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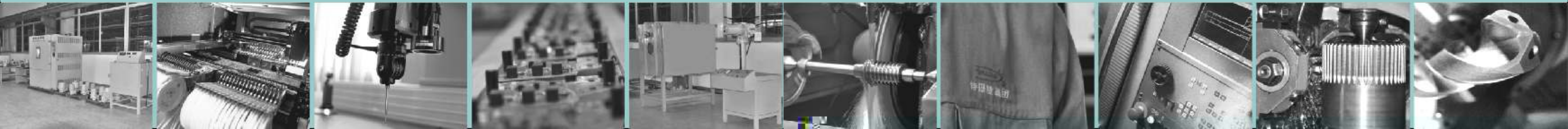


ABOUT TESTING

All actuators can only be dispatched after a full set of test procedure according to the International standards

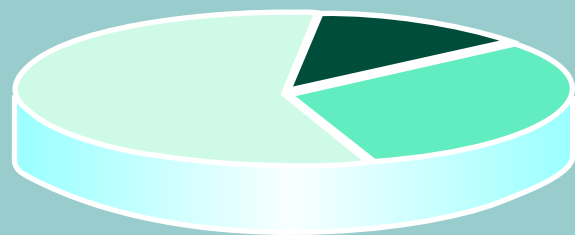


Be strict to every production procedure, make sure every product is finished with high standard, high precision and no defect.



ABOUT QUALITY

Specialist and technician structure diagram



- Junior professional title 48.5%
- Senior professional title 13.5%
- Medium professional title 38%

Being strict , pragmatic and never slackening is our work style, it is rooted in every procedure. Conscientious is our promise, it has blended into every component of actuators.

Tefulong will always work as a high technology, faithful, reliable and good service company.





GB /T 28001



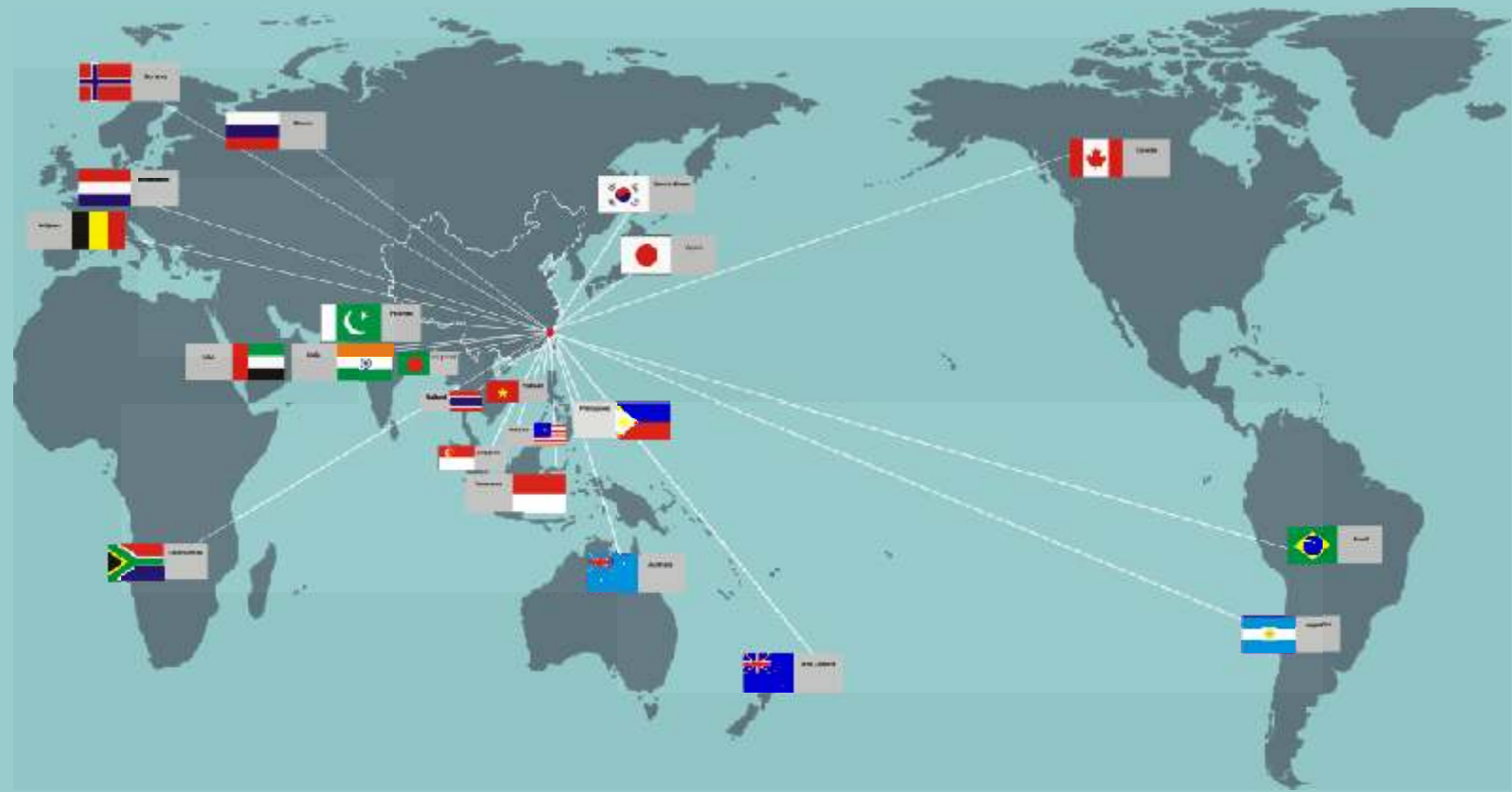
ISO14001



ISO9001



ATEX
Explosion proof



About glory
Quality first, users first



Intelligent Electric Arts

The image features a dynamic, abstract background. It consists of several thick, black, wavy lines that sweep across the frame from the left side towards the right. These lines overlap and create a sense of movement and depth. The background is a gradient of teal, transitioning from a darker shade on the left to a lighter shade on the right. The overall aesthetic is modern and artistic, suggesting a focus on technology and creative design.

Greatork actuators' electronic systems use an advanced 32-bit embedded SOC chip, which not only provides with a strong computing ability, but also integrates multifunctional circuit. It packages all the necessary electronic circuits and parts of electronic components without complex electric wiring, have a high reliability for electronic control.

consequently, the internal electrical control parts can be protected from the site pollution. The design for local operation discards the traditional moving shafts penetrating the control enclosure and takes the hall magnetic sensor technology to control the actuator.

Greatork adopts its patented torque measurement system to ensure the overload protection of actuators and indicate the torque variation by LCD. The precise torque value is decided by the electronic signal converted from the reaction force of motor shaft's thrust transferred by torque sensor, thus solves the problem of calculating the torque according to the changes of power frequency, voltage and temperature.

disk to record valve position accurately without battery when the power is off. For AVA multi-turn actuator, the output angle resolution of the central axis is 0.2° with maximum 1024 circles. For AVAT part-turn actuator, the output angle resolution of the central axis is 0.02°.

Duty cycle

Duty cycle covers S2 to S4.

Noise

Independent tests have shown that the noise did not exceed 61dB (A) within 1M distance.

SERIES

Standard AVA/AVAT range actuator is suitable for the environment where the vibration does not exceed the following standard.

Equipment induction: The cumulated vibration in 10-1000MHz frequency range is less than 1 grms.

Impact: Maximum acceleration is 5g.

Seism: If it is to operate during and after the event, frequency range is 150Hz and acceleration is 2g. If it is only required to maintain structural integrity, it is 5g.

Isolation control should be used or the actuator should be mounted far away from valve and driven by an extension shaft with vibration absorbing couplings in the place where it is excessive equipment induced vibration.

Intelligent Alarm

The alarm will displayed at lower right corner of actuator with English words, like phase lost alarm(PhaseLst), Motor over temperature alarm(TempErr), CPU over temperature(CPUTemp), pressure sensor error(SensorErr) and so on, these words will help users understand the alarm of actuator easily, meanwhile, when there is two or more alarms, these alarms will display alternately, until all of them is solved.

Detailed instruction please refer to P17 of operation manual.

working and displays alarm signals. At the meantime, the indication contacts movement may also be triggered. The other one is the intelligent jam protection, that is when it jams, the actuator will close the valve for a set distance, and then continue to implement the open valve order. If it still jams, the mentioned process will repeat until achieving set times. If the valve overtorques all the same, the actuator will stop working and displays alarm signals. At the meantime, the indication contacts movement may also be triggered. Intelligent jam protection can open and close the sticky valves efficiently.

Motor overheating protection

Greatork actuator motors are designed with F class insulation, which can work in extreme environments. The thermal switches embedded in the motor windings of actuators will disconnect the relevant contacts, stop actuators and display alarm signals once the winding temperature is over presetting (132). Motor overheating protection can be shielded via setting program.

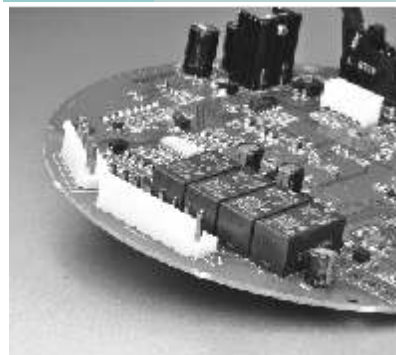
Better record

Greatork actuator has integrated with intelligent function which can record various commands and operation of actuator, through RECORD menu, user can observe actuator production date, production code, recent commands, recent error, max open&close torque, contactor operation times and so on, it will help user understand actuator status easily, detailed information please refer to P41~P42 of operation manual.

AVA /AVAT Intelligent Electric Valve Actuator
Good security , perfect protection

AVA /AVAT
SERIES
Intelligent Electric Actuator

10	Running	25	Motor Running
11	Stall	26	Motor Temp Error
12	Low Battery	27	Sensor Error
13	Hand Wheel	28	CPU Temp Error
14	Running Blink	29	Integrated Error
15	Stop State		



Backup Battery

For an easy manual operation when power is off, a backup battery is installed to activate window displaying of valve status and record valve position. After finishing the manual operation, battery will quit work status for power saving. Backup battery won't lose power when main power supply is connected, so backup battery can last for a long time, normally more than 5 years.

Users can observe battery level through Diagnose menu(refer to P40 of operation manual), meanwhile, Greatork actuator has intelligent battery management system, when battery level is lower than 15%, actuator will alarm, when lower than 10%, battery alarm icon will flash. Battery alarm will not influence actuator operation.



Profibus and Foundation.

Remote indication of valve position

Greatork actuator's current transmitter can convert the present valve position into 4-20mA current output signal. The smallest corresponding signals can be chosen for full open or full close. At rated voltage, the maximum external impedance is 50 Ω and the linearity of the whole stroke is less than 1%.

4-20mA Signal Feedback (Option)

Greatork standard actuator has no 4-20mA signal feedback, it is only available when signal feedback module is installed.

Modulating Control (Option)

Greatork standard actuator has no 4-20mA signal input/output modulating function, it is only available when modulating module is installed.

AVA /AVAT series
Intelligent electric valve actuator
Unparalleled advantages

AVA /AVAT
SERIES
Intelligent Electric Actuator

can make sure of the integrity of the electrical control part even when the terminal compartment cover is removed for site wiring.

Thrust Base

Models below AVA06 are fitted with lubricated, removable type 'A' thrust base. Actuators can be removed without changing valve position. AVA07 and above models' thrust bases are integrated with enclosure. Simple and removable drive bushing can be machined to fit valve stem.



Local Control

Local control switch (Local/Stop/Remote) and pushbuttons are magnetic switches without penetrating shafts and control the actuator by internal magnetic reed. It can meet the requirements of tight seal and damp-proof.

Note: The switch can be locked at Local/Stop/Remote position by padlock to prohibit unnecessary local control.



GREATORK

AVA/AVAT series Intelligent Electric valve actuator Internal structure

AVA /AVAT SERIES

Intelligent Electric Actuator

AVA06	F16	18	650	4	7.20	35.00	1.35	0.80	79	75
		24	650	4	7.60	35.00	1.54	0.80	79	75
		36	540	4	7.74	35.00	1.36	0.80	79	75
		48	450	4	13.50	43.00	2.02	0.88	73	75
		72	450	2	12.50	43.00	1.67	0.88	73	75
		96	365	2	13.20	43.00	2.44	0.88	73	75
		144	270	2	13.00	43.00	2.43	0.88	73	75
		AVA07	F25	18	1100	4	11.00	52.00	1.77	0.86
24	1100			4	12.00	52.00	2.17	0.86	81	200
36	780			4	12.30	52.00	2.73	0.86	81	200
48	680			4	15.80	88.00	3.00	0.85	82	200
72	550			2	16.60	88.00	3.65	0.85	82	200
96	550			2	17.80	88.00	3.83	0.85	82	200
AVA08	F30	18	1500	4	10.50	67.00	2.17	0.87	88	230
		24	1500	4	12.60	67.00	2.40	0.87	88	230
		36	1300	4	13.80	67.00	3.13	0.87	88	230
		48	1000	4	19.00	118.00	4.08	0.89	86	230
		72	800	2	19.50	118.00	4.42	0.89	86	230
		96	745	2	21.00	118.00	4.58	0.89	86	230
AVA09	F30	18	2000	4	18.50	93.00	3.74	0.86	83	230
		24	2000	4	20.00	93.00	4.61	0.86	83	230
		36	1700	4	22.00	93.00	5.00	0.86	83	230
		48	1350	4	21.00	120.00	3.98	0.85	81	230
		72	1100	2	23.00	120.00	4.84	0.85	81	230
		96	1000	2	25.00	120.00	5.10	0.85	81	230
AVA09.1	F30	24	2500	4	25.00	120.00	5.46	0.93	84	230
		36	2500	4	26.00	120.00	5.71	0.93	84	230
AVA10	F30	24	3000	4	29.00	105.00	5.32	0.88	83	230
AVA10G	F30	18	3500	4	30.00	105.00	5.68	0.86	80	230
		24	3500	4	32.00	105.00	5.80	0.86	80	230
		36	2000	4	29.00	105.00	5.43	0.86	80	230
		48	1600	4	31.00	130.00	5.83	0.90	82	230
		72	1400	2	32.00	130.00	5.92	0.90	82	230
		96	1200	2	33.00	130.00	6.10	0.90	82	230

Note:1.Wiring and airbreak switch selection should refer to current(A) data of actuators.
2.The torque value above apply to those voltage higher than 380V.

AVA06	F16	21	650	4	7.50	29.00	1.44	0.84	79	75
		29	650	4	7.80	29.00	1.63	0.84	79	75
		43	540	4	8.00	29.00	1.44	0.84	79	75
		57	450	4	14.60	41.00	2.05	0.80	70	75
		86	350	2	12.80	41.00	1.67	0.80	70	75
		115	365	2	13.50	41.00	2.41	0.80	70	75
		173	270	2	14.50	41.00	2.50	0.80	70	75
		AVA07	F25	21	1100	4	11.50	44.00	1.80	0.91
29	1100			4	12.60	44.00	2.21	0.91	82	200
43	780			4	13.00	44.00	2.79	0.91	82	200
57	680			4	16.50	76.00	3.28	0.89	80	200
86	550			2	17.30	76.00	3.87	0.89	80	200
115	550			2	18.20	76.00	4.00	0.89	80	200
AVA08	F30	21	1500	4	11.50	90.00	2.24	0.88	84	230
		29	1500	4	13.80	90.00	2.72	0.88	84	230
		43	1300	4	15.00	90.00	3.36	0.88	84	230
		57	1000	4	20.00	93.00	4.16	0.90	85	230
		86	800	2	21.00	93.00	4.55	0.90	85	230
		115	745	2	22.00	93.00	4.60	0.90	85	230
AVA09	F30	21	2000	4	19.50	97.00	4.18	0.87	84	230
		29	2000	4	21.00	97.00	4.70	0.87	84	230
		43	1700	4	23.00	97.00	5.50	0.87	84	230
		57	1350	4	22.00	95.00	4.10	0.86	83	230
		86	1100	2	24.00	95.00	4.93	0.86	83	230
		115	800	2	26.00	95.00	5.37	0.86	83	230
AVA09.1	F30	29	2500	4	26.00	95.00	5.29	0.85	81	230
		43	2500	4	26.50	95.00	5.38	0.85	81	230
AVA10	F30	29	3000	4	33.00	102.00	5.51	0.84	82	230
AVA10G	F30	21	3500	4	34.00	102.00	5.82	0.84	81	230
		29	3500	4	36.00	102.00	6.32	0.84	81	230
		43	2000	4	32.00	102.00	5.76	0.84	81	230
		57	1600	4	33.00	124.00	5.96	0.86	83	230
		86	1400	2	34.00	124.00	6.06	0.86	83	230
		115	1200	2	35.00	124.00	6.52	0.86	83	230

Note:1.Wiring and airbreak switch selection should refer to current(A) data of actuators.
2.The torque value above apply to those voltage higher than 380V.

AVAM Series Performance Data (220V 1Phase 60Hz Modulating)



Model	Flange (ISO 5210)	RPM (60Hz)	Torque (Nm)	Motor Poles	Rated Current (A)	Starting Current (A)	Rated Power (KW)	Power Factor	Efficiency (%)	Weight (KG)
AVAM03	F10	21	40	4	1.90	3.90	0.15	0.98	63	32
		29	40	4	1.90	3.90	0.15	0.98	63	32
AVAM04	F14	21	100	4	7.30	13.00	0.47	0.98	73	52
		29	85	4	7.30	13.00	0.47	0.98	73	52
		43	70	4	7.30	13.00	0.48	0.98	73	52
		57	60	4	7.30	13.00	0.48	0.98	73	52
		86	50	2	10.00	22.00	0.78	0.96	78	52
AVAM05	F14	21	120	4	7.60	14.00	0.57	0.97	75	52
		29	120	4	7.60	14.00	0.57	0.97	75	52
		43	90	4	7.60	14.00	0.69	0.97	75	52
		57	80	4	7.60	14.00	0.69	0.97	75	52
		86	60	2	11.00	24.00	0.90	0.96	75	52
AVAM06	F16	21	240	4	13.00	25.00	1.10	0.98	78	75
		29	210	4	13.00	25.00	1.10	0.98	78	75
		43	180	4	13.00	25.00	0.99	0.98	78	75
		57	160	4	18.00	39.00	1.23	0.95	76	75
		86	140	2	18.00	39.00	1.23	0.95	76	75

Note:

1. For 1 phase modulating actuator, client should operate the actuator to oppsite direction for 1-2 seconds first, then move to right direction. The length of oppsite operation time should according the load of actuator, generally 2 seconds is enough.
2. Wiring and airbreak switch selection should refer to current(A) data of actuators.

Speed(rpm)	(mm/sec)	Thrust(KN)	Thrust(KN)	(mm/sec)	Thrust(KN)	Thrust(KN)
18	2.5	45.5	60.7	5.4	31.3	41.7
24	3.4	45.5	60.7	7.3	31.3	41.7
36	5.0	38.4	48.5	10.8	26.4	33.3
48	6.8	30.3	40.4	14.4	20.85	27.8
72	10.1	30.3	40.4	21.6	20.85	27.8

Drive Bush

AVA&AVAM Series Actuator Mechanical Interface Size

Model		AVA01 AVA02 AVA03	AVA04 AVA05	AVA06	AVA07	AVA08	AVA09	AVA09.1	AVA10	AVA10G
Flange	ISO5210	F10	F14	F16	F25	F30	F30	F30	F30	F30
	MSS SP-102	FA10	FA14	FA16	FA25	FA30	FA30	FA30	FA30	FA30
Stem acceptance diameter										
Type'A'(max) rising	mm	32	38	54	64	70	70	70	70	70
Non-rising	mm	26	32	45	51	57	57	57	57	57
Type'Z'(max) rising	mm	-	51	67	73	83	83	83	83	83
Non-rising	mm	-	38	51	57	73	73	73	73	73
Type'Z3'	mm	32	51	67	-	-	-	-	-	-
Type'B1'(fixed bore)	mm	42	60	80	100	100	120	120	120	120
Type'B3'(fixed bore)	mm	20+	30+	40+	50	50	50	50	50	50
Type'B4'(maximum)	mm	20+	30+	44+	50	60	60	60	60	60

Note:Wiring and airbreak switch selection should refer to current(A) data of actuators.

AVATM Series Performance Data (380V 3Phase 50Hz Modulating)



Model	Flange (ISO 5211)	Stem Dia (mm)		90°time (s)	Torque (Nm)	Motor Poles	Rated Current (A)	Starting Current (A)	Rated Power (KW)	Power Factor	Efficiency (%)	Weight (KG)
		Key	Square									
AVATM01	F07	28	19	18-20	125	2	0.42	1.10	0.05	0.80	57	24
AVATM02	F07	28	19	18-20	215	2	0.45	1.10	0.05	0.80	57	24
	F10	42	27									
AVATM03	F10	42	27	26-30	300	2	0.50	1.20	0.06	0.80	57	35
AVATM04	F12	50	32	27-30	700	2	0.53	1.20	0.06	0.79	59	35
	F14	60	36									
AVATM05	F12	50	32	46-50	1100	2	0.57	1.20	0.07	0.84	55	35
	F14	60	36									
AVATM06	F14	60	36	58-60	1500	2	0.60	1.20	0.07	0.84	55	35

Note:Wiring and airbreak switch selection should refer to current(A) data of actuators.

AVATM Series Performance Data (380V 3Phase 60Hz Modulating)



Model	Flange (ISO 5211)	Stem Dia (mm)		90°time (s)	Torque (Nm)	Motor Poles	Rated Current (A)	Starting Current (A)	Rated Power (KW)	Power Factor	Efficiency (%)	Weight (KG)
		Key	Square									
AVATM01	F07	28	19	16-18	125	2	0.45	1.10	0.07	0.75	70	24
AVATM02	F07	28	19	16-18	215	2	0.48	1.10	0.07	0.75	70	24
	F10	42	27									
AVATM03	F10	42	27	19-22	300	2	0.53	1.20	0.08	0.73	69	35
AVATM04	F12	50	32	23-26	700	2	0.58	1.20	0.08	0.73	69	35
	F14	60	36									
AVATM05	F12	50	32	42-45	1100	2	0.61	1.20	0.08	0.72	67	35
	F14	60	36									
AVATM06	F14	60	36	45-50	1500	2	0.66	1.20	0.08	0.72	67	35

Note:Wiring and airbreak switch selection should refer to current(A) data of actuators.

Note:Wiring and airbreak switch selection should refer to current(A) data of actuators.

AVATM Series Performance Data (220V 1Phase 50Hz Modulating)



Model	Flange (ISO 5211)	Stem Dia (mm)		90°time (s)	Torque (Nm)	Motor Poles	Rated Current (A)	Starting Current (A)	Rated Power (KW)	Power Factor	Efficiency (%)	Weight (KG)
		Key	Square									
AVATM01	F07	28	19	14-16	100	2	1.50	4.80	0.10	0.98	80	24
AVATM02	F07	28	19	18-20	150	2	1.50	4.80	0.10	0.98	80	24
	F10	42	27									
AVATM03	F10	42	27	18-20	200	2	1.70	4.80	0.11	0.96	78	35
AVATM04	F12	50	32	25-30	600	2	1.70	4.80	0.11	0.96	78	35
	F14	60	36									
AVATM05	F12	50	32	27-30	1000	2	1.60	4.80	0.11	0.97	79	35
	F14	60	36									
AVATM06	F14	60	36	58-62	1300	2	1.60	4.80	0.11	0.97	79	35

Note:Wiring and airbreak switch selection should refer to current(A) data of actuators.

AVATM Series Performance Data (220V 1Phase 60Hz Modulating)



Model	Flange (ISO 5211)	Stem Dia (mm)		90°time (s)	Torque (Nm)	Motor Poles	Rated Current (A)	Starting Current (A)	Rated Power (KW)	Power Factor	Efficiency (%)	Weight (KG)
		Key	Square									
AVATM01	F07	28	19	13-15	100	2	1.65	4.50	0.10	0.96	77	24
AVATM02	F07	28	19	16-18	150	2	1.65	4.50	0.10	0.96	77	24
	F10	42	27									
AVATM03	F10	42	27	16-18	200	2	1.85	4.50	0.12	0.95	78	35
AVATM04	F12	50	32	19-22	600	2	1.85	4.50	0.12	0.95	78	35
	F14	60	36									
AVATM05	F12	50	32	23-26	1000	2	1.76	4.50	0.12	0.95	79	35
	F14	60	36									
AVATM06	F14	60	36	45-50	1300	2	1.76	4.50	0.12	0.95	79	35

Note:Wiring and airbreak switch selection should refer to current(A) data of actuators.