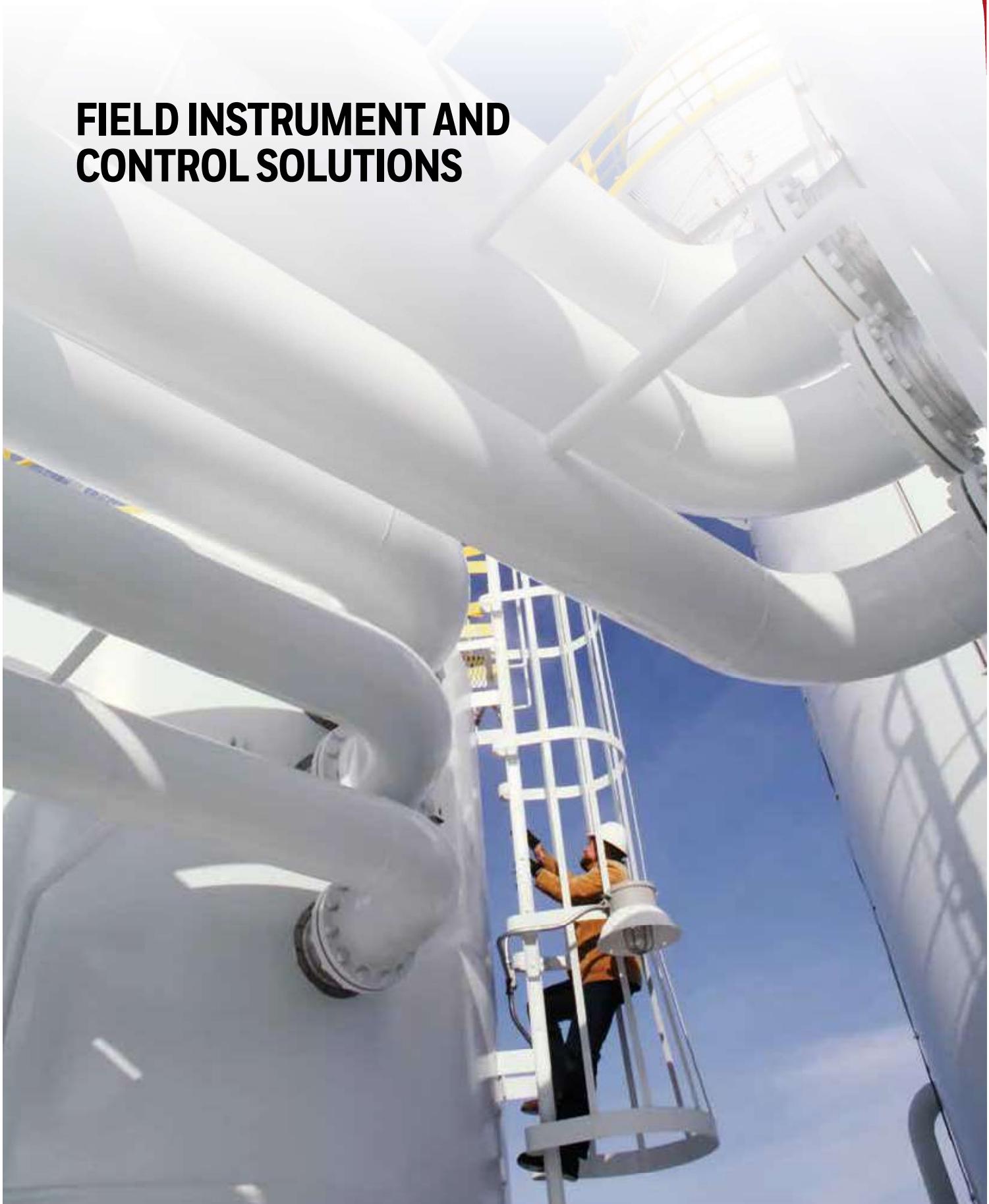


Honeywell | Connected Industrial

FIELD INSTRUMENT AND CONTROL SOLUTIONS





Improve Your Business Performance

Honeywell's comprehensive portfolio of measurement and control products, combined with our software solutions and open interfaces for data access, enable you to manage your plant assets and optimize your enterprise by providing the bedrock system critical measurement, control and data acquisition. From the sensor to the control room—and everything in between—we can help you to improve your quality and productivity and reduce total costs.

The elements of a total control solution.
Networked or stand alone. We have them all.

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

SmartLine Multivariable Transmitters measure static pressure, differential pressure and process temperature with minimal process intrusions to provide reliable, accurate and stable mass flow measurement. Compatible with variety of flow elements and global engineering standards, they deliver superior performance for an accurate and fail safe measurement even on low flow applications.

Temperature Measurement

Honeywell's temperature transmitter offering, including SmartLine, has three tiers to provide the right mix of price and performance to meet different 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 is a comprehensive portfolio of leading flow technologies which cover wide spectrum of applications across various industry verticals. They are easy to configure and use, providing safe, reliable and efficient flow measurement solutions.

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 and Indicators

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

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: circular chart or paperless recorders for viewing, storing and managing your process data. In addition, Honeywell's powerful software suite provides analysis, 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, 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 a portfolio of rotary actuators to control dampers and valves within your plant or mill, providing repeatability, reliability and reduced total cost of ownership.

Smart Pressure Transmitters

SmartLine Pressure Transmitters

Modular, accurate and robust for the lowest cost of ownership



SmartLine® Pressure Transmitters

Honeywell's SmartLine 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 the Experion® control system, Honeywell helps facilities reduce project costs and startup time, avoid unplanned downtime, improve product quality, reduce spare parts inventory and shorten time to repair.

The SmartLine pressure offering has two performance tiers and comprises of absolute, differential, gauge, remote seal, flanged (level) and multivariable transmitter.

Salient features of SmartLine Platform:

- Universal terminals
- Field replaceable modules
- Dual seal compliance
- Temperature and static pressure compensation
- SmartLine Connection Advantage provides unique integration features such as Tamper Alerts, Transmitter Messaging and Maintenance Mode Indication
- Full compliance to SIL2/ SIL3 requirement

ST800 Pressure Transmitter

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
- Comprehensive on-board diagnostic capabilities
- Response time as fast as 80 ms
- Turndown ratios up to 400:1
- 15 years warranty



ST700 Pressure Transmitter

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 ratios 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 easy 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



SmartLine SMV800 Multivariable Transmitter

SmartLine SMV800 Multivariable Transmitter 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 the Experion® control system 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 0.2°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
- 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 Temperature Transmitters and STT 3000 Series

Precision devices, proven in the field



SmartLine STT850 and STT750 Temperature Transmitters

SmartLine STT850 and STT750 Temperature Transmitters are industry's most reliable and robust temperature transmitters, featuring dual compartment housing and intuitive diagnostics for both the transmitter and the sensor. The availability of the dual input and digital output options minimize the number of instruments needed for both monitoring and switching needs, reducing the initial investment cost*. SmartLine Temperature Transmitters feature the best stability with a drift specification of 0.01% of the URL per year for up to ten years. This superior performance reduces calibration frequency and lessens the need for periodic maintenance.

Same as the other SmartLine transmitters, the SmartLine Temperature Transmitters are modular in design, have universal

terminals, advanced display and local configuration. As part of the SmartLine Connection Advantage, STT850 supports Transmitter Messaging, Maintenance Mode Indication and unique Tamper Reporting.

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

SmartLine STT650 DIN Rail Mounted Temperature Transmitter

SmartLine STT650 DIN Rail Mounted Temperature Transmitter offers high measurement accuracy, stability and reliability over a wide range of process and ambient temperatures. Designed and manufactured to deliver very high performance, the STT650 transmitter easily meets the most demanding needs for temperature measurement applications. The total accuracy level of the transmitter, including the ambient temperature effect in harsh industrial environments, allows the STT650 transmitter to replace virtually any transmitter available today. Another great value is the dual channel options combined with the compact design that can help save over 40% panel space, lowering costs and inventory with it.

*STT850 only

Smart Level Transmitters

SmartLine Level Transmitters

A new standard for total performance and user experience



SmartLine SLG700 Level Transmitters

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 Transmitter offers:

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

Honeywell's SmartLine Level Transmitter comes with an intuitive and smart online selection tool to help you configure best instrument for your target application. This SmartLine Application and Validation Tool provides the following smart benefits, leading to lowest lifecycle cost:

- Use the built in logic of the tool and collaboration functionality to speed up the selection process and order an optimal instrument for your specific application

- Document your selection process, and share it with others in the ordering process
- Get your instrument fully preconfigured and ready for use in your application to shorten the commissioning time

SmartLine SLG700 Level Transmitter is powered by innovative guided wave radar technology, which allows reliable and efficient level control in a wide range of industrial applications. The instrument sets new standards for total performance and delivers the following smart benefits:

- Eliminate poor production quality and false off process trips - obstacle immunity and dynamic false echo suppression algorithm's for highly complex tanks and variable processes
- Maximize use of existing tank infrastructure for lower cost - blocking distance optimization maximizes installed accuracy in small tanks
- Eliminate off-process measurement and production under highly dynamic process conditions/change-over - enhanced firmware with advanced co-relation algorithm for dynamic compensation
- Increase the amount of actionable information through intuitive and advanced DTM technology.

Honeywell Transmitters are Recognized for Their Unsurpassed Performance and Accuracy:

- Accuracy: $\pm 3\text{mm}$ or 0.03% of measured distance
- Repeatability: $\pm 1\text{mm}$
- 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
- 2-wire, 4-20mA loop power
- HART, Foundation Fieldbus output options
- Transmitter configuration write protection
- Unequalled local display capabilities
- Comprehensive on-board diagnostic capabilities
- Full compliance to SIL 2/3 requirements as a standard

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 Non intrusive measurement
Features	Resistant to acids and alkalis 250,000 units in operation Conductivity down to 1µS/cm Temperature up to 180°C (356°F) 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

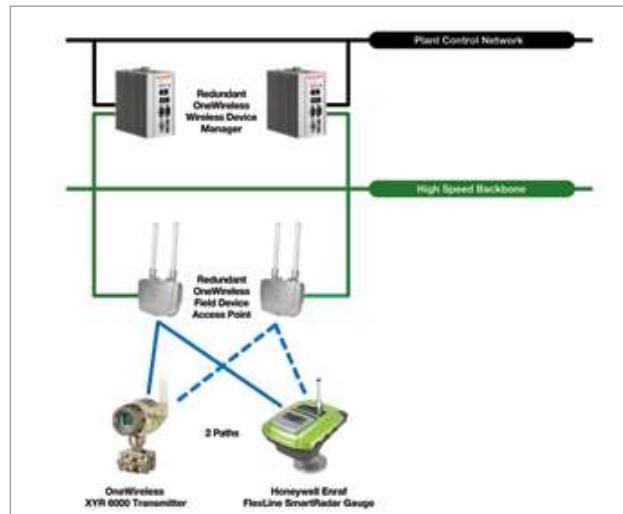


The Honeywell OneWireless™ Network is a multi-application network that can be tailored to offer the wireless coverage needed for industrial applications; from a simple field instrument network (ISA 100 Wireless) to a completely integrated, plant-wide multi-application network (Wi-Fi, ISA100 Wireless and WirelessHART). 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.

Wireless Transmitters

XYR 6000

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

Transmitters	XYR 6000 Transmitters (condensed specifications)
Radio Frequency:	2.4 GHz, License Free, Direct Sequence Spread Spectrum (DSSS) Technology; ISA100.11a Compliant
Sensors Radio Power:	125-400 mW
Range:	305 m (1000 ft) with Integral 2 dBi Antenna
Transmitter Power:	2 "D" size 3.6 V Li - Rechargeable, Commercially Available Batteries
Battery Life:	Up to 10 years
Diagnostics:	Extensive Device Status Capability
Wireless Solutions:	OneWireless Compatible (which is ISA100 Wireless Compliant)
Software:	Software included, allowing both local configuration and configuration via browser interface
LCD Display:	Local, Alpha Numeric, 8 Segment, Always On
Operating Temperature:	-40° to 85°C (-40° to 185°F)
Hazardous Approvals:	FM, CSA, ATEX, IECEx, InMetro, SAEx
Enclosures:	NEMA Type 4X, IP 66/67 and NEMA 8 (Explosion Proof), Stainless Steel Housing Available
Connection:	Optional 4dBi Integral, Remote 8 dBi Omni Directional or 14dBi Directional antennas
Differential Pressure	
Ranges:	400" H ₂ O (1,000 mbar), 100 psi (7,000 mbar), 3000 psi (210,000 mbar)
Gauge Pressure	
Ranges:	500, 3000, 6000 and 10,000 psi (35, 210, 415 and 690 bar) In-Line Meter Body; 500 and 3000 psi, Dual-Head Meter Body
Absolute Pressure	
Ranges:	500 psia (35 barA)
Flange Mount:	
Ranges:	400" H ₂ O (1000 mbar), Pseudo Flange, 100 psi (7000 mbar)
Remote Seal:	
Ranges:	400" H ₂ O (1000 mbar), 100 psi (7000 mbar) DP; 500 psi (35 bar), 3000 psi (210 bar) GP; 500 psia (35 barA) AP
Temperature/DI	Temperature + DI; 3 TC Max, 2 RTD Max, 3 DIs Max
Remote Probe:	Integral and Remote Probe Configurations Available
Analog Input	4-20 or 0-20ma/0-5 or 1-5V
Accuracy:	±0.10%
Discrete Inputs	Three Inputs; Dry Contact Only, No Voltage or Current; 1 Kohm Maximum Impedance
Position:	Provides position monitoring for items like linear distances or valve position
Network Connection:	FDAP, Wireless Device Manager (WDM)/Gateway; 2-802.11 a/b/g (Wi-Fi/Wireless Ethernet) 1-ISA100 Wireless and WirelessHART Compliant 2-Ethernet Cables for Optional Connections to Wired Devices
Power:	24 VDC ±10% at 25 Watts; -40° to 75°C (-40° to 167°F); IP 66, NEMA 4X Enclosure; Class 1 Div2/ATEX Zone II Certified; Integral and Remote Antennas Available

Software Tools

Configuration and Management Tools

Trouble-free and reliable device management



SCT 3000 Smartline Configuration Toolkit

Smartline Configuration Toolkit is a PC-based engineering and maintenance tool designed specifically for use with Honeywell's family of smart field devices based on the DE protocol.

- Access to configuration database parameters
- Verifies all parameters are correct
- Enables "Management of Change"



Field Device Manager Express

Field Device Manager Express software is versatile and flexible, enabling process plant engineers and operators to perform on-the-go smart device maintenance anywhere in the plant. It operates with Windows™ 7 laptop or desktop operating systems and is used for managing and configuring smart HART and Profibus field instruments.

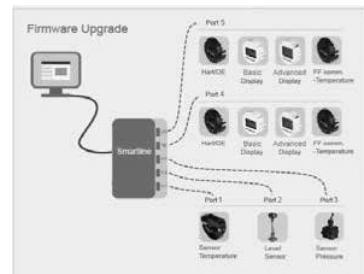
- Provides full access to device parameters, configuration wizards, diagnosis procedures
- On-line and off-line device configuration and maintenance information support using both EDDL and DTM technologies
- Simplifies commissioning and maintenance with an easy-to-use interface for common tasks
- Automatic device discovery
- Provides device history as a way to easily compare today's configuration with last week's or last month's known setup



Honeywell MC Toolkit

The MC Toolkit handles multiple communication protocols, letting you configure, monitor, diagnose, and manage smart devices from Honeywell and other suppliers. This handheld configurator is available in intrinsic as well as non intrinsic safe versions suitable for usage in safe as well as hazardous areas.

- Configures both DE and HART protocols and provisions Honeywell ISA100 Wireless devices
- Automatically verifies device identification and database configuration
- Provides full self-diagnostic and device diagnostic support
- Configures any HART device with a published HART Device Descriptions (DD), regardless of device manufacturer



SmartLine Anytime Tool

SmartLine Anytime Tool allows to upgrade firmware of SmartLine instruments in the field. Easy to use and intuitive, the tool enables the SmartLine platform's promise to:

- Save time on repair and maintenance
- Upgrade instrument to the latest firmware, to take advantage of additional functionality
- Lower the inventory of spare modules

Honeywell's software tools help users configure, install, manage and maintain smart field devices efficiently. All products are intuitive and feature rich and easy-to-use interfaces for plant maintenance engineers, managers and instrument technicians to manage field devices.

Analytical Instruments

Smart Sensors

Unique measurement technology



Hydrogen Purity Concentration

The principles of thermal conductivity are used to determine the concentration of a specific gas in a binary gas mixture. This measurement is used to determine the concentration of the coolant and purge gases (H_2 and CO_2) used on start-up and operating cycles on hydrogen cooled turbine generators.

- Low Drift Reduces Need for Frequent Calibrations
- Rapid Response Provides Immediate Indication of Process Changes
- Time Proven, Reliable Measurement Ensures Safe Start-up and Operation
- On-line Measurement Helps Increase Efficiency and Save Operating Costs

Meridian® Glass pH and ORP Electrodes

Honeywell's traditional glass sensor electrodes offer time proven reliable pH measurement for selected applications. Designs include combination electrodes, as well as separate measuring and reference electrodes.

- High Purity Water Assembly for Accurate pH Measurement in Low Conductivity Sample
- Separate Measuring and Reference Electrodes Lowers Replacement Costs
- Platinum and Gold Electrodes for Accurate Measurement of ORP

High Performance HB and HBD pH and ORP Series

Unique, rugged reference technology extends the lifetime in harsh process applications. This saves on maintenance and replacement costs.

- Durafet non-glass electrode option with HBD Series
- Prevents Sensor Poisoning
- Prevent Internal Leaks and Plugging
- Allows Extreme Temperature and Pressure Tolerance
- Allows for Long Life in Low and High pH Applications

Durafet® pH Electrodes

Honeywell pioneered innovative pH measurement with the first industrial, non-glass, ISFET (Ion Sensitive Field Effect Transistor) based pH sensor—the Durafet pH electrode.

- Waterproof Vario Pin Connector Options
- Rugged Non-glass Design Lowers Replacement Costs
- Long Term Stability Reduces Calibration Frequency
- 3-A Sanitary Design for On-line pH Measurement in Food & Dairy

DL5000 Dissolved Oxygen

Accurate and stable dissolved oxygen measurements can be made using Honeywell's unique equilibrium probe technology. This unique technology provides excellent performance in low parts per billion (ppb) as well as parts per million (ppm) applications.

- Unique Equilibrium Probe Technology
- No Replacement of Membrane, Electrolyte or Electrode
- Unaffected by Fouling
- Not Flow Sensitive

Unique Innovations

Honeywell is an industry proven leader for analytical products and solutions with unique technologies.

Innovations in analytical measurements lead to more reliable systems, lower total cost solutions and safer environments.

This results in process control that maximizes up-time and minimizes cost to add to your bottom line.

Analytical Instruments

Multiple Input Analyzer

Greater value and enhanced performance



UDA2182 Series Analyzers

The UDA2182 Series is a versatile, dual or single input analyzer that measures pH, ORP, contacting conductivity and dissolved oxygen. The "mix-and-match" input design offers the user flexibility for a wide range of applications. Its common form, fit and function to older Honeywell analyzers make it a quick and easy retrofit into existing panels and installations.

- Versatile Multiple Input Analyzer
- Mix and Match Process Measurements
- Entire Status at a Glance—Graphic LED Display
- Fast and Easy Commissioning—Even Wireless Configuration
- Remote Monitoring Using Web Pages
- Single or Dual Input for pH, ORP, Contacting Conductivity or Dissolved Oxygen
- Dual Input in any Measurement Combination
- PID Control Option
- Up to 3 Analog Outputs
- Up to 4 Alarm Relays
- Backlit Graphical LED Display
- Type 4 Case
- Infrared PC and Pocket PC Configuration
- FM/CSA Class 1, Div 2 Approval
- Event History Log
- Real Time Clock
- Auto Clean/Auto Calibration Functions
- Ethernet/Modbus Communications
- Eastern European Languages

pH Input

The pH input will accept a wide variety of sensors—non-glass Durafet[®], HB high performance pH series and traditional glass Meridian[®] electrodes, ORP combination electrodes and the HPW700 high purity system. In addition to the basic unit the pH input has:

- Auto Buffer Calibration
- High Purity Water Solution Compensation
- 0.2 sec Update Rate for Fast Responding Durafet pH Electrodes

Conductivity Input

The conductivity input will accept signals from Honeywell's standard selection of contacting conductivity cells. The conductivity unit also has:

- Temperature Compensation Curves
- Calculation of % Rejection/Passage and Difference of Two Cells
- Conversions to ppm, ppb or ppt Total Dissolved Solids (TDS)
- CO₂ Concentration Algorithm
- pH from Differential Conductivity

Dissolved Oxygen Input

The dissolved oxygen input is from Honeywell's unique equilibrium probe. It has these additional features:

- ppm or ppb Measurement
- Automatic or Manual Calibration
- Ambient Temperature and Atmospheric Pressure Compensation

Analytical Instruments

pH/ORP

Improved accuracy to optimize your process

A range of analyzers and transmitters for use with Honeywell glass and non-glass sensors and mountings to measure pH and ORP. Included in this offering is the Durafet pH electrode, the only industrial, solid state pH electrode on the market. For sanitary applications in the food and dairy industries, the Sanitary Durafet is authorized to use the 3A symbol. For pure water applications, the HPW7000 Hi-pHurity pH measurement system guarantees a 0.1 pH accuracy in water samples with conductivity less than 10 uS. All the below mentioned measurements can be used in process, wastewater and pure water applications.

		
Instruments	UDA2182 Universal Dual Analyzer	APT 2000/4000pH Transmitter/Analyzer
Measurement	pH/ORP	pH/ORP
Case (HxWxD)	Plastic Enclosure Made of GE Valox® 357 CSA Type 4X (NEMA 4X)	Plastic Enclosure Made of PBT NEMA4X, IP65 rating
Display	LCD Dot Matrix, 128 x 64 dpi	7-segment LCD Display
Display Accuracy	0.05% of Reading	pH: ±0.02 pH, Temp: ±0.1°C (±0.1°F)
Control capabilities/ advanced features	PID Control, Ethernet/Modbus Communications, Pocket PC and Infrared Configuration, Auto-buffer Calibration, High Purity Water Solution Compensation, 0.2 sec Update Rate, E. European Languages	Electronics and Sensor Diagnostics, Auto Buffer Recognition, HART communication for Transmitter
Operating Conditions	0° to 60°C (32° to 140°F)	-20° to 55°C (-4° to 131°F)
Operating Voltage	90-264 Vac 47-63 Hz	2000: 14-40 Vdc 4000: 20-253 Vdc
Analog Outputs	Up to Three 4 to 20mA	2000: One 4 to 20 mA 4000: Two 4 to 20 mA (One Dedicated to Temp)
Relays	Up to 4 Relays	2000: N/A 4000: Hi/Lo Alarm Relays
Mountings	Pipe, Wall, or Panel	Pipe, Wall, or Panel
Approvals	CE; FM Class 1, Div. 2; UL/CSA General Purpose	CE; FM Class 1, Div. 2 (APT4000); FM Class I, Div. 1 IS (APT2000) and Cenelec

Analytical Instruments

Multiple Input Analyzer

Greater value and enhanced performance



Sensors	Durafet® Solid State pH Electrode	Meridian II Glass pH Electrode	Oxidation Reduction Potential (ORP) Electrode	HPW7000 High Purity Water pH Measurement System
Measurement Range	0-14 pH	0-14 pH	1999 to 1999 mV	4-10 pH
Temperature Range	-10° to 130°C (14° to 266°F)	0° to 110°C (32° to 230°F)	-5° to 110°C (23° to 230°F)	10° to 80°C (40° to 176°F)
Pressure & Temp Ratings	Depends on sensor	Depends on sensor	Depends on sensor	1 to 10 in. WC (0.249 to 2.49 kPa) 10° to 80°C (40° to 176°F)
Materials of Construction	Ryton body, solid state electrode, viton and EPDM seals	Ryton body, glass electrode, EPDM seals	Ryton body, gold or platinum electrode, EPDM seals	316L SS flow chamber, glass electrodes, 316 SS temp sensor
Special Features	Response 10X faster than glass, replaceable reference junction, VarioPin waterproof connector option	Long lasting combination reference electrode, integral cable	Quick Disconnect cable options	0.1 pH accuracy in process with conductivity <10 uS/cm
Mountings	See mounting types	See mounting types	See mounting types	Panel mounting option



Mountings	7773 Mounting	7774 Mounting	7777 Mounting	7794 Mounting	HB/HBD Series
Measurement Range	0-14 pH ±1600 mV ORP	0-14 pH ±1600 mV ORP	0-14 pH ±1600 mV ORP	0-14 pH	0-14 pH ±1600 mV ORP
Temperature Range	Depends on sensor	Depends on sensor	Depends on sensor	-10° to 110°C (14° to 230°F)	Depends on sensor
Pressure & Temp Ratings	Immersion/Polypropylene: 689 kPa @ 60°C (100 psig @ 140°F) 316 SS: 689 kPa @ 80°C (100 psig @ 176°F) Flow-through/ Polypropylene: 689 kPa @ 60°C (100 psig @ 140°F) 316 SS: 515 kPa @ 80°C (150 psig @ 176°F)	316 SS: Determined by electrode CPVC: 689 kPa @ 50°C (100 psig @ 122°F)	Up to 689 kPa @ 50°C (100 psig @ 122°F)	Up to 689 kPa @ 100°C (100 psig @ 212°F)	CPVC and Polypropylene: 689 kPa @ 100°C (100 psig @ 212°F) Kynar: 1034 kPa @ 140°C (150 psig @ 284°F)
Materials of Construction	Polypropylene, Ryton, or 316 SS	Ball valve, mounting nipple & extension tube, 316 SS or CPVC o-rings: EPDM & Viton	Durafet and glass electrode bodies: Ryton	Body: Polysulfone	Body: CPVC, Polypropylene, Kynar, Durafet non-glass sensor option with HBD Series
Special Features	Allows separate measuring and reference electrodes in one mounting	Insertion/removal under pressure without interrupting process		Sanitary 3-A approval for food & dairy applications	Rugged reference design minimizes fouling or poisoning in harsh environments
Mountings	Immersion or flow-through	1 1/4 in. NPT (316 SS) or 1 1/2 in. NPT (CPVC) pipe nipple through ball valve	Immersion or in-line tee (3/4 in. NPT fitting)	1 1/2, 2 or 3 inch tri-clamp flange mounting	Model 546: In-line or submersion Model 547: Ball valve Model 551: Nut-loc

Analytical Instruments

Conductivity

Proven technology for reliable measurements

A range of analyzers and transmitters for use with Honeywell contacting and toroidal conductivity cells and mountings to measure conductivity, resistivity, salinity and chemical concentrations. These measurements can be made in many industrial process and pure water applications.



Instruments	UDA2182 Universal Dual Analyzer	APT 2000/4000CC Contacting Conductivity	APT 2000/4000TC Toroidal Conductivity
Case (HxWxD)	Plastic enclosure made of GE Valox® 357 CSA Type 4X (NEMA 4X)	Plastic enclosure made of PBT NEMA4X, IP65 rating	Plastic enclosure made of PBT NEMA4X, IP65 rating
Display	LCD dot matrix, 128 x 64 dpi	7-segment LCD display	7-segment LCD display
Display Accuracy	0.05% of reading Temperature: 0.1% from -10° to 100°C ±1.0°C from 101° to 140°C	Conductivity: 1% of measured value or ±(0.4 microS/cm * cell constant)	Conductivity: 1% of measured value ±(0.2 microS/cm ±1 Significant digit)
Control Capabilities /Advanced Features	PID control; Pocket PC and infrared configuration, temp. compensation curves; CO ₂ concentration; ppm, ppb or TDS conversions, Ethernet/Modbus communications, E-European languages	Measures conductivity, resistivity, or salinity; electronics and sensor diagnostics, HART communication for transmitter	Measures conductivity, or chemical concentration; electronics and sensor diagnostics, HART communication option
Operating Conditions	0° to 60°C (32° to 140°F)	-20° to 55°C (-4° to 131°F)	-20° to 55°C (-4° to 13°F)
Operating Voltage	90-264 Vac 47-63 Hz	2000: 14-42 Vdc 4000: 20-253 V, AC or DC	2000: 14-42 Vdc 4000: 20-253 V, AC or DC
Analog Outputs	Up to three 4 to 20mA	2000: One 4 to 20 mA; 4000: Two 4 to 20 mA (one dedicated to temp)	One 4 to 20 mA
Relays	Up to 4 relays	2000: N/A; 4000: Hi/Lo alarm relays	2000: N/A; 4000: Hi/Lo alarm relays
Mountings	Pipe, wall, or panel	Pipe, wall or panel	Pipe, wall or panel
Approvals	CE; FM Class 1, Div. 2; UL/CSA general purpose	CE; FM Class 1, Div. 2 (APT4000); FM Class 1, Div. 1 IS (APT2000); CENELEC	CE; FM Class 1, Div. 2 (APT4000)



Sensors	4973 Contacting Conductivity Cells	4905 Contacting Conductivity Cells	4909 Contacting Conductivity Cells	5000TC Toroidal Conductivity Cells
Measurement Range	0.01, 0.1, 1.0, 10.0 cell constants, 0.055µS/cm to 250 mS/cm	0.01, 0.1, 10.0, 50 cell constants, 0.055µS/cm to 1S/cm	0.01, 0.1, 10.0, 50 cell constants, 0.055µS/cm to 1S/cm	0.2 to 200 milliSiemens/cm
Pressure and Temperature	1724 kPa @ 140°C (250 psig @ 284°F)	1034 kPa @ 130°C (150 psig @ 266°F)	SS: 3.45 bar @ 140°C (50psi @ 284°F); CPVC: 2.07 bar @ 140°C (30psi @ 284°F)	Polypropylene: 6.9 bar @ 100°C (100psi @ 212°F); PVDF: 6.9 bar @ 120°C (100psi @ 248°F); PEEK: 13.8 bar @ 150°C (200psi @ 302°F); PFA Teflon: 13.8 bar @ 150°C (200psi @ 302°F)
Materials of Construction	Titanium or graphite	Nickel or platinum	Nickel or platinum	Polypropylene, PVDF, PEEK, PFA Teflon
Mountings	3/4 inch NPT threaded fitting	1 inch NPT threaded fitting	Insertion/Removal ball valve assembly in CPVC or SS allows insertion/removal of cell without stopping process	Immersion, union adapter, sanitary 2 inch flange or insertion/removal

Analytical Instruments

Dissolved Oxygen & Gas Analyzers

Greater value and enhanced performance

These analyzers/probe systems determine the levels of dissolved oxygen in water. The patented equilibrium dissolved oxygen probe design is unaffected by inert fouling or changes in flow conditions. The system's analyzer/controller measures either ppb DO levels in power plant and semiconductor applications for corrosion detection or deaerator efficiency or ppm DO levels in wastewater, environmental and process applications for control and compliance.



Instruments	UDA2182 Universal Dual Analyzer
Case	Plastic enclosure made of GE Valox ¹ 357 CSA Type 4X (NEMA 4X)
Display	LCD dot matrix, 128 x 64 dpi
Display Accuracy	D.O.: 0.5% of reading Temp.: $\pm 1.0^{\circ}\text{C}$
Operating Conditions	0° to 60° C (32° to 140° F)
Control Capabilities/ Advanced Features	PID control; Pocket PC and infrared configuration; ppb or ppm measurement, automatic or manual calibration; temp. and pressure compensation, Ethernet/Modbus communications, E. European languages
Operating Voltage	90-264 Vac; 47-63 Hz
Analog Outputs	Up to three 4 to 20mA
Relays	Up to 4 relays
Mountings	Pipe, wall, or panel
Approvals	CE; FM Class 1, Div. 2; UL/CSA General Purpose



Sensor	DL5000 Equilibrium Probe for ppb & ppm applications
Measurement Range	0-20,000 ppb or 0-20 ppm
Temperature Range	2° to 60° C (35.6° to 140° F)
Pressure and Temperature Ratings	316SS: 50 psi (345 kPa) CPVC: 30 psi (207 kPa)
Materials of Construction	316SS or CPVC housing
Special Features	Equilibrium probe design requires no internal probe maintenance
Mountings	Immersion in tank, in-line or sample flow chamber
Dimensions (OD)	219 x 34 mm (8.62 x 1.32 in), 1 inch NPT pipe size, 20 feet waterproof cable
Response Time	85% in 60 seconds

7866 Digital Thermal Conductivity Analyzer

The 7866 Thermal Conductivity Analyzer is designed to provide a highly sensitive and accurate analysis of a binary (2-component) mixture of gases. The analyzer can also be calibrated to measure a single component of a multicomponent gas mixture, providing the background gases constitute a stable mixture (such as air), or have approximately the same thermal conductivity. It uses the principles of thermal conductivity, to determine the concentration of a sample gas through the measurement of thermal losses from two highly stable, matched thermistor probes inserted in a stainless steel block.

H ₂ Purity Gas Analyzer	7866 Analyzer
Accuracy	$\pm 2\%$ of span
Response Time (for H ₂)	Initial, <1 sec 63%, 13 sec, 90%, 23 sec, 99%, 40 sec
Measuring Range	1, 2 or 3 as specified
Sample Requirement (Sensing Unit)	0.2 to 4.2 cfm flow 37 mm Hg Pressure min.
Power Requirement (Control Unit)	Universal 90 to 264 Vac, 50 to 60 Hz
Weight (Sensing Unit/Control Unit)	8.5 kg (18 3/4 lb)/1.3 kg (3.0 lbs)

Thermal Conductivity

A thermal conductivity system that measures concentrations of hydrogen purity and CO₂ gas. This measurement is typically made in hydrogen-cooled generators.

- Easy to use prompts
- Security code protected
- Reliable solid state design
- High speed of response
- High sensitivity
- Excellent stability
- Low maintenance requirement
- Low installation costs through optional remote mounting capability of the sensing unit (transmitter)
- Explosion-proof housing on the sensing unit available for Class 1, Div 1 areas
- Signal transmission from the sensing unit up to 1000 feet over unshielded lead wires
- Panel-mounted 1/4 DIN control unit with easy-to-read display
- Current output signal from the control unit representing measured PV
- Single or dual alarms
- A triple range analyzer for hydrogen-cooled generator applications is available
- Optional Modbus communications supports configuration and data acquisition

Controllers

Digital Controllers

Simple to install, easy to configure and easy to operate



EasySet Digital Temp Controllers	EDC201	EDC202	EDC203
Description	Panel mounted industrial temperature controllers providing precise control with Honeywell Accutune III algorithms, auto tuning for determining optimum PID parameters, vivid and large 4-digit displays and keypad buttons for intuitive product use and configuration.	Panel mounted industrial temperature controllers providing precise control with Honeywell Accutune III algorithms, auto tuning for determining optimum PID parameters, vivid and large 4-digit displays and keypad buttons for intuitive product use and configuration.	Panel mounted industrial temperature controllers providing precise control with Honeywell Accutune III algorithms, auto tuning for determining optimum PID parameters, vivid and large 4-digit displays and keypad buttons for intuitive product use and configuration.
Panel Cutout	45x45 mm (1/16 DIN)	45x92 mm (1/8 DIN)	92x92 mm (1/4 DIN)
Analog Inputs	1	1	1
Accuracy	0.5%	0.5%	0.5%
Input Signal Types	Thermocouples, RTDs	Thermocouples, RTDs	Thermocouples, RTDs
Digital Inputs	1	1	1
Control Outputs	1 (5A/30VDC dry contact relay or 24V DC SSR driver)	1 (5A/30VDC dry contact relay or 24V DC SSR driver)	1 (5A/30VDC dry contact relay or 24V DC SSR driver)
Alarm Outputs	1 (5A/30VDC dry contact relay)	2 (5A/30VDC dry contact relay)	2 (5A/30VDC dry contact relay)
Loops	1	1	1



Universal Digital Controllers	DC1000	UDC 700	UDC 1200
Product Description	DC 1000 family of microprocessor based controllers combine a high degree of functionality and reliability at a very low price in 4 different DIN sizes.	The UDC 700 is a 1/32 DIN format, OEM controller designed for a large number of applications.	The UDC 1200 provides a high degree of functionality and reliability in a small format (1/16 DIN) at a very low price. A limit control model is also available.
Front Face Format	48 x 48 mm (1.89 x 1.89 in) 48 x 96 mm (1.89 x 3.78 in) 72 x 72 mm (2.83 x 2.83 in) 96 x 96 mm (3.78 x 3.78 in)	49 x 25 mm (1.93 x 0.98 in)	48 x 48 mm (1.89 x 1.89 in)
Analog Inputs	1 or 2	1	1
Input Signal Types	Thermocouples, RTDs, mV, V, mA	Thermocouples, RTDs, mV, mA	Thermocouples, RTDs, mV, V, mA
Digital Inputs	N/A	N/A	1
Analog Outputs	Up to 2	N/A	Up to 3
Digital Outputs Control	Up to 2	Up to 2	Up to 2
Digital Outputs Alarm	Up to 3	Up to 2	Up to 2
Accuracy (at ref. cond.)	±0.2% of F.S.	±0.1% of span	±0.1% of span
Loops	1	1	1
Networking	RS232 or RS485 ASCII	RS485 Modbus	RS485 ASCII or Modbus

Controllers

Universal Digital Controllers

Simple to install, easy to configure and easy to operate



Universal Digital Controllers	UDC 1700	UDC 2500	UDC 3200	UDC 3500
Product Description	The UDC 1700 is a 1/8 DIN microprocessor based controller. It provides high quality and performance at low cost	The UDC 2500 is a low-cost digital controller providing multi-language prompts (FR, EN, GE, IT, SP) and code for unmatched operating simplicity	The UDC 3200 is a 1/4 DIN general purpose digital controller offering a high degree of functionality and operating simplicity	The UDC 3500 with dual loop and math capability is ideal for process applications
Front Face Format	48 x 96 mm (1.89 x 3.78 in)	96 x 96 mm (3.78 x 3.78 in)	96 x 96 mm (3.78 x 3.78 in)	96 x 96 mm (3.78 x 3.78 in)
Analog Inputs	1	1 high level, 1 universal	2 universal	4 high levels, 1 universal
Input Signal Types	Thermocouples, RTDs, mV, V, mA	Thermocouples, RTDs, mV, V, mA, RH, Radiamatic	Thermocouples, RTDs, mV, V, mA, RH, Radiamatic, carbon, oxygen	Thermocouples, RTDs, mV, V, mA, RH, Radiamatic, carbon, oxygen
Digital Inputs	1	2	2	4
Analog Outputs	Up to 3	2 (4 to 20 mA)	2 (4 to 20 mA)	3 (4 to 20 mA)
Digital Outputs Control	Up to 2	Up to 2	Up to 2	Up to 4
Digital Outputs Alarm	Up to 2	Up to 2	Up to 2	Up to 4
Accuracy (at ref. cond.)	±0.1% of span	±0.25% of span	±0.2% of span	±0.10% of span
Loops	1	1	1	2
Networking	RS485 ASCII or Modbus	Ethernet or Modbus RTU	Ethernet or Modbus RTU	Ethernet or Modbus RTU
Infrared Port	Yes	Yes	Yes	Yes

Honeywell Controller Value

Every Honeywell Controller, Programmer and Indicator offers you the best price/performance ratio compared with any competitive instrument in its class. Our complete line is engineered to provide you with “targeted functionality”—solutions tailored to your specific process control requirements—so you only buy what you need.

- Clear and informative operator interface
- Easy to setup and operate
- Straightforward installation and maintenance
- Single-button turning for precise control
- Fuzzy logic overshoot suppression
- Unsurpassed quality and support

Process Instrument Explore (P.I.E.) Software

P.I.E. is a PC based, intuitive software program that runs on a Pocket PC, desktop or laptop. It can be used either online or offline to create UDC2500, UDC3200 and UDC3500 configurations. Configurations can be easily downloaded to the controller via its communication or infrared port.

Infrared Communication Port

Each UDC2500, UDC3200 and UDC3500 has an infrared communications port that provides a non-intrusive connection to the controller while maintaining Type 4X and IP66 integrity. You can duplicate an instrument's configuration, obtain maintenance information just by pointing your IR interface device in the direction of the instrument.

Programmers and Indicators

Digital Controller Programmers and Indicators

Simple to install, easy to configure and easy to operate



Digital Controller Programmers	DCP 50	DCP 300	DCP 551
Product Description	The low-cost DCP 50 is ideal for set point programming applications where space is at a premium.	The general-purpose DCP 300 programmer is fully dedicated to execute control of temperature, humidity, pressure, flow and other variables.	The high-performance DCP 551 programmer provides advanced setpoint programming, sensing, SP generation, ramp and soak switching and timing in one unit.
Front Face Format	48 x 48 mm (1.89 x 1.89 in)	96 x 96 mm (3.78 x 3.78 in)	144 x 144 mm (5.67 x 5.67 in)
Programs	4	19	99
Segments Per Program	16	30	99 (2000 total max)
Analog Inputs	1	1 or 2	1 or 2
Digital Inputs	1	12	16
Analog Outputs	Up to 3	Up to 3	Up to 3
Digital Outputs	Up to 2	8	16 events
Accuracy (at ref. cond.)	±0.25% of span	±0.1% of span	±0.1% of span
Loops	1	1 or 2	1 or 2
PID Group	1	8	9
Networking	RS485 Modbus	-	RS485 ASCII



Programmers	DCP 250	Programmers	UDC 703	UDI 1700
Product Description	1/4 DIN format, a graphic/text LCD display is an affordable temperature and process controller with advanced functionality including profiling and datalogging options	Product Description	The UDC 703 is a 1/32 DIN format indicator for small space requirements.	The UDI 1700 is a horizontal, 1/8 DIN format, low-cost indicator for most process variable types.
Front Face Format	96 x 96 mm (3.78 x 3.78 in)	Size (L x H x D)	48 x 25 x 100 mm (1.93 x 0.98 x 3.94 in)	96 x 48 x 100 mm (3.78 x 1.89 x 3.94 in)
Programs	64	Accuracy	±0.10% of span	±0.10% of span
Segments Per Program	255	Analog Inputs	1 universal	1 universal
Analog Inputs	2	Input Signal Types	Thermocouples, RTDs, mV, V, mA	Thermocouples, RTDs, mV, V, mA
Digital Inputs	9	Display Types	4 digits-LED (red)	4 digits-LED (red)
Analog Outputs	Up to 3	Alarm Set Points	2	3
Digital Outputs	7	Digital Input	No	Yes
Accuracy	0.1%	Transmitter Power	No	Yes
Loops	1 or 2	Networking	RS485 Modbus	RS485 ASCII or Modbus
PID Group	5			
Networking	RS232, RS485, Ethernet			

Recorders and Data Acquisition

Circular, Strip Chart & Paperless Recorders and Data Acquisition

Experience the flexibility, security and networking capabilities of Honeywell's paperless recorders

Circular Chart Recorders

Honeywell Circular Chart Recorders are preferred for batch processes. The circular chart record displays the entire batch operation over a specific unit of time, from one hour to 31 days. An additional advantage of the circular chart record is easy filing and copying for reference. Compared to the strip chart record, the circular chart has a shorter calibrated chart width.



Circular Chart Recorders	DR4300 Basic	DR4300	DR4500 Classic	DR4500 Truline
Chart Size	254 mm (10 in)	254 mm (10 in)	305 mm (12 in)	305 mm (12 in)
Reference Accuracy	0.35%	0.20%	0.10%	0.10%
Analog Inputs	2	2	2	4
Digital Display	N/A	Yes	Yes	Yes
Chart Type	Preprinted	Preprinted	Preprinted	Self-printing thermal paper
Control	N/A	2 loops	2 loops	2 loops
Math	N/A	Totalization	Yes	Yes
Networking	N/A	Modbus RTU	Modbus RTU	Modbus RTU
Optional Software	N/A	Trend Manager Pro/Specview	Trend Manager Pro/Specview	Trend Manager Pro/Specview

Paperless Recorders

Experience the flexibility, security and networking capabilities of Honeywell's X-Series paperless recorders. The eZtrend, Minitrend, Multitrend and DR Graphic recorders feature easy configuration, remote viewing and control, touch-screen navigation, high-capacity storage, custom screen design, diagnostics, software support and more.



Paperless Recorders	eZtrend	Minitrend	Multitrend	DR Graphic
Displays	145 mm (5.7 in) Color LCD (Active TFT) QVGA	145 mm (5.7 in) Color LCD (Active TFT) VGA	307 mm (12.1 in) Color LCD (Active TFT) XGA	307 mm (12.1 in) Color LCD (Active TFT) XGA
Analog Inputs	Up to 12	Up to 16	Up to 48	Up to 16
Data Storage	SD card / USB memory key	SD card / USB memory key	SD card / USB memory key	SD card / USB memory key
Sample Rate	100/200/500ms	20 ms (linear input)* / 100 ms	20 ms (linear input) / 100 ms	20 ms (linear input) / 100 ms
Digital I/O	Up to 8DI/8DO	Up to 16DI/16DO	Up to 48DI/48DO	Up to 16DI/16DO
Networking	Ethernet	Ethernet / RS485	Ethernet / RS485	Ethernet / RS485
Math Functions/ Math Scripts	Yes/No	Yes/Yes	Yes/Yes	Yes/Yes
Reference Accuracy	0.1% Typical-T/C	0.1% Typical-T/C	0.1% Typical-T/C	0.1% Typical-T/C
Configuration	PC or front panel	PC or front panel	PC or front panel	PC or front panel
Remote Viewing	Yes	Yes	Yes	Yes

Recorders and Data Acquisition

Paperless Recorders and Data Acquisition

Experience the flexibility, security and networking capabilities of Honeywell's paperless recorders

TrendManager Software Suite

Trendview's reliable paperless recorders and software makes recording easier and the data more accessible to improve decision making. The TrendManager Software Suite includes the standard TrendViewer software package; the TrendManager Pro advanced data analysis and archiving software; the TrendServer Pro fully network aware software for communications with recorders; and the Screen Designer software for creating customized screen layouts. This low-cost, flexible, easy-to-use software suite sets the "trend" recorders apart from all the others.

The Paperless Advantage

Easy to Use

Dedicated display keys and full screen menus allow operators to quickly access and interpret information.

Improved Decision Making

On-line data analysis allows fast operator response during process upsets.

Meets Documentation Requirements

Permanent archived records of process and configuration data can be stored to disk and easily replayed on the recorder or personal computer using the data analysis software.

Easy to Operate and Maintain

Reduced maintenance costs, elimination of consumable pens and paper and increased reliability since mechanical print assemblies have been eliminated.

Easy to Own

Paperless recorders offer significant improvements over traditional paper recorders. Their inexpensive storage media and full-color LCD display reduces operating costs and improves data analysis. The lack of vulnerable print mechanisms and other mechanical parts improves reliability.

Easy to Network

Products can be connected directly to the Local Area Network (LAN) via Ethernet using Modbus TCP/IP protocol. Using the LAN, multiple departments can access these instruments for real time data acquisition.

TrendViewer

- View, graph and print stored data
- Print configurations and process data

TrendManager Pro

Industry leading PC based data analysis package that support:

- Importing data from any recorder
- Importing data from any Honeywell solutions such as DPR180, DPR250 and HC900 controller
- Archiving data
- Multi-level, multi-user passwords
- Graph, plot & export data across any recorder, pen or time frame
- Audit trails
- Configuration of recorders
- Batch recorder management
- Export data files in CSV format

TrendServer Pro

Industry leading PC based communications software to network your recorder:

- Handles client/server architecture
- Schedule downloads of recorder data (FTP transfers)
- Remotely configure recorders
- Real time data acquisitions
- Communicate via RS485 and/or Ethernet
- Integrated OPC Server support
- Modbus, FTP, web browser
- Batch Report Tool
- IQ/OQ Protocol Tool

Database Management Tool

Provided with TrendServer Pro

- Provides safe administration of data
- Archive, sort, move, copy or delete data in local or remote database
- Use tree structure for easy understanding of where files are located
- Data viewed by recorders or monthly archive
- Allows storage of data to secure server

Screen Designer

Custom displays to exactly suit your application

- Total design flexibility to produce customized screen layouts
- Design the screen that will best monitor your process
- Includes bitmap picture input for easy process understanding

Tools

- AMS2750D Report Tool
- Generate Survey Reports

Scalable Control Solutions

ControlEdge™ PLC

Secure connectivity and tight integration to devices from multiple vendors – with easy configuration, efficient operations, and reduced maintenance.

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.

Honeywell's ControlEdge Programmable Logic Controllers (PLCs) provide robust control in a wide range of discrete applications. This advanced line of controllers, compliant with the IEC 61131-3 standard, offers impressive scalability for different environments.

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
- 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

Secure connectivity and tight integration to devices from multiple vendors – with easy configuration, efficient operations, and reduced maintenance.

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.

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.

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.



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 and reliability
- Optimize process efficiency
- Boost plant performance and agility to meet business challenges
- Enhance operator effectiveness through alarm management and displays
- Communicate effortlessly with third-party devices and drives
- Reduce OPEX through a low total cost-of-ownership
- Ensure control system scalability and future expansion

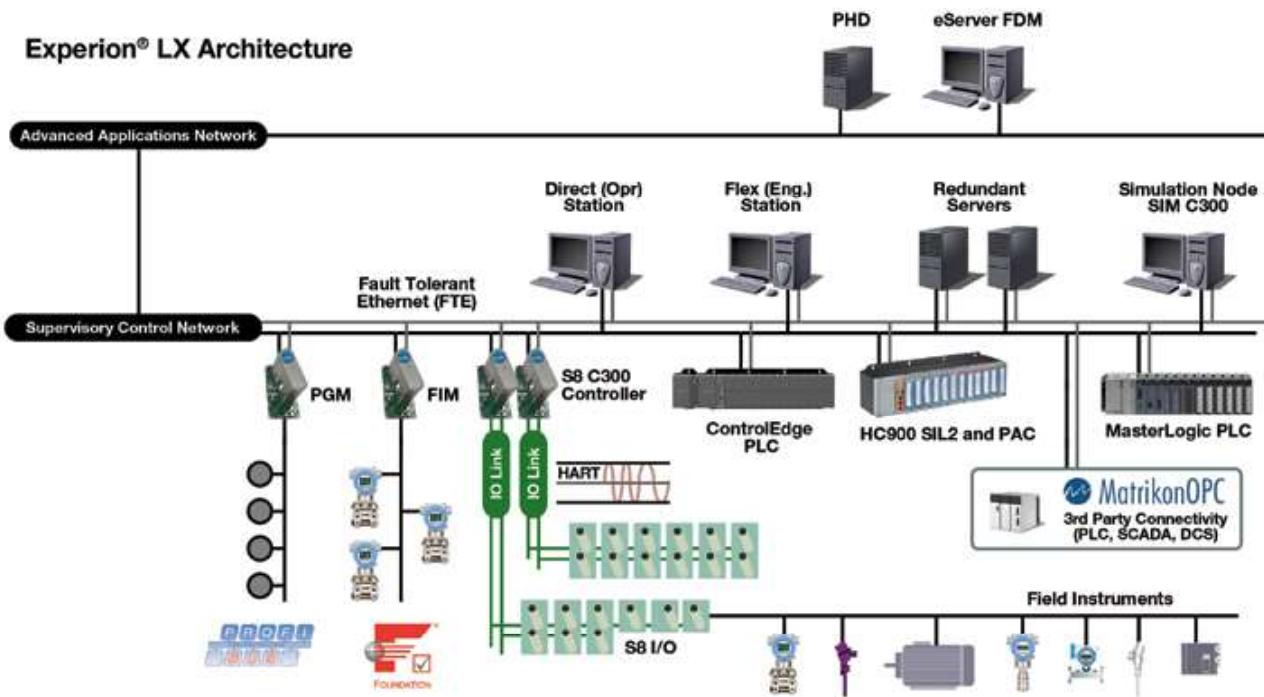
Experion HS SCADA Systems

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:

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

Experion® LX Architecture



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 11 additional 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 1152 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 1152 universal analog inputs, 2304 high level	
Accuracy	±0.1% of span (field calibration to ±0.05% of span)	
Analog Outputs	Up to 480; user specified span from 0 to 20 mA maximum, 12 bits, 0.1% Accuracy	
Digital Inputs/Outputs	Up to 4608, 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 12 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, 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® (32 and 64-Bit, Win 8, Win 10)	
PC	Minimum-Pentium 1 GHz with 64MB of RAM (2.5 GHz with 512MB recommended) Screen resolution-SVGA (1024x768 recommended)	
Cable	RS-485 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 complements 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 OPC

Secure, reliable open data connectivity

Matrikon offers the industry's most extensive portfolio of OPC and 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:

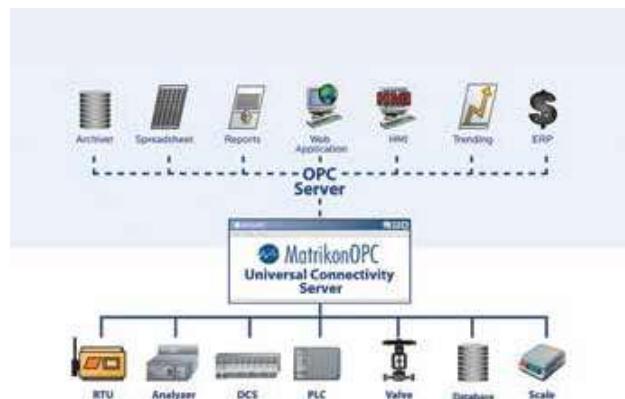
OPC Servers

The Matrikon provides connectivity to multiple devices, protocols and APIs. Matrikon's Server offers a wide range of plug-ins to support the most popular PLC and DCS protocols in the market.

- PLC OPC Servers
 - Honeywell HC900 OPC Server
 - Modbus Devices
 - Siemens, and more
- DCS OPC Servers
 - APACS OPC Server (Direct)
 - Vestas Wind Turbines, and more

OPC Archiving and Analytics

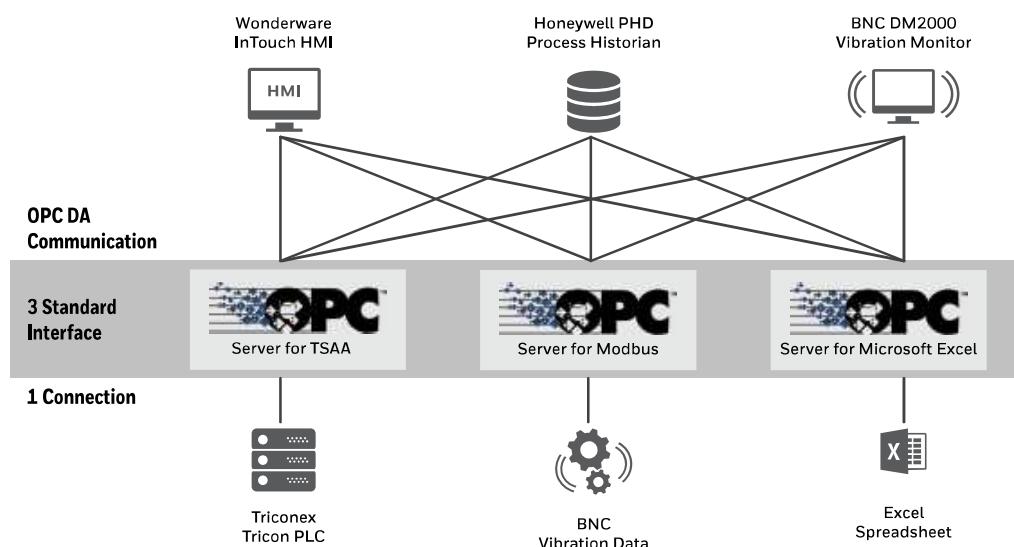
Historical data has never been this easy to configure, store, and transfer. Exposing historical data using standards-based OPC HDA enables users to easily "tap-in" to the data flow at any point. Matrikon has the tools you need to store, move, and access historical data.



- OPC Excel Reporter Easily create production & performance reports...
- OPC Client for ODBC Quickly log data into any database...
- OPC Desktop Historian Lightweight historian for time-based data storage...
- OPC History Link Transfer and consolidate historical data between historians...

OPC Security

The Matrikon Security Suite provides the essential tools to secure existing OPC architectures. There is no need to replace or disturb any OPC components, regardless of whether they are OPC Security enabled or not. The Matrikon Security Suite is compliant with the OPC Foundation's OPC Security Specification and provides you with the security you need.



Connectivity Solutions

Matrikon OPC

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 Tunneller™
 - Provides an easy, reliable and secure way to communicate between networked computers. It does away with the headaches typically associated with DCOM configuration.

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 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.

- OPC Tunneller™ Software 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	Matrikon Industrial UA Modbus Gateway
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.	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 Proxy: enables classic OPC based client applications to connect with OPC Unified Architecture (UA).
- OPC UA Wrapper: enables users to connect to their COM/DCOM based “OPC Classic” servers using the new OPC UA specification.
- Matrikon Flex Software Development Toolkit (SDK): OPC UA Server SDK scalable across every class of device.

Remote Terminal Unit

ControlEdge RTU2020

Realize the production potential of your oil & gas assets



The Honeywell RTU2020 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 RTU2020 Remote Terminal Unit, you have perfect 20/20 vision to realize the production potential of your oil & gas assets through safe, reliable and efficient remote monitoring, diagnosis and asset management, while ensuring low total cost of ownership.

The Lowest Power Consumption

The RTU2020 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, RTU2020 has the power for today's applications and spare reserve to meet tomorrow's needs. Importantly, by having built-in HART, RTU2020 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 Express
- 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

RTU2020 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

RTU2020 has been designed to withstand the toughest environments, with an operating temperature range of -40 to 75°C in humidity of 5% to 95%. RTU2020 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

RTU2020 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.

Smart ISA100 Wireless Device Integration

RTU2020 comes with an onboard Wireless I/O solution to connect ISA100 wireless devices. These wireless devices appear as native I/O, as if they were hard-wired to the controller. They are programmed and managed with the same configuration tool. So, you benefit from the same smart device capabilities as wired smart devices.

Native Redundancy

Honeywell's redundancy is ready to go. There is no need to program any differently from a non-redundant controller. RTU2020 takes away the complexity. No additional infrastructure is required to synchronize the data between CPUs and to connect with I/O modules.

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

Lifecycle Support

Global Services and Support

Streamline startup and optimize your automation investment

Global Service and Support Team

Count on Honeywell to help you streamline startup and optimize the lifecycle of your automation investment. Honeywell's global service and support team will help you maximize the return on your technology investment through personalized service and assistance throughout the life of your installation.

- Achieve faster and smoother startups
- Reduce engineering, procurement, installation and commissioning costs by at least 10%
- Maintain continuity despite any turnover in your organization's personnel
- Maximize payback from your asset investments
- Avoid unplanned downtime

Service Professionals

Our service professionals are experts in their field and have the necessary global certifications to safely install and maintain customers' equipment.



We offer the following services at each lifecycle stage:

Before Installation

- Site survey
- Consulting
- Project planning
- Function design specification
- Product selection

During Installation

- Hardware/Software supply
- Supervision of installation
- Specific application development
- System configuration and integration

After Installation

- Commissioning
- Acceptance testing
- Training
- System optimization
- Remote and onsite service programs, extended warranty, help desk and emergency support

The result is streamlined startup operations and optimized safety, reliability, efficiency and sustainability through the life of the equipment.



Versatile and Modular Field Products

Scan this QR Code to see how Honeywell's portfolio of field measurement and control products enable you to manage your plant assets and optimize your entire enterprise with solutions that are easy to configure, operate and maintain.

For more information

To learn more about Honeywell field products, visit www.honeywellprocess.com or contact your Honeywell account manager.

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