

SQEx 05.2 – SQEx 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/60Hz

Part-turn actuator			Motor										
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power ¹⁾ P _N [kW]	Speed [rpm]	Perma-nent split capaci-tor ²⁾ [μF]	Nomi-nal cur-rent ³⁾ I _N [A]	Max. current ⁴⁾ I _{max} [A]	Starting current I _A [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
												Contac-tor	Thyristor
SQEx 05.2	3	150	VWX0063-2-0,06	0.06	3,360	70	2.6	4.0	14	0.96	4.0	A1	B1
	4.5						2.6	3.7	14	0.96	3.7	A1	B1
	6		VWX0063-4-0,04	0.04	1,680	50	2.7	3.2	5.4	0.98	3.2	A1	B1
	9						2.7	3.1	5.4	0.98	3.1	A1	B1
	12		VWX0063-4-0,02	0.02	1,680	35	1.7	1.8	4.9	0.84	1.8	A1	B1
	17						1.7	1.8	4.9	0.84	1.8	A1	B1
25	SWX0063-4-0,01	0.01	1,680	35	1.6	1.7	4.9	0.82	1.7	A1	B1		
50					1.8	1.8	2.1	0.99	1.8	A1	B1		
SQEx 07.2	3	300	VWX0063-2-0,12	0.12	3,360	100	4.7	7.0	14	0.91	7.0	A1	B1
	4.5						4.7	6.5	14	0.91	6.5	A1	B1
	6		VWX0063-4-0,06	0.06	1,680	70	3.5	4.4	8.5	0.98	4.4	A1	B1
	9						3.5	4.2	8.5	0.98	4.2	A1	B1
	12		VWX0063-4-0,03	0.03	1,680	50	2.6	3.1	5.4	0.98	3.1	A1	B1
	17						2.6	3.0	5.4	0.98	3.0	A1	B1
25	SWX0063-4-0,01	0.01	1,680	35	1.6	1.9	4.9	0.82	1.9	A1	B1		
50					1.8	1.9	2.1	0.99	1.9	A1	B1		
SQEx 10.2	6	450	VWX0063-4-0,10	0.10	1,680	80	4.3	5.6	8.8	0.98	5.6	A1	B1
	9						4.3	5.7	8.8	0.98	5.7	A1	B1
	12	SWX0063-4-0,06	0.06	1,680	60	2.9	3.9	7.7	0.96	3.9	A1	B1	
	17					2.9	3.5	7.7	0.96	3.5	A1	B1	
	25	SWX0063-4-0,04	0.04	1,680	50	2.7	3.2	5.4	0.98	3.2	A1	B1	
	35					2.7	3.0	5.4	0.98	3.0	A1	B1	
50	SWX0063-4-0,02	0.02	1,680	35	1.7	1.8	4.9	0.84	1.8	A1	B1		
70					1.7	1.8	4.9	0.84	1.8	A1	B1		
SQEx 12.2	9	900	VWX0063-2-0,19	0.19	3,360	110	6.0	7.2	14	0.90	7.2	A1	B1
	12						4.3	5.6	8.8	0.98	5.6	A1	B1
	17	VWX0063-4-0,10	0.10	1,680	80	4.3	5.7	8.8	0.98	5.7	A1	B1	
	25					2.9	3.9	7.7	0.96	3.9	A1	B1	
	35	SWX0063-4-0,06	0.06	1,680	60	2.9	3.5	7.7	0.96	3.5	A1	B1	
	50					2.7	3.2	5.4	0.98	3.2	A1	B1	
70	SWX0063-4-0,04	0.04	1,680	50	2.7	3.2	5.4	0.98	3.2	A1	B1		
108					1.7	1.8	4.9	0.84	1.8	A1	B1		
SQEx 14.2	20	1,800	VWX0063-2-0,19	0.19	3,360	110	6.0	7.2	14	0.90	7.2	A1	B1
	30						4.3	5.6	8.8	0.98	5.6	A1	B1
	40	VWX0063-4-0,10	0.10	1,680	80	4.3	5.7	8.8	0.98	5.7	A1	B1	
	60					2.9	3.9	7.7	0.96	3.9	A1	B1	
	85	SWX0063-4-0,06	0.06	1,680	60	2.9	3.5	7.7	0.96	3.5	A1	B1	

1) – 4) Refer to Notes on Electrical data SQEx .2/SQEx .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.

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 protection	<p>To protect against overheating, thermostiches or PTC thermistors are embedded in the motor windings.</p> <p>Actuators without integral actuator controls (AUMA NORM): Thermostiches or PTC thermistors have to be considered within the external controls (refer to terminal plan). Note: Failure to connect thermostiches or PTC thermistors shall void the warranty for the motor. According to EN 60079-14, a thermal overcurrent protection device (e.g. motor protection switch) must be installed for explosion-proof actuators in addition to the thermostiches. PTC thermistors additionally require a suitable tripping device in the actuator controls.</p> <p>Rating of the thermostiches</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 AMExC or ACExC integral 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 rowspan="2">SQEx 05.2 – SQEx 14.2</td> <td rowspan="2">VWX.../SWX...</td> <td>TPA01R1AA-101-000</td> </tr> <tr> <td>TPA01R2AA-101-000</td> </tr> <tr> <td rowspan="2">SQREx 05.2 – SQREx 14.2</td> <td rowspan="2">VWX.../SWX...</td> <td>TPA01R1AA-001-000</td> </tr> <tr> <td>TPA01R2AA-001-000</td> </tr> </tbody> </table> <p>For further information refer to "Technical data Multi-turn actuators SQREx 05.2 – SQREx 14.2 for modulating duty with 1-phase AC motors".</p>	Part-turn actuators	Motor (type)	Terminal plan	SQEx 05.2 – SQEx 14.2	VWX.../SWX...	TPA01R1AA-101-000	TPA01R2AA-101-000	SQREx 05.2 – SQREx 14.2	VWX.../SWX...	TPA01R1AA-001-000	TPA01R2AA-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. 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 rowspan="2">A1</td> <td>400 V AC</td> <td>480 V AC</td> <td>600 V AC</td> </tr> <tr> <td>4.0 kW</td> <td>5.0 hp</td> <td>5.0 hp</td> </tr> <tr> <th>AUMA power class</th> <th>Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a</th> <td colspan="2"></td> </tr> <tr> <td rowspan="2">B1</td> <td>400 V AC</td> <td colspan="2"></td> </tr> <tr> <td>6 A</td> <td colspan="2"></td> </tr> </tbody> </table> <p>Actuators with AMExC or ACExC integral controls: Required switchgear in power classes A1 or B1 are already integrated in AMExC or ACExC 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		A1	400 V AC	480 V AC	600 V AC	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			B1	400 V AC			6 A		
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Notes on Electrical data SQEx .2/SQREx .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 VWX /SWX motors, operating capacitors are integrated within the motor.
3) Nominal current I _N	Current at run torque
4) Max. current I _{max}	Current at maximum torque