Boost Specialty Chemical Production With Experion® LX

Honeywell provides Experion LX to meet the specialized requirements of specialty chemical sites — no matter their size. This flexible Distributed Control System (DCS) boosts the performance of batch operations by enabling improvements to reliability, quality, agility and efficiency.

Today's specialty chemicals market is more rigorous than ever. It demands that you always deliver the right product, on schedule, as well as take advantage of opportunities for new products and minimize manufacturing costs.

The right automation solution can help you respond these challenges by ensuring greater reliability, quality, agility and efficiency — the answer to a sustainable competitive advantage.

A DCS Sized to Your Needs

Honeywell offers Experion® LX to meet the unique requirements of differently sized specialty chemical plants. With this flexible DCS, various system functions and applications aimed at optimizing performance are inherently available in the context of batch production. Data from these functions is also presented in an integrated operating environment.

Figure 1. Specialty chemical manufacturers are under pressure to optimize their operational and business performance.

Honeywell is a leading automation provider in the chemicals market, present in every region of the world. We provide flexible and cost-effective control solutions to a variety of chemical plants, ranging from small, single product operations to world-scale petrochemical complexes. Eight of the top 10 specialty chemical companies use Honeywell systems and solutions.

Leveraging our experience in continuous process and batch automation, Honeywell provides advanced automation technology for applications as diverse as agricultural chemicals, paints and pigments, synthetic fibers, polymers and resins, polysilicons and pharmaceutical ingredients.

Technology That's Proven

Experion LX is an extension of Honeywell's award-winning Experion Process Knowledge System (PKS). This DCS solution brings the best of proven Experion PKS technology to help optimize plant performance in a wide range of industries around the world.

With Experion LX, your specialty chemicals manufacturing operation will have greater agility to respond to new customer demands and changing product requirements. It is a powerful, yet practical solution offering advanced optimization and batch control technology usually found in larger DCS platforms — but at a more affordable price.

Experion LX allows multiple batch recipes to execute completely in a reliable controller environment. This type of batch system offers a higher level of performance than a typical server-based system. The absence of a separate batch server removes associated costs and security/maintenance issues, and eliminates communication latency. Common engineering and

operating tools for batch also provide a single, consistent platform for batch development and execution in compliance with S88 industry standards.

Experion LX's innovative technologies are vital to improved plant performance and better business results, and can be implemented in a way that suits your individual site.

- Tightly integrated DCS and Supervisory Control and Data Acquisition (SCADA)
- Honeywell's Experion C300 controller for robust and versatile control
- C300 simulation for proving out control strategies
- Honeywell's patented, high-performance Fault Tolerant Ethernet (FTE) control network
- Honeywell's patented, revolutionary Profit® Loop algorithm for predictive control
- Unique I/O module design for compact footprint, and efficient installation and maintenance
- Improve accuracy and reduce installation footprint by up to 54% with new TC/RTD module design
- Improve efficiency and reduce configuration time by up to 30% with Honeywell's enhanced Control Builder and newly styled Human-Machine Interface (HMI)
- Easy assembly requiring no special mounting hardware, power rails or cabinet infrastructure for module installation
- Powerful reporting tool for debugging and system maintenance
- Support for industry-standard PROFIBUS® devices
- Optional redundancy at all levels: server, network, C300 controller and Series 8 I/O modules
- Smart device integration through industry-standard protocols such as HART®, FOUNDATION™ fieldbus, PROFIBUS and Modbus®
- Asset management using Honeywell's integrated Field Device Manager (FDM) software
- Controller-based, S88-compliant modular batch control for high throughput and reliability of batch processing
- Enhanced batch functionality with Class-based Recipes, Recipe Builder and Batch Summary Display
- Enhanced SCADA features with Pan and Zoom Displays, Equipment Templates, Interfaces to IEC 60870, etc.
- Extensive integration of PLCs, DCSs, Remote Terminal Units (RTUs), drives, safety systems and weigh scales through rich SCADA capability and Matrikon OPC servers

- Honeywell's flexible Distributed Server Architecture (DSA) for integration of processes across multiple units, control rooms or geographically separated locations for optimum flexibility and system maintenance
- Virtualization solutions intended to improve performance and reliability in the industrial automation domain
- Qualification and Version Control System (QVCS)/E-signature support for improved lifecycle management and change control process verification with embedded regulatory (21 CFR Part 11) compliance

Built for a Specific Purpose

Experion LX is specifically built to help specialty chemical firms realize the performance advantages of a true distributed control solution at a reduced cost. This scalable DCS can be tailored to fit your specific control applications — regardless of their scope — and extended at any time to include personnel and assets, and even to integrate entire business operations.
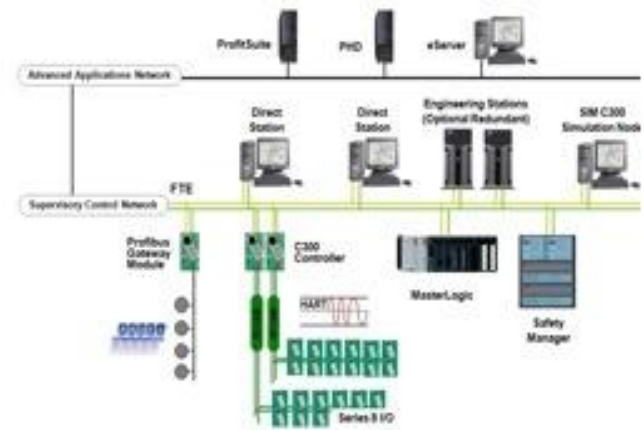

Figure 2. Experion LX architecture

Built-in Function Blocks: Designed to suit DCS requirements unique to various industry applications (support also provided for Custom Algorithm Blocks).

Pre-built Templates: Solution pack with a wide range of templates ideal for general control applications.

Rich Function Libraries: Easily create control strategies with the single, integrated Control Builder tool for function blocks.

Application Development Toolkit: Develop custom applications that communicate with Experion LX through the Network Application Programming Interface (API), Server API, Open Database Connectivity (ODBC) Data Exchange, Server Automation Object, etc.

FTE: Reliable, industrial-grade network providing multiple communication paths between nodes — thus eliminating all single points of failure —and utilizing commercial Ethernet technology for lower costs.

C300 Controller: The Experion C300 controller operates Honeywell's deterministic Control Execution Environment (CEE) software, which executes control strategies on a consistent and predictable schedule.

Direct Station: Powerful operator station functions as a client to the Experion LX Engineering Server, and at the same time, allows direct access to the C300 controller for process data, alarms and messages.

Safe Operations: In collaboration with the Abnormal Situation Management (ASM®) Consortium, Honeywell has developed safe operator functions like Procedural Operations to reduce incidents related to improper execution of operating procedures. It has also created alarm handling and display layouts to improve overall operator response to abnormal conditions.
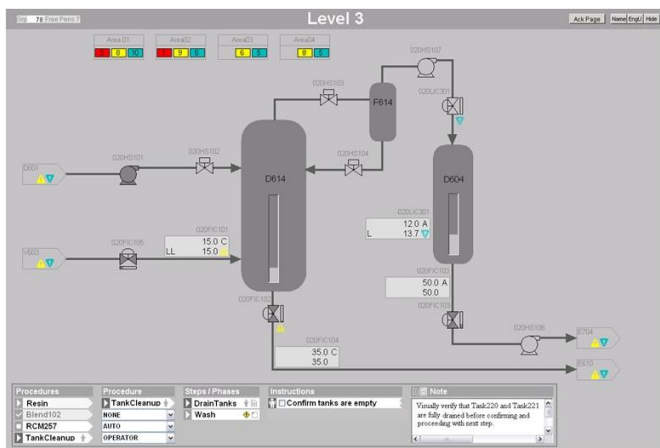

Figure 3. Typical Batch Manager Operating Display.

Simple Use and Configuration

Experion LX not only provides the most advanced DCS and SCADA functionality on the market, but it is also simplifies the use and configuration of these capabilities.

Reduced engineering effort: Users can reduce the time spent getting their system ready for first production by employing features such as drag-and-drop configuration, prebuilt algorithms, a global database and integrated tag configuration. They can also access a complete Honeywell HMIWeb solution pack to develop ASM-compliant displays. In addition, the system comes with common engineering tools, bulk build/bulk edit capabilities,

automatic loop tuning, control strategy simulation and equipment templates for the entire SCADA configuration.

Improved decision-making: Experion LX provides the information operators need to make timely decisions without a cluttered view of the process. Features include: configuration changes without stopping production, run-time view of control strategy and sequence status, advanced operator alarm management tools, and integrated workflow for operators.

Complimentary Offerings

Honeywell supplies a variety of best-in-class technologies to enhance and extend the capabilities of the Experion LX system. These include:

OneWireless™

Honeywell's OneWireless network provides manufacturers with a single, optimized, multifunctional network that supports many applications with comprehensive end-to-end security. Mobile Station technology, an extension of Experion PKS, enables engineering, operations and maintenance personnel to safely capture and share process data locally at the source.

Process Optimization

Honeywell's Profit Loop is a single input/single output (SISO) model predictive control application offering the operating simplicity of a standard PID controller. It serves as a Smith Predictor, gap controller and optimizer all in one. Profit Loop can be incorporated into complex and custom control strategies to drive better control of processes.

OPC Integration

Experion LX integrates OPC with the DCS solution to create the most flexible and powerful OPC suite available, with a broad range of Client, Server and redundant OPC technologies.

Historian

Experion LX provides fully integrated, on-board historian allowing users to collect standard history snapshots and averages, as well as fast or extended history snapshots. Configuration of history is done at the same time, using the same tool as database configuration.

Equipment Procedures

By automating routine or infrequent equipment procedures, Experion LX integrates best practices for batch turnarounds, catalyst regeneration, filter change-out and system startup/shutdowns to improve operator performance, reduce

cycle times and improve quality. This capability prevents downtime by capturing knowledge gained by operators over years of performing cyclic procedures.

Material Handling

Honeywell has a host of solutions to help manufacturers control and reduce raw material usage. For instance, our VersaFlow flow meters are available in electromagnetic, ultrasonic, vortex and Coriolis technologies. We also offer built-in algorithms and integration with Mettler-Toledo weighing terminals, which are integrated with Experion LX through specialized interface function blocks to tighten material transfer control, decrease batch cycle time and improve production quality.

Customer Benefits

Because Experion LX is based on the Experion PKS platform, it enables specialty chemical producers of all sizes to realize the advantages of a robust and secure DCS solution:

Faster Projects and Reduced Lifecycle Costs: Experion LX was specifically designed to help industrial organizations stay competitive, meet customer demands and respond quickly to opportunities. It allows for faster projects and less engineering effort to make ongoing changes to your automation strategy over the life of your system.

Increased Uptime: With Experion LX, you can easily make changes to your automation configuration without stopping production. The solution supports incremental editing and loading of control strategies online; addition of I/O, controllers and control strategies; and online upgrades. Plus, it includes simulation functionality to test changes before putting them on process.

Improved Operational Efficiency: Experion LX has a sophisticated and rich alarm/alerting system capable of handling alarms and alerts for your process. This alarm system supports not only Experion application alarms, events and messages, but also provides full integration with third-party alarms and events via OPC. The standard ASM-conformant alarm summary display allows operators to focus on the problem at hand.

Unsurpassed Batch Expertise

Honeywell has a rich legacy and commitment to batch automation. In addition to offering industry-leading batch solutions for over 20 years, we are one of the founding members of the S88 Batch Standards Committee.

Our company pioneered the industry's most reliable and configurable batch automation technology, resulting in gains of 2-5 percent production throughput compared to competitive offerings.

Honeywell's batch solution is an inherent function within the Experion LX control environment, enjoying seamless interoperability with Experion control functions like alarming, history, mobile tools, real-time visualization of the batch sequences, and intuitive operator displays based on ASM Consortium principles. This delivers a unique, integrated environment to the operator, boosting productivity, efficiency and reliability.

Service and Support Worldwide

Choose Experion LX and know that Honeywell stands behind you over the life of your investment. Our channel partners are fully trained, authorized and experienced to implement and support your project — whether small or large, new or an expansion. You can rely on readily available local service when you need it.

In addition, Experion LX users have full access to Honeywell's Global Technical Assistance Center (GTAC) for product support and consulting. Our experts can help you resolve issues in a timely manner and keep your system running at peak performance.

For More Information
Learn more about how Honeywell's Experion LX solution can optimize your performance, visit our website www.honeywellprocess.com or contact your Honeywell account manager.

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