

auma®

Electric Actuators Valve Gearboxes



AUMA Actuators, Inc.
Registered to ISO 9001
Certificate No. A4682

Product Overview

Solutions for a world in motion.

AUMA automates valves

Industrial processes require automation and automation requires actuators. Reliably operating actuators are crucial to the safety and economic viability of industrial plants.

However, industrial processes vary. Each industry has its specific requirements and many actuator applications require individual solutions. Applications vary between OPEN/CLOSE and modulating duty; watertight, submersible and explosion-proof locations and a wide array of control system interface requirements. In order to make industrial automation possible, great flexibility is demanded of the actuator and the actuator manufacturer.

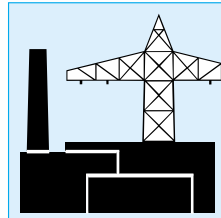
For this reason AUMA has a wide product range with electric multi-turn, part-turn, linear and lever actuators, as well as several different valve gearboxes. Actuator controls including micro-processor based controls and a variety of digital communication interfaces, enable the optimal connection of the motor operated valves to the process control system. This makes it possible for AUMA to provide a suitable automation solution for virtually every valve.

AUMA has been developing and building electric actuators and valve gearboxes for over 30 years. During that time AUMA has acquired expertise which cannot be surpassed. AUMA is one of the world-wide leading electric actuator manufacturers.

This brochure provides an overview on AUMA products and services. Detailed information can be requested from AUMA or can be found on the internet at www.auma-usa.com or www.auma.com.

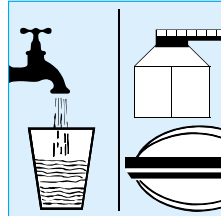


AUMA electric actuators are employed wherever the automation of a valve requires multi-turn rotation, part-turn rotation, linear movement or a lever output.



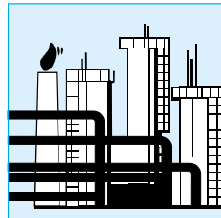
Energy sector

- Power plants
- Flue gas purification plants
- District heating plants
- Pipelines



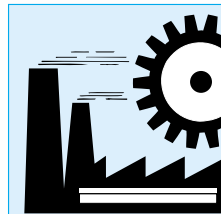
Water sector

- Water treatment plants
- Pumping stations
- Water pipelines
- Sewage treatment plants
- Dams
- Sluice-gates



Chemical sector

- Chemical industry
- Petrochemical industry
- Pharmaceutical industry



Others

- Heating, ventilation and air conditioning
- Steel works
- Shipbuilding
- Cement works
- Food and beverage industry

Electric Actuators

Multi-turn Actuators

e.g. for gate valves and globe valves



Multi-turn actuators SA 07.1 – SA 48.1

Torques from 7 to 23,600 ft lb
Speeds from 4.8 to 216 rpm

Actuator/spur gearbox combinations SA/GST

Torques up to 11,800 ft lb



Actuator/bevel gearbox combinations SA/GK

Torques up to 11,800 ft lb



Lever Actuators

e.g. for butterfly valves with lever arrangement



Lever actuators SGF 05.1 – SGF 12.1

Torques from 66 to 880 ft lb
Speeds for 90° from 6 to 180 sec



Actuator/lever gearbox combinations SA/GF
Torques up to 23,600 ft lb

Part-turn Actuators

e.g. for butterfly valves,
ball valves and plug valves

Part-turn actuators AS 6 – AS 50

Torques from 19 to 370 ft lb
Speeds for 90° from 4 to 90 sec



Part-turn actuators SG 05.1 – SG 12.1

Torques from 66 to 880 ft lb
Speeds for 90° from 6 to 180 sec



Actuator/worm gearbox combinations SA/GS

Torques up to
265 000 ft lb

Linear Actuators

e.g. for gate valves or
butterfly valves with lever
arrangement

Actuator/linear thrust unit combinations SA/LE

Thrusts from 855 to 48,825 lb
Strokes up to 19.7 in
Speeds from
1 to 17 in/min

For the operation of lever
arrangements, the LE can
be mounted on a base



Actuators with controls

Actuator controls with integral pilot devices are available for SA actuators up to size 16.1 and all part-turn actuators SG and AS. They form the optimal interface between process control and actuator.

The controls can be supplied in a variety of versions. Whether parallel control or via digital communication, whether simple OPEN-CLOSE functionality or an integral PID control – almost every process integration imaginable is possible.

In planning, commissioning and operation, AUMA actuator controls have a clear advantage over a remote control center. The economy of integral controls has a positive impact on overall plant cost.

The various AUMA control configurations provide the flexibility for control by many methods:

- Contact closure
- Analog signal
- Digital communications:
 - PROFIBUS DP
 - DeviceNet
 - Modbus
 - Interbus S



Multi-turn SA actuator with AUMA MATIC integral controls
The **AUMA MATIC** is the ideal control for OPEN-CLOSE applications. It is suitable to actuators with 3-phase and 1-phase motor



Part-turn SG actuators with **AUMA MATIC** integral controls. The AUMA MATIC is designed for all actuators with 3-phase AC and 1-phase AC motors.



Multi-turn SA actuator with AUMATIC integral controls

The microprocessor controlled **AUMATIC** offers a variety of functions - from positioning to operating data logging. Fieldbus control is possible.

The controls are designed for all actuators with 3-phase AC and 1-phase AC motors. When furnished with the MWG control unit, the AUMATIC provides the capability for non-intrusive setting.



Part-turn AS actuators with **VARIOMATIC** integral controls.

The VARIOMATIC is designed for the AS actuator.



Part-turn SG actuators with **AUMATIC** integral controls. The AUMATIC is designed for all actuators with 3-phase AC and 1-phase AC motors.



The controls cannot only be mounted directly to the actuators, but also separately on a wall bracket. This is recommended when:

- the controls and therefore also pilot devices would be difficult to access.
- heavy vibrations or high ambient temperatures within the vicinity of the valve could disturb the electronics.

Gearboxes for Manually Operated Valves

Multi-turn Gearboxes



Spur gearboxes
GST 10.1 – GST 40.1
Torques up to 11,800 ft lb
Reduction ratios from 1:1 to 22:1



Limit switching
WSH 10.1 – WSH 14.1
Torques up to 800 Nm
Reduction ratio 1:1



Bevel gearboxes
GK 10.2 – GK 40.2
Torques up to 11,800 ft lb
Reduction ratios from 1:1 to 22:1

The limit switching WSH is designed for the remote indication of the end positions and the valve position in a control room. The valve position can be read from a position indicator on the device.

Part-turn Gearboxes









Worm gearboxes
GS 40.3 – GS 250.3
GS 160 – GS 500
Torques up to 265,000 ft lb
Reduction ratios from 39:1 to 3328:1

The worm gearboxes can also be supplied without end stops for multi-turn applications.



Valve position indicators
WSG und WGD
for indication of the valve position in a control room. The valve position indicators are mounted directly onto the GS worm gearboxes.

The AUMA Products – in a nutshell

For motor driven valves	Torque or thrust	Speed or Operating time ¹⁾	 Gate valves, globe valves	 Butterfly valves, ball valves	 Globe valves, butterfly valves with lever arrangement	 Butterfly valves with lever arrangement	Remarks
Multi-turn actuators SA 07.1 – SA 48.1	7 to 23,600 ft lb	4.8 to 216 rpm	●				Versions for OPEN/CLOSE duty, modulating duty and explosion-proof applications
Multi-turn actuators SA 07.1 – SA 16.1 with bevel gearboxes GK 10.2 – GK 40.2	up to 11,800 ft lb	varies	●				Side-mounted actuator
Multi-turn actuators SA 07.1 – SA 16.1 with spur gearbox. GST 10.1 – GST 40.1	up to 11,800 ft lb	varies	●				Combinations of a smaller actuator and a gearbox are often less expensive than a large actuator
Part-turn actuators SG 05.1 – SG 12.1	66 to 880 ft lb	6 to 180 sec for 90°		●			Actuator for OPEN/CLOSE duty
Part-turn actuators AS 6 – AS 50	19 to 310 ft lb	4 to 90 sec for 90°		●			The version ASR is ideal for modulating applications
Multi-turn actuators SA 07.1 – SA 40.1 with worm gearboxes GS 40 – GS 500	up to 265,000 ft lb	8 to 466 sec for 90°		●			Suitable for part-turn applications up to highest torque requirements
Multi-turn actuators SA 07.1 – SA 16.1 with linear thrust units LE 12.1 – LE 200.1	885 to 48,825 lb	1 to 17 in/min			●		Strokes up to 19.7 in possible
Lever actuators SGF 05.1 – SGF 12.1	66 to 880 ft lb	6 to 180 sec for 90°				●	Based on part-turn actuators SG
Multi-turn actuators SA 07.1 – SA 25.1 with lever gearboxes GF 50 – GF 250	up to 23,600 ft lb	15 to 327 sec for 90°				●	Lever gearboxes based on worm gearboxes GS
For manually operated valves		Reductions					
Bevel gearboxes GK 10.2 – GK 40.2	up to 11,800 ft lb	1:1 - 22:1	●				Displaces input shaft by 90°
Spur gearboxes GST 10.1 – 40.1	up to 11,800 ft lb	1:1 - 22:1	●				Is equipped with second shaft coupling at gearbox input side
Limit switching WSH	up to 590 ft lb	1:1	●				Makes position indication for manually operated valves possible
Worm gearboxes GS 40.3 – GS 250.3 and GS 160 – GS 500	up to 265,000 ft lb	39:1 - 3328:1		●			High mechanical safety through special end stop technology
Valve position indicators WSG / WGD				●			Accessory for worm gearboxes GS for remote position indication

1) For multi-turn actuators output speed, for part-turn actuators operating time for 90° movement, for linear actuators stroke speed

Service

The reliability of actuators is crucial to the safety of entire plants. Therefore it is imperative to choose an appropriate configuration of actuators and to integrate the actuator optimally into the process control system.

Actuators are found in all industry sectors. The resulting variety of different requirements makes extensive know-how necessary even in the planning phase. The careful selection of the devices is the prerequisite for smooth installation and commissioning. However, if a fault should occur during operation, it must be eliminated as soon as possible.

This defines the AUMA service concept. And for this reason AUMA offers a range of services.

Advice via telephone / e-mail

At AUMA, engineers are available as competent contacts in every phase of the project. This means that questions can be answered quickly and plans can be finalized early in the design process. If a dimensional drawing or a wiring diagram is required at short notice, the necessary documents are quickly available via fax or e-mail.



documents are quickly available via fax or e-mail.

Internet

The AUMA internet presentation (www.auma-usa.com or www.auma.com) offers up-to-date and extensive information around the clock. General information, wiring diagrams, CAD drawings, operation instructions and lots more are also accessible on these web sites. Have a look. It is well worth a visit.

Trouble-shooting, commissioning and maintenance

With subsidiaries and representatives based throughout North America and worldwide, AUMA has the necessary infrastructure to react quickly and competently to customer requirements. Optimally equipped with tools, parts and knowlodge, AUMA technicians can eliminate faults quickly.

Furthermore, apart from trouble-shooting, several additional services are offered. The commissioning service for actuators ensures correct function from the beginning.

Automation / modernization

Valves are often still fully functional after many decades, however, the actuator technology is no longer compatible with the new process control system and needs to be replaced. AUMA automation-centers provide everything necessary to modernize the actuator technology in an older plant - from the preparation of a quotation, the construction and manufacturing of special adapters to commissioning and training.



Service van with built-in workshop

www.auma-usa.com

www.auma.com

AUMA – the Company

AUMA has been designing and manufacturing actuators since 1964. The modular design and easy to use features of AUMA products have made them the preferred electric actuator of many plant owners and operators

worldwide. The Company has sales and service facilities or representation in forty-seven countries.

In North America, AUMA Actuators, Inc. is headquartered in Pittsburgh, PA. An organization of seven factory

offices and over 50 independent sales agents in North and South America assure actuator users and specifiers that AUMA support is close to virtually any location.

AUMA Factory – Pittsburgh PA



After assembly all actuators are thoroughly tested



Assembly Shop in Pittsburgh Factory

Machining Operation in Pittsburgh Factory



AUMA Factory – Muellheim, Germany



Solutions for a world in motion.

North American Sales and Service:

**US Headquarters and Factory:
AUMA Actuators, Inc.**

4 Zesta Drive
Pittsburgh PA 15205
Tel: 1-412-787-1340
Fax: 1-412-787-1223
email: mailbox@auma-usa.com
www.auma-usa.com

Regional Offices:

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