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/50 Hz

Part-turn actuator			Motor									AUMA power class switchgear	
Type	Operating time for 90° in seconds	Max. torque [Nm]	Motor type	Nominal power[1] P_N [kW]	Speed [rpm]	Permanent split capacitor[2] [µF]	Nominal current[3] I_N (A)	Max. current[4] I_{max} [A]	Starting current I_A [A]	cos φ	Overcurrent protection device setting [A]	Contactor	Thyristor
SQEx 05.2	4	150	VWX0063-2-0,06	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		VWX0063-4-0,04	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		VWX0063-4-0,02	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		SWX0063-4-0,01	0.01	1,400	35	1.8	1.8	4.1	0.81	1.8	A1	B1
	63		SWX0063-8-0,01		700	25	1.5	1.5	1.8	0.99	1.5	A1	B1
SQEx 07.2	4	300	VWX0063-2-0,12	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		VWX0063-4-0,06	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		VWX0063-4-0,03	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		SWX0063-4-0,01	0.01	1,400	35	1.8	1.9	4.1	0.81	1.9	A1	B1
	63		SWX0063-8-0,01		700	25	1.5	1.6	1.8	0.99	1.6	A1	B1
SQEx 10.2	8	450	VWX0063-4-0,10	0.10	1,400	80	3.9	4.5	7.4	0.94	4.5	A1	B1
	11	600					3.9	4.6	7.4	0.94	4.6	A1	B1
	16		SWX0063-4-0,06	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		SWX0063-4-0,04	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		SWX0063-4-0,02	0.02	1,400	35	1.8	1.9	4.1	0.84	1.9	A1	B1
SQEx 12.2	11	900	VWX0063-2-0,19	0.19	2,800	110	4.5	6.0	12	0.98	6.0	A1	B1
	16		VWX0063-4-0,10	0.10	1,400	80	3.9	4.5	7.4	0.94	4.5	A1	B1
	22	1,200					3.9	4.3	7.4	0.94	4.3	A1	B1
	32		SWX0063-4-0,06	0.06	1,400	60	3.1	3.5	6.8	0.84	3.5	A1	B1
	45						3.1	3.4	6.8	0.84	3.4	A1	B1
	63		SWX0063-4-0,04	0.04	1,400	50	2.3	2.7	4.6	0.97	2.7	A1	B1
	90						2.3	2.7	4.6	0.97	2.7	A1	B1
	125		SWX0063-4-0,02	0.02	1,400	35	1.8	1.9	4.1	0.84	1.9	A1	B1
SQEx 14.2	24	1,800	VWX0063-2-0,19	0.19	2,800	110	4.5	6.0	12	0.98	6.0	A1	B1
	36		VWX0063-4-0,10	0.10	1,400	80	3.9	4.5	7.4	0.94	4.5	A1	B1
	48	2,400					3.9	4.6	7.4	0.94	4.6	A1	B1
	72		SWX0063-4-0,06	0.06	1,400	60	3.1	3.5	6.8	0.84	3.5	A1	B1
	100						3.1	3.4	6.8	0.84	3.4	A1	B1

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

To protect against overheating, thermoswitches or PTC thermistors are embedded in the motor windings.

Actuators without integral actuator controls (AUMA NORM):

Thermoswitches or PTC thermistors have to be considered within the external controls (refer to terminal plan).

Note: Failure to connect thermoswitches 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 thermoswitches. PTC thermistors additionally require a suitable tripping device in the actuator controls.

Rating of the thermoswitches

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

Actuators with AMExC or ACExC integral controls:

Thermal motor protection is already integrated.

Mains voltage, mains frequency

Permissible variation of mains voltage: ±10 %

Permissible variation of mains frequency: ±5 %

Terminal plan

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

For further information refer to "Technical data Multi-turn actuators SQREx 05.2 – SQREx 14.2 for modulating duty with 1-phase AC motors".

Switchgear sizing

For motor operation, reversing contactors (mechanically, electrically and electronically locked) or thyristors (electronically locked) can be used.

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:

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

Actuators with AMExC or ACExC integral controls:

Required switchgear in power classes A1 or B1 are already integrated in AMExC or ACExC controls.

Notes on Electrical data SQEx .2/SQREx .2 part-turn actuators with 1-phase AC motors

1) Nominal power P_N	Mechanical power output at motor shaft at run 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 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