

METTLER TOLEDO MonARC Driver/Interface

This document describes the driver/interface for the METTLER TOLEDO MonARC process analyzers.

Product Description

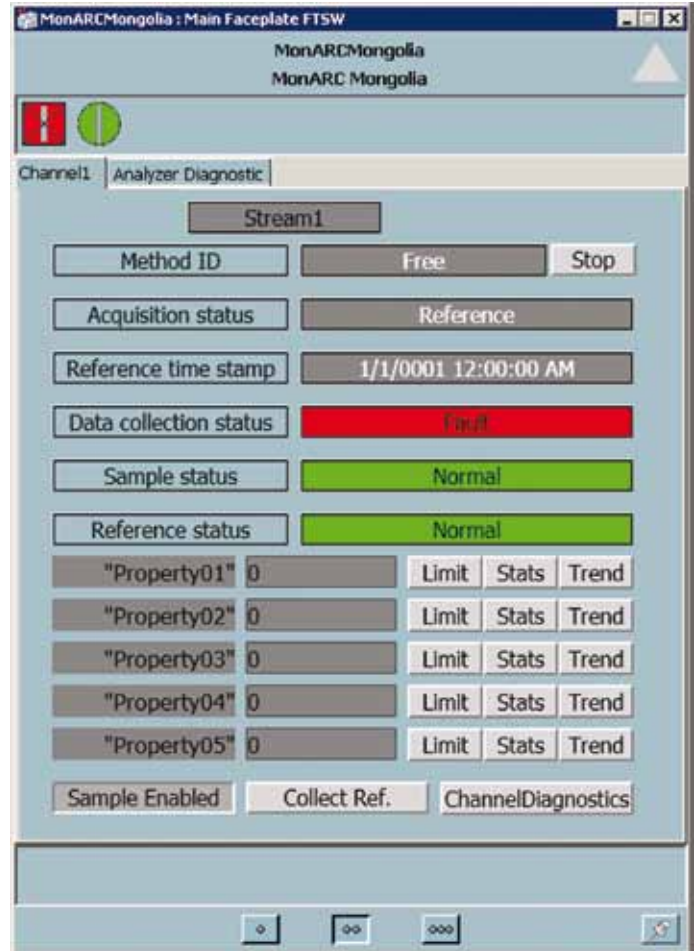
The interface provides data collection and control of all instrument parameters. This allows acquisition of reference (also called background) and sample spectra.

The interface is compatible with all MonARC spectrometers running METTLER TOLEDO PIA software version 2.03.0008.

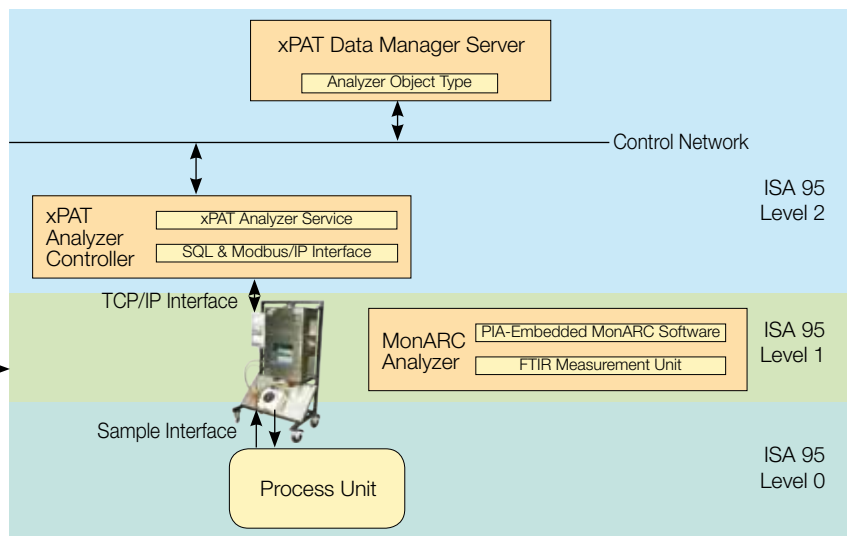
The software interface is made up of the MT PIA software that runs on the analyzer on-board computer and interfaces to the analyzer hardware, an interface driver that links to the METTLER TOLEDO PIA software over Ethernet using Modbus/IP and SQL server protocols, the xPAT analyzer service, the xPAT configuration template for MonARC and the xPAT object type for MonARC.

The METTLER TOLEDO PIA software is used directly from the analyzer touch screen display to commission and validate the analyzer as well as to trigger the collection of reference spectra. The xPAT system takes control of the analyzer through the METTLER TOLEDO PIA software for routine operation and interaction with the analyzer touch screen display is not required.

Manual control and status display of the analyzer is provided by a standard faceplate associated with each instance of the analyzer on the xPAT workplace and directly on the analyzer by a touch screen display.



METTLER TOLEDO MonARC Analyzer



Specifications

Analyzer Class	Mid IR spectrometer
Subclass	Fourier Transform spectrometer (FTIR)
Interface	SQL Server and Modbus/IP over Ethernet TCP/IP
Compatibility	MonARC PIA embedded software version 2.03.0008
Throughput	Resolution Max Spectrum size Max Samples
	2 cm ⁻¹ 3480 Every 9 secs
	4 cm ⁻¹ 1740 Every 5 secs
	8 cm ⁻¹ 870 Every 5 secs
	16 cm ⁻¹ 435 Every 5 secs
Control Parameters	Read/write access to all parameters
Channels	1 channel
Gains	Selectable 1, 4, 16, 64 or automatic gain
Spectral Resolution	Selectable 2, 4, 8, 16 cm ⁻¹
Number of Scans	Number of scans to average per sample measurement / per reference measurement; Default 1
Clean	Ultrasonic in place cleaning of sample probe can be turned on/off and duration of cleaning in seconds can be set
Signal Processing Parameters	Settings for signal processing of raw data
Laser Frequency	Set directly on analyzer control panel
Apodization	Selectable to either Boxcar, Triangular or Happ-Genzel
Spectral Range	Three selectable preset spectral ranges
	DiComp: 650 – 4000 cm ⁻¹
	SiComp: 650 – 4000 cm ⁻¹
	ZrComp: 1450 – 4000 cm ⁻¹
Faceplate Status Indicators	
Connection Status	Status of Ethernet link to analyzer: good or bad
Analyzer Status	Status of analyzer: good or bad
Acquisition Status	Idle, Sample starting, Sample, Reference starting or Reference
Reference Time Stamp	Data time for last reference
Data Collection Status (for sample or reference)	Normal, Maintenance, Fault
Faceplate Commands	Collect Sample, Collect Reference
Control Type	xPAT provides start/stop signal for sample collection; Reference collection triggered from analyzer
Data Acquisition	Collect reference spectrum for calibration and absorbance spectrum for samples
Data Analysis	Up to 5 properties per channel with prediction statistics computed from Peak height or PLS model (PLSplusIQ or SimcaP+)
Calibration	Collect Reference
Validation	Operational Qualification (OQ) of analyzer partly supported in spectral diagnostics; full OQ performed directly at instrument using the onboard PIA software. Performance Qualification (PQ) implemented by method specific configuration
Spectral Diagnostics	Available on reference and sample spectra: Spectral Noise (RMS noise over a spectral region), Frequency Validation (check correct location of a known band), Non-linearity (detect saturation with out of band signal), Spectral Band Intensity (Check a band for minimum intensity)
Health Monitoring	Monitors analyzer hardware status; e.g. TCP/IP connection to analyzer, analyzer passes internal self test
Asset Management	Not implemented

For more information about this analyzer please visit www.mt.com/monarc. For more information on ABB Life Sciences solutions visit www.abb.com/lifesciences.

Note:

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