Flex-Blend provides documented quality and reports per production lot without the need for Supervisory Control and Data Acquisition (SCADA). Davis 5 records and archives critical quality control parameters in a database for real-time documentation and generates reports for in-spec production.

Online values and data logging

- Display and logging of quality parameters like CO₂, O₂, alcohol, and extract, as well as four additional media/product flows, and system pressure
- Monitoring of target values and limits

Quality reporting

- Report selection by product and/or date, as well as per batch / multiple batches over period
- Statistical and trend reports

Calibration and adjustment

- Calibration and adjustment of quality parameters from L-Com, Carbo, Oxy
- Tracking of calibration and adjustment activities



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Reliable. Compliant. Qualified.

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



Maximum uptime

Regardless of how intensively you use your instrument, we help you keep your device in perfect shape and safeguard your investment. For at least 10 years after the discontinuation of a device, we'll provide you with any service and spare part that you might need.



Warranty program

We're confident in the high quality of our instruments. That's why we provide a full 3-year warranty. Just make sure to follow the relevant maintenance schedule. You can also extend your instrument's warranty beyond its expiration date.



Short response times

We know that sometimes it's urgent. That's why we provide a response to your inquiry within 24 hours. We give you straightforward help from great people, not from bots.



A global service network

Our large service network for customers spans 86 locations with more than 600 certified service technicians. Wherever you're located, there's always an Anton Paar service technician nearby.

