INGOLD
Leading Process Analytics

THORNTON
Leading Pure Water Analytics

M800 Transmitter

Intuitive Touchscreen Menus

Intelligent Diagnostics

Multi-parameter / Multi-channel

M800 Multi-parameter Transmitter

Intuitive, Intelligent, Flexible

Visit our M800 competence center and discover white papers, application notes, product documentation and more.

▶ **www.mt.com/m800**

ISM

www.mt.com/pro

For more information

Touch the Future
of Multi-parameter Analytics

METTLER TOLEDO

M800 Multi-parameter Transmitter
Intuitive, Intelligent, Flexible

Improved productivity, lower operating costs and reliable processes. High-performance process analytical systems help you accomplish all of this. With the M800 multi-parameter, multi-channel transmitter, intuitive operation saves time, predictive maintenance ensures reliability and reduces maintenance, and multi-channel installation reduces cost per measurement.

Convenience meets performance
You need assurance that your processes are running to specification. The M800 transmitter is the ideal combination of convenience and performance in a cost-effective multi-parameter instrument.

The M800 is focused on providing reliable and accurate measurements, convenient operation, at-a-glance diagnostics, and system flexibility and security. Its multi-parameter capabilities for pH, amperometric and optical dissolved oxygen and conductivity mean that one transmitter family can cover all your process measurement needs.

Intelligent Sensor Management (ISM)
ISM enables you to take full advantage of digital sensor-transmitter communication for excellent signal stability, fast sensor commissioning and predictive maintenance. For details about the ISM technology see page 7.

Intuitive Touchscreen Operation
The large, button-free front panel provides intuitive and simple operation, clear and tailorable information, and fast access to any menu or function.

Intelligent Diagnostics
The unique iMonitor offers predictive diagnostics using traffic light color coding to warn you of sensor problems and tells you how to rectify them – before performance is affected.

Flexible and Secure
Multi-parameter, multi-channel capabilities mean that one transmitter family can be utilized throughout your facility. User management and internal logbook features provide excellent security and reduce human error.

Actual size

Complete Control at Your Fingertips
Intuitive Touchscreen Operation

The M800's color touchscreen provides simple, convenient operation. Just touch and follow the intuitive user interface. It guides you by a quick setup sequence or lets you define a wizard to get you to your favorite menus instantly. The screen can be configured to tailor displayed information to your needs.

Intuitive user interface
The M800's large, high-resolution color touchscreen simplifies all transmitter operations. With its highly organized menu structure navigation is easy and intuitive. A "home" key instantly gets you back to the main screen.

Favorites menu
The Wizard set-up allows you to define your most important menus and reach them in only three touches, reducing training effort and configuration failures to a minimum.

Secure operation
Security in process automation instills confidence and integrity in a system. The M800 has two levels of user-selectable security to restrict access to sensitive menus or functions by providing access for the appropriate level of responsibility. For additional security, the internal logbook records the last 250 transmitter operations and alarms.

Benefits

Intuitive and convenient
The transmitter is intuitive to operate and all sensor and transmitter data is easily accessible, which saves time. No manuals are needed for operation.

Configurable
The display can be configured to show from one to eight measurement values.

Simple calibration
Step-by-step menus make calibration an easy task, helping to reduce installation errors and training needs.

Safer operation
Password security helps safeguard against operator errors.

Easy troubleshooting
The iMonitor (see page 6) and service menus allow easy and straightforward troubleshooting.

Fast configuration
The quick setup guide ensures fast and error-free configuration.

As easy as 1, 2, 3: Intuitive operation – in a few steps you get to sophisticated setup routines like PID control.

PID control setup made easy: visually guided setup simplifies configuration and avoids errors – complete control at your fingertips.

Historic data can be displayed as a trend measurement with one second updates.

iMonitor: Intelligent Diagnostics
Ensure High Process Reliability

Most scheduled maintenance is unnecessary and doesn't always prevent unplanned shutdowns due to failed sensors. With its unique iMonitor predictive diagnostics functionality, based on METTLER TOLEDO's ISM technology, the M800 tells you not only what is wrong with a sensor but how to fix it – before a problem arises.
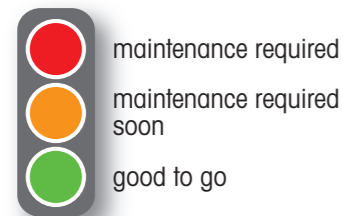
Reduce maintenance

Why schedule maintenance when it is not required? A great deal of time is spent maintaining plant equipment, but over 60 % of maintenance work is unnecessary.

Predictive diagnostics with iMonitor

iMonitor constantly checks the condition of all connected sensors. Should a sensor need cleaning, calibrating or replacement, an alarm is triggered and iMonitor tells you what is wrong and indicates how to rectify it.

Use of traffic light color coding provides continuous notification of sensor health:

- 🔴 maintenance required
- 🟠 maintenance required soon
- 🟢 good to go

Benefits

Reduced maintenance costs through ISM
Real-time measurement sensor data are included in proprietary algorithms leading to online predictive maintenance information. iMonitor provides an at-a-glance overview of all sensors' health status and allows the user to
- avoid unexpected process downtime
- estimate measurement accuracy, predict failure and plan maintenance schedules more efficiently
- convert to a new revolutionary maintenance management which will significantly reduce maintenance costs.

At-a-glance warnings
Flashing red bar provides instant notice of sensor issues.

Predictive indicator for problems
Clear information on how and when to restore sensor condition.

Complete overview
All sensors monitored in real-time and displayed on iMonitor for at-a-glance overview.

DLI — Dynamic Lifetime Indicator (DLI)
Dynamic Lifetime Indicator estimates in real-time the remaining lifetime of the sensor.

TTM — Time to Maintenance (TTM)
The sensor also indicates when you will have to perform the next maintenance.

ACT — Adaptive Calibration Timer (ACT)
Based on the above algorithm the sensor predicts the time when the next calibration will be needed.

CIP — CIP/SIP Counter
CIP and SIP cycles are interpreted with a proprietary, patented algorithm.

ISM at a glance

Intelligent
- Digital sensor technology offers easy handling and enhanced sensor performance.
- Sensors can be pre-calibrated and stored for later use.
- Electronic documentation of calibration and maintenance for regulatory compliance.

Predictive
- Avoid unscheduled maintenance with real-time diagnostics.
- Unique software provides instant evaluation of sensor condition.

Adaptive
- Flexible system integration via transmitters, converters or Ethernet allows integration of diagnostic information.
- Digital technology permits temporary, remote and wireless solutions.

Tailorable
- Industry specific solutions tailored to respective needs, from Biopharma to Chemical to Food and Beverage.

Learn more about ISM
www.mt.com/ISM

Powerful Flexibility
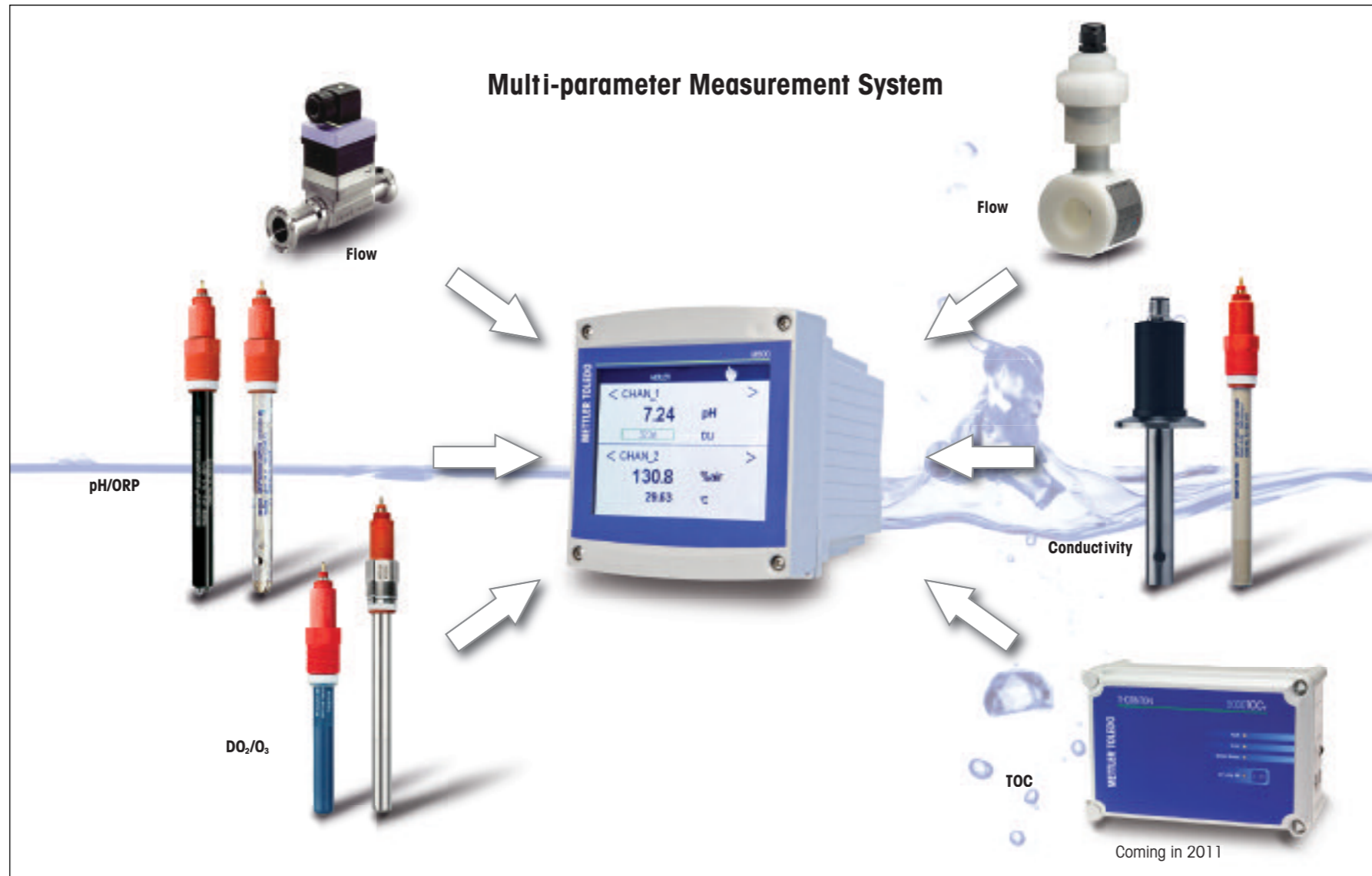## More Parameters, More Channels

Having a variety of different transmitter models at your facility means increased system complexity, additional training for operators and maintenance engineers, larger inventory and greater risk of human error. The multi-parameter, multi-channel M800 transmitter with its user management and logbook features answers all these concerns while reducing cost per measurement point.

Multi-parameter

The advantages of one transmitter model that can analyze pH, ORP, conductivity/resistivity, dissolved oxygen, dissolved ozone and flow with more parameters to follow, are obvious: greater flexibility, less complexity, and less training and inventory. Order only one model of transmitter for your process analytics needs.

Multi-channel

Two- and four-channel M800 transmitters reduce the cost per measurement point by providing multiple measurements from a single transmitter. Combined with the multi-parameter capabilities, you can mix and match parameters for flexible measurement configuration.

Multi-parameter Measurement System

Flow

Flow

< CHAN_1 >
7.24 pH
DU

< CHAN_2 >
130.8 %air
29.63 °C

pH/ORP

Conductivity

DO₂/O₃

TOC

Coming in 2011

Benefits

Lower inventory
One transmitter model for all processes and parameters.

Versatility
One transmitter can measure up to four different parameters plus flow.

Low cost per measurement
Multiple sensors on one transmitter reduces cost per measurement point and saves space.

Simpler handling for fabricators
Transmitter configurations can be downloaded to a PC and uploaded to other M800 transmitters. This simplifies handling and reduces commissioning errors significantly.

On-site upgrades
USB interface provides easy upgrading as new parameters and features are introduced.

Universal power supply
One version for all standard power systems simplifies specifications and reduces inventory.

Optimized Process Analytics Solutions
To Meet Specific Industry Needs

The M800 multi-parameter transmitter offers tailored solutions for ultrapure water and process applications in a wide range of industries. The combination of convenient multi-channel/multi-parameter measurement, best-in-class measurement performance and predictive diagnostics functionality of ISM sensors enable cost-effective UPW measurement as well as low maintenance ISM solutions for enhanced process reliability in production processes.

Multi-parameter for high purity water applications

Water purity and the elimination of potential contaminants are critical in water make-up applications. Reclaim and reuse of contaminated waters must include rapid system monitoring and control. Water system fabricators are challenged to build sophisticated, efficient and effective water systems with measurement and control capabilities. Simplicity in operation minimizes system complexity – measurement from one multi-parameter instrument family with ISM is key!

M800 for high purity water

2 Models
- M800, 2 channel, + 2× flow
- M800, 4 channel, + 2× flow

Covers all UPW parameters with full mix & match flexibility
- Conductivity or Resistivity
- pH/ORP
- Dissolved Oxygen
- Dissolved Ozone
- Flow
- TOC (coming in 2011)

Flexible ISM solutions for process applications

Production processes in pharmaceutical or biotechnology plants require high process reliability and traceable documentation in both upstream and downstream operations. In breweries, a 24/7 filler line operation puts very demanding requirements on oxygen measurement to control product quality.

The M800 multi-channel transmitter allows redundant measurements with full access to all ISM diagnostics to ensure high uptime and low maintenance.

M800 for production processes

2 Models
- M800, 2 channel
- M800, 4 channel

Covers all process parameters with full mix & match flexibility
- pH/ORP
- Amperometric and optical Dissolved Oxygen
- Conductivity
- CO_2 (coming in 2011)

Microelectronics
Multi-parameter M800 transmitter and ISM sensors manage a complete UPW system to ensure highly accurate measurement and control.

Pharmaceutical Waters
Verification, calibration and certification following system SOPs are simplified with pre-calibrated ISM sensors and the certified M800.

Power Generation
Multi-parameter measurements with convenient temperature compensation algorithms for ISM sensors ensure efficient plant water management.

Pharmaceutical Industry
With the M800, sensors can be pre-calibrated and diagnosed before the next fermentation batch. In addition, the M800 enables cost-effective redundant measurements for all parameters needed.

Brewing
The M800 transmitter offers the opportunity of determining optical DO and implementing cost-effective redundant measurement points. Predictive diagnostics with ISM help to avoid unplanned maintenance shutdowns.

General features of M800
- 4-wire installation
- Eight 0/4 … 20 mA current outputs
- Eight freely configurable relays
- PID controllers
- Universal power supply (100 – 240 V AC, 20 – 30 V DC)
- 1/2 DIN housing
- USB port for SW downloads
- IP 66 rated