

Multi-turn actuator			Motor									
Type	Output speed [rpm]	Max. torque [Nm]	Motor type	Nominal power <sup>1)</sup> P <sub>N</sub> [kW]	Speed [rpm]	Nominal current <sup>2)</sup> I <sub>N</sub> [A]	Max. current <sup>3)</sup> I <sub>max</sub> [A]	Starting current I <sub>A</sub> [A]	Field current I <sub>F</sub> [A]	Starting resistance R <sub>A</sub> [Ω]	Overcurrent protection device setting [A]	AUMA power class switchgear
												Contactor
SA 07.2	4	30	FN00063-4-0,02	0.02	1,400	2.0	3.5	27	2.4	–	3.5	A2
	5.6					2.0	3.8	27	2.4	–	3.8	A2
	8		FN00063-4-0,04	0.04	1,400	3.3	6.0	27	2.4	–	6.0	A2
	11					3.3	6.5	27	2.4	–	6.5	A2
	16		FN00063-2-0,06	0.06	2,800	5.5	12	80	2.4	–	12	A4
	22					5.5	13	80	2.4	–	13	A4
	32		FN00071-4-0,10	0.10	1,400	7.0	16	67	2.6	–	16	A2
	45					7.0	19	67	2.6	–	16	A2
	63		FN00071-2-0,20	0.20	2,800	12	26	170	3.6	–	25	A4
	90					12	30	170	3.6	–	25	A4
125	FN00071-2-0,30	0.30	2,800	18	38	170	3.6	–	25	A4		
180				18	42	170	3.6	–	25	A4		
SA 07.6	4	60	FN00063-4-0,03	0.03	1,400	2.8	5.0	27	2.4	–	5.0	A2
	5.6					2.8	5.0	27	2.4	–	5.0	A2
	8		FN00063-4-0,07	0.07	1,400	6.0	10	27	2.4	–	10	A2
	11					6.0	11	27	2.4	–	11	A2
	16		FN00063-2-0,12	0.12	2,800	9.0	19	80	2.4	–	18	A4
	22					9.0	22	80	2.4	–	18	A4
	32		FN00080-4-0,20	0.20	1,400	13	28	150	3.4	–	28	A4
	45					13	35	150	3.4	–	29	A4
	63		FN00080-2-0,40	0.40	2,800	25	50	240	3.4	–	47	A5
	90					25	62	240	3.4	–	47	A5
125	FN00080-2-0,50	0.50	2,800	30	80	240	3.4	–	47	A5		
180				30	90	240	3.4	–	47	A5		
SA 10.2	4	120	FN00063-4-0,06	0.06	1,400	4.0	8.0	27	2.4	–	8.0	A2
	5.6					4.0	11	27	2.4	–	11	A2
	8		FN00071-4-0,12	0.12	1,400	8.0	16	67	2.6	–	16	A2
	11					8.0	20	67	2.6	–	16	A2
	16		FN00071-2-0,25	0.25	2,800	15	28	170	3.6	–	25	A4
	22					15	38	170	3.6	–	25	A4
	32		FN00090-4-0,40	0.40	1,400	28	55	210	2.6	–	47	A5
	45					28	70	210	2.6	–	47	A5
	63		FN00090-2-0,70	0.70	2,800	55	92	250	2.6	–	85	A5
	90					55	112	250	2.6	–	85	A5
125	FN00090-2-1,00	1.00	2,800	68	140	250	2.6	–	85	A5		
180				68	145	250	2.6	–	85	A5		
SA 14.2	4	250	FN00071-4-0,13	0.13	1,400	8.2	18	67	2.6	–	17	A2
	5.6					8.2	20	67	2.6	–	17	A2
	8		FN00080-4-0,25	0.25	1,400	16	40	150	3.4	–	29	A4
	11					16	48	150	3.4	–	29	A4
	16		FN00080-2-0,45	0.45	2,800	29	70	240	3.4	–	47	A5
	22					29	77	240	3.4	–	47	A5
	32		FL00100-4-0,75	0.75	1,400	44	107	200	13	–	86	A5
	45					44	124	200	13	–	86	A5
	63		FL00100-2-1,40	1.40	2,800	85	201	400	13	–	170	A6
	90					85	234	400	13	–	170	A6
125	FL00100-2-1,80	1.80	2,800	110	310	400	13	–	170	A6		
180				110	308	400	13	–	170	A6		
SA 14.6	4	500	FN00080-4-0,22	0.22	1,400	16	34	150	3.4	–	29	A4
	5.6					16	39	150	3.4	–	29	A4
	8		FN00090-4-0,45	0.45	1,400	26	72	210	4.6	–	47	A5
	11					26	81	210	4.6	–	47	A5
	16		FN00090-2-0,80	0.80	2,800	60	120	250	4.6	–	85	A5
	22					60	138	250	4.6	–	85	A5
	32		FL00112-4-1,60	1.60	1,400	100	193	270	10	–	170	A5
45	100	226				270	10	–	170	A5		
SA 16.2	4	1,000	FL00100-4-0,40	0.40	1,400	25	68	200	12	–	48	A5
	5.6					25	72	200	12	–	48	A5
	8		FL00100-4-0,80	0.80	1,400	48	128	200	12	–	86	A5
	11					48	140	200	12	–	86	A5
	16		FL00100-2-1,50	1.50	2,800	80	230	400	13	–	170	A6
22	80	264				400	13	–	170	A6		

1) – 3) Refer to notes on page 2.

Notes on table on page 1																			
1) Nominal power $P_N$	Mechanical power output at motor shaft at running torque of multi-turn actuator (corresponds to approx. 35 % of maximum torque).																		
2) Nominal current $I_N$	Current at running torque																		
3) Max. current $I_{max}$	Current at maximum torque																		
Notes on installation and sizing																			
Motor data	Motor data is approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.																		
Motor type	Up to size 90, DC motors are designed as shunt motors, from size 100 as compound motor.																		
Motor protection	<p>DC motors are generally designed without motor protection since the motor heats up within the rotor and not within the field windings.</p> <p><b>Actuators without integral controls (AUMA NORM):</b> Motor protection within the external controls must be implemented via an overcurrent protection device. Setting of the overcurrent protection device is based on the value listed in the table.</p> <p><b>Actuators with AC integral controls:</b> Motor protection is ensured by the overcurrent protection device integrated within actuator controls.</p>																		
Mains voltage	Permissible variation of mains voltage: $\pm 10\%$																		
Cable entry	For notes on the threads of the cable entries as well as other information, refer to "Technical data Multi-turn actuators for open-close duty with DC motors".																		
Switchgear sizing	<p>For motor operation, reversing contactors (mechanically, electrically and electronically locked) can be used.</p> <p><b>Actuators without integral controls (AUMA NORM):</b> Switchgear are supplied by the customer. We recommend specification of switchgear suitable for their rated operating currents in compliance with the assigned AUMA power class.</p> <p><b>Switchgear assignment to AUMA power classes:</b> DC shunt motor, motor type FN:</p> <table border="1"> <thead> <tr> <th>AUMA power class</th> <th>Reversing contactor Rated operating current acc. to EN 60947-4 Utilization category DC-3</th> </tr> </thead> <tbody> <tr> <td>A2</td> <td>30 A</td> </tr> <tr> <td>A4</td> <td>110 A</td> </tr> <tr> <td>A5</td> <td>160 A</td> </tr> </tbody> </table> <p>DC compound motor, motor type FL:</p> <table border="1"> <thead> <tr> <th>AUMA power class</th> <th>Reversing contactor Rated operating current acc. to EN 60947-4 Utilization category DC-5</th> </tr> </thead> <tbody> <tr> <td>A2</td> <td>30 A</td> </tr> <tr> <td>A4</td> <td>110 A</td> </tr> <tr> <td>A5</td> <td>160 A</td> </tr> <tr> <td>A6</td> <td>250 A</td> </tr> </tbody> </table> <p><b>Actuators with AC integral controls:</b> For actuators without starting resistance, the required switchgear in power class A2 are directly integrated into AC actuator controls. For switchgear of power classes A4 to A6 or for actuators with starting resistance, a control box is additionally required.</p>	AUMA power class	Reversing contactor Rated operating current acc. to EN 60947-4 Utilization category DC-3	A2	30 A	A4	110 A	A5	160 A	AUMA power class	Reversing contactor Rated operating current acc. to EN 60947-4 Utilization category DC-5	A2	30 A	A4	110 A	A5	160 A	A6	250 A
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