



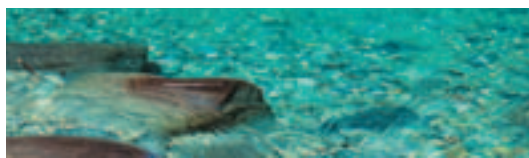
Sun Yeh Electrical Ind. Co., Ltd.

2013

www.sun-yeh.com



Quarter-Turn
Electric Actuator
CM Series





Company Profile

Sun Yeh Electrical Ind. Co., Ltd. was founded in 1986. We have adhered to the highest principle of understanding customer's demand in depth, and continuing to develop quarter-turn actuator, spring return actuator and linear actuator. It has won the new type patent in Taiwan, U.S.A, Japan and China. Sun Yeh offers various products which are widely applied to the control on industry, water treatment, air conditioning, chemical engineering, food industry and so on.

Introduction

CM series electric actuators offer a range of 100 N·m to 600 N·m torque and can be applied to ball valves, plug valves and butterfly valves according to client's demand.

CM series electric actuators can be used for ON-OFF or modulating control (option item). All models include ISO 5211 mounting flange, a domed position indicator and manual override to help users install and operate the actuators easily.



ISO 9001:2008
FM 501148



ISO 14001:2004
EMS 562513



OHSAS 18001:2007
OHS 573179



• RoHS Compliance

Perfect solution is the only goal for Sun Yeh.





General Information

Enclosure :

- Base : Dry powder coated aluminum alloy.
- Top cover : ABS anti-collision plastic material.

Motor : (small power, big torque, less power consumption)

- B class insulation.
- Built-in thermal protection prevents motor burning out.
AC motor : $115 \pm 5^{\circ}\text{C}$ / $239 \pm 9^{\circ}\text{F}$ DC motor : $90 \pm 5^{\circ}\text{C}$ / $194 \pm 9^{\circ}\text{F}$ °

Manual override device :

- Users can open or close the actuator with manual override device. Please remove the red dust proof plug on the manual override device when manual operation is needed and put the red dust proof plug back after finishing the manual operation.

Warning :

1. If the actuator is not equipped with manual power-off device (option item), make sure power is off before operating the manual override device.
2. If the actuator is equipped with manual power-off device (option item), please switch it to "Manual" before operating the manual override device. Switch it back to "Auto" after finishing the manual operation.



Manual override device

1. Red dust proof plug
2. When using manual override device, the recommended tool is as below :

Model No.	Allen Key	Fully-open→Fully-close
CM100~200	8mm	10 turns
CM300~600	10mm	8.5 turns

Manual power-off device
(option item)

Duty Cycle :

- 30% duty cycle.

Position indicator :

- All models have a continuous mechanism position indicator on the top of actuator cover to indicate the valve's position.

Working Conditions :

- Ambient temperature : Plastic cover $-10^{\circ}\text{C} \sim +65^{\circ}\text{C}$
Aluminum cover $-30^{\circ}\text{C} \sim +65^{\circ}\text{C}$ / $-22^{\circ}\text{F} \sim +149^{\circ}\text{F}$
- The humidity : 30% ~ 95%

Specifications

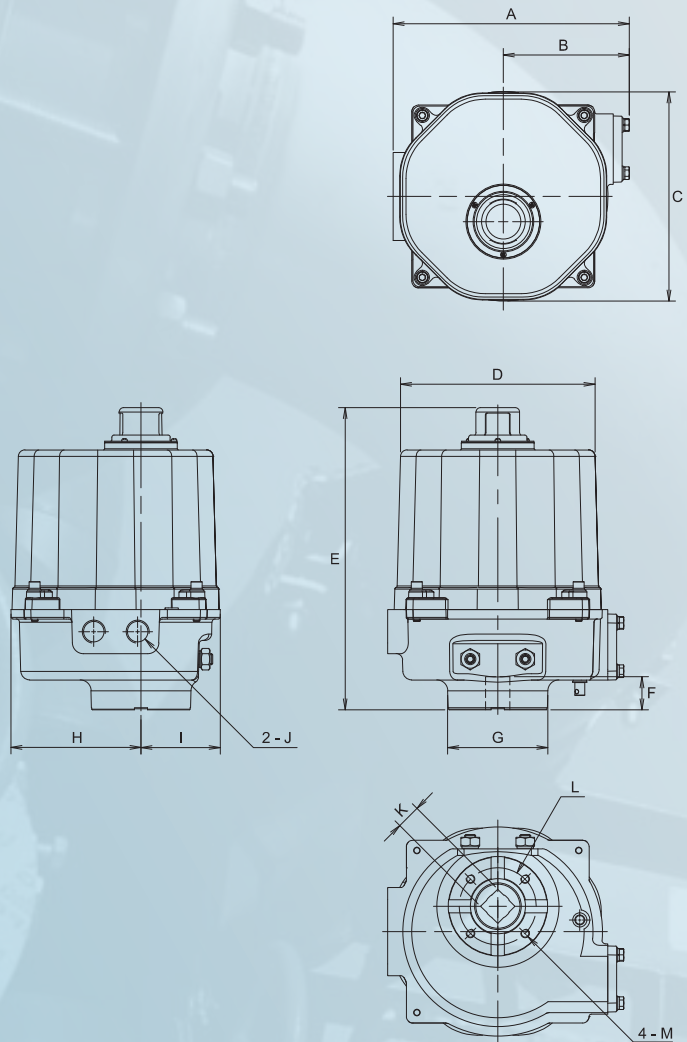
Model	Max. Torque		Weight		Mounting flange (ISO 5211)	Shaft ◇		Depth of shaft	
	N·m	lb·in	Kg	lb		mm	inch	mm	inch
CM100	100	885	7.6	17	F07	22	0.866	30	1.181
CM200	200	1771	7.6	17	F07	22	0.866	30	1.181
CM300	300	2656	14	31	F10	36	1.417	40	1.575
CM400	400	3542	14	31	F10	36	1.417	40	1.575
CM500	500	4427	14	31	F10	36	1.417	40	1.575
CM600	600	5313	14	31	F10	36	1.417	40	1.575

Important Notices and Maintenance

- Check for correct voltage prior to wiring.
- Turn power off before servicing or for maintenance purpose.
- Use sealant to seal conduit connections after wiring to prevent dusting or water contamination.
- The angle of electric actuator installation must be between 0~180 degree. Do not install upside down or below the horizontal.
- When more than one electric actuator needs to operate simultaneously, please connect with the individual cables. Recommendation : When needed, please install an extra relay.
- Not intended for vacuum spaces and avoid installing near explosive atmospheres.
- Actuators should be placed at clean and dry place for storage, and protected with outer carton from being affected by great temperature difference or serious vibration.
- To avoid functional failure caused by statics, do not touch any components on the PCB with metal tools or bare hands.
- Please connect the ground wire to PE inside the electric actuator.
- The warranty period of our products is one year.



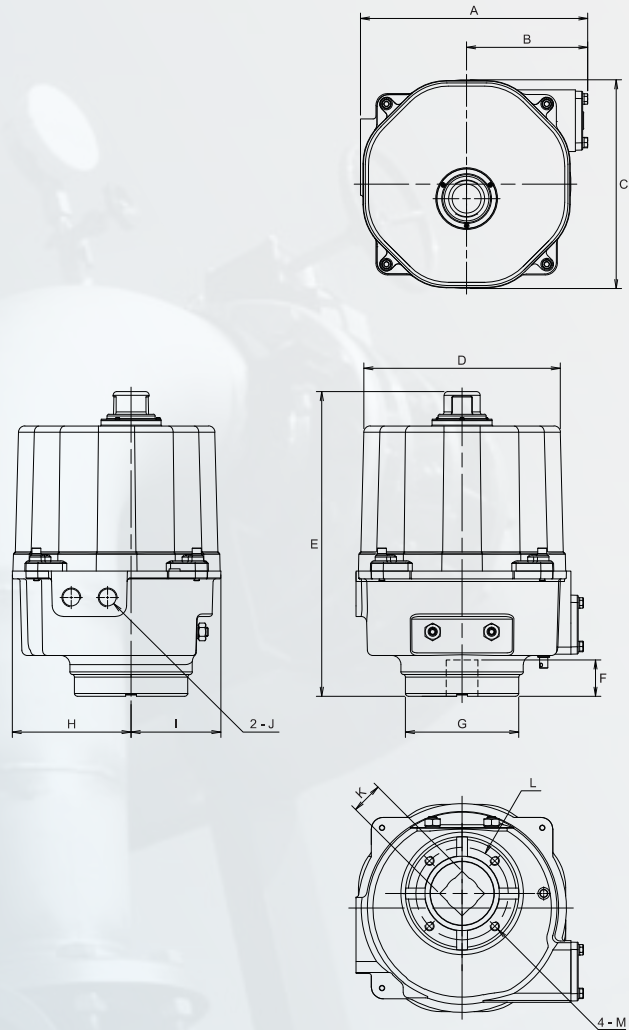
Outline Dimensions



Unit	Model No.	A	B	C	D	E	F	G	H	I	J	K MAX.	L	M	Flange Type
mm	CM100 ~ CM200	215	115	Ø190	177	275	30	Ø90	118	72	1/2" PS	22	Ø70	M8*1.25	F07

Unit	Model No.	A	B	C	D	E	F	G	H	I	J	K MAX.	L	M	Flange Type
inch	CM100 ~ CM200	8.47	4.53	Ø7.48	6.97	10.83	1.18	Ø3.54	4.65	2.84	1/2" PS	0.87	Ø2.76	M8*1.25	F07

CM100~CM200



Unit	Model No.	A	B	C	D	E	F	G	H	I	J	K MAX.	L	M	Flange Type
mm	CM300 ~ CM600	251	134	Ø230	217	336	40	Ø125	131	99	1/2" PS	36	Ø102	M10*1.5	F10

Unit	Model No.	A	B	C	D	E	F	G	H	I	J	K MAX.	L	M	Flange Type
inch	CM300 ~ CM600	9.88	5.28	Ø9.06	8.54	13.23	1.58	Ø4.92	5.16	3.9	1/2" PS	1.42	Ø4.01	M10*1.5	F10

CM300~CM600



Option Items



AC/DC 24V

AC 220V

AC 110V

AC 380V ~ 440V/3PH

Space heater

A space heater can increase the internal temperature and keep dry inside actuator to avoid the freezing lubricant and moisture causing actuator failure under low temperature or high humidity. Heater is not recommended if the ambient temperature is above 35° C / 95° F. However, when the temperature varies much from day to night or between summer and winter, heater and thermostat (25±5° C / 77±9° F) are recommended.

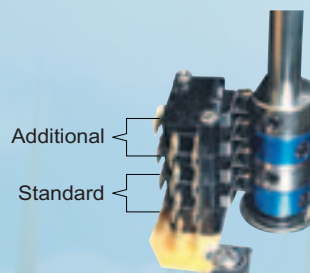
Heater Thermostat

The option can switch the heater off when the temperature inside the actuator is over 25° C / 77° F.



Additional limit switches

The standard model equips with the 1st & 2nd switches for fully-open and fully-closed. The option consists of the 3rd & 4th auxiliary switches which provide dry contacts for fully-open and fully-closed.



Current position transmitter

The option can provide 4-20mA output signal for position indicator and etc. It can be ordered with ON-OFF actuators.

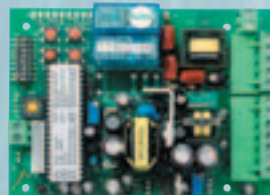


The picture is based on AC 110/220V

Modulating controller

Actuator can be operated according to input signal and provide the output signal for position indicator.

Input signal : 4-20mA, 1-5V, 2-10V Output signal : 4-20mA, 2-10V



The picture is based on AC 110/220V



Potentiometer unit

The option can be ordered with On/Off actuators. The selection has 1k or 5k ohm resistance values. It provides feedback signal for position indicator.



Wiring box

The option can provides user to connect all wires without removing actuator cover.

Manual power-off device

When power is supplied, users can switch from "Auto" to "Manual" with a lever to operate the manual override device to either open or close direction.

Hand-wheel

When using manual override device, user can choose the hand-wheel to operate the actuator easily as an option.

Aluminum cover (round shape)

The option is suitable for outdoor applications.

Conduit entrance

Standard : 1/2" PS
Optional : 3/4" NPT
1/2" NPT
M20

Various voltage

24V AC/DC
110/220V 1-Phase
220/380/440V 3-Phase



Motor Data

Run : Full Load Ampere
Lock : Locked Rotor Ampere

24V AC

Model	Max. Torque		Speed (90°)		Power (W)	24V AC Current(50Hz)		24V AC Current(60Hz)	
	N·m	lb·in	50Hz	60Hz		Run(A)	Lock(A)	Run(A)	Lock(A)
CM100	100	885	12s	12s	60	5.0	9.7	4.5	9.7
CM200	200	1771	25s	25s	60	4.0	9.7	4.0	9.7
CM300	300	2656	17s	15s	80	12.5	16.4	11.3	16.4
CM400	400	3542	23s	21s	80	12.7	16.4	12.5	16.4
CM500	500	4427	26s	23s	80	11.3	16.4	11.1	16.4
CM600	600	5313	34s	33s	80	11.8	16.4	11.6	16.4

24V DC

Model	Max. Torque		Speed (90°)	Power (W)	24V DC Current	
	N·m	lb·in			Run(A)	Lock(A)
CM100	100	885	13s	60	4.2	13.1
CM200	200	1771	24s	60	4.0	13.1
CM300	300	2656	19s	80	9.9	15.7
CM400	400	3542	24s	80	8.7	15.7
CM500	500	4427	27s	80	8.9	15.7
CM600	600	5313	36s	80	9.2	15.7

110V AC 1-Phase

Model	Max. Torque		Speed (90°)		Power (W)	110V AC Current(50Hz)		110V AC Current(60Hz)	
	N·m	lb·in	50Hz	60Hz		Run(A)	Lock(A)	Run(A)	Lock(A)
CM100	100	885	12s	10s	50	1.3	3.8	1.2	3.8
CM200	200	1771	26s	22s	60	1.5	3.8	1.2	3.8
CM300	300	2656	13s	11s	180	3.9	8.5	2.8	8.5
CM400	400	3542	18s	15s	180	3.9	8.5	2.8	8.5
CM500	500	4427	24s	19s	180	3.9	8.5	3.1	8.5
CM600	600	5313	28s	23s	180	3.8	8.5	3.2	8.5

220V AC 1-Phase

Model	Max. Torque		Speed (90°)		Power (W)	220V AC Current(50Hz)		220V AC Current(60Hz)	
	N·m	lb·in	50Hz	60Hz		Run(A)	Lock(A)	Run(A)	Lock(A)
CM100	100	885	12s	10s	50	0.7	1.7	0.7	1.7
CM200	200	1771	26s	22s	60	0.6	1.7	0.5	1.7
CM300	300	2656	13s	11s	180	2.2	6.8	1.4	6.8
CM400	400	3542	18s	15s	180	2.2	6.8	1.5	6.8
CM500	500	4427	24s	19s	180	2.2	6.8	1.5	6.8
CM600	600	5313	28s	23s	180	2.2	6.8	1.4	6.8

220V AC 3-Phase

Model	Max. Torque		Speed (90°)		Power (W)	220V AC Current(50Hz)		220V AC Current(60Hz)	
	N·m	lb·in	50Hz	60Hz		Run(A)	Lock(A)	Run(A)	Lock(A)
CM100	100	885	12s	10s	50	1.0	3.2	0.7	3.2
CM200	200	1771	26s	22s	60	1.0	3.2	0.7	3.2
CM300	300	2656	13s	11s	180	1.2	3.7	1.0	3.7
CM400	400	3542	18s	15s	180	1.2	3.7	1.0	3.7
CM500	500	4427	24s	19s	180	1.2	3.7	1.0	3.7
CM600	600	5313	28s	23s	180	1.2	3.7	0.9	3.7

380V AC 3-Phase

Model	Max. Torque		Speed (90°)		Power (W)	380V AC Current(50Hz)		380V AC Current(60Hz)	
	N·m	lb·in	50Hz	60Hz		Run(A)	Lock(A)	Run(A)	Lock(A)
CM100	100	885	12s	10s	50	0.4	1.0	0.3	1.0
CM200	200	1771	26s	22s	60	0.5	1.0	0.4	1.0
CM300	300	2656	13s	11s	180	0.6	2.5	0.5	2.5
CM400	400	3542	18s	15s	180	0.6	2.5	0.5	2.5
CM500	500	4427	24s	19s	180	0.6	2.5	0.5	2.5
CM600	600	5313	28s	23s	180	0.6	2.5	0.5	2.5

440V AC 3-Phase

Model	Max. Torque		Speed (90°)		Power (W)	440V AC Current(50Hz)		440V AC Current(60Hz)	
	N·m	lb·in	50Hz	60Hz		Run(A)	Lock(A)	Run(A)	Lock(A)
CM100	100	885	12s	10s	50	0.4	1.1	0.3	1.1
CM200	200	1771	26s	22s	60	0.5	1.1	0.4	1.1
CM300	300	2656	13s	11s	180	0.7	2.5	0.5	2.5
CM400	400	3542	18s	15s	180	0.6	2.5	0.5	2.5
CM500	500	4427	24s	19s	180	0.7	2.5	0.5	2.5
CM600	600	5313	28s	23s	180	0.7	2.5	0.5	2.5



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