

Technical data Part-turn gearboxes for open-close duty

General information

For motor or manual operation of valves (e.g. butterfly valves, ball and plug valves). Specific sizing is required for special applications e.g. dampers or gas diverters. For special applications, please consult AUMA.

Valve			Gearbox					
Max. valve torque	Valve attachment		Gearbox/prim. red gearing	Factor ¹⁾	Turns for 90°	Input shaft	Max. Input torques	Weight ²⁾
to [Nm]	Flange	Max. Shaft diameter [mm]				[mm]	[Nm]	GS + GZ [t]
480,000	F90/AUMA	400	GS 630.3	19.8	13	120	24,242	4.8
			GS 630.3 GZ 630.3 – 4:1	71.9	52.5	80	6,676	5.3
			GS 630.3 GZ 630.3 – 8:1	145.5	106.3	60	3,299	
			GS 630.3 GZ 630.3 – 16:1	261.2	212	50	1,838	5.5
			GS 630.3 GZ 630.3 – 32:1	528.8	429.5	40	908	
			GS 630.3 GZ 630.3 – 64:1	951.2	857.3	40	505	5.6
			GS 630.3 GZ 630.3 – 133:1	1,924.9	1,734.8	30	249	
675,000	F90/AUMA	400	GS 630.3	19.8	13	120	34,160	4.8
			GS 630.3 GZ 630.3 – 4:1	71.9	52.5	100	9,395	5.3
			GS 630.3 GZ 630.3 – 8:1	145.5	106.3	80	4,640	
			GS 630.3 GZ 630.3 – 16:1	261.2	212	60	2,585	5.5
			GS 630.3 GZ 630.3 – 32:1	528.8	429.5	50	1,275	
			GS 630.3 GZ 630.3 – 64:1	951.2	857.3	40	710	5.6
			GS 630.3 GZ 630.3 – 133:1	1,924.9	1,734.8	40	350	

- 1) Conversion factor from output torque to input torque for actuator size definition For new gearboxes, input torques increased by 15 % are required due to lower efficiency.
- 2) Specified weight includes coupling (with pilot bore) and grease filling in the gear housing.

		Possible combinations with multi-turn actuators												Multi-turn actuator	Input mounting flange for mounting multi-turn actuator	Permissible actuator weight
Gearbox/primary reduction gearing	Reduction ratio	Operating time for 50 Hz ¹⁾ in seconds at 90° for multi-turn actuator speed in rpm												Actuator for max. input torque	EN 5210	[kg]
		4	5.6	8	11	16	22	32	45	63	90	125	180			
GS 630.3	52:1	195	139	98	71	49	–	–	–	–	–	–	–	SA 48.1	F48	1,400
GS 630.3 GZ 630.3 – 4:1	210:1	788	563	394	286	197	143	98	70	–	–	–	–	SA 35.1	F35	800
GS 630.3 GZ 630.3 – 8:1	425:1	–	–	797	580	398	290	199	142	101	71	–	–	SA 30.1	F30	400
GS 630.3 GZ 630.3 – 16:1	848:1	–	–	–	–	–	–	398	283	202	141	–	–	SA 25.1	F25	340
GS 630.3 GZ 630.3 – 32:1 ²⁾	1,718:1	–	–	–	–	–	–	–	573	409	286	206 ³⁾	143 ³⁾	SA 16.2	F16	160
GS 630.3 GZ 630.3 – 64:1	3,429:1	–	–	–	–	–	–	–	–	816	572	411	286	SA 16.2	F16	160
GS 630.3 GZ 630.3 – 133:1	6,939:1	–	–	–	–	–	–	–	–	1,652 ⁴⁾	1,157 ⁴⁾	833	578	SA 14.6	F14	100
GS 630.3	52:1	195	139	98	71	49	–	–	–	–	–	–	–	SA 48.1 ³⁾	F48	1,400
GS 630.3 GZ 630.3 – 4:1 ²⁾	210:1	788	563	394	286	197	143	98	–	–	–	–	–	SA 40.1	F40	1,000
GS 630.3 GZ 630.3 – 8:1	425:1	–	–	797	580	398	290	199	142	–	–	–	–	SA 35.1	F35	800
GS 630.3 GZ 630.3 – 16:1	848:1	–	–	–	–	793	578	398	283	202	141	–	–	SA 30.1	F30	400

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document. For further information on the product, refer to www.auma.com.

Technical data Part-turn gearboxes for open-close duty

		Possible combinations with multi-turn actuators												Multi-turn actuator	Input mounting flange for mounting multi-turn actuator	Permissible actuator weight
Gearbox/primary reduction gearing	Reduction ratio	Operating time for 50 Hz ¹⁾ in seconds at 90° for multi-turn actuator speed in rpm												Actuator for max. input torque	EN 5210	[kg]
		4	5.6	8	11	16	22	32	45	63	90	125	180			
GS 630.3 GZ 630.3 – 32:1	1,718:1	–	–	–	–	–	–	805	573	409	286	–	–	SA 25.1	F25	340
GS 630.3 GZ 630.3 – 64:1	3,429:1	–	–	–	–	–	–	–	–	816	572	411	286	SA 16.2	F16	160
GS 630.3 GZ 630.3 – 133:1	6,939:1	–	–	–	–	–	–	–	–	1,652 ⁴⁾	1,157 ⁴⁾	833	578	SA 16.2	F16	160

1) Standard values at 50 Hz; at 60 Hz, the indicated operating time is reduced by 17 %.

2) On request

3) Maximum output torque cannot be reached.

4) Motor for S2 – 30 min.

Features and functions

Worm wheel material	Bronze	
Version	Standard:	Clockwise rotation RR, counterclockwise rotation LL
	Option:	RL or LR
Housing material	Cast iron (GJL-250)	
Self-locking	The gearboxes are self-locking when at standstill under normal service conditions; strong vibration may cancel the self-locking effect. While in motion, safe braking is not guaranteed. If this is required, a separate brake must be used.	
End stops	Positive for both end positions by travelling nut, sensitive adjustment.	
Swing angle	Adjustable 80° – 100°; set in the factory to 92° unless ordered otherwise.	
Mechanical position indicator	Standard:	Pointer cover with sealing for continuous position indication. For gas applications with sealed pointer cover, an air vent valve in the pointer cover or venting keyways in the valve mounting flange must be provided.
	Option:	Protection cover instead of pointer cover for buried service.
Input shaft	Cylindrical with parallel key according to DIN 6885-1 (refer to table on page 1).	

Operation

Motor operation	- Via electric multi-turn actuator - Input mounting flanges for multi-turn actuator (refer to table on pages 1 and 2)
Type of duty	Short-time duty S2 - 15 min or S2 - 30 min (open-close duty).
Manual operation	Via handwheel with GZ primary reduction gearing. Possible handwheel diameters, selection in compliance with the required input torque up to 400 Nm.

Primary reduction gearing

Primary reduction gearing	Type GZ as planetary gearing with various reduction ratios for reducing the input torques (refer to table).
---------------------------	---

Valve attachment

Valve attachment	Standard:	F90/AUMA with spigot, dimension drawing U3.2592 Dimensions not within specifications according to EN ISO 5211
	Option:	F90/AUMA-plane without spigot Dimensions not within specifications according to EN ISO 5211
Splined coupling for connection to the valve shaft	Standard:	With pilot bore 100 mm
	Option:	Finish machining with bore and keyway, bore diameter max. 400 mm.

Technical data Part-turn gearboxes for open-close duty

Service conditions		
Mounting position	Any position	
Ambient temperature	Standard:	−40 °C to +80 °C
	Option:	0 °C to +120 °C
Enclosure protection according to EN 60529	Standard:	IP68-3, dust-tight and water-tight up to max. 3 m head of water
	Option:	IP68-6, dust-tight and water-tight up to max. 6 m head of water
Corrosion protection	Standard:	KN Suitable for installation in industrial units, in water or power plants with a low pollutant concentration.
	Options:	KS Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	KX	Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
Paint	Standard:	Primer coated
	Option:	Two-component iron-mica combination
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)
	Option:	Other colours available on request.

Special features for use in potentially explosive atmospheres in accordance with ATEX 2014/34/EU

Explosion protection in accordance with ATEX 2014/34/EU	Standard:	II 2G Ex h IIC T4 Gb II 2D Ex h IIIC T130°C Db
	Option:	II 2G Ex h IIC T3 Gb II 2D Ex h IIIC T190°C Db I M2 Ex h I Mb
Ambient temperature	Standard:	−40 °C to +40 °C (II 2G Ex h IIC T4 Gb; II 2D Ex h IIIC T130°C Db) −40 °C to +60 °C (II 2G Ex h IIC T4 Gb; II 2D Ex h IIIC T130°C Db) −50 °C to +60 °C (II 2G Ex h IIC T4 Gb; II 2D Ex h IIIC T130°C Db) −60 °C to +60 °C (II 2G Ex h IIC T4 Gb; II 2D Ex h IIIC T130°C Db)
	Option:	−40 °C to +80 °C (II 2G Ex h IIC T3 Gb; II 2D Ex h IIIC T190°C Db) 0 °C to +120 °C (II 2G Ex h IIC T3 Gb; II 2D Ex h IIIC T190°C Db) −20 °C to +40 °C (I M2 Ex h I Mb)
Type of duty	Maximum 3 cycles (OPEN - CLOSE - OPEN) in accordance with AUMA load spectrum (90° part-turn movement) and maximum permissible input speeds, or with mean constant output 480,000 Nm.	
Output speeds	Standard:	50 Hz, refer to table page 1
	Option:	60 Hz with respective output speed of multi-turn actuator

Further information

EU Directives	Machinery Directive: (2006/42/EC)
---------------	-----------------------------------