



EMOS® EARLY DETECTION ENGINE

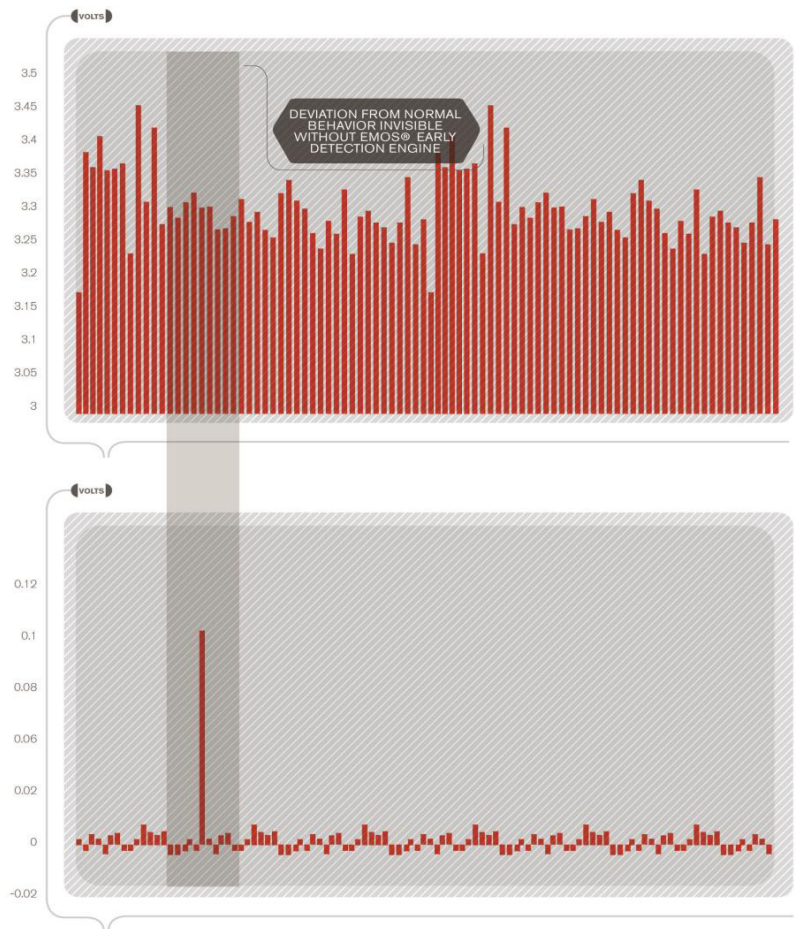
IT'S NEVER TOO EARLY TO PREVENT AN INCIDENT

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



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 electrolyzer. 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® View** 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.



PRODUCT DATA SHEET

MKD0063_3V0 - EMOS Early Detection Engine

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EMOS® View screen showing Realtime EDE Residuals

SYSTEM REQUIREMENTS

EMOS® Server System Requirements		Additional Requirements	
Operating System	Microsoft Windows Server 2022	Network	OPC Link with DCS
CPU	Intel® Xeon® processor	Information	<ul style="list-style-type: none"> • temperature of the brine inlet of the electrolyzers • temperature of the anolyte outlet of the electrolyzers • temperature of the catholyte inlet of the electrolyzers • temperature of the catholyte outlet of the electrolyzers • concentration of the catholyte outlet of the electrolyzers • pH of anolyte outlet of the electrolyzer • electrolyser chlorine pressure-electrolyzer differential pressure
RAM	16 GB		
Hard Drive	2x1 TB RAID1 SSD (Solid State Drive) recommended		
Network Ports	(4) 100/1000		
Part Number	Description	Part Number	Description
SWSTD	EMOS® Safety Software Package	SWSTD	EMOS® Early Detection Engine (EDE) Annual License (Includes periodic model update)

ADDITIONAL INFORMATION

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



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