



## **6000TOCi with ISM<sup>®</sup>**

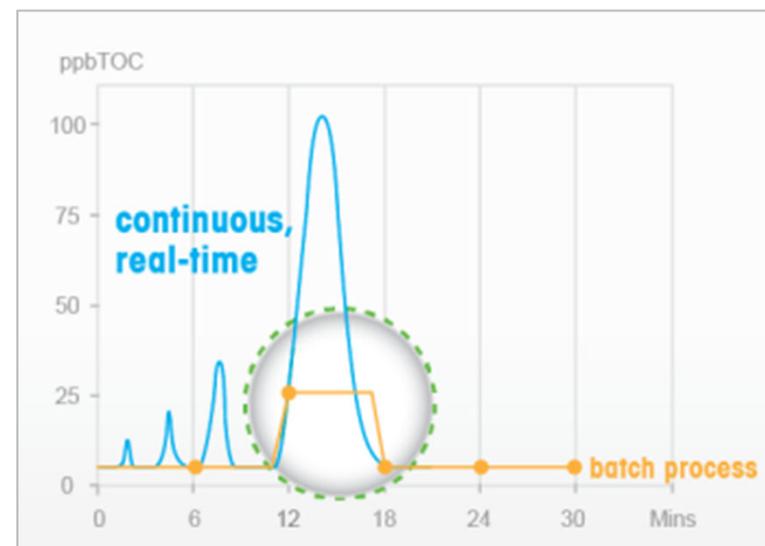
The Audit-Ready Total Organic Carbon Sensor

**METTLER TOLEDO**

## Water quality confidence with continuous, real-time TOC monitoring

### On-line TOC sensor provides continuous, fast and reliable monitoring of TOC levels

- Never miss an excursion with continuous, real-time measurement
- Ensure water quality with reproducible, accurate measurement
- Meet global regulatory and internal water quality requirements
- Predictive diagnostics reduce downtime



## The audit-ready solution for all TOC applications



### Water Purification

- Monitor TOC levels of systems producing:
  - Water for Injection (WFI)
  - Highly Purified Water (HPW)
  - Purified Water (PW)

### Final Rinse

- Ensure final rinse completion with TOC after Clean in Place (CIP) applications

### Point-of-use

- TOC sensor located after RO purification, storage and distribution at water point-of-use

## Fully compliant, easy-to-use, **CONTINUOUS REAL TIME TOC**

### Solution

- The robust 6000TOCi with M800 transmitter is ideal for global pharmaceutical and Biotech water systems
- Compliant to all water regulations
- Validate conductivity separately
- Complete calibration, IQ/OQ and validation documentation

**Proven Confidence**

### Benefits

- Proven performance and reliability
- Meets USP <643>, <645>, EP 2.2.44, JP, ChP, IP
- Real-time response to system changes, reducing the number of lab sampling errors, downtime and maintenance of the pure water system
- TOC for real-time release supporting **PAT** initiative

**Compliant with all major pharmacopeia**



**Meets requirements of all major global pharmacopeias for TOC and Conductivity**



**Meets USP <643> TOC and <645> Conductivity, EP, JP, ChP and IP**

Limit of detection of apparatus must be less than 50 ppb Carbon (0.05 mg/L C) and less than 1.3  $\mu\text{S}/\text{cm}$  at 25° C

Validated by System Suitability Test (SST) response efficiency of 85-115%

**Proven technology with NEW solutions for improved TOC performance!**

More Robust Design

Consistent Measurements with Stability

Audit-ready continuous, Real-time TOC Analysis

Enhanced Data Assurance for Global Compliance



## Verifiable sensor performance with Predictive Diagnostics

- The 6000TOCi with the M800 transmitter offers a unique set of diagnostics to verify during an audit that your TOC analyzer was operating appropriately during its use.
- Ensures your TOC system is always measuring effectively and efficiently.



### Lamp Dynamic Lifetime Indicator

Predictive diagnostic tool that ensures the UV oxidation lamp is providing oxidation according to specification.

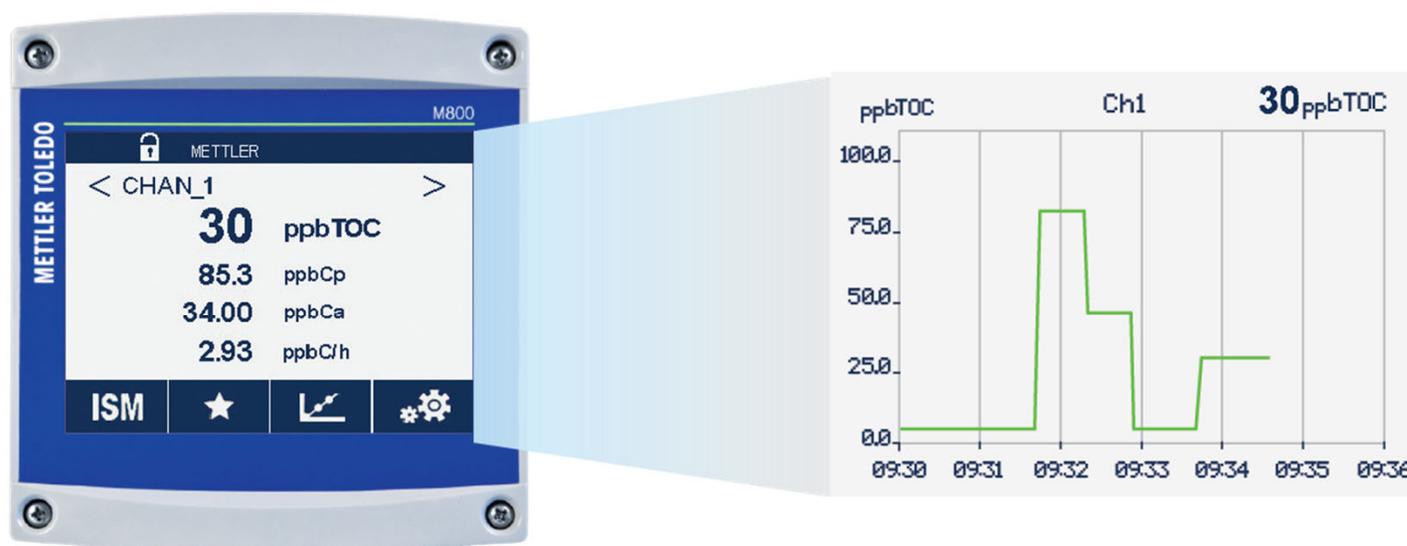
### TTM – Time to Maintenance

Indicates when services are required, including Calibration, SST and ballast.

### Sensor Alarms & Excursion Counters

Clearly alerts you if there is an identifiable problem with your TOC measurements.

## Trending, history and key statistics to support your compliance documentation



- ✓ **TOC Statistics and trending**  
Peak & Average TOC, Conductivity  
& Temperature  
Rate of Change of TOC

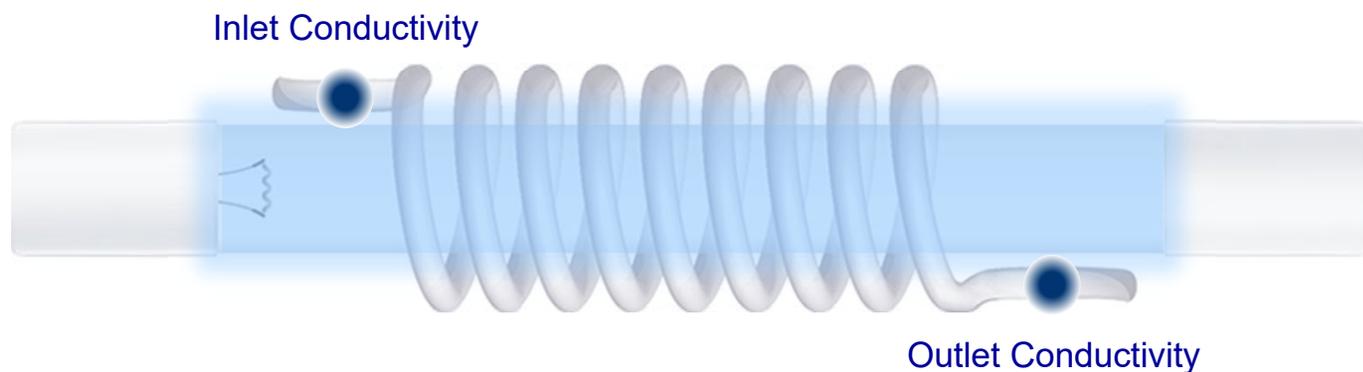
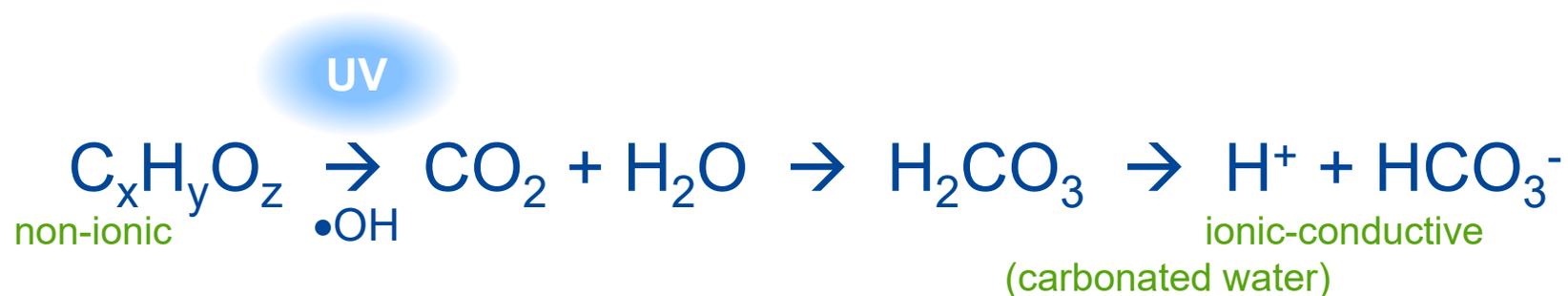
- ✓ **Calibration & SST History**  
Stores up to 10 CAL & SST  
events

- ✓ **Supports audits and validation**  
with USB port for printer and data  
logging

- ✓ **Meet all global pharmacopeia**  
and internal water quality requirements  
with a fully compliant solution

Ultra violet light at 185 nm breakdowns non-ionic organic species which

M-T On-Line TOC Measurements by UV Oxidation/Conductivity



## A functional and effective design for dependable measurement

### Robust Enclosure

- Powder coated Metal
- Gasket lined

### Separated Electrical & Wet Components

- Elevated PCB & electrical connectors

### Removable Service Panels

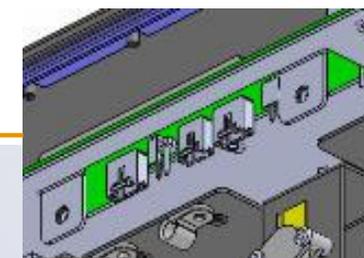
- PCB board
- Back panel

### Access Side panel

- UV Lamp Access
- USB Printer capable
- USB Data logger

### Universal Ballast

- 100-240 VAC



### Centralized Signal & Control Connectors

### Efficient Sample Flow Path

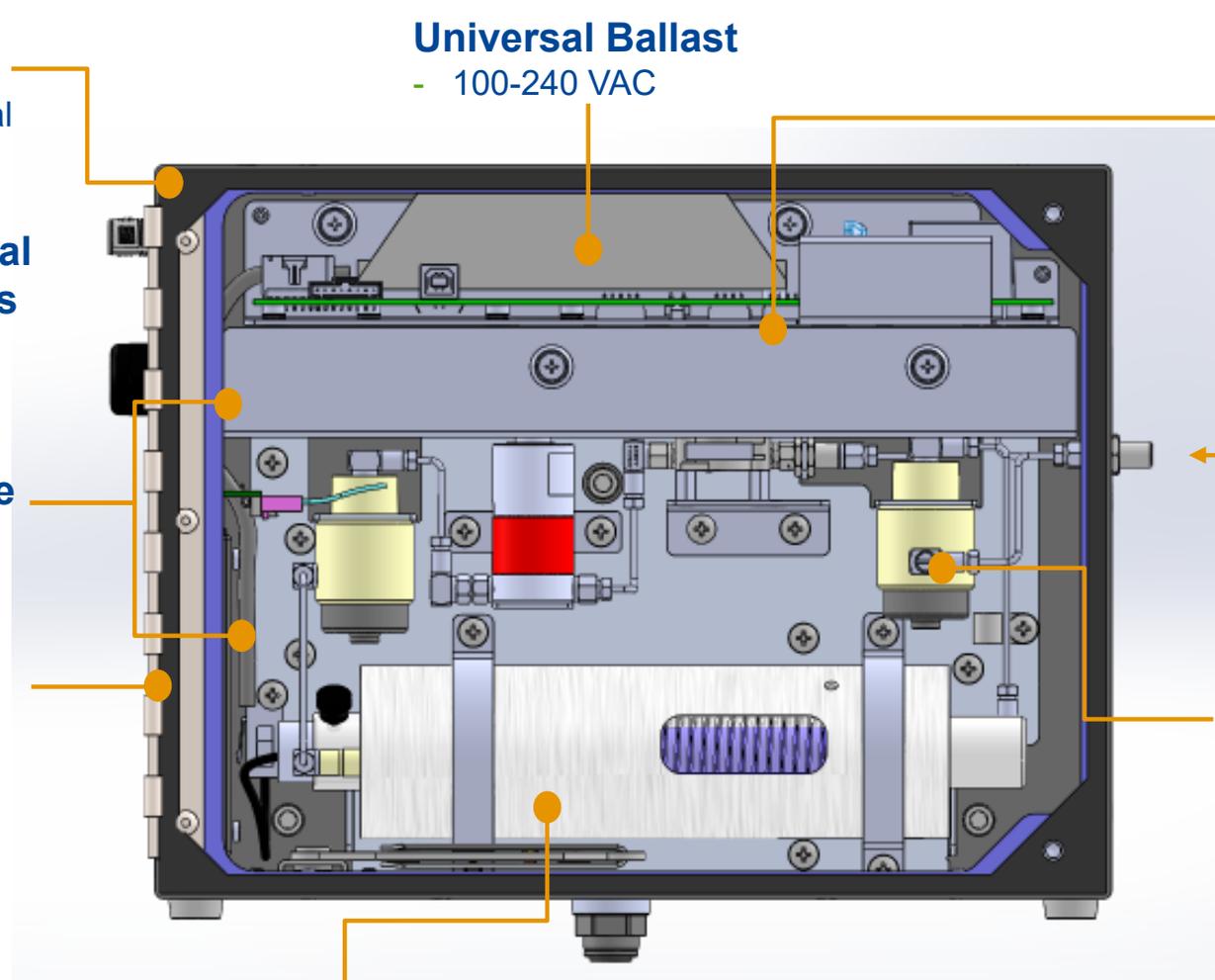
- Compression fittings
- 316SS tubing
- Shortened flow path

### Conductivity Sensor Enhancement

- Optimized flow velocity for more efficient measurement

### Oxidation Chamber Enhancement

- Quartz Coil optimization
- Quartz Chamber View Port



## Data Collection and Convenient Printer Output

- Two USB ports provide:
  - Real-time data collection for TOC, conductivity and/or temperature
  - Trending capture
  - Printing
  
- Epson printer support included



## Reduced water consumption is a significant reduction in total cost of ownership

### Setting sample flow rate

(500 RL Operator Manual Step 6, Section 3, DLM 74001-08 EN Rev. A)

- The 6000TOCi Sensor is designed to operate optimally at a flow rate of 8.5 mL/min.

### Annual Water Savings of the 6000TOCi

- At \$4 a liter the 600TOCi has an annual cost of \$14,688 per 300 days of operations saving:
  - **\$88,992 over the PAT700**
  - **\$71,712 over the 500 RL**



## New CAL/SST integrated solution

- Small, lightweight and portable, easy-mount service tool with handle for introducing solutions into multiple 6000TOCi sensors
- Simple installation and menu-driven operation from any M800 WATER model
- Convenient user-friendly bottle installation in front with RFID recognition for error-free auto detection
- Professional functionality/appearance is complementary to the 6000TOCi sensor
- UniCond<sup>®</sup> reference conductivity sensor ensures confidence in calibration and performance (**new positioning of sensor**)



**Important:** Due to lower flow rates, the 6000TOCi CAL/SST Module is not backward compatible with the 5000TOC, 4000TOC or 450TOC models

## Automatic solution recognition and data transfer minimizes errors and saves time



- Shelf Life 50 Days

RFID identification requires MT solutions

RFID tag ensures solutions are installed in the correct order

Smaller 250 ml bottles are more convenient and easy to handle

RFID automatically transmits unique solutions data directly to M800

## Enhanced Documentation and SOPs



### IQ/OQ

- Formatted for Good Documenting Practices
- Revised to include only the most important components

### TOC CAL/SST

- Convenient, easy to use CAL/SST module
- Streamlined to minimize downtime and maximize uptime
- System guided process utilizing RFID enabled solutions to streamline data entry/recording
- Minimize human error

### Service Manual

- Spare parts lists
- Detailed work instructions
- Troubleshooting guide

## Delivering Audit-Ready validation and expert services for compliance

- ✓ Basic Preventative Maintenance
- ✓ Full Preventative Maintenance with TOC, conductivity, flow and temperature Calibration
- ✓ System Suitability Test (SST)



**New added services to ensure YOU are Audit-Ready**



## Enhanced TOC Basic Preventative Maintenance Every 6 Months

- Installation & Operational Qualification (IQ/OQ) at start-up
- System Suitability Test (SST)\*
- Multi-point Health Checklist
- UV Lamp replacement
- Filter Change
- TOC Calibration
- Service Certificate

**Simple and straightforward  
expert services by MT**

\*For pharmaceutical end-users only

## Enhanced TOC Full Preventative Maintenance Every 12 Months

- System Suitability Test (SST)\*
- Multi-point Health Checklist
- UV Lamp replacement
- Filter Change
- Flow Calibration
- Temperature Calibration
- Conductivity Calibration
- TOC Calibration
- Service Certificate
- Proactive replacement of expendable parts
- Replacement of UV lamp power supply at 4 years

**Audit-ready compliance for  
your TOC measurements**



## 450TOC Portable TOC Analyzer

METTLER TOLEDO

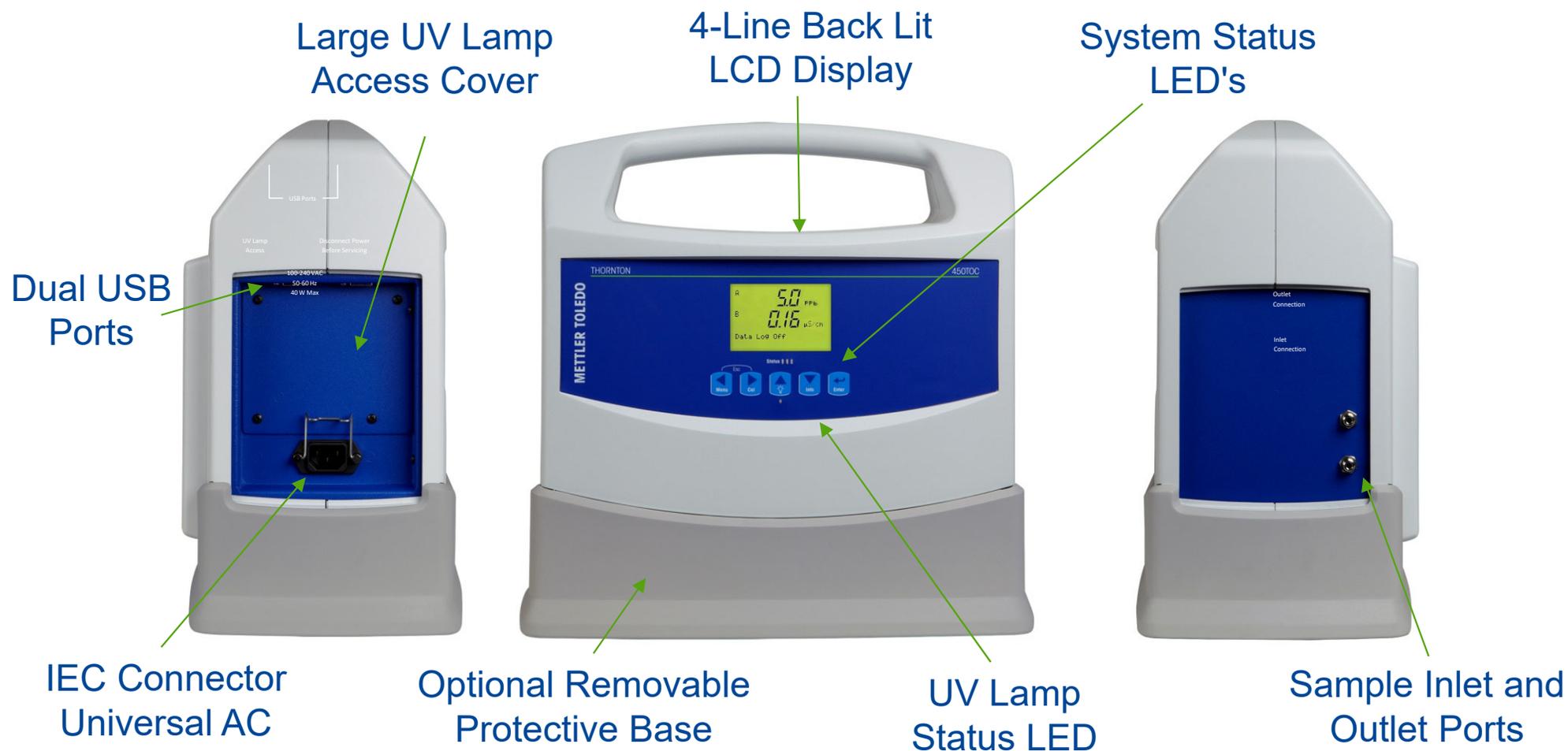
## Bring the Measurement to the Sample, Not the Sample to the Lab!

...delivers Portable, Fast and Continuous TOC Sampling!

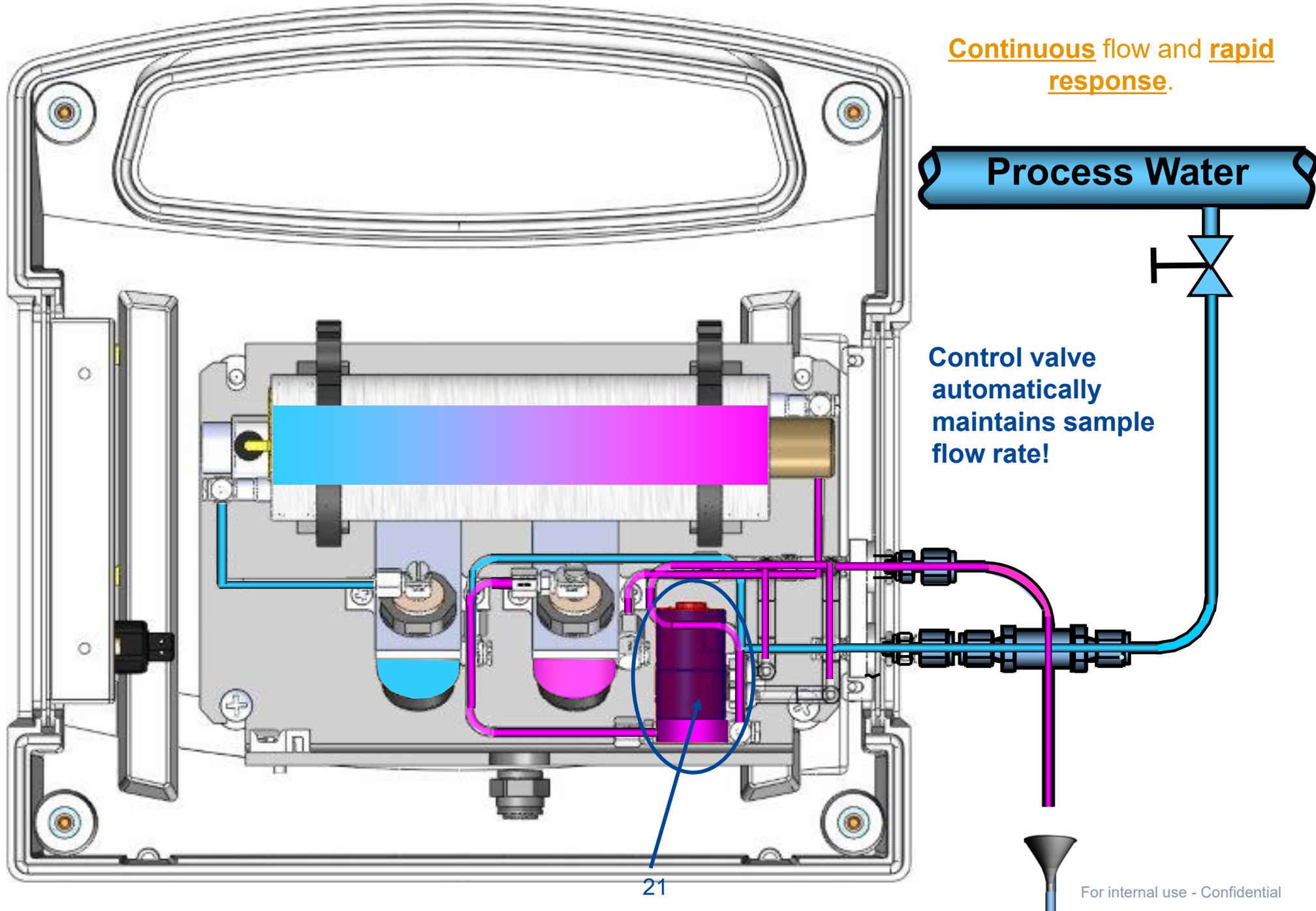


- Measurement at process line eliminates sampling errors
- On-the-spot results eliminates delays with lab analysis
- Simultaneously measure TOC and conductivity
  - Fully verify system performance
- Data log to USB memory
  - One-press access to data logging
  - Easily export to data spread sheet for analysis
- Fastest response minimizes sampling time
- Continuous operation captures every TOC change
  - Excellent for trending analysis
- Fully compliant with USP<643>, EP2.2.44, Ch P and JP16

## Real Time Measurement, Any Time, Anywhere



# The 450TOC Flow Path



- Silicone protective base protects instrument from drops and accidental impact
- Stand to facilitate use of existing Cal/SST module for Cal/SST or for grab sample processing
- METTLER TOLEDO P25USB printer
  - Fully supported by 450TOC
  - Standard MT Lab product
- Storage and transportation case

