

With their 60-year industry knowledge and experience, Rotork has made a resounding impression on the actuation market. The UK-based company has seen success after success and is still aiming for the stars. Valve World spoke to Ross Pascoe, Chief Technology Officer; Keith Barnard, Oil & Gas Managing Director; and Mike Pelezo, Site Services Director to learn more about what Rotork has in store for the future.

By Alexandra Kist, Valve World



*Rotork has partnered with customers all around the world.*

## Rotork: overflowing with ambitious industry solutions

**A**s a global provider of mission-critical flow control and instrumentation equipment for the industrial actuation and flow control market, Rotork has built a name for themselves in this competitive market. The company was founded in 1957 and has seen great success in the meantime. Rotork keeps innovating and growing. Their products are found in the oil and gas, water and wastewater, power, chemical process, and industrial applications markets.

### Serving the customer as a priority

Rotork understands that the world is changing and the markets it serves are benefiting from global mega trends such as the energy transition, automation, electrification and digitalisation. These trends play directly into their technology capabilities. For example:

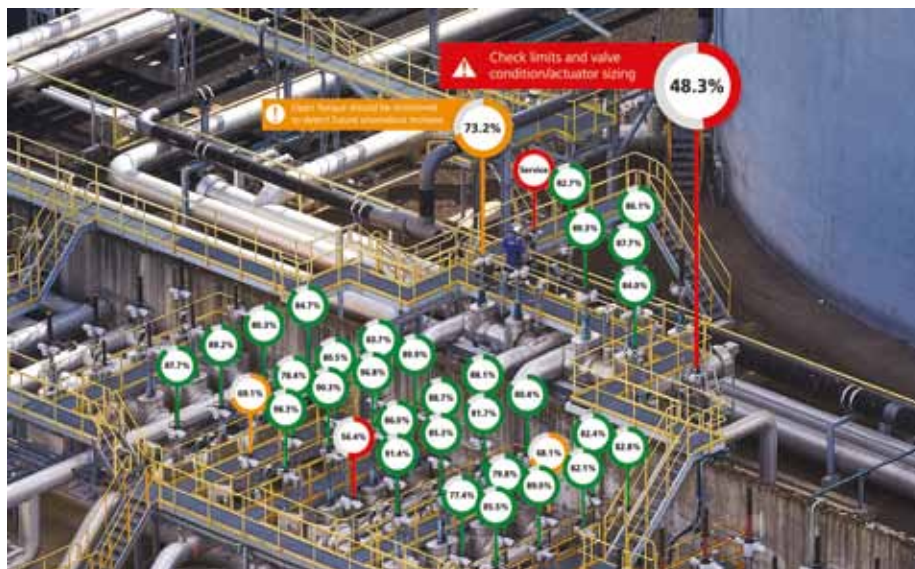
- **Water quality:** Rotork is enabling network infrastructure modernisation, water treatment and desalination.
- **New energies:** the energy transition is presenting a number of exciting opportunities



for bridging the fuel gap, including LNG, biofuels, carbon capture utilisation and storage, green and blue hydrogen and concentrated solar.

- **Electrification:** electrification is a critical part of Rotork's offering and is a driving force of Rotork's emission reduction and improved control.
- **Sustainability:** sustainability is a major opportunity for Rotork, including through methane emissions and flaring elimination and low- and no-carbon fuels.

This is why Rotork has developed its Growth+ strategy to grow the business through target segments, helping customers through customer value initiatives and staying ahead of the



iAM can analyse information from the data loggers within the intelligent actuators.

competition through innovative products and services development.

All this, whilst:

- Enabling a sustainable future by helping customers reduce their emissions and energy footprint whilst reducing Rotork's own;
- Investing in their people and culture, as everyone at Rotork is key to delivering this strategy; and
- Embracing digital technology to enable further growth and development.

Rotork's Growth+ strategy has been designed to deliver its ambition by being the leader in intelligent flow control, targeting key market segments, putting the value it delivers to its customers at the forefront of everything they do, and accelerating innovation in its products and services.

Rotork is well placed to benefit from the industrial megatrends of automation, electrification, digitalisation and sustainability. Their 'Enabling a sustainable future' initiative underpins everything that happens at Rotork. CEO, Kiet Huynh, commented: "Our vision is for Rotork to be the leader in intelligent flow control. This recognises the ever-increasing importance of connectivity to our end users. Today's intelligent flow control systems not only ensure safety, but they are also reliable, efficient and easy to use, and play a vital role in ensuring the uptime of our end users' operations (including through predictive and preventative maintenance).

Growth+ is designed to deliver our vision. Its three pillars of Target Segments, Customer Value and Innovative Products &

Services are underpinned by our 'Enabling a Sustainable Future' initiative. The starting point of Growth+ is our Purpose, 'keeping the world flowing for future generations.' Our Purpose is unchanged. It remains a powerful motivator, and it drives everything we do. It recognises the important part that we play in making our world a great place in which to live, but also the role we can play helping improve the safety, environmental and social performances of not just ourselves, but also of our end users, customers, suppliers and communities."

### Intelligent Asset Management (iAM)

One of the many services Rotork has to offer is their cloud-based asset management system for intelligent actuators and valves. Their Intelligent Asset Management (iAM) system provides comprehensive condition monitoring, anomaly detection and predictive diagnostics that allows asset condition and actionable insight to be accurately and clearly communicated to users.

The system uses specially developed analytical models and data logged in intelligent actuators to allow users to effectively plan maintenance and react appropriately to developing issues. This leads to reduced costs, reduced risk to the plant and increased uptime. Multiple inputs are simultaneously analysed by Intelligent Asset Management including torque, temperature, vibration, event log information, starts per hour, motor run time, cycles, torque trip events, power supply phase loss, network communication and configured settings. ►



The secure platform provides summary views and colour-coded maps that simplify complex analytics into easy-to-understand visuals. This facilitates the transition from periodic to predictive maintenance. Intelligent Asset Management eliminates the need to manually review data, providing a time-efficient, reliable solution giving consistency across multiple sites. Mike Pelezo, Director of Rotork Site Services said: "Our customers have found iAM to be a perfect solution as they journey towards digitalisation. iAM allows the user to utilise the operational and performance data stored inside their actuators to reduce downtime and operational risk. Unlike other performance monitoring equipment on the market today, Rotork has been building actuators with data log capability for over 20 years. Our customers can realise the significant benefits of iAM with very minimal investment outlay."

### IQ3 Pro range

Another of Rotork's key assets is their IQ3 Pro range of intelligent actuators. These can be operated and configured through the Rotork app on a smartphone. The actuator offers intelligent control and communication options.

The app and actuator are coupled by a secure PIN pairing to help prevent unauthorised access. The app offers multiple smart features such as a dashboard that always displays detailed status information and offers easy navigations to all other app functions. These include the valve configuration wizard, a manual configuration tool that allows experienced engineers to take control over all main commissioning settings, a setting tool that gives access to the actuator on-screen setup menus, data logs that enable the user to download data logs from multiple IQ3 Pro actuators. The configuration wizard helps users configure and commission the actuator installed on the valve. It is available for all major valve types and provides an easy, guided setup for engineers based on the valve type chosen. This helps the user confidently set up the valve and includes tailored tool tips if needed for the specific valve. The IQ3 Pro actuators have built-in data loggers which can be extracted using the app. Downloaded files can then be sent to Rotork Insight 2 software or the Intelligent Asset Management system. The data logger can record up to 3,000 events, providing a comprehensive record



*The Hanbay Hero.*

of actuator performance. The data log files include torque and operation, temperature, vibration, and event log information. Other metrics, such as partial stroke profile, maximum starts per hour, and motor run time, are also available.

Ross commented: "The IQ3 Pro App compliments the Rotork digital journey, providing the user with a seamless interface between the actuator, smart device and the Rotork Intelligent Asset Management System."

He continued: "We have been helping customers specify and size electric actuators for their valve types and applications from on/off to continuous duty for over 60 years. We work closely with our customers to ensure that the actuator selected is optimal for the valve and application. With more than half a million IQ3 multi-turn and part-turn actuators in service, it is one of the most robust actuator designs in the industry, providing exceptional reliability."

The non-intrusive design means the actuator can be securely installed and commissioned whilst being permanently

protected from the ambient environment. They can operate reliably without an internal heater at even the lowest temperatures. The key to this proven benefit is the actuator's double-sealed enclosure, combined with 'non-intrusive' setting and commissioning. The separately sealed terminal compartment enables site wiring to be completed without exposing internal parts to the ambient environment. Through oil bath lubrication, the range's lifecycle is also extended, and the actuator can be mounted in any orientation. Typical position encoder designs are very complex, but Rotork's patented IQ absolute encoder can measure up to 8,000 output turns and has redundancy and self-checking built in. If there is a loss of power, the absolute encoder retains the latest position of the valve. Even if the handwheel is used to move the actuator during power loss, the new position of the valve is displayed as soon as power is restored. Additionally, many commissioning tasks can be completed without the need for mains by using the internal 9V battery.



Keith Barnard, Oil & Gas Managing Director.



Mike Pelezo, Site Services Director



Ross Pasco, Chief Technology Officer..

For all actuator sizes, the thrust base types are separate from the main gear case, facilitating easy installation. Without a detachable thrust base, when an actuator is fitted, the engineer has to rotate the actuator onto the threaded stem to mount it to the valve. With a detachable thrust base, the engineer can do this in advance and then mount the electric actuator afterwards, making sure it is safer and a lot simpler. The large clear display provides a 'window into the operation of the plant' and shows

real-time asset management data at the actuator. The advanced display allows large segment character position displays down to -50 °C while the matrix display provides detailed setting, status and diagnostic multilingual screens.

For critical areas, an optional Safety Integrity Level 2 (SIL2) Emergency Shutdown (ESD) function. The actuators are certified for use in an SIS up to SIL level 2 for a single actuator or SIL level 3 for two actuators in a redundant

system. These actuators are equipped with the Rotork SIL safety module, which monitors the standard IQ3 control board and provides diagnostic coverage and redundant control to perform the desired safety function. A safety function status relay provides a remote indication of the actuator availability and the redundant safety function operation, with the same status duplicated locally on the actuator display.

### Hanbay, Inc. acquisition

Rotork recently announced the addition of Hanbay, Inc. to the Rotork Group. Through the acquisition of the Canadian Montreal-based company, Rotork has enhanced their product range by adding precise, compact, miniature electric actuators to their portfolio. In addition to their space-efficient and high-torque design, these actuators offer great compatibility with small valves and instrument valves for use in both hazardous and non-hazardous applications.

Traditionally, actuation for small valves (typically below 2") and instrument valves has been done through manual or pneumatic operation. However, increased recognition of the benefits of automation and digitalisation is driving the market to more electrification. Rotork can now extend its offering of electric actuation solutions for medium and large-size valves down to these smaller instrument valves, which opens a new technology platform for the company. The Hanbay products are expected to play into this electrification trend and comply with all of Rotork's end markets, including decarbonisation, which has a particular advantage in modular and packaged equipment solutions. The acquisition is part of Rotork's Growth+ strategy. ■



A look into the IQ Pro app.