FIELD INSTRUMENT AND CONTROL SOLUTIONS

Honeywell
THE POWER OF **CONNECTED**

Your Complete Provider

Versatile products that are easy to configure,
easy to operate and easy to maintain.

Pressure Measurement
Honeywell's modular SmartLine® pressure offering includes differential pressure, absolute pressure, gauge pressure, flange, remote seal and multivariable transmitter solutions with global agency and SIL certifications backed by an industry leading 15-year warranty.

Multivariable Measurement
The SmartLine Multivariable Transmitter measures static pressure, differential pressure and process temperature with minimal process intrusions and lowers the total cost of ownership delivering superior performance for an accurate and fail safe flow measurement.

Temperature Measurement
Honeywell's Smart Temperature Transmitter line, including the new SmartLine, provides a three-tiered solution, providing the right mix of price and performance to meet application needs. They are available in OEM packages and ready-to-install assemblies with globally accepted approvals, communications and diagnostics.

Level Measurement
SmartLine Level Transmitter allows reliable measurement of liquid level and interfaces in dynamic process conditions. The SmartLine Application Validation Tool eliminates model selection errors while providing fully pre-configured transmitters on site to reduce commissioning time.

Flow Meters
VersaFlow flow meters are built to our exacting standards for quality, performance and reliability backed up by a comprehensive global support network.

Configuration and Device Management
A flexible suite of configuration and device management tools enable easy and reliable device configuration, monitoring, diagnosis and health management, for smart devices from Honeywell and other suppliers.

Analytical Instruments
Honeywell offers a broad line of advanced sensors and instruments for measuring pH, ORP, conductivity and dissolved oxygen. Unique Analytical solutions keep plant operations running, smoothly, efficiently and safely.

Controllers
Honeywell single and dual loop digital controllers and indicators provide precise control and indication of process variables with a wide choice of functionality. With Honeywell's complete line, we can offer a versatile solution for a variety of applications. All Honeywell controllers and indicators are highly reliable, easy to configure, flexible and versatile.

Programmers and Indicators
Digital control programmers perform pre-determined processing or testing schedules on a time-versus-set point program. Honeywell offers programmers that perform basic to complex recipes and feature universal inputs, and multi-channel models.

Recorders and Data Acquisition
Honeywell offers a comprehensive portfolio for all of your recording and data acquisition needs. Choose your format: strip chart, circular chart or paperless recorders for viewing, storing and managing your process data. In addition, Honeywell's powerful software suite provides networking capability and real time archiving.

Wireless Solutions
Honeywell provides a single wireless network which supports multiple industrial protocols and applications simultaneously. Wireless solutions are simple to manage and efficient to operate.

Modular Systems
A range of flexible automation and control solutions meeting the needs of many different industries like specialty chemicals, pharmaceuticals, metals, water/waste-water and pharmaceuticals, while avoiding the overhead of complex, non-integrated automation systems.

Connectivity Solutions
OPC connectivity products and applications integrate Honeywell products with third-party SCADA, historians and human machine interfaces to provide secure, reliable open data connectivity.

Electric Actuators
With over 100 years in the control industry, Honeywell offers an innovative portfolio to reliably manage and control your plant or mill measurements and reduce your total cost of ownership.

Smart Pressure Transmitters

SmartLine Pressure Transmitters

Modular, accurate and robust for the lowest cost of ownership

SmartLine®

Honeywell's SmartLine smart pressure measurement system sets the standard for total performance in harsh process environments, featuring the industry's most modular and robust pressure transmitters.

With better performance, modular construction, an advanced graphic display and the best integration features available when used with Experion® PKS, Honeywell helps our customers reduce project costs and startup time, avoid unplanned downtime, improve product quality, reduce spare parts inventory and shorten time to repair.

The line includes two performance tiers with absolute, differential, gauge, remote seal, flanged (level) and multivariable transmitters as well as remote indicator products.

All are available with:

- Temperature and static pressure compensation
- Universal terminal
- Modular design components
- SIL2 certified/SIL 3 capable standard
- Dual seal compliance
- SmartLine Connection Advantage options, such as the ability to display maintenance mode and messages from the control room
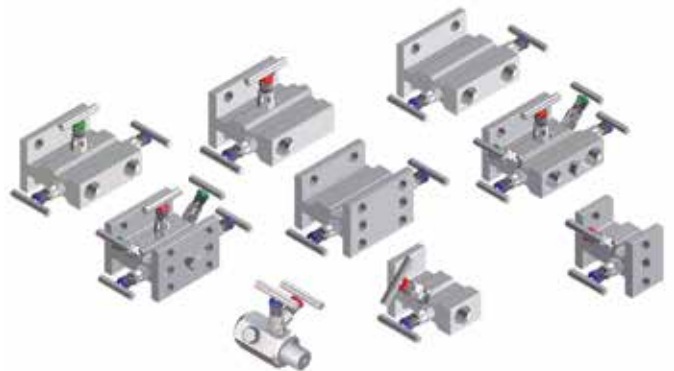
ST800 Pressure

The highest performance offering features:

- Suitable for critical process control loops, custody transfer and SIL2 safety
- Industry leading stability up to 0.01% span per year for ten years
- Accuracy up to 0.0375% of span standard and 0.025% span optional
- Wide range of materials and measurement spans
- Turndown ratios up to 400:1
- Available lifetime warranty

ST700 Pressure

Smart performance at conventional prices.

- Suitable for monitoring,critical process control loops, and SIL2 safety
- Stability up to 0.02% span per year for five years
- Accuracy up to 0.05% of span
- Turndown rations up to 100:1

SmartLine Accessories

Honeywell SmartLine Pressure accessories include a wide range of manifolds in different configurations to suit pressure, differential pressure and level measurement. Honeywell manifolds come with built in safety mechanisms to ensure safe, reliable and efficient operations and maintenance of SmartLine pressure transmitters. These include block and bleed, 2-valve, 3-valve and 5-valve manifolds.

These are available as standalone parts or as a part of integrated and pretested assembly along with SmartLine pressure transmitters in order to minimize total cost of ownership for the users, original equipment manufacturers and EPC contractors.

Smart Multivariable Transmitters

SmartLine Multivariable Transmitters

Discover the smart power of 3-in-1: it is easy, accurate and reliable

SMV 800

The SmartLine SMV800 has the ability to calculate compensated mass or volume flow rate as a fourth process variable. Meter body-only components are also available to support third party and OEM metering solutions. In addition, it offers simple modularity, universal input for process temperature and advanced display with fail safe measurement helping users improve availability, reduce their inventory by up to 70% and maintenance cost by up to 30%.

It is compliant with Experion® PKS and HART7 providing the highest level of compatibility assurance and integration capabilities.

SmartLine Multivariable Transmitter leverages the proven SmartLine technology to measure three separate process variables by combining sensor technologies for static pressure, differential pressure and process temperature for air, gases, steam and liquids, with minimal process intrusions, lower total cost of ownership and superior performance for accurate and fail safe flow measurement.

Key Features:

- Used to measure the flow of virtually any liquid, gas, steam or slurry for which a primary flow element exists to provide a differential measurement
- OEM Multivariable Pressure Transducers – measure both differential pressure and static pressure (absolute or gauge)
- Accuracies – up to 0.04% for differential pressure
- Accuracies – up to 0.1 °C for temperature
- Accuracies – up to 0.6% for flow
- Built in static pressure and temperature compensation
- Range ability – up to 400:1
- Compensated flow response time-up to 2x/sec
- Multiple local display capabilities
- Universal transmitter terminals
- Simple modular design
- Universal process temperature input option
- HART7/DE protocol support

With the addition of the SmartLine Multivariable Transmitter SMV800, the Honeywell SmartLine Pressure transmitter family now offers a complete range of absolute, differential, gauge pressure, including flanged and remote seal transmitters to suit every application need.

Smart Temperature Transmitters

SmartLine Transmitters Temperature and STT 3000 Series

Precision devices, proven in the field

STT850 / STT750

Similar to SmartLine Pressure, SmartLine Temperature Transmitters deliver value with industry-leading performance, unique features that lower your total cost of ownership and the most efficient control system integration. With innovative modularity and an intuitive advanced graphics display, these products are ideal for a wide range of industrial process control and safety applications.

SmartLine Temperature also offers:
- Comprehensive on-board diagnostic capabilities for the sensor and the transmitter
- Built-in digital output option
- Universal terminal
- Sensor health trend through advanced display
- Dual compartment housing
- Single and dual input options
- TÜV SIL2 certified
- STT750 is a cost effective and performant SmartLine Temperature Transmitter with many of the same features of as the STT850

STT700

The STT700 features a combination of price and performance thus making it suitable transmitter for the bulk of your temperature sensing needs. With performance suitable for control at a price typical of those transmitters used for monitoring, the STT700 can be the site's go-to temperature transmitter.

Features
- Universal sensor inputs
- Single and dual input options
- HART 7 protocol
- DE protocol
- Compact size allows for direct head mount
- Available in single compartment housing and DIN rail mount

STT650 DIN Rail Transmitter

The SmartLine STT650 DIN rail mounted high performance temperature transmitter offers high measurement accuracy, stability and reliability over a wide range of process and ambient temperatures.

STT650 Portfolio
- Input Types
  – RTD input
  – Universal input type
  – Single and dual channel options
- Output/Communication protocol
  – 4-20ma/PC-based communication
  – HART 7 protocol
  – Fieldbus protocol
  – Profibus PA protocol

STT170
- Cost-effective, solution with 4-20 mA communications
- Universally PC programmable for both RTDs and thermocouples
- Available in single compartment housing
- Ultra compact size fits into the smallest DIN B head mount housing
- FF DTM Support

STT250
- Universal sensor inputs
- Compact size allows direct head mounting
- Available with integral engineering units meter
- Sensor matching function
- TÜV SIL2 certification

STT800 Measurement Assembly

An installation-ready temperature measurement assembly is offered with sensor heads, sensors, thermo wells and process connections. It is available in short delivery cycles and comes with custom calibration and agency approvals. These have an exceptional level of support that provide ease of engineering, procurement and installation.

The assembly is offered in three models:
- Rigid probe assembly
- Threaded and socket weld thermo well assembly
- Drilled and flanged thermo well assembly
- ATEX, CSA, FM Approvals available on all the STT800 Assemblies

Smart Level Transmitters

SmartLine Level Transmitters

A new standard for total performance and user experience

SmartLine Level Transmitters

In addition SmartLine Level Transmitter offers a new user experience from the start of using a new online tool or profiling the targeted tank application to the moment when the SmartLine Level Transmitter is installed and ready for measurement.

The SmartLine Application Validation Tool prevents costly errors upfront by validating the SmartLine Level Transmitter against the specified process tank. The tool interfaces to Honeywell's order management system ensuring that the transmitter is built to the right specifications.

SmartLine Level offers:

- Leading performance and user experience
- Unique features that lower your total cost of ownership
- Efficient control system integration

Honeywell Transmitters are Recognized for Their Unsurpassed Performance and Accuracy:

- Able to measure liquids and interfaces
- Accuracy: ±3mm or 0.03% of measured distance
- Repeatability: ±1mm
- Pressure range: –1 bar to 400 bar (–14 psi to 5801 psi)
- Temperature range: –60 to 450C (–76 F to 842 F)
- Full scope of process connections:
    - Flanges starting from DN40 and 1-1/2 inch
    - NPT thread starting from 3/4 inch
- Wetted materials for corrosive environments: Alloy C-276 and SS316
- Resolution: 1mm
- Pressure range: 1 bar to 400 bar (–14 psi to 5801 psi)
- Temperature range: –60 to 450C (–76 F to 842 F)
- Full scope of process connections:
    - Flanges starting from DN40 and 1-1/2 inch
    - NPT thread starting from 3/4 inch
- Wetted materials for corrosive environments: Alloy C-276 and SS316
- 2-wire, 4-20mA loop power
- HART, Foundation Fieldbus output options
- Transmitter configuration write protection
- 2 kV electrical transient immunity
- Unequaled local display capabilities
- Field calibration and configuration through external three-button facility
- Recall capability of last good calibration
- Universal terminal
- Comprehensive on-board diagnostic capabilities
- Full compliance to SIL 2/3 requirements as a standard
- Advanced display supports:
    - Up to 8 screens with three formats: process variable, bar graph and trend
    - Full library of engineering units with the ability to add custom units
    - Configurable screen rotation timing
    - Multiple languages
    - Two diagnostic indications
    - 90-degree position adjustments

Level Measurement

Non-Contact Radar

Stable level measurements that also deliver a low total cost of ownership

Non-Contact Radar Level Meter

1. Optional touch screen with 4-button operation
2. Two-wire level meter
3. Same housing for Ex and Non-Ex
4. One converter for all applications
5. Rotatable housing
6. Optional Metaglas barrier
7. Antenna extension (for long nozzles)

The Universal Radar Solution

The Non-Contact Radar (FMCW) is for level measurement of liquids and can be used to calculate for volume assessment. Non-Contact Radar provides a more stable measurement than pulse radar and they are well suited for agitated process conditions.

Highlights

- Standard accuracy ±3 mm (±0.04 in)
- Reliable measurement in difficult process conditions
- Operates up to a flange temperature of 200°C (390°F) and 40 barg (580 psig)
- Measuring range up to 80 m (260 ft)
- Long antenna versions can be extended to suit nozzle length
- Configuration software and HART DTMs included as standard
- Optional second current output
- Direct-accessible graphic touchscreen/wizard (option)
- Converter rotates 360°
- Triple barrier gas-tight protection available for working with dangerous gases (using pre-stressed fused glass)

Industries

- Chemicals
- Food & Beverage
- Iron, Steel and Metals
- Minerals & Mining
- Oil & Gas
- Petrochemical
- Pulp & Paper
- Water and Wastewater

Applications

- Tanks with agitators
- Process tanks
- Storage tanks

Flow Measurement

VersaFlow Flow Meters

Accurate and reliable flow measurements for the most demanding applications

VersaFlow	Electromagnetic Flow Meter	Coriolis Mass Flow Meter	Vortex Flow Meter	Clamp-on Ultrasonic Flow Meter
Benefits	Proven technology Expanded application capabilities Wide range of process conditions Easy to install and operate Sizes to fit your requirements	Improved safety A wide range of flow applications Reduced maintenance cost and worry Improved performance Reduced maintenance time and cost	Reduced installation cost and improved performance Rugged, long-lasting design for the toughest applications Easy to install and maintain Multiple parameter monitoring	Reduced installed cost and improved performance Low cost to service and maintain
Features	Resistant to acids and alkalis 250,000 units in operation Conductivity down to 1µS/cm Temperature up to 1.80ºC (356ºF) Easy to select, fit and forget Available sizes: 0.1 to 80 inches (DN 2.5 - 3000) Various electrode materials available Standard liners: PTFE, PFA, ETFE, hard rubber and polyurethane	Secondary pressure containment around sensor Pressure-resistant jacket up to 100 bar (1450 psi) 0.3 to 430,000 kg/h of flow Easily drained and easy to clean Excellent zero stability Rapid signal processing even with product and temperature changes and sudden changes in density Modular electronics concept and data redundancy–sensor and plug-and-play electronics easy to replace	2-wire device with integrated pressure and temperature compensation Non-wearing, fully welded stainless steel construction with high corrosion, pressure and temperature resistance Optimal process reliability thanks to ISP (Intelligent stable readings, free of external signal processing) Ready to use–plug-and-play Maintenance-free sensor design Pressure and temperature can be called up via HART	Minimized uncertainty Easy sensor mounting Optimized reliability Installation wizard Minimal maintenance All in one system Efficient regreasing concept Portable configuration is available
Applications	Suitable for all conductive applications From clean liquids to slurries and pastes with high solids content Abrasion, chemical and vacuum resistant Suitable for high temperatures Custody Transfer Applications	Viscous or shear-sensitive products Products requiring low flow velocities In homogeneous mixtures Products with entrained solids or gas Flow and purity measurement Density, temperature and concentration measurement Custody Transfer Applications	Superheated and saturated steam measurement Steam boiler monitoring Monitoring of compressor output Measurement of consumption in compressed air systems Measurement of consumption of industrial gases SIP and CIP processes in the food, beverage and pharmaceutical industries Measurement of conductive and non-conductive liquids	Chemical addition Potable water General process control Purified water Broad range of refined hydrocarbons Sanitary flow rate measurements De-ionized and demineralized water Cooling water/district heating water
Industries				
Chemicals	✔	✔	✔	✔
Petrochemical	–	✔	–	✔
Food & Beverage	✔	✔	–	✔
Minerals & Mining	✔	✔	–	–
Oil & Gas	✔	✔	✔	✔
Pharmaceuticals	✔	✔	–	✔
Power Plants	✔	✔	✔	✔
Pulp & Paper	✔	✔	✔	–
Water	✔	✔	✔	✔
Wastewater	✔	✔	–	–
Iron, Steel & Metals	–	–	✔	–
Automotive	–	–	✔	–

Wireless Solutions

Wireless Field Devices

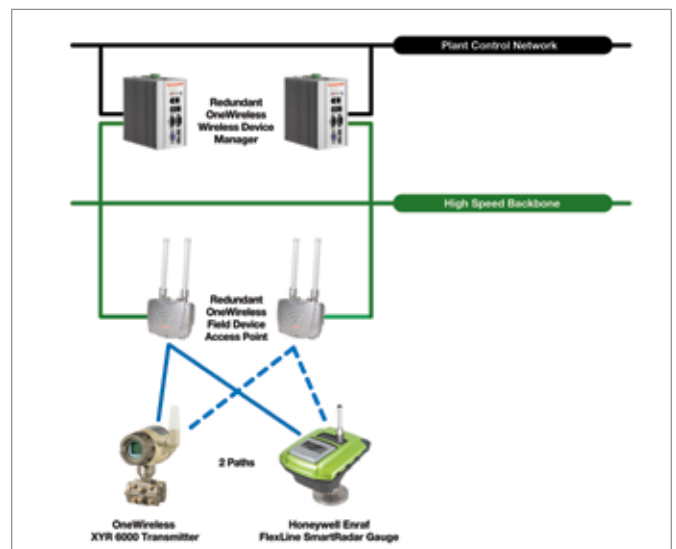Simple and efficient network that enables increased safety, reliability and efficiency

The Honeywell OneWireless™ Network is a multi-application network that can be tailored to offer the wireless coverage needed for industrial applications; from a simple field instrument network (ISA 100 Wireless) to a completely integrated, plant-wide multi-application network (Wi-Fi and ISA100 Wireless). OneWireless Solutions offer several benefits beyond avoiding wiring costs such as helping customers optimize plant productivity, ensuring safety, meeting regulatory compliance and improving asset reliability. Supporting Honeywell XYR™ 6000 wireless transmitters and the Honeywell OneWireless Adapter, this network delivers a global solution with robust security, predictable power management and multi-speed monitoring. Attributes and benefits include:

- Single plant wide wireless infrastructure for lowest total cost of ownership

- Open, standards based system providing choice of product and supplier

- Best integrated industrial security available today

- Extremely reliable mesh system—field proven for best uptime

- Flexible and scalable for designing the network that best fits the application need

OneWireless XYR 6000 Transmitters

OneWireless XYR 6000 Transmitters provide highly accurate pressure, temperature, analog input, valve position, digital input measurements or a digital output, and transmit the measured value wirelessly using the 2.4 GHz ISM band and ISA100 Wireless open protocol to a Honeywell access point. XYR 6000 transmitters provide the ability to obtain data from remote and hazardous measurement locations without the need to run wires.

OneWireless Adapter

The OneWireless Adapter (OWA) transforms a HART device into an ISA100 Wireless compliant wireless device, transmitting this valuable information back to a host system wirelessly. The OWA provides access to: 4 HART dynamic variables (PV, SV, TV, FV), multivariable data, calibration and diagnostic information, device configuration parameters.

XYR 3000 Wireless Multiplexer I/O, Modems and Gateways

Honeywell XYR 3000 products provide a simple and reliable means of implementing a wireless solution for applications with high-density I/O concentrations, providing the lowest cost per wireless measurement point, enabling new applications. Gateway and modem products provide wireless interfaces between data buses such as Ethernet, RS232 and RS485.

Scalable Control Solutions

ControlEdge™ PLC

ControlEdge™ PLC, when combined with Experion®, reduces integration costs for balance of plant operations, minimizes downtime through unified support, decreases risk with embedded cyber security, and lowers total cost of ownership through extended system lifecycle.

Honeywell's advanced Programmable Logic Controller (PLC) technology improves control performance while offering greater flexibility and lower costs. The new ControlEdge™ PLC improves integration with Experion®, HMIs and third-party devices, and reduces configuration efforts by utilizing the industry-accepted IEC 61131-3 programming languages, as well as remote configuration and firmware updates.

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Key Highlights

The ControlEdge PLC is based on the proven 900 platform of racks and power supplies, currently used by HC900.

- First PLC with Universal I/O for greater configuration flexibility
- First PLC certified ISASecure EDSA Level 2 compliant
- Designed and developed by Honeywell, a global leader in process automation for more than 40 years
- Tightly integrated with Experion, Honeywell's best-in-class Distributed Control System (DCS), Supervisory Control and Data Acquisition (SCADA) system, and safety system
- Native controller redundancy
- Optionally redundant power supplies
- Two variants of power supplies: 60W 24VDC and 110/240VAC
- Leverages Honeywell's LEAP project methodology and Universal I/O for greater configuration flexibility
- I/O racks of various sizes
- Integration with third-party systems and devices such as motors, drivers, and compressors
- Connects to Human-Machine Interface (HMI) through Modbus and OPC UA protocols
- Compatible with leading open network standards such as Modbus and OPC UA
- Powerful IEC 61131-3 programming environment

- Best-in-class cyber security ensuring the safety of the system, personnel and critical information
- Single vendor service and support across PLC, DCS and Safety

Superior Integration Capability

With Honeywell technology, industrial sites have a flexible way to efficiently access data in a seamless manner, ensuring easy configuration and maintenance. ControlEdge PLCs are tightly integrated with the Experion control system architecture. By partnering with an automation vendor offering both DCS and PLC solutions, users have a single point of contact for support and supply chain, substantially reducing CAPEX and OPEX.

Universal I/O for Project Flexibility

Honeywell's automation experience and innovative LEAP methodology are the key to increased flexibility – allowing industrial firms to optimize project execution. With LEAP, companies can realize significant capital savings on the total installed automation costs of a project, reduce rework costs, and minimize schedule delays.

Essential to the LEAP approach is the implementation of 16-channel Universal I/O modules (UIO), which offer flexibility in I/O type, eliminating the need for custom PLC hardware alignment with different I/O configurations. Any field signal can be connected to any I/O channel. Deployment of UIO provides greater flexibility for late stage changes, such as configuration and design changes on a typical automation project.

The UIO module reduces equipment needs by reducing or eliminating marshalling, and because there is no need for hardware with different I/O configurations. The result is significant savings in spares inventory and associated costs.

Scalable Control Solutions

ControlEdge™ PLC

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Embedded OPC UA Protocol

As the protocol of choice for IIoT, OPC Unified Architecture (UA) provides secure, reliable and vendor-neutral transport of raw data and pre-processed information from the sensor and field level up to the manufacturing level. Utilizing this open protocol – embedded directly in the controller itself as a client and a server – Honeywell's ControlEdge PLC provides users with the flexibility to choose between interfaces while simplifying integration with a wide range of third-party systems and devices.

Robust Cyber Security

Our embedded cyber security supports compliance, reduced risk, and availability. Features include secure boot to prevent uploading of unauthorized software, a built-in firewall to reduce exposure to denial-of-service attacks and message flooding, encryption for critical data with easy configuration, and authentication and authorization through a trusted certificate and robust item subscription model.

Controller Redundancy

Honeywell's redundancy is ready to go. There is no need to program any differently from a non-redundant controller. ControlEdge PLC takes away the complexity. No additional infrastructure is required to synchronize the data between CPMs.

Scalable Control Solutions

Experion Solutions

Scalable solutions for diverse control requirements

Experion LX

Experion LX is a proven, easy to use and purpose-built distributed control system.

Experion LX manages all continuous process control applications and optimizes batch and sequence-oriented applications. Experion LX incorporates Honeywell's latest C300 controller technology and an innovative Series 8 I/O platform.
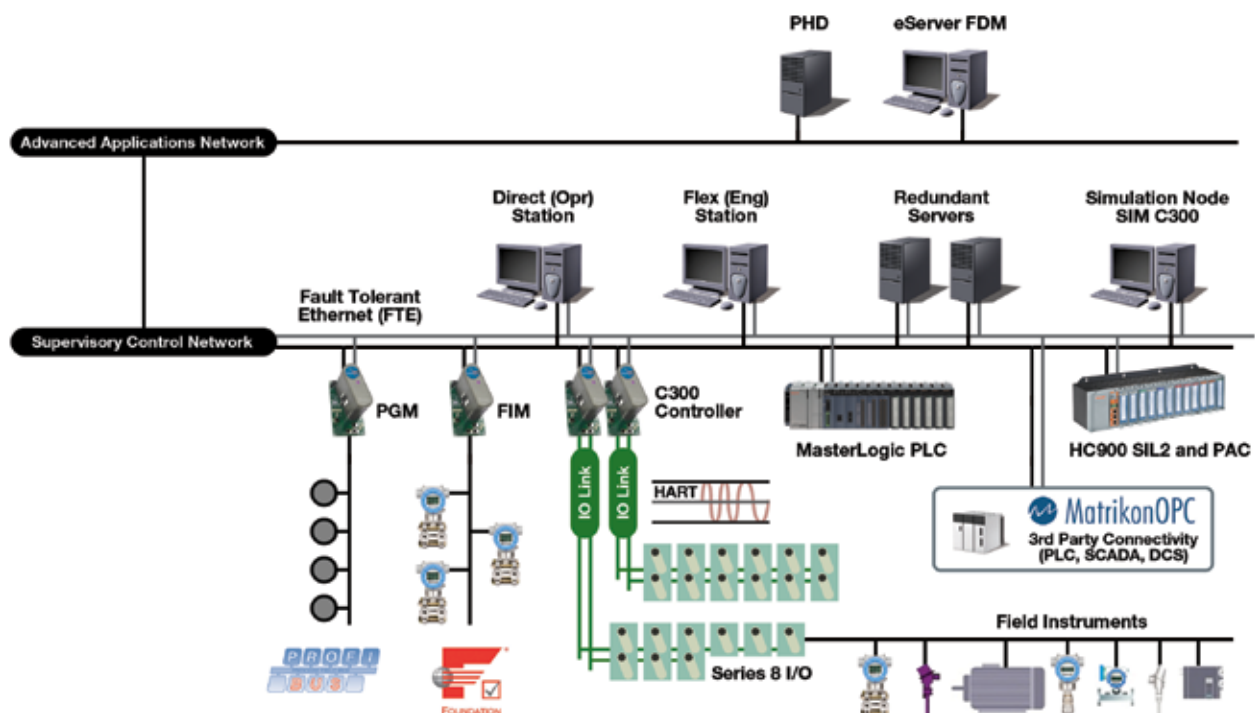
Benefits:

- Maximize plant uptime
- Improve plant reliability
- Optimize plant efficiency
- Boost plant performance and agility to respond to business changes
- Enhance operator effectiveness through alarm management and displays
- Communicate effortlessly with third-party devices and drives
- Drive down costs through a low total cost of ownership
- Ensure scalability and future expansion

Experion HS SCADA Systems

Experion HS is a powerful software platform that incorporates innovative applications for human machine interface applications (HMI) and supervisory control and data acquisition (SCADA). Built upon the proven technologies of the Experion platform, Experion HS is an integrated and affordable solution for smaller unit operations.

Features:

- HMI including 300 pre-built displays
- On-board historian and trending
- Alarm and event subsystem
- Reports
- 10 dual-window client stations
- SCADA support for a wide variety of devices
- OPC Suite and open standard communication protocols
- eServer for casual browser view

Scalable Control Solutions

MasterLogic Programmable Logic Controllers
Greater versatility, easier engineering

Advanced Technology—Available at a Competitive Cost

MasterLogic's advanced technology enables higher speed processing and better control in applications of all types, particularly smaller unit operations. This compact and modular PLC offers all of the redundancy architecture options needed for most industrial operations—and at a competitive cost. A versatile family of I/O modules and networking options offers flexibility in how MasterLogic fits into an entire automation scheme.

Available through Honeywell's expansive global organization, the MasterLogic PLC features:

- Powerful and versatile processors for high-speed applications (provides 42 ns/step, 7 MB program memory, 4 MB system memory, 2 MB data memory and 16 MB built-in flash memory for program and data backup)

- Full redundancy for CPU, power and network

- Compact pocket-size modules to optimize space

- IEC61131-3 standard programming with LD/SFC/ST/IL language options

- Vast library of standard function blocks and support for creating new or user-defined function blocks

- Over 50 types of I/O modules including High Speed Counter and Sequence-of-Event modules

- Open network protocols with field devices (Profibus DP, DeviceNet, HART, "Modbus TCP/RTU/ASCII") and user-defined frame option

- Open communication with external systems through 10/100Mbps fast Ethernet and serial RS232C/RS422

- Peer-to-peer communications between PLCs with either dedicated 100 Mbps Ethernet or fiber-optic

- Hot swapping, online editing, user-defined interrupt programs

- Integration with Experion PKS, Experion HS, or Experion LX architecture and SCADA systems

- Self-diagnostics including network diagnostics, system logs, auto-scan and system monitoring

- Program simulator to test programs offline without PLC/CPU

The MasterLogic PLC is a powerful and scalable rack-based programmable logic controller. It can be installed in either a stand-alone or distributed architecture. A range of CPUs, power supplies and different rack sizes are available, to meet the requirements of a broad range of applications.

Honeywell's Integrated Approach

MasterLogic is much more than just a better PLC; it comes from a company focused on the "system" of automation—not just the parts. Honeywell has always thought about automation problems in their entirety. Its holistic systems strategy, first developed in the 1970s with the introduction of the distributed control system (DCS), supports an integrated architecture with unified sensing, control, operations and information management.

The various elements of a plant automation system can be installed, started and operated together in a prepackaged manner without excessive tuning and adjustment by the implementation project engineer. Hardware and software components continue to operate with high reliability because they were engineered to be compatible. And when it's time to expand or upgrade the system, that task is made easy as well.

The core aspects of Honeywell's systems include:

- Standard displays, faceplates and detail displays that provide a consistent look and feel to operators even when used with non-Honeywell controllers

- Embedding of MasterLogic alarms and events into the Experion HS alarm and event sub-system, including Sequence of Event information

- Critical functionality unifying the real-time, process-connected world of the controller with graphical user interface (GUI) and plant supervisory functions such as monitoring and alarm management

- Data management functions that derive from history collection and reporting

Scalable Control Solutions

HC900 Process & Safety System
Single flexible system for safety and process control

HC900 Controller

The HC900 offers an integrated solution that provides a single flexible system for process control and safety with faster start-up time, common engineering tools, reduced training, simplified training and low cost of ownership. The combination of analog control loops, setpoint programs, function block configuration, data acquisition and an extensive assortment of predefined analog and digital blocks make the HC900 the ideal choice for thermal processing, water treatment, food & beverage processing, power generation, pharmaceutical, manufactured goods, semiconductor industries and other safety related applications such as burner management systems, combustion control, pipeline monitoring, spill prevention, and emergency shutdown.

The rack-based HC900 is a modular, scalable platform available in 3 rack sizes (4, 8 and 12 I/O slots) and three CPU performance choices to handle a wide range of automation requirements. The CPU options available for the HC900 Controller include ones for non-redundant applications, redundant networking and for both redundant CPU applications and redundant networking. To maximize installation flexibility, up to 4 remote I/O racks may be connected to a single controller to reduce wiring and installation costs.

The versatile HC900 Controller is the perfect solution for unit control requiring integrated loop and logic processing. It is also the ideal data acquisition package with up to 480 universal analog inputs, extensive math and free form calculations. Intuitive function block software allows you to quickly get up and running, saving you time and money. Ethernet Open Connectivity simplifies plant network integration. Redundant CPU's, Power Supplies and Networks maximize process uptime.

The HC900 consists of three components: a powerful controller (either process or safety) with modular I/O; a hardened operator interface with color display compact flash card (4GB); and intuitive configuration software.

The HC900 system is also available with similar hardware that is TÜV certified for safety applications.

Controller:
- Modular I/O design
- Multiloop PID Control
- Setpoint programmers, scheduler
- Process logic, timers, counters
- Process algorithms, calculations
- Universal analog inputs
- Stores setpoint profiles, recipes
- Remote Terminal Panels (RTP)
- Redundant CPU's, power supplies

Control Designer Software:
- Drag and drop soft wiring of function block objects
- Load configuration via Ethernet, serial communication modem
- Graphic hard copy records
- Load/upload, monitor configuration via modem
- Database export in CSV or TAB DELIMITED formats

The HC900 Process and Safety Control System is:

- High Performance - enhances quality
- Easiest to Use and Engineer- improves productivity
- Low Total Cost of Ownership –maximizes profitability

HC900 Controller		
Analog Inputs	Up to 480 universal analog inputs, 960 high level	
Accuracy	±0.1% of span (field calibration to ±0.05% of span)	
Analog Outputs	Up to 200; user specified span from 0 to 20 mA maximum, 12 bits, 0.1% Accuracy	
Digital Inputs/Outputs	Up to 1920, contact DI, 24 Vdc DI/DO 120 Vac DI/DO, 240 Vac DI/DO, relay DO	
Function Blocks	C70, C75 CPU-5000; C50 CPU-2000; C30 CPU-400	
I/O Racks Per System	Up to 5 total	
Control Loops	PID, on/off, cascade, ratio, %C, RH, dewpoint	
Control Output Types	Current, time-proportioning, position proportioning, three-position step	
Setpoint Programmers	50 segments each, 16 event outputs, profiles stored in controller	
Setpoint Scheduler	50 segments, 8 ramp/soak outputs, 8 auxiliary outputs, 16 events, schedules stored in controller	
Recipes	50 variables each	
Communication	Ethernet 10BASE-T; Modbus/TCP protocol; up to 5 Ethernet hosts; up to 32 peer to peer controllers; Serial Modbus RTU, RS485 or RS232, Slave (up to 16) or master operation	
Power Supply	120 Vac to 240 Vac or 24Vdc	
Operating Temp.	0° to 60°C (0° to 140°F)	
Humidity	10% RH to 90% RH, non-condensing	
Rack Size	**4 Slot**	266.7 mm (10.5 in)
	8 Slot	419.1 mm (16.5 in)
	12 Slot	571.5 mm (22.5 in)
HC900 Control Designer Software		
Configuration	Off-line, with run mode editing	
Operating Environment	Windows Vista, XP SP2 Professional support, Windows™ 7	
PC	Minimum–Pentium 1 GHz with 64MB of RAM (2.5 GHz with 512MB recommended) Screen resolution–SVGA (1024x768 recommended)	
Cable	9-pin RS232 null modem cable to configuration port or Ethernet 10BASE-T	
Modem Support	Monitor, upload, download configuration	

Scalable Control Solutions

HC900 Process & Safety System
Single flexible system for safety and process control

Operator Interface

The 900 Control Station operator interface from Honeywell compliments the HC900 Controller with a unique combination of predefined display features and custom display development tools to deliver ease of use and high flexibility in an efficient and affordable package. The color display and finger touch user interface enhances process monitoring while simplifying online controller changes. The Station Designer software used to configure the interface works in conjunction with the HC900 Process Controller configuration software to automatically build a Control Station database that exactly matches the unique, user configured, controller database. This highly integrated operation eliminates the time consuming task of assigning controller communication register addresses to the operator interface parameters used to build displays. The standard database of the Control Station allows all available controller tags to be imported without restriction or costly price adders, eliminating the risk of running out of tag resources in the middle of your project. The hardware of the 900 Control Station is designed to handle tough industrial environments with a full metal case design and water tight, type 4X, front bezel assembly. Hardware push buttons on the front panel supplement touch screen software buttons for common interface tasks such as user log-off, display last screen and main menu access.

The 900 Control Station is available with either a 10.4 inch or 15 inch display size. Both models are configured using Station Designer PC configuration software.

Communications:
- Modbus/TCP Protocol
- USB Ports: Adhere to USB specification 2.0
- RS232 Serial Ports (RJ12 connectors)
- RS485 Comm. Port (RJ45 connector)
- Ethernet Port: (RJ45 connector)–wired as a NIC (Network Interface Card)
- 10BASE-T/100BASE-TX
- Redundant Networks

Operator Interface	Model 900CS10-00	Model 900CS15-00
Display	Size: 264 mm (10.4 in) Pixels: 640 X 480; Color LCD	381 mm (15 in) Pixels: 1024 X 768; Color LCD
Data Logging	Media: Volatile RAM memory, optional non-volatile flash card memory or removable USB memory module, Secure Data Archiving; Data Types: Process history, alarms, events, diagnostics, user changes; Export format: CSV	Media: Volatile RAM memory, optional non-volatile flash card memory or removable USB memory module, Secure Data Archiving; Data Types: Process history, alarms, events, diagnostics, user changes; Export format: CSV
Power Supply	+24 VDC ±20% @ 29 W max. Requires Class 2 or SELV rated power supply. Front panel LED indication of power on	+24 VDC ±20% @ 46 W max. Without options. Requires Class 2 or SELV rated power supply. Front panel LED indication of power on
Safety	ANSI/UL 61010-1 – 2005, Second Edition. General Purpose (Ordinary Location) Safety. UL evaluated to CSA C22.2 No. 61010-1-2004- Second Edition. General; Purpose (Ordinary Location) Safety; UL, CSA and FM Class I, Div 2 Groups A,B,C and D - Hazardous (Classified; Location Safety for USA and Canada	ANSI/UL 61010-1 – 2005, Second Edition. General Purpose (Ordinary Location) Safety; UL evaluated to CSA C22.2 No. 61010-1-2004- Second Edition. General Purpose (Ordinary Location) Safety; UL, CSA and FM Class I, Div 2 Groups A,B,C and D - Hazardous (Classified); Location Safety for USA and Canada
Operating Temperature	Operating Temperature Range: 0 to 50°C (32 to 122°F) Storage Temperature Range: -20 to 70°C (-4 to 158°F)	Operating Temperature Range: 0 to 50°C (32 to 122°F) Storage Temperature Range: -20 to 70 °C (-4 to 158°F)
Humidity	Operating and Storage Humidity: 80% maximum relative humidity (non-condensing) from 0 to 50°C.	Operating and Storage Humidity: 80% maximum relative humidity (non-condensing) from 0 to 50°C.

Operator Interface:
- Fully manage HC900 controller function blocks such as PID, setpoint programmers, etc.
- Load/monitor setpoint programs, recipes
- View analog and digital status
- View bar graph groups
- View trends
- View alarm and event status
- Initiate operator push-button actions
- Expandable memory with Flash Memory socket for record keeping & configuration transfer
- Configuration stored in non-volatile memory for secure operation
- Integrate HC900 controller alarms/events or build them into the interface
- Emulator
- Multilingual (5 languages including English, German, French, Spanish and Italian)
- Batch Reporting

Connectivity Solutions

Matrikon®

Secure, reliable open data connectivity

Matrikon offers the industry's most extensive portfolio of OPC & OPC UA connectivity products along with unmatched global domain expertise. Its solutions integrate Honeywell's products such as the HC900 Controller, MasterLogic PLC, single loop controllers, control systems, actuators and analyzers with third-party SCADA, historians and human machine interfaces (HMIs) to provide secure, reliable open data connectivity.

The following Matrikon products are available with Honeywell products:

OPC Server for Modbus

The Modbus OPC Server provides secure and reliable real-time data access between all modbus-capable devices to OPC-enabled applications such as historians, HMIs and SCADA systems, etc.

OPC Redundancy Broker

OPC Redundancy Broker (ORB) easily enables implementing redundancy in systems that take advantage of OPC technology, such as Honeywell's Experion® HS.

Easy OPC Trender

Easy OPC Trender is an intuitive and powerful OPC Trending Client. With OPC-HDA, you can connect to any process historian data source.
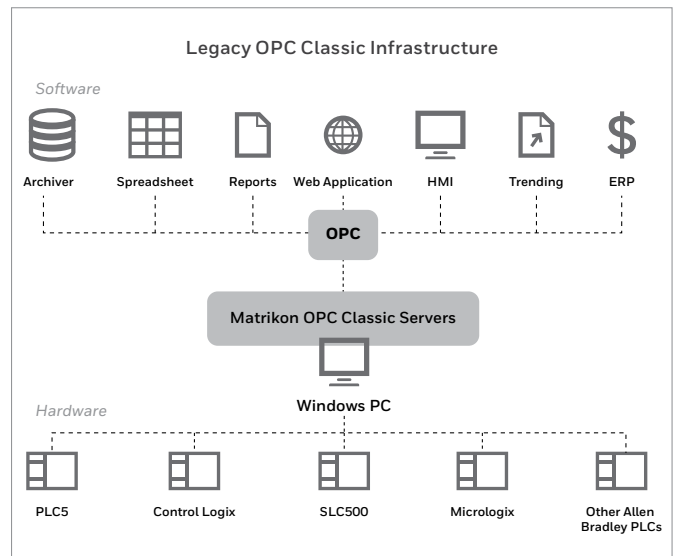
OPC Security Gateway

Matrikon OPC Security Gateway secures all real-time OPC architectures. Unlike OPC solutions that rely only on DCOM security, Security Gateway controls who can browse, add, read and/or write to a tag on a per-user-per-tag basis on any OPC DA or HDA server.

OPC UA Tunneller™

Matrikon OPC UA Tunneller provides an intuitive, user-friendly interface to help you get your Classic-to-Classic OPC connectivity and Classic-to-OPC UA bridging up-and-running quickly and efficiently.

The OPC UA Tunneller UA-to-Classic Bridge for COM OPC Servers provides OPC UA Clients with access to legacy COM OPC DA and HDA Servers using the OPC UA specifications. The UA-to-Classic Bridge exposes COM OPC Servers as folders in the OPC UA Server's address space and can be configured to host multiple OPC Servers.

OPC Data Manager

OPC Data Manager (ODM) is a software application that transfers data from one OPC server to another. Use ODM when you need to share, map, and bridge OPC data between two or more control systems (e.g. PLC and a DCS). With ODM this connectivity can be accomplished with standard, off-the-shelf software.

OPC Excel Reporter

OPC Excel Reporter is an OPC Client for Excel that transforms Excel into a reporting tool for your process and equipment data. Connect to any real-time (OPC DA) or historical (OPC-HDA) data source. With its simple and easy to use interface, Excel sheets and cells can be linked to specific I/O point(s) in the PLC in a matter of seconds.

Micro Historian

OPC Micro Historian is ideal for storing data from individual PLCs, in small plants, or for simple processes for analysis and reporting.

Connectivity Solutions

Matrikon®

Secure, reliable open data connectivity

- OPC security Gateway Software

  Provides configurable access to the OPC architectures and full control for the user. Users can control who can browse, add, read or write per tag.

- OPC UA Tunneller™

  Matrikon OPC UA Tunneller allows OPC UA-enabled client applications to communicate with OPC Classic Servers and Clients, as well as OPC UA Servers and vice versa.

OPC Solutions and Architectures

Matrikon offers a wide variety of OPC solutions and products that solves many market problems to ensure that you receive all your data in secure and reliable manner.

- OPC DMZ Agent
- OPC Hub and Spoke Industry

OPC Data Management

Here you'll find products related to the transfer and conversion of data. Leveraging OPC's Client/Server model, these communication enablers can be added to most OPC systems to provide additional functionality.

	Fastest and secure way to make OPC connections...
OPC Data Manager	Share and map data between OPC Servers...
OPC Redundancy Broker	Make all your OPC connections redundant...
OPC Funnel	Consolidate OPC Servers into a single OPC Gateway...

Data Connectivity Devices

Matrikon Industrial and Gateway data connectivity devices provide the ultimate in secure, reliable data visibility into remote parts of the enterprise commonly considered out of reach or overly expensive for traditional PC based OPC solutions.

- Matrikon Industrial Data Logger Collects data from assets and control systems, buffers the data locally to ensure zero data loss then forwards that data to a central location for long term archiving.

  Matrikon Industrial UA Modbus Gateway Provides a simple and secure method to gain access to data from RTUs, PLCs, or any other devices that use the MODBUS data protocol, well suited for limited power availability in remote conditions.

OPC Event Management

Matrikon offers a wide variety of OPC A&E (Alarms and Events) products to store, move, and expose A&E data. Unlike other OPC vendors that provide the bare minimum for data connectivity, Matrikon offers OPC A&E to ensure that you receive all your SOE data.

- OPC Server for A&E — Create OPC A&E events from real-time OPC values...
- OPC A&E Explorer — Quickly connect to A&E OPC Server...
- OPC Messenger — Send email notifications based on the triggered events...
- OPC A&E Historian – Store A&E data from any data source into one repository

IIoT / Industry 4.0 Solutions

OPC UA is recognized as an enabling technology for the IIoT and Industrie 4.0, supporting multi-vendor, multi-platform interoperability for moving data and information from the embedded world to the enterprise. OPC UA extends the capabilities of the Classic OPC model by improving upon security and employing standard Internet technologies.

- OPC UA Tunneller™ enables classic OPC based applications to connect with OPC Unified Architecture (UA).
- Matrikon FLEX Software Development Toolkit (SDK): is the first high-performance developer toolkit that quickly and easily enables any application, regardless of size, with OPC UA.

Remote Terminal Unit

ControlEdge™ RTU

ControlEdge RTU provides simplified and efficient remote monitoring, diagnostics and management. Reduce equipment monitoring and diagnostics from hours to minutes. Experion® SCADA configuration time is reduced by 80%.

The ControlEdge™ Remote Terminal Unit (RTU) is a modular, powerful and scalable controller capable of all remote automation & control applications. When combined with Experion® LX and its radically simplified SCADA configuration with superior operator experience, it solves the most challenging remote automation requirements for the oil & gas industry.

With our modern RTU, you have an edge into realizing the best utilization of your distributed assets through safe, reliable and efficient remote monitoring, diagnosis and asset management, while ensuring low total cost of ownership.

Lowest Power Consumption

The ControlEdge RTU has one of the lowest power consumptions on the market at a typical tiny 1.9 Watts, even when using HART. When HART is required, other RTUs require additional hardware, consuming even more power, whereas RTU2020 has HART onboard. Even in tropical and desert environments, either minimal or no cooling is required.

Efficient Wiring and Assembly

RTU2020 comes with removable field terminals, allowing the installer to hold the terminals in their hand for wiring even with gloves on. In addition, the terminals are printed with the I/O type and number giving the installer positive identification. Combined, this saves upfront installation cost and reduces wiring errors.

High Performance RTU with HART Enabled Onboard I/O

With a modern dual core 667MHz processor, ControlEdge RTU has the power for today's applications and spare reserve to meet tomorrow's needs. Importantly, by having built-in HART, ControlEdge RTU has no requirement for separate expensive and power consuming HART I/O modules or third party components.

Key Features:

- Stand-alone lowest power consumption in its category at a typical 1.9W
- Temperature range -40 to 75°C (-40 to 167°F). Up to 75°C, not 70°C like other units
- High reliability with well designed thermal paths
- HART enabled onboard and expansion I/Os. No extra hardware required. Digital HART data & diagnostics are available locally for use in RTU program & remote alarming
- HART IP allowing remote asset management of HART devices via Honeywell's Field Device Manager
- Efficient wiring & configuration saving installation and maintenance time
- Modern, powerful CPU for now & into the future
- Transient suppression on every I/O channel & every communication
- A powerful IEC 61131-3 programming environment
- Liquids & gas calculations in the same controller
- Flexible communication options for uplink & downlink
- Industry standard protocols of Modbus & DNP3 both as master and slave
- Secure communications with authentication & encryption
- Data logging on board & optionally on local SD card
- Hazardous area certified

The Value of HART

ControlEdge RTU helps eliminate maintenance trips to the field with robust data logging, good sub-system communications with local devices and smart device integration with HART to enable better fault modeling, both direct on the RTUs and at central locations.

Endures Tough Environments

ControlEdge RTU has been designed to withstand the toughest environments, with an operating temperature range of -40 to 75°C in humidity of 5% to 95%. ControlEdge RTU has conformal coating to G3 and is hazardous area certified.

Flexible Communication Ports, Standard Protocols

RTUs need to efficiently manage unreliable, low bandwidth networks and support remote, redundant and master/slave communication scenarios to provide data buffering and history backfill.

Robust Data Logging Ensures Data Availability

ControlEdge RTU comes with data logging capabilities to record values to data files in flash memory or the onboard SD card, (optional), supporting up to a massive 32GB of data. This ensures important data is never lost and is available for future analysis.

Actuators

HercuLine
Smart design for lower cost of ownership

HercuLine Electric Actuators	HercuLine 2000	HercuLine 2001 / HercuLine 2002	HercuLine 10260A / HercuLine 10260S
Product Description	Low torque electric actuator	Low torque electric actuator	Medium torque industrial electric actuator
Torque	50 to 400 in-lb (6 to 45 N-M)	50 to 400 in-lb (6 to 45 N-M)	10 to 300 lb-ft (14 to 400 N-M)
Stroke/Speed	90° to 150°/6 to 75 sec	90° to 150°/7.5 to 120 sec	90°/10/20/40/60 sec
Input Signals	Floating, Pos. prop., Open/Close	1-5 Vdc, 4 to 20 mA	0/1-5 Vdc, 0/4-20 mA, Floating, Pos. prop., Open/Close
Position Feedback	1000 ohms potentiometer	0/1-5 Vdc, 0-16 Vdc, 0/4-20 mA, SW emulation	0/1-5 Vdc, 0-16 Vdc, 0/4-20 mA, SW emulation 1000 ohms potentiometer
Position Sensing	1000 ohms potentiometer	2001: slidewire 2002: contactless	Contactless
Environmental	-40° to 85°C (-40° to 185°F)	-40° to 75°C (-40° to 170°F)	-30° to 75°C (-20° to 170°F)
Duty Cycle	Continuous	Continuous	Continuous
Repeatability	N/A	0.2% of 90° span	0.2% span
Dead-Band	N/A	Adj. 2% to 5% span	Adj. 0.2% to 5% span
Local Auto/Man Switch	Optional	Optional	Optional
Local Keypad/Display	N/A	Optional	10260S: Optional
RS485 Modbus Comms.	N/A	Yes	10260S: Yes

HercuLine Electric Actuators

HercuLine Electric Actuators are engineered for exceptional reliability, accurate positioning, and low maintenance. Designed for very precise positioning of dampers and quarter-turn valves, they perform especially well in extremely demanding environments requiring continuous duty, high reliability and low maintenance. With non-contact sensing, the maintenance problems and unexpected shutdowns associated with slidewires and potentiometer wear are eliminated.

HercuLine Smart Actuators

Honeywell's new actuators incorporate all of the quality and reliability features of the HercuLine actuators with the added benefits of microprocessor-based electronics. These benefits make it easier to install, set up and commission the actuator, while allowing you to monitor the health parameters for proactive maintenance planning.

- RS485/Modbus communications for remote access
- Programmable: Alarm and relay outputs; Characterization, failsafe functions, dead-band, and filtering; Direction of rotation
- Diagnostic Parameters: Maximum Hi and Lo temperature; Stall and accumulated stall time; Total travel

HercuLine PC Software
- Lowers ownership cost
- Use your PC for calibration, configuration and maintenance data
- Eliminates local display and keypad