

Process Knowledge for Lab and Plant

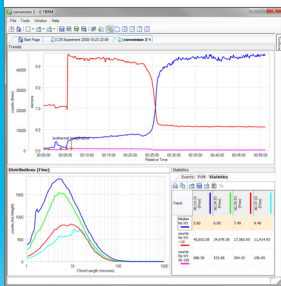
Inline Particle and Droplet Measurement



Scale-up from Lab to Plant
 Process knowledge collected in the laboratory is developed into a standard operating procedure. iC Process enables the seamless transfer of these methods to the plant where they can be used for real-time process monitoring and control.



Intuitive Process Monitoring
 The user interface of iC Process makes it easy for operators to select the appropriate, approved method and collect data. Trend views allow users to monitor particle or droplet processes without the need for offline sampling and analysis.



Data Analysis for Experts
 Plant data collected with iC Process can be further analyzed to gain deeper insight into the particle process. iC FBRM™ provides a wide range of options for analysis and comparison of real-time and historical process data.

ID	Method Name	Process Variable	Unit	Control
1	48001-00001	ProcessVariable1	mg/l	not measured
2	48002-00004	ProcessVariable2	mg/l	not measured
3	48003-00008	ProcessVariable3	mg/l	not measured
4	48004-00016	ProcessVariable4	mg/l	not measured
5	48005-00032	ProcessVariable5	mg/l	not measured
6	48006-00064	ProcessVariable6	mg/l	not measured
7	48007-00128	ProcessVariable7	mg/l	not measured
8	48008-00256	ProcessVariable8	mg/l	not measured
9	48009-00512	ProcessVariable9	mg/l	not measured
10	48010-01024	ProcessVariable10	mg/l	not measured
11	48011-02048	ProcessVariable11	mg/l	not measured
12	48012-04096	ProcessVariable12	mg/l	not measured
13	48013-08192	ProcessVariable13	mg/l	not measured
14	48014-016384	ProcessVariable14	mg/l	not measured
15	48015-032768	ProcessVariable15	mg/l	not measured
16	48016-065536	ProcessVariable16	mg/l	not measured
17	48017-0131072	ProcessVariable17	mg/l	not measured
18	48018-0262144	ProcessVariable18	mg/l	not measured
19	48019-0524288	ProcessVariable19	mg/l	not measured

Standard Interface to DCS
 iC Process supports full communication to Distributed Control Systems (DCS) via industry standard communication protocols such as Modbus and OPC UA.



iC Process™ for FBRM® Software

Specifically designed for inline monitoring of particle and droplet systems in the plant, iC Process enables the tracking of critical quality parameters in a process vessel or pipeline. This allows direct monitoring and control of their impact on final product quality or downstream process efficiency.

The iC Process user interface provides an immediate visual understanding of process progress and any upsets that may occur. Key information can be viewed on the iC Process client or sent to the Distributed Control System (DCS) for real-time monitoring and control of particle and droplet processes.

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Create a Standard Method for Process Monitoring

During the development process, scientists and engineers use iC software to collect and analyze data from laboratory experiments and use it to develop analytical methods for Process Analytical Technology (PAT) instruments. These methods are used to monitor critical quality and process variables when the process is transferred to the plant.

Transfer and Approve

An important part of implementing process analytics in the plant is the ability to transfer knowledge from the laboratory in the form of a method that is easily implemented in the plant. Optimized methods are validated and locked, then made available for use by authorized personnel. Within iC Process, engineers and operators can choose from pre-defined methods or templates developed in iC FBRM.

Monitor Particles and Droplets in Real Time

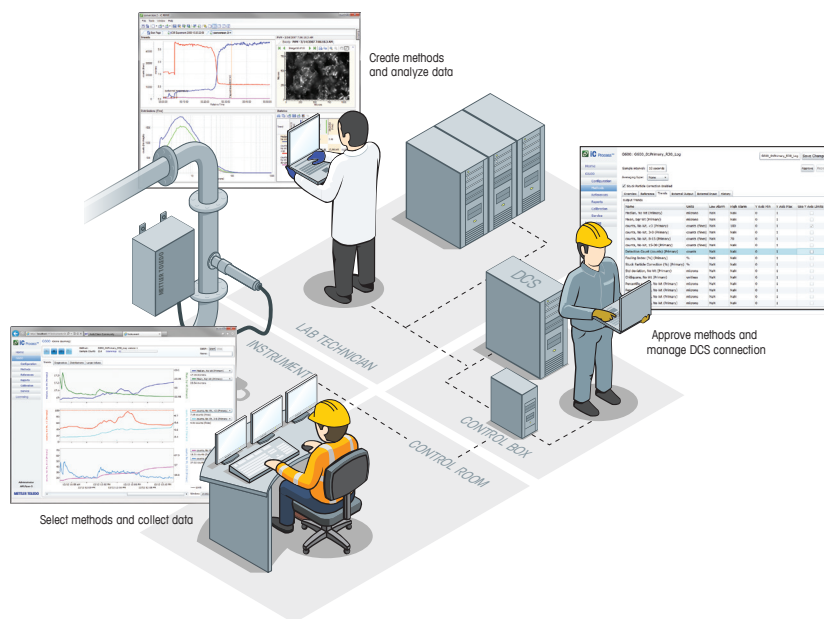
Operators select an approved method and start batch or continuous data collection using the intuitive interface. Collected data is available in real-time via the iC Process client or directly through the DCS. Disturbances and process deviations are immediately detected and used to trigger manual corrective action or automated process control.

Conduct Expert Analysis with iC FBRM

Data collected in the plant using iC Process is seamlessly transferred back to iC FBRM where it can be further studied and analyzed. iC FBRM allows users to investigate root causes of process disturbances, batch to batch repeatability, and other factors related to critical product quality and process efficiency parameters.

Generate Reports

iC Process includes options to produce batch reports, customized time-range summaries or automated daily summary reports. Additional details are available using the professional reports generated by iC FBRM.



Technical Specifications

iC Process Server - PC Specifications (Minimum Requirements)

Operating System	Microsoft® Windows® 8.1, Microsoft® Windows® 10, Microsoft® Windows® Server 2012/2016/2019
CPU	Intel Core 2 Duo 2.8 GHz
Memory	8 GB (64-bit); 4 GB (32-bit)
Hard Drive	SATA 7200 rpm

iC Process Client - PC Specifications (Minimum Requirements)

Operating System	Microsoft® Windows® 8.1, Microsoft® Windows® 10, Microsoft® Windows® Server 2012/2016/2019
CPU	Intel Core 2 Duo 2.4 GHz
Memory	2+ GB RAM or more
Hard Drive	SATA 5400 rpm
Graphics	SXGA 1280x1024 with 3D hardware acceleration

Additional Software Requirements

Latest version of Adobe Acrobat Reader

Supported Hardware and Software

Supported Hardware

ParticleTrack™ G600/G600 Ex and G600B instruments

www.mt.com/iCProcess

For more information

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Subject to technical changes
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