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A-ONE

Automatic Valves
Electric On/Off & Control Valves
Pneumatic Actuator & Valves

FLUID CONTROL SOLUTION



A-ONE AUTO VALVE

Electric On/Off & Control Valves



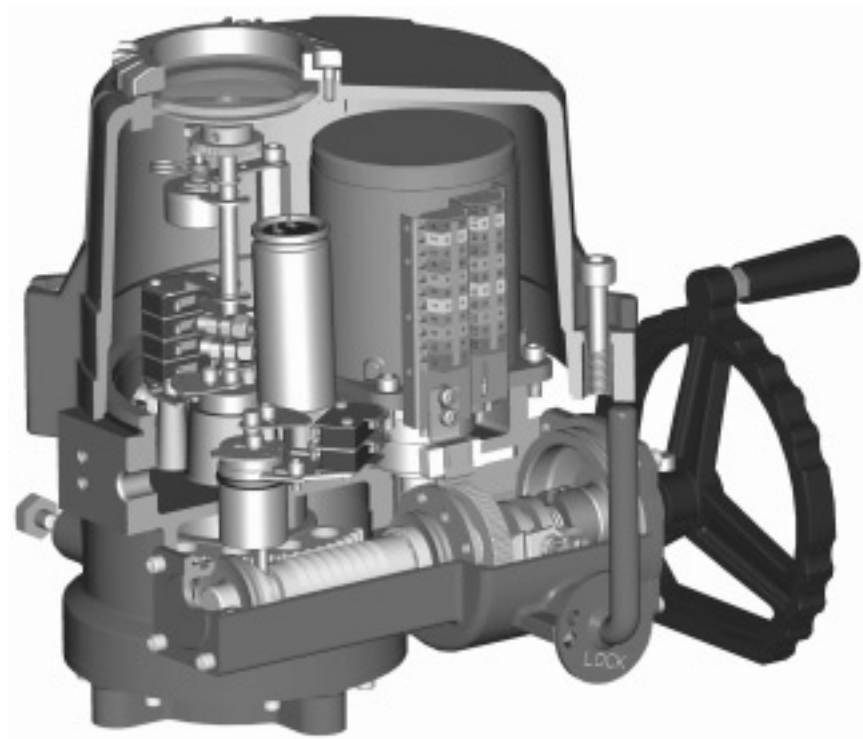
Electric On/Off & Control Valves

- **Housing**

Hard anodized Aluminum casting and external epoxy powder coated against severe industrial environment.

- **Sealing**

Sealed by O-ring in all interfaces, and double o-ring sealing for IP68(option)



- **Lubrication**

EP type grease, maintenance free service for a long period time

- **Hand wheel**

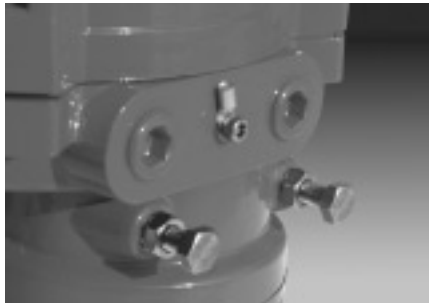
Difference size depending on actuator torque, and knob on hand wheel for easy operation

- **Gear**

Precisely machined double worm gear c/w minimum back-lash, low noise, high output torque

- **Self locking**

Provided by double worm gearing to keep position of valve unchanged against reverse torque from valve

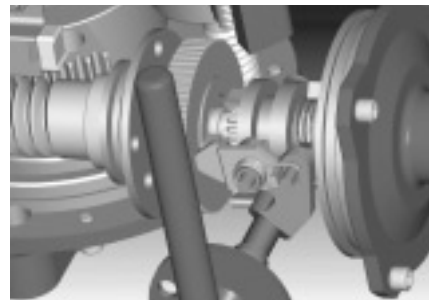


External mechanical stopper

- To prevent over run of travel angle when limit switch fails

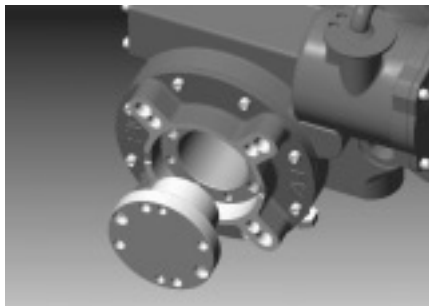
Cable entries

- Standard 2 X PF 3/4" (Max 1") cable entry for various cable gland



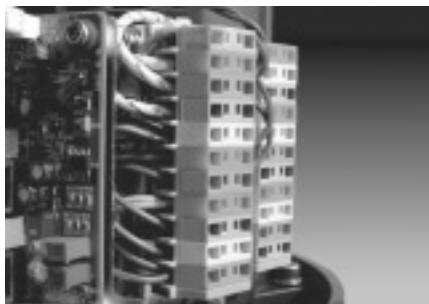
Manual override

- Auto/Manual switch able lever hand wheel engagement for emergency manual operating
- Drive force automatically resorted by motor start unless lever padlock to prevent it



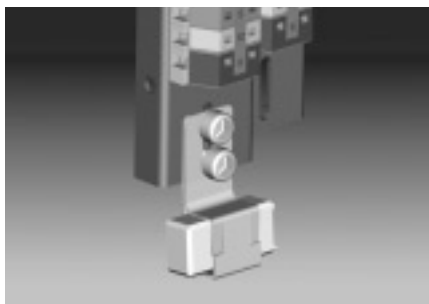
Removable drive bushing and ISO5211 mounting base

- Easy machining for step adaption
- Standard ISO5211 mounting base (F03 ~ F16) for easy mounting on valve
- Large size drive bushing accept large valve stem



Terminal block

- Specially designed induction motor generate high starting torque and high efficiency equip with thermal protector to prevent damage from over heating



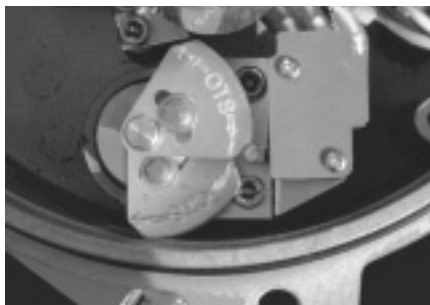
Space Heater

- Anti-condensation equip with thermal



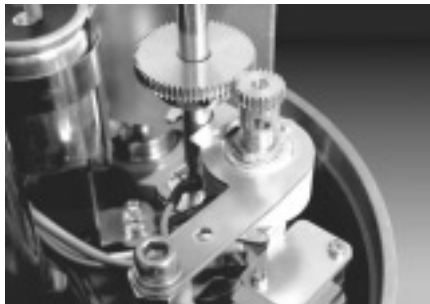
Captive cover bolt

- Cover bolts are captive type designed to prevent loosening during maintenance or installation
- All external bolts are stainless steel for rust prevention



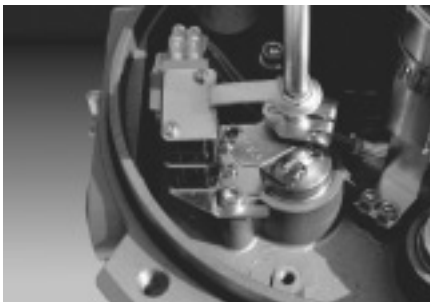
Torque switches(Open/Close)

- To protect actuator from damage caused by overload from the driven valve over the whole travel



Potentiometer kit(PK)

- High resolution potentiometer and precisely machined gearing are directly engaged with drive shaft to feedback continuous position of valve



Limit switches

- Directly engaged with driving shaft to set accurate position of valve
- 1 ea for each travel end (open/close)
- Optional Extra Limit Switches (Max 4 ea for each end)



Indicator position with arrow supported By spring

- Large size position directly engaged with driving shaft for better visibility from a distance
- Spring loaded underneath keeps set position unchanged unless used move it

ELECTRIC ROTORY TYPE ACTUATOR

ELECTRIC ACTUATOR

● Technical Information

Model	Rated torque	Operating time 50/60Hz	Max bore size	Power consumption	Motor insulation class	Rated current (A) 50/60Hz				No of handle turns	Weight
						1Phase	3Phase				
	Nm	90°	mm	Watts		110V	220V	380V	440V	90°	Kg

● Small ATM

ATM0040	40	20/14	17	15	F	0.5	0.3	OK	NA	9	5
ATM0080	80	20/14	17	15	F	0.95/1.05	0.50/0.55	OK	NA	10	7

● Regular ATM

ATM0100	100	21/18	23	15	F	0.95/1.05	0.50/0.55	NA	NA	10	7
ATM0160	160	26/22	27	40	F	1.60/1.70	0.85/0.90	0.30/0.30	0.30/0.32	12	15
ATM0240	240	26/22	27	40	F	1.62/1.72	0.87/0.92	0.32/0.32	0.32/0.34	12	15
ATM0350	350	31/26	42	40	F	1.72/1.80	0.92/0.95	0.32/0.32	0.32/0.35	14	20
ATM0500	500	31/26	42	90	F	3.60/3.90	1.30/1.60	0.52/0.56	0.55/0.58	14	20
ATM0800	800	39/32	52	180	F	3.80/4.20	2.05/2.20	0.82/0.88	0.82/0.85	17	25
ATM1100	1100	20/14	52	180	F	3.90/4.30	2.15/2.30	0.84/0.90	0.84/0.88	17	25

● Regular ATM with Gear Box

ATM1500 (ATM0500+AG1/3)	1500	93/78	78	180	F	3.60/3.90	1.30/1.60	0.52/0.56	0.55/0.58	42	42
ATM2000 (ATM0800+AG1/3)	2000	117/97	78	180	F	3.80/4.20	2.05/2.20	0.82/0.88	0.82/0.85	52	52
ATM3000 (ATM1100+AG1/3)	3000	117/97	78	180	F	3.90/4.30	2.15/2.30	0.84/0.90	0.84/0.88	52	52

● Standard Specification

Enclosure	Weather poof IP67, NEMA4 and 4X,O-ing sealed (ATM0060 IP66)
Main Power supply	110/220V AC / 1Ph / 50 / 60Hz, 380/440/VAC/9Ph / 50 / 60 / Hz $\pm 10\%$
Control power supply	110/220V AC / 1Ph / 50 / 60 Hz $\pm 10\%$
Duty cycle (on-off)	S2, 20 ~ 50% Max 10Min ~ 30Min
Duty cycle (modulating)	S4, 30 ~ 50%, 300 ~ 1200 start/hour
Motor	Squirrel caged induction motor
Limit switches	1 each for open and close (SPDT 250V AC/10A rating)
Torque switches	1 each for open and close (SPDT 250V AC/10A rating except for ATM0060,0100)
Stall protection/set temperature	Built in thermal protection, High 150°C $\pm 5^\circ\text{C}$, Low 97°C $\pm 15^\circ\text{C}$
Travel angle	90 $\pm 5^\circ$ (0° $\pm 100^\circ$)
Position indicator	Plate with indication arrow
Manual override	De-clutchable (except for ATM0060)
Self locking	Provided by double worm gearing (no brake)(except for ATM0060)
Mechanical stopper	1 each for each travel end (open and close),(external adjustable(ATM0060))
Heater	5W (110/220V AC) for anti-condensation
Cable entries	2 X PF 3/4" TAP (except for ATM30,60, 2 X PT 1/2 TAP)
Lubrication	EP type grease
Terminal block	Screw and lever push type (spring loaded)
Ambient temperature	-20°C ~ 70°C
Ambient humidity	90% RH Max (Non-Condensing)
Anti vibration	XYZ 10g, 02 ~ 34Hz, 30 minutes
External coating	Dry power (Polyester)

● Mechanical

Symbol	Description	Remark
DOM	Dome indicator	Except for ATM0060
EX	Explosion proof (Ex d II B(c) T4)	Except for ATM0060
WT	Watertight (IP68)	Except for ATM0060
ALS	Auxiliary limit switches (Max 4 for each travel end)	
ATS	Auxiliary torque switches (Max 4 for each travel end)	Except for ATM0060, ATM0100
EXT	Extended travel angle (up to 120°, 135°, 180°, 270°)	Except for ATM with gear box
SV	Variation in torque and operating speed	Please consult before order

● Remote monitoring and control

PK	Potentiometer kit (output signal : 0 ~ 1Kohm)	
CT	Current transmitter (output : 4 ~ 20mA)	
RPC	Remote position controller(by input and output signal)	Refer to below signal configuration
RPD	Remote position controller(by input and output signal) with display (LCD)	
Signal	In put: 4~20mA, 0~10 VDC, 2~10 VDC, 1~5VDC, 0~5VDC	
Configuration	Out put: 4~20mA, 0~10 VDC, 2~10 VDC, 1~5VDC, 0~5VDC	

● Local monitoring and control

LP1	Local position control (Remote/Open/Step/Close without lamps)
LP2	Local position control (Remote/Local, Open/Step/Close with lamps)
LM1	Integrated motor starter without local control switches (On ~ off only)
LM2	Local position control (Remote/Local, Open/Step/Close with lamps)with integrated Motor starter (Mechanical)
LD	Local position control ((Remote/Local, Open/Stop, Close with lamps) with Integrated motor starter, monitoring relays)

● Local Position controller LP1

- 1) Type : Rotary switch
- 2) Selecting and control:4 steps (Remote/Open/Stop/Close)for on-off only
- 3) No local display

● Local Position controller LP2

- 1) Type : Rotary switches with position lamps
- 2) Operating
 - Selector switch : Remote (with Yellow lamp), Local(with Red lamps)
 - Control switch : Open/Stop/Close
 - Local display : Green lamp at open position, Red lamp at close position

● LM1 for 3 Phase actuator

- Integrated 2 magnetic contactors for open and close without control device

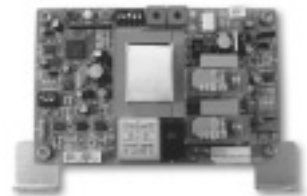


● LM4 for 3 Phase actuator

- 1) Type : Rotary switches with position lamps
- 2) Operating
 - Selector switch: Remote (With Yellow lamp), Local (With Red lamp)
 - Control Switch: Open/Step/Close
 - Integrated 2 magnetic contactors for Open/Close, Power source for control
- 3) Options for remote monitoring and control
 - PK(0~1Kohm), CT(4~20mA output signal), RPC(or RPD) for 4-20mA input/output Signal

● RPC

- Combination of electronic positioner(4~20mA input, proportional control)
- Auto-calibration provides the most convenient to user without complicated set in field



- RPC -

● RPD

- All adjustable point are parameterized, and big size LCD display panel for indicating current status

● LD for ATM

- 1) Type : 2 Magnetic sensors (Rotary type) with status monitoring lamps
- 2) Operating : Selector switch-Off, Local, Remote (Off : Stop or turn off) Control switch-Local open, Close
- 3) Local display : Remote/Local, open, close, over torque
- 4) Remote control
 - Type : 500V Opto-Isolated, DC24V, AC110 both
 - Command : Open/Close/Stop/ESD (Emergency shut down)
 - Output : Relay and direct from switch (Full Open/Full Close)
- 5) Options
 - CT (Current transmitter) : Both sink/Source type, output 4-20mA
 - RPC (or RPD) for 4-20mA input and output signal
 - Profuse communication : 1.5Mbps, 1 channel, SPC-3

● CT CARD

1. General performance

CT is basically R/I converter as signal transmitter after positioning of actuator.

Potentiometer detects current position of actuator as resistance(0~1Kohm) and CT convert it to current signal(4-20mA) and send it back to main controller.

Generally, it transmits 4mA at fully closed position, and 20mA at fully open position

2. Standard specification

1) Model: CT-01-A

2) Power : 110V/220VAC $\pm 10\%$ 50/60Hz 4VA Max(changeable by DIP switch)

3) Output signal: 4~20mA DC

4) Load resistance: 750Ohm Max.

5) Resolution : Min. 1 / 1000

6) Position conversion accuracy : $\pm 0.5 \sim \pm 1.5\%$ (Depending on mounting accuracy)

7) Ambient temperature: -10oC ~ +60oC

8) Ambient humidity: 90% RH Max (Non-condensate)

9) Dielectric strength: 1500V AC 1Min (Input to output, Power to Ground)

10) Insulation resistance: Min. 500VDC 30Mohm

11) Vibration & Shock (X, Y, Z): 10g(6g based on RMF, Frequency: 0.2 ~ 34Hz, 30Min

12) LED signal : Refer to LED signal indication

3. Setting of CT

1) Zero setting

Put actuator 50% open position by manual, supply close command from control panel.

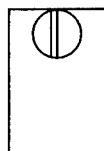
When actuator fully close, adjust Zero volume until getting correct signal 4mA.

2) Span setting

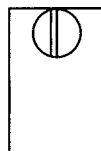
Repeat same procedure as Zero setting, but gained signal must be 20mA adjusting Span volume.

3) Repeat above procedure 2~3 times to get correct signal

Zero
Close
Setting



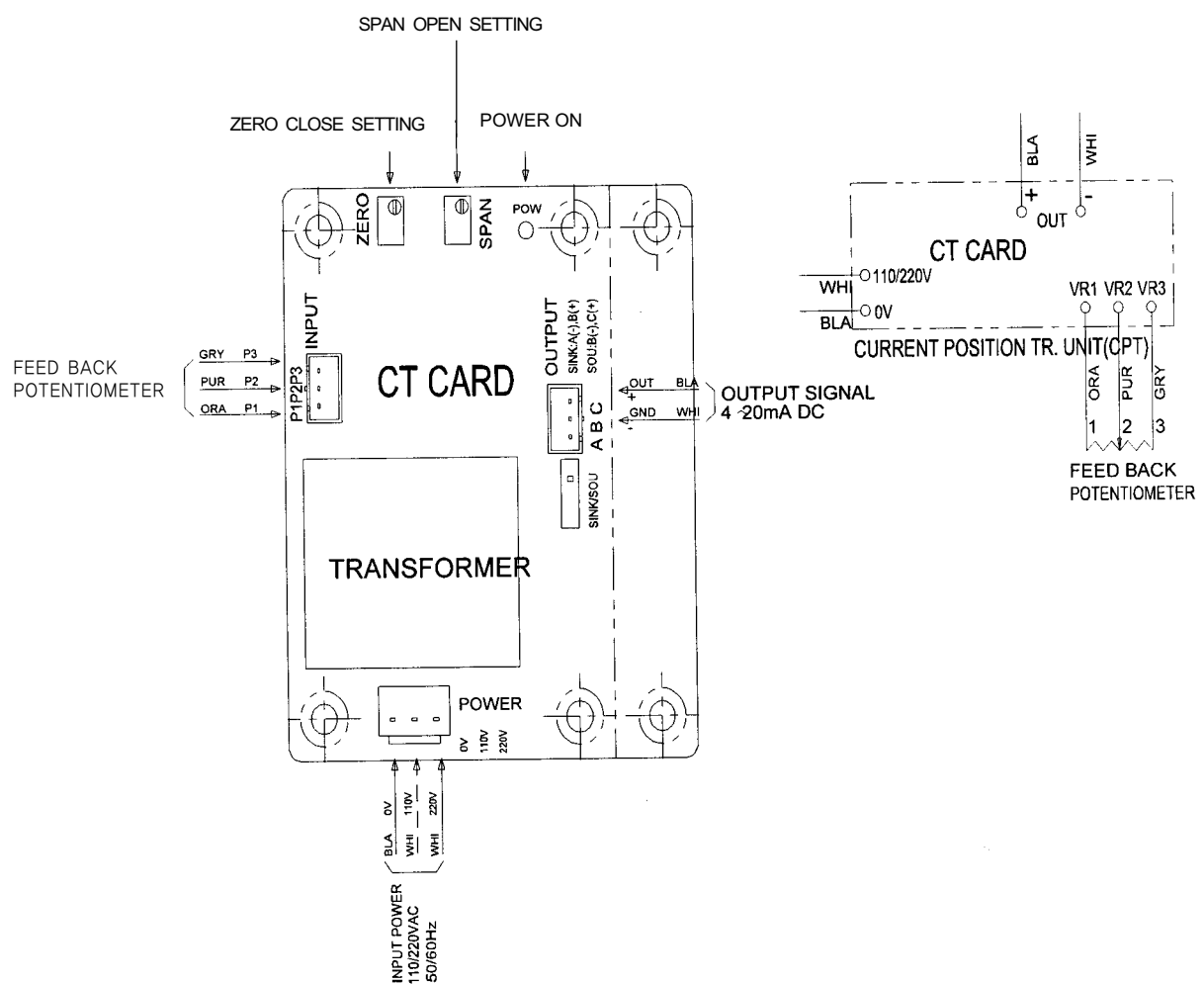
Span
Open
Setting



● SIGNAL LED indication

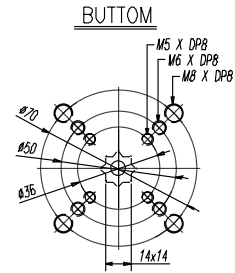
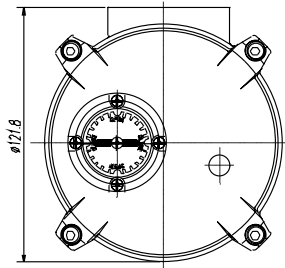
Indication on PCB	LED	Meaning
O POW	Blue on	Power on
O FAU	Yellow Flicker	Failure in either PK. CT or Wiring

● Layout of CT

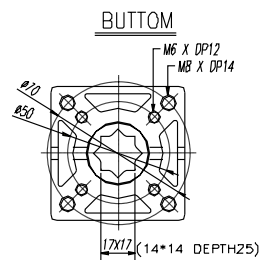
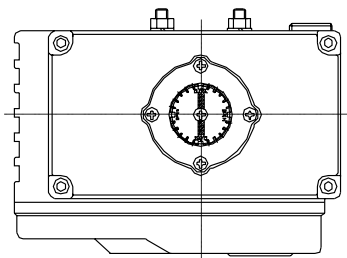
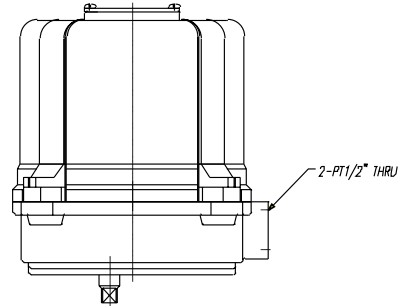
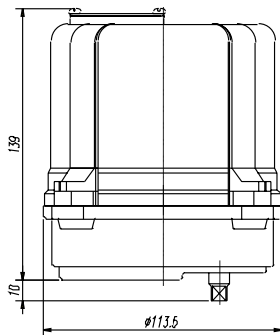


All electrical wiring is done by quick plug-in connectors.

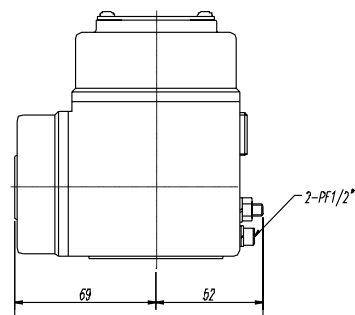
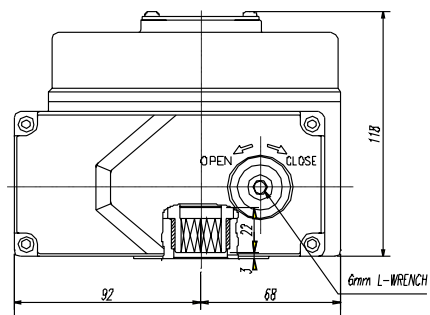
● Dimensions



ATM-0040



ATM-0080



ELECTRIC ROTORY TYPE ACTUATOR

ELECTRIC ACTUATOR

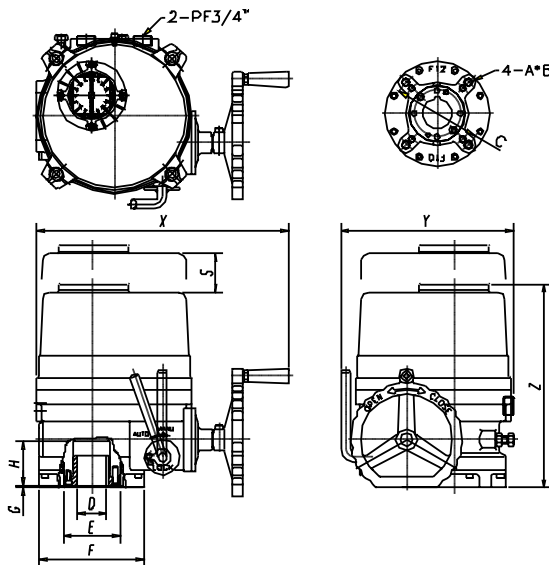
● Dimensions

Regular ATM

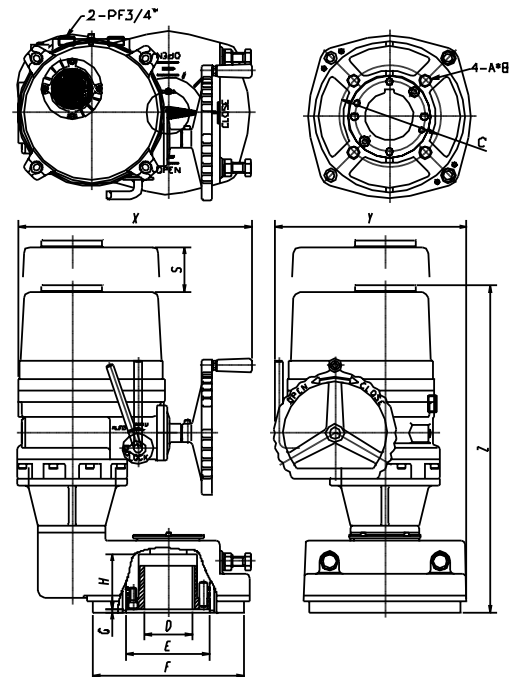
	(mm)						
TYPE	ATM0100	ATM0160	ATM0240	ATM0350	ATM0500	ATM0800	ATM1100
FLANGE	F07	F07	F07	F10	F10	F12	F12
ISO5211		F10	F10	F12	F12	F14	F14
C	∅ 70	∅ 70 ∅ 102	∅ 70 ∅ 102	∅ 102 ∅ 125	∅ 102 ∅ 125	∅ 125 ∅ 140	∅ 125 ∅ 140
A	M8	M8/M10	M8/M10	M10/M12	M10/M12	M12/M14	M12/M14
B	14	14 / 17	14 / 17	17 / 21	17 / 21	20/25	20/25
D (Key)	∅ 22	∅ 25	∅ 25	∅ 40	∅ 40	∅ 48	∅ 48
D (Squ.)	□ 20	□ 23	□ 23	□ 34	□ 34	□ 40	□ 40
E	∅ 50	∅ 58.5	∅ 58.5	∅ 80	∅ 80	∅ 95	∅ 95
F	∅ 88	∅ 125	∅ 125	∅ 148	∅ 148	∅ 178	∅ 178
G	3	3	3	3	3	3	3
H	37	57	57	62	62	67	67
S	100	115	115	145	145	170	170
X	258	338	338	357	357	380	380
Y	172	229	229	244	244	284	284
Z	220	259	259	288	288	313	313

ATM with Gear Box

	(mm)		
	ATM1500	ATM2000	ATM3000
	F16	F16	F16
	∅ 165	∅ 165	∅ 165
	M20	M20	M20
	32	32	32
	∅ 75	∅ 75	∅ 75
	□ 64	□ 64	□ 64
	∅ 135	∅ 135	∅ 135
	∅ 245	∅ 245	∅ 245
	5	5	5
	90	90	90
	145	170	170
	368	380	380
	293	312	312
	506	531	531



ATM0100, ATM0160, ATM0240, ATM0350
ATM0500, ATM0800, ATM1100

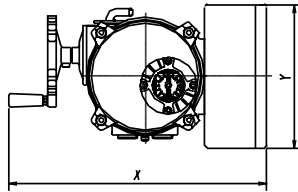


ATM1500, ATM2000, ATM3000(GEAR BOX)

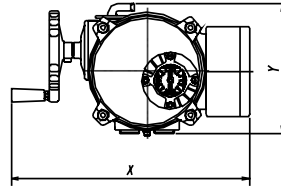
ELECTRIC ROTORY TYPE ACTUATOR

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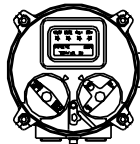
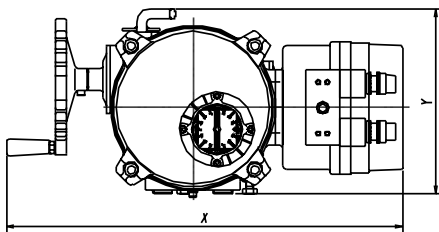
● Control Option Dimensions



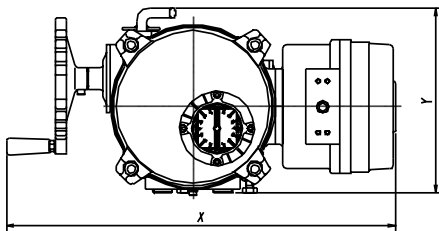
OPTION NAME	RPC
MODEL	ATM0100
X mm	340
Y mm	190
Z mm	220



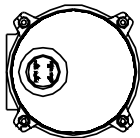
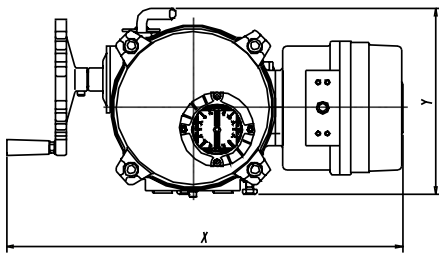
OPTION NAME	CT
MODEL	ATM0100
X mm	316
Y mm	172
Z mm	220



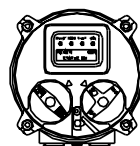
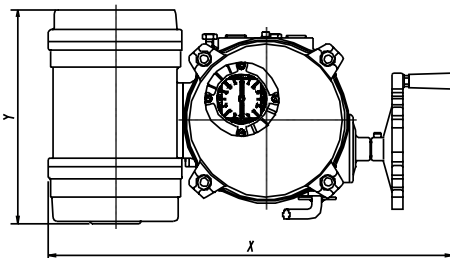
OPTION NAME	LP2/LM2					
MODEL	0100	0160/0240	0350/0500	0800/1100	1500	2000/3000
X mm	428	508	527	550	538	550
Y mm	172	229	244	284	293	312
Z mm	220	259	288	313	506	531



OPTION NAME	LP4/LD1					
MODEL	0100	0160/0240	0350/0500	0800/1100	1500	2000/3000
X mm	419	499	518	541	529	541
Y mm	172	229	244	284	293	312
Z mm	220	259	288	313	506	531



OPTION NAME	BP		
MODEL	0100	0160/0240	0350
X mm	428	508	527
Y mm	172	229	244
Z mm	220	259	288



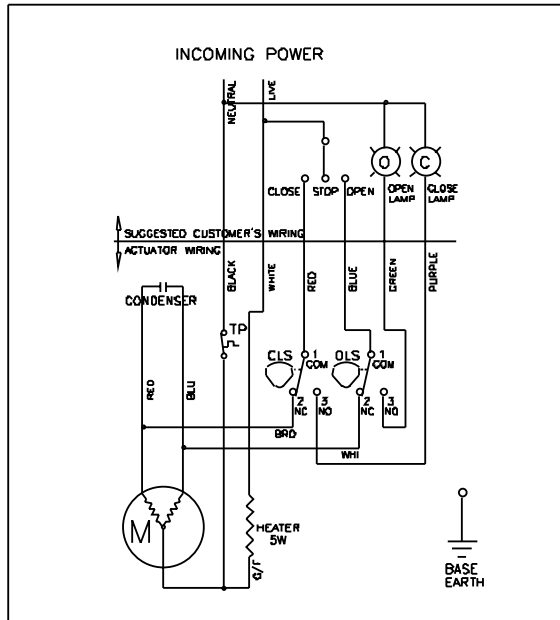
OPTION NAME	LD2				
MODEL	0160/0240	0350/0500	0800/1100	1500	2000/3000
X mm	517	536	559	547	559
Y mm	284	284	284	284	284
Z mm	259	288	313	506	531

ELECTRIC ROTORY TYPE ACTUATOR

ELECTRIC ACTUATOR

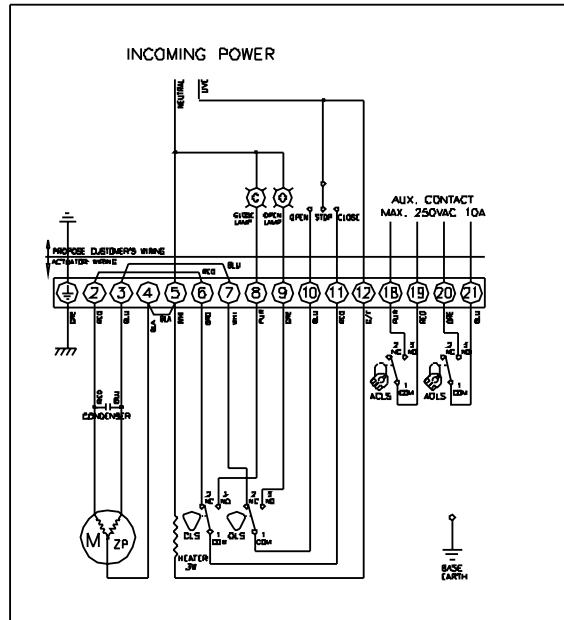
● Typical Wiring (ATM 0040~0080)

AC 110/220V, 50/60Hz, 1Ph(On-off)



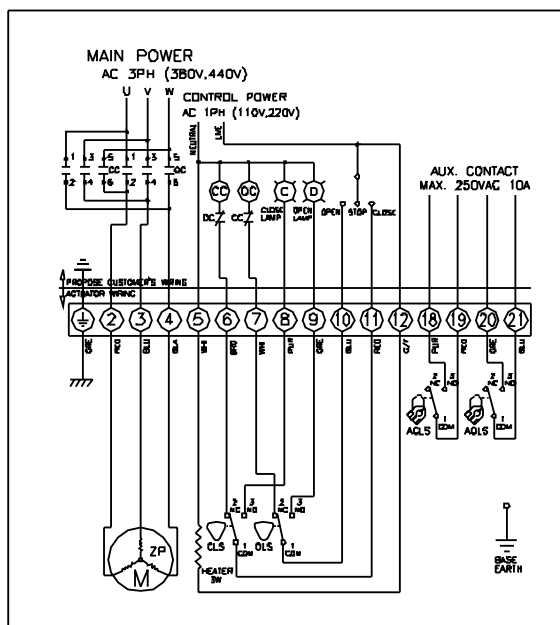
ATM0040

AC 110/220V, 50/60Hz, 1Ph(On-off)



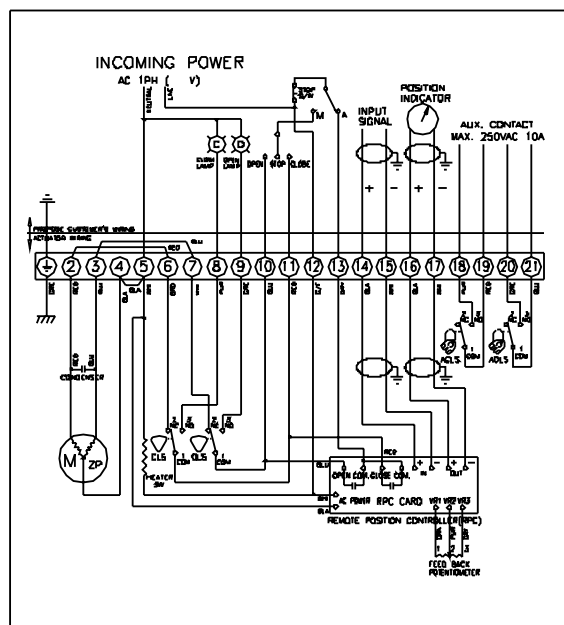
ATM0080

AC 380/480V, 50/60Hz, 3Ph(On-Off)



ATM0080(3Ph)

AC 110/220V, 50/60Hz, 3Ph(Modulating:RPC)



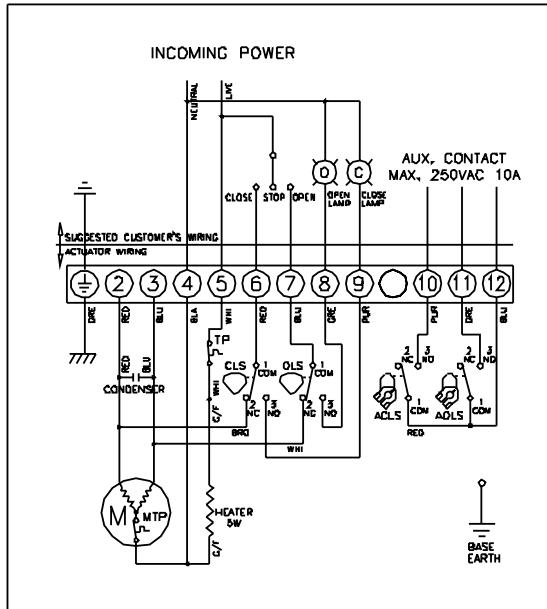
ATM0080(RPC)

ELECTRIC ROTORY TYPE ACTUATOR

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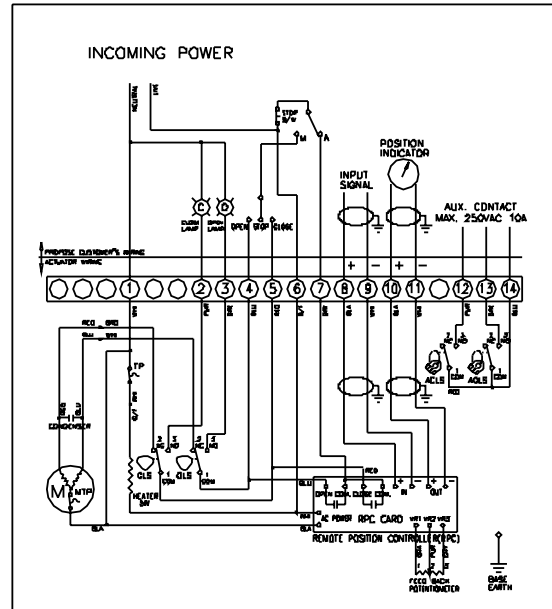
● Typical Wiring (ATM 0100)

AC 110/220V, 50/60Hz, 1Ph(On-off)



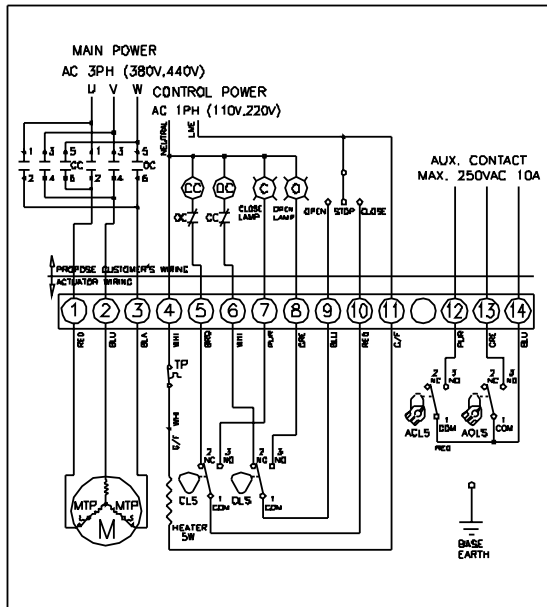
ATM0100

AC 110/220V, 50/60Hz, 3Ph(Modulating:RPC)



ATM0100(RPC)

AC 380/480V, 50/60Hz, 3Ph(On-Off)



ATM0100(3Ph)

CLS : Close Limit Switch (250VAC 10A)
 OLS : Open Limit Switch (250VAC 10A)
 ACLS : Aux. Close Limit Switch (250VAC 10A)
 AOLS : Aux. Open Limit Switch (250VAC 10A)
 ACTS : Aux. Close Torque Switch (250VAC 10A)
 AOTS : Aux. Open Torque Switch (250VAC 10A)
 TP : THERMAL PROTECTOR (250VAC 15A OPTION)
 * Each actuator should be powered through its own individual switch or relay contacts to prevent cross feed between two or more actuators.

TORQUE AND LIMIT SWITCHES OPERATION

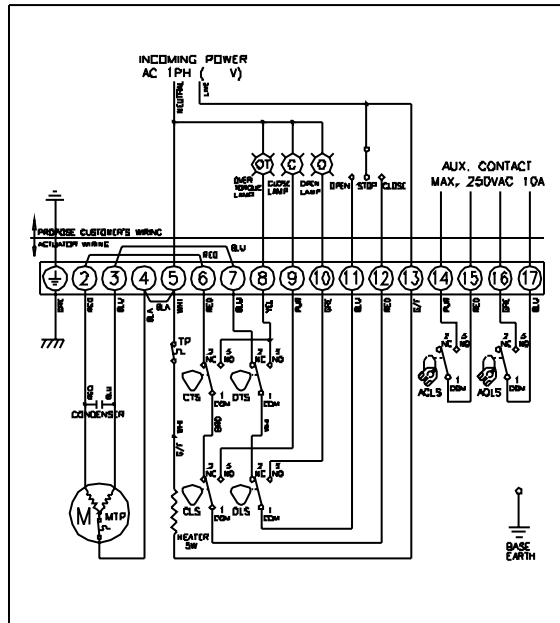
SWITCH	CLOSE	INTERMEDIATE	OPEN
CLS 1-2			
CLS 1-3			
OLS 1-2			
OLS 1-3			
ACLS 1-2			
ACLS 1-3			
AOLS 1-2			
AOLS 1-3			

ELECTRIC ROTORY TYPE ACTUATOR

ELECTRIC ACTUATOR

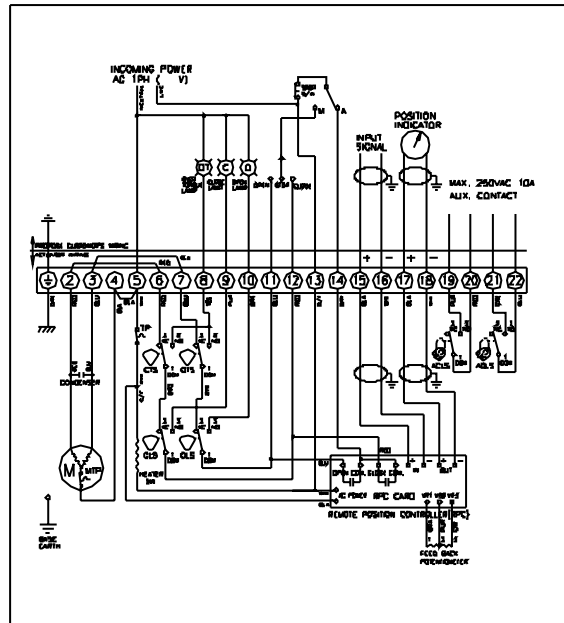
● Typical Wiring (ATM 0160~3000)

AC 110/220V, 50/60Hz, 1Ph(On-off)



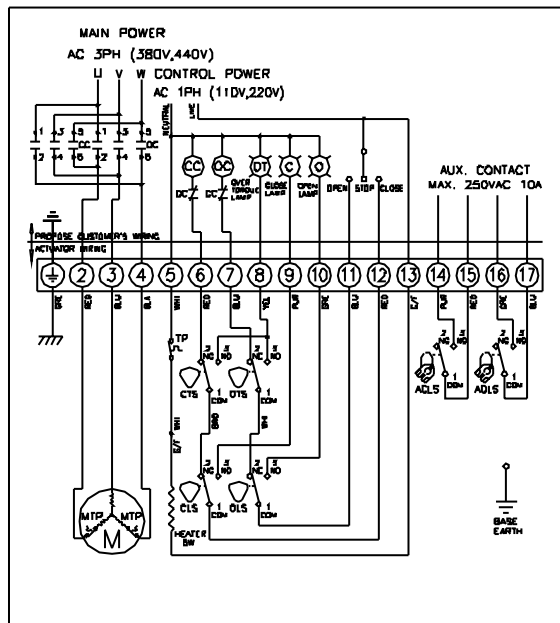
ATM0160~3000

AC 110/220V, 50/60Hz, 3Ph(Modulating:RPC)



ATM0160~3000(RPC)

AC 380/480V, 50/60Hz, 3Ph(On-Off)



ATM0160~3000(3Ph)

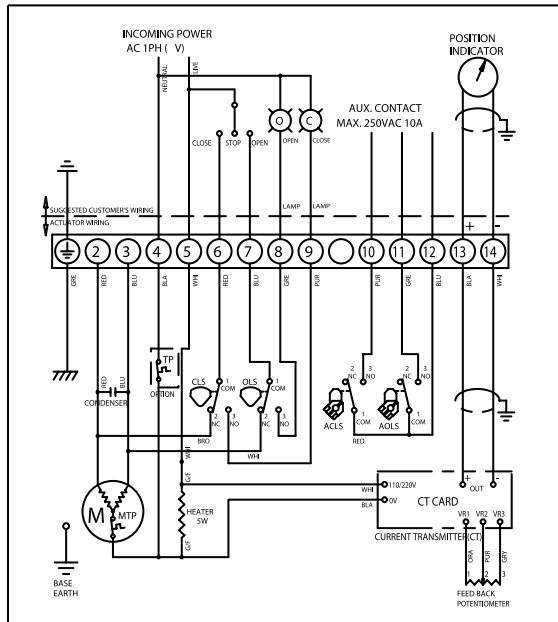
CLS : Close Limit Switch (250VAC 10A)
 OLS : Open Limit Switch (250VAC 10A)
 ACLS : Aux. Close Limit Switch (250VAC 10A)
 AOLS : Aux. Open Limit Switch (250VAC 10A)
 ACTS : Aux. Close Torque Switch (250VAC 10A)
 AOTS : Aux. Open Torque Switch (250VAC 10A)
 TP : THERMAL PROTECTOR (250VAC 15A OPTION)
 * Each actuator should be powered through its own individual switch or relay contacts to prevent cross feed between two or more actuators.

TORQUE AND LIMIT SWITCHES OPERATION

SWITCH	CLOSE	INTERMEDIATE	OPEN
CLS 1-2			
CLS 1-3			
OLS 1-2			
OLS 1-3			
ACLS 1-2			
ACLS 1-3			
AOLS 1-2			
AOLS 1-3			

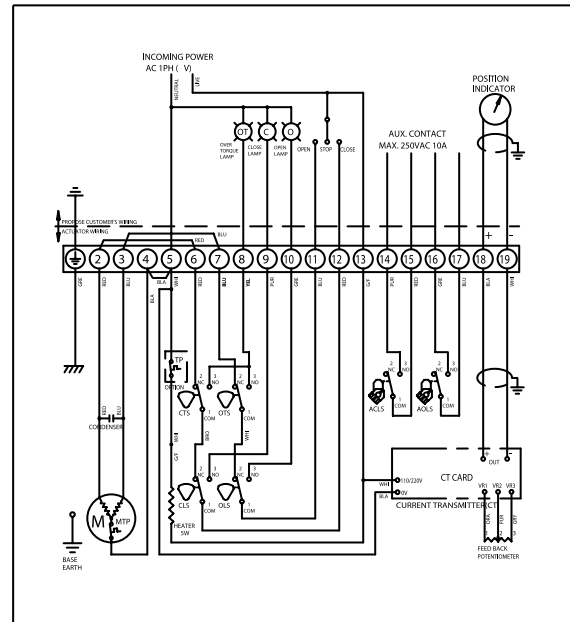
● Typical Wiring (ATM 0100~3000)

AC 110/220V, 50/60Hz, 1Ph(CT)



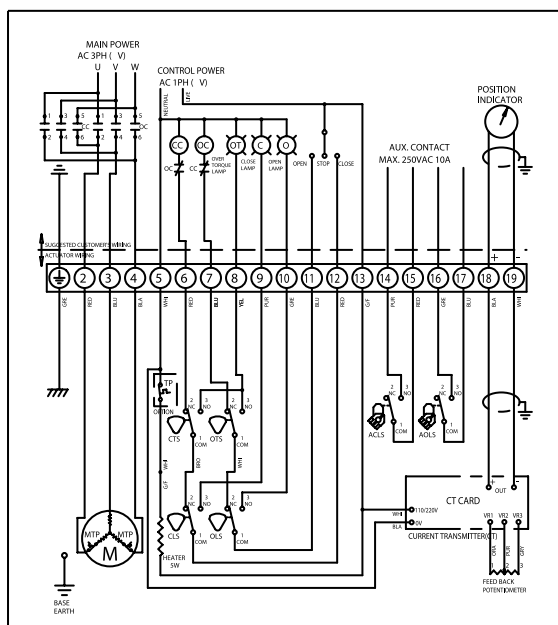
ATM0100(CT CARD)

AC 110/220V, 50/60Hz, 1Ph(CT)



ATM0160~3000(CT CARD)

AC 380/480V, 50/60Hz, 3Ph(CT)



ATM0160~3000(CT CARD)

- CLS : Close Limit Switch (250VAC 10A)
- OLS : Open Limit Switch (250VAC 10A)
- ACLS : Aux. Close Limit Switch (250VAC 10A)
- AOLS : Aux. Open Limit Switch (250VAC 10A)
- ACTS : Aux. Close Torque Switch (250VAC 10A)
- AOTS : Aux. Open Torque Switch (250VAC 10A)
- TP : THERMAL PROTECTOR (250VAC 15A OPTION)

* Each actuator should be powered through its own individual switch or relay contacts to prevent cross feed between two or more actuators.

TORQUE AND LIMIT SWITCHES OPERATION

SWITCH	CLOSE	INTERMEDIATE	OPEN
CLS 1-2			
CLS 1-3			
OLS 1-2			
OLS 1-3			
ACLS 1-2			
ACLS 1-3			
AOLS 1-2			
AOLS 1-3			



A-ONE AUTO VALVE

2121 Jeongwang-dong, Siheung-si
Gyeonggi-do 429-793, Korea
TEL : **82-31-8041-1979**
FAX : 82-31-8041-1975
<http://www.aovv.co.kr>
Email: aonevalve@empal.com

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※ The product is subject to change for technical development and quality improvement without prior notice.