

# Technical Data sheet for Part-turn Worm Gearboxes

TECHNICAL DATA FOR PART-TURN WORM GEARBOXES (FLANGE MOUNTED) AND PRIMARY REDUCTION GEARS											GS 160 – GS 250/GZ					
Application																
Manual operation and motor operation of valves (e.g butterfly valves, ball valves, louver valves) For special applications, please consult AUMA.																
Worm gearboxes GS 160 – GS 250 with primary reduction gearing GZ 14 – GZ 25																
Valve			Gearboxes													
Max. Permissible valve torque	Valve attachment		Gearbox size	Suitable primary reduction gearing			Factor <sup>1)</sup>	Turns for 90°	Input shaft	Max. input torques	Weight <sup>2)</sup>					
	in Nm up to	Flange acc. to EN ISO 5211		Max. shaft diameter in mm	Type	Reduction ratio (i)						Ø	in Nm	GS+GZ kg		
					GS	GZ	GS+GZ			mm						
14000	F25 <sup>3)</sup> F30	100	GS 160	-	54:1	-	54:1	24.2	13.5	30	579	85				
				GZ 14	54:1	4:1	216:1	82	54	30/(20)	171	106				
					54:1	8:1	432:1	164	108	20	86	106				
28000	F30 <sup>3)</sup> F35	125	GS 200	-	53:1	-	53:1	23.9	13.25	40	1172	150				
				GZ 16	53:1	4:1	212:1	82	53	30	342	180				
					53:1	8:1	424:1	163	106	30/(20)	172	180				
					53:1	16:1	848:1	320	212	20	88	180				
56000	F35 <sup>3)</sup> F40	160	GS 250	-	52:1	-	52:1	23.4	13	50	2394	290				
				GZ 25	52:1	4:1	208:1	80	52	40/(30)	700	325				
					52:1	8:1	416:1	160	104	30	350	325				
					52:1	16:1	832:1	320	208	30/(20)	175	325				

  

Gearbox size	Primary reduction gearing	Possible combinations with multi-turn actuators												Multi -turn Actuator	Flange mounting of actuator		Max. weight <sup>4)</sup>
		Operating times for 50 Hz <sup>5)</sup> in seconds for 90° at actuator speed in rpm													Actuator for Max. input torque	EN ISO 5210	
	Type	4	5.6	8	11	16	22	32	45	63	90	125	180				
GS 160	-	203	145	102	74	51	37	25	18	-	-	-	-	SA60	F14	G½	185
	GZ 14 (4:1)	810	579	405	295	204	148	102	72	51	36	25	18	SA25	F14	G½	178
	GZ 14 (8:1)	-	-	810	589	405	296	204	144	102	72	51	36	SA12	F10	G0	139
GS 200	-	199	142	100	72	50	35	25	18	-	-	-	-	-	F25	-	300
	GZ 16 (4:1)	795	568	398	288	200	144	100	72	50	36	25	18	SA50	F14	G½	280
	GZ 16 (8:1)	-	-	795	578	398	288	200	144	100	72	50	36	SA25	F14	G½	252
	GZ 16 (16:1)	-	-	-	-	795	578	398	288	200	144	100	72	SA12	F10	G0	213
GS 250	-	195	139	98	71	49	35	24	-	-	-	-	-	-	F30	-	480
	GZ 25 (4:1)	780	557	390	284	196	140	98	70	49	35	24	17	SA100	F16	G3	456
	GZ 25 (8:1)	-	-	780	567	392	280	196	140	98	70	48	35	SA50	F14	G½	425
	GZ 25 (16:1)	-	-	-	-	780	567	392	280	196	140	98	70	SA25	F14	G½	397

  

1) Conversion factor from output torque to input torque to determine the actuator size. This can be used to select the actuator for torque other than the max. permissible valve torque  
2) With coupling (with pilot bore), grease filling in the gear housing and without handwheel  
3) Observe maximum torque for valve mounting flanges according to EN ISO 5211  
4) With coupling (with pilot bore) and grease filling in the gear housing, multi-turn actuator AUMA NORM with 3-phase AC motor, standard electrical connection, output drive E type and handwheel  
5) Standard values at 50Hz, at 60 Hz the speeds increase by 20% and the operating times are reduced to 83% of the indicated values

We reserve the right to alter data according to improvements made. Previous documents become invalid with the issue of this document.

# Technical Data sheet for Part-turn Worm Gearboxes

GS 160 – GS 250/GZ	TECHNICAL DATA FOR PART-TURN WORM GEARBOXES (FLANGE MOUNTED) AND PRIMARY REDUCTION GEARS																																
<b>Features and functions</b>																																	
Version	Standard: clockwise rotation LR, counterclockwise rotation RL, option: R or L																																
Self-locking	The gearboxes are self-locking when at stand-still under normal service conditions; strong vibrations may cancel the self-locking effect. While in motion, safe breaking is not guaranteed. If this is required, a separate brake must be used																																
End stops	Positive for both end positions by traveling nut, sensitive adjustment																																
GS - Swing angle	Fixed swing angle up to max. 135°; set in the factory to 90° unless ordered otherwise																																
Mechanical position indicator	Standard: Pointer cover for continuous position indication Option: Protection cover for buried service instead of pointer cover																																
Input shaft	Cylindrical with parallel key according to IS 2048. (refer to table page1)																																
<b>Operation</b>																																	
Motor operation	With electric multi-turn actuator, directly or through primary reduction gearing GZ Flanges for mounting of multi-turn actuator (refer to table page 1)																																
Type of duty	Short-time duty S2-15 min (open-close duty)																																
Manual operation	Via handwheel, directly or through primary reduction gearing GZ Available handwheel diameters, selection according to the max. output torque:																																
	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Type</th> <th colspan="3">GS 160</th> <th colspan="3">GS 200</th> <th colspan="3">GS 250</th> </tr> </thead> <tbody> <tr> <td>Primary red. gearing</td> <td>-</td> <td colspan="2">GZ 14</td> <td>-</td> <td colspan="2">GZ 16</td> <td>-</td> <td colspan="2">GZ 25</td> </tr> <tr> <td>Handwheel Ø mm</td> <td>640/ 800</td> <td>400</td> <td>300</td> <td>-</td> <td>500/ 640</td> <td>400</td> <td>300</td> <td>-</td> <td>800</td> <td>500/ 640</td> <td>400</td> </tr> </tbody> </table>	Type	GS 160			GS 200			GS 250			Primary red. gearing	-	GZ 14		-	GZ 16		-	GZ 25		Handwheel Ø mm	640/ 800	400	300	-	500/ 640	400	300	-	800	500/ 640	400
Type	GS 160			GS 200			GS 250																										
Primary red. gearing	-	GZ 14		-	GZ 16		-	GZ 25																									
Handwheel Ø mm	640/ 800	400	300	-	500/ 640	400	300	-	800	500/ 640	400																						
<b>Primary reduction gearing</b>																																	
Primary reduction gearing	- Spur gear with various reduction ratios for reducing the input torques (refer to tables page 12). - Combination with GK bevel gearbox directly on GS with GZ possible.																																
<b>Valve attachment</b>																																	
Valve attachment	Dimensions according to EN ISO 5211 (refer to table page12) Standard: GS 160 – GS 250: with spigot GS 160 – GS 250: without spigot																																
Splined coupling for connection to the valve shaft	Standard: With pilot bore Worm gearbox can be repositioned 4 x 90° on coupling Including grub screw for fixing to valve shaft Option: Machined with bore and keyway or square bore																																
<b>Service conditions</b>																																	
Mounting position	Any position																																
Enclosure protection according to IS/IEC 60529	Standard: IP 67, Totally enclosed protection against short time immersion in water Option: IP 68, Enclosure can be provided on request																																
Corrosion protection	Standard: Suitable for installation in industrial units, in water or power plants with a low pollution concentration																																
Paint	Standard: Epoxy primer + Epoxy finish paint Option: Other paints on request																																
Colour	Standard: Smoke Grey Code 692 as per IS: 5 Option: Other colours on request																																
Ambient temperature	Standard: -20 °C to +80 °C Option: Others temperature requirements on request.																																
<b>Notes</b>																																	

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