

# Solutions for Agricultural Production

# Real-time Process and Laboratory Analyzers for Gas, Water and Liquid Applications

Heating Value, Electrochemical & Spectroscopy Analyzers



## **Ammonia Fertilizer Process Control**

#### **Applications:**

- Real-time ammonia process control for optimized steam control and tighter H:N ratio at the converter for increased efficiency and higher yields
- Gas analyzers for H<sub>2</sub>O, CO, CO<sub>2</sub>, H<sub>2</sub>, N<sub>2</sub>, CH<sub>4</sub>, H<sub>2</sub>S, hydrocarbons, BTU, Wobbe, CARI and Density
- Safe, automated, inline analysis of nitrous acid and urea in liquid at ammonia fertilizer plants



Laboratory Mass Spectrometers for Real-Time, ppb-level, Multi-Impurity Analysis MAX300-LG™



Industrial Mass Spectrometers for Real-Time, Multi-Stream Process Control MAX300-RTG™ 2.0



Injection-Style Heating Value
Analyzer for Zero Hydrocarbon
Emissions for BTU and Flare Control
9610CXc™ Calorimeter



Dual Beam Photometer for Continuous PAT Monitoring ClearView® db

#### **Water Quality Analyzers**



#### **Pure Water & Wastewater**

# Applications:

- Monitor Total Organic Carbon (TOC) in water
- Irrigation, cleaning and sanitation, product hydration, water recycle monitoring
- Water influent and effluent discharge control
- Process control, high purity, oil in water, cooling water, condensate return, water-steam cycles, boiler feed water, and environmental compliance



TOC Water Analyzer for Harsh Wastewater Applications QuickTOCultra™



TOC Water Analyzer for Clean Water Applications

OuickTOCuvII™



TOC Water Analyzer for Municipal and Cooling Water Applications OuickTOCeco™



COD Water Analyzer for Laboratories **QuickCODlab™** 

#### Electrochemical Sensors & Laser Spectroscopy Analyzers



# **Instrument Air & Dryers**

#### **Applications:**

- Moisture control in maturation and ripening, packaging, storage, and transportation of food and stimulants
- Continuous moisture analysis in instrument air and dryers, and portable spot checking
- Trace moisture in clean dry air, ppb to %







CRDS Analyzer for UHP Moisture in Air **Spark™** 

#### Mass Spectrometers & Laser Spectroscopy Analyzers



**Fermentation & Bioreactor Control** 

#### **Applications:**

- Fermenter bioreactor off-gas composition analysis
- Fast and accurate analysis for control parameters such as:
- Oxygen Uptake Rate (OUR)
- Carbon Dioxide Evolution Rate (CER)
- Respiratory Quotient (RQ) and fermentation end point
- Continuous monitoring to improve yield / quality and reduce waste - single species or multi-component analysis (e.g. CO<sub>2</sub>, O<sub>2</sub>, N<sub>2</sub>, Ar, H<sub>2</sub>O, CO, H<sub>2</sub>, He, hydrocarbons, alcohols, aldehydes, sulfurs)



Real-Time, Multi-Stream Mass Spectrometer Gas Analyzer for Accurate OUR, CER and RQ MGA 1200CS™



Laboratory Mass Spectrometer for Real-Time Multi-Stream, Bioreactor Control MAX300-LG™



CRDS Single-Species, Trace Gas Analyzer for ppb-Level of H<sub>2</sub>O, CH<sub>4</sub>, CO, CO<sub>2</sub>, Detection **Spark**™

# Photometers & Probes for H<sub>2</sub>O<sub>2</sub> and H<sub>2</sub>O

## Sterilization & Virus Deactivation

#### **Applications:**

- · Real-time sterilant gas monitoring
- Near-infrared (NIR) filter photometer for H<sub>2</sub>O<sub>2</sub> and H<sub>2</sub>O vapor mixtures
- H<sub>2</sub>O<sub>2</sub> and H<sub>2</sub>O under ambient or vacuum conditions
- Optical RH and relative saturation measurements
- NOx and Ethylene Oxide sterilant gas monitoring



Dual Beam Photometer for Real-Time Hydrogen Peroxide Vapor Sterilant Gas Monitoring ClearView® db Hydrogen Peroxide Vapor Analzer



Vapor Probe for H<sub>2</sub>O<sub>2</sub> Analyzer System, Suitable for Vacuum and Positive Pressure (up to 2 atm)

G-SST™ Vapor Probe

#### Spectroscopy, Electrochemical & Water Quality Analyzers



Environmental, Health & Safety (EHS)



Percent and Trace Oxygen Analyzers, and Oxygen Deficiency Safety Monitors Series 2000™ and ZRO2000™



Dual Beam Photometer for Real-Time Triazine Content in Runoff ClearView® db

#### **Applications:**

- Oxygen levels in grain elevators, silos, storage and food processing plants
- Triazines and precursors in agricultural runoff
- Continuous Emissions Monitoring (CEM) from agricultural operations
- Greenhouse gas (GHG) emissions from landfills, processing plants and agricultural facilities
- · Air and fenceline monitoring
- Wastewater discharge compliance
- Trace gas analyzers for  $\rm H_2O,\,O_2,\,H_2,\,CH_4,\,NH_3,\,CO,\,CO_2,\,N_2,\,Ar,\,He$  and hydrocarbons



UV-VIS Process Analyzer for Chlorine and Phosgene Gas 508 UV-VIS™



CRDS Analyzer for the Detection & Continuous Monitoring of Greenhouse Gases (GHG)

T-I Max AIR™



Industrial Mass Spectrometer for Environmental Health and Safety MAX300-AIR™



FTIR Environmental Vapor Monitoring Analyzer **ANALECT EVM™** 



TOC Water Analyzers for Pure and Process Water Applications for Laboratories **QuickTOCpurity™** 



COD Water Analyzer for Laboratories **QuickCODlab™** 

#### Spectrometers, Electrochemical & Chilled Mirror Analyzers



**Controlled Atmosphere & Glovebox** 

#### **Applications:**

- Real-time, in situ glovebox and incubation monitoring
- Ideal for vessel and climatic chamber monitoring and validation
- ppb to 100% H<sub>2</sub>O and O<sub>2</sub> (aerobic or anaerobic activity), relative humidity and dew point, temperature and compositional gas analysis
- Glovebox moisture, temperature and dew point sensor validation



Portable and Fixed Trace-to-Percent Oxygen Monitors Series 3520™ and OXY-SEN™



Aluminum Oxide Dew Point Meters and Transmitters with Hyper-Thin-Film Technology for Portable/Fixed/Loop-Powered Applications

XDT™ | XPDM™ | HDT™ | LPDT2™



CRDS Trace Gas Analyzer for ppb-Level Detection of  $H_2O$ ,  $CH_4$ , CO,  $CO_2$  and  $C_2H_2$  **Spark**<sup>M</sup>



Laboratory Mass Spectrometer for Real-Time ppb-Level to 100% Compositional Analysis of Glovebox Gases MAX300-LG™



Benchtop Mass Spectrometer for Real-Time ppb-Level to 100% Catalysis, Reaction Monitoring, and Environmental Research MAX-CAT™



Chilled Mirror Dew Point Hygrometer with Measuring Head for Temperature and RH Measurements

MODEL 973™

For a complete range of products, applications, systems, and service options, please contact us at: info@process-insights.com

For a complete list of sales & manufacturing sites, please visit:

https://www.process-insights.com/about-us/locations/

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