



Electric part-turn actuators

SG 03.3 – SG 05.3
with integral controls
SIMPACT
Torques up to 125 Nm





Electric part-turn actuators

Smaller, lighter..

“To design a small and lightweight electric actuator with a simple integral controls for the automation of small OPEN-CLOSE part-turn valves with low torque requirement, but which meets the high AUMA standards,” this was the task given to the AUMA design engineers.

The result are the part-turn actuators SG 03.3 – SG 05.3 with SIMPACT integral controls.

Due to consistent lightweight design and the use of a compact gear technology patented by AUMA, the task could be fulfilled.

SIMPACT are integral controls which enable easy control via a PLC.

Service conditions

Enclosure protection IP

AUMA products in the standard version conform to enclosure protection IP 67 according to EN 60 529. IP 67 means protection against immersion up to max. 1 m head of water for max. 30 minutes.

For higher requirements the actuators are available in increased enclosure protection IP 68.

Corrosion protection

The standard AUMA corrosion protection KN is a high quality coating. This is suitable for outdoor installation and for slightly aggressive atmospheres with a low level of pollution.

For exposure to more aggressive substances, the devices are available in the protection classes KS and KX.

Ambient temperatures

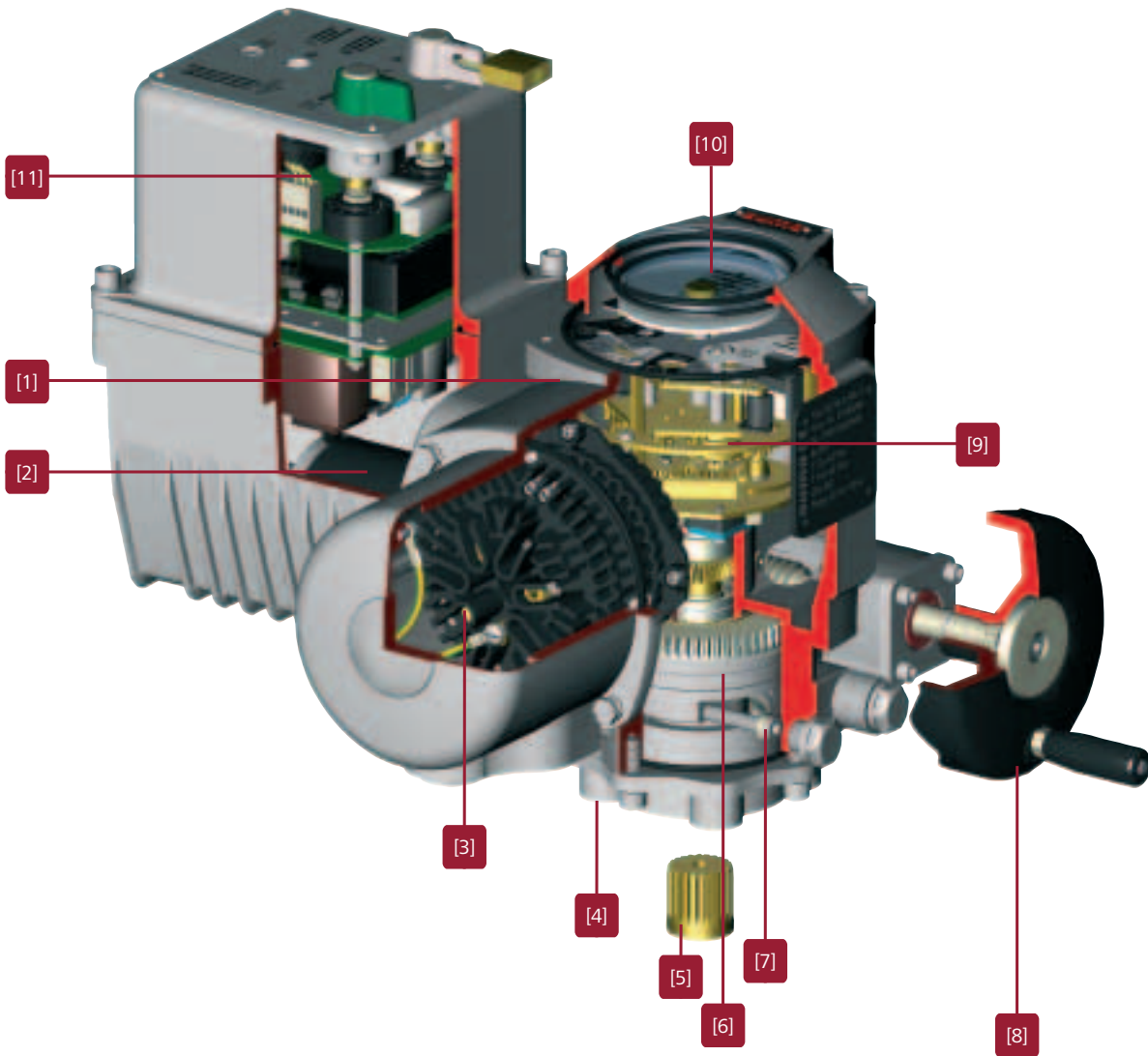
■ -25 °C ... +70 °C

Technical data

For detailed configuration please refer to separate technical data sheet SG 03.3 – SG 05.3

		SG 03.3	SG 04.3	SG 05.3
Output torque max. [Nm]		32	63	125
Valve attachment	Standard	F05/F07	F05/F07	F05/F07
	Option	F04	F04	–
Operating time for 90° at 50 Hz [s]		8 – 63 ¹		
Swing angle (standard)		adjustable between 82° and 98°		
Motor	1-phase AC	220 – 240 V 50 Hz/110 – 120 V 60 Hz		

¹ freely adjustable



[1] Housing

The housing is the crucial component for the light weight. It is manufactured of a high quality aluminium alloy.

[2] Motor

The actuator is equipped with a permanently excited DC motor, which, in combination with the SIMPACT controls, enables the adjustment of the operating time. The motor was specially developed for the special requirements in valve automation.

[3] Electrical connection

The connections for motor and control cables are made on a 50-pole AUMA plug/socket connector. Advantage: The correct wiring remains undisturbed if the actuator is removed from the valve for maintenance.

[4] Valve attachment

The valve attachment is according to EN ISO 5211. The actuator can be positioned on the valve at every 90°.

[5] Coupling

The separate coupling enables easier mounting of the actuator to the valve. The coupling with bore is placed on the valve shaft and secured against axial movement. Subsequently the actuator is fitted on the valve flange.

[6] Gearing

Principal item is the patented ellipto-centric gearing, which enables a reduction ratio of 80:1 in one stage. This contributes decisively to the exceptional small size of the AUMA part-turn actuators.

[7] End stops

When operating the actuator manually the end stops define the end position.

[8] Handwheel

For commissioning or in an emergency the part-turn actuator can be operated with the handwheel. The manual drive is designed as an over-riding gear arrangement. A change-over to manual operation is not required.

[9] Control unit

The control unit contains the limit switching with the end position switches.

[10] Position indicator

The position indicator is coupled directly to the output drive and therefore to the valve shaft.

[11] Integral controls SIMPACT

SIMPACT controls enable easy integration of the actuators into a DCS. The controls process the internal actuator signals and trip the actuator automatically and without delay when reaching an end position. A current limiting device protects both valve and actuator against excessive torques. The required operating time can be freely set on the SIMPACT controls. For control purposes, the SIMPACT requires 24 V signals which are provided, for example, by a PLC. As standard the SIMPACT can provide end positions and collective fault as feedback signals. As an option the valve position can be transmitted as a current feedback signal. The SIMPACT can be supplied with local controls (option), which can be used to operate the actuator locally.

[1] Multi-turn actuators
SA 07.1 – SA 48.1
Torques from 10 to 32,000 Nm
Output speeds from 4 to 180 rpm

[2] Multi-turn actuators SA/SAR
with controls AUMATIC
Torques from 10 to 1,000 Nm
Output speeds from 4 to 180 rpm

[3] Linear actuators SA/LE
Combination of multi-turn actuator SA
with linear thrust unit LE
Thrusts from
4 kN to 217 kN
Strokes up to 500 mm
Linear speeds
from 20 to 360 mm/min

[4] Part-turn actuators
SG 05.1 – SG 12.1
Torques from 100 to 1,200 Nm
Operating times for 90° from 4 to 180 s

[5] Part-turn actuators SA/GS
Combination of multi-turn actuator SA with
part-turn gearbox GS
Torques up to 675,000 Nm

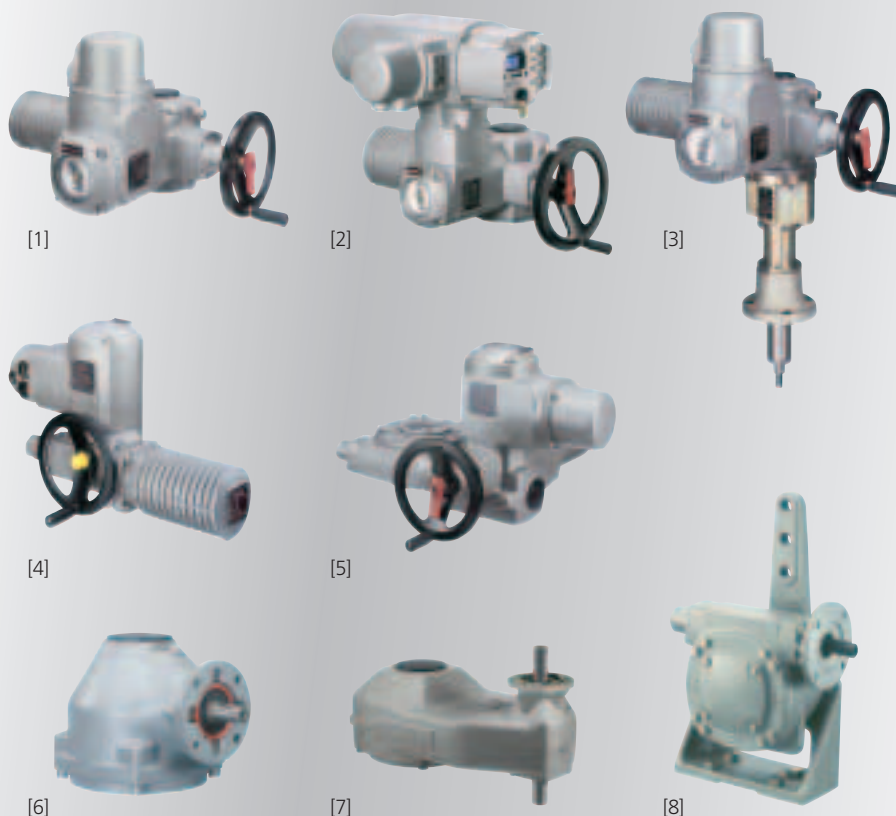
[6] Bevel gearboxes
GK 10.2 – GK 40.2
Torques up to 16,000 Nm

[7] Spur gearboxes
GST 10.1 – GST 40.1
Torques up to 16,000 Nm

[8] Worm gearboxes with base and lever
GF 50.3 – GF 250.3
Torques up to 32,000 Nm

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