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
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 predetermined 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

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 ratios up to 100:1

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

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, HART 7 and Modbus RTU(RS485) providing the highest level of compatibility assurance and integration capabilities.

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
• DE/HART7/Modbus RTU protocol support

With the addition of Modbus protocol to SmartLine Mutivariable transmitter SMV800, Honeywell offers a complete range of SmartLine pressure 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

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

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 450°C (-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 450°C (-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

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
Level Measurement

Non-Contact Radar
Stable level measurements that also deliver a low total cost of ownership

Non-Contact Radar Level Meter

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

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)
Flow Measurement
VersaFlow Flow Meters
Accurate and reliable flow measurements for the most demanding applications

<table>
<thead>
<tr>
<th>VersaFlow</th>
<th>Electromagnetic Flow Meter</th>
<th>Coriolis Mass Flow Meter</th>
<th>Vortex Flow Meter</th>
<th>Clamp-on Ultrasonic Flow Meter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits</td>
<td>• Proven technology</td>
<td>• Direct mass &amp; density measurement</td>
<td>• Reduced installation cost and improved performance</td>
<td>• Reduced installed cost</td>
</tr>
<tr>
<td></td>
<td>• Expanded application capabilities</td>
<td>• Highly accurate &amp; low pressure drop</td>
<td>• Rugged, long-lasting design for the toughest applications</td>
<td>• Non intrusive</td>
</tr>
<tr>
<td></td>
<td>• Wide range of process conditions</td>
<td>• Near zero flow rate</td>
<td>• Easy to install and maintain</td>
<td>• Easy sensor mounting</td>
</tr>
<tr>
<td></td>
<td>• Easy to install and operate</td>
<td>• Flow conditioning usually not required</td>
<td>• Multiple parameter monitoring</td>
<td>• Optimized reliability</td>
</tr>
<tr>
<td></td>
<td>• Sizes to fit your requirements</td>
<td>• Designed for liquid as well as gas applications</td>
<td>• Reduced maintenance time and cost</td>
<td>• Easy installation wizard</td>
</tr>
<tr>
<td></td>
<td>• Negligible pressure loss</td>
<td>• Two phase flow indication &amp; diagnostics acc to NAMUR 107</td>
<td>• Designed for liquid as well as gas applications</td>
<td>• Minimal maintenance</td>
</tr>
<tr>
<td>Features</td>
<td>• Conductivity down to 1.5 μS/cm</td>
<td>• Straight and bent tube designs</td>
<td>• Advanced technology for signal filtering</td>
<td>• Flexible-Stationary and portable configurations</td>
</tr>
<tr>
<td></td>
<td>• Virtual reference ground</td>
<td>• Secondary pressure containment around sensor</td>
<td>• Integrated reduction of nominal sizes</td>
<td>• Efficient re-greasing concept</td>
</tr>
<tr>
<td></td>
<td>• Conductivity &amp; electrode resistance measurement</td>
<td>• Extended temperature &amp; pressure ranges</td>
<td>• Integrated gross and net heat calculation</td>
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</tr>
<tr>
<td></td>
<td>• Easy to select and maintain</td>
<td>• Easily-drained and easy to clean</td>
<td>• Ready to use-plug-and-play</td>
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</tr>
<tr>
<td></td>
<td>• Empty pipe detection</td>
<td>• Excellent zero stability</td>
<td>• Maintenance-free, water hammer resistant sensor design</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Electrode noise detection</td>
<td>• Stable measurement even with 100% gas entrainment</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Modular electronics concept</td>
<td>• Immunity to crosstalk</td>
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<td></td>
<td>• Bi-directional flow</td>
<td>• Compact envelope</td>
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<td></td>
<td>• Solid content up to 70%</td>
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<td></td>
<td>• Continuous self test for sensor, converter and process</td>
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<td></td>
<td>• Available in sizes 0.1 to 80 inches (DN25 - 3000)</td>
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<tr>
<td>Applications</td>
<td>• Suitable for all conductive applications</td>
<td>• Liquids or Gases</td>
<td>• Superheated and saturated steam measurement</td>
<td>• Chemical addition</td>
</tr>
<tr>
<td></td>
<td>• From clean liquids to slurries and pastes with high solids content</td>
<td>• Slurries or viscous products</td>
<td>• Steam boiler monitoring</td>
<td>• Potable water</td>
</tr>
<tr>
<td></td>
<td>• Abrasion, chemical &amp; vacuum resistant</td>
<td>• Liquids with gas entrainment</td>
<td>• Monitoring of compressor output</td>
<td>• Purified water</td>
</tr>
<tr>
<td></td>
<td>• Suitable for high temperatures</td>
<td>• Custody transfer</td>
<td>• Measurement of consumption in compressed air systems</td>
<td>• Broad range of refined hydrocarbons</td>
</tr>
<tr>
<td></td>
<td>• Custody Transfer Applications</td>
<td>• Abrasive fluids</td>
<td>• Measurement of consumption of industrial gases</td>
<td>• Sanitary flow rate measurements</td>
</tr>
<tr>
<td></td>
<td>• Energy measurement in commercial buildings</td>
<td>• Density, temperature</td>
<td>• SIP and CIP processes in the food, beverage &amp; pharmaceutical industries</td>
<td>• De-ionized and demineralized water</td>
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<tr>
<td></td>
<td></td>
<td>• Super critical gases</td>
<td>• Measurement of conductive and non-conductive liquids</td>
<td>• Cooling water/district heating water</td>
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<td></td>
<td></td>
<td>• LNG transfer/dispensing</td>
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<td></td>
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<td>• Combustion control and fuel oil</td>
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<td>Industries</td>
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<tr>
<td>Chemicals</td>
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<tr>
<td>Petrochemical</td>
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<td>✓</td>
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<td>✓</td>
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<tr>
<td>Food &amp; Beverage</td>
<td>✓</td>
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<tr>
<td>Minerals &amp; Mining</td>
<td>✓</td>
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<tr>
<td>Oil &amp; Gas</td>
<td>✓</td>
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<tr>
<td>Pharmaceuticals</td>
<td>✓</td>
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<tr>
<td>Power Plants</td>
<td>✓</td>
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<tr>
<td>Pulp &amp; Paper</td>
<td>✓</td>
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<tr>
<td>Water</td>
<td>✓</td>
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<tr>
<td>Wastewater</td>
<td>✓</td>
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<tr>
<td>Iron, Steel &amp; Metals</td>
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<td>✓</td>
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<tr>
<td>Automotive</td>
<td>–</td>
<td>–</td>
<td>✓</td>
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</tbody>
</table>
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. Honeywell SmartLine Wireless, XYR 6000 wireless transmitters, OneWireless Adapter and the OneWireless network deliver 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

SmartLine Wireless Pressure
SmartLine Wireless Pressure transmitters have been enhanced with performance suitable for process control as part of a site-wide industrial wireless strategy.

This development keeps pace with end user demands and provides a clear path to meeting future application requirements. SmartLine Wireless Pressure provides:

- A scalable and future-proof wireless pressure measurement solution
- The wireless transmitters seamlessly integrate with the Experion® control system
- They are compliant with the ISA100 Wireless protocol and interoperate with other devices on the OneWireless network

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.
# Wireless Transmitters

## XYR 6000 and SmartLine Wireless
Simple and efficient network that enables increased safety, reliability and efficiency

<table>
<thead>
<tr>
<th>Transmitters</th>
<th>XYR 6000 and SmartLine Wireless (condensed specifications)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Radio Frequency:</strong></td>
<td>2.4 GHz, License Free, Direct Sequence Spread Spectrum (DSSS) Technology, ISA100.11a Compliant</td>
</tr>
<tr>
<td><strong>Sensors Radio Power:</strong></td>
<td>125-400 mW</td>
</tr>
<tr>
<td><strong>Range:</strong></td>
<td>XYR 6000: 305m (1000 ft) with Integral 2dBi Antenna; SmartLine: 350m (1150 ft) with Integral 4dBi Antenna</td>
</tr>
<tr>
<td><strong>Transmitter Power:</strong></td>
<td>2 &quot;D&quot; size 3.6 V Li - Non Rechargeable Batteries</td>
</tr>
<tr>
<td><strong>Battery Life:</strong></td>
<td>Up to 10 years</td>
</tr>
<tr>
<td><strong>Diagnostics:</strong></td>
<td>Extensive Device Status Capability</td>
</tr>
<tr>
<td><strong>Wireless Solutions:</strong></td>
<td>OneWireless Compatible and ISA100 Compliant</td>
</tr>
<tr>
<td><strong>Software:</strong></td>
<td>Local and Software Configurable</td>
</tr>
<tr>
<td><strong>LCD Display:</strong></td>
<td>Local, Alpha Numeric, 8 Segment, Always On</td>
</tr>
<tr>
<td><strong>Operating Temperature:</strong></td>
<td>-40° to 85°C (-40° to 185°F)</td>
</tr>
<tr>
<td><strong>Hazardous Approvals:</strong></td>
<td>FM, CSA, ATEX, IECEx, InMetro, SAEx</td>
</tr>
<tr>
<td><strong>Enclosures:</strong></td>
<td>NEMA Type 4X, IP 66/67 and NEMA 8 (Explosion Proof), Stainless Steel Housing Available</td>
</tr>
<tr>
<td><strong>Connection:</strong></td>
<td>4dBi Integral, Remote 8 dBi Omni Directional or 14dBi Directional antennas</td>
</tr>
<tr>
<td><strong>Differential Pressure</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Ranges:</strong></td>
<td>10” H₂O (25 mbar), 400” H₂O (1,000 mbar), 100 psi (7,000 mbar), 3000 psi (210,000 mbar)</td>
</tr>
<tr>
<td><strong>Gauge Pressure</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Ranges:</strong></td>
<td>50, 500, 3000, 6000 and 10,000 psi (3.5, 35, 210, 420 and 690 bar) In-Line Meter Body, 500 and 3000 psi, Dual-Head Meter Body</td>
</tr>
<tr>
<td><strong>Absolute Pressure</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Ranges:</strong></td>
<td>500 psia (35 barA)</td>
</tr>
<tr>
<td><strong>Flange Mount:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Ranges:</strong></td>
<td>400” H₂O (1000 mbar)</td>
</tr>
<tr>
<td><strong>Remote Seal:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Ranges:</strong></td>
<td>400” H₂O (1,000 mbar), 100 psi (7,000 mbar) DP, 500 psi (35 bar), 3000 psi (210 bar) GP</td>
</tr>
<tr>
<td><strong>Temperature/DI</strong></td>
<td>Temperature + DI; 3 TC Max, 2 RTD Max, 3 DIs Max</td>
</tr>
<tr>
<td><strong>Remote Probe:</strong></td>
<td>Integral and Remote Probe Configurations Available</td>
</tr>
<tr>
<td><strong>Analog Input</strong></td>
<td>4-20 or 0-20ma/0-5 or 1-5V</td>
</tr>
<tr>
<td><strong>Accuracy:</strong></td>
<td>±0.10%</td>
</tr>
<tr>
<td><strong>Discrete Inputs</strong></td>
<td>Three Inputs; Dry Contact Only, No Voltage or Current, 1 Kohm Maximum Impedance</td>
</tr>
<tr>
<td><strong>Position:</strong></td>
<td>Provides Position Monitoring for Items Like Linear Distances or Valve Position</td>
</tr>
</tbody>
</table>
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’
- Microsoft Windows 95b, 98, NT (4.0), 2000 and XP

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

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’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 (H₂ and CO₂) 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

Meredian® Glass pH 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/HBD Series
Unique, rugged reference technology extends the lifetime in harsh process applications. This saves on maintenance and replacement costs.
- Durafet non-glass sensor 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.

### Instrument Specifications

<table>
<thead>
<tr>
<th>Instruments</th>
<th>UDA2182 Universal Dual Analyzer</th>
<th>DirectLine Model DL421/422</th>
<th>APT 2000/4000 pH Transmitter/Analyzer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurement</strong></td>
<td>pH/ORP</td>
<td>pH/ORP</td>
<td>pH/ORP</td>
</tr>
<tr>
<td><strong>Case (HxWxD)</strong></td>
<td>Plastic Enclosure Made of GE Valox® 357 CSA Type 4X (NEMA 4X)</td>
<td>Plastic Polysulfone Enclosure, NEMA4X, 123 x 48 x 46 mm (4.84 x 1.89 x1.81 in)</td>
<td>Plastic Enclosure Made of PBT NEMA4X, IP65 rating</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>LCD Dot Matrix, 128 x 64 dp</td>
<td>LCD 4-digit, 7-segment</td>
<td>7-segment LCD Display</td>
</tr>
<tr>
<td><strong>Display Accuracy</strong></td>
<td>0.05% of Reading</td>
<td>pH ±0.02, Temp ±1.0°C (°C or °F)</td>
<td>pH ±0.02, pH, Temp ±0.1°C (±0.1°F)</td>
</tr>
<tr>
<td><strong>Control capabilities/advanced features</strong></td>
<td>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</td>
<td>Integral Electronics/Sensor Design, One or Two Point Calibration, Auto Buffer Recognition</td>
<td>Electronics and Sensor Diagnostics, Auto Buffer Recognition, HART communication for Transmitter</td>
</tr>
<tr>
<td><strong>Operating Conditions</strong></td>
<td>0° to 60°C (32° to 140°F)</td>
<td>-20° to 85°C (-4° to 185°F)</td>
<td>-20° to 55°C (-4° to 131°F)</td>
</tr>
<tr>
<td><strong>Operating Voltage</strong></td>
<td>90-264 Vac. 47-63 Hz</td>
<td>16-42 Vdc</td>
<td>2000: 14-40 Vdc, 4000: 20-253 Vdc</td>
</tr>
<tr>
<td><strong>Analog Outputs</strong></td>
<td>Up to Three 4 to 20mA</td>
<td>One 4 to 20 mA</td>
<td>2000: One 4 to 20 mA, 4000: Two 4 to 20 mA (One Dedicated to Temp)</td>
</tr>
<tr>
<td><strong>Relays</strong></td>
<td>Up to 4 Relays</td>
<td>N/A</td>
<td>2000: N/A, 4000: Hi/Lo Alarm Relays</td>
</tr>
<tr>
<td><strong>Mountings</strong></td>
<td>Pipe, Wall, or Panel</td>
<td>Integral: No Electronics Mounting Needed, Remote: Pipe, Wall or DIN Rail</td>
<td>Pipe, Wall, or Panel</td>
</tr>
<tr>
<td><strong>Approvals</strong></td>
<td>CE: FM Class 1, Div. 2, UL/CESA General Purpose</td>
<td>CE for Industrial Applications, UL-General Purpose, CSA General Purpose FM Class I, Div. 1, Groups A-D (IS), FM Class I, Div. 2, Groups A-D (N.I. Field Wiring)</td>
<td>CE: FM Class 1, Div. 2 (APT4000), FM Class I, Div. 1 IS (APT2000) and Cenelec</td>
</tr>
</tbody>
</table>
## Analytical Instruments

### Multiple Input Analyzer

Greater value and enhanced performance

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement Range</td>
<td>0-14 pH</td>
<td>0-14 pH</td>
<td>1999 to 1999 mV</td>
<td>4-10 pH</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-10° to 130°C (14° to 266°F)</td>
<td>0° to 110°C (32° to 230°F)</td>
<td>-5° to 110°C (23° to 230°F)</td>
<td>10° to 80°C (40° to 176°F)</td>
</tr>
<tr>
<td>Pressure &amp; Temp Ratings</td>
<td>Depends on sensor</td>
<td>Depends on sensor</td>
<td>Depends on sensor</td>
<td>1 to -10 in. WC (0.249 to -2.49 kPa)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10° to 80°C (40° to 176°F)</td>
</tr>
<tr>
<td>Materials of Construction</td>
<td>Ryton body, solid state electrode, viton and EPDM seals</td>
<td>Ryton body, glass electrode, EPDM seals</td>
<td>Ryton body, gold or platinum electrode, EPDM seals</td>
<td>316L SS flow chamber, glass electrodes, 316 SS temp sensor</td>
</tr>
<tr>
<td>Special Features</td>
<td>Response 10X faster than glass, replaceable reference junction, VarioPin waterproof connector option</td>
<td>Long lasting combination reference electrode, integral cable</td>
<td>Quick Disconnect cable options 0.1 pH accuracy in process with conductivity &lt;10 μS/cm</td>
<td></td>
</tr>
<tr>
<td>Mountings</td>
<td>See mounting types</td>
<td>See mounting types</td>
<td>See mounting types</td>
<td>Panel mounting option</td>
</tr>
</tbody>
</table>

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

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
- 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, Polypopylene, 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 in harsh environments

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.

<table>
<thead>
<tr>
<th>Instruments</th>
<th>UDA2182 Universal Dual Analyzer</th>
<th>APT 2000/4000CC Contacting Conductivity</th>
<th>APT 2000/4000TC Toroidal Conductivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case (HxWxD)</td>
<td>Plastic enclosure made of GE Valox® 357 CSA Type 4X (NEMA 4X)</td>
<td>Plastic enclosure made of PBT NEMA4X, IP65 rating</td>
<td>Plastic enclosure made of PBT NEMA4X, IP65 rating</td>
</tr>
<tr>
<td>Display</td>
<td>LCD dot matrix, 128 x 64 dpi</td>
<td>7-segment LCD display</td>
<td>7-segment LCD display</td>
</tr>
<tr>
<td>Display Accuracy</td>
<td>0.05% of reading at temperature. 0.1% from -10°C to 100°C ±1.0°C from 101°C to 140°C</td>
<td>Conductivity: 1% of measured value or ±(0.4 microS/cm × cell constant)</td>
<td>Conductivity: 1% of measured value ±(0.2 microS/cm ±1 Significant digit)</td>
</tr>
<tr>
<td>Control Capabilities /Advanced Features</td>
<td>PID control; Pocket PC and infrared configuration, temp. compensation curves; CO2 concentration; ppm, ppb or TDS conversions, Ethernet/Modbus communications, C. European languages</td>
<td>Measures conductivity, resistivity, or salinity; electronics and sensor diagnostics, HART communication for transmitter</td>
<td>Measures conductivity, or chemical concentration; electronics and sensor diagnostics, HART communication option</td>
</tr>
<tr>
<td>Operating Conditions</td>
<td>0° to 60°C (32° to 140°F)</td>
<td>-20° to 55°C (-4° to 131°F)</td>
<td>-20° to 55°C (-4° to 13°F)</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>90-264 Vac 47-63 Hz</td>
<td>2000: 14-42 Vac; 4000: 20-253 V, AC or DC</td>
<td>2000: 14-42 Vac; 4000: 20-253 V, AC or DC</td>
</tr>
<tr>
<td>Analog Outputs</td>
<td>Up to three 4 to 20mA</td>
<td>2000: One 4 to 20 mA; 4000: Two 4 to 20 mA (one dedicated to temp)</td>
<td>One 4 to 20 mA</td>
</tr>
<tr>
<td>Relays</td>
<td>Up to 4 relays</td>
<td>2000: N/A; 4000: Hi/Lo alarm relays</td>
<td>2000: N/A; 4000: Hi/Lo alarm relays</td>
</tr>
<tr>
<td>Mountings</td>
<td>Pipe, wall, or panel</td>
<td>Pipe, wall or panel</td>
<td>Pipe, wall or panel</td>
</tr>
<tr>
<td>Approvals</td>
<td>CE, FM Class 1, Div. 2, UL/CSA general purpose</td>
<td>CE, FM Class 1, Div. 2 (APT4000); FM Class 1, Div. 1 (APT2000); CENELEC</td>
<td>CE, FM Class 1, Div. 2 (APT4000)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sensors</th>
<th>4973 Contacting Conductivity Cells</th>
<th>4905 Contacting Conductivity Cells</th>
<th>4909 Contacting Conductivity Cells</th>
<th>5000TC Toroidal Conductivity Cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement Range</td>
<td>0.01, 0.1, 1.0, 10.0 cell constants, 0.05 μS/cm to 250 mS/cm</td>
<td>0.01, 0.1, 10.0, 50 cell constants, 0.05 μS/cm to 15 S/cm</td>
<td>0.01, 0.1, 10.0, 50 cell constants, 0.05 μS/cm to 15 S/cm</td>
<td>0.2 to 200 milliSems/cm</td>
</tr>
<tr>
<td>Pressure and Temperature</td>
<td>1724 kPa @ 140°C (250 psig @ 284°F)</td>
<td>1034 kPa @ 130°C (150 psig @ 266°F)</td>
<td>SS: 3.45 bar @ 140°C (50 psig @ 284°F) CPVC: 2.07 bar @ 140°C (30 psig @ 284°F)</td>
<td>Polypropylene: 6.9 bar @ 100°C (100 psi @ 212°F) PVDF: 6.9 bar @ 120°C (100 psi @ 248°F) PEK: 13.8 bar @ 150°C (200 psi @ 302°F) PFA Teflon: 13.8 bar @ 150°C (200 psi @ 302°F)</td>
</tr>
<tr>
<td>Materials of Construction</td>
<td>Titanium or graphite</td>
<td>Nickel or platinum</td>
<td>Nickel or platinum</td>
<td>Polypropylene, PVDF, PEK, PFA Teflon</td>
</tr>
<tr>
<td>Mountings</td>
<td>3/4 inch NPT threaded fitting</td>
<td>1 inch NPT threaded fitting</td>
<td>Insertion/Removal ball valve assembly in CPVC or SS allows insertion/ removal of cell without stopping process</td>
<td>Immersion, union adapter, sanitary 2 inch flange or insertion/removal</td>
</tr>
</tbody>
</table>

17
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 dearator efficiency or ppm DO levels in wastewater, environmental and process applications for control and compliance.

<table>
<thead>
<tr>
<th>Instruments</th>
<th>UDA2182 Universal Dual Analyzer</th>
<th>DL425 ppb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>Plastic enclosure made of GE Valox® 357 CSA Type 4X (NEMA 4X)</td>
<td>Plastic polysulfone enclosure, IP66, 123 x 48 x 46 mm (4.84 x 1.89 x 1.81 in)</td>
</tr>
<tr>
<td>Display</td>
<td>LCD dot matrix, 128 x 64 dpi</td>
<td>LCD 4-digit, 7 segment</td>
</tr>
<tr>
<td>Display Accuracy</td>
<td>D.O.: 0.5% of reading</td>
<td>Temp.: ±1.0°C</td>
</tr>
<tr>
<td>Operating Conditions</td>
<td>0° to 60°C (32° to 140°F)</td>
<td>-20° to 60°C (-4° to 185°F)</td>
</tr>
<tr>
<td>Control Capabilities/Advanced Features</td>
<td>PID control, Pocket PC and infrared configuration, ppm or ppb measurement, automatic or manual calibration; temp. and pressure compensation, Ethernet/Modbus communications, E. European languages</td>
<td>Integral electronics/sensor design</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>90-264 Vac; 47-63 Hz</td>
<td>16-42 Vdc</td>
</tr>
<tr>
<td>Analog Outputs</td>
<td>Up to three 4 to 20mA</td>
<td>One (1) 4 to 20 ma</td>
</tr>
<tr>
<td>Relays</td>
<td>Up to 4 relays</td>
<td>N/A</td>
</tr>
<tr>
<td>Mountings</td>
<td>Pipe, wall, or panel</td>
<td>Integral, no electronics mounting needed Remote: pipe, wall or DIN rail</td>
</tr>
<tr>
<td>Approvals</td>
<td>CE, FM Class 1, Div 2, UL/CSA General Purpose</td>
<td>UL and CSA general purpose</td>
</tr>
</tbody>
</table>

Sensor DL5000 Equilibrium Probe for ppm & ppb application

- 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.

<table>
<thead>
<tr>
<th>H₂ Purity Gas Analyzer</th>
<th>7866 Analyzer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>±2% of span</td>
</tr>
<tr>
<td>Response Time (for H₂)</td>
<td>Initial, &lt;1 sec 63%, 13 sec 90%, 23 sec 99%, 40 sec</td>
</tr>
<tr>
<td>Measuring Range</td>
<td>1, 2 or 3 as specified</td>
</tr>
<tr>
<td>Sample Requirement (Sensing Unit)</td>
<td>0.2 to 4.2 cfh flow 37 mm Hg Pressure min.</td>
</tr>
<tr>
<td>Power Requirement (Control Unit)</td>
<td>Universal 90 to 264 Vac, 50 to 60 Hz</td>
</tr>
<tr>
<td>Weight (Sensing Unit/Control Unit)</td>
<td>8.5 kg (18.34 lb)/1.3 kg (3.0 lbs)</td>
</tr>
</tbody>
</table>

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 Class1, Div1 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

<table>
<thead>
<tr>
<th>Model</th>
<th>EDC201</th>
<th>EDC202</th>
<th>EDC203</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>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.</td>
<td>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.</td>
<td>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.</td>
</tr>
<tr>
<td><strong>Panel Cutout</strong></td>
<td>45x45 mm (1/16 DIN)</td>
<td>45x92 mm (1/8 DIN)</td>
<td>92x92 mm (1/4 DIN)</td>
</tr>
<tr>
<td><strong>Analog Inputs</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>0.5%</td>
<td>0.5%</td>
<td>0.5%</td>
</tr>
<tr>
<td><strong>Input Signal Types</strong></td>
<td>Thermocouples, RTDs</td>
<td>Thermocouples, RTDs</td>
<td>Thermocouples, RTDs</td>
</tr>
<tr>
<td><strong>Digital Inputs</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Control Outputs</strong></td>
<td>1 (5A/30VDC dry contact relay or 24V DC SSR driver)</td>
<td>1 (5A/30VDC dry contact relay or 24V DC SSR driver)</td>
<td>1 (5A/30VDC dry contact relay or 24V DC SSR driver)</td>
</tr>
<tr>
<td><strong>Alarm Outputs</strong></td>
<td>1 (5A/30VDC dry contact relay)</td>
<td>2 (5A/30VDC dry contact relay)</td>
<td>2 (5A/30VDC dry contact relay)</td>
</tr>
<tr>
<td><strong>Loops</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

### Universal Digital Controllers

<table>
<thead>
<tr>
<th>Model</th>
<th>DC 1000</th>
<th>UDC 700</th>
<th>UDC 1200</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Description</strong></td>
<td>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.</td>
<td>The UDC 700 is a 1/32 DIN format, OEM controller designed for a large number of applications.</td>
<td>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.</td>
</tr>
<tr>
<td><strong>Front Face Format</strong></td>
<td>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)</td>
<td>49 x 25 mm (1.93 x 0.98 in)</td>
<td>48 x 48 mm (1.89 x 1.89 in)</td>
</tr>
<tr>
<td><strong>Analog Inputs</strong></td>
<td>1 or 2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Input Signal Types</strong></td>
<td>Thermocouples, RTDs, mV, V, mA</td>
<td>Thermocouples, RTDs, mV, mA</td>
<td>Thermocouples, RTDs, mV, V, mA</td>
</tr>
<tr>
<td><strong>Digital Inputs</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td><strong>Analog Outputs</strong></td>
<td>Up to 2</td>
<td>N/A</td>
<td>Up to 3</td>
</tr>
<tr>
<td><strong>Digital Outputs Control</strong></td>
<td>Up to 2</td>
<td>Up to 2</td>
<td>Up to 2</td>
</tr>
<tr>
<td><strong>Digital Outputs Alarm</strong></td>
<td>Up to 3</td>
<td>Up to 2</td>
<td>Up to 2</td>
</tr>
<tr>
<td><strong>Accuracy (at ref. cond.)</strong></td>
<td>±0.2% of F.S.</td>
<td>±0.1% of span</td>
<td>±0.1% of span</td>
</tr>
<tr>
<td><strong>Loops</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Networking</strong></td>
<td>RS232 or RSA85 ASCII</td>
<td>RSA85 Modbus</td>
<td>RSA85 ASCII or Modbus</td>
</tr>
</tbody>
</table>
## Controllers

**Universal Digital Controllers**

Simple to install, easy to configure and easy to operate

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

### 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

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

<table>
<thead>
<tr>
<th>Programmers DCP 250</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Description</strong></td>
<td>¼ DIN format, a graphic/text LCD display is an affordable temperature and process controller with advanced functionality including profiling and datalogging options.</td>
<td></td>
</tr>
<tr>
<td><strong>Front Face Format</strong></td>
<td>96 x 96 mm (3.78 x 3.78 in)</td>
<td></td>
</tr>
<tr>
<td><strong>Programs</strong></td>
<td>64</td>
<td></td>
</tr>
<tr>
<td><strong>Segments Per Program</strong></td>
<td>255</td>
<td></td>
</tr>
<tr>
<td><strong>Analog Inputs</strong></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Digital Inputs</strong></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Analog Outputs</strong></td>
<td>Up to 3</td>
<td></td>
</tr>
<tr>
<td><strong>Digital Outputs</strong></td>
<td>7</td>
<td></td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>0.1%</td>
<td></td>
</tr>
<tr>
<td><strong>Loops</strong></td>
<td>1 or 2</td>
<td></td>
</tr>
<tr>
<td><strong>PID Group</strong></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Networking</strong></td>
<td>RS232, RS485, Ethernet</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Programmers DCP 500</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Description</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Size (L x H x D)</strong></td>
<td>48 x 25 x 100 mm (1.93 x 0.98 x 3.94 in)</td>
<td>96 x 48 x 100 mm (3.78 x 1.89 x 3.94 in)</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>±0.10% of span</td>
<td>±0.10% of span</td>
</tr>
<tr>
<td><strong>Analog Inputs</strong></td>
<td>1 universal</td>
<td>1 universal</td>
</tr>
<tr>
<td><strong>Input Signal Types</strong></td>
<td>Thermocouples, RTDs, mV, mA</td>
<td>Thermocouples, RTDs, mV, mA</td>
</tr>
<tr>
<td><strong>Display Types</strong></td>
<td>4 digits-LED (red)</td>
<td>4 digits-LED (red)</td>
</tr>
<tr>
<td><strong>Alarm Set Points</strong></td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Digital Input</strong></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Transmitter Power</strong></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Networking</strong></td>
<td>RS485 Modbus</td>
<td>RS485 ASCII or Modbus</td>
</tr>
</tbody>
</table>
Circular, Strip Chart & Paperless Recorders and Data Acquisition
Dependable, versatile and low maintenance. Electronic data for improved decision-making

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

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

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

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

Paperless Recorders and Data Acquisition
Electronic data for improved decision-making

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.

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

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.
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®, HMI’s 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.

ControlEdge™ PLC improves integration with Experion®, HMI’s 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.

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

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.

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.
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

Diagram: Advanced Applications Network and Supervisory Control Network.
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

<table>
<thead>
<tr>
<th>HC900 Controller</th>
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</thead>
<tbody>
<tr>
<td>Analog Inputs</td>
</tr>
<tr>
<td>Accuracy</td>
</tr>
<tr>
<td>Analog Outputs</td>
</tr>
<tr>
<td>Digital Inputs/Outputs</td>
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<tr>
<td></td>
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<tr>
<td>Function Blocks</td>
</tr>
<tr>
<td>I/O Racks Per System</td>
</tr>
<tr>
<td>Control Loops</td>
</tr>
<tr>
<td>Control Output Types</td>
</tr>
<tr>
<td>Setpoint Programmers</td>
</tr>
<tr>
<td>Setpoint Scheduler</td>
</tr>
<tr>
<td>Recipes</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Power Supply</td>
</tr>
<tr>
<td>Operating Temp.</td>
</tr>
<tr>
<td>Humidity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rack Size</th>
<th>4 Slot</th>
<th>8 Slot</th>
<th>12 Slot</th>
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<tbody>
<tr>
<td></td>
<td>266.7 mm (10.5 in)</td>
<td>419.1 mm (16.5 in)</td>
<td>571.5 mm (22.5 in)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HC900 Control Designer Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration</td>
</tr>
<tr>
<td>Operating Environment</td>
</tr>
<tr>
<td>PC</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Cable</td>
</tr>
<tr>
<td>Modem Support</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Operator Interface</th>
<th>Model 900CS10-00</th>
<th>Model 900CS15-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>Size: 264 mm (10.4 in) Pixels: 640 X 480; Color LCD</td>
<td>381 mm (15 in) Pixels: 1024 X 768; Color LCD</td>
</tr>
<tr>
<td>Data Logging</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td>Power Supply</td>
<td>+24 VDC ±20% @ 29 W max. Requires Class 2 or SELV rated power supply. Front panel LED indication of power on</td>
<td>+24 VDC ±20% @ 46 W max. Without options. Requires Class 2 or SELV rated power supply. Front panel LED indication of power on</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Operating Temperature Range: 0 to 50°C (32 to 122°F) Storage Temperature Range: -20 to 70°C (-4 to 158°F)</td>
<td>Operating Temperature Range: 0 to 50°C (32 to 122°F) Storage Temperature Range: -20 to 70°C (-4 to 158°F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>Operating and Storage Humidity: 80% maximum relative humidity (non-condensing) from 0 to 50°C</td>
<td>Operating and Storage Humidity: 80% maximum relative humidity (non-condensing) from 0 to 50°C</td>
</tr>
</tbody>
</table>

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.

- OPC Data Manager
  Fastest and secure way to make OPC connections...

- OPC Redundancy Broker
  Share and map data between OPC Servers...

- OPC Funnel
  Make all your OPC connections redundant...

- OPC Server for A&E
  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

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**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.

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

**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.

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