SAFER AND MORE SECURE PLANT, PEOPLE AND ENVIRONMENT.

Plant & Personnel Safety Solutions

Honeywell

SAFETY FIRST

Honeywell is an industry leader in Plant and Personnel Safety Solutions to safeguard the process, plant, people and environment.

A comprehensive portfolio of technologies and services helps you improve policy compliance, productivity, security and safety reducing the risk of incidents, and if one should occur, to respond more quickly and effectively with better information. From risk assessments and fire & gas systems to intrusion detection and cyber security, our integrated solutions are field proven to ensure safe, secure operations.

With a layered approach to safety, our integrated solutions break down barriers and information silos, helping improve situational awareness and allowing more effective decision-making.

Tried and Tested

Nothing is possible without safe operations. Safety and security are the foundations on which profitable operations are built. Your plant uptime and license to operate depend on preventing and mitigating the abnormal situations that can lead to dangerous and damaging incidents.

Plants worldwide trust Honeywell with their most precious asset: their reputation. They count on more than four decades' experience, a worldwide presence and the industry's widest portfolio to keep operations running safely and smoothly.

They're also trusting a partner with hands-on experience: our strategies and solutions are used in our own Honeywell Advanced Materials plants that deal daily with hazardous and combustible compounds and processes.

It all means that you're safe with us.

Empowering Solutions

Honeywell helps people make the decisions that keep operations safe. We get real-time data and powerful tools to those who need them: plant operators, security staff, fire chiefs, emergency responders, EHS teams and management—helping them achieve faster, better responses.

A comprehensive portfolio of Integrated Solutions lets us help with every part of your safety and security projects:

- Risk assessment and security and safety system design
- Emergency shutdown systems and fire & gas detection
- Physical security, personnel safety devices and mustering solutions
- Business Continuity and Response Management
- Cyber security
- Wireless networks and alarm management
- Process Safety Life Cycle Management
- Digitized Workforce Management.

Intruder Alert!

Monitor your plant with digital surveillance to improve situational awareness during safety, security and process related events. Use controlled access systems integrated with the workforce management solution and with the flexibility to provide eMustering to ensure the safety of your facilities and workers.

It's Hot In Here

Place sensors at strategic locations in your plant to monitor for smoke, flame and flammable or toxic gases. Pair them with an alarm management system to alert your team of these conditions and respond quickly to mitigate damage.

Risk Assessments and Consulting

Our expert assessors draw on experience and best practice from projects around the world to identify and address the key risks facing your plant. Helping identify quick wins and long-term strategic projects, we can help you prioritize the critical risks and realize a safer and more secure work environment.

Detailed, step-by-step plans enable operations to reduce target risks to ALARP (as low as reasonably practical) levels and continuously improve their performance. As a single-service solutions provider we also draw from the full range of Honeywell and third-party technologies to implement the most efficient, reliable solution tailored to your plant.

Backed by regional project centers and subject matter experts on safety, fire & gas, security and cyber security, we can take any size and complexity of project. Functional safety-certified engineers also ensure plans and project execution comply with international standards and local regulatory codes.

Emergency Shutdown

Honeywell's Safety Manager detects dangerous conditions and prevents them from becoming incidents. Providing automatic, safe shutdown to protect the operation, it also offers root-cause analysis to drive improved system performance. Minimizing incidents and maximizing production uptime, you can reduce the cost of compliance and ensure your plant safety.

Now in its third generation, Safety Manager offers the tightest possible integration with Honeywell's Experion® DCS. Together, process safety data, applications, system diagnostics and critical control strategies enable it to execute SIL-defined safety applications in a fully redundant architecture. Intuitive configuration tools and universal I/O, meanwhile, simplify engineering and reduce installation and maintenance costs for a powerful, cost effective solution:

— Safety system architecture for both centralized and decentralized system designs

— "Out of the box" SIL3 rated system with tools to reduce engineering design, FAT, and commissioning

— Integration of the safety system into the DCS.

Process Safety Suite

Despite the application of a wide variety of safeguarding measures, accidents in the process industries continue to occur. Plant owners/operators must find ways to better understand the safety status of their assets and then act appropriately. Key information in the process safety lifecycle is often handled through many manual and disconnected steps. This results in inefficient operations, increased risk and reduced profits

Honeywell Process Safety Suite (PSS) is a comprehensive solution that fully automates the process safety lifecycle, helping to reduce errors, lower costs, continuously monitor operations for hazardous conditions, and provide safety alerts in a timely fashion.

Designed to Optimize Existing Operations

No matter where you enter the process safety lifecycle, Honeywell Process Safety Suite can help you reduce risk and save money, while complying with best engineering practices throughout the operating life of the plant. This solution enables you to use your operating history in addition to your testing to minimize risk and optimize spending.

With the robust PSS applications, you can employ a single data system to manage all your process safety risk management analysis and information throughout the life of your project

Process Safety Analytics

Extract more value from plant data to obtain automated process safety analytics, giving real-time insights on abnormal conditions and enable a more proactive approach towards best-in-class safety and uptime.

Honeywell's Process Safety Analyzer can take advantage of data associated with unplanned trips for automatically validating and documenting the performance of safety instrumented systems and final control elements. An automated validation can help to identify issues earlier, SIF demand rates and implement an exception-based inspection.

Leveraging on Honeywell expertise and solutions, it is possible to connect to Honeywell and third-party systems. With Process Safety Analyzer, plants can better detect issues that could compromise safety and uptime, and also comply with regulations.

Use a Fail Safe

Use a reliable safety shutdown system to monitor temperature, fluid flow, pressure and other parameters for unsafe conditions and automatically shutdown when appropriate to help prevent the unsafe conditions from causing damage. After mitigating the immediate problem, analyze the incident to prevent a repeat occurrence.

Keep a Lookout

Track your workers' exposure to hazards with 24/7 real-time monitoring through wireless personal gas detection. In the event a worker is exposed, your operator will be alerted to the condition and location, facilitating more effective incident response and rescue.

THE BEST PROTECTION IS PREPARATION.

A comprehensive approach to plant safety with integrated safety and security solutions can accurately identify and address risks as they arise.

Fire & Gas

Integration of fire and gas systems into the overall control system is a very important factor in running modern process plants. Integration of data, sequence of events, alarms, time synchronization and diagnostic messages is mandatory for safe operations.

Our best-in-class technology and expertise is based on a layered approach to safety, encompassing both process and system technology, and the people who interact with that technology. This integrated approach to safety and security based on "defense-in-depth," with independent layers of protection, is the foundation of industry best practices.

Our systems enable users to monitor areas where hazardous levels of explosive or toxic gas may become present, and provide early warning of the build-up of gas or fire before it becomes a hazard. With an early warning of abnormal situations you can protect assets, staff and the environment.

As well as increasing safety, users also realize a range of other benefits: reduced insurance premiums; improved compliance with safety standards and regulations; reduced risk and improved operational performance and lifecycle sustainability

Industrial Security and Personnel Safety Solutions

We keep you in control of your plants and industrial sites. With access control, perimeter intrusion detection, advanced video surveillance and lighting, we offer a full range of solutions for deterrence, protection, and real-time monitoring of movement in and around the plant.

Using both our own portfolio and best-in-class technologies from third-party manufacturers, Honeywell uses the most effective combination of technologies to meet each site's specific requirements. We provide both improved security along with cost-effective solutions:

- Combined radar video and traditional fixed camera surveillance solutions—delivering improved monitoring in all weather conditions using fewer field devices for lower installation, operating and maintenance costs
- A modular industrial security solution that grows with the construction site, providing security from day one to reduce asset losses through pilferage and vandalism and to lower the risk of schedule overruns
- A flexible access control solution, Temaline, is able to deploy varied reader technologies, from basic proximity to advanced biometrics, as well as potential for a real-time mustering solution with readers placed at muster points or safe havens.

Honeywell industrial security solutions integrate tightly with safety and process systems. Fire, gas and process alarms can be programmed to automatically focus cameras on affected areas and initiate emergency mustering without operator input. Live video images pulled into security and process control displays also enhance situational awareness for faster, effective responses.

Safety and security incidents can be costly to the industry, plants, and people involved as evidenced by the data collected each year.

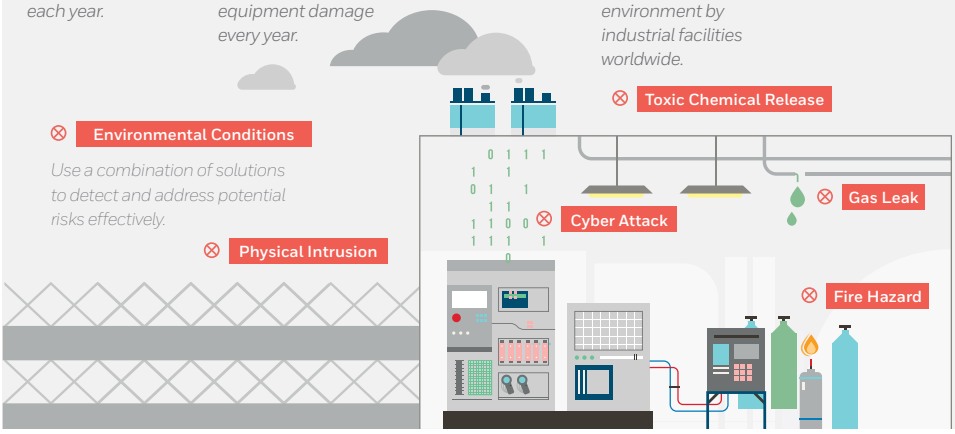
$10B
what safety incidents cost the process industry worldwide each year.

$2.2B
in claims are reported to insurance companies due to equipment damage every year.

2M+
tons are recognized carcinogens.

10M
tons of toxic chemicals are released into the environment by industrial facilities worldwide.

$12M
is lost due to fires or explosions, on average.



Personal Gas Safety

Personal Gas Safety, is an integrated solution that keeps workers safe and provides 24 x 7 real – time field personnel monitoring with enhanced visibility for exposure conditions and dangerous situations. In addition, the solution offers post-incident evaluations and HSE management, as well as faster response time in critical situations without the need for additional resources.

Personal Gas Safety offers wearable gas detectors, seamlessly integrated with Experion PKS Process Control System for enhanced personnel safety.

This integration allows real time alarm reporting and location display on Experion operator stations.

Cyber Security

Honeywell's full range of cyber security solutions protect the availability, safety, and reliability of industrial facilities, critical infrastructure and the industrial Internet of things (IIoT). Defending against common and emerging threats, including those specific to industrial automation, we help businesses establish secure connections between plant networks and the IT network, and ensure ongoing awareness of new vulnerabilities and advanced persistent threats.

Recognizing the difficulty of achieving total security, Honeywell's solutions also enable timely responses and fast recovery from cyber incidents. A full range of services and solutions reduce vulnerabilities and mitigate the impact of breaches for regulatory compliance and resilient operations:

- Consultation on cyber security architectures and network topologies for proper segmentation of security zones and conduits
- Assessments and audits to uncover passive attacks and identify vulnerabilities such as unauthorized access and non-compliance issues
- Endpoint protection, including application whitelisting, patching and anti-malware to protect users from unwanted intrusions
- Industrial Cyber Security Risk Manager—the first software solution for industrial environments to proactively monitor, measure and manage cyber security risks
- Managed industrial cyber security services to reduce the risk of security breaches and manage the essential elements of their process control infrastructure
- Network security services for more secure perimeters and higher reliability
- Response and recovery, including backup and recovery plans and automated backup systems, for system recovery of digital assets
- Ongoing updates on new vulnerabilities and the latest a dvanced persistent threats.

Honeywell PMT, Advanced Materials, and UOP

We know our safety solutions and strategies work because we use them ourselves. Honeywell Advanced Materials plants manufacture both toxic and combustible products. As such, they must identify and mitigate critical risks in the most cost-effective way possible—just like our HPS customers. We use many of our safety and security solutions to protect our own operations.

Honeywell UOP, a leading international supplier and technology licensor for petroleum refining, gas processing and petrochemical production, also uses our solutions when developing design documents for its licensees.

Dealing with combustible process and potentially dangerous chemicals, our solutions are tested by us and our licensees in the field every day. Our own hands-on experience, along with extensive customer feedback, means you can rely on our solutions to keep your plant and people safe. After all, we do.

FACILITATING TECHNOLOGIES

Honeywell's OneWireless™ Solution help users improve the safety and security of their facilities and meet regulatory requirements cost effectively.

OneWireless

Honeywell's OneWireless connects ISA100 Wireless, WirelessHART and Wi-Fi devices all in one end-to-end redundant, cyber secure network. OneWireless delivers near real-time performance and is scalable up to thousands of IO.

Reducing costs by up to half and execution times by 80% relative to wired solutions, OneWireless lets you add devices quickly and cost-effectively to rapidly provide valuable data. A portfolio of access points, transmitters, cameras and portable gas detectors radically enhance visibility, situational awareness, and personnel safety.

OneWireless supports a wide range of applications to reduce process safety incidents and unplanned downtime:

- Monitoring for chemical processes and onsite security via wireless video surveillance
- Monitoring for rotating equipment and access to schematics, blueprints, or work instructions through handheld Wi-Fi tablets for onsite workers
- Real-time location of personnel during emergencies
- Workforce management layer of protection for risk events.

With vendor-neutral support for a wide range of wireless devices, Honeywell provides extensive services and support. We'll help you design and install a robust, efficient and cyber secure wireless network that's scalable and flexible enough to meet your current and future requirements.

DynAMo® Alarm Management

With wireless technology, IIoT devices and more process and safety data than ever, operators can quickly become overwhelmed with information and alarm floods.

Honeywell's DynAMo Alarm Suite connects to any control or supervisory system to give operators a more effective alarm management solution. Improving alarm monitoring and reporting, it improves analysis and rationalization, and delivers increased safety through critical limit management, improved situational awareness, enforced operational best practices and secure shift handovers.

Our experts offer alarm improvement services to assess and rationalize alarm systems and help assure optimal performance. With proper alarm management, plants reduce incidents and their severity and avoid "run to fail" maintenance that inhibits high reliability.

Honeywell Plant and Personnel Safety Solutions Offers:

- *Gain significant cost, safety, compliance and technological efficiencies.*
- *Increased Workforce safety compliance with real time location and and enhanced business continuity.*
- *Enhance Workforce Productivity, Reduce Operational cost with digitization of process.*
- *Reduce risk and cost with digitized process life cycle management*
- *Comprehensive Integrated portfolio of solutions and services .*
- *Your one stop shop for your Safety & security needs - Lower project risk and cost.*

Project Execution

To control costs and risks, Honeywell uses its unique approach, reducing system design engineering and FAT.

Wherever possible we will use I/O virtualization to test logic offline without a full system of hardware.

For More Information

To learn more about Honeywell's Plant and Personnel Safety, visit https://hwll.co/PlantPersonnelSafety or contact your Honeywell account manager.

Honeywell Process Solutions

1250 West Sam Houston Parkway South
Houston, TX 77042

Honeywell House, Arlington Business Park
Bracknell, Berkshire, England RG12 1EB UK

Shanghai City Centre, 100 Zunyi Road
Shanghai, China 200051

www.honeywellprocess.com

OneWireless™ is trademarks, and DynAMo® and Experion® are registered trademarks of Honeywell International Inc.
Other trademarks are the property of their respective owners.

BR-16-22-ENG | 07/20

©2020 Honeywell International Inc.

THE FUTURE IS WHAT WE MAKE IT

Honeywell