

rotork[®]

Process Controls

1000 Series



**Linear and Rotary
Control Valve Actuators**

Established Leaders in Actuation Technology

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Rotork is the global market leader in valve actuation products, with a fifty-year track record serving the oil and gas, power, water and waste treatment industries.

We strive always for technical excellence, innovation and the highest quality standards in everything we do. As a result, our people and products remain at the forefront of actuation technology.

Uncompromising reliability is a feature of our entire product range, from our flagship electric actuator range through to our pneumatic, hydraulic and electro-hydraulic actuators, as well as gear boxes and valve accessories.

Rotork is committed to providing first class support to each client throughout the whole life of their plant, from initial site surveys to installation, maintenance, audits and repair. From our network of national and international offices, our engineers work around the clock to maintain our position of trust.

Rotork. Established leaders in actuation technology.

Product Overview

The Rotork Process Controls 1000 series is a robust and compact range of linear and rotary control valve actuators. Electronically controlled for precise remote operation, these digital actuators are ideal for many applications in the process control industry.

Features

- Simple Compact Mechanics.
- Continuous Modulation.
- 4 to 20 mA Input and Output Signal.
- Easy Set-up.
- Certified Ex Enclosures.
- Manual Override.
- 120 V and 240 V Single-Phase.
- 24-36 VDC.
- High Resolution and Repeatability.
- IP65 Enclosure Standard.



MV & VA-1000 Series

General Description

The 1000 series linear actuators are designed to be used with Low thrust control valves, capable of accepting standard analog current and voltage control signals. The brushless stepper motor design provides smooth, highly accurate positioning, with positive position-lock when not in motion.

The VA-1000 Series is ideally suited for valve, regulator and metering pumps requiring exact position control and unrestricted continuous modulation.

Features

- Permanently lubricated for any position mounting.
- Amplifier supplies current to hold last position and prevent backdriving, up to thrust rating under power.
- AC or DC input power versions.
- 4 to 20 mA position, loop-powered, feedback signal.
- Field selectable adjustments for: speed; deadband; zero and span; command signal type; standard or reverse acting; manual-auto operation; output shaft position on loss of signal.
- Wide ambient temperature range.

Base Model Includes

- Motor (stepper).
- Manual override.
- Amplifier.
- Electronic thrust limiting.
- Cast aluminum NEMA 4 (IP65) & dust ignition-proof enclosure.
- Four adjustable position switches (40 mA at 40 VDC).
- Valve position indicator.
- Internal steel gear train.
- 4 to 20 mA transmitter for customer use.



Left: Linear VA-1000 series
Right: Linear MV-1000 series

Popular Options

- Signal Conversion Module: Convert 40 mA, 40 VDC low level to 5 Amp, 120/240 VDC current rated position limit switches.
- Sleeper circuit (24 VDC only).
- Switching input powered AC or DC positioning for positioning actuator using AC or DC remote voltage control.
- Process Variable Controller to control one process variable.
- Local Auto/Manual and INC/OFF/DEC toggle switches (Close-coupled, NEMA 4).
- Various enclosure coatings.
- Battery backup to position actuator on loss of AC power.
- Factory mounting to valve.
- ATEX Approval.

Model	Single Phase Voltage	Motor type	DC	Enclosure Certification	Max Thrust lbs (N)	Speed in/sec (mm/sec) at Max. Thrust	Min Thrust lbs (N)	Speed in/sec (mm/sec) at Min. Thrust	Stroke length in (mm)	Manual Override	Operating Temp.	Weight lbs (kg)
MV-1010	120/240	Stepper	Y	IP65; CSA ATEX; FM	100 (445)	0.05 (1.27)	25 (111)	0.25 (6.35)	1.375 (35)	Yes	-40 to 150 °F -40 to 65 °C	12 (5.44)
MV-1020	120/240	Stepper	Y	IP65; CSA ATEX; FM	200 (890)	0.13 (3.3)	100 (445)	0.25 (6.35)	1.375 (35)	Yes	-40 to 150 °F -40 to 65 °C	16 (7.25)
VA-1020	120/240	Stepper	Y	IP65; CSA ATEX; FM	900 (4003)	0.014 (0.35)	220 (978)	0.034 (0.86)	1.5 (38.1)	Yes	-40 to 150 °F -40 to 65 °C	24 (10.8)

SM-1000 Series

General Description

The SM-1000 Series are multi-turn, rotary actuators, designed to meet the exacting requirements for closed-loop modulating positioning control. Designed for low to medium torque rotary applications, these actuators are capable of accepting analog current and voltage command signals. The brushless stepper motor design provides smooth, highly accurate positioning, with positive position-lock when not in motion and powered. The SM-1000 Series is ideally suited for regulators, pilot valves, small quarter-turn valves, choke valves and dampers.

All SM-1000 Series actuators come with a standard digital internal amplifier. These amplifiers are all full featured devices designed to work seamlessly with the actuator for closed loop control.

Features

- Permanently lubricated for any position mounting.
- Amplifier supplies current to hold last position and prevent backdriving, up to thrust rating under power.
- AC or DC input power versions.
- 4 to 20 mA position, loop-powered, feedback signal.
- Field selectable adjustments for: speed; deadband; zero and span; command signal type; standard or reverse acting; manual-auto operation; output shaft position on loss of signal.
- Wide ambient temperature range.

Base Model Includes

- Motor (stepper).
- Manual override.
- Amplifier.
- Electronic thrust limiting.
- Cast aluminum NEMA 4 (IP65) & dust and hazardous gas ignition-proof enclosure.
- Four adjustable position switches (40 mA at 40 VDC).
- Internal spur gear train.
- 4 to 20 mA transmitter for customer use.



SM Multi-turn Rotary 1000 series

Popular Options

- Signal Conversion Module: Convert 40 mA, 40 VDC low level to 5 Amp, 120/240 VAC current rated position limit switches.
- Sleeper circuit (24 VAC only).
- Switching input powered AC or DC positioning for positioning actuator using AC or DC remote voltage control.
- Process Variable Controller to control one process variable - 120/240 VAC only.
- Custom mounting and interface hardware.
- Local Auto/Manual and INC/OFF/DEC toggle switches (Close-coupled, NEMA 4).
- Various enclosure coatings.
- Exd IIB (Hydrogen) enclosure (up to 85 in. lbs.).
- Battery backup to position actuator on loss of AC power.
- ATEX Approval.

Model	Single Phase Voltage	Motor type	DC	Enclosure Certification	Max Torque in lb (Nm)	Speed at Max. Torque	Min Torque in lb (Nm)	Speed at Min. Torque	Total turns available	Manual Override	Operating Temp.	Weight lbs (kg)
SM-1015	120/240	Stepper	Y	IP65; CSA ATEX; FM	45 (5)	1 RPM	15 (1.69)	12.5 RPM	10° to 20 turns	Yes	-40 to 150 °F -40 to 65 °C	12 (5.44)
SM-1020	120/240	Stepper (w/gearbox)	Y	IP65; CSA ATEX; FM	350 (40)	0.7 RPM	20 (2.25)	10 RPM	10° to 20 turns	Yes	-4 to 150 °F -20 to 65 °C	16 (7.25)

CSA - Class I, Division 1, Groups C & D; Class II, Division 1, Groups E, F & G; CSA Enclosure 4.
 FM - Class I, Division 1, Groups C & D; Class II/III, Division 1, Groups E, F & G; NEMA Type 4.
 ATEX - Testing and certification varies for RPC products, Apply to RPC for specific actuator information.

Applications

Water Treatment Application

MV-1020

- Chemical feed valve control.
- Controls the ALUM that is added to raw, potable water.
- Through the DCS, flow rate is accurately controlled via a needle valve.
- Application environment is outdoors, which requires a NEMA 4 enclosure rating. The application requires unrestricted modulating duty.
- Remote Auto/Manual enclosure required that included power status relay.



Recycling Plant Chemical Injection

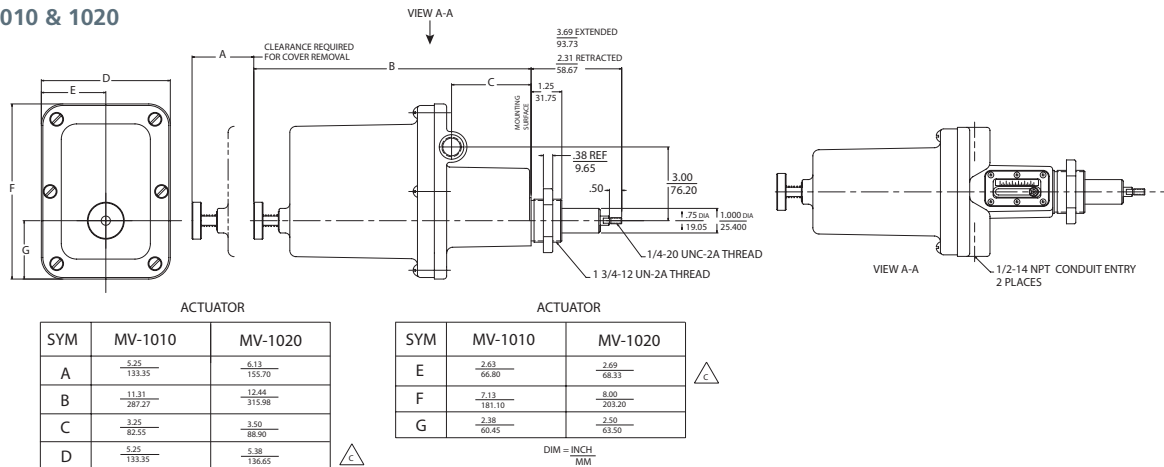
MV-1020

- Emissions control on digester gas combustion in cogenerators.
- Controls levels of hydrogen sulphide in combustion gas.
- Flow is controlled by a 4 to 20 mA signal from the DCS.
- Explosion proof version of MV1020 modulates a 1" Bauman valve to an accuracy of $\pm 0.1\%$.
- Hydrogen sulphide controlled to 50 ppm.

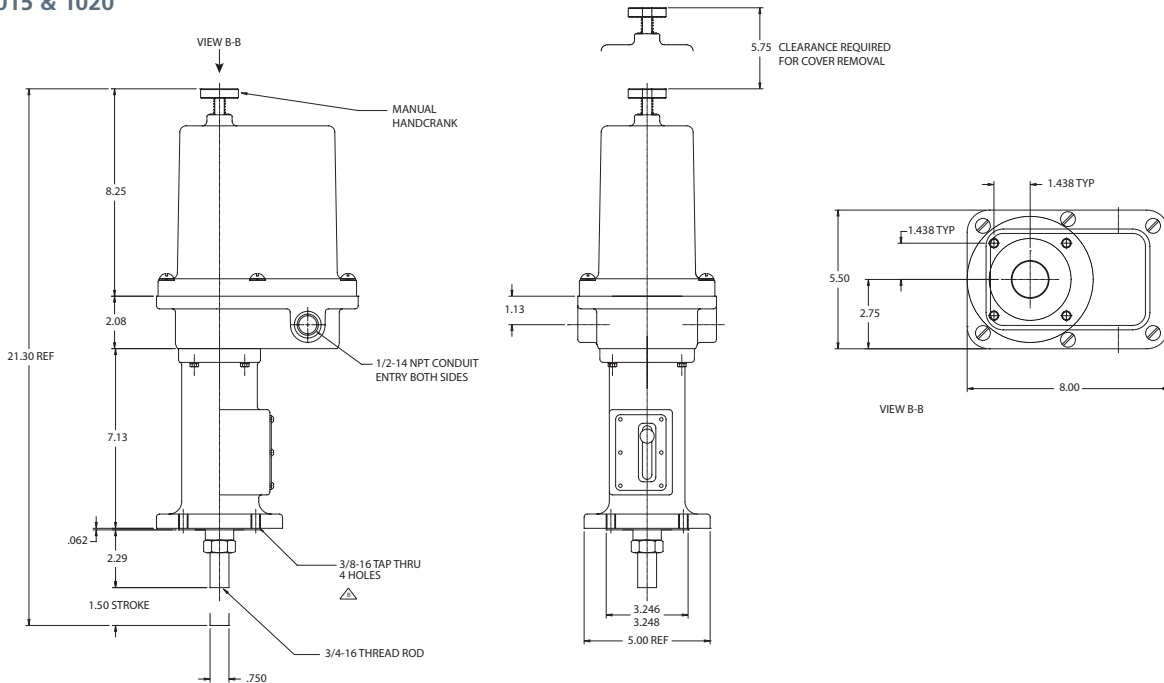


Dimensions

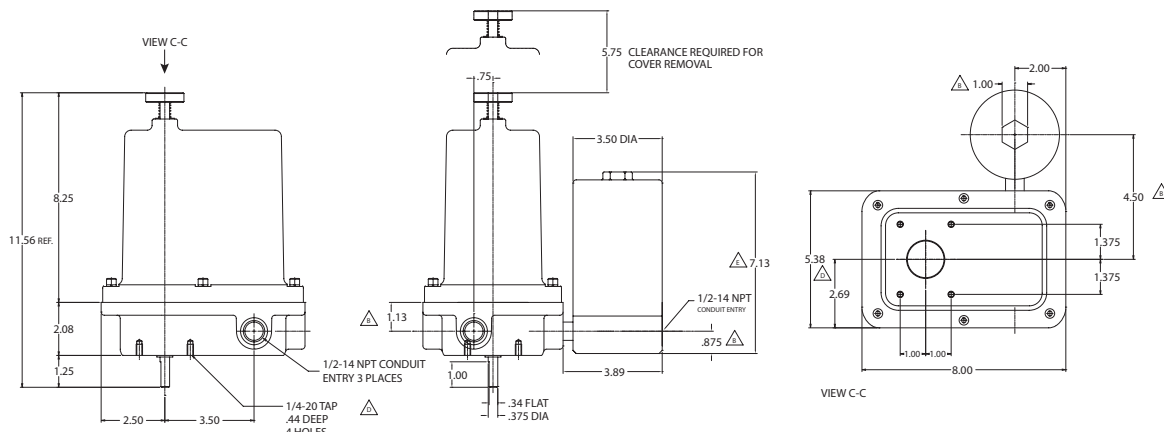
MV-1010 & 1020



VA-1015 & 1020



SM-1015 & 1020





Electric Actuators and Control Systems
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Gearboxes and Gear Operators
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