

Electric Actuators  
Valvcon® V-Series



Rugged,  
reliable  
actuators  
built for  
hard work





# A Tradition of Innovation

Metso is a leading designer and provider of compact, reliable, electronically controlled electric actuators for valves and dampers. We offer a complete line of *Valvcon* electric actuators for accurate positioning of dampers and valves in the aerospace, automotive, consumer services, discrete manufacturing, energy, environmental, oil/pipeline, petrochemical, power/utilities, process, recreation, transportation, and water/wastewater industries.

Metso has developed and introduced the industry's most innovative products, including simple "set and go" calibration, intelligent processor-based digital electronics, "Plug-in" accessory boards, "Fail-Safe" actuators, as well as electric actuators designed for remote,

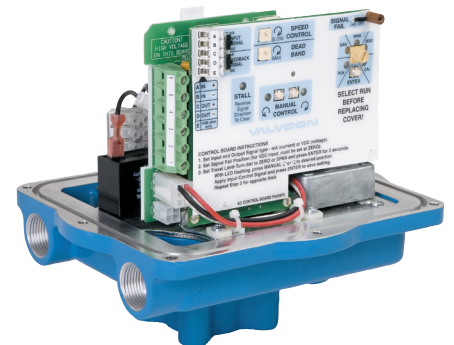
solar-powered applications and two-wire network applications. Metso has built its reputation and success on the ability to envision, implement, and deliver innovative actuator technology products and services to support emerging market requirements. As emerging technologies and market

needs continue to evolve, Metso will lead the way with high quality *Valvcon* actuators that exceed industry expectations and further refine the valve actuation process.

## Rugged, Reliable Electric Actuators for Valves and Dampers

The V-Series is a compact, rugged, reliable electric actuator designed for quarter-turn valve and damper applications. V-Series actuators are available in NEMA 4/4X and NEMA 4/4X/7/8/9 configurations, are CSA (C US) Certified, CE Compliant, and NEMA 4/4X/7/8/9 models are also certified to ATEX

Directive 94/9/EC, IECEx CSA 14.0057X. V-Series actuators are available in a variety of control configurations from On/Off to Automatic Cycling, to Analog Modulating; with a host of other options available, they are extremely well-suited to a multitude of demanding process applications.



# Actuators Built for Hard Work

V-Series actuators provide several levels of protection against overloads and overheating.

## Thermal Overload Breaker

If the motor is running too hot, for any reason, it will automatically be disconnected until it cools down. After cooling, it will resume normal operation.

## Fuse Protected Input Power

On AC Hot and AC Common connections. If power is mis-applied, the fuses will isolate damage to the Motor Board, allowing for easy repair.

## Auto-Resetting Fuses for Limit Indicator Outputs

Protect the limit switches and internal circuitry from overloads caused outside the actuator. The working limit is .25 amps, enough for any pilot or indicator applications. They reset automatically, approximately 3 minutes after the overload condition is corrected.

## Stall Protection (Modulating Applications)

If the actuator cannot achieve the position commanded by the control signal, it will automatically disconnect power to the motor until the control signal commands the actuator to drive in the opposite direction.

## Electrical Interference and Emissions

The actuator has been carefully designed to minimize electrical interference with other equipment. Emission levels comply with Part 15 of the FCC Rules for Class A electronic equipment.

## Simplified Set-up

With the Mode Selector Switch and the touch of a simple “enter, set and go” push button, the V-Series Control Board simplifies actuator set-up. On-board push buttons and slide switches make manual positioning easy, and simplify the selection of input signal type, feedback signal type, and actuator fail position in the event of a loss of control signal. With a simple turn of a dial, signal sensitivity (dead band) and cycle time (speed) are easily adjusted.

## Extended Duty Cycle for Continuous Cycling

Metso conservatively rates its AC motors at 75% duty cycle. These electric actuator motors can operate continuously at full rated torque for up to 15 minutes without pausing. After running continuously for 15 minutes, motors need to rest for only 1/3 of the cycle time between each cycle. That is, if the cycle time is 30 seconds, they must rest for 10 seconds between each cycle. In constantly modulating applications, all Valvcon V-Series actuators can handle up to 30 starts per minute.

## Break-away Torque

Designed for efficiency and reliability, all Valvcon electric actuators deliver the power you need when and where it is needed. With efficient gear trains and motors these actuators are rated at breakaway torque. Immediately upon power up, the actuator supplies the rated torque — when it is needed to break the valve away from its seat. Other manufacturer’s actuators may be rated at running torque, but actually deliver significantly less breakaway torque.

## V-Series Options Available

### Board Options

- Control Board
- Isolated Control/Position Feedback Board
- Speed Control/Timer Board

### Other Options

- Feedback Potentiometer
- Handwheel
- Heater/Thermostat
- ISO 5211 Output
- Tropical Heater/Thermostat
- Hazardous Location Enclosures
- Additional Limit Switches
- Brake
- Keyed Output

“The Valvcon V-Series control board introduces a revolutionary advance in the set-up and calibration process — Simplicity.”

## Other Valvcon Actuators

### ADC-Series

- Universal Control Board for On/Off and Modulating applications
- Up to 3000 inch pounds (250 lb-ft; 339 Nm)
- Optional Internal Battery Back-Up
- Continuous Duty Cycle
- Universal Input Power: 115VAC, 230VAC, 24VAC, 12VDC or 24VDC
- NEMA 4/4X and NEMA 4/4X/7&9 enclosures
- CSA (C US) Certified
- CE Compliant
- Certified to ATEX Directive 94/9/EC: Ex d IIB T6 Gb, and IECEx CSA 14.0057X (“WX” models only)
- Standard Features: auxiliary limit switches, heater/thermostat, manual override and visual position indicator
- Available Options: metric and “keyed” female outputs, and handwheel override

### I-Series Network Capable

- MODBUS®
- AS-Interface
- DeviceNet™
- Foundation Fieldbus
- Other fieldbus protocols (consult factory)
- CSA Certified to Canadian & U.S. standards

### Q6-Series for Remote Solar Applications

- 600 inch pounds (50 lb-ft; 68 Nm)
- 12VDC
- Low current draw
- 80% Duty Cycle
- NEMA 4/4X/7&9
- CSA (C US) Certified

### QX-Series for Economical DC-Powered On/Off Applications

- Up to 3000 inch pounds (250 lb-ft; 339 Nm) for On/Off applications
- Economical NEMA 4/4X/7&9 solution
- 12VDC & 24VDC voltages
- 80% Duty Cycle
- CSA (C US) Certified
- Standard Features: auxiliary limit switches, dynamic brake, manual override and visual position indicator
- Available Options: metric and “keyed” female outputs, heater/thermostats and handwheel override



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