

Electric actuators TYPE AN03



Description:

Intelligent electric 90° quarter-turn actuator for open/close and modulating duty up to 3000 Nm. For mounting on valves with mounting flange to ISO 5211.

Product features:

- Torque limiter, mechanically adjustable
- Optical position indicator
- Manual operation
- Automatic 1-button commissioning
- Integrated positioner
- Position feedback

Version:

PSQ103AMS, PSQ203AMS, PSQ503AMS, PSQ703AMS, PSQ1003AMS,
PSQ1503AMS, PSQ2003AMS, PS2803AMS, PSQ3003AMS

Temperature:

-20°C - +60°C

Design:

Intelligent quarter-turn actuator for open/close and modulating duty
Class C modulating actuator in accordance with DIN EN ISO 22153
Standard | additional power fail-safe device

Version:

Housing material:

Aluminium alloys

Ambient temperature:

-20°C to +60°C

Flange:

According to ISO 5211

Swivelling angle:

90° +/-5°

Protection class EN60529:

IP67

Duty cycle IEC60034-1.8:

S2 30 min, S4 50% @ 25°C

Motor protection:

Electronic motor current monitoring with safety cut-off

Overvoltage category:

II

Breakaway torque:

Adjustable up to +50% nominal force

Set value and feedback:

Current 0 (4) - 20 mA, voltage 0 (2) - 10 V adjustable

Binary control:

24 V - 230 V for OPEN/CLOSE control (min. pulse duration 1 sec.)

Positioner:

Dead band adjustable from 0,5 - 5%, shut-off minimum at torque switching
Recognizing of the end position(s) and autoscaling set and feedback values

Automatic start-up:

Additional position switches:

Potential-free additional position switches with silver contacts, suitable for currents
from 0,1 A to 10 A at voltages in the range of 24 V to 230 VAC/DC

Internal fault monitoring:

Torque, set value, temperature, power supply, deviation of end positions,
adjustable actions and signalisation

Fault indication ready:

Diagnostic function:

Potential-free opening contact provides a freely definable collective fault signal
Stores number of motor starts, motor and total running time. Rolling data storage
of set value, feedback value, torque, temperature and status

Cable glands:

2 threaded holes ISO M20 x 1.5 (cable glands are not included)

Handwheel:

No need to switch from motorised to manual mode, the handwheel is available at
motor operation at a standstill, but is always ready for operation. 18 turns for 90°

Installation position:

Any, except suspended

Technical information:

Actuator	Torque / Switching torq.		Power supply (V)			
			230V AC 1~	24V AC 1~ / 24V DC	115V AC 1~	360-575V AC 3~ ***
PSQ103AMS11	max. 130 Nm / 65 - 130 Nm	Operating time / 90°	36 - 72 sec (adjustable)			
		Normal current (A)*	0,24	2.3 (AC) / 1.4 (DC)	0,48	0,2
		Max. current (A)*	0,31	3 (AC) / 1.9 (DC)	0,62	0,2
		Power consumption (W)**	41	38 (AC) / 34 (DC)	41	50
PSQ103AMS12	max. 130 Nm / 65 - 130 Nm	Operating time / 90°	9 - 18 sec (adjustable)			
		Normal current (A)*	0,5	4.8 (AC) / 3.0 (DC)	1	0,36
		Max. current (A)*	0,65	6.2 (AC) / 3.9 (DC)	1,3	0,5
		Power consumption (W)**	100	95 (AC) / 72 (DC)	98	95
PSQ203AMS11	max. 250 Nm / 125 - 250 Nm	Operating time / 90°	60 - 120 sec (adjustable)			
		Normal current (A)*	0,24	2.3 (AC) / 1.4 (DC)	0,48	0,17
		Max. current (A)*	0,31	3 (AC) / 1.9 (DC)	0,62	0,2
		Power consumption (W)**	41	38 (AC) / 34 (DC)	41	45
PSQ203AMS12	max. 250 Nm / 125 - 250 Nm	Operating time / 90°	16 - 32 sec (adjustable)			
		Normal current (A)*	0,59	5.6 (AC) / 3.5 (DC)	1,2	0,42
		Max. current (A)*	0,76	7.3 (AC) / 4.6 (DC)	1,5	0,5
		Power consumption (W)**	115	108 (AC) / 84 (DC)	115	110
PSQ503AMS12	max. 500 Nm / 250 - 500 Nm	Operating time / 90°	36 - 72 sec (adjustable)			
		Normal current (A)*	0,64	6.2 (AC) / 3.9 (DC)	1,3	0,45
		Max. current (A)*	0,84	8.0 (AC) / 5.0 (DC)	1,7	0,59
		Power consumption (W)**	126	118 (AC) / 92 (DC)	126	120
PSQ703AMS13	max. 700 Nm / 350 - 700 Nm	Operating time / 90°	70 - 140 sec (adjustable)			
		Normal current (A)*	0,48	4.6 (AC) / 2.9 (DC)	1,0	0,35
		Max. current (A)*	0,62	5.9 (AC) / 3.7 (DC)	1,2	0,45
		Power consumption (W)**	93	88 (AC) / 69 (DC)	93	91
PSQ1003AMS13	max. 1000 Nm / 500 - 1000 Nm	Operating time / 90°	70 - 140 sec (adjustable)			
		Normal current (A)*	0,64	6.2 (AC) / 3.9 (DC)	1,3	0,45
		Max. current (A)*	0,84	8.0 (AC) / 5.0 (DC)	1,7	0,59
		Power consumption (W)**	126	118 (AC) / 92 (DC)	126	120
PSQ1503AMS13	max. 1500 Nm / 750 - 1500 Nm	Operating time / 90°	110 - 220 sec (adjustable)			
		Normal current (A)*	0,7	6.4 (AC) / 4.0 (DC)	1,4	0,40
		Max. current (A)*	0,91	8.32 (AC) / 5.0 (DC)	1,82	0,52
		Power consumption (W)**	120	115 (AC) / 95 (DC)	120	120
PSQ2003AMS12	max. 2000 Nm / 1000 - 2000 Nm	Operating time / 90°	144 - 288 sec (adjustable)			
		Normal current (A)*	0,7	6.8 (AC) / 4.2 (DC)	1,4	0,3
		Max. current (A)*	0,9	8.8 (AC) / 5.5 (DC)	1,8	0,4
		Power consumption (W)**	138	130 (AC) / 101 (DC)	138	132
PSQ2803AMS13	max. 2800 Nm / 1400 - 2800 Nm	Operating time / 90°	280 - 560 sec (adjustable)			
		Normal current (A)*	0,5	4.9 (AC) / 3.0 (DC)	1,0	0,2
		Max. current (A)*	0,7	6.3 (AC) / 3.9 (DC)	1,3	0,3
		Power consumption (W)**	99	93 (AC) / 73 (DC)	99	98
PSQ3003AMS13	max. 3000 Nm / 1500 - 3000 Nm	Operating time / 90°	280 - 560 sec (adjustable)			
		Normal current (A)*	0,5	5.2 (AC) / 3.3 (DC)	1,1	0,23
		Max. current (A)*	0,7	6.8 (AC) / 4.2 (DC)	1,4	0,30
		Power consumption (W)**	106	100 (AC) / 78 (DC)	106	105

* Data may increase depending on accessories

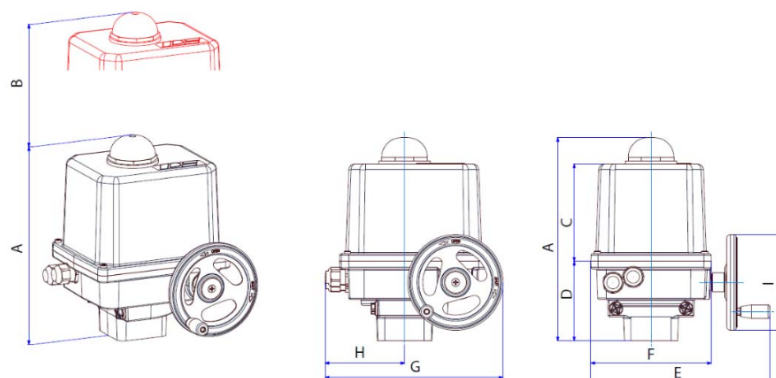
** At switching torque, data may increase depending on accessories

*** Without additional position switches, available on request!

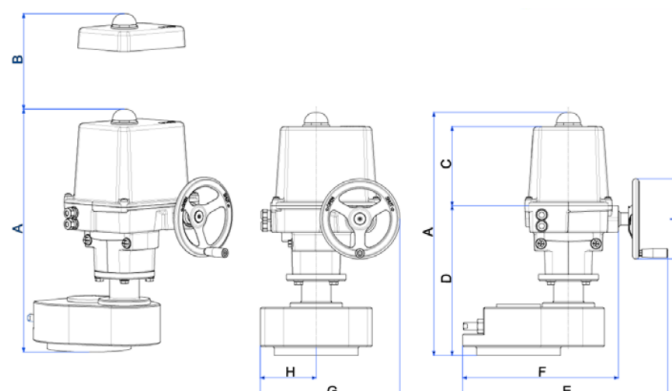
max. input voltage range; values in table valid for 400V 3 phases and 50 Hz

Standard dimensions:

PSQ103AMS - PSQ1503AMS



PSQ2003AMS - PSQ3003AMS

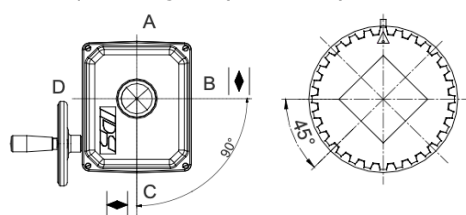


Dimension B: Height required to open/remove the cover.

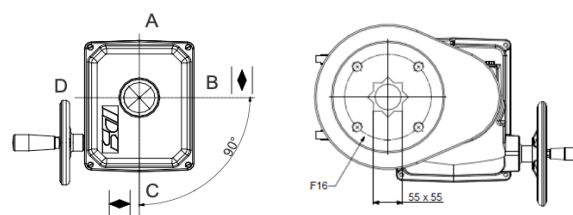
Actuator	ISO flange	Stem intake (see below)	Screw x thread depth	A	B	C	D	E	F	G	H	I	weight
PSQ103AMS	F05 + F07	22 x 35	F05: M6x12mm F07: M8x16mm	268	161	128	104,5	236	158	244	114	125	approx. 7 kg
PSQ203AMS	F07 + F10	22 x 35	F07: M8x16mm F10: M10x20mm	355	228	194	122,5	307	185	292	112	200	approx. 13 kg
PSQ503AMS	F10 or F12	27 x 45,9	F10: M10x18mm F12: M12x18mm	406	240	198	171,5	358	234	350	141	200	approx. 27 kg
PSQ703AMS	F10 or F12	27 x 45,9	F10: M10x18mm F12: M12x18mm	406	240	198	171,5	358	234	350	141	200	approx. 27 kg
PSQ1003AMS	F10 or F12	27 x 45,9	F10: M10x18mm F12: M12x18mm	406	240	198	171,5	287	234	375	141	250	approx. 27 kg
PSQ1503AMS	F14	27 x 45,9	M16x28mm	406	240	198	173	275	234	375	141	250	approx. 27 kg
	F16	27 x 45,9	M20x28mm	420									
PSQ2003AMS	F16	55 x 55	M20x30mm	608	240	198	374,5	506	390	350	140	200	approx. 54 kg
PSQ2803AMS	F16	55 x 55	M20x30mm	608	240	198	374,5	506	390	350	140	200	approx. 54 kg
PSQ3003AMS	F16	55 x 55	M20x30mm	608	240	198	374,5	431		374	140		approx. 54 kg

Stem intake PSQ103AMS - PSQ1503AMS:

Square, diagonal (45° rotated)



Stem intake PSQ2003AMS - PSQ3003AMS:



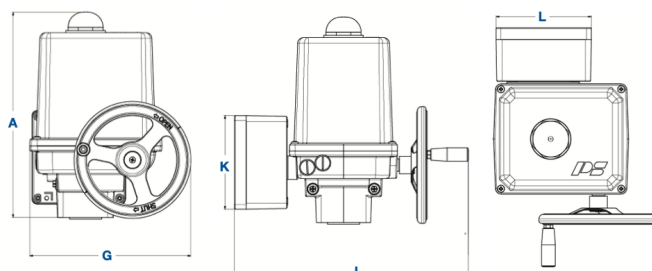
Other intakes (other square sizes, square parallel, double D, keyway, ...) available on request

Dimensions with power failure protection:

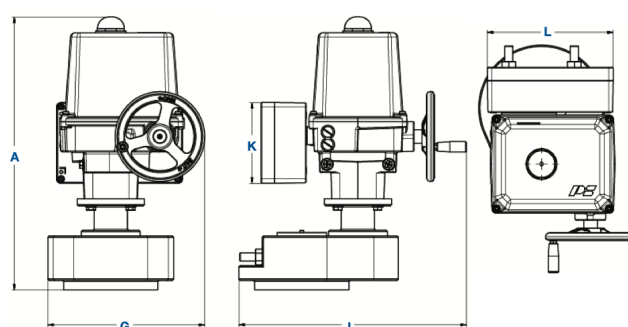
Details about ISO flange, mounting, screws, etc., see standard dimensions

Actuator	A	G	J	K	L	weight
PSQ103AMS	268	241	350	230	200	approx. 7 kg
PSQ203AMS	355	276	401	160	160	approx. 13 kg
PSQ503AMS	405	323	447	160	160	approx. 27 kg
PSQ703AMS	405	323	447	160	160	approx. 27 kg
PSQ1003AMS	405	348	372	160	160	approx. 27 kg
PSQ1503AMS	406	355	382	160	280	approx. 27 kg
	420					
PSQ2003AMS	608	349	506	160	280	approx. 54 kg
PSQ2803AMS	608	349	506	160	280	approx. 54 kg
PSQ3003AMS	608	374	432	160	280	approx. 54 kg

PSQ103AMS - PSQ1503AMS



PSQ2003AMS - PSQ3003AMS



Power Fail-Safe device based on supercapacitors:

The additional power fail-safe device ensures the reliability of the valve in the event of an unplanned power failure. Any desired safety position can be easily programmed using PC parameterisation.

The device is permanently mounted / attached to the actuator and requires no further wiring.

The energy storage system based on supercapacitors is powerful and maintenance-free. As soon as the actuator controls detect a power failure, they automatically switch over to the power failure backup. The actuator moves to the set safety position with the same torque and operating speed as in normal operation. In addition, a potential-free signalling contact is available to provide the control centre or control system with fault information.

The capacity and service life of the fail-safe device is designed for at least 500,000 charging cycles.

Electrical connection plan:

Electrical connection plan:																	1-Phasen Wechselspannung / DC 1-Phase AC / DC				3-Phasen 3-Phase AC																						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	X6						X7						22	23			RJ-45 TTL	Taster Button	L1	L2	L3	PE					
↕	↕	↕	↕	↕	↕	↕↔	↕↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	1	2	3	4	5	6	1	2	3	4	5	6	↕	↕					↕	↕	↕					
+ 0(4) - 20 mA			GND			max. Last / max. Load 100 mA bei / at 24 VDC		L+ / AUF/OPEN		N/-		L+ / ZU/CLOSE		N- (24V AC/DC - 230VAC)		L+ (24V AC/DC - 230VAC)		(Option)						(Option)						L+ (siehe Typenschildsee tag plate)		N- (siehe Typenschildsee tag plate)		PE		(Option)				Schutzleiter / protective conductor			
21 - 40 VDC / 100 mA																																								400VAC			
+ 0(2) - 10 V																																								400VAC			
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Options (on request):

- Increased corrosion protection K2 including heating resistor
- Increased degree of protection IP68 (EN 60529) including corrosion protection K2 and heating resistor
- Increased degree of protection IP68 (EN 60529) including heating resistor and corrosion protection C4 or C5 in accordance with ISO22153:2020
- Heating resistor (12-36VAC/DC or 110-250VAC/DC)
- Silicone-free design
- Other swivel angles, rotating
- Input for emergency operation command
- Electrical connection via plug box
- Local controls with plug box
- Local controls for mounting separately from the drive (incl. 10 m cable)
- Various fieldbus and Ethernet interfaces (e.g. MODBUS RTU, PROFIBIS DP, CANopen, PROFINET, ...)
- SIL2 manufacturer's declaration (only for PSQ103AMS to PSQ1503AMS)
- Low temperature -40°C to +60°C (for PSQ103AMS - PSQ503AMS)
- Other ISO 5211 flange connections and stem intakes

Article number:

Type	Version	Voltage	Actuator
AN03 - electric	00 - Standard	00 - 230V AC 1~	00 - PSQ103AMS11
	01 - Fail-Safe device	01 - 24V AC 1~ / 24V DC 02 - 115V AC 1~ 03 - 360-575V AC 3~	01 - PSQ103AMS12 02 - PSQ203AMS11 03 - PSQ203AMS12 04 - PSQ503AMS12 / F10 05 - PSQ503AMS12 / F12 06 - PSQ703AMS13 / F10 07 - PSQ703AMS13 / F12 08 - PSQ1003AMS13 / F10 09 - PSQ1003AMS13 / F12 10 - PSQ1503AMS13 / F14 11 - PSQ1503AMS13 / F16 12 - PSQ2003AMS12 13 - PSQ2803AMS13 14 - PSQ3003AMS13

Example no. AN03000002:

AN03 | **00** | **00** | **02**

Electric actuator

Version: Standard

Voltage: 230V AC

Drive unit: PSQ203AMS11

Torque: 250Nm

Image similar, subject change without notice.