

Protec**nica**  
Solutions

 **centec**

**ABER**  
TRUSTED TECHNOLOGY

# Instruments & Process Sensors for Breweries

*"helping to produce  
fabulous beer and cider  
every time!"*



**Protecnic Solutions Ltd**  
*Beverage Process Technology*

Protecnic Solutions Ltd are UK distributors for CENTEC GmbH process sensors and ABER Instruments. We are also the Technical & Sales Representatives for CENTEC GmbH systems and BREWERY ADVICE BV beverage concentrates.



**ABER Instruments Ltd** are the market leader in their specialist field. Based in Aberystwyth, ABER design and manufacture innovative instruments to measure the concentration of live yeast cells in solution for both yeast process control and laboratory analysis.

*Many of the world's major breweries use ABER*



**CENTEC GmbH** specialise in the design and manufacture of product sensors and skid mounted systems. Beer, Cider and Beverage production are key global markets. From their head office near Frankfurt, Germany, sensors are manufactured. CENTEC produce their process skids in the Czech Republic and USA.



**BREWERY ADVICE BV**, a range of innovative alcohol-free custom concentrated lagers, beers, ales, stouts and ciders. These natural concentrates can be diluted, blended and carbonated as required to produce a wide range of adult drinks, either with or without the addition of alcohol. Low cost, highly flexible production.



### **Process Sensors**

*by ABER Instruments Ltd and Centec GmbH*

- Live Yeast Cell Concentration
- Oxygen in Water, DAL, Wort, Beer, Cider
- Oxygen in Waste CO<sub>2</sub> Gas
- Wort Concentration
- Alcohol Content of Beer & Cider
- Liquid Density / Specific Gravity
- Dissolved CO<sub>2</sub> in Carbonated Drinks

### **Lab. Analysers & Portable Instruments**

*by ABER Instruments Ltd and Centec GmbH*

- Bench-top Live Yeast Analysers
- Portable Oxygen Meter & Datalogger

*Please ask for our brewery systems brochure*

### **Skid Mounted Process Systems**

*by Centec GmbH*

- Wort Cooling & Wort Aeration
- Precision Yeast Pitching
- Minor Additions Dosing
- Water Treatment & Purification
- Water Deaeration 'DAL Plants'
- Dealcoholisation Plants
- Multi-Stream Blending
- High Gravity Beer Blending
- In-Line Carbonation of Beer and Cider
- In-Line Nitrogenation of Beer
- Flash Pasteurisation
- Cleaning in Place 'CIP'
- 'Direct to Filler' Technology
- Process Software & Automation

ABER Instruments use a radio frequency field to constantly monitor yeast suspensions. Small changes in capacitance vary in direct proportion to the concentration of live yeast cells. Only live cells are detected, dead cells and other solids are ignored.



**COMPACT**  
*New Robust In-Line  
Yeast Monitor*



**ADAPT**  
*In-Line  
Yeast Monitor*

Brewery applications include:

- Accurate Yeast Pitching
- Fermentation Monitoring
- Improved Yeast Cropping
- Reliable Yeast Propagation
- Final Product Monitoring

**Operating Range:** Approx. 0.5 to 70% live spun solids or  $20 \times 10^6$  to  $5 \times 10^9$  live cells/ml for typical 6  $\mu$ m cells

**Output:** Local HMI & 4-20mA signal



**V350**  
*Touch screen  
display, HMI  
& transmitter*



Watch Youtube Video

*"Consistent brews  
every-time, superb  
fermentation control"*

*Used by AB InBev,  
SAB Miller, Heineken,  
Diageo, Molson Coors  
and many others*

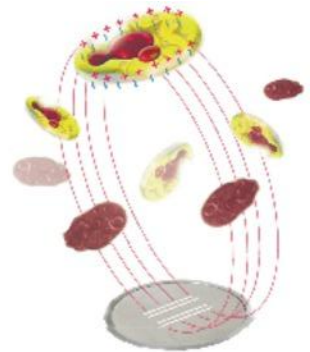


**COMPACT LYA**  
**Lab Yeast Analysers**  
by ABER Instruments Ltd

**ABER Compact Lab Yeast Analysers** use the same well established principle as the Compact In-Line Yeast Monitors. A quick and accurate capacitance measurement reveals the presence of live yeast cells in the 40 ml sample. The viable cell concentration is calculated in direct proportion to the capacitance value and displayed on the instrument's screen.



Watch Youtube Video



**Working Range:** as Compact In-Line  
**Sample volume:** 40 ml

When calibrated,  
CLYA's memory  
can store the  
characteristics of  
20 different yeast  
strains



**CLYA Yeast Analyser**  
*Rapid Bench-Top Units*

*"Easy to use, quick  
and accurate results  
every time"*

# OXYTRANS TR

## In-Line Oxygen Sensors

by Centec GmbH

Using the latest in-line optical window technology, Centec oxygen sensors accurately and reliably measure oxygen levels in many liquids and gases.

OXYTRANS measures O<sub>2</sub> levels in:

- **Wort** - To optimise yeast activity
  - **DAL** - To check deaerator performance
  - **Beers & Ciders** - To maximise quality
  - Recovered **CO<sub>2</sub>** - To reduce waste
- 
- Accurate measurement from ppb to ppm
  - Operates reliably over a wide temperature range
  - Temperature compensation for accurate results
  - Standalone operation - *easy just connect 24 V DC!*
  - Robust IP65 unit with local LCD display.
  - Standard analogue and digital I/O connections
  - Programmable for more than 100 recipes, each with selectable alarm points for manual use or automation
  - Option internal Profibus DP card
  - Suitable for most standard CIP and SIP regimes
  - Retractable version with CIP facility, for automated pneumatic or manual operation



**Oxytrans TR-W**  
In-Line & Retractable



**Oxytrans TR**  
In-Line



**OXYTRANS M**  
*Portable Oxygen Meters*  
by Centec GmbH



Robust and accurate, hand-held portable instruments for measuring oxygen levels in a variety of applications around the brewery

A very useful tool for quickly checking:

- Other O<sub>2</sub> monitoring instruments
  - Process components, systems and pipes
  - O<sub>2</sub> levels in Beer, Beverages and DAL
  - Site utilities e.g. boiler feed water
- 
- Rapid response & highly accurate
  - A choice of operating ranges
  - Operates across a wide temperature range
  - Fully Portable, just 1.7 kg
  - Includes a large Li-Ion battery, international charger (incl. UK plug), leads, robust carry case and software.
  - IP65 USB port for 'Centec Viewer' PC Software
  - Use for Manual 'single reading' operation or for unsupervised automatic data logging
  - Select datalog intervals from seconds to several minutes
  - Large datalog storage capacity
  - Robust IP65 construction

*An ideal fault finding tool for any brewery*



**Oxytrans M**  
*Portable O<sub>2</sub> Meter  
& Datalogger*

**SONATEC TR**  
**"The Plato Monitor"**  
In-Line Ultrasonic Analysers  
by Centec GmbH

The speed of sound is a defining physical characteristic. Centec sensors use ultrasound to determine the concentration of various liquids, including the sugar content of wort.

Brewery applications for Sonatec include:

- Evaporator monitoring & control
- Fluid interface detection

Differentiating between yeast slurry and beer or cider before filtration

- Easy In-Line installation on a Varivent union
- Standalone operation, just connect 24V DC supply
- Hygienic, CIP cleanable design
- Highly precise over a wide measuring range.
- Temperature compensation for accurate results
- Operates reliably over a wide temperature range
- Pressures to suit virtually any brewery duty
- Displays: m/s, Mass%, Volume% or °Brix
- Compact IP65 unit with local LCD display
- Include numerous digital & analogue I/O terminals
- Profibus DP and ATEX options
- Programmable for more than 100 products, each with various selectable alarm/output points

*A robust and reliable process instrument*



**Sonatec TR**  
In-Line Sensors





**SONATEC TR-HW**  
Ultrasonic Vessel Monitors  
by Centec GmbH



Tank mounted ultrasonic sensors to monitor process activity inside a closed vessel, by accurately measuring changes in sound velocity through the fluid. The speed of sound typically increases in direct relationship to an increase in solution concentration.

Applications include:

- Evaporator monitoring & control
- Product level & stratification detection

Most features as Sonatec TR, plus

- Probes custom made up to 2.5 metres long for top entry vessels
- Optional targeted CIP nozzle for products which tend to coat on surfaces
- Optional sampling point for calibration checking and laboratory analysis.
- Available in a range of different alloys

*N.B.: Liquids should be free of bubbles*



**Sonatec HW**  
with sample point &  
CIP nozzle



Centec Rhotec sensors use a high frequency oscillating U tube to accurately and continuously measure the density of numerous liquids. They are so accurate that the German authorities have certified Rhotec for measuring alcohol content, against which tax is levied.

Brewery applications include:

- Accurate alcohol measurement - ABV
  - High Gravity Blender process control
  - Fermentation monitoring
  - Accurate Wort & Extract monitoring
- 
- Extremely accurate over a wide density range
  - Robust IP65 construction with local LCD display
  - Displays: Density, ABV%, w/w%, v/v%, °Brix
  - Includes a selection of analogue and digital I/O
  - Profibus DP and ATEX options
  - Programmable for more than 100 products, each with selectable alarm/digital output points
  - Uses a standard 24V DC supply
  - Various installation options



## COMBITEC SD "The Beer Monitor"

Density+Sound Analysis Combined  
by Centec GmbH

Combitec are dual function instruments to efficiently monitor three component liquids e.g. fermented beer which contains water, sugar and alcohol.

These cost effective sensors which provide valuable product data, displaying it locally as a standalone unit and transmitting analogue and digital signals for accurate automated process control.



Applications include:

- Extract/Sugar Monitoring
- Alcohol measurement
- OG monitoring
- Fermentation monitoring
- Final Product inspection

*N.B. Combitec is installed on DN40-150 Varivent unions. The special sensor head generates sufficient  $\Delta P$  to operate the instrument under most normal brewery flow conditions*

Spec. generally as Rhotec and Sonatec:

- Provides and analysis density over a wide range
- Measure sound velocity at >2500 m/s (approx. 80°Brix)
- Operates reliably over a wide temperature range
- Extensive analogue and no-volt/digital I/O connections
- Internal Profibus DP card option
- Uses 24V DC, IP65. Robust & reliable
- USB interface for 'Centec Viewer' PC software



Carbotec uses controlled decompression, with precise temperature and pressure measurement for the in-line monitoring of dissolved CO<sub>2</sub> in carbonated drinks.

Brewery applications include:

- Monitoring of CO<sub>2</sub> carbonation
- Control of carbonation systems
  
- Accurately measures light to highly carbonated drinks
- Temp. Range to suit any normal requirement.
- CIP cleanable
- Max. Pressure: 10 bar g.
- Response time: <= 20 seconds
- Suitable for DN65 to DN150 Varivent pipe unions
- Standalone unit with LCD display and various I/O connections both analogue and digital (no-volt)
- Programmable for more than 100 products, each with selectable alarm/output points
- Profibus DP option
- 24V DC, IP65. Robust & reliable
- Leak detection alarm feature

Produkt-Nr.: 1  
P: 1,062 bar  
T: 1,54 °C  
CO<sub>2</sub>: 5,45 g/l



Carbon Dioxide Sensors



# 'TR' TRANSMITTERS

"The brains in the family"  
by Centec GmbH



TR Transmitters uniquely enable Centec sensors to operate as 'stand-alone' devices or as part of a process control system. Data obtained from the sensor head is processed inside the robust IP65 transmitter for direct display on the instrument's LCD screen, on a local display and remotely as required.

### Features & benefits of TR Transmitters:

- Cost effective 'stand-alone' units with LCD display and keypad. Only a 24V DC 2A supply is required
- Easily connects to most process automation and SCADA systems
- I/O include several 4-20 mA connections and digital no-volt contacts.
- Profibus DP is an option
- Program specific settings, constants and alarm points are selectable for more than 100 different products
- Calculates and displays a wide range of values incl. °Plato, °Brix, ABV, SG, ppb, ppm, and more to suit customer preferences
- Internal USB port and 'Centec Viewer' PC software for easy set-up and inspection
- Robust epoxy powder coated IP65 construction
- External display option
- All Stainless steel and ATEX options



**TR Transmitter**  
External display option

- Centec 'MCM Systems' provide full HMI and process automation functions for complex applications...  
**please ask for details.**



Centec GmbH not only make sensors, they also use their automation expertise and brewing knowledge to design and build a range of pre-assembled process skids especially for breweries. Centec systems are used worldwide by most major brewers to produce many fabulous beers and ciders.

Centec Process Skids include:

- Water filtration, softening & deionisation
- DAL Plants - Water Deaeration
- High Gravity Blending
- Blender-Carbonation Units
- Continuous Multi-Stream Blending
- Minor Additions Dosing
- CO<sub>2</sub> Carbonation Systems
- N<sub>2</sub> Nitrogenation of ales and stouts
- De-alcoholisation with aroma recovery
- Flash Pasteurisation
- 'Direct to Filler' Systems
- CIP Systems

*Over many years, the Centec team of experienced automation & software engineers have skilfully produced thousands of systems for hundreds of customers*



**CarboBlender**

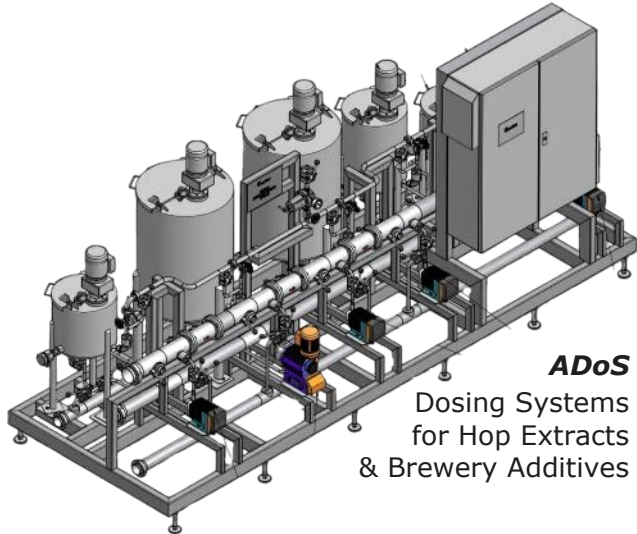
*Continuous In-Line HG Beer/DAL Blending & Carbonation*





Fully automated  
**'Direct to Filler'**  
systems

**DGS** - 'DAL Plants'  
Water Deaeration



**ADoS**  
Dosing Systems  
for Hop Extracts  
& Brewery Additives

**Centec = Sensors + Automation + Skids**

**'A Unique Synthesis'**



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