Cobrix 5

Beverage Analyzer for Inline and Bypass Installations

Your Beverage Production Under Control

Cobrix 5 reduces out-of-spec production

Laboratory methods for quality control often take up to 30 minutes before results are known. Therefore, a change during production often causes significant losses in both time and product. Continuous measurement of product parameters with Cobrix 5 ensures the product quality is always right on target. If the measured values are outside preselected quality limits this immediately activates alarms, so you can take action to avoid out-of-spec product and make significant savings in syrup and CO_2. The result: the production of all your beverages under control with one online beverage analyzer.

Very low running costs

With Cobrix 5 power consumption is very low: it requires only 100 Watt, no more than a light bulb. These low running costs make a contribution to the efficient and economical operation of your plant.

Production problems identified quickly

If any problems occur during production, i.e. leaking valves or fluctuations of the CO_2 saturation due to changes in the water temperature, Cobrix 5 detects these and informs you immediately.

Traceable quality

Cobrix 5 in combination with the Davis 5 software stores all quality-related data automatically, including Cpk and Cp values. Line performance and product quality are therefore completely traceable.

Same principle in your laboratory and process

Cobrix 5 uses the oscillating U-tube principle to measure the density and the volume expansion method to determine CO_2 content, the same principles which are used in Anton Paar's laboratory beverage analyzers, such as the DMA density meters, CarboQC CO_2 analyzer and Packaged Beverage Analyzers PBA-S, PBA-SI and PBA-B. This means your online results are completely comparable with your reference results.

All Beverages,
All Parameters

Inline analysis for all soft drinks, beers and other beverages

With the inline Cobrix 5 beverage analyzer it is now possible to continuously measure °Brix, % Diet, carbon dioxide, alcohol, sugar inversion, original extract and additional parameters inline, directly in the production line with a single analysis system. Cobrix 5 provides instant and highly accurate results, while requiring minimum supervision and maintenance.

Inline installation for direct measurement
The inline version of Cobrix 5 measures the beverages directly in the production line. It is therefore suitable for the hygienic production of all beer types, wine, juices and soft drinks. Using a cut-off adapter, the sensors can be serviced on the filled line, even during production.

Bypass installation recommended for diet beverages
Cobrix 5 is simple to install in a bypass and easily accessible for service and maintenance. Service can be carried out on filled lines and during production. Cobrix 5 in a bypass is recommended for monitoring diet beverages.

Designed according to EHEDG guidelines
Cobrix 5 is constructed according to EHEDG guidelines and is cleaned by standard CIP routines.

Flexible positioning of the evaluation unit
Install the sensor wherever you need to monitor the beverages and position the evaluation unit up to 250 meters away in an easily visible location.

Depending on your requirements, choose from the following Cobrix 5 versions:

Cobrix 5 inline
Cobrix 5 bypass

Both systems are available for the following beverages:

▶ Regular soft drinks
▶ Soft drinks with sugar inversion
▶ Beer
▶ Wine
▶ Alcopops (FABs)
▶ Mineral water
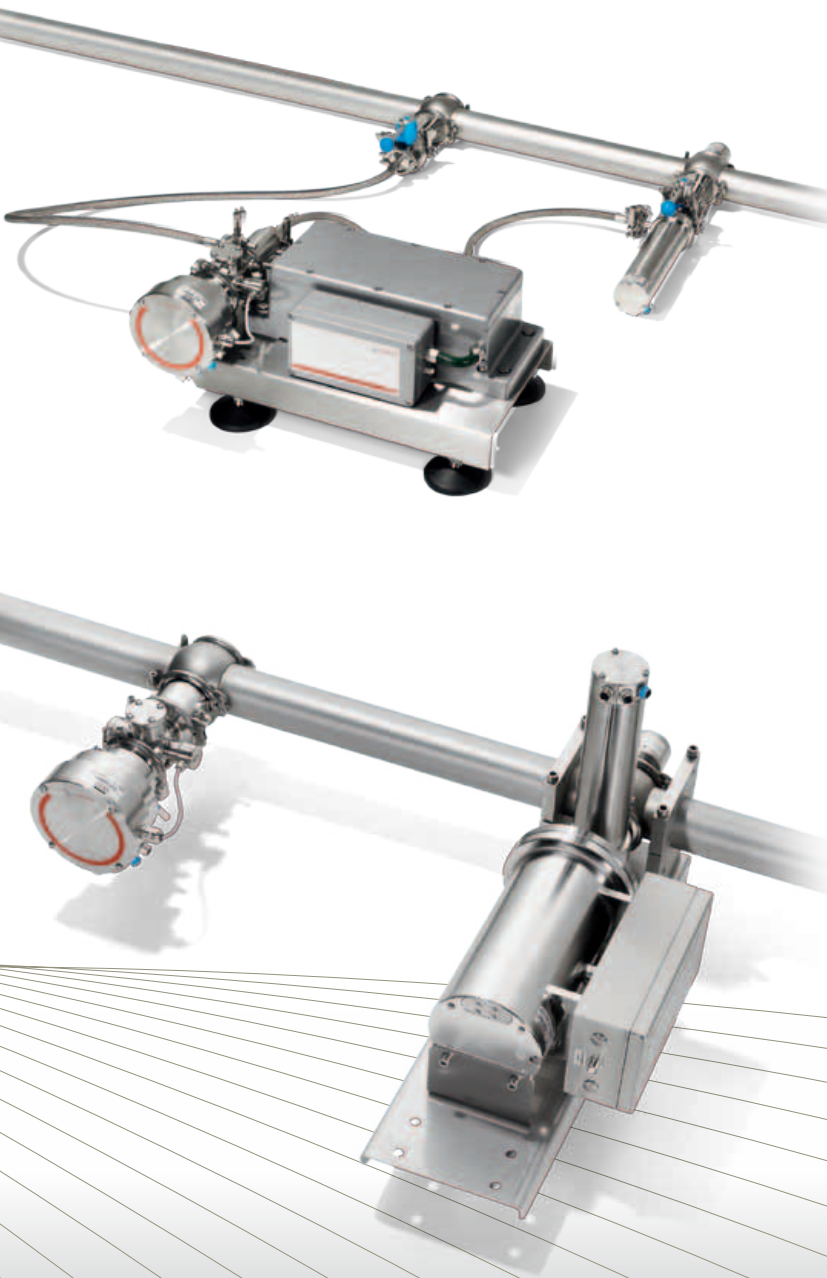
Data Processing and Storage

Davis 5 software for analyzing, recording and storing data

Cobrix 5 can be controlled by a PC running the powerful Davis 5 software for data acquisition and visualization. Place the PC running Davis 5 in your control room or in any convenient position and connect it via a standard Ethernet cable with Cobrix 5. Now production is conveniently under your control.

Remote access via Ethernet

Real-time data can be shown simultaneously on several PCs throughout the plant. This means you can check the values, change the configuration or stop the line from any location within your company network. You can easily scroll back to review earlier production performance as Davis 5 provides unlimited access to recorded data.

Display of trends and statistics

Scroll back to check the beginning of the production run, while Davis 5 continues collecting and storing the current data without any interference. The PC monitor shows production start/stop information and many other selected parameters such as values which are outside the limits, trends and quality-related information (Cp, Cpk and Quality Index).

Davis 5 stores and uses brand-specific settings such as target values and alarm limits for up to 999 beverages.

If target values are exceeded or not reached, Cobrix 5 activates the large, bright warning light and also shows the alarm on the evaluation unit by changing the background color. On Davis 5 the out–of-spec values are easily recognized as they are highlighted on the display and the background also changes color. If the 'filler stop' signal is connected to Cobrix 5, it stops the line if the values are outside a critical limit.

Statistics report

The statistics report gives you the mean value, min./max. and standard deviation, operating times and down times of the production line, bottle/can numbers for out-of-spec product, history of adjustments, etc. At the end of each production run, the statistics report is automatically printed, containing user-specific calculations such as process capability and quality index (Cp, Cpk). All reports can be exported as an Excel or PDF file.

Benefits and Features at a Glance

▶ Monitor real-time data from any PC in the plant

▶ Access for remote operation, maintenance diagnostics and trouble-shooting

▶ Up to 50 different measuring values are recorded per beverage

▶ Product-specific target limits and alarms for up to 999 beverages

▶ Simple, user-friendly adjustment of measurement values

▶ Continuous storing interval down to 1 second possible

▶ Database technology: SQL database

▶ Intuitive handling and easy-to-use software

▶ Traceable documentation of all line stops and adjustments

▶ Concise statistical evaluation of line performance

▶ Individual screen designs

▶ Editing of reports

▶ Excluding of measurement values

Results On Spec

Cobrix 5 provides the following results:

°Brix
Cobrix 5 measures the density and converts this into the °Brix concentration. This online measurement exactly matches the well-established laboratory density method found in Anton Paar's DMA density meters and PBA-B and PBA-S systems.

% Diet
Highly accurate % Diet results are determined by combining precise density measurement with fast and reliable CO_2 measurement.

CO_2 analysis
CO_2 is measured by the new Carbo 510 Smart Sensor built into the Cobrix 5 system. It is faster than other available CO_2 sensors because it uses the Anton Paar impeller method. A measuring cycle of only 15 seconds is fast enough to avoid out-of-spec production.

°Brix with compensation of sugar inversion
For soft drinks which undergo sugar inversion, an additional sound velocity measurement is used to automatically correct the results. The results are given as fresh Brix, inverted Brix and actual Brix.

Alcohol
For beers, wine and alcopops (FABs) Cobrix 5 uses an additional sound velocity measurement to determine % alcohol, density, extract, original extract, real extract, apparent extract, and degree of fermentation.

Optional parameters

A number of other sensors can easily be connected, such as an oxygen sensor, conductivity sensor or color sensor.

Technical Specifications

Sugared soft drinks	
Sugar concentration	0 °Brix to 50 °Brix 0 °Brix to 15 °Brix for products with sugar inversion
Temperature	0 °C to +80 °C 0 °C to +25 °C for products with sugar inversion
Diet drinks	
Concentration	0 % to 150 %
Temperature	0 °C to +25 °C
FABs (alcopops)	
Alcohol	0 % w/w to 16 % w/w (% weight/weight) 0 % v/v to 20 % v/v (% volume/volume at 20 °C)
Sugar concentration	0 °Brix to 20 °Brix
Temperature	0 °C to +25 °C
Beer	
Alcohol	0 % w/w to 12 % w/w (% weight/weight) 0 % v/v to 15 % v/v (% volume/volume at 20 °C)
Real extract	0 °Plato to 12 °Plato
Original extract	0 °Plato to 35 °Plato
Temperature	-3 °C to +25 °C
Wine	
Alcohol	0 % w/w to 16 % w/w (% weight/weight) 0 % v/v to 20 % v/v (% volume/volume at 20 °C)
Extract	0 % w/w to 10 % w/w
Temperature	0 °C to +25 °C
CO_2 concentration	
Carbo 510	0 to 10 Volumes/0 to 20 g/L
Temperature	-5 °C to +60 °C

Accuracy*	Soft drinks: < 0.02 °Brix
	Diet drinks: < 1 %
	FABs (alcopops):
	      Alcohol: 0.04 % w/w
	      Extract/Sugar: 0.04 % w/w
	CO_2: 0.025 Vol. (0.05 g/L)

* Standard values after product-specific adjustment and under stable process conditions

CIP/SIP	120 °C for max. 30 min CIP
Line pressure	max. 10 bar (145 psi)
Degree of protection	IP 65
Power supply	SELV 24 VDC
Power consumption	100 W
mPDS 5 fieldbus board (optional)	Profibus-DP ProfiNet EthernetIP ModBus TCP DeviceNet

Anton Paar

Instruments for:
Density & concentration
measurement

Rheometry & viscometry

Sample preparation

Microwave synthesis

Colloid science

X-ray structure analysis

Refractometry

Polarimetry

High-precision temperature
measurement