Food & Beverage Solutions

Solution Note

Honeywell's food and beverage solutions help manufacturers maintain auditability and transparency, optimize production and increase profitability while focusing on quality, flexibility and repeatability.

Food and beverage businesses face unique challenges. Ever tighter industry standards and intense competition mean quality, efficiency and speed to market are critical to success. Today's challenges also include rising concerns about product traceability, shifting consumer demands, and disruption in supply chains. We help your business ensure quality, increase efficiency, reduce risk, and bring products to market faster. Connecting your people, process, and assets, our solutions can be your competitive edge.

Meet Competitive Pressures

Honeywell combines field-proven technology with expertise in the Industrial Internet of Things (IIoT) and cloud technologies for effective solutions. Our control solutions and connected field instrumentation help food and beverage manufacturers boost process efficiency, increase plant availability, and reduce maintenance costs.

Solutions and Expertise You Need for Success:
* *Most advanced automation & process control for consistency and oversight of every batch*
* *Transparency through data capture, recording and reporting solutions that simplify and safeguard quality*
* *Unique LEAP™ execution reduces risk and accelerates project schedules to get to production quicker*
* *Market leading, global services and support that keep plants and businesses running efficiently, reliably and safely.*

FEATURES & BENEFITS

Experienced
* Specialists with a lifetime's experience in batch

Scalable
* Flexible advanced technologies for the smallest to the largest operations

Secure
* Industry leading cybersecurity, access control and protection against message flooding and denial of service ensures system availability

Compliant
* Validation and reduced quality control costs with system self-documentation, change management, compliance, and enforced and verified operating instructions

Fast
* A unique approach with LEAP™ project execution to remove risk and accelerate automation project schedules

Efficient Validation
* Virtualization and simulation of all DCS components available for cost effective change implementation

Across automation, control, field devices and building systems, we offer comprehensive solutions and services for a better business. We help your processes run smoothly, optimize operations, enable collaboration and improve analysis to deliver more profitable outcomes.

With the largest project service organization in process control, complemented by our key authorized solution partners, Honeywell brings a unique approach to project execution. With intelligent application of cloud technologies, virtualization and our Universal I/O, you can get to market faster. With solutions for optimization, monitoring and analysis, we'll also ensure you maximize and sustain production and profits.

Reduce the Regulatory Burden

The requirements of the US Food and Drug Administration (FDA), China Food and Drug Administration (CFDA), and other regulatory bodies on a national and international scale are, rightly, among the toughest in the world. Penalties and reputational damage from quality failures erode profits and public trust, ultimately jeopardizing future operations. We offer solutions

for validation, automated system change management, and electronic batch recording with exception reporting. Moving operations from paper to digital, we ensure full traceability, eliminate errors, cut costs and increase confidence in quality.

Unrivalled Process Control Solutions

Automate and optimize through our control solutions for all plant processes. Monitor and control batches confidently and efficiently, from the simplest sequences to the most complex class-based recipes. Delivering the mightiest control to the smallest or largest of processes, Honeywell automation offers powerful, scalable functions with a small footprint to fit even the tightest areas.

Experion® Batch combines distributed control, batch automation and patent pending visualization to optimize availability, productivity and reliability. Our human-machine interface (HMI) presents the current and future state of operations in a natural
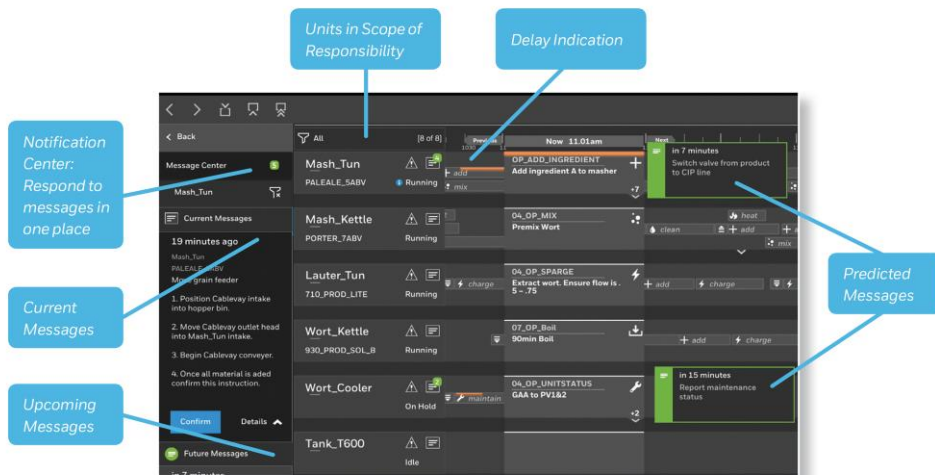
intuitive manner. This provides operators with insights into upcoming events or potential delays, making it easier for them to conduct multiple tasks, take appropriate actions sooner, and adjust next steps accordingly. Progressive workflow instructions and intuitive displays enable guided proactive troubleshooting, allowing users to better anticipate and respond to potential process deviations or equipment failures before they occur.

ControlEdge™ Unit Operations Controller (UOC):

The **ControlEdge Virtual UOC** is a Virtual Appliance offering a secure digital twin of the UOC controller that operates without utilizing Windows. The Virtual UOC enables flexible recipe development, testing, and the option of executing in a virtual environment. Move control strategy configuration from testing to the production environment effortlessly, without modification or reassignment.

Universal Process I/O reduces or eliminates marshalling and allows immediate configuration without the need for additional hardware. Connect any field signal to any I/O channel in standard cabinets to complete projects quicker, eliminate delays, and reduce validation efforts from changes that are made late in the design. Reducing wiring, footprints and spares, Universal I/O coupled with the UOC offers a lean and ready design for skid and unit level automation flexibility.

Fast Track Automation brings products to market faster by starting production automation design earlier and using pre-structured standard system designs, parallel path development of production systems while in clinical trials, and unique automation system technologies offering flexibility to respond to changing strategy and demand.

Honeywell's **Orchestration Layer** uses less hardware for direct control of any PLC on a processing unit or skid without going through a Microsoft server running batch execution software. This provides flexibility to respond to changes in demand and formulation, and saves on hardware cost, configuration, and communication time.

Honeywell Forge Asset Performance Management goes beyond traditional asset monitoring and data gathering. By merging together decades of machine modeling experience with modern cloud analytics, Honeywell digital twins predict equipment availability, drill to the root cause of inefficient operation, and bring order to reliability and maintenance planning. Use predictive analytics to achieve up to 5% reduction in energy usage, 7% increase in productivity, and 10% increase in throughput.

Data Capture, Recording and Analytics

Data matters. Honeywell's solutions enable you to capture data, including first points of record,

ensure integrity, and turn data into actionable intelligence through advanced analytics. Easily producing reports for quality and other purposes, Honeywell puts your data to work for you.

Experion Batch Reporting provides comprehensive procedure execution reporting and tracking for confident quality control. Integrating data from our PHD or other historian with event data from Experion, it enables users to collect, query and report—safeguarding data integrity and rapidly identify quality problems and deviations from golden batch procedures. Plants can achieve greater consistency, safer production, lower material and energy usage, and reduced cycle times.

Experion Batch provides an HMI with electronic signature access; a tamper-proof audit trail that accurately records alarms and events, invalid test runs, and invalid log-in attempts; and active directory integration of single sign on, access permission, and role definitions across the entire automation infrastructure. Additionally, the **Experion Qualification and Version Control System (QVCS)** provides version control for all application software for change management. Facilities can achieve greater consistency, safer production, lower material and energy usage, and reduced cycle times.

Manufacturing Intelligence: Honeywell is teaming with Aizon to implement and support a GxP-compliant data analysis platform to consolidate compliance-related manufacturing data from disparate systems into a single visual interface.

Together, Aizon's cloud-based software-as-a-service (SaaS) data lake platform and Honeywell's Batch CoE and global engineering and support provide real-time visibility and insights through advanced analytics and Internet-of-Things (IoT) technologies with end-to-end data integrity. Through enhanced transparency, regulatory visibility, and digital transformation of manual paper processes, the solution helps you minimize regulatory risk, increase operational efficiencies, and deliver products to customers faster while reducing rejections and waste of products.

Safety and Security

Comprehensive solutions deliver fire and gas detection and suppression, access control, and cybersecurity. Our solutions protect your plant, people and environment from every type of threat.

Honeywell's Plant and Personnel Safety and Risk Reduction Solutions are a comprehensive and truly integrated suite of safety and security hardware and software for the process, plant, people and environment. The only end-to-end solution of its kind, it digitizes, integrates, and automates the EHS

Honeywell offers a one-stop shop for automation and process control. Solutions span manufacturing automation, building controls and fire and safety. Comprehensive support and services can be deployed remotely or through our global network of expert engineers.

ecosystem to deliver fire & gas, security, personnel protection, digitized workforce management, intelligent wearables, real-time location solutions and business continuity holistically across process facilities. Digital safety transformation ultimately aims at providing the analytics to solve vulnerabilities before they happen, improve policy compliance and productivity, reduce the risk of incidents, and to respond more quickly and effectively with better information.

Our **Building Solutions** have helped pharma businesses protect and control their facility and workplace environment for over a century. With extensive experience in all pharma and biotech operations, including HVAC and GxP critical environments, we can help with building automation, climate control, and energy management solutions.

Honeywell's renowned **Cybersecurity Solutions** are embedded in each solution from the start to defend the availability, reliability and safety of your process control systems and facility operations:

• Architecture and design services based on rigorous segmentation of security zones and conduits
• Assessments and audits to uncover passive attacks and identify vulnerabilities
• Application whitelisting and endpoint protection
• Industrial Cybersecurity Risk Manager, the first solution to monitor, measure and manage cybersecurity risks for industry manufacturing environments
• Managed cybersecurity services.

Project Execution and Services

Honeywell brings a unique approach and advanced technology to both project execution and ongoing support. At every stage of the lifecycle we cut costs and accelerate schedules to get production running and keep it operating at its fullest potential.

Lean Project Execution: LEAP is a paradigm shift in automation project implementation. Virtualization, Universal Channel Technology and Cloud Engineering free projects from sequential project flows. Keeping automation systems off the critical path, it drastically improves the overall schedule and reduces risk. Once the project is implemented, LEAP principles continue to help run the plant more efficiently, use assets more effectively and avoid major capital expansions.

Assurance 360 is Honeywell's outcomes-based service program, delivering economic benefits and certainty in industrial operations. Under Assurance 360, Honeywell provides agreed service levels rather than prescribed quantities of materials and labor; takes a strategic view to minimize the total cost of ownership; guarantees performance levels; and utilizes the automation system to improve business performance.

Consulting and Engineering Services are delivered through our Project Services expert technicians using Six Sigma methodologies and best-in-class tools for superior results. With a global presence, our teams will deliver on time and on budget to minimize downtime, and allow you to focus on manufacturing of quality products.

WHY HONEYWELL?

We Never Leave a Customer Behind: Some of Honeywell's greatest innovations are the result of our commitment to helping customers continuously evolve while maintaining their current systems. Honeywell provides lifecycle investment protection by providing easy upgrade paths to the latest control system technology when the time is right for you. We can lower risk, retain IP, revitalize and add functionality to help facilities reliably run for many more years in the future. We have a wealth of experience in migrating legacy control and safety systems, no matter who the manufacturer.

Starting with our invention of the first distributed control system in 1975, Honeywell has provided the confidence of a trusted provider with the largest installed base of integrated systems and the greatest longevity in the control industry. Manufacturers rely on our experience and our ecosystem of technical solution providers to reduce risk and expedite proven performance. Whether you choose Honeywell directly, or one of our trusted authorized channel providers, you benefit from the best expertise. Merging the best of Honeywell together with this nimble and customer-centric delivery model means we are working together toward the customer's greatest benefit and success with the best options the industry has to offer.

For More Information

To learn more about how Honeywell's Food & Beverage solutions can improve time to market and profitability, visit www.honeywellprocess.com/batch or contact your Honeywell Account Manager or System Integrator.

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Honeywell Process Solutions

1250 West Sam Houston Parkway South
Houston, TX 77042

Honeywell House, Skimped Hill Lane
Bracknell, Berkshire, England RG12 1EB UK

Building #1, 555 Huanke Road,
Zhangjiang Hi-Tech Industrial Park,
Pudong New Area, Shanghai 201203

www.honeywellprocess.com

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