Pneutork™
Actuators ■ Positioners ■ Limit Switch

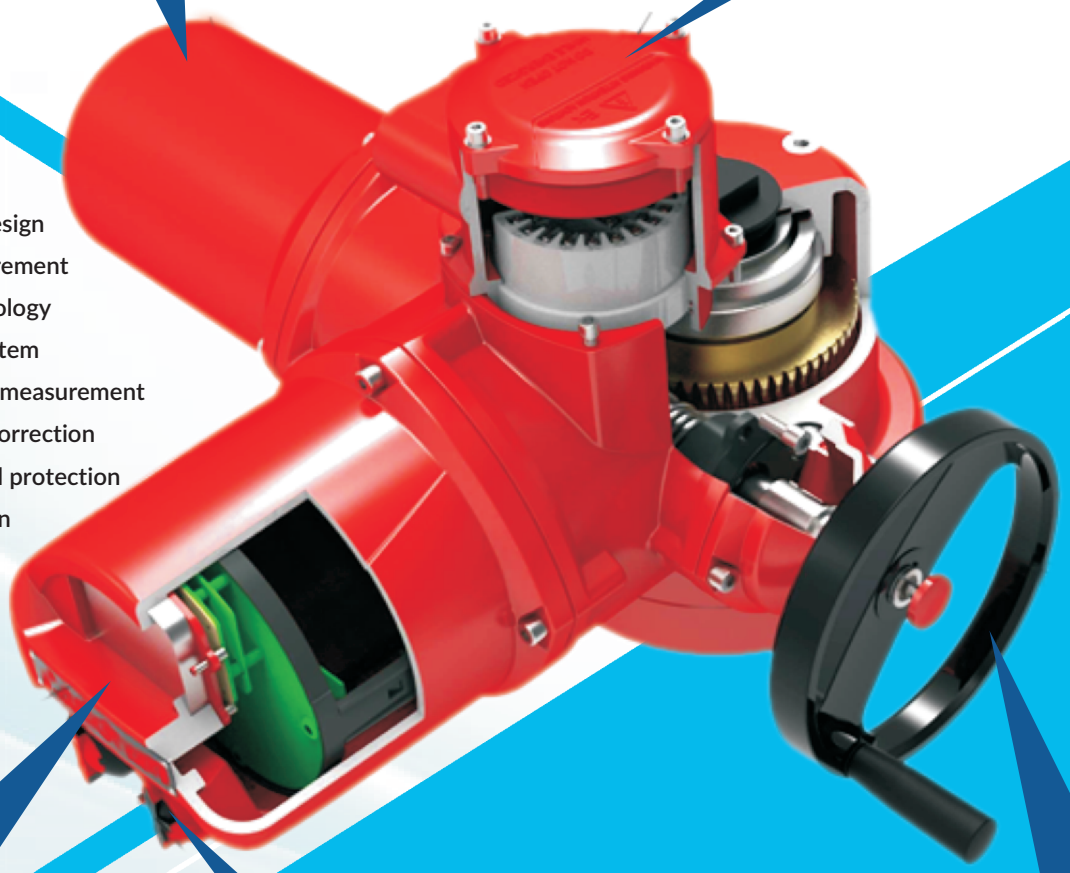
AUM MULTI-TURN ELECTRICAL ACTUATOR

Motor

Specially designed high starting torque mot, can frequent open the valve from fully closed position. In addition to the three-phase AC motors, single phase AC and DC motors are also suitable for AUM series actuators.

Terminal Box

Terminal box which is double sealing separate enclosure protection, assure the sealing integrity of the electronic component if open the box cover to make the on-site wiring.



- Double seal structure
  Latest non-invasive design
- Precise torque measurement
- Infrared setting technology
- Reliable electronic system
- Precise valve position measurement
- Phase sequence self-correction
- Instantaneous reversal protection
- Over torque protection
- Intelligent block protection
- Motor overheat protection

Infrared Setting

The setting and diagnostic of the actuator can be processed via sealing display screen, without opening the housing. The valid distance between the setting tools and display screen is about 1-1.5m.

Local Control

Local control switches and locking type selector switch local/stop/ remote are magnetic switches , controlled by magnetic reed, thus assure the damp proof sealing inside of the actuator.

Manual Operation

- In the commissioning or in an emergency the actuator can be operated by handwheel.
- By operating the red button to disconnected the actuator and motor and start manual operation. Because the self-locking worm gear between the motor and the operating shaft are separated. It's very easy to turn to manual operation even if the actuator is running at maximum torque.
- After starting the motor, automatically breaks away from manual operation, when the motor is operating the hand wheel does not work.

AUM MULTI-TURN ELECTRICAL ACTUATOR

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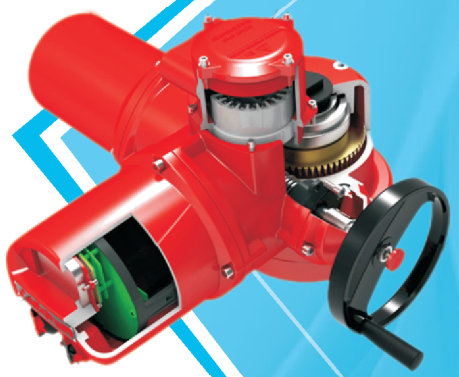
PUM series intelligent multi turn actuator is applied in controlling various valves and other similar products, include butterfly valve, ball valve, gate valve, control valve and etc. It is widely applied in petroleum, chemical, water treatment, shipping, paper making, power plants, heating, building automation and other industries. PUM series multi turn actuator combine the characteristic of intelligent and reliable, and expand richer application based on basic modular product. It can meet various kinds of working conditions. There are different PUM valve gear boxes can be configured which greatly expanded the torque range or turn the multi-turn actuator into quarter turn actuator, linear actuator to meet the different requirements.



PERFORMANE FEATURES

SHELL

The main shell if made of aluminium, lighter weight. The surface coating of epoxy resin, and go through the 12 step of coating protective treatment, with high corrosion resistance, the protection grade is IP67, NEMA4 and 6.

MOTOR

Fully enclosed squirrel-cage motor, small size, large torque, and small inertia force, insulation class F, build in thermal protection switch to avoid damaging the motor.

LUBRICATION

Using oil immersed type, it can provide excellent lubrication and cooling in case of high strength, large temperature different and high torque, the oil is more stable.

Terminal box

Terminal box, which is double sealing and separate enclosure protection, assure the sealing integrity of the electronic component if open the box cover to make the on-site wiring. The motor and the controls are connected by 29 contacts.

Valve control

Traditional potentiometer is eliminated, and adopt magnetic induction absolute encoder to provide position accuracy. It can record the precise valve position without battery if actuator power off.

Infrared setting

The setting and diagnostic of the actuator can be processed via sealing display screen, without opening the housing. The valid distance between the setting tools and display screen is about 1-1.5m.

Local control

Local control switches and locking type selector switch local/stop/remote are magnetic switches, controlled by magnetic reed, thus assure the damp proof sealing inside of the actuator.

Manual structure

The handle is designed to ensures safe, reliable, labor-saving and small. When the power outage, press the red button in the middle of handwheel to make motor and actuator disconnected, and start manual operation. Because of the automatic clutch between the motor and the operating shaft, it is easy to turn to manual operation even if the actuator at the maximum torque . After starting the motor, automatically breaks away from manual operation. When performing motor operation handwheel does not work .(Note: In the situation of no electricity, the electric actuator will remain permanently manual mode).

Space heater

It is used to control temperature and remain the internal electrical components dry, it can avoid the moisture condensation inside the actuator because of the change of the temperature and weather.

Torque switch

Providing overload protection, it can shut down the power automatically when jamming to avoid damaging valves and actuators, torque is adjustable within a certain range.

Self-locking

Precision worm mechanism can efficiently transfer large torque, high efficiency, low noise (max 50 dB), long life, and have self-locking function to prevent the inversion, transmission part is stable and reliable.

Anti-off bolt

The bolts will attach to the case and not fall off when removing the shell, external screws are made of 304 stainless steel.

Installation

The bottom mounting dimensions conform to international standard ISO5210, **the drive sleeve can be removed for processing as needed. It can be installed vertically and horizontally.**

Circuit

The control circuit in line with single-phase or three-phase power supply standard, circuit layout is compact and reasonable , (It can be designed according to customer requirements).

AUM MULTI-TURN ELECTRICAL ACTUATOR

ELECTRICAL ACTUATOR WITH LINEAR THRUST COMPONENT.

- Electrical actuator with Linear Thrust Element / Gear Box Torque : 5KN-217KN Suitable for Globe valve and Gate Valve.

Common thrust specifications for linear units

No.	Max. Thrust (N)	Standard Stroke (mm)	Customized Stroke (mm)
1	6400	10-60	60-100
2	10000	10-60	60-100
3	16000	10-60	60-100
	25000	10-60	60-100
5	35000	10-60	60-100
	45000	10-60	60-100
7	65000	10-60	60-100

- Electric actuator with bevel gear box torque : 200Nm-50000Nm suitable for Globe valve and Gate Valve
- Electric actuator with quarter turn Gear Box Torque : 100Nm – 600000 Nm suitable for ball valve, Butterfly valve and Plug Valve.

Electric actuator with Gear Box.

Common torque specifications for partially rotating electric turbo chargers.

No.	Combination Torque (Nm)	Electric Actuator (Torque)	Default Speed R/Min.	Default Ratio	Open Time (s)
1	2500	Contact the manufacturers	24	122:1	76s
2	3500		24	122:1	76s
3	4500		24	132:1	83s
4	6500		24	150:1	94s
5	8500		24	150:1	94s
6	10000		24	150:1	94s
7	13000		24	160:1	100s
8	16000		24	160:1	100s
9	22000		24	153:1	96s
10	26000		24	215:1	135s
11	35000		24	255:1	160s
12	40000		24	340:1	212s
13	50000		24	360:1	225s

General Type

General Parameter	
Torque Range	60-800Nm Direct output
Rotate Speed	18-144 (rpm)
Environment Temperature	-20OC TO 70OC
Vibration Level	JB/T8219
Noise Level	Less than 70dB within one meter
Electrical Interface	2 X NPT3/4, Standby 1XNPT 3/4 (Contact Pneutork for customization)
IP Grade	IP67, IP 68 Optional (15 meters underwater for 72 hours no leakage)
Connection	JB2920 (Three Jaw Type) or ISO 5210 (Thrust Type, Torque Type)
Technical Parameters	
Motor	Class F, with heat Protector 135°c
Duty	ON/OFF, S1-15min, No more than 600 start per hour
Voltage	3PH : AC380V (10%) : 50HZ (5%) 3PH 4 wires Optional : 220VAC 415V (other voltage customize)
Bus Type	NA
On/off – Input	ON/OFF control, Contact Inside support 5A@250Vac
- Output	Full open / Full Close dry contact Passive contact of Opening Overtorque / Closing Overtorque Optional : half modulating with potentiometer
Control Mode	Pointer Opening Dial
Display Mode	N/A
Manu Control	N/A
Local Control	N/A
Data Recording Intelligent Diagnostics	Moisture proof heater (moisture proof device)
Other Functions	Motor overheat protection Torque Bypass Explosion proof IR remote Control

AUM MULTI-TURN ELECTRICAL ACTUATOR

Pneutork™
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Intelligent Type

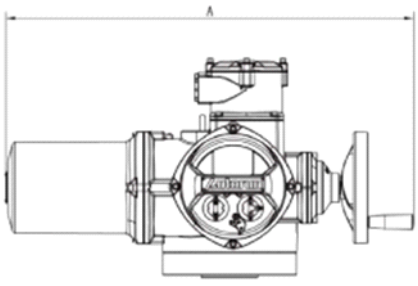
General Parameter	
Torque Range	60-800Nm Direct output
Rotate Speed	18-144 (rpm)
Environment Temperature	-20°C TO 70°C
Vibration Level	JB/T8219
Noise Level	Less than 70dB within one meter
Electrical Interface	2 X NPT3/4, Standby 1XNPT 3/4 (Contact Pneutork for customization)
IP Grade	IP67, IP 68 Optional (15 meters underwater for 72 hours no leakage)
Connection	JB2920 (Three Jaw Type) or ISO 5210 (Thrust Type, Torque Type)

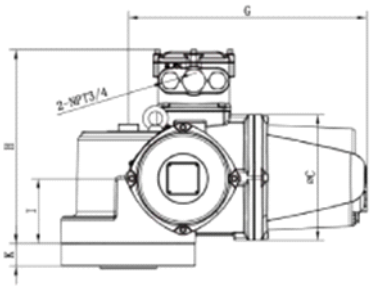
Technical Parameters	
Motor	Class F, with heat Protector 135Oc
Duty	ON/OFF, S1-15min, No more than 600 start per hour Modulating: S4-50% No more than 600 triggers per hour Optional: 1200 times per hour
Voltage	3PH: AC380V (10%) : 50HZ (5%) 3PH 4 wires Optional: 220VAC 415V (other voltage customize)
Bus Type	Optional : Modbus : Profibus

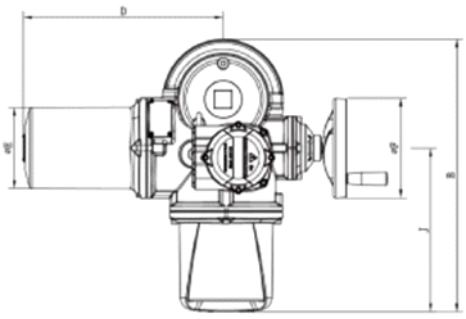
On/off Details	
Input	ON/OFF signal (passive dry contact, active 24V active 220V, Inching / hold switchable
On/off - Output	Six non – holding relay contact output (five state relay + one integrated faulty relay) One way analog output feedback: 4-20mA, Output impedance ≤750 (standard 4-20mA, optional 0-10V, 2-10V, others customizable

Modulating	
Input	ON/OFF signal (passive dry contact, active 24V, active 220V, inching / hold switchabe Analog signal : 4-20mA, input impedance ≤100 (Optional 0-10V, 2~10V, others customizable)
Output	Six non-holding relay contact output (five state relay + one integrated fault relay) One way analog output feedback : 4-20mA, Output impedance ≤750 (Standard 4-20mA, Optional 0-10V, 2-10V, Others customizable)
Dead Zone	0.3~9.9% adjustable within the whole stroke
Reverse Signal	Support
Default Mode Setting	Support

Control Mode	
Display Mode	Fourth – order grey-scale LCD opening indicator Open/Close/Remote/Fault indicator (Figures show opening percentage and torque percentage)
Manu Control	Non-open cover setting (menu setting via remote control or button) Configuration setting (such as valve position, maximum opening, maximum torque etc.)
Local Control	Non-Invasive local control button (valve operating/valve closing/stop) Non-invasive local control button (close control/remote control/forbidden)
Data recording intelligent Diagnosis	Infrared remote control with menu for fault diagnosis analysis
Other Functions	Automatic calibration of phase sequence (three-phase power supply only)
	Torque setting and protection - Motor heat protection – Torque Bypass
	Moisture – proof heater (moisture-proof device) ESD can be set : Fully on, Fully off, and Maintain position
	Launching record Opening Trend Record
	Event Log Operating Time Average Torque
	Explosion proof IR Remote Control







PUM DIMENSION GENERAL TYPE

Dimension and connection (mm)

Model	A	B	C	D	E	F	G	H	I	J	K	
											Z TYPE FLANGE	T TYPE FLANGE
PUM10	591	453	222	297	102	200	220	325	107	160	40	60
PUM15	591	453	222	297	102	200	220	325	107	160	40	60
PUM20	668	491	222	355	131	200	236	335	108	160	40	60
PUM30	668	491	222	355	131	200	236	335	108	160	40	60
PUM40	668	491	222	355	131	200	236	335	108	160	40	60
PUM50	718	538	222	394	160	200	262	341	114	166	40	60
PUM60	718	538	222	394	160	200	262	341	114	166	40	60
PUM80	718	538	222	394	160	200	262	341	114	166	40	60
PUM100	871	438	222	515	230	250	298	345	119	178	50	120
PUM150	871	438	222	515	230	250	298	345	119	178	50	120
PUM200	871	438	222	515	230	250	298	345	119	178	50	120
PUM300	871	438	222	515	230	250	298	345	119	178	50	120

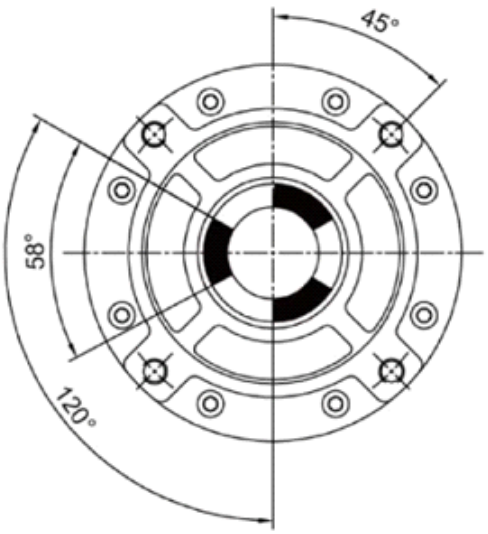
PUM DIMENSION INETELLIGENT TYPE

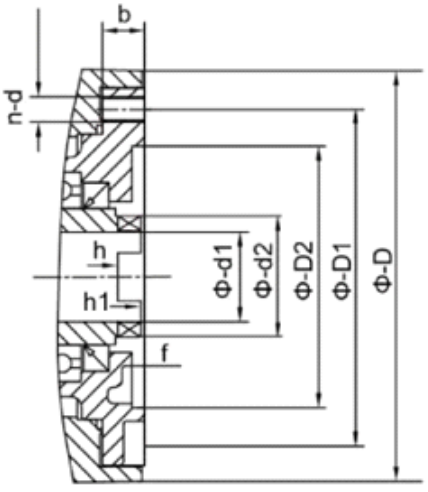
Dimension and connection (mm)

Model	A	B	C	D	E	F	G	H	I	J	K	
											Z TYPE FLANGE	T TYPE FLANGE
PUM10	591	453	222	297	102	200	378	325	107	318	40	60
PUM15	591	453	222	297	102	200	378	325	107	318	40	60
PUM20	668	491	222	355	131	200	394	335	108	318	40	60
PUM30	668	491	222	355	131	200	394	335	108	318	40	60
PUM40	668	491	222	355	131	200	394	335	108	318	40	60
PUM50	718	538	222	394	160	200	420	341	114	324	40	60
PUM60	718	538	222	394	160	200	420	341	114	324	40	60
PUM80	718	538	222	394	160	200	420	341	114	324	40	60
PUM100	871	595	222	515	230	250	455	345	119	335	50	120
PUM150	871	595	222	515	230	250	455	345	119	335	50	120
PUM200	871	595	222	515	230	250	455	345	119	335	50	120
PUM300	871	595	222	515	230	250	455	345	119	335	50	120

CONNECTION DIMENSION

Y TYPE (three jaw)----------JB2920





AUM MULTI-TURN ELECTRICAL ACTUATOR

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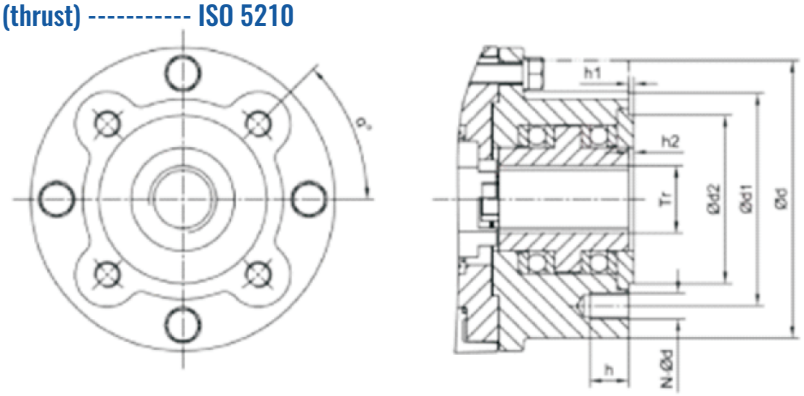
No Model	BASE NO.	ØD	Ød1	ØD2	Ød1	Ød2	f	h	h1	n-d	B
PUM10/15	JB2	145	120	90	30	45	5	8	2	4-M10	15
PUM20/30/40	JB3	185	160	125	43	58	5	10	2	4-M12	15
PUM 50/60/80	JB4	225	195	150	50	72	5	12	2	4-M16	30
PUM 100/150	F25	338	254	215	82	108	5	16	2	8-M16	25
PUM 200/300	F30	338	298	215	82	108	5	16	2	8-M20	30

Z TYPE (keyway) of T type (thrust) ---------- ISO 5210



No Model	Flange	Ød	Ød1	Ød2	N-Ød	Ød2	h	h1	Tr Max	ao
PUM10/15	F10	138	102	-	4-M10	45	15	-	28	45
PUM20/30/40	F14	175	140	100	4-M16	58	24	4	48	45
PUM 50/60/80	F16	205	165	130	4-M20	72	30	5	62	45
PUM 100/150	F25	338	254	-	4-M16	108	24	-	80	45
PUM 200/300	F30	338	298	-	4-M20	108	30	-	80	45

PUM SERIES TORQU PARAMETERS

Due to the inertia effect and wear of the driving shaft sleeves. It is recommended not to run at too high speeds when directly installed on a gate valve. The rated torque is the maximum torque set in two directions. The maximum torque is 1.4 to 2 times that, depending on the actuator's speed and voltage. If you require the use of maximum torque when exceeding 20% of the valve stroke, please contact us.

Three phase 380VAC – adjustable type with switch and trigger frequency of less than 600 times.

50Hz RPM	18	24	36	48	72	96	144
No Model	NM						
PUM10	100	90	80	70	50	40	
PUM15	150	130	120	100	70	60	
PUM20	200	200	180	170	150	100	
PUM30	300	280	250	200	170	120	
PUM40	400	350	300	250	230	150	
PUM50	500	450	400	350	300	200	
PUM60	600	550	500	450	400	260	
PUM80	800	750	650	600	480	350	
PUM100	1000	850	700	650	550	420	
PUM150	1500	1300	1000	900	750	650	
PUM200	2000	1700	1400	1200	1000	850	
PUM300	3000	2000	1800	1600	1450	1350	

Three phase 380VAC – adjustable type with trigger frequency of less 600-1200 times.

50Hz RPM	18	24	36	48	72	96	144
No Model	NM						
PUM10	100	90	80	70	50	40	
PUM15	150	130	120	100	70	60	
PUM20	200	200	180	170	150	100	
PUM30	300	280	250	200	170	120	
PUM40	400	350	300	250	230	150	
PUM50	500	450	400	350	300	200	
PUM60	600	550	500	450	400	260	
PUM80	800	750	650	600	480	350	
PUM100	1000	850	700	650	550	420	
PUM150	1500	1300	1000	900	750	650	
PUM200	2000	1700	1400	1200	1000	850	
PUM300	3000	2000	1800	1600	1450	1350	

Single phase 220VAC – switch type.

50Hz RPM	18	24	36	48	72	96	144
No Model	NM						
PUM10	100	90	80	70	50	40	
PUM40	150	130	120	100	70	60	
PUM60	200	200	180	170	150	100	
PUM100	300	280	250	200	170	120	

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