PHARMACEUTICAL SOLUTIONS FOR A CHALLENGING MARKET

Honeywell Has the Solutions and Expertise You Need for Success:

- The industry's most advanced automation and process control for consistency and oversight of every batch

- Improve traceability and transparency through data capture, recording and reporting solutions that simplify and safeguard compliance

- A unique lean execution LEAP™ service that 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.

Pharmaceutical Solutions for a Challenging Market

For more than three decades, Honeywell's solutions and services have helped the world's leading drug manufacturers and biomedical firms enhance operations and build more effective, profitable businesses.

Pharmaceuticals businesses face unique challenges. Massive R&D spending, the world's tightest regulations and intense competition mean compliance, efficiency and speed to market are critical to success.

We help pharma businesses ensure compliance, 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 pharmaceutical manufacturers boost process efficiency, increase plant availability and reduce maintenance costs.

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.

Maximize Your IP

In an industry where 95% of experimental medicines never come to market, successes need to count. The largest project service organization in process control, Honeywell brings a unique approach to 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), European Medicines Agency (EMA), 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 compliance failures erode profits and public trust, ultimately jeopardizing future operations.

We offer solutions for validation, including 21 CFR part 11 compliance; 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 compliance.

An Unrivalled Offering

Honeywell offers a one-stop shop for automation and process control across drug development, clinical manufacturing and commercial manufacturing processes. 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.

Choose from a wide-ranging portfolio and benefit from the most advanced technologies, lowest lifecycle costs and a long-term commitment to support.

Solutions for Process Control

Automate and optimize through our control solutions for all plant processes, including reactors, CIP units and media vessels. 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. A single robust controller for creating and executing all levels of the ISA S88 procedural model, Experion Batch eliminates costs associated with using a Windows-based batch server. It is also highly flexible. Users can quickly modify recipes, equipment or even hardware without shutting down.

ControlEdge™ Unit Operations Controller (UOC): Incorporated in Experion Batch, ControlEdge is the next generation family of controllers, delivering a powerful DCS solution in a compact form. Significantly reducing the hardware footprint, ControlEdge also supports the Virtual UOC, extending the Experion control environment to the smallest applications. ControlEdge Virtual UOC is a Virtual Appliance that operates without utilizing Windows. The Virtual UOC enables flexible recipe development, testing, and the

option of executing in a virtual environment in pilot plants, laboratories, and cost-sensitive applications. Move from test to execution effortlessly, without modification.

The controller eliminates hardware utilizing industry-standard virtualization and cloud technologies.

Universal Process I/O reduce or eliminates marshalling and allow immediate configuration without the need for additional hardware. Connect any field signal to any I/O channel in standard cabinets to complete projects quicker and eliminate delays and reduce validation efforts from changes that are made late in the design. Reducing wiring, footprints and spares, Universal I/O is the most efficient, flexible controller available.

The Distributed System Architecture brings your processes together. The ideal solution for integrating multiple units, control rooms or geographically distributed locations, DSA delivers a single, integrated system for user. Providing unrivalled scalability, it seamlessly combines operational data from multiple Experion systems, wherever they're based, without additional engineering or configuration.

We connect people, process and assets to continually redefine optimal performance.

The Connected Plant and Advanced Process Control

Honeywell Connected Plant brings together our industrial expertise, software and digital technologies to make our customers' operations more reliable, profitable and secure.

People

Giving customers' workforce new tools to do their jobs better and more safely, and to increase their competency and levels of collaboration.

Process

Complex and industrial processes need more than traditional process control strategies. Experion Batch combines distributed control and batch automation. Enhancing throughput, efficiency and reliability, it's the only batch solution executing directly in the controller.

Assets

Combining asset and process data with OEM analytics and expert guidance improves asset reliability and avoids unplanned shutdowns. Uniformance® Asset Sentinel continuously monitors equipment and process health, enabling pharmaceutical manufacturing to predict and prevent asset failures and improve poor operational performance.

Why Honeywell?

Compliant

Solutions to facilitate validation and reduce compliance costs with system self-documentation, electronic change management of control configurations, 21 CFR part 11 compliance and enforcement and verification of operating instructions.

Fast

A unique approach to project execution with LEAP™ project execution and technologies such as our Universal I/O remove risks and accelerate schedules.

Virtual Ready

A Virtual Engineering Platform allows for virtualization and simulation of all DCS components for cost effective change implementation in a validated environment.

Experienced

More than three decades working with the world's leading pharma businesses, with specialists who bring a lifetime's experience in pharma.

Scalable

Delivering the most advanced technologies to the smallest and largest operations, with flexible solutions.

Secure

Industry leading cyber security, access control and protection against message flooding and denial of service to ensure system availability.

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 regulatory and other purposes, Honeywell puts your data to work for you.

Procedure Analyst provides comprehensive procedure execution reporting and tracking for confident quality control. Integrating data from the Uniformance Insight 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 procedures. Plants can achieve greater consistency, safer production, lower material and energy usage, and reduced cycle times.

DynAMo® Alarm & Operations Management is Honeywell's award-winning software for alarm and operations management. Turning noise into knowledge through effective alarm management, Dynamo also helps drive informed decisions and operational compliance using safe and profitable operating windows. Together, Dynamo solutions move traditional reactive alarm management practices to proactive alarm and operations management.

Smart instrumentation: Connecting the plant, Honeywell's comprehensive portfolio of IIoT-ready and wireless measurement and control products includes standalone instruments, smart sensors and integrated systems. With software solutions and open interfaces for data access, we enable you to manage plant assets better and optimize their productivity.

Solutions for Safety and Security

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

Industrial Cyber Security Solutions defend the availability, reliability and safety of your industrial control systems and plant 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 Cyber Security Risk Manager, the first solution to monitor, measure and manage cyber security risks for industrial environments
- Managed industrial cyber security services.

Honeywell Building Solutions has helped pharma businesses protect and control their plant environment for over a century. Maintaining safety, comfort, security and efficiency, Honeywell delivers customized solutions that work for you. With extensive experience of all pharmaceutical operations, including HVAC and GxP critical environments, we can help with building automation, security, energy management, and fire and life safety solutions.

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 Execution of Automation Projects: 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.

For more information

To learn more about Honeywell's Pharmaceutical solutions, visit www.honeywellprocess.com or contact your Honeywell account manager.

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