EMOS® EARLY DETECTION ENGINE

It's Never Too Early to Prevent an Incident

Early Detection of:

- Brine impurities
- Catholyte impurities
- Abnormal operating conditions (temperature, concentration, flow)
- Abnormal aging or sudden failure of cell components
- Instrument failure
- Short circuits
- Brine blockage
- Blistering
- Busbar degradation

Benefits:

- Real-time display of abnormal cell behaviour
- Start preventative actions immediately
- Avoid unplanned shutdowns
- Prevent irreversible damage

DEVIATION FROM NORMAL BEHAVIOR INVISIBLE WITHOUT EMOS® EARLY DETECTION ENGINE
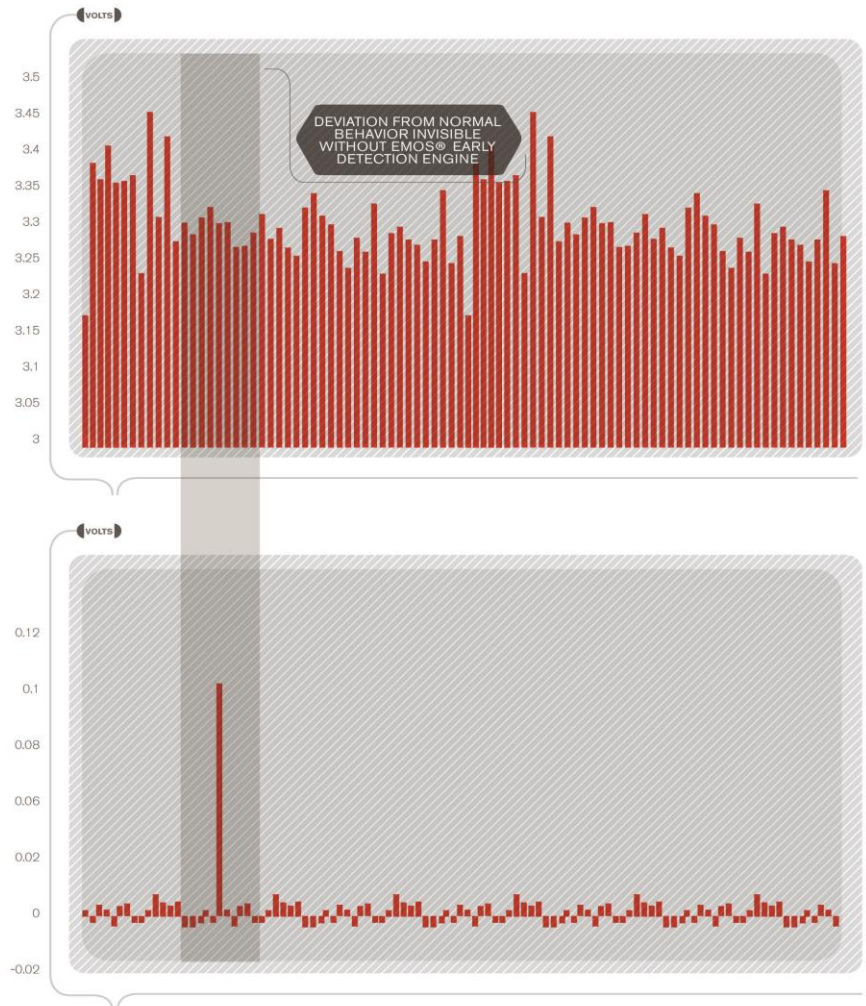
Overview

Detecting abnormal cell behaviours before they become a safety issue can help prevent dramatic production losses caused by unplanned shutdowns.

All industrial electrolytic cells have differences in performance & aging; this makes it difficult to determine if a particular cell is behaving normally simply by observing its raw voltage values. In order to properly follow an electrolytic cell's decreased performance, it should not be compared to the rest of the electrolyser. Instead, the detection of decreasing performance of cells must be based on the modeling of the behavior of each individual cell.

An annual license, the EMOS® Early Detection Engine is an extension of the EMOS® Safety System that performs real-time comparisons of measured cell voltages (raw cell voltage) with their learned behavior. The resulting value is the EDE Residual. A high or low EDE Residual will generate an alarm on the EMOS® Monitoring screen for immediate action by an operator or process engineer.

This detection can be early enough to minimize or even avoid operational and financial losses; which in turn lowers operating costs, maintenance costs, and increases production.

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EMOS® Monitoring screen showing Realtime EDE Residuals

System Requirements

System Requirements – *runs on EMOS® Server*	
Operating System:	Windows 7 pro 32-bit/64-bit/ Windows Server 2008 Windows 8.1 pro 32-bit/64 bit/ Windows Server 2012
CPU:	Xeon processor (minimum)
RAM:	16 GB (minimum)
Hard Disk Space:	(2) 500GB Hard Drives mounted in RAID-1
--	DVD RW
--	(4) 100/1000 Network Ports

Additional Requirements	
Network:	OPC Link with DCS:
Information:	- temperature of the brine inlet of the electrolysers - temperature of the anolyte outlet of the electrolysers - temperature of the catholyte inlet of the electrolysers - temperature of the catholyte outlet of the electrolysers - concentration of the catholyte outlet of the electrolysers - pH of anolyte outlet of the electrolyser - electrolyser chlorine pressure - electrolyser differential pressure

Ordering Information

Part Number	Description
SW501	EMOS® Early Detection Engine (EDE) Annual License (Includes periodic model update)

Related Products

Part Number	Description
SWSTD	EMOS® Safety Software Package

Additional Information

EMOS® Early Detection Engine is part of R2's Electrolyser Maintenance, Optimization and Safety System. Contact us for more information.

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