Technical data Part-turn actuators for open-close and modulating duty

General information

AUMA part-turn actuators PF-Q80 - PF-Q600 are equipped with integral controls.

Туре	Operating time for 90° in seconds ¹⁾ (selection of 9 levels) ²⁾		Torque range ³⁾	Modulat- ing torque ⁴⁾	Valve attachment	Valve shaft		Handwheel		Weight ⁵⁾		
PF-Q	V1	V2	V3	Max. [Nm]	Max. [Nm]	Standard EN ISO 5211	Cylindrical Max. [mm]	Square Max. [mm]	Two-flat Max. [mm]	Ø [mm]	Turns for 90°	approx. [kg]
80	16 – 160	8 - 80	4 - 40	32 - 80	40	F05/F07/F10	20	17	17	100	20.2	8
150	32 – 320	16 – 160	8 - 80	60 - 150	75	F05/F07/F10	20	17	17	100	20.2	8
300	63 - 320	45 – 320	22 – 160	120 – 300	150	F07/F10	38	30	27	160	16.3	11
600	-	75 – 320	45 – 320	240 - 600	300	F07/F10	38	30	27	160	16.3	11

The values for operating times refer to an operation across 90° of travel at a load of 70 % of the maximum torque. Operating times without considering soft 1)

2)

The values for operating times refer to an operation across 90° of traver at a load of 70 % of the maximum torque. Operating times without considering soft start/soft stop. Soft start/soft stop is preselected for the factory settings. Operating time can be selected in 9 levels when placing the order. Settable via Bluetooth in steps of 1 % within the range. The tripping torque is adjustable for directions OPEN and CLOSE within the indicated torque range. The "Torque by-pass" function (can be activated) allows increasing the pre-set tripping torque to 127 % (unseating torque). This increase only applies during actuator start for an adjustable time period. This allows 3) unseating blocked valves.

Maximum permissible torque for modulating duty. The values from the column "Torque range" still apply as tripping torques. Specified weight includes part-turn actuator, unbored coupling and handwheel. 4)

5)

Features and functions						
Type of duty	Open-close duty:	Classes A and B according to ISO 22153, short-time duty S2 - 15 min				
	Modulating duty:	Class C according to ISO 22153, intermittent duty S4 - 50 % with maximum number of 1,200 starts/h				
	For nominal voltage and +40 °C ambient temperature and at load with 35 % of the maximum torque. The type of duty must not be exceeded.					
Motor	Variable speed, brushless motor Soft start/soft stop. The progress characteristics can be configured as requested.					
Insulation class	F (motor winding)					
Motor protection	Via short-circuit protection and current measurement					
Self-locking	At standstill with spring-applied brake					
Swing angle	Standard:	90° ±15° adjustable between min. and max. values (with mechanical end stops)				
	Option:	120° ±15° adjustable between min. and max. values (with mechanical end stops)				
		$45^{\circ} - 360^{\circ}$ adjustable between min. and max. values (without mechanical end stops)				
Limit switching	Via hall sensors					
Torque switching	Via electronic current measurement. Tripping torques infinitely adjustable via Bluetooth. 8 levels can be selected when placing the order.					
Mechanical position indicator	Standard:	Continuous indication, for 90° or 120° Via own markings at indication 45° – 360°				
	Option:	Without mechanical position indicator				
Manual operation PF-Q80 – PF-Q600	Standard:	Manual drive for setting and emergency operation, handwheel does not rotate during electrical operation				
	Option:	Without manual operation, this means handwheel and handwheel shaft are obsolete. The end stops are included except version with swing angle $45^{\circ} - 360^{\circ}$.				
Coupling	Standard:	Coupling unbored				
	Options:	 Coupling unbored extended Finish machining of coupling (standard or extended) Bore according to EN ISO 5211 with 1 keyway according to DIN 6885-1 Square bore according to EN ISO 5211 Two-flat according to EN ISO 5211 				
Valve attachment	Dimensions according to EN ISO 5211					

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PF-Q80 - PF-Q600

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Features and functions			
Power supply	Standard voltages: 1-phase AC current: 100 – 240 V / 50 – 60 Hz The voltage range may be exceeded or undercut by max. 10 % The frequency range may be exceeded or undercut by max. 5 % Option: DC current: 24 V DC ±10 % For current consumption, refer to Electrical data PROFOX Part-turn actuators		
Overvoltage category	Category III according to IEC 60364-4-443 Category II in compliance with IEC 60364-4-443 (according to cDEKRAus for the North American market)		
Power electronics	With integral m	notor controller (current consumption in standby mode < 3 W)	
Control (input signals)	puts:	 Via opto-isolator, with one common Control voltage 24 V DC, current consumption: approx. 15 mA per input Minimum pulse duration for shortest operation pulse: 100 ms All digital inputs must be supplied with the same potential. All inputs can be configured as required Standard assignment: CLOSE, OPEN, STOP Assignment for option with positioner: MODE, CLOSE, OPEN 	
	Analogue in- put (option)	 0/4 - 20 mA or 0 - 10 V No galvanic isolation Used as input signal for position setpoint (in combination with positioner) or as input signal for motor speed 	
Status signals (output signals)		 Freely configurable semi-conductor output contacts, per contact max. 24 V DC, 100 mA (resistive load) Outputs can be configured as required Standard assignment: End position CLOSED (high active), end position OPEN (high active), collective fault signal (low active) 	
	outout	 Position feedback signal 0/4 – 20 mA (load maximum 500 Ω) or 0 – 10 V No galvanic isolation 	
Voltage output (option)	Auxiliary voltag	ge 24 V DC, max. 80 mA for supply of control inputs, without galvanic isolation.	
Functions	Standard:	 Switch-off mode adjustable: Limit or torque seating for end positions OPEN and CLOSED Torque monitoring across the whole travel Torque by-pass Programmable EMERGENCY behaviour Digital input low active, Reaction can be selected: Stop, run to end position CLOSED, run to end position OPEN Speed control Ramps Program operation profiles Program either specific speed for OPEN and CLOSE operations or one digital input 	
	Option:	 Positioner Position setpoint via analogue input E1 = 0/4 - 20 mA or 0 - 10 V Programmable behaviour on loss of signal Automatic adaptation of dead band (adaptive behaviour selectable) Selection between open-close duty and modulating duty via digital MODE input 	

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Bluetooth Communication interface Bluetooth class II chip, with a range of min. 3 m in industrial environments. Required accessories: AUMA Acsistant App (Commissioning and Diagnostic Tool for Mindows-based PC) AUMA Acsistant App (Commissioning and Diagnostic Tool for Mindows-based PC) AUMA Acsistant App (Commissioning and Diagnostic Tool for Mindows-based PC) AUMA Acsistant App (Commissioning and Diagnostic Tool for Android and IOS devices) Electrical connection Cable entry: 3 X M2X1: 5 threads for rable gands. Inside rail with spring clamp terminals for wire connection. Wiring diagram (basic version) TPC P00A1141 4100000, version with positioner With base and lever (option) TPC P00A14181 A100000, version with positioner With base and lever (option) Two ball joints matching the lever, including lock nuts and two welding nuts, suitable for pipe according to dimension sheet Exing Base with four holes for fastening screws Operation and Display Basic at the actuator Status indications: OK, end positions, faults and "Bluetooth connection active" End position Run actuator in directions OPEN and CLOSE. Set end position noce mounted to the valv astituty in directions OPEN and CLOSE. Set end position noce mounted to the valv astituty in directions OPEN and CLOSE. Set end position noce mounted to the valv astituty in directions OPEN and CLOSE. Set end position noce mounted to the valv astituty in directions OPEN and CLOSE. Set end position noce mounted to the valv astituty indications stately in directions opEN and CLOSE. Set end position noce mounted to the valv astituty indications actuator in directions o	Features and functions						
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Service conditions					
Mounting position	Any position				
Installation altitude	≤ 2,000 m abo > 2 000 m abo	ove sea level ove sea level on request			
Ambient temperature	–30 °C to +70 °C				
Humidity	Up to 100 % relative humidity across the entire permissible temperature range				
Enclosure protection in accordance	Standard IP67				
with IEC 60529	Option:	 According to AUMA definition, enclosure protection IP68 meets the following requirements: Depth of water: maximum 8 m head of water Continuous immersion in water: maximal 96 hours Up to 10 operations during immersion Modulating duty is not possible during immersion 			
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)				
Vibration resistance according to IEC 60068-2-6	2 g, from 10 Hz to 200 Hz Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. Not valid in combination with gearboxes.				
Seismic resistance according to IEC 60068-3-3	Test proof for application class 3				
Corrosion protection	Standard:	KS Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.			
	Option:	KX (upon request) Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.			
Coating	Double layer powder coating Two-component iron-mica combination				
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)			
	Option:	Available colours on request			
Driving load	During operation, accelerating loads up to 15 % of the max. torque may occur.				
Lifetime	Open-close duty:	10,000 operating cycles OPEN - CLOSE - OPEN An operating cycle is based on an operation from CLOSED to OPEN and back to CLOSED, at a respective rotary movement of 90°.			
	Modulating duty:	1.8 million modulating steps			
	The lifetime depends on the load and the number of starts. A high starting frequency will rarely improve the modulating accuracy. To reach the longest possible maintenance and fault-free operating time, the number of starts per hour chosen should be as low as permissible for the process.				
Further information					
EU Directives	Machinery Dir	rective 2006/42/EC			

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EU Directives	Machinery Directive 2006/42/EC Low Voltage Directive 2014/35/EU EMC Directive 2014/30/EU RoHS Directive 2011/65/EU
Reference documents	Dimensions PF-Q80 – PF-Q600 Electrical data PF-Q80 – PF-Q600

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