

# Process Analytics

**INGOLD**

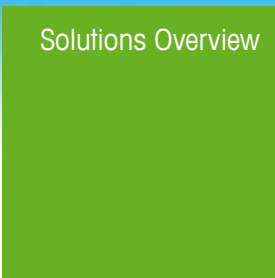
Leading Process Analytics

**THORNTON**

Leading Pure Water Analytics



Liquid Analytics  
Gas Analytics  
Pure Water Analytics



## Analytical Parameter Measurement for Industrial Environments

**METTLER TOLEDO**

# Process Analytics Solutions for

- **Pharmaceutical Production and Regulated Waters**
- **Biotech and Biopharma Processes**
- **Chemicals, Petrochemicals and Refining**
- **Pure and Ultrapure Water in Power and Microelectronics**
- **Breweries, Dairies and Sugar Manufacturers**
- **OEMs, System Integrators and Panel Fabricators**
- **Industrial and Make-up Waters**



## pH/ORP (Redox) Probes

- ISM sensors with predictive diagnostics
- Hygienic design for SIP & CIP in sterile applications
- Durable probes for harsh chemical applications
- Non-glass probes for meeting safety requirements
- pH probes for pure water

► [www.mt.com/pro-pH](http://www.mt.com/pro-pH)



## Dissolved O<sub>2</sub>, CO<sub>2</sub> and Ozone

- High performance dissolved oxygen sensors
- Optical DO measurement requiring no polarization
- DO sensors for trace levels and pure water use
- Dissolved CO<sub>2</sub> sensors for pharma and beverages
- Dissolved O<sub>3</sub> for pure water

► [www.mt.com/pro-dissolved](http://www.mt.com/pro-dissolved)



## Conductivity and Resistivity

- 2-electrode sensors for high purity water
- 4-electrode sensors for medium to high conductivity
- Inductive sensors for high conductivity and calculating major acids/bases and salts concentrations.

► [www.mt.com/conductivity](http://www.mt.com/conductivity)



## Gas Analyzers

- TDL gas analyzers for in situ and extractive applications
- Multiple process adaptations for versatile installation
- Measurement parameters include:
  - O<sub>2</sub>, CO, CO<sub>2</sub>, H<sub>2</sub>O, H<sub>2</sub>S & HCl
- Amperometric oxygen gas sensors

► [www.mt.com/pro-gas](http://www.mt.com/pro-gas)

## Intelligent Sensor Management (ISM)

Digital Sensors that Learn from Your Processes



ISM sensors offer predictive diagnostic tools including:

### Adaptive Calibration Timer

Counts down to next required calibration.

### Time to Maintenance

Days until the next recommended maintenance.

### Dynamic Lifetime Indicator

Indicates expected remaining life of your sensor.

ISM sensors offer operational enhancements including:

- Increased accuracy with parameter value calculated in the sensor.
- Secure digital signal for installation in areas prone to interference.
- Easy setup with Plug and Measure technology and integrated calibration data.

Learn more at [www.mt.com/ism](http://www.mt.com/ism)



## Transmitters

- Multi-parameter and multi-channel transmitters
- HART, Foundation Fieldbus, PROFIBUS PA and DP
- Easy-to-use touchscreen and tactile interfaces
- High installation flexibility, including DIN rail model
- Robust and Ex approved for hazardous areas

► [www.mt.com/transmitters](http://www.mt.com/transmitters)



## Housings and Process Adaptions

- Stationary for short running batches
- Retractable for continuous and long-running processes
- Flow-through housings for pipes and bypass installations
- Immersion housings for open vessels
- Automatic calibration and cleaning systems

► [www.mt.com/housing](http://www.mt.com/housing)



## Turbidity Meters

- Turbidity measurement with 25° and 90° scattered light
- Yellowish color monitoring using blue light for beer
- Backscatter light for medium to high turbidity
- Product monitors for phase separation and product identification by turbidity or color

► [www.mt.com/turbidity](http://www.mt.com/turbidity)



## Setup and Configuration, Calibration and Preventive Maintenance

- Professional setup and equipment qualification
- Planned calibration and preventive maintenance services
- Electronic documentation delivery and on-demand access to certificates

► [www.mt.com/pro-service](http://www.mt.com/pro-service)

# Water Analyzer Portfolio



## Microbial Detection Analyzers

- Real-time, on-line microbial monitoring of water
- Continuous measurement of bioburden
- Reliable laser-induced fluorescence technology
- Eliminates errors associated with sample handling

► [www.mt.com/7000RMS](http://www.mt.com/7000RMS)



## Total Organic Carbon Sensors

- Continuous on-line monitoring of TOC
- Meets USP <643>, <645>, EP 2.2.44, ChP and JP 16 requirements
- Portable model available for fast, at-line monitoring

► [www.mt.com/toc](http://www.mt.com/toc)



## On-Line Ion Analyzers

- Reliable, on-line, ppb-level analyzers for pure water treatment and power cycle chemistry applications
- Sodium analyzers
- Silica analyzers
- Chloride and sulfate analyzers

► [www.mt.com/pro-analyzers](http://www.mt.com/pro-analyzers)

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#### Process Analytics

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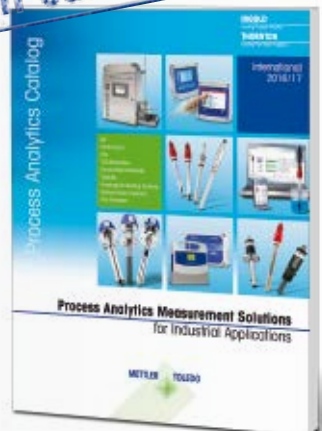
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Subject to technical changes.

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