



# Intelligent Sensor Management for Brewing Processes

ISM®

# Intelligent Sensor Management

Intelligent Sensor Management, or simply ISM<sup>®</sup>, is a digital technology for in-line process analytical systems that enhances measurement integrity, simplifies sensor operations, and reduces sensor lifecycle costs.

These benefits translate into substantial gains for the brewery industry in relation to production process reliability, and sensor handling and maintenance.

Unlike analog probes, ISM sensors output a robust digital signal, retain their own calibration and other

data, and even predict when they will need maintained or replaced.

In dissolved O<sub>2</sub>, dissolved CO<sub>2</sub>, gas O<sub>2</sub>, turbidity, pH and conductivity measurement systems ISM gives you much more than just a measurement ...

**Greater process  
reliability**



**Reduced  
maintenance**



**ISM<sup>®</sup>**

**Easy sensor  
handling**



# Greater Process Reliability

Ensuring production processes will operate as necessary, and generate the desired product quality and yield in the required time is central to successful brewery operations. In support of this, ISM offers two significant features: digital communication and predictive sensor diagnostics.

## **Digital communication**

Analog sensors send an interference-prone signal to the transmitter, which calculates the parameter value. ISM sensors are different. The parameter value is calculated within the sensor itself and transmitted digitally. Digital signals are much more robust against electrical interference and moisture; therefore, the transmitter always receives reliable measurements.

## **Predictive sensor diagnostics**

ISM sensors predict their own maintenance. Using historical data on the affects of exposure to process environments, a sensor continuously calculates when it will next need to be calibrated or require replacement of its consumable elements. This means that you always know the “health” of your installed sensors.



Increased operational uptime

# Easy Sensor Handling

ISM sensors provide a level of ease of handling that is not possible with analog sensors. Now you can prepare a supply of pre-calibrated probes ready for quick exchange at the process.

## **Sensor calibration away from the process**

iSense is partnering PC software for ISM sensors. Among its most useful functions is sensor calibration. Instead of having to calibrate sensors at the process, this can now be done more securely and more accurately in a convenient location such as a lab or maintenance shop. And because the

calibration data is retained on the sensor, you can build up a supply of pre-calibrated probes.

## **Plug and Measure start up**

When a pre-calibrated ISM sensor is connected to the transmitter, calibration data is automatically uploaded and the transmitter configures itself appropriately without any operator intervention.

# Convenient lifecycle management



# Reduced Maintenance

ISM reduces maintenance time and effort through effective planning tools and robust sensor design.


## **Effective maintenance planning**

Sometimes maintenance is conducted when it is not even required. ISM features a range of predictive diagnostics that tell you what and when maintenance should be performed. Tools such as the Dynamic Lifetime Indicator (DLI) for consumables help you ensure your measurement points are always operating at their best.

## **Robust measurement systems**

ISM sensors are designed to tolerate the humid environment, and wide ranging temperatures and pressures found in breweries. Sensor protection mechanisms, long maintenance intervals, and easy to use multi-channel transmitters mean low cost of ownership over a system's service life.



A photograph of industrial brewing equipment, featuring large stainless steel tanks and a control panel with a digital display. The control panel is mounted on a metal frame and displays a green bar chart. The tanks are connected by various pipes and valves, and a pressure gauge is visible on top of the upper tank. The background shows a tiled wall and a metal ladder.

Low cost of ownership

# ISM Solutions

METTLER TOLEDO offers an extensive range of analytical measurement solutions with ISM.

## **A system for your process ...**

In-line measurement solutions from the brew house to the filling line and effluent monitoring all benefit from the greater process reliability, simplified sensor handling, and reduced maintenance that ISM provides.

## **... adaptable to your requirements**

Our ISM transmitter portfolio covers single-parameter, single-channel units for greater process safety, to multi-parameter, multi-channel devices for convenience and flexibility.

Incorporating ISM systems into your control system via transmitters or converters allows seamless integration of sensor diagnostics information for remote monitoring.

## **Wide parameter range**

ISM solutions are available for the following parameters:

- Dissolved O<sub>2</sub>
- Dissolved CO<sub>2</sub>
- Gas O<sub>2</sub>
- Turbidity
- pH
- Conductivity

ISM<sup>®</sup>



For more information:

▶ [www.mt.com/ISM-brewery](http://www.mt.com/ISM-brewery)

**METTLER TOLEDO**

The logo graphic consists of a series of parallel, slightly curved lines that create a sense of depth and movement, resembling a stylized arrow or a dynamic shape. The lines are light green and converge towards the right, framing the text 'METTLER TOLEDO'.