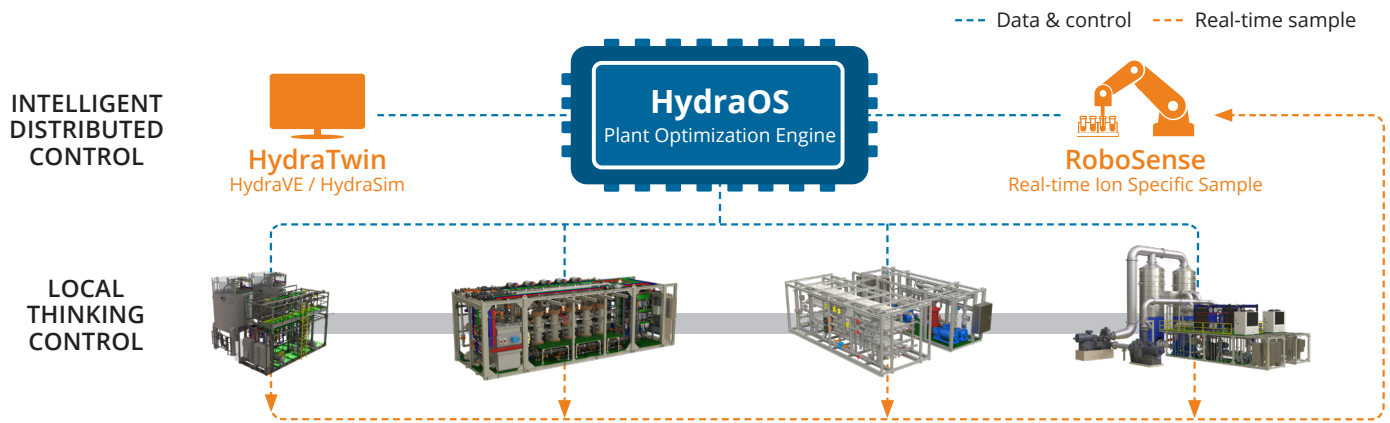


HydraOS

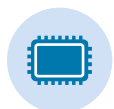
Intelligent Plant Operating System

HydraOS is an intelligent, plant-wide operating system that transforms water treatment and lithium refining operations, end-to-end. It delivers real-time operability and performance benefits: increases uptime, reduces maintenance, and optimizes plant recovery.

HydraOS is built into Saltworks' high-performing modularized process plants, and represents the next generation of AI-ready advanced process control and real-time optimization. It integrates hardware, software, and data systems into a unified, operator-focused platform with future-proof AI-enabled capabilities.



Digital Architecture Components



HydraOS
Intelligent plant operating system (OS) coordinating control, optimization, data visualization & reporting



HydraTwin
Offline digital twin for plant optimization & scenario analysis



HydraVE
AI-enabled virtual engineer to support operations



RoboSense
Real-time ion-specific sampler & data compiler



HydraSim
Plant simulator to pre-commission & train operators

Operator Ease Training & Onboarding

Designed for operators to enable rapid informed decisions. Plant simulations for training and integration with digital twins for offline or online optimization.

Real-Time Visibility & Reporting

Real-time performance monitoring with integrated reporting for trend identification, plant-wide visibility, and management level tracking.

Autonomy & Intelligent Control

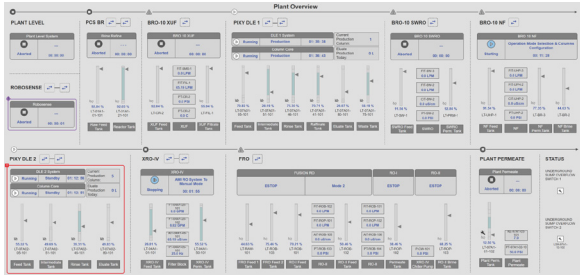
Autonomous operation with self-optimizing controls that enhance plant performance, uptime, and operability, with scalable architecture.

Equipment Health & Reliability

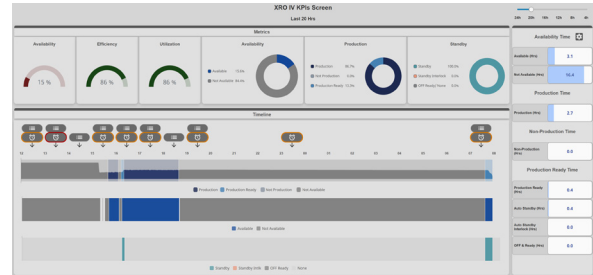
Performance-based health monitoring for proactive intervention to improve uptime and reduce maintenance through advanced condition tracking.

HydraOS Interface

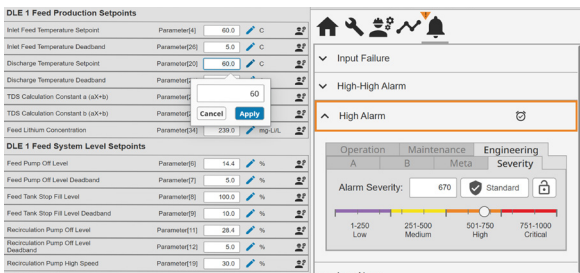
The HydraOS control interface presents a unified view for plant-wide monitoring, control, and interaction with all connected systems.



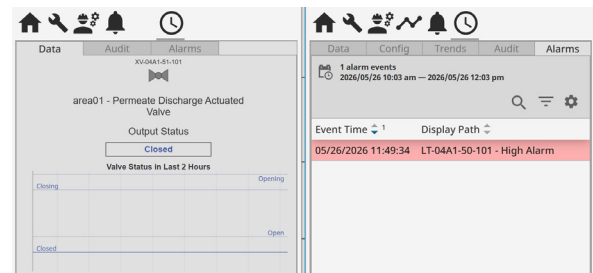
Unified intelligent distributed control



Customized KPI reporting dashboard



Alarm mapping & priority stacking



Rewind & replay "time machine" feature

Standard Package & Options

PLC / HMI	Allen-Bradley (Master PLC) / IPC 24" with Ignition Perspective
SCADA	Ignition SCADA Server (Inductive Automation) + PostgreSQL data storage Can be integrated with other SCADA platforms
Control Code	Studio 5000 V36 and Ignition 8.3 (or newer versions)
Network Protocols	Ethernet/IP (PLC-to-PLC); OPC UA (SCADA control network)
Operator Training	Virtual commissioning (plant simulator) for operator familiarization and testing. On-site commissioning and operator training and video tutorials.
Remote Operations Center (ROC) Support	Real-time secure data link enables remote support for operator training, troubleshooting, trend analysis, and performance reporting.

Future-Proof AI Integration

HydraOS does not include embedded AI by default, but is designed to accommodate and interact with AI plug-ins at the client's discretion. Saltworks' open architecture across HydraOS and HydraTwin does not lock clients into a specific AI platform or vendor. Clients can extract data from HydraOS, run external AI models, and apply resulting insights to inform operations. AI assistance boosts operator confidence and insights.