

SUPPORTING EFFICIENCY AND ASSET MANAGEMENT

Santiago Murguia discusses the importance of digitalisation for valve and actuator automation.

The Industrial Internet of Things (IIoT) technology, which relies on devices being equipped with sensors, electronics and software to enable them to gather and share data, is the foundation of an approach that enables a site to run as efficiently and safely as possible.

When it comes to valves and actuators, modern technological innovations are not just about the products themselves; it is also about the data they are able to generate and retain, which enables engineers to make faster and better-informed decisions.

The value of data provided by the digitisation of systems cannot be overstated. However, in order to receive data, a site first needs to be fitted with the appropriate equipment that can retrieve useful information. When operating hundreds of valves on a site, having an intelligent actuator that can provide advanced data logging capabilities is vital to a functional digital asset management network. Intelligent actuators should give the operator access to the data both in the field and in the control room, via an integrated network.

Network control

Comprehensive data communication is an essential element in modern actuation. A network control system for valve actuators will allow the site operator to control the operation at all times, 365 days a year, while monitoring up to 240 actuators on a single fault tolerant field network, and up to 20km long without repeaters.

To meet these requirements, engineers incorporate field communication networks that enable



plant equipment to be controlled and monitored by their Distribution Control Systems (DCSs) and for a DCS to function effectively it requires a master station. This provides an essential link between field devices and the central DCS.

A master station is usually available in either single, dual or hot standby configurations. The single option provides redundant host connections and redundant field network loops while the dual configuration sees two fully isolated independent units installed side by side. The hot standby variant offers full redundancy, and every interface is replicated. In the event of a fault occurring, the changeover to the standby is seamless without loss of data and control.

Intelligent asset management

The maintenance and management of assets digitally, through a cloud-based system, can also offer benefits. An intelligent asset management cloud-based system will be able to analyse information from the data loggers within the intelligent actuators.

For decades intelligent actuators, such as the IQ3 from Rotork, have been

able to capture useful data – torque, operations, temperature initially, and later vibration with the latest product range – and keep this data stored in the actuator. The challenge then was that this data was not really used for the benefit of the plant operation. Today, with the new technology that is available it is possible to process and make sense of the data to analyse not only actuator performance, but also valve performance.

The focus now is on how to retrieve this data in the most efficient way. To process it and present it in a streamlined and simple way that allows the operator to have a holistic view of exactly what is occurring on site, allowing for faster and informed decisions when it comes to maintenance and minimising downtime.

All the elements of modern intelligent electric actuation – from cloud-based intelligent asset management to DCS and master stations – provide simplified, secure, and economical solutions to support long-term efficiency and asset management. +

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