

# PLANTWEB ADVISOR FOR METROLOGY

Managing Ultrasonic Meter Uncertainty

## Plantweb Advisor for Metrology Functionality

Plantweb Advisor for Metrology is Emerson's new modular analytics platform. It is built upon the latest technologies, providing a suite of functions and flexibility that are unprecedented within the measurement world today. This next-generation platform provides a level of standardization and automation of complex tasks that integrate seamlessly across measurement assets and engineering support locations.

The enhanced diagnostic, remote monitoring, predictive capabilities and validation provide greater insight into both process and instrumentation, driving clarity and reducing financial exposure and risk.

## Ultrasonic Meter Diagnostic Module

Ultrasonic flow meters require periodic checks and calibrations to ensure optimal performance. Having an automated tool available online gives an added degree of confidence in the performance of the device. For this purpose, Plantweb Advisor for Metrology offers ultrasonic diagnostics software.

This software module interfaces to the ultrasonic flow meter either directly or via a flow computer/supervisory/DCS, taking the diagnostic data from the device and offers the following functionality:

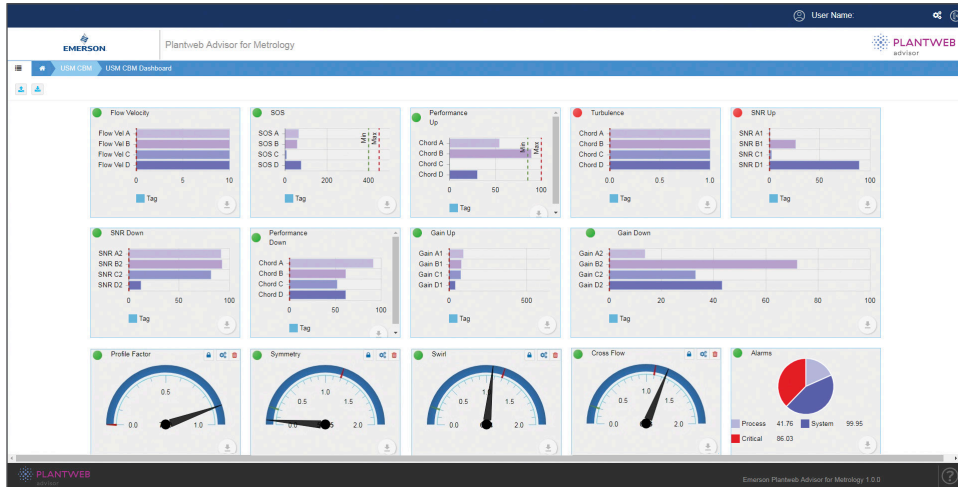
- Signal-to-noise ratio per path
- Gain per path
- Path percent performance
- Profile factor
- Symmetry
- Cross flow
- Swirl
- Turbulence
- Speed of sound cross-check



The Ultrasonic Meter Module provides diagnostics to detect and predict device failures and deviations that affect measurement uncertainty.

## Ultrasonic Meter Dashboards

A number of dashboards are provided to give at-a-glance performance indication, alongside current and historical trending and configurable reports. The Ultrasonic Diagnostic Module is integrated with the full suite of Plantweb Advisor for Metrology modules, giving a holistic overview of the measurement system.



Ultrasonic Meter Diagnostic Dashboard

USM Alarms									
Chord Alarms				System Alarms		Other Alarms		Gain	SNR
ChordA	ChordB	ChordC	ChordD						
AcqMode	█	█	█	█	AbnormalProfileDetected	█	A1	█	█
AcqSndSpdRangeErr	█	█	█	█	AcqModuleIncompatible	█	A2	█	█
BatchInactive	█	█	█	█	BatchDataRcvFailed	█	B1	█	█
DtTmChkFail	█	█	█	█	BlockageDetected	█	B2	█	█
ExceedMaxNoise	█	█	█	█	BoreBuildUpDetected	█	C1	█	█
FailedForBatch	█	█	█	█	LiquidDetected	█	C2	█	█
MeasSndSpdRange	█	█	█	█	MeterVelAboveMaxLmt	█	D1	█	█
PeakSwitchDetected	█	█	█	█	PowerFail	█	D2	█	█
SignalOvered	█	█	█	█	ReverseFlowDetected	█			
SignalBad	█	█	█	█	SwComponentIncompatible	█			
SNRTooLow	█	█	█	█	TooFewOperChords	█			
TmDevChkFail	█	█	█	█	XcprFringSynError	█			
XcprMaintenanceRequired	█	█	█	█					
Other Alarms				AllChords	Other Alarms	ProfileOOL	SwirlAngle	SymmetryOOL	

Condition-Based Monitoring Alarms Report of an Ultrasonic Flow Meter

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