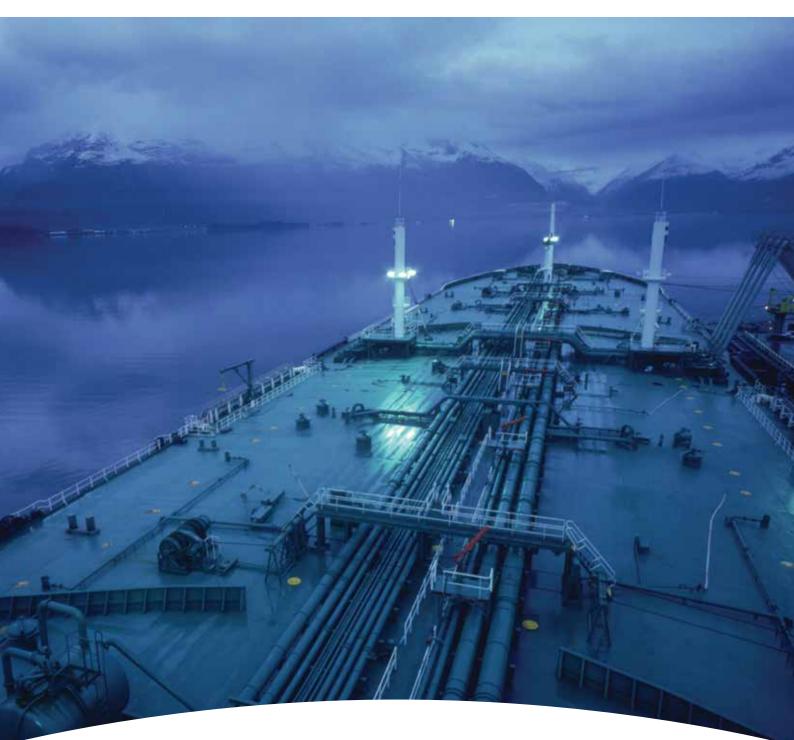
## **Marine Solutions**

## Honeywell



Dedicated to Safe, Secure and Profitable Operations Honeywell understands the challenges encountered by today's seafarers, ship builders, fleet owners and vessel operators.

Increasingly, companies involved in marine and offshore operations are faced with an uncertain economy, rising fuel costs, unforeseeable safety and security hazards, and a growing list of mandatory regulations and laws.

Crews are smaller, rotate frequently, and may be unfamiliar with high-tech equipment. Crews are pressured by long voyages at sea, characterized by harsh weather and long hours, and their stays in harbor, which must be as brief as possible.

Ship owners must also deal with the availability of capital, as well as the duration of time needed to build and complete a vessel. This puts pressure on shipyards to select powerful, easy and integrated systems and find competent technical help on a local basis.

# Our Commitment to Maritime Industries and Mariners

"We found Honeywell offers today's best-in-class technologies. In addition, we like the fact that they are focused on delivering business results, as evidenced by their business consulting capabilities." – John Ford, Offshore Installations Manager, ConocoPhillips

#### **A Trusted Global Partner**

Honeywell International Inc is a Fortune 100 diversified technology and manufacturing leader, serving customers worldwide with aerospace products and services; control technologies for buildings, homes and industry; automotive products; turbochargers; and specialty materials. Headquartered in Morristown, New Jersey, Honeywell's shares are traded on the New York, London, and Chicago Stock Exchanges.

Marine solutions are largely provided by Honeywell Process Solutions, a pioneer in industrial automation for more than 30 years that delivers leading-edge process control solutions, equipment and services designed to improve customers' business performance.

Our products are certified by international classification societies, including ABS, Bureau Veritas, DNV, GL, Lloyds and others.

Furthermore, Honeywell Process Solutions is ISO 9001 V2000-certified, ATEX-compliant, and an associate member of Intertanko. We have supplied equipment for more than 7,500 tankers, barges and tank farms, supported by a network of agents and service stations worldwide.

We serve owners, operators and yards in the merchant, cruise and ferry, offshore, military and special vessel markets.

#### **Our Value Proposition to Customers**

Ship automation is our business—we are focused on the specific needs of the marine business, with a global team of experts with life-long experience.

Honeywell provides solutions for large and small projects alike. From a single-point tank gauge to a full automation system managing several thousand I/O, we have the capacity and expertise to deal with needs of any size.

Honeywell thinks globally, but acts locally. Wherever your operations are located around the world, there is a Honeywell office nearby. We combine the high standards and global perspective of a world-class company while maintaining a presence close to you, speaking everyday to our customers in their language.

With strong technical expertise and experience, Honeywell assures realistic and optimized planning, smooth engineering, confident execution and reliable support. Honeywell solutions integrate production, processing and transportation operations linking them with security, safety, commercial, regulatory and environmental functions. This helps Honeywell customers to improve productivity, lower operating costs, capitalize on key business opportunities, improve asset utilization and boost profitability.

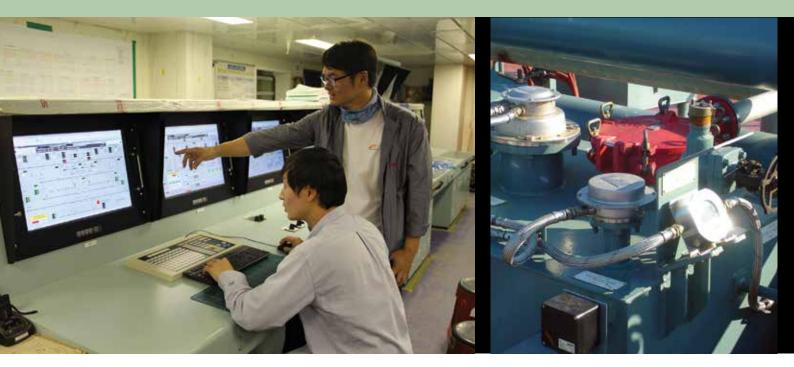


#### Global Installed Base:

- Honeywell Tank Gauging – More than 7,500 installed
- Integrated Automation Systems – More than 300 installed

# Forty Years of Experience in the Marine Market

automation system, we offer the most reliable technology for each specific application.



#### Experion PKS<sup>®</sup> Integrated Control and Safety

Honeywell embeds decades of experience into state of the art automation solutions for the most demanding vessel applications such as LNG and FPSOs. Our Experion PKS solution includes process control and safety, security, asset management, simulation, and supply chain management into a unified environment for shipboard operations.

#### **HERMetic Portable Samplers**

Designed to sample crude oil, products and chemicals from tanks under closed or restricted conditions. All portable HERMetic equipment fit on the specially designed HERMetic compact valves fixed installed on each tank.

#### **Tank Gauging Solutions**

Honeywell offers full tank gauging solutions for cargo, ballast and service tanks, including monitoring of temperature and inert gas, as well as gauging calculations and innovative human-machine interface (HMI) solutions.

#### **Fire Detection and Alarm**

Honeywell provides Fire detection systems based on the famous IQ8Quad smoke detectors, and XLS120 and XLS3000 Intelligent Addressable Alarm Systems.





#### **HERMetic UTImeter Gauges**

For 25 years our level gauges have set the industry standard for precision level gauging, custody transfer measurement, inventory control and back up unit for fixed systems.

#### **Small Volume Prover**

The Small Volume Prover is intended for periodic calibration of custody transfer flowmeters on offshore platforms (FPSO). They are a precise, easy, compact solution compared to technologies such as master meters and ball provers.

#### **CALLIDUS Flares**

Durable, easy-to-operate flares are important safety equipment on most oil production facilities like FPSOs.







#### **GASBAL®** Gas Detector

Gasbal gas detectors provide fast and reliable detection of dangerous gases in empty spaces such as ballast tanks. They enable regulatory compliance while providing a sturdy design with minimal footprint.

#### CAMS<sup>™</sup> Control, Alarm and Monitoring

CAMS is a versatile multi-station system based on Experion HS. Scalable, open architecture, highly communicant, easy to commission and service, it is a perfect fit from small ships to tankers and offshore supply vessels.

#### **BW Portable Gas Detectors**

Cover the whole range of dangerous gas detection, from Hydrogen Sulfide to heavy hydrocarbons; from simple one-use clips to full solutions including charge, calibration and tracking.

#### LIDEC<sup>®</sup> High Level or Water Ingress Detectors

Accepted by all major classification societies, Lidec detectors use a proprietary guided wave technology. They provide the highest level of performance for prevention of overfill and detection of water ingress in empty spaces.





# Application Expertise and Vision

Honeywell combines a top-class value proposition and very large offering to deliver expertise spanning the entire range of vessel and offshore requirements.

#### Portable Level Gauging, Temperature Measurement and Sampling for Oil and Chemical Tankers and Barges

Honeywell Tanksystem is the world's leading supplier of portable level gauging and sampling equipment for marine applications as well as for the oil and petrochemical industry. Honeywell Tanksystem has supplied equipment for more than 7,500 tankers, barges and tank farms.

Our goal is to build up a long-term relationship with our customers and to put their needs in the centre of all our activities. We are dedicated to fulfilling the needs of customers who operate in classified areas according to high standards regarding safety, reliability and accuracy. We help you to protect the operator and the environment.

Our latest addition to our portfolio is our Eight in. One system, a compact solution for gauging and safety onboard barges and inland tankers.



#### Full Automation Packages for Ships and Platforms with Integrated Processes (e.g., LNG terminals and carriers, FPSOs and FSRUs)

Honeywell provides ship-owners, shipyards and operators with the benefits of an Integrated Automation System (IAS) encompassing process and ship management; as well as ICSS for production vessels.

Honeywell's IAS is powered by Experion PKS, which embeds three decades of Honeywell process control, business management and domain expertise into a unified architecture..

#### Typical applications include:

- Compressor Integration
- Generator Control
- Peripheral Functions
  - Alarm Monitoring
  - Asset Management
  - Ballast Control
  - Fire and Gas Detection
  - Security Systems

### Automation for All Types of Merchant Vessels and Inland Waterway Barges

Honeywell provides ship owners and operators with simple and reliable solutions for safe operations. Experion HS, a smaller implementation of Experion PKS, benefits from the same experience, global implementation, and support and reliability as its larger counterpart.

#### Our offerings include:

- Equipment for Cargo, Ballast and Service Tank Gauging Based on Proven Radar, Pressure, Electro-pneumatic and Capacitive Technologies
- Draft, Temperature and Pressure Measurements
- Gas and Water Ingress Detection
- CCTV Monitoring
- Control and Alarm Monitoring Systems

- Power Management
  - Production Control
  - Regasification
  - Reliquefaction
- Storage

## Service and Support When and Where You Need It

No matter where your project is located, Honeywell has the global talent and presence to support you in all phases, from specification to long-term profitable ship operation. We deliver turnkey solutions integrating operation, maintenance and support throughout the lifetime of the vessel or offshore application.

Our complete solution includes systematic lifecycle management with proactive services aimed at maximizing production process availability, reliability and performance.

With service centers located in the major harbors of the world, Honeywell provides unmatched customer support and a range of services from installation and beyond. We also offer a remote maintenance service, which allows for onboard support anytime and anywhere. The Honeywell R-box enables remote real-time troubleshooting, and provides a cost-effective, same-day maintenance solution during sailing or loading/offloading operations.

Honeywell maintains complete traceability of all installations and interventions, by ship, since 1983; this allows us to immediately identify the equipment type, configuration and related parts as soon as we know the IMO number.

Whether a product is upgraded or replaced by another solution, Honeywell's service specialists will make it hassle-free for your business.

"Honeywell knows how important maintenance is to us. And I know I can count on them for service and assistance with maintenance not only during installation, but after commissioning." – Torstein Thyberg, Esso Norge AS





#### **One Honeywell**

Honeywell develops and produces a wider range of products and solutions for the marine world than any other manufacturer.

#### **Global Tracking**

Satellite-based products used to locate, track, and communicate with cargo, personnel and fleet assets. http://www.gt.honeywell.com

#### WDC torsion meters

Carries NIST calibration, installed on low speed shafts, monitor the torque and rotation, for efficiency computation and preventing propeller damage.

http://measurementsensors.honeywell.com

#### Laseref®

High accuracy ring laser gyro used in Dynamic Positioning systems. http://aerospace.honeywell.com/

#### **Honeywell Safety Products**

Personal Protective Equipment for body protection from head-to-toe. *http://www.honeywellsafety.com* 

#### Spectra<sup>®</sup> Fiber

One of the world's strongest and lightest fibers for fish lines, ropes and shields. http://www.honeywell-advancedfibersandcomposites.com

#### **Honeywell Turbo Technologies**

Global leading manufacturers of engine boosting systems. http://www.honeywell.com/turbo

#### For More Information

To learn more about Honeywell's marine solutions, email hpsmarketing@honeywell.com, visit www.honeywellmarine.com or contact your local Honeywell account manager.

#### **Honeywell Marine SAS**

9, Rue Isaac Newton 18000 Bourges, France

Phone: +33 (0) 2 48 23 79 01 Email: contact.marine@honeywell.com Web: www.honeywellmarine.com

#### Honeywell Tanksystem

Enraf Tanksystem SA Rue de l'Industrie 2 1630 Bulle, Switzerland

Phone: +41 26 919 15 00 Email: tanksystem@honeywell.com Web: www.tanksystem.com

#### **Honeywell Process Solutions**

4F, Sangam IT Tower, B4-4Block, 1590 DMC Sangam-dong, Mapo-gu, Seoul 121-835, Korea

Web: www.honeywellprocess.com



