# Naval - HVAC/R, Fire and Security Solutions







## Protecting 25 of the world's Naval Armed Forces

#### We design, manufacture, install, service & maintain

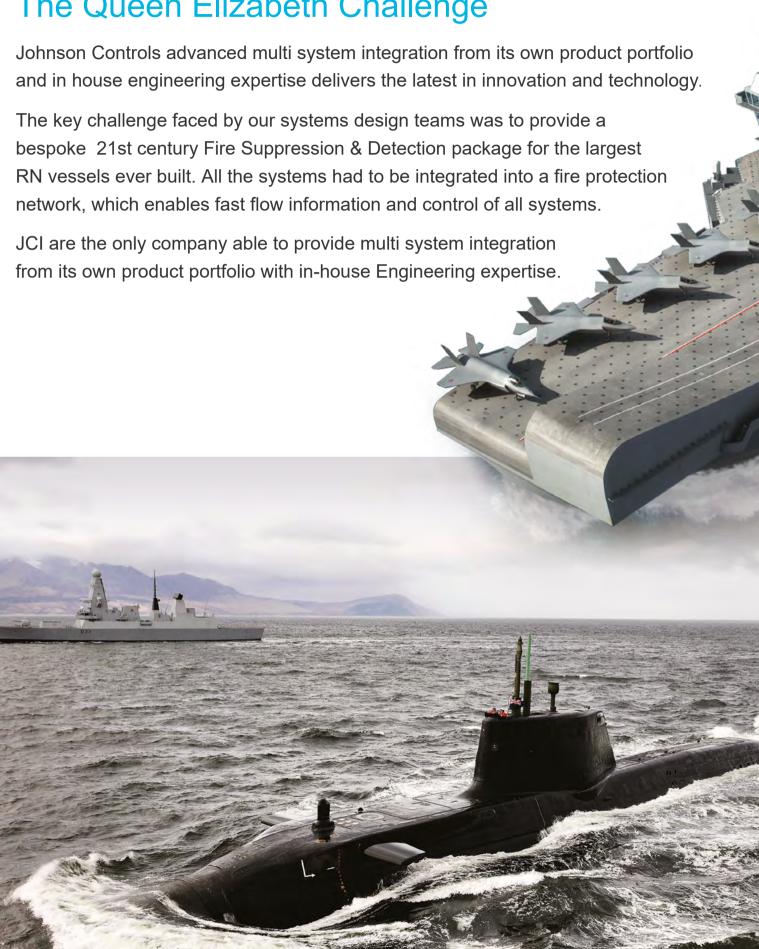
With experience that can be traced as far back as 1852 and one of the world's largest portfolios of marine HVAC/R, fire safety and security solutions, Johnson Controls is a leader in meeting the challenges for the Naval Marine market.

We are passionately committed to helping customers improve sustainability, safety and asset integrity. As such Johnson Controls helps protect Naval Vessels in more than 25 counties around the world. This ranges from the latest generation of Nuclear Powered Submarines to the innovative QEC Aircraft carriers and Future Surface Combatants. With our global Naval Marine Centres of Excellence's, Johnson Controls has many years' experience in providing reliable & robust solutions.

- Turnkey Solutions
- ILS Integrated Logistic Solutions
- Through Life Support, Maintenance and Services
- Digital Sustainability
- Logic Based Damage Control
- Inspection & testing



### The Queen Elizabeth Challenge





#### Water Based Systems Fire Detection

- · Medium velocity spray
- · Quartzoid bulb spray
- Rapid reaction spray
- · Chemical spray
- · Local application mist
- High / Low pressure mist

## Water/Foam Based Systems

- · Waterspray / foam
- · Fine water spray / foam
- · Flight deck foam
- Deck foam
- · Water mist / foam

## Systems

- Emergency door hold back
- · Flood detection
- PAGA
- Conventional
- · Digital addressable
- Detectors combined (CO & Heat or Smoke)
- Carbon monoxide detectors
- Break glass call points
- Electronic sounders beacons

#### Gaseous Extinguishing Systems

- INERGEN
- Carbon dioxide
- NOVEC 1230
- FM200

#### **Security Systems**

- CCTV
- Access control

#### Heating, Ventilation & Control

- Air Handlers
- · Air Filtration
- · Fan Coils
- · NBC Units

#### Digital / Logic Control

- Openblue
- · Fire Protection Network
- · Battle Damage Control
- Digital Twin

## Chilled Water & Provision Plants

- Centrifugal
- Screwed
- · Oil Free
- Scroll

#### **Medical Suites**

- On-ships
- · Multi-mission Bays



## Project experience

#### Capabilities

- Royal Navy Queen Elizabeth Class Aircraft Carriers
- · Royal Navy Frigates City Class
- · Royal Navy Type 45 Destroyer Daring Class
- · Royal Navy Nuclear powered Submarines
- · Royal Fleet Auxiliary Tide Class
- · Norwegian Logistics Support Vessel
- · Royal Malaysian Navy Littoral Combat Ships
- · Oman OPV Khareef Class
- · Brazil OPV Amazonas Class

- · France Nuclear Submarines SNLE
- · France Charles De Gaulle Aircraft Carrier
- · Italian FREMM Frigates
- · Germany F125 Frigates
- Sweden A26 Submarines
- · France FTI Frigates
- · France GOWIND Corvettes
- · Singapore Navy Invincible Class Submarine
- · Indian Navy INS Vikrant Aircraft Carrier

## Turnkey services

- On-board survey and safety case reviews
- · Conceptual, feasibility, consulting and pre-engineering studies
- · Project management
- Detailed design manufacture and installation of new systems and upgrades
- Full turnkey contractual responsibility and delivery
- Commissioning and certification
- Through life service
- · Inspection and testing

## Global Partner - Local Content

Combining the experience and expertise of our Centre Of Excellence for Naval applications, together with our global footprint. We aim to deliver local industry content on all Naval project requirements.

#### **Our Commitment**

Johnson Controls is fully committed to through life support of Naval Vessels. Our systems are designed, installed and serviced to the highest standards in order to provide robust solutions for navies around the world 24/7 / 365 days of the year.

#### Johnson Controls Marine Locations

Centres of Excellence

Europe Asia
France Hong Kong
Germany S. Korea
Holland China
Norway Singapore
Pacific N. America

Australia USA Canada

> S. America Brazil

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