



Gas Processing Solutions

The future of gas processing automation & safety

Safer, smarter and more profitable gas operations
powered by honeywell

Gas processing automation & safety trends

Gas processing operators are under constant pressure to do more with less. Volatile gas markets and margin compression demand higher asset utilization and tighter operational control. At the same time, aging infrastructure, unplanned downtime and workforce shortages disrupt operational reliability and throughput.

Industry challenges

Gas processing operators work in an environment defined by constant pressure. External market forces, internal operational constraints and rising expectations around safety, sustainability and digital resilience are gradually reshaping how facilities must be designed and operated.

Market Volatility and Margin Pressure

Volatile gas markets and sustained margin pressure are forcing operators to extract more value from existing assets. Fluctuating demand, pricing uncertainty and tighter economics require higher asset utilization, improved throughput and tighter operational control.

Declining Infrastructure

Aging assets, unplanned downtime and non-productive time can erode performance and profitability.

Many facilities still operate with legacy systems not designed for today's operating demands, leading to limited visibility into asset health and increasing the risk of unexpected failures.

Workforce Gaps

The industry is facing a growing shortage of skilled and experienced workers as seasoned personnel retire, and fewer new entrants replace them.

Remaining teams are being asked to manage increasingly complex operations. This skills gap places additional strain on operations, increases reliance on individual expertise and heightens the risk of human error—especially during abnormal or high-pressure situations.

Rising Safety & Regulatory Expectations

Operators must comply with increasingly stringent regulations while maintaining safe, reliable operations across both process and non-process areas.

Expectations around emissions reduction, incident prevention and regulatory compliance continue to rise, requiring better visibility, faster response and more consistent execution across the organization.



Digitalization & Cybersecurity Risk

As operations strive to become more digital and connected, dependence on automation and data systems continues to grow. IT/OT convergence enables new levels of efficiency and insight—but also exposes operations to evolving cybersecurity threats.

These risks can disrupt production, compromise safety systems and damage business continuity if not properly managed, making cybersecurity a core operational concern rather than a standalone IT issue.

The Need for a New Operating Model

Traditional operating methods are no longer sufficient to address modern challenges. To remain competitive, gas processors must adopt integrated solutions that improve resilience, enable predictive and autonomous operations and support faster, better decision-making.

Achieving this requires a holistic approach—one that delivers performance, safety and security improvements without increasing operational complexity or risk.

Future proof gas operations with our integrated portfolio

Honeywell Gas Processing technologies are unified into a comprehensive, integrated portfolio designed to address the full spectrum of operational, safety and performance challenges facing gas processors today.

Industry-Leading Process and Automation Technologies

With over a century of innovation and gas processing expertise, Honeywell delivers trusted gas technologies designed to scale across multiple facility types, operating models and environments—supporting centralized plants, distributed assets and remote operations alike.

We connect the entire gas value chain—from wellhead to gathering, plant processing, storage and export—into a cohesive, data-driven operation.

We provide integrated automation, digital intelligence and cybersecurity to ensure visibility, control and modernization at every stage.

This end-to-end approach enables operators to improve coordination, reduce handoff losses and make decisions based on a complete, near real-time view of operations—improving value across the lifecycle.



Unlock Your Full Processing Potential

- Improve asset utilization and throughput
- Maximize higher-margin products
- Reduce operational risk
- Enable predictive operations via digital integration
- Accelerate decision-making with near real-time insights
- Reduce Maintenance OPEX with Predictive Workflows.
- Optimize production tradeoffs and energy consumption

Wellhead (Upstream/Production)

Honeywell focuses on improving recovery and enhancing safety at the source, particularly for remote or challenging locations.

- Automation and remote control
- Safety systems
- Production improvement and process control

Gathering (Midstream)

Honeywell offers technologies that help perform safe transport and precise measurement of gas from the field to the processing plant.

- Pipeline control systems
- Measurement devices
- Leak detection

Plant Processing Midstream/Processing

Honeywell offers market-leading technologies to remove impurities and separate NGLs.

- Gas treating and contaminant removal
- NGL/LPG recovery
- Modular plants
- LNG pretreatment and liquefaction

Storage/Export (Downstream/Terminal)

Honeywell improves terminal and loading operations, focusing on safety and efficiency for LNG, NGLs and refined products.

- Terminal automation
- Cybersecurity



Figure 1: Honeywell Forge APM™ leverages artificial intelligence (AI) and OEM insights to predict equipment performance and integrate workflows with your CMMS.

Why gas processing operators trust Honeywell

- **Over a century** of deep gas processing domain expertise
- **A unique portfolio** of OT, digital and process technologies
- **Cybersecure-by-design solutions** with lifecycle support
- **Proven performance** and high reliability
- **Vendor-neutral integration** without operational disruption

Honeywell delivers comprehensive gas technologies that are practical, scalable and dependable for critical gas operations worldwide

Autonomous operations for gas processing

Honeywell enables a shift from reactive operations to autonomous, exception-based operations.

Remote monitoring, advanced analytics, alarm management and intelligent optimization allow operators to focus on what matters most—intervening only when conditions deviate from optimal performance.

Experion® Process Knowledge System (PKS)

Experion PKS is Honeywell's flagship distributed control system (DCS). It acts as the operational backbone—managing process control, integrating safety systems and ensuring stable, reliable and secure plant operations.

PKS unifies controllers, I/O, safety, SCADA and operator interfaces into one highly reliable automation platform designed for deterministic control and compliance-critical environments.

Cyber Security & Resilience

Honeywell provides cybersecurity specifically for Operational Technology (OT) and Industrial Control Systems (ICS) in gas processing and process industries, including:

Cyber Proactive Defense: AI-powered continuous monitoring and behavior-based analytics that detect threats and anomalies in near real-time.

Integrated gas processing automation & safety systems



Autonomous Operations



Expertise Suite



Specialized Equipment and Process Technology



Figure 2: Experion Operations Assistant leverages machine learning to predict near-term events and anomalies and offer guidance within the Panel Operators workstation.



Secure OT Security Operations Center (SOC): 24/7 monitoring and rapid incident response managed by certified OT experts.

Cyber Insights & Cyber Watch: Software that continuously measures, monitors and analyzes cybersecurity risks.

Managed Services & Professional Services that are vendor agnostic.

Media Exchange (SMX): Protection that screens and blocks USB-borne malware.

Experion Cognition

Cognition is an AI layer built on top of the core Experion platform. It brings advanced

prediction and analytics, near real-time data intelligence, autonomous decision support and procedural automation into the control room to augment operator awareness and elevate gas plant performance.

Distributed System Architecture (DSA)

Honeywell DSA is the ideal solution for integrating assets when there are multiple units, control rooms or geographically distributed locations. DSA allows multiple ICSS systems to operate as one to enable seamless global access to data, alarms, alerts, interactive operator control messages and history.



Advanced Alarm Management

Advanced Alarm Management helps operators reduce alarm counts and analysis time while increasing operator response times and demonstrating compliance.

Simplify alarm management by centrally assessing the health of every site's alarm system in one place.

Predictive Maintenance

The Honeywell Forge Asset Performance Management (APM) platform automates maintenance analytics and leverages generative AI to predict equipment performance and integrate into CMMS workflows to enable the most effective transition to condition- and reliability-based maintenance regimes with reduced maintenance OPEX and improved asset reliability.

Honeywell Forge Advanced Process Control (APC)

Achieve maximum yield, throughput and efficiency by applying APC and optionally integrating with planning, scheduling, blending and monitoring control performance in near real time using cloud-based and/or on-premises analytics.

Turbomachinery Control Honeywell

CCC provides advanced, integrated turbomachinery control solutions for gas processing operations. These solutions help enable reliable and efficient compressor and expander performance through proven capabilities such as anti-surge protection, performance monitoring and load sharing.

By improving control stability and supporting optimal operating conditions, CCC can help reduce energy consumption, enhance equipment protection and sustain throughput across midstream and downstream applications.

Remote Operations Center

Integrated and Remote Operations enable sharing of resources, improved staff retention and improved asset performance. These are purpose-built systems enable staff to share expertise and operate assets from convenient hubs to enhance asset performance, reduce errors and improve business agility.

Gas processing solutions: connecting expertise, data, and decisions

Embed engineering and operational expertise directly into daily decision making to improve planning, forecasting, optimization and response to change.

The Honeywell solutions encompass institutional knowledge, reduce reliance on individual experts and enable faster, higher quality decisions across shifts and sites.

UniSim® Design Suite

The Honeywell UniSim Design Suite is an intuitive, comprehensive and cost-effective process simulation and modeling software platform that helps engineers create steady-state and dynamic models.

Its industry-leading dynamics simulator is used for plant design, performance monitoring, troubleshooting, scenario analysis, decision support and asset and operation management.

Process Digital Twin

Uncover your plant's true capacity and leverage first principles models combined with live plant data to monitor performance, predict behavior, and evaluate operational tradeoffs before making changes.

Operational Excellence for Industrials

Utilize a cloud-based subscription offering that collects cross-functional, multidimensional data from process control, assets, alarms and operations. Obtain outcome-based insights and persona-driven dashboards that help you optimize performance.

Honeywell Forge APM

A near real-time machinery analytics solution that continuously monitors assets and process performance, detects impending health issues and predicts time to failure. It helps operators reveal opportunities for performance improvement and expedites analysis toward the root cause of inefficiencies or impending issues.

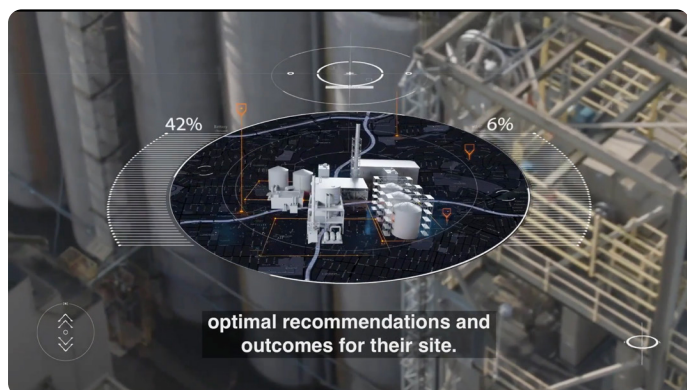


Figure 3: Sensepoint XCD Gas Detector

Specialised measurement and safety for natural gas

Honeywell measurement systems, industrial automation infrastructure and safety-critical equipment are designed for accuracy, availability and lifecycle reliability. These systems integrate seamlessly into the broader automation and digital environment.

Field Device Manager (FDM)

Leverage an instrument asset management system that allows instrument engineers to carry out commissioning and maintenance activities remotely.

Field Device Manager is essential to meet the extensive requirements of a modern plant, which continues to get more complex over time.

A facility may have instruments not only from many different manufacturers but also from different control system vendors. Our open standards Field Device Manager enables plantwide instrument integration of multiple vendors and manufacturer types.

Industrial Fire and Gas Systems

Honeywell Industrial Fire and Gas systems play a critical role in protecting people, processes and the environment. Reliable data from these systems are needed for personnel to take the right actions for early detection and response in both process and non-process areas of the plant.

Safety Instrumented Systems (SIS—Safety Manager)

Honeywell's SIL3-certified Safety Manager System is designed to minimize incidents, maximize production uptime, reduce the cost of compliance, manage and ensure plant safety, simplify operations and reduce costs by providing one scalable, securely integrated safety platform to support all process industry applications. It detects dangerous conditions and helps prevent them from becoming incidents.

Measurement and Instrumentation

Whether it's regulation, metering, data collection, data transfer or evaluation, Honeywell Elster, SmartLine and Versatilis™ instruments offer solutions for every application – customized to the specific needs of each individual customer – either as single components or complete systems.





Process technology for gas processing & treating

Honeywell provides end-to-end solutions for gas treating, dewpointing and gas processing. Maximize the value of gas streams by enabling efficient, flexible and high recovery processes—fully integrated with automation and digital performance systems.

Gas Treating and Contaminant Removal

Removing contaminants from natural gas streams is critical to protect downstream processing equipment and meet pipeline-quality specifications.

Our broad portfolio of gas treating solutions effectively removes impurities, including mercury, acid gas, water and heavy hydrocarbons to help keep your operations running at their best.

Gas Dehydration

Honeywell UOP gas processing provides comprehensive gas dehydration technologies to remove water vapor from natural gas streams to prevent hydrate formation, avoid downstream equipment corrosion and meet strict pipeline or cryogenics specifications.

UOP is a pioneer in synthetic zeolites and an industry leader in molecular sieve technology. Our MOLSIV™ adsorbents are widely used to dry gas to ultra-low moisture levels (under 0.1 ppmv) for the LNG industry.

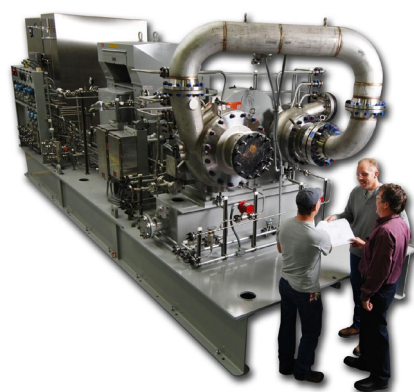
For bulk separation our UOP Separex™ Membrane Systems remove water vapor and acid gases.

Acid Gas & Mercury Removal

Honeywell UOP provides a comprehensive suite of acid gas removal (AGR) technologies. Our systems are engineered to remove carbon dioxide (CO₂) and hydrogen sulfide (H₂S).

Honeywell UOP offers several solvent-based absorption systems including: UOP Amine Guard™ FS, UOP Benfield™ and SeparALL™ processes.

UOP also offers Selectox™ for sulfur recovery to elemental sulfur.



Natural Gas Liquids (NGL) Recovery & Fractionation

Utilizing processes through its Ortloff technology brand, UOP provides elite cryogenic turboexpander systems designed to maximize liquid yields with superior energy efficiency.

Once NGLs are extracted as a mixed stream, UOP provides advanced distillation and fractionation systems to separate them into distinct, high-purity commercial products. Their columns can be tailored to individual project capacities and include Deethanizers, Depropanizers, Debutanizers and Butane/C₄ Splitters. Equipment can be provided as separate components or pre-engineered modular units.

Honeywell's NGL recovery solutions are specialized to help maximize recovery while providing you with high operational flexibility and greater returns on plant investments.

Carbon Capture & Hydrogen

Honeywell UOP provides a comprehensive range of pre- and post-combustion CO₂ capture, as well as biogas and hydrogen production, processing, blending and de-blending processes and equipment.

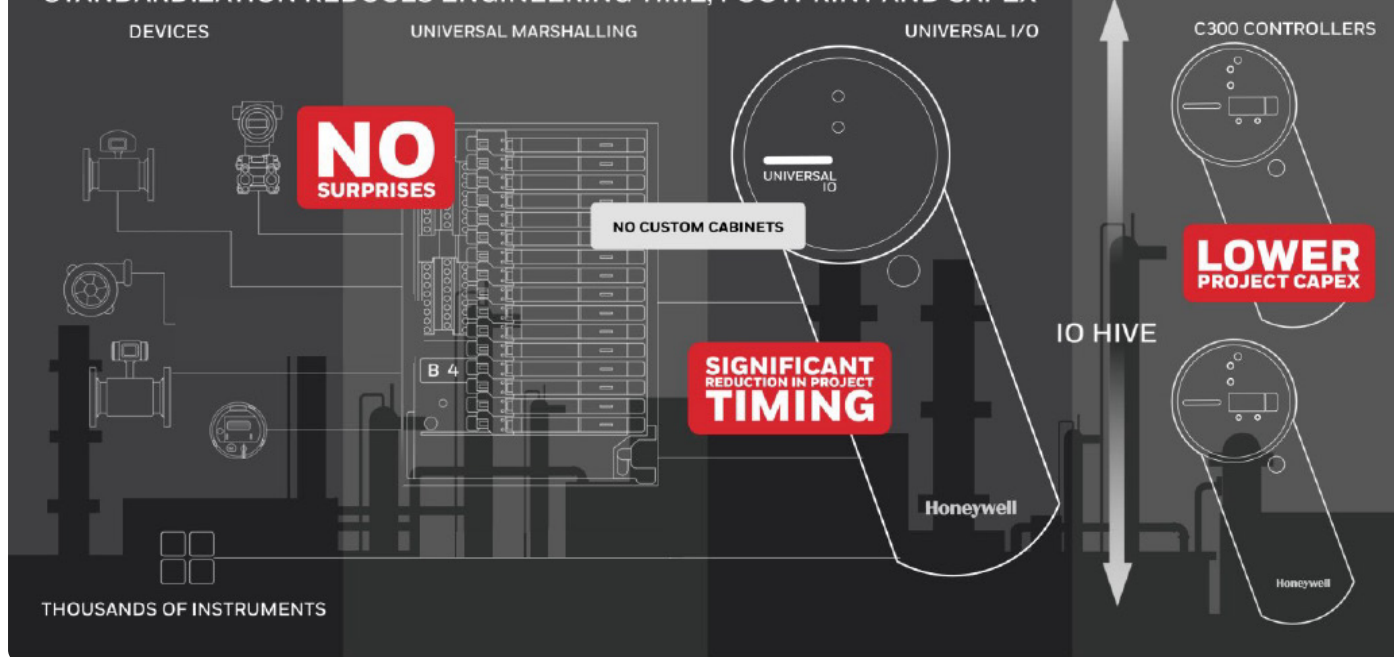
Modular & Scalable Processing Concepts

Whether onshore or offshore, Honeywell's UOP Russell pre-engineered modular gas processing units are fast, flexible and cost-effective solutions to meet your gas processing needs.

Honeywell is a proven industry leader with extensive pre-engineered, skid-mounted, modular gas processing equipment installations around the globe, including remote, hard-to-reach locations.

ON-TIME & ON-BUDGET PROJECTS

STANDARDIZATION REDUCES ENGINEERING TIME, FOOTPRINT AND CAPEX



Honeywell Sundyne Pumps & Compressors

Honeywell Sundyne provides high-speed, integrally geared centrifugal pumps and compressors designed for demanding gas processing applications.

Compliant with industry standards such as API 610, API 617, and API 618, these solutions support reliable performance in low-flow, high-head environments.

Honeywell Sundyne equipment is widely applied in natural gas processing, hydrogen handling, LNG and flare gas recovery, offering robust and efficient operation. With oil-free designs and compact configurations, these systems help improve operational reliability, reduce maintenance requirements and support consistent plant performance.

Unify & connect with award-winning project execution

Honeywell LEAP™

LEAP enhances our project implementation services with innovative, enabling technologies — universal I/O cabinets, virtualization, cloud engineering and auto-device commissioning.

LEAP gains even more flexibility connected with Experion® PKS HIVE. A large capital project can realize capital savings in automation infrastructure projects, as well as flexibility for scheduling improvements.

For more information

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