

OEM Optical Competences

Solutions for Optical OEM Applications in Liquid Analysis.





Process Analytical Measurement Solutions

Endress+Hauser Conducta Inc. offers a wide range of precision in-line measuring instruments for liquid analysis. Our products are a recognized leader in design and innovation of in-line electrochemical and optical measurement systems.

Company History

Endress+Hauser Conducta Inc. (previously Wedgewood Analytical, Inc.) was established as a result of the successful merger of Innovative Sensors, Inc. (Anaheim, CA) and Wedgewood Technology (San Carlos, CA) in 2003.

Innovative Sensors Inc. (ISI) was founded in 1976 as a manufacturer of electrochemical analytical sensors for industrial and laboratory applications. Wedgewood Technology started its business with in-line process photometers in 1982 focused primarily on the pharmaceutical and biotech industries.

Endress+Hauser Conducta Inc. continues to offer their product lines under the ISI and Wedgewood trademarks

Your Liquid Analytical Specialists:

- Complete analytical systems – sensors, process housings, analyzers
- Global network of World-class manufacturing facilities and processes
- Sensor research, design and development
- Factory service, calibration, certification
- ATEX, FM, ISO 9001:2000 certified



Dedicated to Customer Satisfaction

Due to our strong history serving the world's leading pharmaceutical, biotech, food & beverage, chemical, environmental and utility companies, we understand the unique requirements in these highly regulated industries.

With more than 30 years experience as an established manufacturer of high quality measurement technology, Endress+Hauser Conducta is driven to exceed customer expectations.

Our engineering, sales and service experts provide assistance from initial specification and design to commissioning, maintenance, and calibration of installed systems. Every manufactured product is individually tested and calibrated. As the product matures, our service and repair department can recalibrate and recertify the product to original requirements. Performance to design specifications is guaranteed.

Wedgewood Optical Technology Benefits

In the early 1980's we designed the first in-line process optical measurement systems for the Life Sciences Industry. Since that time technology has transferred into many other industries; including chemical, petrochemical, food & beverage, and environmental. Our systems have become the industry standard for robustness, accuracy and reliability.

Today, our offering of in-line process photometers is considered the industry standard in a variety of applications like:

Pharmaceutical

- Chromatography control
- Filter monitoring
- Cell growth control in bioreactors/fermentors
- Centrifuge control
- Protein concentration
- Biomass concentration

Food and Beverage

- Dairy products separation
- Hot wort turbidity
- Yeast concentration
- Fermentation monitoring
- Clarity control
- Product loss detection

Chemical

- Interface detection
- Effluent color monitoring
- Heat exchanger leak detection
- Flocculant control

Oil/Gas

- Pipeline contamination monitoring
- Tank dewatering

Our analytical solutions provide direct, real-time data to monitor and control your processes without the need for off-line sampling, thereby eliminating the errors and high operational costs involved with off-line measurements. The combination of optimized optical design and unique filter performance provides a very precise output with direct correlation to lab results. Additionally, all sensors are available with simple, traceable calibration and verification capabilities.

A complete optical system consists of:

- the right sensor for your application (including cables)
- the transmitter with the needed performance/output signals
- the flow cell with a wide variety of configurations to fit your requirements:
 - Lowest hold-up volume
 - Multiple process connections (Tri-clamp®, flanged, welded, etc.)
 - Various materials (316L, Titanium, Hastelloy®, PEEK, Kynar®)
 - Ultra hygienic, CIP, SIP (Ra 16 µinch, 0.4 µm 316L SS)

Our optical controls make your processes operate more efficiently through traceable, in-line and online controls and as a direct result improve your product quality.

Typical Optical Applications

	Absorbance	Cell Growth	Ultraviolet	Ion Analysis	Turbidity/ Suspended Solids	Color	Bubble Detection
Biotech	■	■	■		■	■	■
Pharmaceutical	■	■	■		■	■	■
Semiconductor	■		■	■	■		
Power	■			■	■	■	
Food and Beverage	■	■	■	■	■	■	■
Process Water/Wastewater	■		■	■	■	■	
Chemical Processing	■		■	■	■	■	■
Pulp and Paper	■			■	■	■	
Mining and Minerals	■			■	■		
Environmental	■			■	■	■	

Our Product Portfolio - The best Fit for your Application Requirements

Sensors

UV-Absorption



OUSAF44

- Single wavelength sensor with reference
- Measuring range up to 50 OD
- Built-in EasyCal™ System to substitute for liquid calibration
- Patented gas discharge light source
- Simple calibration and verification capabilities
- Hygienic and sterile flow cell design

OUSAF45

- Single wavelength sensor with reference
- Provides measurement at 206, 214 or 226 nm
- Includes separate high voltage power supply
- Wide variety of process connections
- CIP and SIP resistant wetted parts



OUSAF46

- Dual wavelength measurement with reference
- Measuring range up to 50 OD
- Patented gas discharge light source
- Discrete wavelengths between 254 and 365 nm available
- Compact and modular sensor design

NIR Absorbance



OUSAF12

- Measures suspended solids with optical density
- Recommended measuring range: 200 ppm up to 10,000 ppm
- Easy NIST traceable calibration capabilities
- Hygienic and sterile flow cell design



OUSAF13

- Measures light transmission from 0-100%
- Optimized for bubble and foam detection in liquids
- Detects liquid phase variations such as alcohol/water
- Suitable for CIP and SIP



OUSAF23

- Dual wavelengths measurement with compensation
- Measures water accurately in organic solvent
- Allows temperature compensated measurement
- Hygienic and sterile flow cell design

Color



Color sensor OUSAF21

- Dual wavelength measurement with compensation
- Optimized for low level color applications
- Easy verification capabilities
- CIP and SIP resistant wetted parts



Color sensor OUSAF22

- Dual wavelength measurement with compensation
- Concentration and color scale measurements
- Wide variety of process connections and line sizes
- Hygienic and sterile flow cell design

Turbidity



OUSTF10

- Scattered light technology for low turbidity values
- Calibration in FTU or ppm
- Wide variety of process connections and line sizes
- CIP and SIP resistant wetted parts

Cell Growth



BT65

- Measures cell mass with optical density
- Optimized for pilot and production scale fermenters
- 19mm and 25mm designs
- CIP/SIP resistant and fully autoclaveable
- Simple calibration with slide on filters
- Available with various tank port fittings
- Optional EasyCal™ to substitute for liquid calibration

Transmitter

Series 700

- Adaptable to overall computerized control schemes
- Front panel calibration controls
- Multiple full scale ranges
- Analog 4-20 mA outputs



Digital transmitter series OUM900

- Simple and user friendly menu structure
- Four-line display for measurement and temperature
- Versatile data processing capabilities
- Analog 4-20 mA outputs



Memograph M CVM40

- Easy menu-guided calibration
- 7 inch graphic display
- Versatile data processing capability
- Data recording on internal memory, SD card on USB stick



Patented Easycal™ and Precision Optical Pathlength (POPL) provides precise results and cost savings for your system

The patented Easycal™ System offers you the lowest Total Cost of Ownership. It replaces the manual, time consuming and sometimes erroneous liquid calibration procedure with an easy to use, NIST traceable optical filter based calibration method. This can save you up to 45 minutes per calibration while increasing calibration accuracy.

The Easycal™ System is the most accurate and convenient method for in-line verification and calibration without dismounting the sensor from the process. The Easycal™ unit comprises an optical detector system with two NIST traceable filters that provide an accurate and reproducible 3-point calibration method. The mechanically sealed and compact design of the Easycal™ results in the longest lifetime and stability of the certified filters, even under the harshest conditions. Calibration is fast and easy by simply rotating the filters into the light path. All Easycal™ units come standard with a full NIST traceable certification.

The Precision Optical Pathlength (POPL) adjustment system allows the precise setting of the distance between the windows (the pathlength). The POPL system consists of adjustable window rings in the flow cell design and a certified measuring gauge that precisely determines the distance between the windows. This unique feature allows precise optical pathlengths down to 0.5 mm and results in an increased measuring range, a unique repeatability of measuring values, consistent readings between different instruments and fully comparable measuring values to lab results. The combination of the POPL with an Easycal™ offers the complete opportunity for a liquid-free, traceable calibration of the whole measuring system, and thus eliminates the need for time consuming calibrations with liquid standards.

Patented Easycal™ benefits

- Simple, in-line calibration
- Robust, mechanically sealed system
- NIST traceable, 3-point calibration
- Repeatable results
- Precise results using POPL technology with easy adjustments to ensure small pathlengths



Our Application Expertise - Your Gain

On-line Measurement of Product Loss, CIP Interface and Interface Control

Example: OUSAF11 Sensor Applications in Dairy



Customer requirement

On-line measurement of product loss in effluent
On-line measurement of CIP interface
On-line product interface control

Solution

CVM40, OUSAF11 & CYY105

Customer benefit

- Product loss detection
- Money savings
- Reduce waste water BOD overloading
- Water and chemical usage reduction
- Shorter CIP cycle
- Early detection of product phase change

Monitoring Potassium Permanganate in Water Treatment Systems

Example: OUSAF21 In-line Water Treatment Control



Customer requirement

Oxidize organic matter in the purification of drinking water

Solution

CVM40 with OUSAF21

Customer benefit

- Measure color at low levels
- Flexible measurement ranges with adjustable pathlengths
- Continuous real-time measurement
- Instant feedback

Online Monitoring of Solids Removal during Centrifugation

Example: OUSAF12 In-line Discharge Control



Customer requirement

On-line measurement of centrate clarity

Solution

CVM40 with OUSAF12

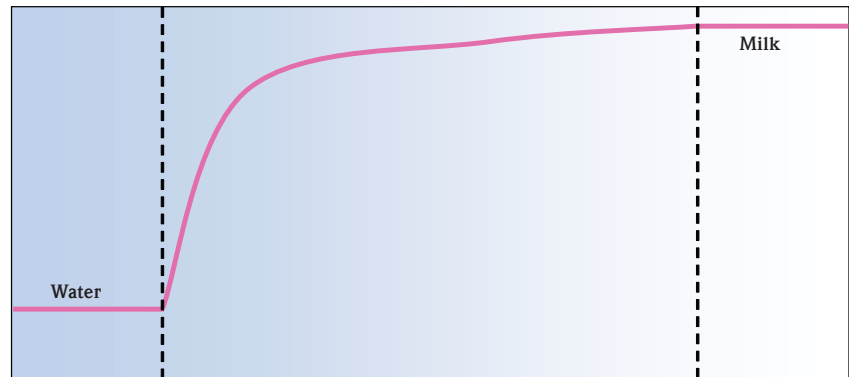
Customer benefit

- Automated discharge control
- Higher product yield
- Minimized product loss
- Cost reduction
- Continuous quality monitoring

Phase Separation Milk/Water

Technology

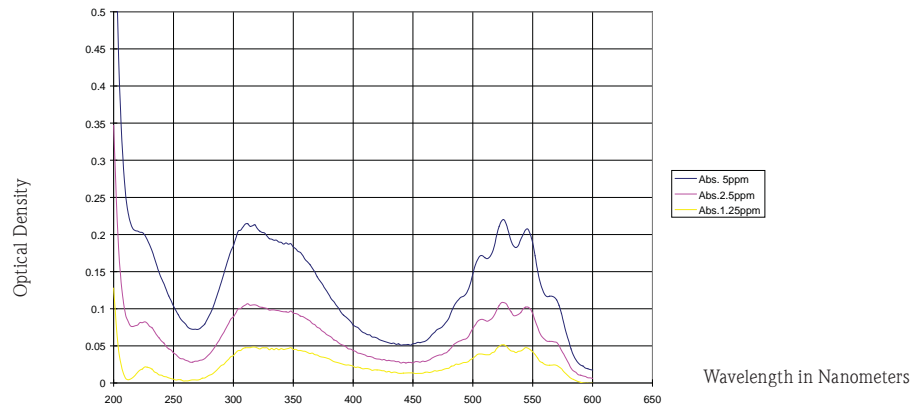
- Single beam sensor
- NIR absorption
- Submersible application



Potassium Permanganate Absorption

Technology

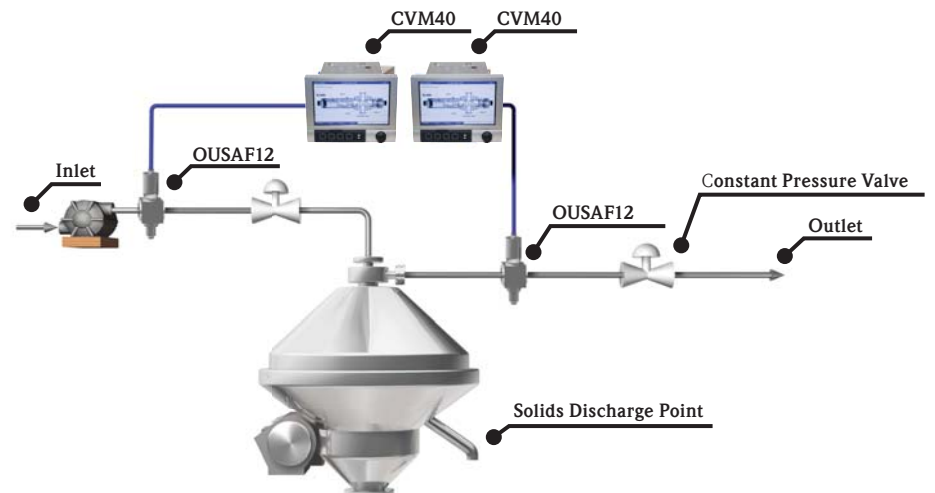
- Dual beam sensor
- Measures absorption
- 390 to 1100 nm range



Centrifuge Discharge

Technology

- Single beam sensor
- NIR absorption
- In-line application



Anything for You

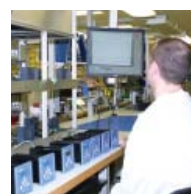
Endress+Hauser Conducta serves a wide variety of industries, including chemical processing, water, wastewater, environmental, pool and spa, microelectronic, biotech, pharmaceutical, laboratory, and food & beverage industries.

Our OEM products and services range from customized sensors, assemblies and components through to an entire analytical product portfolio. Of course we also offer an assortment of standard products for your applications.

For us competent consultation, engineering, planning and implementation means to work in close relationship with you every step of the way to deliver solutions meeting the needs of the OEM marketplace.

Measurement parameters include:

pH/ORP
Specific-Ions
Conductivity
Dissolved Oxygen
Turbidity/Suspended Solids
Chlorine/ Chlorine Dioxide
Absorbance/Cell Growth
Ultraviolet
Color
Bubble Detection



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