

## 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, 100 V – 105 V/60Hz

Part-turn actuator			Motor										
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power <sup>1)</sup> P <sub>N</sub> [kW]	Speed [rpm]	Perma-nent split capaci-tor <sup>2)</sup> [μF]	Nomi-nal cur-rent <sup>3)</sup> I <sub>N</sub> [A]	Max. current <sup>4)</sup> I <sub>max</sub> [A]	Starting current I <sub>A</sub> [A]	cos φ	Overcurrent protection device setting [A]	AUMA power class switchgear	
												Contac-tor	Thyristor
SQEx 05.2	3	110	VWX0063-2-0,06	0.06	3,360	70	2.5	3.6	12.5	0.94	3.6	A1	B1
	4.5						2.5	3.4	12.5	0.94	3.4	A1	B1
	6		VWX0063-4-0,04	0.04	1,680	50	2.6	3.0	4.7	0.96	3.0	A1	B1
	9						2.6	2.9	4.7	0.96	2.9	A1	B1
	12		VWX0063-4-0,02	0.02	1,680	35	1.4	1.6	4.3	0.94	1.6	A1	B1
	17						1.4	1.6	4.3	0.94	1.6	A1	B1
25	SWX0063-4-0,01	0.01	1,680	840	1.3	1.5	4.3	0.91	1.5	A1	B1		
50					1.6	1.7	1.9	0.99	1.7	A1	B1		
SQEx 07.2	3	220	VWX0063-2-0,12	0.12	3,360	100	4.6	6.3	13.0	0.83	6.3	A1	B1
	4.5						4.6	6.0	13.0	0.83	6.0	A1	B1
	6		VWX0063-4-0,06	0.06	1,680	70	3.5	4.6	7.8	0.98	4.6	A1	B1
	9						3.5	4.4	7.8	0.98	4.4	A1	B1
	12		VWX0063-4-0,03	0.03	1,680	50	2.5	2.9	4.7	0.96	2.9	A1	B1
	17						2.5	2.8	4.7	0.96	2.8	A1	B1
25	SWX0063-4-0,01	0.01	1,680	840	1.3	1.7	4.3	0.91	1.7	A1	B1		
50					1.6	1.7	1.9	0.99	1.7	A1	B1		
SQEx 10.2	6	340	VWX0063-4-0,10	0.10	1,680	80	4.3	5.6	8.0	0.98	5.6	A1	B1
	9						4.3	5.7	8.0	0.98	5.7	A1	B1
	12	SWX0063-4-0,06	0.06	1,680	60	2.7	3.3	6.6	0.98	3.3	A1	B1	
	17					2.7	3.0	6.6	0.98	3.0	A1	B1	
	25	SWX0063-4-0,04	0.04	1,680	50	2.6	3.0	4.7	0.96	3.0	A1	B1	
	35					2.6	2.9	4.7	0.96	2.9	A1	B1	
50	SWX0063-4-0,02	0.02	1,680	35	1.4	1.6	4.3	0.94	1.6	A1	B1		
75					1.4	1.6	4.3	0.94	1.6	A1	B1		
SQEx 12.2	9	670	VWX0063-2-0,19	0.19	3,360	110	5.8	6.5	13.5	0.86	6.5	A1	B1
	12						4.3	5.6	8.0	0.98	5.6	A1	B1
	17	VWX0063-4-0,10	0.10	1,680	80	4.3	5.7	8.0	0.98	5.7	A1	B1	
	25					2.7	3.3	6.6	0.98	3.3	A1	B1	
	35	SWX0063-4-0,06	0.06	1,680	60	2.7	3.0	6.6	0.98	3.0	A1	B1	
	50					2.6	3.0	4.7	0.96	3.0	A1	B1	
75	SWX0063-4-0,04	0.04	1,680	50	2.6	2.9	4.7	0.96	2.9	A1	B1		
108					1.4	1.6	4.3	0.94	1.6	A1	B1		
SQEx 14.2	20	1,350	VWX0063-2-0,19	0.19	3,360	110	5.8	6.5	13.5	0.86	6.5	A1	B1
	30						4.3	5.6	8.0	0.98	5.6	A1	B1
	40	VWX0063-4-0,10	0.10	1,680	80	4.3	5.7	8.0	0.98	5.7	A1	B1	
	60					2.7	3.3	6.6	0.98	3.3	A1	B1	
	85	SWX0063-4-0,06	0.06	1,680	60	2.7	3.0	6.6	0.98	3.0	A1	B1	

#### Notes on table

1) Nominal power P <sub>N</sub>	Mechanical power output at motor shaft at running torque of part-turn actuator (corresponds to approx. 35 % of maximum torque). The consumed electrical power can be calculated using the following formula: $P = U \times I \times \cos \varphi$
2) Permanent split/starting capacitor	For VW/SW motors, permanent split capacitors are integrated within the motor.
3) Nominal current I <sub>N</sub>	Current at running torque
4) Max. current I <sub>max</sub>	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 protection	<p>To protect against overheating, thermostiches or PTC thermistors are embedded in the motor windings.</p> <p><b>Actuators without integral controls (AUMA NORM):</b> Thermostiches or PTC thermistors have to be considered within the external controls (refer to terminal plan). <b>Note: Failure to connect thermostiches or PTC thermistors shall void the warranty for the motor.</b> <b>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 controls.</b></p> <p><b>Rating of the thermostiches</b></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><b>Actuators with AMExC or ACEXC integral controls:</b> 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
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														
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>SQEx 05.2 – SQEx 14.2</td> <td>VWX.../SWX...</td> <td>TPA01R1AA-101-000 TPA01R2AA-101-000</td> </tr> </tbody> </table> <p>For further information refer to "Technical data Part-turn actuators SQEx 05.2 – SQEx 14.2 for open-close 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										
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SQEx 05.2 – SQEx 14.2	VWX.../SWX...	TPA01R1AA-101-000 TPA01R2AA-101-000															
Switchgear sizing	<p>For motor operation, reversing contactors (mechanically, electrically and electronically locked) or thyristors (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 power/motor power in compliance with the assigned AUMA power class. Switchgear assignment to AUMA power classes:</p> <table border="1"> <thead> <tr> <th rowspan="2">AUMA power class</th> <th rowspan="2">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> <tr> <th>480 V AC</th> <th>600 V AC</th> </tr> </thead> <tbody> <tr> <td>A1</td> <td>400 V AC 4.0 kW</td> <td>5.0 hp</td> <td>5.0 hp</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th rowspan="2">AUMA power class</th> <th rowspan="2">Thyristor Rated operating current acc. to EN 60947-4-2 Utilization category AC-53a</th> </tr> <tr> <th>400 V AC</th> </tr> </thead> <tbody> <tr> <td>B1</td> <td>6 A</td> </tr> </tbody> </table> <p><b>Actuators with AMExC or ACEXC integral controls:</b> 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		480 V AC	600 V AC	A1	400 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	400 V AC	B1	6 A	
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													
		480 V AC	600 V AC														
A1	400 V AC 4.0 kW	5.0 hp	5.0 hp														
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