

SQ 05.2 – SQ 14.2

Electrical data Part-turn actuators for open-close duty with 1-phase AC motors

Short-time duty S2 - 10 min, 110 V – 120 V/50 Hz

Part-turn actuator			Motor										
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Operating capacitor ²⁾ [μF]	Nominal current ³⁾ I _N [A]	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Over-current protection device setting [A]	AUMA power class switchgear	
												Contact	Thyristor
SQ 05.2	4	150	VW00063-2-0,06	0.06	2,800	70	2.6	3.4	12	0.85	3.4	A1	B1
	5.6						2.6	3.2	12	0.85	3.2	A1	B1
	8		VW00063-4-0,04	0.04	1,400	50	2.3	2.7	4.6	0.97	2.7	A1	B1
	11						2.3	2.6	4.6	0.97	2.6	A1	B1
	16		VW00063-4-0,02	0.02	1,400	35	1.8	1.9	4.1	0.84	1.9	A1	B1
	22						1.8	1.8	4.1	0.84	1.8	A1	B1
	32		SW00063-4-0,01	0.01	1,400	35	1.8	1.8	4.1	0.81	1.8	A1	B1
63	1.5	1.5					1.8	0.99	1.5	A1	B1		
SQ 07.2	4	300	VW00063-2-0,12	0.12	2,800	100	3.7	5.4	12	0.98	5.4	A1	B1
	5.6						3.7	5.0	12	0.98	5.0	A1	B1
	8		VW00063-4-0,06	0.06	1,400	70	3.5	4.0	7.0	0.88	4.0	A1	B1
	11						3.5	3.8	7.0	0.88	3.8	A1	B1
	16		VW00063-4-0,03	0.03	1,400	50	2.3	2.6	4.6	0.96	2.6	A1	B1
	22						2.3	2.6	4.6	0.96	2.6	A1	B1
	32		SW00063-4-0,01	0.01	1,400	35	1.8	1.9	4.1	0.81	1.9	A1	B1
63	1.5	1.6					1.8	0.99	1.6	A1	B1		
SQ 10.2	8	450	VW00063-4-0,10	0.10	1,400	80	3.9	4.5	7.4	0.94	4.5	A1	B1
	11						3.9	4.6	7.4	0.94	4.6	A1	B1
	16	SW00063-4-0,06	0.06	1,400	60	3.1	3.5	6.8	0.84	3.5	A1	B1	
	22					3.1	3.4	6.8	0.84	3.4	A1	B1	
	32	SW00063-4-0,04	0.04	1,400	50	2.3	2.7	4.6	0.97	2.7	A1	B1	
	45					2.3	2.6	4.6	0.97	2.6	A1	B1	
63	SW00063-4-0,02	0.02	1,400	35	1.8	1.9	4.1	0.84	1.9	A1	B1		
SQ 12.2	11	900	VW00063-2-0,19	0.19	2,800	110	4.5	6.0	12	0.98	6.0	A1	B1
	16						3.9	4.5	7.4	0.94	4.5	A1	B1
	22	VW00063-4-0,10	0.10	1,400	80	3.9	4.3	7.4	0.94	4.3	A1	B1	
	32					3.1	3.5	6.8	0.84	3.5	A1	B1	
	45	SW00063-4-0,06	0.06	1,400	60	3.1	3.4	6.8	0.84	3.4	A1	B1	
	63					2.3	2.7	4.6	0.97	2.7	A1	B1	
	90	SW00063-4-0,04	0.04	1,400	50	2.3	2.7	4.6	0.97	2.7	A1	B1	
125	1.8					1.9	4.1	0.84	1.9	A1	B1		
SQ 14.2	24	1,800	VW00063-2-0,19	0.19	2,800	110	4.5	6.0	12	0.98	6.0	A1	B1
	36						3.9	4.5	7.4	0.94	4.5	A1	B1
	48	VW00063-4-0,10	0.10	1,400	80	3.9	4.6	7.4	0.94	4.6	A1	B1	
	72					3.1	3.5	6.8	0.84	3.5	A1	B1	
	100	SW00063-4-0,06	0.06	1,400	60	3.1	3.4	6.8	0.84	3.4	A1	B1	

1) – 4) Refer to Notes on Electrical data SQ .2/SQR .2 part-turn actuators with 1-phase AC motors

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

Installation and sizing																			
Motor data	Motor data is approximate. Due to usual manufacturing tolerances, there may be deviations from the values given.																		
Motor protection	<p>To protect against overheating, thermostats or PTC thermistors are embedded in the motor windings.</p> <p>Actuators without integral actuator controls (AUMA NORM): Thermostats or PTC thermistors have to be considered within the external controls (refer to terminal plan).</p> <p>Note: Failure to connect thermostats or PTC thermistors shall void the warranty for the motor.</p> <p>Rating of the thermostats</p> <table border="1"> <thead> <tr> <th colspan="2">AC current</th> <th colspan="2">DC current</th> </tr> </thead> <tbody> <tr> <td colspan="2">250 V, 50 – 60 Hz</td> <td>60 V</td> <td>1.0 A</td> </tr> <tr> <td>cos φ = 1</td> <td>2.5 A</td> <td>42 V</td> <td>1.2 A</td> </tr> <tr> <td>cos φ = 0.6</td> <td>1.6 A</td> <td>24 V</td> <td>1.5 A</td> </tr> </tbody> </table> <p>Actuators with AM or AC integral actuator controls: Thermal motor protection is already integrated.</p>	AC current		DC current		250 V, 50 – 60 Hz		60 V	1.0 A	cos φ = 1	2.5 A	42 V	1.2 A	cos φ = 0.6	1.6 A	24 V	1.5 A		
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Mains voltage, mains frequency	<p>Permissible variation of mains voltage: ±10 %</p> <p>Permissible variation of mains frequency: ±5 %</p>																		
Terminal plan	<table border="1"> <thead> <tr> <th>Part-turn actuators</th> <th>Motor (type)</th> <th>Terminal plan</th> </tr> </thead> <tbody> <tr> <td>SQ 05.2 – SQ 14.2</td> <td>VW.../SW...</td> <td>TPA01R1AA-101-000</td> </tr> <tr> <td>SQR 05.2 – SQR 14.2</td> <td>VW.../SW...</td> <td>TPA01R1AA-001-000</td> </tr> </tbody> </table> <p>For further information refer to "Technical data Part-turn actuators SQ 05.2 – SQ 14.2 / SQR 05.2 – SQR 14.2 with 1-phase AC motors"</p>	Part-turn actuators	Motor (type)	Terminal plan	SQ 05.2 – SQ 14.2	VW.../SW...	TPA01R1AA-101-000	SQR 05.2 – SQR 14.2	VW.../SW...	TPA01R1AA-001-000									
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Switchgear sizing	<p>For motor operation, reversing contactors (mechanically, electrically and electronically locked) or thyristors (electronically locked) can be used.</p> <p>Actuators without integral actuator controls (AUMA NORM): Switchgear are supplied by the customer. We recommend specification of switchgear suitable for their rated operating power/motor power in compliance with the assigned AUMA power class.</p> <p>Switchgear assignment to AUMA power classes:</p> <table border="1"> <thead> <tr> <th>AUMA power class</th> <th>Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3</th> <th colspan="2">Reversing contactor Motor power according to UL/CSA at</th> </tr> </thead> <tbody> <tr> <td></td> <td>400 V AC</td> <td>480 V AC</td> <td>600 V AC</td> </tr> <tr> <td>A1</td> <td>4.0 kW</td> <td>5.0 hp</td> <td>5.0 hp</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>AUMA power class</th> <th>Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a</th> </tr> </thead> <tbody> <tr> <td></td> <td>400 V AC</td> </tr> <tr> <td>B1</td> <td>6 A</td> </tr> </tbody> </table> <p>Actuators with AM or AC integral actuator controls: Required switchgear in power classes A1 or B1 are directly integrated in AM or AC actuator controls.</p>	AUMA power class	Reversing contactor Rated operating power acc. to EN 60947-4-1 Utilization category AC-3	Reversing contactor Motor power according to UL/CSA at			400 V AC	480 V AC	600 V AC	A1	4.0 kW	5.0 hp	5.0 hp	AUMA power class	Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a		400 V AC	B1	6 A
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Notes on Electrical data SQ .2/SQR .2 part-turn actuators with 1-phase AC motors	
1) Nominal power P _N	<p>Mechanical power output at motor shaft at run torque of part-turn actuator (corresponds to approx. 35 % of maximum torque).</p> <p>The consumed electrical power can be calculated using the following formula: P = U x I x cos φ</p>
2) Permanent split/starting capacitor	For VW/SW motors, permanent split capacitors are integrated within the motor.
3) Nominal current I _N	Current at run torque
4) Max. current I _{max}	Current at maximum torque