

# HONEYWELL EXPERION<sup>®</sup> HS

Proven and open SCADA platform for  
operational excellence



Honeywell

# THE POWER OF EXPERION FOR ANY OPERATION

Honeywell's Experion HS SCADA solution gives operators the tools they need to monitor and control the plant environment in real-time for faster responses, safer operations and a more productive process. Built on the proven Experion platform, it is reliable, flexible, easy to use and scalable to meet wide range of applications.

## MEETING YOUR NEEDS

Experion HS addresses the complex needs of modern industrial environments: integrating a wide range of DCS, RTUs and PLCs; incorporating geographically dispersed applications; and ensuring security and regulatory compliance.

Powerful and intuitive, it helps plant managers, plant maintenance engineers, process engineers and operators get the most from their operation.

## THE RIGHT ANSWER FOR YOUR APPLICATION

An advanced SCADA platform, Experion HS is easy to use, secure by design and features various data connectivity and mobility options. Plants of various sizes across the world use it in a wide range of industries and applications:

- Oil & Gas- upstream, downstream and processing utilities

- Mining, Metals and Minerals
- Cement and Glass
- Chemicals
- Life Sciences- Utilities, OEM packages
- Food & Beverage
- Power
- Tank farm management
- Electrical SCADA
- Fire & Gas Solutions
- Equipment Health Monitoring
- Gas/Liquid and Water pipelines
- Infrastructure: Tunnel, Metro, commercial, state-owned establishments, Datacenters, new energy

For every application, Experion HS delivers information where it is needed to boost operations' effectiveness, improve management of critical processes and equipment, and promote faster, more accurate engineering and maintenance.

## POWERFUL CORE SCADA FEATURES

- Built-in system displays, and configurable reports, easy-to-use scripting, and recipe management (21CFR Part11)
- A wide range of interfaces for controllers and enterprise applications
- Optional redundancy with onboard historian and OPC support including OPC UA, UA HA and MQTT interfaces
- Protect the plant with the advanced alarm and event management subsystem, in-built operator security and data integrity

With built-in system displays, configurable reports, an onboard historian and out-of-the-box functionality, Experion HS is a more efficient route to operational excellence.



# EXPERION HS

## KEY FEATURES



### OPEN PLATFORM

- Choice of Windows Server and Workstation operating systems and ruggedized commercially-off-the-shelf (COTS) compute platforms.
- Windows SQL Server and Microsoft Office support.
- Flexible network switch selection.
- Approved McAfee and Symantec based anti-virus solutions.
- HTML based client graphics with tabbed displays.
- Support for SQL database access via an ODBC driver, Microsoft Excel Data Exchange, Visual Basic scripting, and complete OPC suite support for read/write operations.
- Supports running in virtualized environment for various deployment and lifecycle benefits.



### SCALABLE

- Standard 50 composite point database with 1x Station, scalable up to 16,000 SCADA points and 20x Stations as standard (more SCADA points and stations added as per project requirement).
- Up to 16 displays per station node, True HD 4K screen resolutions supported.
- Multi-Window functionality supported.
- Distributed System Architecture (DSA) supported.



### FLEXIBLE

- Use a single computer as server and client station if required.
- Deploy Experion stations on thin clients with virtualization.
- Optional redundancy of servers.
- Use Engineering and Graphics builder utility from any computer machine.
- Experion Report Builder with easy drag and drop report configuration.



### EFFICIENT DESIGN

- Universal scan engine ensuring improved data availability and data integrity.
- Built-in Historian: Historical data storage limited only by storage media size, optionally redundant.
- On-demand trending and reporting capabilities.
- Built-in OPC Gateway: OPC Classic, OPC UA, optionally redundant with OPC redirection capability.
- Support "Composite Tags" with a single tag storing multiple parameters.
- Honeywell's proven Experion ASM compliant HMI experience with touch interface for field operations using industrial grade touch Panel PC.
- Deployed in Windows workgroup or domain environment.

# ADVANCED SCADA PLATFORM

Built upon the proven technologies of the Experion platform, Experion HS extends Honeywell's process and operation expertise to SCADA operations.

## ADVANCED HMI FOR EFFECTIVE OPERATIONS

Experion HMI is developed from extensive consideration of human factors by the Abnormal Situation Management (ASM) consortium, targeted towards improving operator's situational awareness. Experion HS offers advanced alarm management features, and state of the art optimal alarm workflow with a complete, built-in and customizable alarm management user interface.

## ENHANCED REPORTING AND SCRIPTING

Experion HS offers various built-in reporting functions covering alarm, tags, assets, batch and more. It comes with customizable reporting options including excel data reports, free-format reports, ODBC data exchange report and Experion reports. The reports can be generated a periodic basis, on-demand or triggered by events. HMI scripting can be done using VBScript and Jscript scripting languages.

## COMPOSITE SCADA POINT STRUCTURE

Experion HS licensing is based on Composite Data Structure where multiple I/O tags are stored and consumed in one Experion SCADA point. For example, for an analog control loop, the process variable, the setpoint, output, mode and all related alarms and other parameters are components of a single Experion HS SCADA point. Each SCADA point can also contain an unlimited number of user defined parameters — used to store calculations for this point or hold related equipment information like maintenance details of a motor. These user-defined parameters support a dynamic scanning feature, which helps in optimizing system and control network performance

- Advanced Alarm Management features as per standards and recommended practices such as EEMUA Publication 191, ISA-18.2 and API RP 1167
- Experion Report Builder enables a simple and flexible way to configure, modify and maintain user reports in multiple file formats - HTML, CSV, Excel, PDF
- Multiple I/O tags are stored and consumed in one Experion HS SCADA point. Associated tags or flags can be scanned dynamically.



# EASY TO USE

From ordering to configuration and operations, Experion HS SCADA offers an improved project ownership experience.

## EASY ORDERING THROUGH HS BUNDLES

Experion HS offers ready-to-order, single SKU based pre-packaged solutions limited by SCADA point count and comes with all key communication interfaces and features. These packages can be expanded and upgraded anytime during the product lifecycle.

This approach simplifies the ordering process with projects only needing to add Microsoft Operating System and SQL Server in required quantities. Experion HS bundles and the required accessory parts can be ordered through Honeywell's MyHPS eCommerce portal – [process.honeywell.com](https://process.honeywell.com)

## EASY HMI CONFIGURATION

The Experion HMI solution comes with an Equipment Template feature that can help reduce upfront project configuration design efforts by up to 80%. HMI graphic screens are designed using Experion HMIWeb Display Builder – an object-oriented tool for building and maintaining user displays. It is easy to navigate and make changes, prebuilt structured list of shapes for drag and drop.

Built-in system displays, configurable reports, easy-to-use scripting, and recipe management enable faster project configuration and improve project delivery schedules.

## EASY TO USE TRENDING

Trending is an integral and important feature of Experion HS SCADA. Trends can be preconfigured or configured online. Users can simply browse the database and select or drag and drop the desired point and parameter. Users can also configure panel board-like displays. Each group contains up to eight points using standard faceplates for analog and digital status points.

Trend with Events view for diagnosing process upsets where events are represented by icons displayed along with process data and a fully synchronized event window.

- Single SKU for ordering, based on 3K, 8K, 16K and more SCADA points Experion HS bundles
- Simplified ordering experience through Honeywell's new eCommerce portal
- Equipment Template feature can help in reducing upfront project configuration design efforts by up to 80%
- HTML based graphics using Experion HMIWeb Display Builder tool
- 32 pens per trend display, 8 points-based group displays
- Unique Trend with Events operator view for diagnosing process upsets.



# SECURE SCADA BY DESIGN

The Experion HS platform design includes data exchange, data integrity and operator security combining Experion and Microsoft design elements.

## DATABASE INTEGRITY & OPERATOR SECURITY

Experion HS uses the Microsoft SQL based database with built-in security and data integrity. Optional server redundancy provides a redundant database including process data, alarms and events, controller configuration, logic and more.

Experion user-based security provides configurable access and security levels for operators, supervisors, and other personnel. The single sign-on feature adds access authorization and ease of operations.

## SECURE DATA EXCHANGE

Various proven and open interfaces are available in Experion HS, ranging from Classic OPC DA, HDA and A&E to OPC UA DA, HDA, and MQTT. These supported interfaces ensure secure authentication-based data exchange with peer and enterprise-level communication.

Various other data exchange options are also available with embedded security for accessing Experion HS database: Server API, ODBC driver, Microsoft Excel data exchange and VB scripting.

## COMPLIANCE FOR REGULATED INDUSTRIES

Experion HS supports a dual electronic signature, audit trail, operator security, version control and other features. It helps make FDA electronic records compliance a plug-and-play operation, by enabling system change management and complying with FDA 21CFR Part11 regulation.

- SQL-based database with built-in data security and integrity with secure data access options
- Combination of Experion operator-based security with Microsoft account-based security for ease of operator access, and account management
- Support for new-generation interfaces such as OPC UA and MQTT
- Compliant with FDA 21CFR Part 11 for regulated industrial applications.



# CONNECTIVITY

Experion HS SCADA provides seamless connectivity with a variety of PLCs and other devices. It offers seamless integration with ControlEdge PLCs and RTUs and device-specific and open interfaces for third-party controllers.

## SEAMLESS CONTROLLEDGE INTEGRATION

Experion HS offers simple, lean, and secure integration with the ControlEdge PLC and RTU, enabling faster project uptime and reduced maintenance costs. Under the Experion integration scheme, the engineered PLC variables, alarms and events, and hardware diagnostics are automatically configured in the Experion HS database and ready for use.

## DEVICE SPECIFIC AND OPEN INTERFACES

Experion SCADA offers built-in interfaces the Allen Bradley Logix PLC, Siemens S7, multiple EFM RTU devices and more. Industry open interface support also ensures wider device connectivity, including Modbus TCP/IP, Modbus RTU, DNP3, UMDB, OPC UA, MQTT, IEC 60870, IEC 61850 and more.

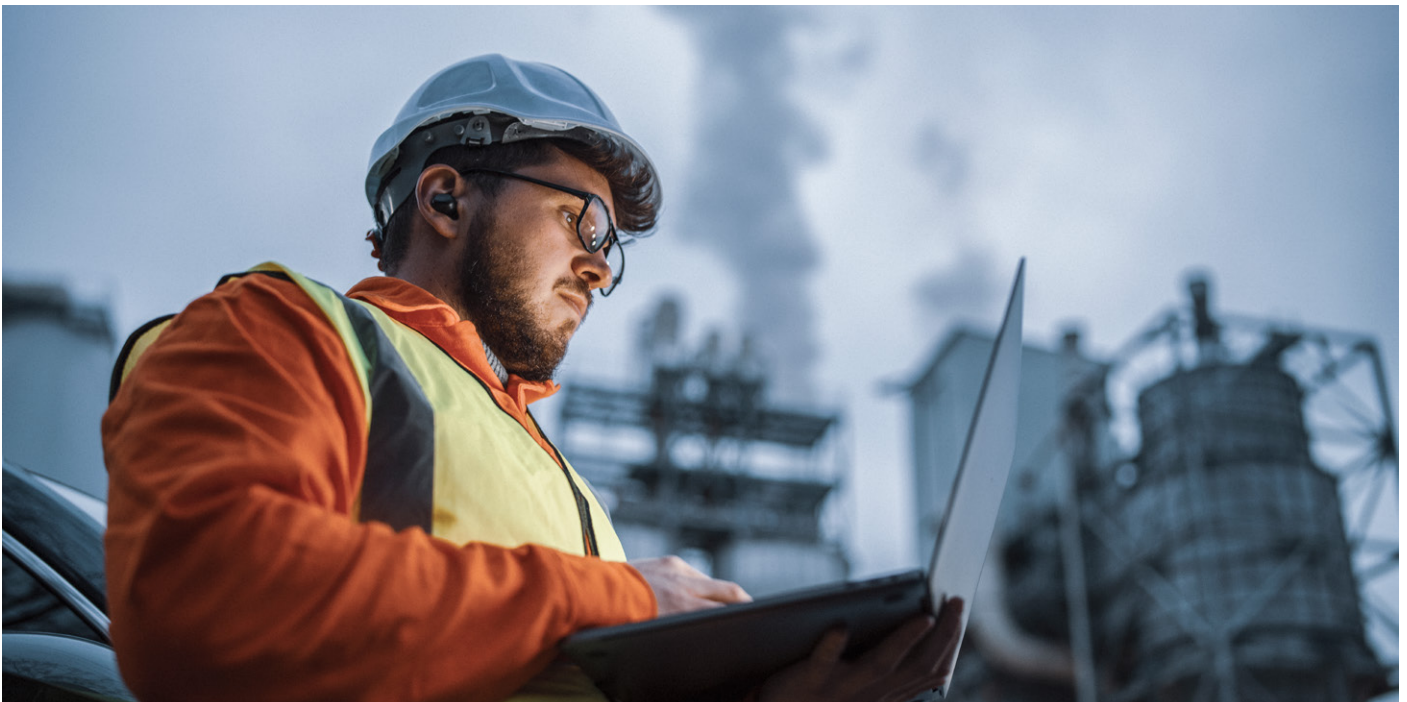
## DATA BACKFILL FOR THE HIGHEST UTMOST INTEGRITY

The Experion HS History Backfill function can upload historical data after a data communication outage for a device, meeting data protection and compliance requirements. This history backfill feature is supported over Universal Modbus (HC900), DNP3 and IEC 61850 interfaces in Experion.

## INTEGRATE WITH PEER AND ENTERPRISE SYSTEMS

Data integration is key for SCADA systems, where increased data availability directly translates to improved enterprise level productivity enhancements. Experion HS supports multiple data exchange options: SQL access via an ODBC driver, Microsoft Excel Data Exchange, Visual Basic scripting, OPC DA, HDA and A&E, OPC UA DA, OPC UA HDA, and MQTT with read/write access. The bi-directional communication can be optionally redundant using technologies such as OPC Redirection.

- Seamless Experion integration with ControlEdge PLC and RTU to improve configuration time by up to 90% compared to conventional like Modbus and DNP3 interfaces, like
- Built-in third-party PLC interfaces and open SCADA interfaces for maximized interoperability investment protection
- History Backfill function for seamless data availability and integrity
- Multiple open yet secure data exchange options for integrating PLCs, peer sub-systems and Enterprise level applications for improved decision workflow and productivity.



# ASSET-ORIENTATED SCADA

Experion Equipment Templates radically simplify asset's initial configuration and future expansion costs by enabling configuration by equipment rather than by SCADA points.

## CHOOSE OR BUILD YOUR ASSET

Asset-oriented object-based configuration greatly simplifies SCADA configuration efforts. With Experion HS, you can build a wellhead, a pipeline compressor or a pump set by defining just the few unique fields for that instance of that equipment type. The libraries of equipment templates can be imported and exported so organizations can standardize on best practice across multiple sites.

## AUTO-GENERATED EQUIPMENT DISPLAY

Experion displays are based on equipment configured and driven by the contained information of the equipment instance, enabling superior operations. Tabular displays of same equipment instances with key parameter comparison also available along with task-based views.

Using equipment templates, drilling through to individual equipment for closer monitoring or control with custom displays, parameters, trends, KPIs and alarms and operator tasks is much easier. The new equipment instances will automatically appear and be aligned to the generic equipment type configured without any additional configuration.

- Simplified and repeatable configuration using Experion Equipment Templates
- Single pane of glass for all equipment-specific information through Experion HS Equipment Display pages
- Compare different equipment instances, enable task-based views along with detailed deep-dives of equipment for closer monitoring, enabling simplified operator task execution
- Scalable design allowing newly added asset instances to align with already configured Equipment Template type.





# EASY DATA ACCESS AND FLEXIBLE OPERATIONS

Experion HS's data mobility options provide access for field-level operations, system overview data dashboards for casual users, alarm and event notifications for mobile users and connectivity for remote operations across multiple enterprise locations.

## EXPERION TOUCH USER INTERFACE AND PANEL PC

The Experion Panel PC solution offers Experion's proven HMI user experience with touch user interface for field operations. This enables touch-based Experion station operations. The Experion Panel PC (PPC) hardware platform is used to host the touch panel Experion HMI. The 19-inch industrial-grade Experion PPC (Panel PC) hardware features a 0-60°C operating temperature and IP66, Class1 Div2 and other certifications. Pre-installed with Windows 10 OS, it can be used as a standalone system or as a remote station or thin client.



## EXPERION HS eSERVER AND ALARM PAGER

**Experion HS eServer** provides remote and mobile personnel with secure access to key real-time data through Experion process graphics, trends and more enabling faster decisions and better business outcomes.

**Experion HS Alarm Pager** uses paging, SMS, e-mail, or SNMP traps to escalate operational and system alarms. Customizable alarm-based notifications can be forwarded to one or multiple recipients, and further escalated if unattended.

## AUGMENTED REMOTE OPERATION (ARO)

The Experion ARO solution allows you to maintain full production with minimal on-site staff by augmenting your local control system with remote operations capabilities. Enterprises can utilize available resources from any location to maintain SCADA operations and business continuity, enabling multi-site operations.

- The Experion Panel PC software solution enables touch-based field operation hosted on industrial-grade touch Panel PCs
- Experion PPC hardware offers a ready-to-deploy Panel PC hardware solution, certified for use in harsh industrial environment
- Experion HS eServer and Alarm Pager options ensure system data, KPIs and notification for mobile and enterprise users
- Experion Augmented Remote Operations (ARO) uses Microsoft Terminal Services for remote view and operations from distant location or from nodes connected at Enterprise level.



# KEY APPLICATION MODULES

Experion HS add-on modules feature pre-built interfaces, templates and tools for a wide range of applications. We help deliver a plug-and-play solution, meeting all your specific industry requirements.



## TANK FARM MANAGEMENT FOR TERMINALS

- Experion HS based ENRAF Tank Inventory Systems (ENTIS) provide accurate and secure inventory data at all times enabling overflow protection, leak detection and alarming to mitigate or prevent possible disasters and protect the tank farm's people and environment
- It allows users to reduce costs, increase efficiency and improve profits for all kinds of distribution and bulk terminals.



## GAS & LIQUID PIPELINE OPERATIONS

- Experion HS enables cost-effective, easy-to-configure, easy-to-maintain gas and liquid operations applications in compliance with API 21.1 and 21.2 standards for gas and liquids respectively
- The suite offers server-based flow compensation calculations, flow and gas/liquid quality calculations, linepack and a basic leak detection solution and pipeline compressor maps.



## GAS & LIQUID METERING AUTOMATION

- Honeywell's Experion HS-based Metering Automation System (MAS) provides a total solution for gas and liquid metering for stations from a single stream up to 50+ streams: One package covering everything from process visualization to performance monitoring, validation support and reporting and billing
- Measurement IQ (MIQ) Optimize provides a single enterprise-wide view of the performance of your gas measurement equipment at all individual stations. It connects remotely to all distributed assets to get deeper insights to drive up measurement accuracy across the organization and deliver clear and actionable recommendations in case of issues.



## OIL & GAS EFM CUSTODY TRANSFER

- Experion HS provides a single polling engine to collect electronic flow meter (EFM) custody transfer logs alongside regular process data. This includes historical data log collection and export to gas management systems like Flow-Cal.





## LIFE SCIENCES AND FOOD & BEVERAGE

- We help regulated industry manufacturers maintain auditability and transparency, optimize production, and increase profitability while focusing on quality, flexibility and repeatability
- Solutions support compliance with 21 CFR Part 11/EU Annex 11 and current good manufacturing practices (cGMPs). The solution can be used across the plant including clean utilities, clean in place, water and other packaged systems such as boiler, heat exchange, HVAC and more.



## ELECTRICAL SCADA

- Experion HS supports the IEC 61850 Edition 2 interface for electrical power management equipment used in substations and motor control centers (MCC)
- It offers a single process and power automation solution, providing electrical equipment status and interlocking control strategies for load-shedding applications or tracking energy consumption.



## WATER & WASTEWATER

- Experion HS SCADA offers hundreds of pre-built displays for real-time and historical process trends such as overflow counts, pumping metrics and dissolved oxygen numbers.
- The solution can be used with an industrial cyber-security framework across the value chain, from pumping and lifting stations to storage tanks, valve vaults, water treatment and desalination facilities. Operators can detect and report water usage or tampering and leaks by comparing flow data with pressure metrics.



## INFRASTRUCTURE

- Experion HS can be used across various infrastructure applications with Honeywell controllers including the ControlEdge PLC, RTU, HC900, Safety Manager SC, MasterLogic and Panel HMI.
- Examples include tunnel automation (HVAC, control packages), metro rail with SIL PLCs, commercial complexes, stadiums, correction facilities, datacenters, airport automation, traffic Light control, and new energy and battery energy storage systems.



## PROCESS AND INDUSTRIAL SAFETY

- Experion HS brings together Honeywell's proven SIL-rated PLCs – ControlEdge HC900 (SIL2) and Safety Manager SC (SIL3) – with proven HMI visualization and other features, such as Sequence of Events (SOE), required for process and industrial safety systems.



## EQUIPMENT HEALTH MONITORING

- Experion HS is the core of Experion Equipment Health Monitoring (EHM). It analyzes health parameters for rotating equipment, including three-axis vibration, surface temperature and audio acoustics, as well as ambient temperature, barometric pressure and humidity received through Honeywell Versatilis Transmitters.
- Built-in dashboards visualize current and historical data over time, enabling users to analyze correlations between equipment health parameters.

# EXPERION HS SUPPORT AND SERVICES

From installation and start up to system maturity and future expansion, Honeywell TotalCare remote and on-site support services ensure you get maximum return from your automation system investment.

The TotalCare Service program features specially designed service package options in addition to Honeywell's standard support commitment under the Scalable Control Solutions portfolio. Available on an annual subscription basis, TotalCare Lite and Enhanced service packages encompass system updates, upgrades, corrective and preventive maintenance, support requests and more.

Factory-trained remote service engineers provide technical support and rapid responses to queries regarding procedures, documentation, operation, service, training, and system enhancements. In addition, TotalCare remote services include a review of operational procedures, software analysis and diagnostic evaluations when required.

#### For more information

To learn more about Honeywell's Experion HS, visit [process.honeywell.com](https://process.honeywell.com) or contact your Honeywell account manager.

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THE  
FUTURE  
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WHAT  
WE  
MAKE IT

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