



CAUTION !

The applicable place of the product should be based on the nameplate and followed our safety instructions, explosion-proof standards and local relevant specifications. The explosion-proof standards and important notices are not universal.



II 2GD Ex db IIB T4 Gb, Ex tb IIIC T130°C Db IP66,IP68

OME series Explosion-proof Quarter-turn Electric Valve Actuator (referred as "actuator") is a control device for valves and can be used in the places, where is classified as Zone 1 or Zone 2, contained Group II A and Group II B gases, Zone 21 or Zone 22, contained the combustible dust atmosphere or the mixture circumstance with the explosive gas atmospheres and the combustible dust atmospheres. Temperature group T1-T4.

This product is certified to be used in the following locations:

Atmospheric pressure : 80 - 110 kPa

Ambient temperature : -30 °C to +70 °C (-22 °F to +158 °F)

Relative humidity : Not more than 95 % (+25 °C / 77 °F)

The actuator can operate normally within tolerated variation of ±10 % of rated supply voltage or ±1 % of rated frequency.



OME series Explosion-proof Quarter-Turn Electric Valve Actuator (referred as "actuator"). It is a control device for valves and can be used in following places:

Division System where is classified as North American Division 1 or Division 2 of hazardous location, contains Group C and Group D gases and temperature group T1 - T4; or contains one or several flammable dusts with minimum flaming point over 130 °C; or include both above flammable gases and dusts.

Zone System where is classified as North American Zone 1 or Zone 2 of hazardous location, contains Group II A and Group II B gases and temperature group T1 - T4; or in Zone 21 or Zone 22, contained one or several flammable dusts with the minimum flaming point over 130 °C; or include both above flammable gases and dusts.

This product is certified to be used in the following locations:

Class I, Division 1, Groups C, D T4

Class II, Division 1, Groups E, F, G T130°C

Type 4X

Ex db IIB T4 Gb (For Canada)

Class I, Zone 1, AEx db IIB T4 Gb (For US)

Ex tb IIIC T130°C Db (For Canada)

Zone 21, AEx tb IIIC T130°C Db (For US)

IP66, IP68 (72h, 7m)



II 2GD Ex db IIB T4 Gb, Ex tb IIIC T130°C Db IP66,IP68

OME series Explosion-proof Quarter-turn Electric Valve Actuator (referred as "actuator") is a control device for valves and can be used in the places, where is classified as Zone 1 or Zone 2, contained Group II A and Group II B gases, Zone 21 or Zone 22, contained the combustible dust atmosphere or the mixture circumstance with the explosive gas atmospheres and the combustible dust atmospheres. Temperature group T1-T4.

This product is certified to be used in the following locations:

Atmospheric pressure : 80 - 110 kPa

Ambient temperature : -30 °C to +70 °C (-22 °F to +158 °F)

Relative humidity : Not more than 95 % (+25 °C / 77 °F)

The actuator can operate normally within tolerated variation of ±10 % of rated supply voltage or ±1 % of rated frequency.

JPEX Ex db IIB T4 Gb, Ex tb IIIC T130°C Db IP66,IP68

OME series Explosion-proof Quarter-turn Electric Valve Actuator (referred as "actuator") is a control device for valves and can be used in the places, where is classified as Zone 1 or Zone 2, contained Group II A and Group II B gases, Zone 21 or Zone 22, contained the combustible dust atmosphere or the mixture circumstance with the explosive gas atmospheres and the combustible dust atmospheres. Temperature group T1-T4.

This product is certified to be used in the following locations:

Atmospheric pressure : 80 - 110 kPa.

Ambient temperature : -30 °C to +70 °C (-22 °F to +158 °F).

Relative humidity : Not more than 95 % (+25 °C / 77 °F).

The actuator can operate normally within tolerated variation of ±10 % of rated supply voltage or ±1 % of rated frequency.



TD0404XY

Ex db IIB T4 Gb, Ex tb IIIC T130°C Db IP66,IP68

OME series Explosion-proof Quarter-turn Electric Valve Actuator (referred as "actuator") is a control device for valves and can be used in the places, where is classified as Zone 1 or Zone 2, contained Group II A and Group II B gases, Zone 21 or Zone 22, contained the combustible dust atmosphere or the mixture circumstance with the explosive gas atmospheres and the combustible dust atmospheres. Temperature group T1-T4.

This product is certified to be used in the following locations:

Atmospheric pressure : 80 - 110 kPa.

Ambient temperature : -30 °C to +70 °C (-22 °F to +158 °F).

Relative humidity : Not more than 95 % (+25 °C / 77 °F).

The actuator can operate normally within tolerated variation of ±10 % of rated supply voltage or ±1 % of rated frequency.

Installation Notices

- DO NOT install in ambient temperatures that exceed 70 °C (158 °F).
 - DO NOT, under any circumstances, remove the cover of the actuator while in a hazardous location when the power is still live inside the actuator. This could cause ignition of a hazardous atmosphere.
 - DO NOT, under any circumstances, use an explosion-proof electric actuator in a hazardous location that does not meet the specification which the actuator was designed for.
 - Mount, test, and calibrate actuators in non-hazardous location.
 - When removing the actuator, care must be taken not to scratch, scar or deform the flame path of the cover or base of the actuator. That will negate the protection rating of the enclosure in a hazardous location.
 - The explosion-proof electric actuator is shipped with mating surfaces of the cover and base. When assembling them, pay attention to the mating number (QA code) to assure the protection rating in a hazardous location.
 - Please read operation manual and wiring diagram carefully before installation.
 - Verify that supply voltage is in accordance with the data on nameplate to prevent short circuit or electrical/electronic parts damage caused by incorrect power input.
 - Turn power off before wiring or maintenance.
 - There are grounding devices both inside and outside of the actuator and the ground wires should be connected properly.
 - The metal plugs in conduit entries are for transit only. For long term protection fit suitable flameproof cable gland and power cable should be with a minimum withstand temperature 105 °C (221 °F). Please refer to operation manual section 1.2.3 (P.3).
- ⚠ Relating to Japanese explosion-proof certification, it is mandatory to select the cable gland of A2F series made by CMP Products Ltd to meet Japanese explosion-proof standards.**
- ⚠ Loctite 577 sealant is recommended for NPT metal plugs or cable glands to achieve IP rating.**
- To avoid functional failure caused by static, do not touch any components on the PCBA with metal tools or bare hands.
 - Do not parallel wire multiple actuators together without using an extra relay.
 - Use suitable explosion-proof and water-proof cable glands to ensure it fits the conduit entry size, diameter of the cable and the enclosure protection of the actuator when wiring. The explosion-proof and water-proof cable glands must be tightened and flattened to the cable after wiring procedure. Do not remove the explosion-proof and water-proof metal plugs from unused conduit entry, be sure to fasten the top cover of the actuator to reach explosion-proof and water-proof function.
 - Actuator should be installed in an upright or horizontal position. Do not mount upside down or below a horizontal position.
 - Periodically inspect actuator enclosure to prevent dust from accumulating.
 - Please obey the local environment regulation for equipment scrapping.
 - Perform below inspections prior to installation. Not allowed to adopt if any item is unqualified.
 - ✓ Check the marking and certificate number to see if it conforms to the indicated application.
 - ✓ All the parts of the housing are assembled in the right manner and fastened.
 - ⚠ USE FASTENERS WITH YIELD STRESS ≥ 450Mpa.**
 - ✓ All the explosion-proof parts should be made without cracks or functional defects.
 - CSA Certification Considerations
 - ✓ KEEP COVER TIGHT WHILE CIRCUITS ARE ALIVE.
 - ⚠ AFTER DE-ENERGIZING, DELAY 10 MINUTES BEFORE OPENING THE COVER.**
 - ✓ SEAL REQUIRED WITHIN 18 INCHES (450 mm) OF ENCLOSURE (for Divisions only).
 - ✓ SEAL REQUIRED WITHIN 2 INCHES (50 mm) OF ENCLOSURE (for Zones only).



CAUTION !

- Please ensure that the O-ring seal is in good condition prior to cover installation.
- Installation, maintenance and repair works must be performed by trained personnel.
- Do not use any tools to increase force on handwheel for operating as this can damage the actuator or valve.

Sizing

- The actuator shall be sized to ensure that its torque output meets the load requirements of valve and its ability to overcome the required duty cycle of application (As a MINIMUM, a 30% safety factor is suggested for the calculation of torque requirement).

- If the maximum torque of 5" valve is 80 Nm
 $\rightarrow 80 \times 1.3$ (safety factor) = 104 Nm
104 Nm < 150 Nm (OME-3) → OK!
104 Nm > 90 Nm (OME-2) → Not OK!

- In cases where the actuator does not fit directly onto the valve, a mounting kit is required. Please ensure the bracket and coupling are properly designed and manufactured to withstand the torque output of the actuator.

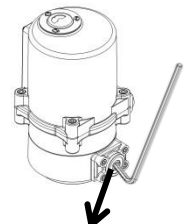
Manual Device Installation

● OME-1 & OME-AM



Manual Position

- Use a 8 mm wrench to rotate the shaft.
- Max. torque : 5 Nm

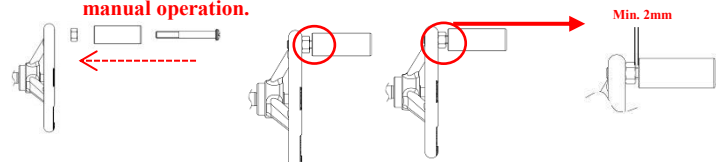


Manual Position

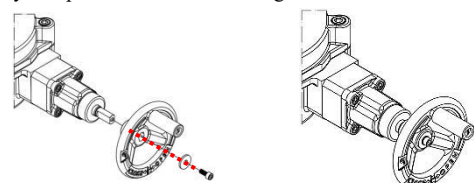
- Use a 5 mm wrench to rotate the shaft.
- Max. torque : 5 Nm

● OME-2 to OME-8

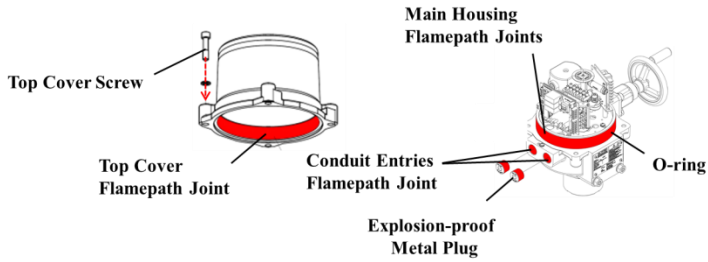
- Pass the screw through the handle and tighten the nut onto handwheel.
 - ⚠ Do not overtighten.**
- Secure the handle to the wheel with the slotted screw and tighten the locknut all the way down to the wheel. Ensure that the locknut is locked between the wheel and the handle.
 - ⚠ Leave a 2 mm gap between the locknut and the handle as the figure below to allow the handle free to rotate and then to have a smooth manual operation.**



- Slide fixing screw through washers and handwheel and secure them to override shaft as shown in the figure below.
 - ⚠ Turn off power when installing handwheel.**
- Assembly completed as shown in the figure below.



Flamepath Joint



Cover Removal

Remove the conduit entry metal plugs to relieve the pressure inside the actuator for the ease of the top cover removal and gently remove the cover. DO NOT attempt to remove the top cover with a screwdriver as it will damage the surfaces.

Cover Installation

- ⚠ Please ensure that the O-ring seal is in good condition prior to cover installation. Slowly re-install the cover while being careful not to pinch the O-ring seal.
- ⚠ The explosion-proof enclosures are labeled with a QA code on both of the middle plate and the cover, please verify the QA code inside the cover is the same as the one on middle plate when installation. The cover is not interchangeable.

Please follow this table to tighten the cover screw :

Model	Screw	Allen Key	Torque
		mm	Nm
OME-A, OME-AM & OME-1	M6	5	8
OME-2 to OME-3	M10	8	43
OME-4 to OME-8	M12	10	75

Valve Mounting Instructions

- a. Make sure both the valve and actuator are in the same position before mounting, either fully-open or fully-closed. If not, use the manual override to correct this.
- b. Once mounted together, either directly or with a mounting kit, ensure that they are properly secured together and all fasteners are tightened.
 - ⚠ Remove all of valve handle parts, for example, the handle or open/close mechanical stops so as to not interfere with the actuator.
- c. Check again that the valve and actuator are in the same position.
- d. Remove the conduit entry plug to relieve the pressure inside the actuator for the ease of the top cover removal and gently remove the cover, please refer to Flamepath joint section for cover installation.
 - ⚠ The power must be off before removing the cover.
 - ⚠ AFTER DE-ENERGIZING, DELAY 10 MINUTES BEFORE OPENING THE COVER.
- e. Refer to operation manual section 4.3 (P.16) for wiring notices and connect the wires according to the wiring diagram labeled inside the cover of actuator.
- f. Supply power to actuator.
 - ⚠ Care must be taken at all times as there are live circuits present that may cause electrical shock.
- g. Re-calibration may be required for the end positions, refer to Actuator Set-up section for further instructions.
- h. Refer to Modulating Control Board Adjustment.
 - ⚠ Use the insulated wires and length should be less than 30 m.
 - ⚠ A minimum of 18 AWG wire is recommended for all field wiring.
 - ⚠ Turn power off before changing any settings.
- i. Assemble the cover and secure cover screws firmly after setting.
 - ⚠ Refer to Flamepath joint section for installation and check if there is any foreign object between top cover flamepath joint and base.
 - ⚠ Please ensure that the O-ring seal is in good condition prior to cover installation.
 - ⚠ The explosion-proof enclosures are labeled with a QA code on both of the middle plate and the cover, please verify the QA code inside the cover is the same as the one on middle plate when installation. The cover is not interchangeable.

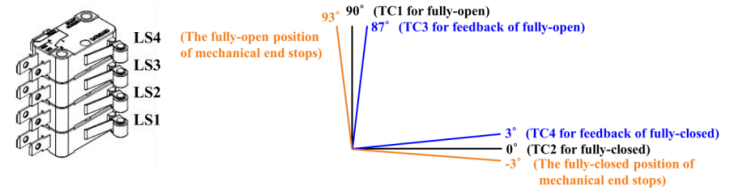
Actuator Set-up

CAUTION:

- The power must be off during this procedure so as to avoid damage to the actuator.
- Do not make adjustments to the mechanical end stops when actuator is in motion.
- All steps below must be completed before normal operation.

Instructions - Fully-open and fully-closed position limit switches

- The travel cams are set to control the open and closed position of the actuator. See below procedure for corresponding actuator model:
 OME-1, OME-A and OME-AM : The position is set to stop the travel of the actuator when the travel cams activate the limit switch.
 OME-2 to OME-8 : The position is set to stop the travel of the actuator when the travel cams don't activate the limit switch.
- The standard is equipped with two limit switches (LS1 & LS2) and cams (TC1 & TC2).
 LS1 & LS2 : LS1 is for open and LS2 is for close. Travel limit settings for starting and cutting off the motor power to reach the fully-open and fully-closed positions.
 LS3 & LS4 are optional. They allow external equipment to confirm that the valve has reached the fully-open and fully-closed positions.
 - ⚠ LS3 (LS4) should activate before LS1 (LS2).



Instructions – Dry contact sequence diagram:

- The state of dry contact feedback signal :
 - Solid line (—) : Dry contact in conductive state.
 - Dotted line (---) : Dry contact in non-conductive state.

【OME-1, OM-A, OM-AM】

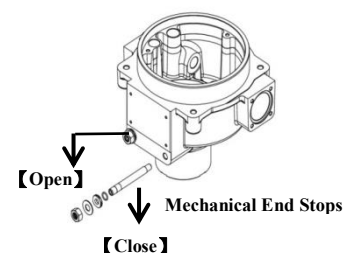
Symbol	Contact	Position	
		100%	0%
LS4 (Dry Contact)	A - F	—	---
	A - E	---	—
LS3 (Dry Contact)	A - C	---	—
	A - B	—	---

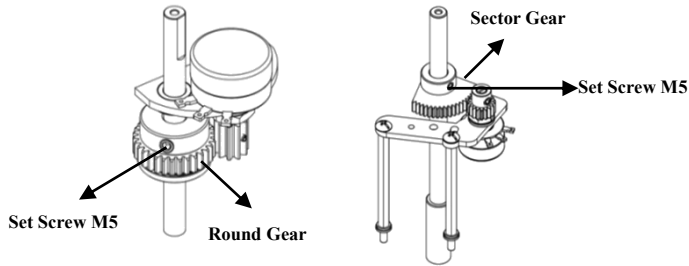
【OME-2 to OME-8】

Symbol	Contact	Position	
		100%	0%
LS4 (Dry Contact)	D - F	---	—
	D - E	—	---
LS3 (Dry Contact)	A - C	—	---
	A - B	---	—

Adjustment Steps:

- a. Turn power off.
- b. Loosen the locknut and unwind both Open and Close Mechanical end stop screws based on the actuator model listed below.
 - OME-2 to OME-6 : 25 turns
 - OME-7 to OME-8 : Remove the mechanical end stop screws completely.
- c. Loosen the M5 set screw on the sector gear or round gear.





【OME-1, OME-A and OME-AM】 **【OME-2 to OME-8】**

d. Refer to below illustrations to adjust the TC1 - TC4 to set the fully-open and fully-closed position.

【OME-A and OME-AM】 **Tool: 2.5 mm Allen Key**

TC2"CLOSE" ↻ Clockwise : increase closing degree.
TC4 (Optional Item) ↻ Counter-clockwise : decrease closing degree.
TC1"OPEN" ↻ Clockwise : decrease opening degree.
TC3 (Optional Item) ↻ Counter-clockwise : increase opening degree.

【OME- **Tool: 2.5 mm Allen Key**

TC2"CLOSE" ↻ Clockwise : decrease closing degree.
TC4 (Optional Item) ↻ Counter-clockwise : increase closing
TC1"OPEN" ↻ Clockwise : increase opening degree.
TC3 (Optional Item) ↻ Counter-clockwise : decrease opening degree.

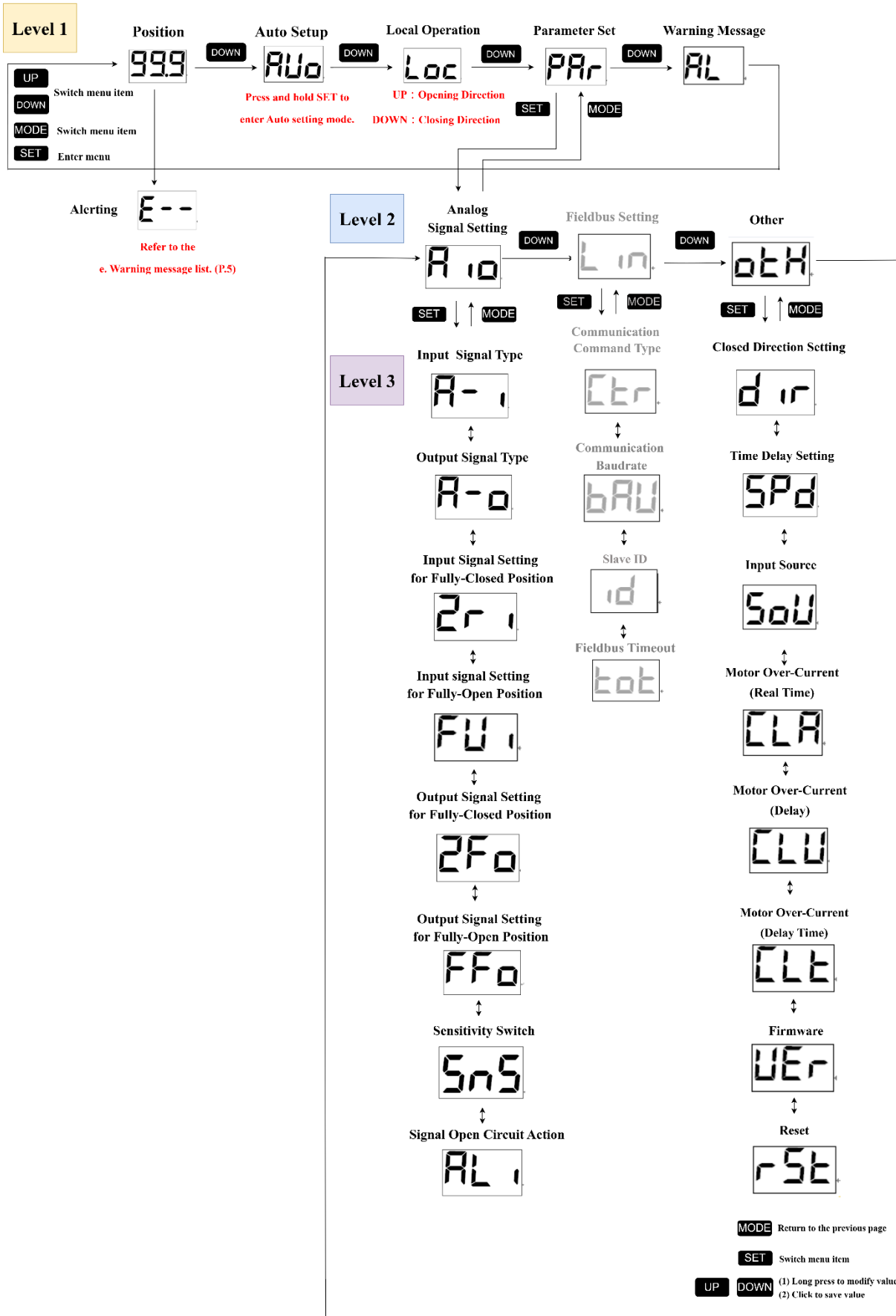
【OME-2 to OME-8】 **Tool: 2.5 mm Allen Key**

TC2"CLOSE" ↻ Clockwise : decrease closing degree.
TC4 (Optional Item) ↻ Counter-clockwise : ncrease closing degree.
TC1"OPEN" ↻ Clockwise : increase opening degree.
TC3 (Optional Item) ↻ Counter-clockwise : decrease opening degree.

- e. Supply power to the fully-open position. Screw in the Open (left) Mechanical end stop screw until it bottoms out, and then turn back for 1/2-1 turn based on the actuator model listed below.
 - ⚠ **Do not remove the cover to supply power if the actuator is located in a hazardous environment. If so, for the following steps, operate the unit manually.**
 - OME-2 to OME-3 : 1 turn.
 - OME-4 to OME-8 : 1/2 turn.
- f. Tighten the locknut.
- g. Supply power to the fully-closed position. Screw in the Close (right) Mechanical end stop screw until it bottoms out, and then turn back for 1/2-1 turn based on the actuator model listed below.
 - ⚠ **Do not remove the cover to supply power if the actuator is located in a hazardous environment. If so, for the following steps, operate the unit manually.**
 - OME-2 to OME-3 : 1 turn.
 - OME-4 to OME-8 : 1/2 turn.
- h. Tighten the locknut of mechanical end stops.
- i. Supply the power to confirm that the limit switches achieve the fully open-close stroke.
- j. Supply power to run the actuator to the fully-closed position. Adjust the gear and the set screws based on the actuator model listed below.
 - OME-A and OME-AM : Rotate the round gear counter-clockwise to the end and tighten the M5 set screw
 - OME-1 : Rotate the round gear clockwise to the end and tighten the M5 set screw
 - OME-2 to OME-8 : Rotate the sector gear clockwise to the end and tighten the M5 set screw
- k. The setting procedure is now completed.

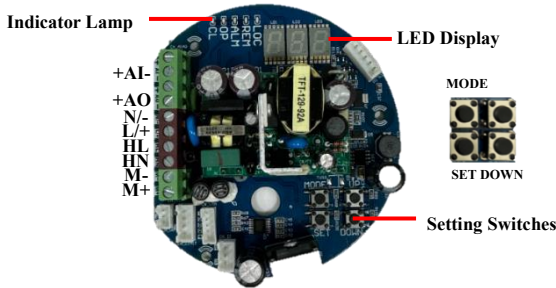
PCB Setting Modulating board Settings Menu (OME-1, OME-A and OME-AM)

⚠ The Fieldbus Settings function is currently unavailable. It will be available in later version.



Modulating Control Board Adjustment (OME-1, OME-A and OME-AM)

- ⚠ **If the LED display is not operated for ten minutes, it will go out and return to the first level 999. Please press any button to display it again. In local control mode, the LED display will return to remote control mode after it goes out.**
- ⚠ **The layout is based on 110 / 220 V AC.**



Modulating Control Board

● Analog Signal Connection Terminal Blocks

Terminal	Status
AO -	Analog signal output (-)
AO +	Analog signal output (+)
	N/A
AI -	Analog signal input (-)
AI +	Analog signal input (+)

● Lamp Status

Lamp Code	Actuator Status
CL	Light on: Fully-Closed Flashing: Closing Direction
OP	Light on: Fully-Open Flashing: Opening Direction
ALM	Alerting Signal
REM	Remote Control Mode
LOC	Local Control Mode

● Auto Setup **RLO**

- ⚠ **Be sure to reset OPEN and CLOSE position according to the following steps after recalibrating fully-open and fully-closed position.**

- Auto setup for the fully-open and fully-closed positions.
- Setting Steps:
 1. Press “DOWN” several times to get into **RLO**.
 2. Press and hold “SET” around 3 sec to enter Auto Setup mode, Steps 3 to 5 will be executed automatically.
 3. Auto run the actuator in CCW direction until the display shows 100% to reach the fully-open position.
 4. Auto run the actuator in CW direction until the display shows 0% to reach the fully-closed position.
 5. The setting is completed.
 6. After completing the **RLO** setup, please set the input mode setting **SOI** to choose the operation mode of the actuator according to the required control type.
- Local Control **LOL**
 - The actuator could be directly controlled in the field.
 - Setting Range: 0% to 100%.
 - Setting Steps:
 1. Press “DOWN” several times to get into **LOL**.
 2. Press “SET” until **LOL** comes on to enter local control mode. The indicator will show the current position and the **LOL** indicator lamp will light on.
 3. Press “UP” and “DOWN” buttons to perform open and close settings. Press “UP” to run the actuator toward opening direction and press “DOWN” to run the actuator toward closing direction.

4. Press “MODE” to complete the local operation and return to remote control mode.

● Parameter Setting **PRR**

- Please refer to the operation manual **SOI** (P.38), then configure the signals and other parameters according to the selected input mode. If the input mode is changed, adjust the wiring according to the corresponding wiring diagram.

Analog Signal Setting **RIO**

- ⚠ **Use a multimeter to measure the output signal in accordance with the selected signal type.**
- ⚠ **Be sure to complete the analog input / output signal type setting before setting the fully-closed / fully-open input / output signal.**

a. Analog Input Type **R-1**

- Analog input signal type setting.
- Default setting: **000**
- Setting Steps:

1. Press “DOWN” several times until **PRR** displays, then press “SET” once to enter parameter setting.
2. Press “UP” or “DOWN” until **RIO** displays, then press “SET” once to enter signal setting.
3. Press “UP” or “DOWN” until **R-1** displays, then press “SET” once to enter analog input signal type setting.
4. Press and hold “SET” around 3 sec until the indicator shows the parameter code and flashes.
5. Press “UP” or “DOWN” to select desired parameter code according to the following table.

Parameter Code	Input Signal Type
000	4 - 20 mA
001	0 - 20 mA
002	1 - 5 V
003	0 - 5 V
004	2 - 10 V
005	0 - 10 V

6. Once selected, press “SET” once to complete analog input signal type setting.

b. Output Signal Type **R-O**

- Output signal type setting.
- Default Setting: **000**
- Setting Steps:

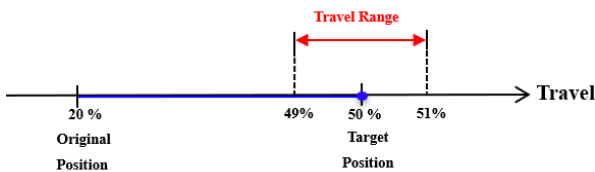
1. Press “DOWN” several times until **PRR** displays, then press “SET” once to enter parameter setting.
2. Press “UP” or “DOWN” until **R-O** displays, then press “SET” once to enter analog signal setting.
3. Press “UP” or “DOWN” until **R-O** displays, then press “SET” once to enter output signal type setting.
4. Press and hold “SET” around 3 sec until the display shows the parameter code and flashes.

Parameter Code	Output Signal Type
000	4 - 20 mA
001	0 - 20 mA
002	1 - 5 V
003	0 - 5 V
004	2 - 10 V
005	0 - 10 V

5. Press “UP” or “DOWN” to select desired parameter code according to the following table.
6. Once selected, press “SET” once to complete analog output signal type setting.

c. Sensitivity Setting 5.5

- When the value of sensitivity (%) is lower, the resolution of the input signal will be higher, and relatively the dead band will be smaller. Excessive high resolution may cause the actuator to keep hunting and could not run to the desired position which will lead to the thermostat inside the motor to trip because of overheating, and finally the actuator will shut down. If this situation happens, it is suggested to adjust the sensitivity setting.
- Setting Range: 0.1 % to 5.0 %.
 - When set to 0.1 %, it means that the allowable tolerance is ± 0.1 %, which is the highest sensitivity.
 - When set to 5.0 %, it means that the allowable tolerance is ± 5 %, which is the lowest sensitivity.
 - For example, if the sensitivity switch is set to 1% and the target position is 50 %, the valid travel range will be from 49 % to 51 % as shown in the figure below.



- Default Setting: 0.7 %
- Setting Steps:
 1. Press "DOWN" several times until PAr displays, then press "SET" once to enter parameter setting.
 2. Press "UP" or "DOWN" until F 10 displays, then press "SET" once to enter analog signal setting.
 3. Press "UP" or "DOWN" until 5.5 displays, then press "SET" once to enter sensitivity setting.
 4. Press and hold "SET" around 3 sec until the display shows the value and flashes.
 5. Press "UP" or "DOWN" to adjust the sensitivity setting value.
 6. Press "SET" to complete the sensitivity setting.

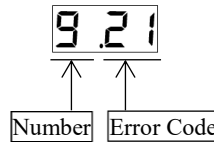
d. Signal Open Circuit Action RL 1

- Action when the input signal fails or communication protocol timeout.
 - ⚠ **This function is only available when the input signal type A- is set to 4 - 20 mA, 1 - 5 V or 2 - 10 V.**
- Setting Steps: 000 to 002.

Parameter Code	Instruction
000	Stay at the last position when input signal fails or communication protocol timeout.
001	Run to the fully-open position when input signal fails or communication protocol timeout.
002	Run to the fully-closed position when input signal fails or communication protocol timeout.

- Default Setting: 002
- Setting Steps:
 1. Press "DOWN" several times until PAr displays, then press "SET" once to enter parameter setting.
 2. Press "UP" or "DOWN" until F 10 displays, then press "SET" once to enter analog signal setting.
 3. Press "UP" or "DOWN" until RL 1 displays, then press "SET" once to enter signal open circuit action mode.
 4. Press and hold "SET" around 3 sec until the display shows the value and flashes.
 5. Press "UP" or "DOWN" to adjust the value.
 6. Press "SET" to complete the signal open circuit action setting.
 - ⚠ **When set to 000 or 001, if a signal open circuit occurs, the actuator will operate to close direction for 1 second before executing the setting function.**

e. Warning Messages FL

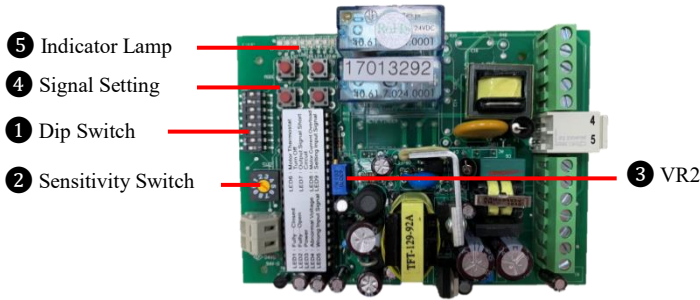


1. Press "UP" or "DOWN" to switch the number from 0 to 9.
2. Press and hold "SET" to clean all the error data.
3. Press "MODE" to return to the first level.
4. A maximum of 10 records can be recorded. Number 9 is the latest data and number 0 is the oldest data.
5. The first digit shows the number of records, and the second and third one show the error code.
6. The latest data is listed at the top and the oldest data at the bottom.

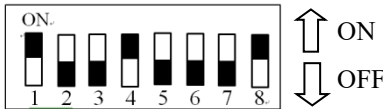
Error Code	Warning Message	Solution
11	Limit Switch Fault	Refer to P.2 for adjustment steps setting.
19	Digital Input Fault	Please exclude the input signal of open and closed are both ON.
21	Input Signal Fault	Please set the correct input signal type.
22	Output Signal Fault	Please refer to the wiring diagram to confirm whether the input signal are connected correctly. ("AO-" to "AO+").
23	Flash Memory and Operating Status Fault	Replace a new modulating board.
27	Low Input Voltage	a. Confirm the supply power. b. Replace a new power board.
30	Installation Error of Potentiometer	Contact the seller.
31	Positioning Fault	Refer to P.5 c. for sensitivity setting.
32	OPEN Potentiometer Fault	Confirm that if the torque is overloaded or the motor is locked. If this problem cannot be solved, please contact the seller.
33	CLOSE Potentiometer Fault	Confirm that if the torque is overloaded or the motor is locked. If this problem cannot be solved, please contact the seller.
34	Abnormal Current for Open Direction	Use the manual device to check if the valve is stuck by foreign objects and remove them.
35	Abnormal Current for Closed Direction	Use the manual device to check if the valve is stuck by foreign objects and remove them.
38	Signal Open Circuit	Check if the input signal is connected or not.

Modulating Control Board Adjustment (OME-2 to OME-8)

▲ Turn power off before adjusting below settings.



1 Dip Switch Setting (Original Factory Setting : 1, 4, 8 ON)



Analog Signal Setting

* S1, S2 : Input Signal Setting

Input Signal	S1	S2
4 - 20 mA	ON	OFF
1 - 5 V	OFF	OFF
2 - 10 V	OFF	ON

* S3, S4 & S5 : Output Signal Setting

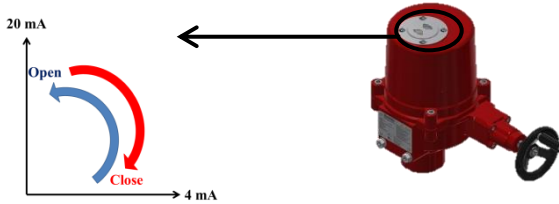
Output Signal	S3	S4	S5
4 - 20 mA	OFF	ON	OFF
2 - 10 V	ON	OFF	ON

* S6 : Close direction setting

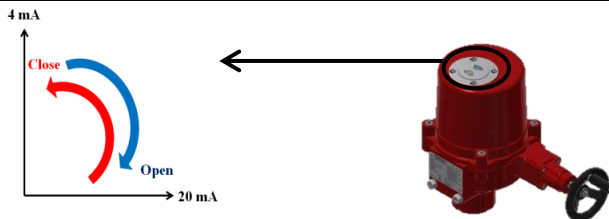
- When S6 is set to OFF, the close direction is CW (clockwise).
- When S6 is set to ON, the close direction is CCW (counterclockwise).

⚠ **The input signal type is set by switches 1 and 2. And switch 6 is used to set the corresponding relationship between value of input signal and operation direction of actuator as shown in the figure below, e.g., 4 - 20 mA input signal.**

⚠ **The operating direction of the actuator has been set and calibrated at the factory. Be sure to change the direction of the position indicator if different operating direction is required.**



S6	Position Indicator (Fully-Open → Fully-Closed)	Operating Position	Input Signal	LED	Output Signal
OFF	CW	Fully-Closed	1 V, 2 V, 4 mA	LD1 ON	2 V, 4 mA
		Fully-Open	5 V, 10 V, 20 mA	LD2 ON	10 V, 20 mA



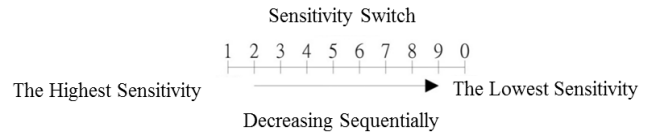
S6	Position Indicator (Fully-Open → Fully-Closed)	Operating Position	Input Signal	LED	Output Signal
ON	CCW	Fully-Closed	1 V, 2 V, 4 mA	LD1 ON	2 V, 4 mA
		Fully-Open	5 V, 10 V, 20 mA	LD2 ON	10 V, 20 mA

* S7 & S8 : Setting of fail position when input signal failed.

Signal Failed Position	S7	S8
Fully-Open	ON	OFF
Fully-Closed	OFF	ON
The Last Position	ON	ON
	OFF	OFF

2 Sensitivity Switch Setting (SW2)

- When switched to "1": The Highest Sensitivity.
When switched to "0": The Lowest Sensitivity.
- Original factory setting
➢ OME-2 ~ OME-8 : 3



4 Signal Setting for Open and Close Position

⚠ **These settings are set and calibrated at the factory. Be sure to reset the Signal Setting for Open and Close Position when recalibrating TC1 and TC2 for fully-open and fully-closed position or other signal types are required.**

⚠ **Use a multimeter to measure the output signal in accordance with the selected signal type.**

Press and hold "SET" button for 2 seconds until LD9 lights to enter local setting mode.

① **Please adjust the signal setting for fully-open position first, then adjust the signal setting for fully-closed position.**

Signal setting for Fully-OPEN position

- Press and hold "UP" button to operate the actuator to open until it has reached fully-open position and LD2 lights and then input a signal 5 V or 10 V or 20 mA.
- Press "MODE" button for 2 seconds until LD2 flashes to complete the setting of fully-open position.

Signal setting for Fully-CLOSED position

- Press and hold "DN" button to operate the actuator to close until it has reached fully-closed position and LD1 lights and then input a signal 1 V or 2 V or 4 mA.
- Press "MODE" button for 2 seconds until LD1 flashes to complete the setting of fully-closed position.

① **See below description for VR2 adjustment :**

VR2 Clockwise: decreasing signal value.
Counter-clockwise: increasing signal value.

After completing the above settings, press "SET" button to quit local setting.

5 Indicator Lamp (LD1 - LD9)



Lamp	Status	Lamp	Status
LD1	Fully-closed	LD6	Motor thermal protector activated
LD2	Fully-open	LD7	Output signal short circuit
LD3	Power	LD8	Overcurrent in motor
LD4	Abnormal input voltage	LD9	Local setting mode
LD5	Wrong input signal		