

Rotork's CVA heralds new age of electric actuation for process control valves

Rotork has launched a revolutionary new electric actuator for the operation of process control valves. The Rotork CVA range provides continuous, repeatable modulating control with a programmable fail to position option. Operating on an industry-standard 4-20mA control signal or digital bus, the resolution, repeatability and hysteresis performance of the CVA is quoted at <0.1% of full scale, making it suitable for the most demanding applications.

Available for the direct-drive actuation of linear or quarter-turn control valves, the CVA draws on Rotork's fifty years of experience and innovation as the world's leading designer and manufacturer of industrial electric valve actuators. The result is a range of actuators that demonstrates highly accurate control valve automation, combined with advanced, non-intrusive calibration, valve diagnostics and the simplicity, user-friendliness and economy of electric operation.

Mechanical features include Rotork's well-known 'double-sealed' enclosure, whereby internal electrical components are permanently protected from the effects of the operating atmosphere. The IP68 dust tight, watertight and temporarily submersible (7 metres, 72 hours) enclosure is universal to all models in the CVA range, including those with hazardous area approvals.



Rotork CVA actuator installation at a UK power station.

The CVA is engineered to deliver high precision valve positioning and facilitate the tightest possible tolerances on the process variable, enabling process quality and output to be optimised. On loss of mains power, built-in super-capacitors allow the CVA to move the valve to a desired position, programmable as open, close, any intermediate position or stay-put. Manual operation is also optionally available.

The CVA utilises a new variant of Rotork's innovative and well established 'non-intrusive' communication technology for actuator programming and adjustment. Actuator set-up and configuration is performed using a Bluetooth enabled PDA or PC running Rotork Enlight software which is freely downloadable from the Rotork website. Every CVA incorporates an onboard data logger, enabling operational data such as valve torque profiles, dwell times, actuator events and statistics to be downloaded for detailed investigation and diagnosis. After analysis, any required configuration changes can be uploaded into to the actuator.



Cutaway illustration of the CVA quarter-turn control valve actuator.



Cutaway illustration of the CVA linear control valve actuator.

Digital control bus connectivity options for the CVA initially include Hart and Foundation Fieldbus protocols, facilitating enhanced installed economy as well as giving the CVA the increased ability to dovetail into existing asset management systems. The all-electric CVA design also simplifies the process of retrofitting actuators onto existing valves. Rotork's specialist Site Services organisation is available on a global basis to provide comprehensive support in these areas, from advice and surveys to installation and commissioning.

When complete, the full range of CVA actuators will have a maximum rated thrust of 22.2 kN (5000 lbf) with a maximum stroke of 114.3 mm (4.5 inches), whilst quarter-turn actuators will supply a maximum rated torque of 677.5 Nm (6000 inch lbs), enabling the range to operate most control valve types and sizes. Actuators can be specified for single-phase AC or DC electrical supplies.

The launch of the CVA follows an exhaustive programme of market research, product development and field testing. Rotork's research has identified significant enthusiasm for the introduction of viable electric actuation in the control valve market. The benefits in the reduction of on-going plant running and maintenance costs are apparent to both plant operators and owners.