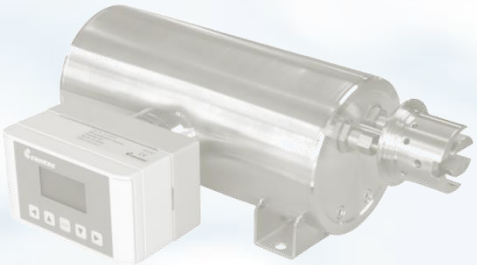
Company Profile



The Company

Market Segments

High Precision Process Sensors

Sensor Control Options

Skid Mounted Process Units

References

Contact Data

© Copyright 2013. All rights reserved.

The Company: Centec Headquarters

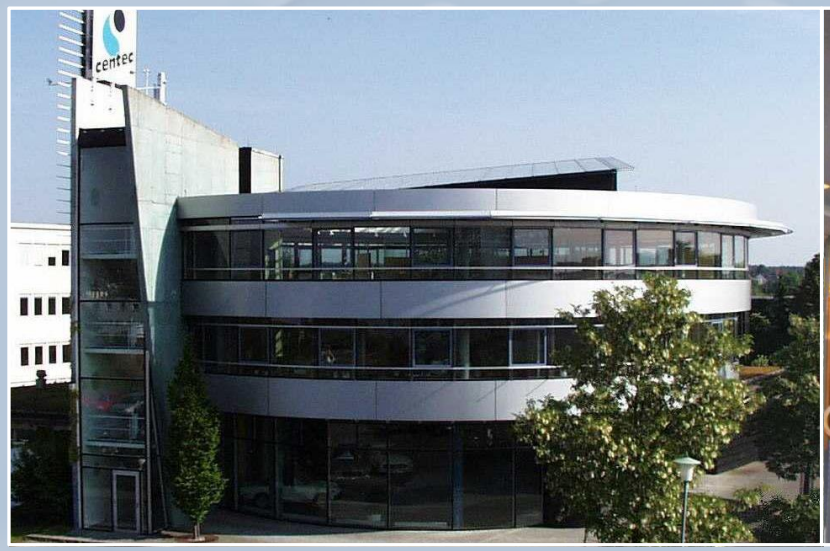
Centec GmbH

Wilhelm-Röntgen-Strasse 10

63477 Maintal

Germany

- General Management
- Global Purchasing, Sales & Service
- Development & Engineering
- Sensor Manufacturing



© Copyright 2013. All rights reserved.

The Company: Czech Subsidiaries

Prague Plant

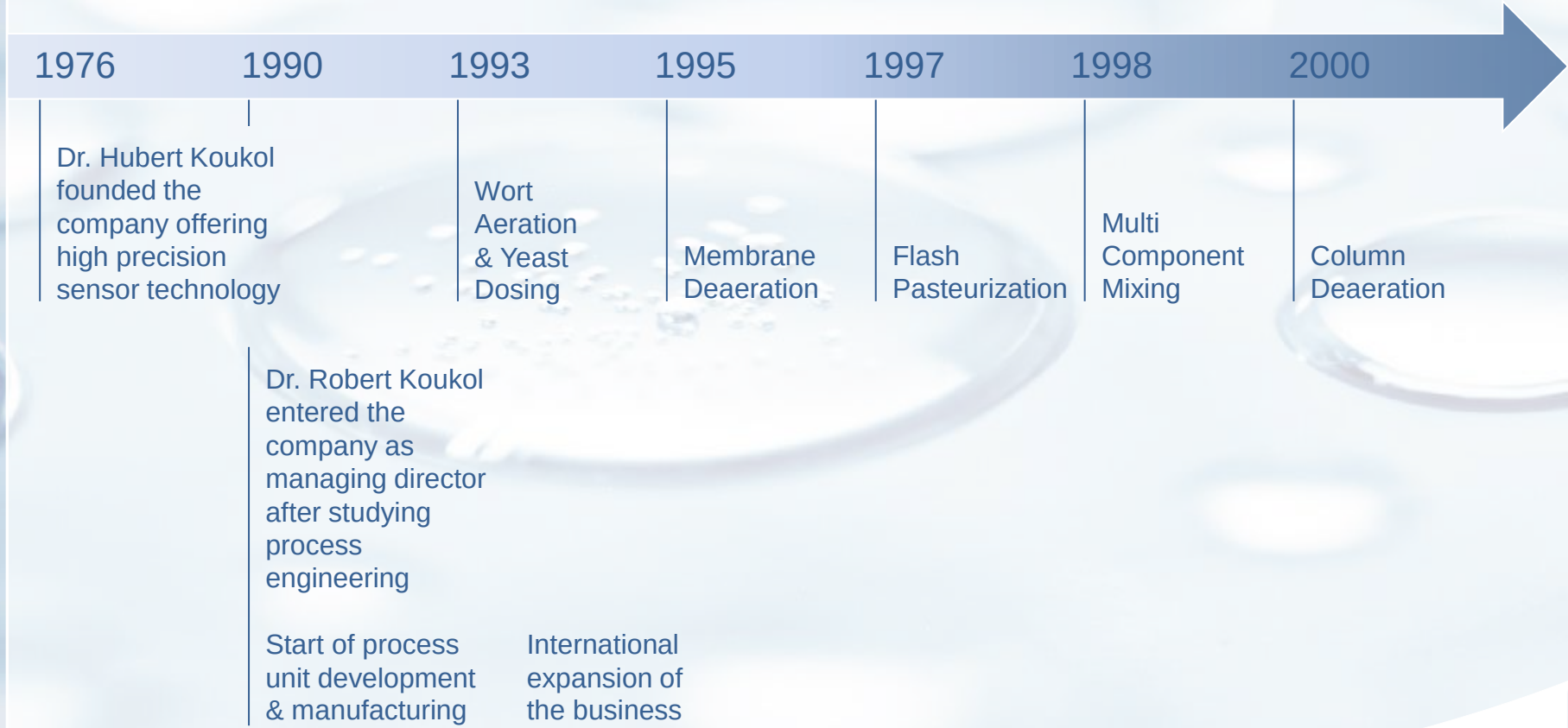
- Detail Engineering
- Automation Engineering
- Switch Cabinet Manufacturing

Horatev Plant

- Unit Manufacturing
- Materials Warehouse
- Factory Acceptance Tests

© Copyright 2013. All rights reserved.

The Company: From the Past to the Future



© Copyright 2013. All rights reserved.

The Company: From the Past to the Future

© Copyright 2013. All rights reserved.

The Company: Global Presence

- Centec Automatica, Czech Republic
- Centec LLC, U.S.A.
- Centec Predstavništvo u Beogradu, Serbia
- Centec RRR Systems & Sensors, India
- Centec América Latina, Brazil

Our own subsidiaries.

A network of distributors.

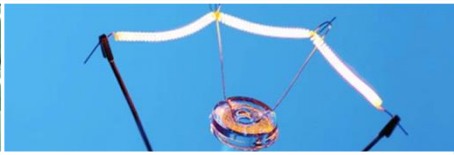
Your benefit.

Global Knowledge. Local Solutions.

Centec.

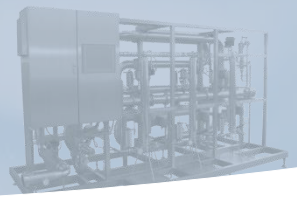
© Copyright 2013. All rights reserved.

Market Segments



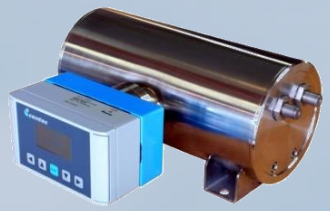
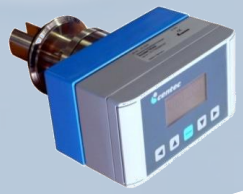
Food & Beverage	Chemical	Pharmaceutical	Energy
Brewery	Chemistry	Pharmaceutics	Solar Energy
Soft Drinks	Petrochemicals	Biotechnology	Biofuel
Wine & Spirits	Electronics		Coal-Fired &
Dairy	Semiconductor		Nuclear Power
Food			Plants

High precision sensors and process units. **From a single source.**



© Copyright 2013. All rights reserved.

High Precision Process Sensors: Overview

Name of Sensor			
OXYTRANS	CARBOTEC	RHOTEC	SONATEC
Measured Parameter			
O_2 Concentration & Temperature	CO_2 Concentration & Temperature	Density & Temperature	Sound Velocity & Temperature
Determined Parameter			
O_2 Concentration	CO_2 Concentration	Concentration	Concentration
Illustration of Sensor			
			

© Copyright 2013. All rights reserved.

High Precision Process Sensors: OXYTRANS

OXYTRANS TR

OXYTRANS M

Description

- Precise and immediate determination of O_2 content in liquids and gases
- Optical principle of measurement
- Lightweight portable device available
- Designed for high-end requirements, e.g. in breweries and power plants
- Hygienic design; CIP-capable
- Easy maintainable

Technical Data

Temp.	-5°C - +98°C
Pressure	max. 12 bar
Enclosure	IP 65
Liquid Phase	
Range I	1 ppb - 2 ppm (± 1 ppb)
Range II	30 ppb - 50 ppm (± 30 ppb)
Gas Phase	
Range I	0 - 4,2 % (± 0,002 %)
Range II	0 - 50 % (± 0,03 %)

© Copyright 2013. All rights reserved.

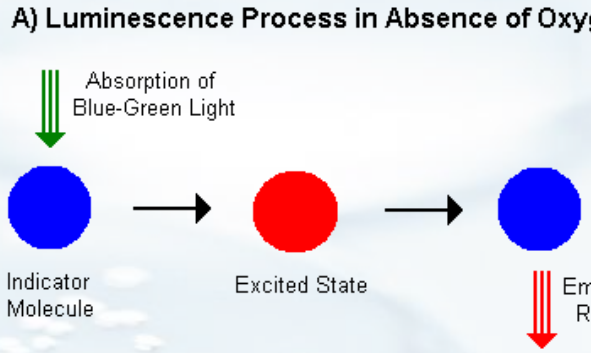
High Precision Process Sensors: OXYTRANS

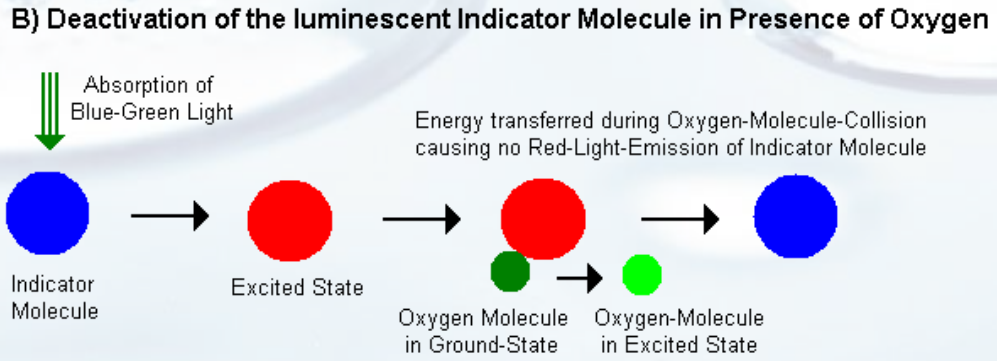
OXYTRANS TR

OXYTRANS M

Measurement Principle

- An indicator layer in the sensor is illuminated with blue-green-light
- The indicator molecules are excited
- They emit a red light which is detected
- If oxygen is present the energy is transferred to the oxygen molecules
- The measured signal decreases linear with the oxygen content





© Copyright 2013. All rights reserved.

High Precision Process Sensors: OXYTRANS

! NEW !

OXYTRANS TR-W

Description

- The perfect way to draw back the sensor for maintenance without stopping production or during CIP with aggressive detergents to protect the optical window
- Retractable unit made of stainless steel
- Manual or pneumatic version
- Hygienic design; CIP-capable
- Easy maintainable

Technical Data

Temp.	-5°C - +98°C
Pressure	max. 12 bar
Enclosure	IP 65
Liquid Phase	
Range I	1 ppb - 2 ppm (± 1 ppb)
Range II	30 ppb - 50 ppm (± 30 ppb)
Gas Phase	
Range I	0 - 4,2 % (± 0,002 %)
Range II	0 - 50 % (± 0,03 %)

© Copyright 2013. All rights reserved.

High Precision Process Sensors: CARBOTEC

CARBOTEC TR-PT

Description

- Precise and immediate determination of dissolved CO_2 content in liquids
- In-line measurement based on abrupt localized decompression
- Applicable e.g. for beer, carbonated soft drinks and sparkling water
- Hygienic design; CIP-capable
- Easy maintainable

Technical Data

Temp.	-10°C - +100°C
Pressure	max. 10 bar
Enclosure	IP 65
Range	0 - 10 g/l
Accuracy	± 0,05 g/l

© Copyright 2013. All rights reserved.

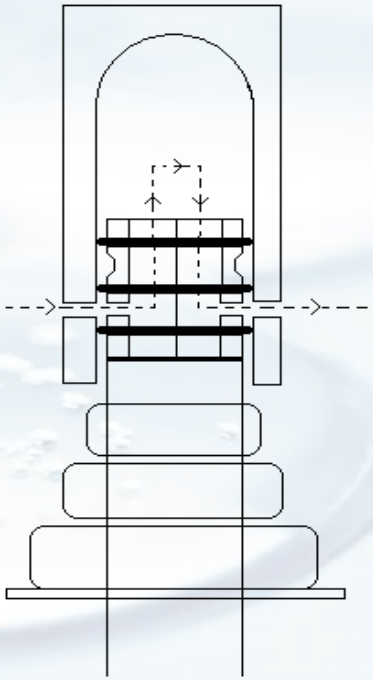
centec

High Precision Process Sensors: CARBOTEC

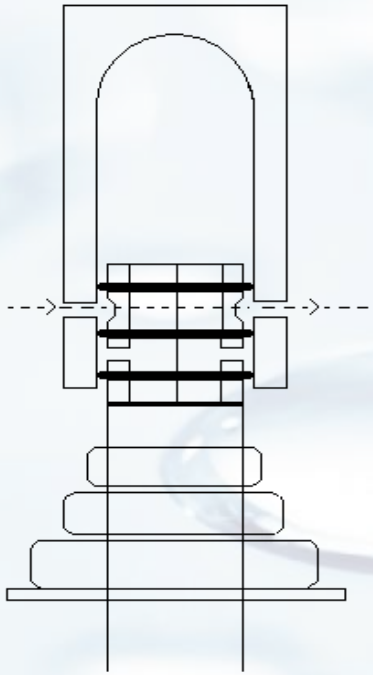
CARBOTEC TR-PT

Measurement Principle

- A CO_2 sample is take from the main stream (pos. A)
- The increase of volume forces the CO_2 out of the liquid into the gas phase (pos. B)
- The resulting pressure in the chamber differs from that of a non-carbonated liquid according to the volume of dissolved CO_2 in the sample



Pos. A: piston up
Inlet and outlet open;
new sample taken;
old sample returned



Pos. B: piston down
Inlet and outlet closed;
volume of chamber increased;
pressure and temperature
taken for CO_2 calculation

© Copyright 2013. All rights reserved.

High Precision Process Sensors: CARBOTEC

! NEW !

CARBOTEC NIR

Description

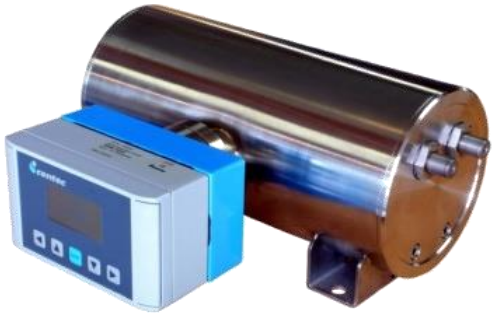
- Precise and immediate determination of dissolved CO_2 content in liquids
- Measurement based on Attenuated Total Reflection (ATR) technology
- No moving parts in the sensor
- Hygienic design; CIP-capable
- Almost maintenance free

Measurement Principle

- Infrared light is reflected at the surface when transmitting a crystal
- The surface is in contact to the carbonated liquid
- CO_2 absorbs the specific wavelength of the transmitting light
- Each reflection reduces the intensity of the light according to the CO_2 content in the liquid

© Copyright 2013. All rights reserved.

High Precision Process Sensors: RHOTEC



RHOTEC

Description

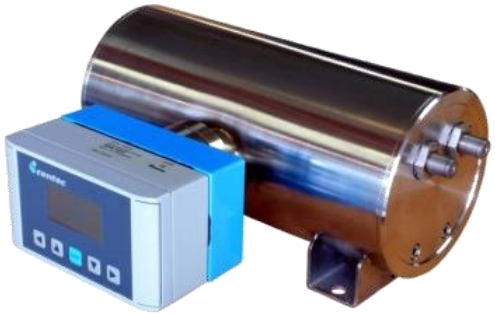
- Highly precise determination of the concentration of a media such as sugar, alcohol, acid or caustic
- Based on measurement of density
- Ideally suited for monitoring the quality of raw materials and final products
- Hygienic design; CIP-capable
- Maintenance free

Technical Data

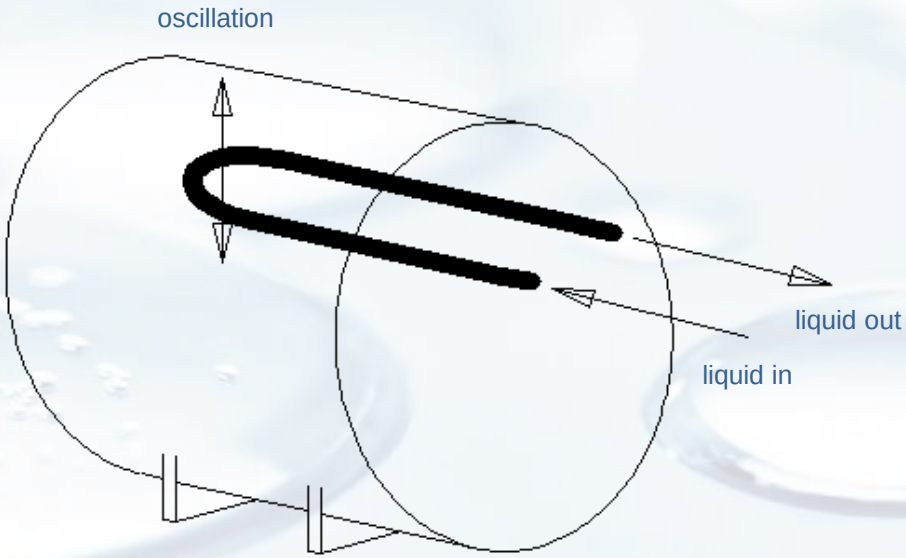
Temp.	-25°C - +125°C
Pressure	max. 50 bar
Enclosure	IP 65
Range	0 - 3 g/cm^3
Accuracy	± 0,0001 g/cm^3

© Copyright 2013. All rights reserved.

High Precision Process Sensors: RHOTEC



RHOTEC



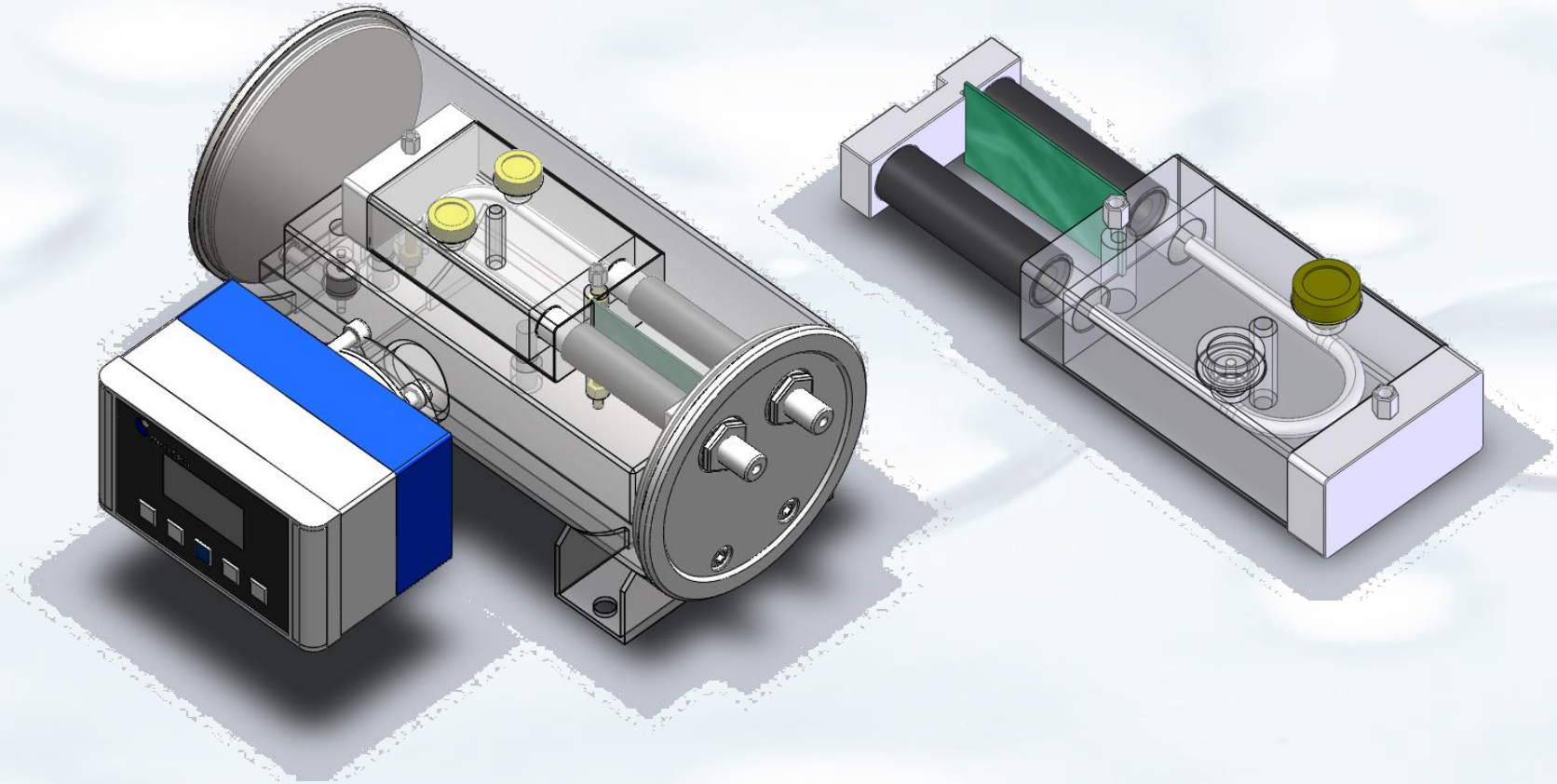
Measurement Principle

- As the liquid flows through an "U"-shaped tube, the oscillating frequency of the tube is measured
- The frequency is affected by any changes in the density of the liquid
- Temperature drifts are automatically compensated by an internal Pt1000 sensor

The tube is electronically excited to oscillate at resonance;
low density medium > high frequency or high tone;
high density medium > low frequency or low tone

© Copyright 2013. All rights reserved.

High Precision Process Sensors: RHOTEC



© Copyright 2013. All rights reserved.

High Precision Process Sensors: RHOTEC

! NEW !

RHOTEC L

Description

- Highly precise determination of concentrations in the laboratory
- Based on measurement of density
- Vol.%, °Brix, °Plato and other scales
- User-friendly 10” touch screen
- Compatible to MS Windows ®
- Various interfaces for data exchange (USB, WLAN, Ethernet)

Technical Data

Temp.	+5°C - +85°C
Pressure	max. 50 bar
Enclosure	IP 65
Range	0 - 3 g/cm³
Accuracy	± 0,0001 g/cm³
Material	glass, PTFE
Sample	approx. 2 ml
Weight	approx. 22 kg

© Copyright 2013. All rights reserved.

High Precision Process Sensors: SONATEC

SONATEC

Description

- Highly precise determination of the concentration of a media such as sugar, alcohol, acid or caustic
- Based on measurement of the speed of sound through a liquid
- Ideally suited for monitoring the quality of raw materials and final products
- Hygienic design; CIP-capable
- Maintenance free

Technical Data

Temp.	-25°C - +125°C
Pressure	max. 16 bar
Enclosure	IP 65
Range	400 m/s - 3.000 m/s
Accuracy	± 0,05 m/s

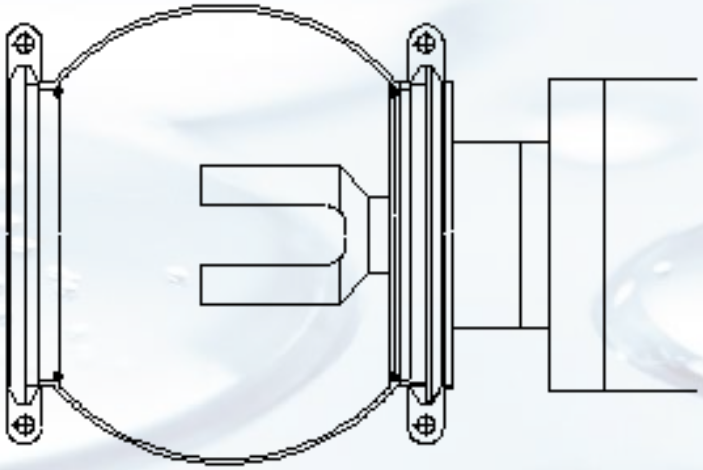
© Copyright 2013. All rights reserved.

High Precision Process Sensors: SONATEC

SONATEC

Measurement Principle

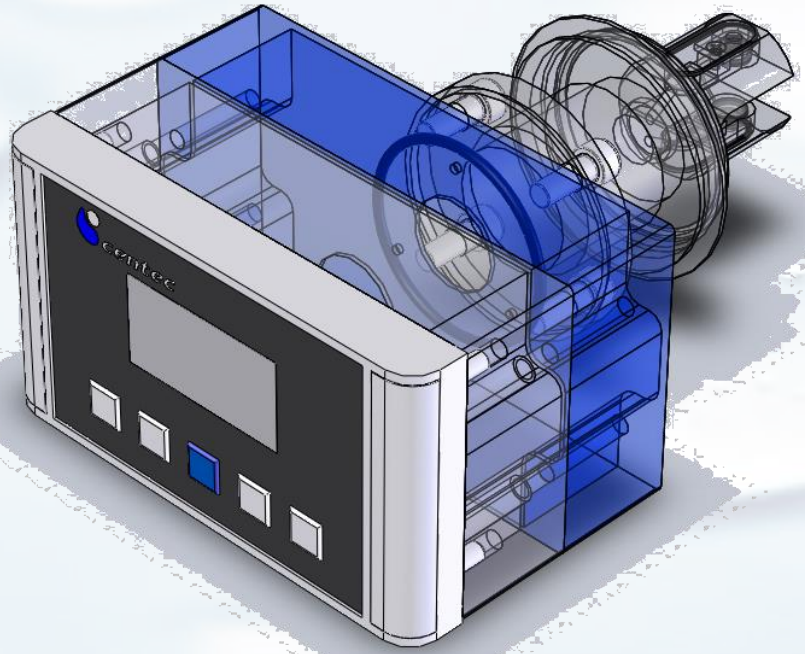
- As the liquid flows through the sensor head, the speed of sound between a transmitter and a receiver is measured
- The sound velocity is affected by any changes in the density of the liquid
- Temperature drifts are automatically compensated by an internal Pt1000 sensor

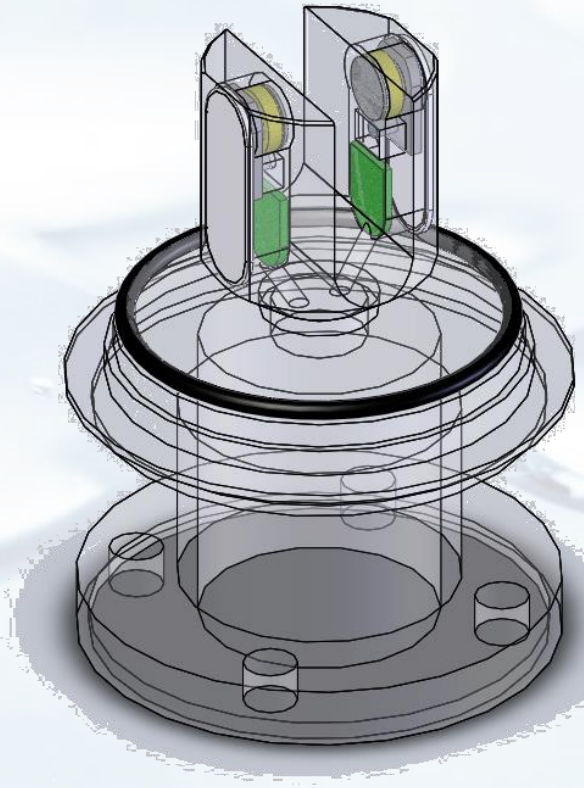


The speed of sound between a transmitter and a receiver is measured; the sound pulse is created by piezo-elements and is moving perpendicular to the product flow

© Copyright 2013. All rights reserved.

High Precision Process Sensors: SONATEC





© Copyright 2013. All rights reserved.

High Precision Process Sensors: COMBITEC

COMBITEC

Description

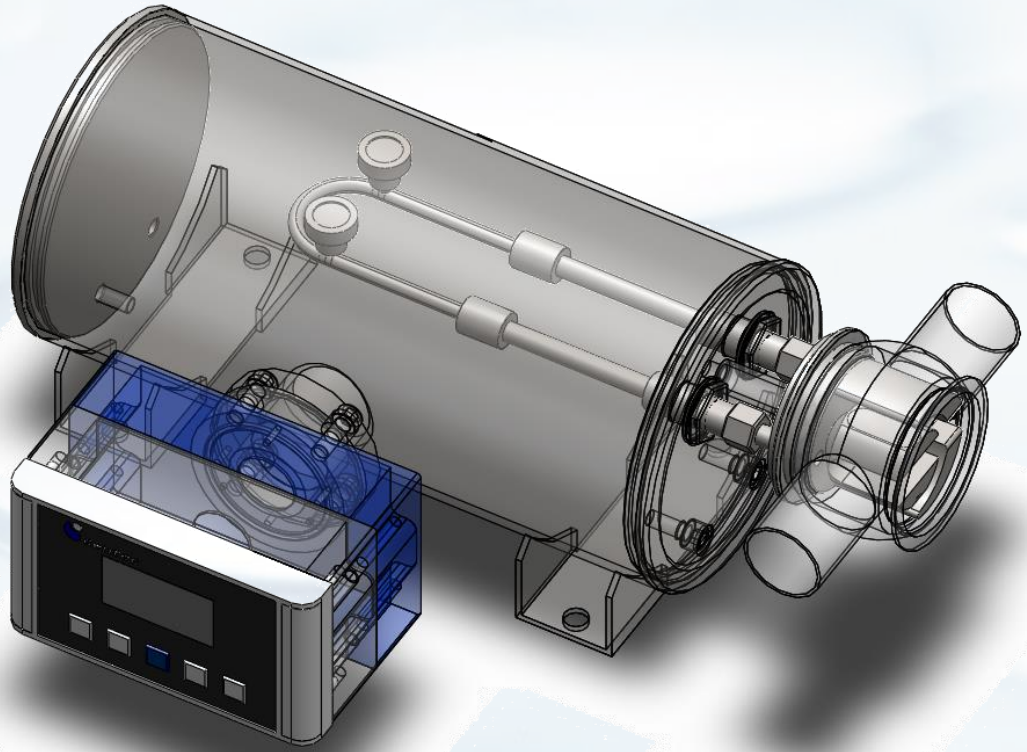
- Highly precise determination of the characteristics of 3-component liquids
- Combination of fluid density sensing and sound velocity measurement
- Largely applied e.g. in the brewing process as BEERMONITOR
- Hygienic design; CIP-capable
- Maintenance free

Technical Data

Temp.	-25°C - +125°C
Pressure	max. 16 bar
Enclosure	IP 65
Density	
Range	0 - 3 g/cm^3
Accuracy	± 0,0001 g/cm^3
Sound Velocity	
Range	400 m/s - 3.000 m/s
Accuracy	± 0,05 m/s

© Copyright 2013. All rights reserved.

High Precision Process Sensors: COMBITEC



© Copyright 2013. All rights reserved.

Sensor Control Options: Overview

Transmitter Version (with local display)

compact unit

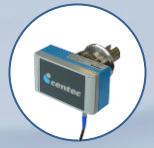
4 - 20 mA (standard)

Profibus (option)

separated by cable

display

sensor



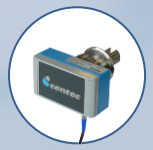
display

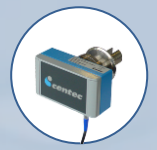
sensor

4 - 20 mA (standard)

Profibus (option)

Sensor (without local display)





sensor

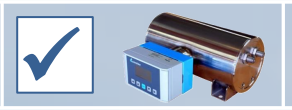
sensor

MCM 68

SIMATIC S7
A. Bradley

© Copyright 2013. All rights reserved.

Sensor Control Options: External Display



Description

- Aiming for increased user-friendliness
- The perfect solution for installations that are difficult to access
- Cable length between sensor and display up to 15 meters
- Applicable for O_2, density and sound velocity sensors
- Two 4 mA - 20 mA outputs

Technical Data

According to the technical data of the corresponding sensors.

© Copyright 2013. All rights reserved.

Sensor Control Options: MCM 68

Technical Data

Memory	512 kByte SRAM
Temp.	-20°C - +60°C
Enclosure	IP 65
Display	5,7” QVGA 320 x 240 pixel 16 Bit colours
Weight	approx. 1,0 kg

MCM 68 can be connected to 4 sensors.

Description

- Simultaneous evaluation of the output signals of several different sensors
- Data is locally displayed or transmitted to process control system
- Applicable for O_2, CO_2, density, sound velocity, pH, colour and other sensors
- User-friendly 5,7” touch screen
- S7-compatible; Profibus interface

© Copyright 2013. All rights reserved.

Skid Mounted Process Units: Project Management

© Copyright 2013. All rights reserved.

Skid Mounted Process Units: Overview

Core Competences	Units
Water Purification	Depending on the raw water quality (water analysis) and the quality standards expected of the purified water, Centec provides the appropriate water treatment technologies; from the desalination of seawater to the production of WFI.
Deaeration	Oxygen is removed from food and beverages in order to improve product quality and shelf life; a low oxygen content in boiler water avoids serious corrosion damages.
Product Preparation; Carbonation and Nitrogenation	Automated process skids by Centec are applied in all steps of the brewing process and for manufacturing of e.g. wine, soft drinks, mineral water and various dairy products; in many industries there is a large number of applications that require the injection of gases.

© Copyright 2013. All rights reserved.

Skid Mounted Process Units: Overview

Core Competences	Units	
Water Purification	DeSaTec	Seawater Desalination
	IONTEC	Water Softening & Demineralization
	REVOTEC	Reverse Osmosis
	STILL	WFI Distillation
Deaeration	DGS	Membrane Deaeration
	DeGaS	Column Deaeration
	VeGaS	Vacuum Deaeration
Product Preparation; Carbonation and Nitrogenation	Standardizer	Milk Standardization
	EASYOMER	Hops Pre-Isomerization
	Wort Aerator	Aeration of Wort
	Yeast Pitch	Pitching of Yeast
	Carbonator	Carbonation

© Copyright 2013. All rights reserved.

Skid Mounted Process Units: Overview

Core Competences	Units
Product Preparation; Carbonation and Nitrogenation	CO_2 is added for carbonation of beverages such as beer, soft drinks and sparkling water; nitrogenation enhances the head stability of some beer.
Mixing and Dosing	In many industries liquids need to me mixed, e.g. deaerated water with syrup or water with acids and caustics.
Pasteurization, Cleaning and Sterilization	Centec technology is applied for pasteurizing beverages, food and pharmaceutical products; we are a specialist for cleaning and sterilization concepts for product wetted components and complete process plants.
Dealcoholization	Our systems produce alcohol-free products and rectified alcohol.

© Copyright 2013. All rights reserved.

Skid Mounted Process Units: Overview

Core Competences	Units	
Product Preparation; Carbonation and Nitrogenation	DeCarbonator Nitrogenator Blender	Carbonation & Decarbonation Nitrogenation High Gravity Blending
Mixing and Dosing	MultiMixer ADoS	Multi Component Mixing Additive Dosing
Pasteurization, Cleaning and Sterilization	INTRAP FlashPasto CIP & SIP RDE	Product Sterile Filtration Flash Pasteurization Cleaning- & Sterilization-in-Place Pure Steam Generation
Dealcoholization	DeAlcoTec	Dealcoholization

© Copyright 2013. All rights reserved.

DeSaTec: Desalination of Seawater and Brackish Water

Description

- Production of drinking water according to WHO standards or process water for industry
- Applicable e.g. for hotels, ships, beverage manufacturers, chemical plants etc.
- Based on reverse osmosis with optional disinfection and mineralization
- Easy to install and operate
- Low energy consumption

Technical Data

Capacity	10 – 15.000 m^3/day
TDS in	up to 4,5 % (seawater)
	up to 1,0 % (brackish water)
Temp.	+10°C - +30°C
Pressure	min. 2 - 3 bar
TDS out	max. 0,05 %

© Copyright 2013. All rights reserved.

IONTEC: Water Softening & Demineralization

Description

- For softening water, Ca^{++} and Mg^{++} in the water are exchanged for the Na^{+} of the cation exchange resin
- For demineralization, the water passes cation and anion resin with H^{+} and OH^{-}
- Once most ions of the resin have been replaced, the resin is exhausted and the system needs to be regenerated
- Mixed bed units are available

Technical Data

Capacity	up to 1.500 hl/h (500 m^3/h)
Temp.	+2°C - +60°C
Pressure	0 - 8 bar
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404 / 1.4435
	epoxy / PP / PE
PLC	SIMATIC S7

© Copyright 2013. All rights reserved.

REVOTEC: Reverse Osmosis

Technical Data

Capacity	up to 1.500 hl/h (150 m^3/h)
Temp.	+2°C - +60°C
Pressure	0 - 8 bar
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404 / 1.4435
	epoxy / PP / PE
PLC	SIMATIC S7

Description

- Water is purified by passing through a semi-permeable membrane at high pressure reversing the natural osmosis
- With reverse osmosis all suspended solids, bacteria, viruses, salts and ions remain in the retentate
- Membranes with larger pores allow the passage of various larger particles

© Copyright 2013. All rights reserved.

STILL: WFI Distillation

Technical Data

Capacity	up to 20 m^3/h
Columns	up to 8
WFI Temp.	80°C
Bacteria	< 10 CFU/100 ml
Endotoxin	< 0,25 EU/ml
Conduct.	< 1,1 µS/cm (20°C)
Material	1.4404 / 1.4435
PLC	SIMATIC S7

Description

- Water for Injection (WFI) is required to manufacture parenteral drugs
- The unit consists of several distillation columns producing pyrogen-free steam
- Each column is heated by steam produced in the previous one; for the first column plant steam is used for heating
- The steam condenses into WFI and is further processed

© Copyright 2013. All rights reserved.

DGS: Membrane Deaeration

Technical Data

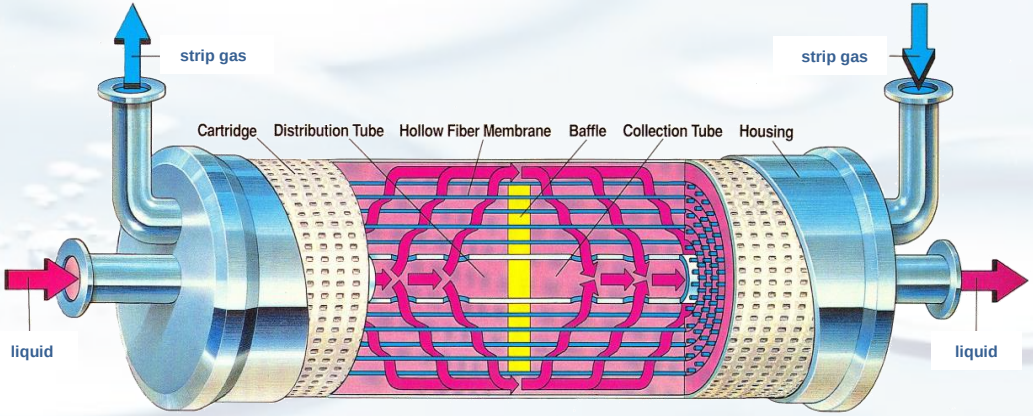
Capacity	up to 2.000 hl/h (500 m^3/h)
O_2	< 10 ppb residual
Temp.	+2°C - +45°C
Pressure	0 - 6 bar
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404 / 1.4435
Membrane	PP / polyolefin / epoxy
PLC	SIMATIC S7

Description

- Automated and highly efficient deaeration of water applying hollow fibre membranes
- Cold water flows along the outer side of the membranes; through their inner side and in the opposite direction passes under vacuum the strip gas CO_2 or N_2
- The partial pressure difference between both sides forces the O_2 out of the water into the gas phase

© Copyright 2013. All rights reserved.

DGS: Membrane Deaeration



Functionality

- According to Henry's Law, the gas solubility in a liquid decreases as the partial pressure of this gas above the liquid decreases
- Vacuum and/or strip gas lead to a diffusion of O_2 from the liquid phase into the gas phase

A compact bundle of hollow fibres maximises the surface for the gas exchange between the water and the vacuum and/or strip gas inside the membranes

© Copyright 2013. All rights reserved.

DeGaS-Cold: Column Deaeration

Description

- Automated deaeration of water
- Water at ambient temperature runs top down a column
- Strip gas CO_2 or N_2 flowing in the opposite direction removes the O_2
- The partial pressure difference between both sides forces the O_2 to percolate
- The O_2 leaves the column at its top together with the strip gas

Technical Data

Capacity	up to 2.000 hl/h (200 m^3/h)
O_2	< 10 ppb residual
Temp.	ambient temperature
Pressure	0 - 8 bar
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404
Cooling	glycol, ice water, ammonia
PLC	SIMATIC S7

© Copyright 2013. All rights reserved.

DeGaS-Hot: Column Deaeration

Description

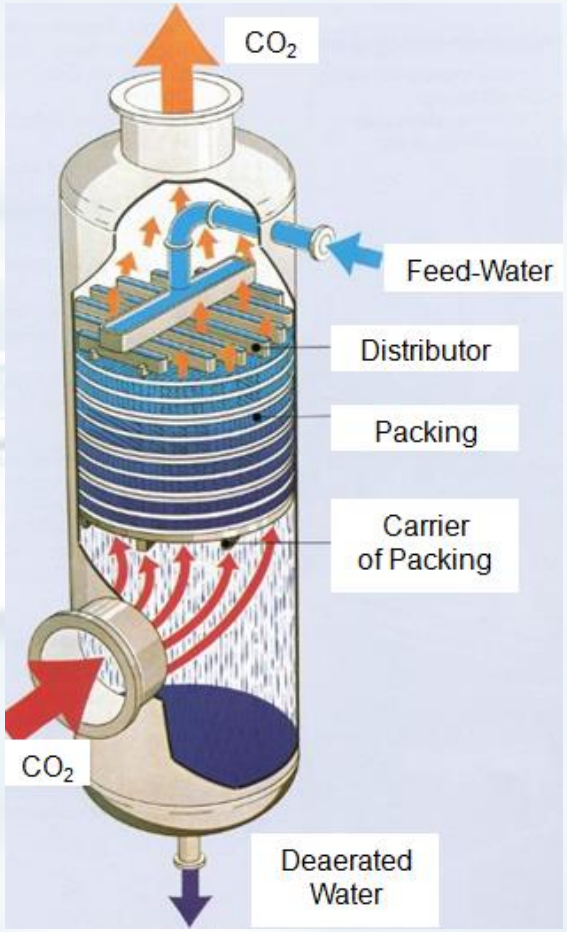
- Automated deaeration of water
- Water heated to about 75°C runs top down a column
- Strip gas CO_2 or N_2 flowing in the opposite direction removes the O_2
- The partial pressure difference between both sides forces the O_2 to percolate
- The O_2 leaves the column at its top together with the strip gas

Technical Data

Capacity	up to 2.000 hl/h (200 m^3/h)
O_2	< 10 ppb residual
Temp.	+8°C - 95°C
Pressure	0 - 8 bar
Cleaning	CIP up to +95°C
Material	1.4301 / 1.4404
Heating	steam
Cooling	glycol, ice water, ammonia
PLC	SIMATIC S7

© Copyright 2013. All rights reserved.

DeGaS-Cold / Hot: Column Deaeration



Containing several layers of highly efficient packings, the column is designed to maximise the surface for the gas exchange between the water and CO_2 or N_2

Functionality

- According to Henry's Law, the gas solubility in a liquid decreases as the partial pressure of this gas above the liquid decreases
- Vacuum and/or strip gas lead to a diffusion of O_2 from the liquid phase into the gas phase

© Copyright 2013. All rights reserved.

VeGaS: Vacuum Deaeration

Technical Data

Capacity	up to 1.500 hl/h (180 m^3/h)
O_2	depending on product
Temp.	+2°C - +85°C
Pressure	0 - 8 bar
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404
PLC	SIMATIC S7

Description

- Deaeration by spraying liquid products into a vacuum vessel
- Applicable e.g. for ketchup or soy milk
- The level of vacuum is adjusted based on the required O_2, CO_2 or N_2 content, temperature and product characteristics
- The deaerated product falls to the bottom of the vessel from where it is further processed

© Copyright 2013. All rights reserved.

Standardizer: Milk Standardization

Description

- Raw or pasteurized milk is separated into skimmed milk and cream by a separator
- Part of the cream is added to the skimmed milk in exact portions in order to reach a precisely defined fat content
- The milk fat content is permanently and automatically measured and controlled
- Any variations of the fat content of the standardized milk are avoided

Technical Data

Capacity	up to 60.000 l/h
Fat	0 - 5 % (milk)
	18 - 50 % (cream)
Accuracy	± 0,05 %
Material	1.4301 / 1.4404
PLC	SIMATIC S7

© Copyright 2013. All rights reserved.

EASYOMER: Hops Pre-Isomerization

Description

- Optimized use of hops (natural hops, pellets and extract) due to increased yield of bitter substances
- Achieved by isomerization of the hops solution applying new, scientifically proved parameters
- Hops reduction up to 30 % possible
- In compliance with the “German Purity Law” and without effect on taste

Technical Data

Capacity	min. 200.000 hl per year
Hops	natural, pellets, extract
Reduction	up to 30 %
Pressure	0 - 10 bar
Cleaning	CIP up to +125°C
Material	1.4301 / 1.4404
PLC	SIMATIC S7

© Copyright 2013. All rights reserved.

Wort Aerator: Aeration of Wort

Description

- O_2 is required for yeast growth and the establishment of a yeast culture
- Accurate and continuous aeration of wort due to highly precise optical O_2 measurement and reliable flow meters
- A Vortex injector automatically delivers the right amount of sterile O_2 that mixes homogeneously with the wort
- Integrated yeast dosing as option

Technical Data

Capacity	up to 3.000 hl/h
Range O_2	0 - 50 ppm
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404
PLC	SIMATIC S7

© Copyright 2013. All rights reserved.

YeastPitch: Pitching of Yeast

Technical Data

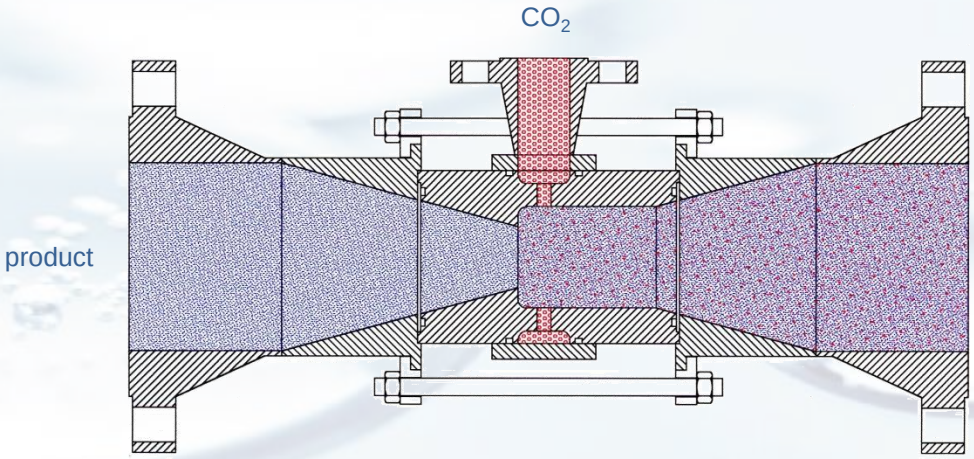
Capacity	up to 3.000 hl/h
Yeast Cells	0 - 100 Mio/cm^3
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404
PLC	SIMATIC S7

Description

- During fermentation the yeast converts sugars into alcohol and CO_2
- Homogeneous spread of yeast into wort
- Wort and yeast are blended together in the mixing nozzle; the process is controlled by a comparison of either
  - the flow rates of yeast and wort or
  - the turbidity before and after blending
- Integrated wort aeration as option

© Copyright 2013. All rights reserved.

Vortex Injector



Functionality

- The nozzle is specifically designed according to the process parameters
- Gas can be injected from several direction and splits into fine bubbles
- Extremely homogeneous mixture
- Time and space for gas binding are minimized

The increase of the diameter after the injection of e.g. CO_2 results in a reduction of the flow velocity and thus high turbulence; the turbulence splits the CO_2 into very fine bubbles and leads to a very fast and homogeneous mixture of liquid and gas

© Copyright 2013. All rights reserved.

Carbonator: Carbonation

Description

- Continuous carbonation of beverages and other liquid media
- A specifically designed Vortex injector is applied for adding CO_2 into the stream
- Very homogeneous mixture resulting from extremely fine gas bubbles
- The gas content is permanently and automatically measured and controlled

Technical Data

Capacity	up to 2.000 hl/h
CO_2	0 - 10 g/l dissolved
Temp.	+2°C - +50°C
Pressure	1 - 10 bar
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404
PLC	SIMATIC S7

© Copyright 2013. All rights reserved.

DeCarbonator: Carbonation and Decarbonation

Description

- Continuous carbonation, decarbonation and deoxygenation of beverages
- Hollow fibre membranes enable the gas transmission into or out of the liquid
- Homogeneous gas exchange due to microscopic pores in the membrane
- The gas content is permanently and automatically measured and controlled

Technical Data

Capacity	up to 1.500 hl/h
CO_2	0 - 10 g/l dissolved
Temp.	+2°C - +20°C
Pressure	0 - 6 bar
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404
PLC	SIMATIC S7

© Copyright 2013. All rights reserved.

Nitrogenator: Nitrogenation

Technical Data

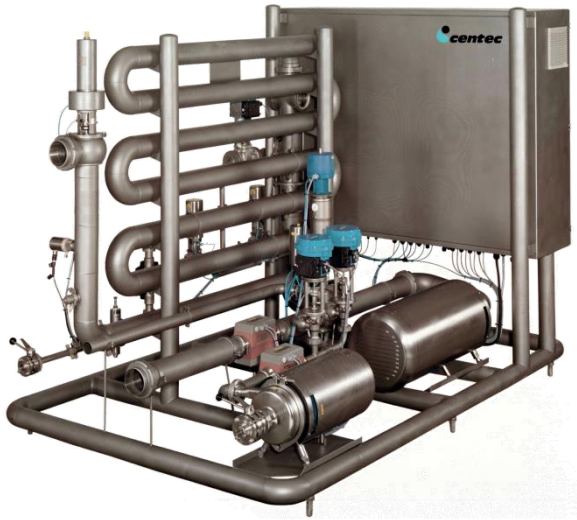
Capacity	up to 1.500 hl/h
N_2	0 - 100 ppm dissolved
Temp.	+2°C - +20°C
Pressure	1 - 10 bar (Vortex injector)
	0 - 6 bar (membranes)
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404
PLC	SIMATIC S7

Description

- Continuous nitrogenation of beverages
- Based on hollow fibre membranes or a specifically designed Vortex injector
- Very homogeneous injection of N_2 due to the applied technologies
- The gas content is permanently and automatically measured and controlled
- Integrated carbonation as option

© Copyright 2013. All rights reserved.

Blender: High Gravity Blending



Technical Data

Capacity	up to 2.000 hl/h
CO_2	0 - 10 g/l dissolved
Orig. Grav.	0 - 20°P (± 0,05°P)
Alcohol	0 - 10 vol.% (± 0,03 vol.%)
Temp.	+2°C - +30°C
Pressure	0 - 10 bar
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404
PLC	SIMATIC S7

Description

- Certain high gravity beverages need to be blended with deaerated water to achieve the desired alcohol content
- Other minor ingredients like flavors can be added at the same time
- Applying in-line sensor technology, the process is highly precise
- Integrated carbonation as option (Carboblender)

© Copyright 2013. All rights reserved.

centec

MultiMixer: Multi Component Mixing

Description

- Accurate and continuous blending of two or more steams of liquids
- Allowing high flexibility in manufacturing
- Applicable in various industries for mixing of e.g. water with syrup or with acids or caustics
- Densities and concentrations are permanently and automatically measured and controlled

Technical Data

Capacity	up to 1.500 hl/h (150 m^3/h)
Temp.	+2°C - +85°C
Pressure	0 - 10 bar
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404 / 1.4435
PLC	SIMATIC S7

© Copyright 2013. All rights reserved.

ADoS: Additive Dosing

Description

- Accurate and continuous adding of ingredients into a main liquid stream
- Allowing high flexibility in manufacturing
- Applicable in various industries for adding minor amounts of e.g. flavours, sweeterers, vitamins, colours
- Densities and concentrations are permanently and automatically measured and controlled

Technical Data

Capacity	up to 1.500 hl/h (150 m^3/h)
Temp.	+2°C - +85°C
Pressure	0 - 20 bar
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404 / 1.4435
PLC	SIMATIC S7

© Copyright 2013. All rights reserved.

INTRAP: Product Sterile Filtration

Description

- Single- or multi-stage system containing back flushable cartridge filters with specific pore sizes
- The product is sterilized by removing micro-organisms and bacteria
- Differential pressure detection can be used to monitor the condition of the filter and to enable back-flushing

Technical Data

Capacity	up to 1.500 hl/h (150 m^3/h)
Particles	0,1 µm (min. size)
Temp.	+2°C - +85°C
Pressure	2 - 8 bar
Cleaning	CIP up to +85°C
Material	1.4301 / 1.4404 / 1.4435

© Copyright 2013. All rights reserved.

FlashPasto: Flash Pasteurization

Technical Data

Capacity	up to 1.000 hl/h (60 m^3/h)
Range PU's	10 - 500
Past. Temp.	+68°C - +165°C
Pressure	1 bar - 25 bar
Cleaning	CIP up to +125°C
Material	1.4301 / 1.4404 / 1.4435
PLC	SIMATIC S7

Description

- Automated heat treatment of products to eliminate bacteria without injuring their colour, taste and effectiveness
- Applicable for e.g. beer, soft drinks, dairy and pharmaceutical products for improved quality and shelf life
- Optimized regarding the level of heat input, energy recovery and cooling
- Buffer tank as option in front of filler

© Copyright 2013. All rights reserved.

CIP & SIP: Cleaning- & Sterilization-in-Place

Technical Data

Capacity	customized
Media	caustic, acid, steam
Temp.	+2°C - +85°C (liquid)
	+2°C - +165°C (steam)
Pressure	0 - 7 bar
Material	1.4301 / 1.4404 / 1.4435
PLC	SIMATIC S7

Description

- Efficient cleaning across a wide range of processes in various industries
- Sterilization with chemicals or steam may be required after the cleaning process
- Small mobile skids through to multi tank channel systems for large plants
- Lost CIP and batch CIP units available
- Optimum cleaning performance at lowest consumption of resources

© Copyright 2013. All rights reserved.

centec

RDE: Pure Steam Generation

Technical Data

Capacity	up to 15.000 kg/h
Steam	up to 165°C
Bacteria	< 10 CFU/100 ml
Endotoxin	< 0,25 EU/ml
Material	1.4404 / 1.4435
PLC	SIMATIC S7

Description

- Applicable for sterilization of equipment
- A tubular heat exchanger produces steam that enters a separation column above
- Since any droplets remain in the lower segment of the column, the steam is absolutely pyrogen-free
- When condensed, the steam becomes WFI water quality

© Copyright 2013. All rights reserved.

DeAlcoTec: Dealcoholization

Technical Data

Capacity	up to 200 hl/h
Alcohol	0,01 - 0,4 vol.% residual up to 90 vol.% rectified
Temp.	+8°C - +95°C
Pressure	0 - 8 bar
Material	1.4301 / 1.4404
Heating	steam
Cooling	glycol, ice water, ammonia
PLC	SIMATIC S7

Description

- After gentle pre-heating, the product runs top down an evaporation column
- Exhaust vapor flowing in the opposite direction remove the alcohol; the resulting alcohol-free product is chilled
- The vapor can be concentrated and condensed to deliver sellable alcohol
- The aroma from the vapor can be recycled to the product

© Copyright 2013. All rights reserved.

References

Food & Beverage	Chemical	Pharmaceutical	Energy
Coca Cola	AMD	Aventis	BS Energy
Gerolsteiner	BASF	DSM	E-ON
AB InBev	Bayer	Pharmaplan	ENBW
BBH Baltika	Evonik Degussa	Fresenius	EWE
Bitburger	Hexion	Roche	MVV
Efes	Kali + Salz		RWE
Heineken	Rhodia		
Modelo	Solvay		
SAB Miller			

© Copyright 2013. All rights reserved.

Contact Data

Centec GmbH

Wilhelm-Röntgen-Strasse 10

63477 Maintal

Germany

Dr. Stefan Gärtner

Business Development Manager

T + 49 (0) 6181 1878-39

F + 49 (0) 6181 1878-50

E Stefan.Gaertner@centec.de

© Copyright 2013. All rights reserved.