



## AE Series Electric Actuator Installation & Operation Manual



### Technical Data

OPERATION VOLTAGE	Standard Type, 110 / 220 / 380 VAC Standard Type, 12 VAC , 24 VDC , and 24 VAC / VDC "Extended Duty Cycle" Type 110 / 220 VAC "Fast Acting" Type 110 / 220 VAC
POWER CONSUMPTION	10 to 60 watts (depending on model)
PROTECTION CLASS	IP 67 according to STD. IEC60529
RATED TORQUE	35 to 600 NM (310 to 5310 lbf*in)
TEMPERATURE RANGE	-10 to 60°C (14 to 140°F)
ROTATION ANGLE	90°(±5°)
CASE MATERIAL	Aluminum alloy
COVER MATERIAL	Polycarbonate
CERTIFICATION / TEST	Comply with CE directives of - The LOW Voltage Directive, 73/23/EEC, 93/68 EEC - The EMC Directive, 89/336/EEC

### Operational Conditions & Safety Precautions

- Follow the instruction manual to connect power –  
\*do not alter the electronic circuit. Tampering may result in electrical shock.
- Actuators should be operated and wired as single units-  
\*do not connect multiple units in parallel or in series.
- If two or more actuators are used at the same time, please install a relay for each unit to ensure safety of operation.
- Do not use this product in hazardous environments where there is a presence of explosive gas or other chemically active substances.
- Thermal overload protection:
  - The 110VAC/220VAC motor has thermal overload protection.
  - 12VDC and 24VAC/DC motors do not have thermal overload protection.
- Fuses are only included for On/Off model voltages 24VDC, 24VAC/DC, 12VDC and Modulating actuators all voltages. Other models do not have fuses.

### Installation & Wiring

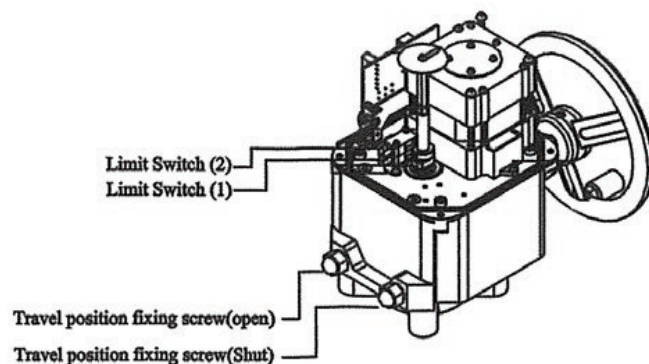
#### Pre-Installation Procedure & Safety Precautions

- Confirm the input voltage before powering up - (120VAC, 220VAC, 3-PHASE, 24VAC/DC, etc.)
- Ensure that the pipe line is clear before actuator installation.
- During initial testing and position adjustment, there will be live wires. An experienced electrician should perform all electrical testing and wiring.

#### Installation Notes

- The indicator window shows valve status [O=OPEN, S=SHUT]
- When replacing the actuator cover, ensure that the O-ring is in the groove correctly before fastening to prevent ingress of water and dust.

Part No	ISO Mounting	DSQ Drive (mm)
AE01-AE02	F03/F04/F05/F07	14
AE03	F05/F07	17
AE03H-AE06H	F07/F10/F12	27



### Limit Switch Cam Adjustment



- \*NOTE\*: If travel stops are equipped (on models with handwheels), first back off both travel stops by turning each one CCW all the way before adjust limit switch cams.
- Cams are affixed to the transmission shaft via a set screw.
- Shaft turns CCW to open until Open cam triggers Open switch.
- Shaft turns CW to close until the Closed cam triggers Shut switch.
- Switches are triggered when the roller cam is in the "out" position, corresponding to the flat face of the cams.

### Travel Stop Adjustment

- Travel stops are only equipped on models with handwheels.
- Before setting travel stops, ensure limit switch cams are set first, while travel stops are backed out all the way.
- Once limit switch cams are set, power actuator to the full open position (set by open limit switch cam), then turn open travel stop CW until there is slight resistance, then back out CCW 1 turn.
- Next power actuator to full closed position (set by close limit switch cam), then turn closed travel stop CW until there is slight resistance, then back out CCW 1 turn.

### Manual Operation

- \*Shut off power to actuator before manual operation or maintenance. Do not remove cover unless power is shut off, and ensure that the cover is securely back on before powering up.
- AE03H, AE04H, AE05H, & AE06H actuators with handwheels, to operate in manual mode, push in the handwheel to engage the shaft. It will automatically disengage when released.
- In manual mode, if abnormal friction or resistance is felt while turning the valve, do not exert excessive force to avoid damaging internal parts.

### Maintenance

- Please contact Max-Air in case of malfunction.
- If fuse replacement is necessary, contact Max-Air for fuse specification.
- Do not dismount electric actuator & valve unless absolutely necessary, otherwise the limit switches will have to be recalibrated. Follow previous instructions for limit switch adjustment if necessary.
- Three minutes rest is needed before restart.

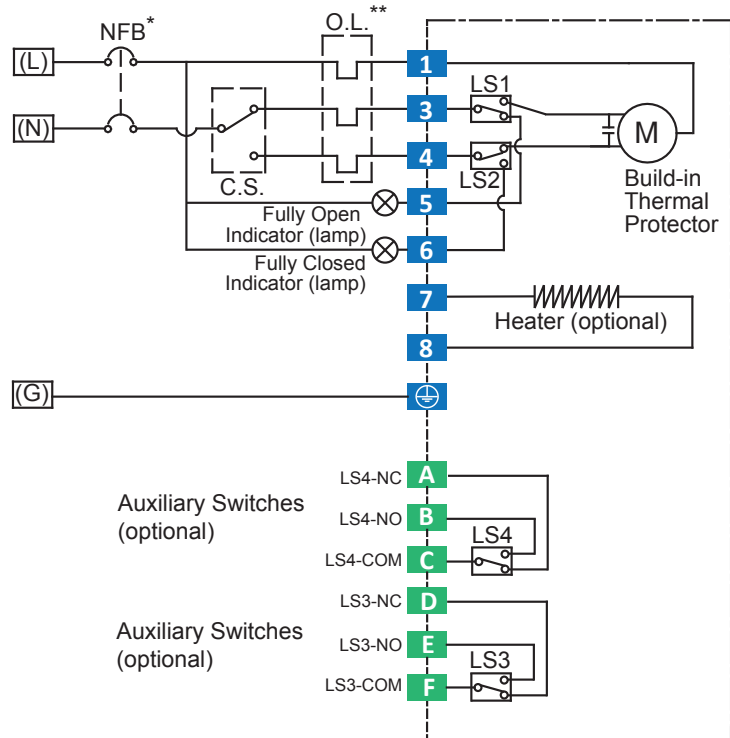
# Wiring Diagrams

## On/OFF Type, 110/220 VAC (1-Phase)

- 1** shall connect to Power Supply (L)
- 3** when connected to (N) = "OPEN"
- 4** when connected to (N) = "CLOSE"
- 5** Open Indicator Lamp
- 6** Closed Indicator Lamp
- 7** Heater Connection
- 8** Heater Connection

C.S. = Circuit Switch  
 NFB\* = No Fuse Breaker  
 O.L.\*\* = Overload Protection

Note: Use the voltage/current  
 less than AC220V/0.1A for **A** to **F**



## On/OFF Type, 24 VAC/VDC

- 1** shall connect to Power Supply (L) or (+)
- 3** when connected to (N) or (-) = "OPEN"
- 4** when connected to (N) or (-) = "CLOSE"
- 5** Open Indicator Lamp
- 6** Closed Indicator Lamp
- 7** Heater Connection
- 8** Heater Connection

C.S. = Circuit Switch  
 NFB\*=No Fuse Breaker  
 O.L.\*\*= Overload Protection  
 F\*\*\*=Fuse

Note: Use the voltage/current  
 less than AC220V/0.1A for **A** to **F**

