

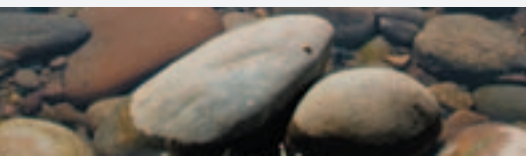


Sun Yeh Electrical Ind. Co., Ltd.

2014

[www.sun-yeh.com](http://www.sun-yeh.com)

Quarter-Turn  
Electric Actuator  
OM 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. We won the new type patents from several countries. 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.

Sun Yeh electric actuators are built on high quality; all products have been certified with approval of CE and CSA. As well as the ISO 9001, ISO 14001, OHSAS 18001, REACH, and RoHS certificates. "Perfect Solution" is the only goal for Sun Yeh.

## Introduction

OM series electric actuators offer a range of 35N·m~4500N·m torque. The actuator comes standard with NEMA 4X (IP67) environmental rating. All models are ISO 5211 compliant and have a visual position indicator. The manual override can be operated without clutch and brake under our research and development.



C US  
204450



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 :

- IP67, NEMA 4X : Water-proof and dust-proof enclosure.
- Material : Dry powder coating aluminum alloy.

### Motor :

- F (Standard) or H (Optional) insulation class for all models.
- Built-in thermal protection prevents motor burning out.  
AC motor :  $125 \pm 5^{\circ}\text{C}$  /  $257 \pm 9^{\circ}\text{F}$  DC motor :  $90 \pm 5^{\circ}\text{C}$  /  $194 \pm 9^{\circ}\text{F}$

### Duty Cycle :

- All models : 30% duty cycle (Standard)
- Extended duty cycle : (Optional)  
OM-A, OM-A-M, OM-1~OM-8 : 75% duty cycle  
OM-9~OM-13 : 50% duty cycle

### Position Indicator :

- All models have continuous mechanism position indicator on the top of actuator cover.





### Manual Override :

- Non-clutch design, the manual operation can be operated without any lever, clutch or brake upon power outage.
- When electric motor is operating, hand-wheel won't rotate for personal safety purpose.

### Gear Train :

- High alloy steel gear trains provide self-locking function to avoid valve back drive.
- Gear trains have been already lubricated sufficiently with anti-high temperature lubricant at the factory.

### Working Conditions :

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

### Certificates :

- CE
- CSA (Conforming to the test standard of outdoor usage)
- RoHS Compliance



## Selection Steps

- a. Before mounting actuator, verify that the torque requirement of valve is less than the output torque of the actuator. (The suggested safety factor is 1.3. )

For example :

If the maximum torque of 5" valve is 80N·m. →  $80 \times 1.3$  (safety factor) = 104N·m



104N·m < 150N·m (OM-3) → OK !

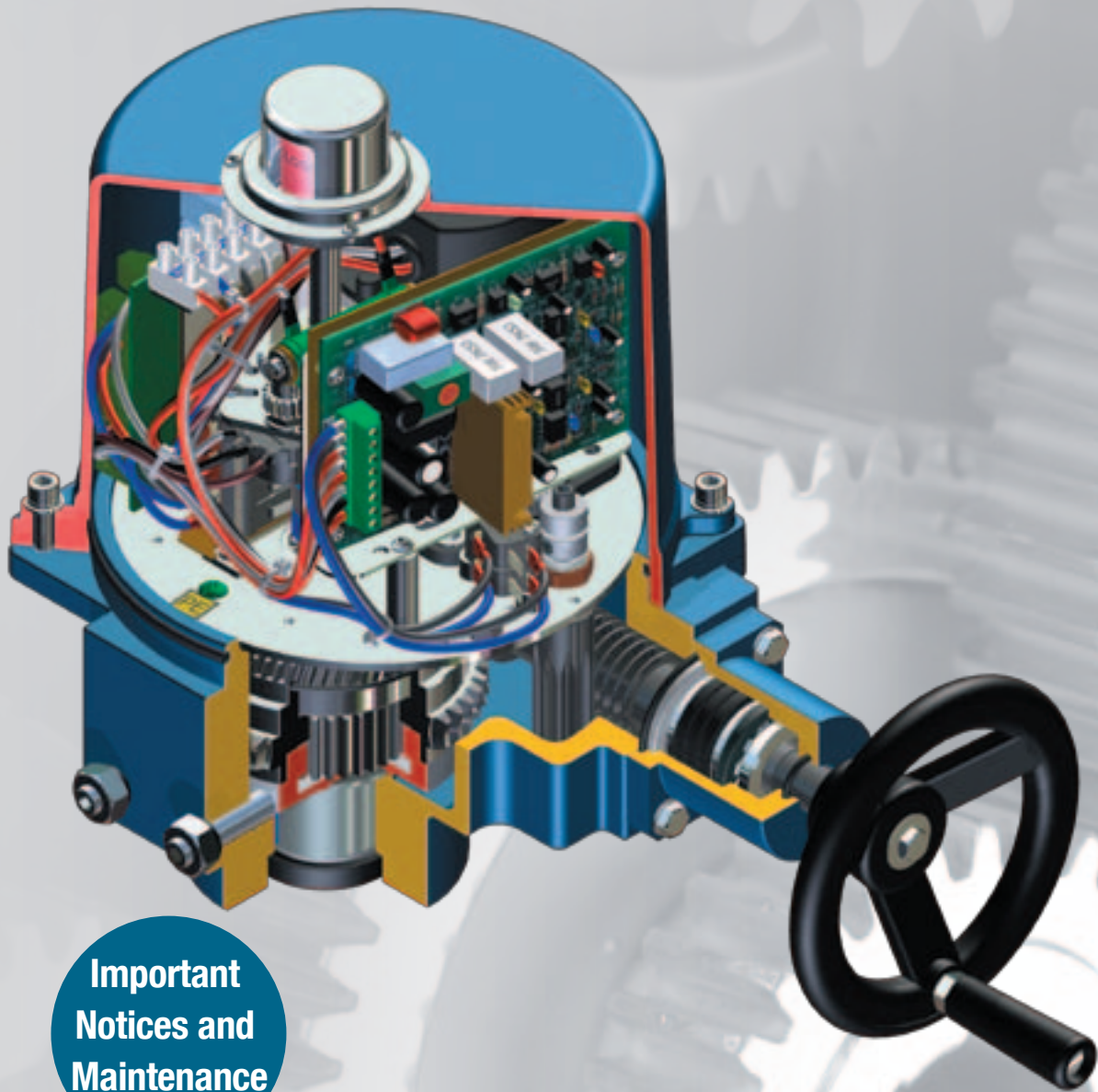
104N·m > 90N·m (OM-2) → NO!

- b. Check that output shaft adaptor fits stem of valve before inserting into actuator. If not, please apply suitable adaptor or mounting kit.

## Specifications

Model No.	Max Torque		Weight		Manual Override
	N·m	lb·in	Kg	lb	
OM-A	50	443	3	6.61	N/A
OM-A-M	50	443	3	6.61	Lever
OM-1	35	310	2	4.41	
BM-2	120	1063	5.5	12.13	N/A
OM-F	65	576	11	24.25	Hand-Wheel
OM-2	90	797	11	24.25	
OM-G	120	1063	11	24.25	
OM-3	150	1328	11	24.25	
OM-4	400	3542	20	44.09	
OM-5	500	4427	20	44.09	
OM-6	650	5756	20	44.09	
OM-7	1000	8855	32	70.55	
OM-8	1500	13282	32	70.55	
OM-9	2000	17709	71	156.53	
OM-10	2500	22137	71	156.53	
OM-11	3000	26564	72	158.73	
OM-12	3500	30991	72	158.73	
OM-13	4500	39846	106	233.69	

Model No.	Mounting Flange (ISO 5211)	Shaft		Depth of shaft		Key			
		mm	inch	mm	inch	mm	inch		
BM-2		F07	22	0.87	30	1.18	N/A		
OM-A		F05 / F07	17	0.67	20	0.78			
OM-A-M		F05 / F07	17	0.67	20	0.78			
OM-1		F03 / F05	14	0.55	17	0.67			
OM-F, OM-G		F07	22	0.87	30	1.18			
OM-2~OM-3		F07	22	0.87	30	1.18			
OM-4~OM-6		F10	36	1.38	40	1.57			
OM-7~OM-8		F12 or F14	35	1.38	60	2.36		10 × 10	0.39 × 0.39
OM-9~OM-12		F14 or F16	75	2.95	100	3.94		12 × 10	0.47 × 0.39
OM-13		F16 / F25	72	2.83	110	4.33		20 × 12	0.79 × 0.47



## 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 needed to operate simultaneously, please connect with the individual cables or install the coupling board.
- 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.
- Connect the ground wire to PE inside the electric actuator.
- The warranty period of all products is one year.



# Option Items

## Space heater



AC/DC 24V    AC 220V    AC 110V    AC 380V~440V/3PH

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.

## Potentiometer unit



OM-1, OM-A, OM-A-M

OM-2~OM-13  
OM-F, OM-G

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

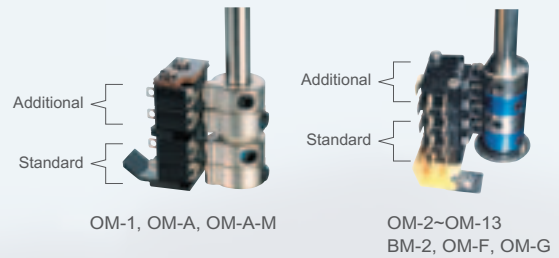


OM-1, OM-A, OM-A-M

OM-2~OM-13, OM-F, OM-G

The option can be connected all wires by the user without removing actuator cover.

## Additional limit switches



OM-1, OM-A, OM-A-M

OM-2~OM-13  
BM-2, OM-F, OM-G

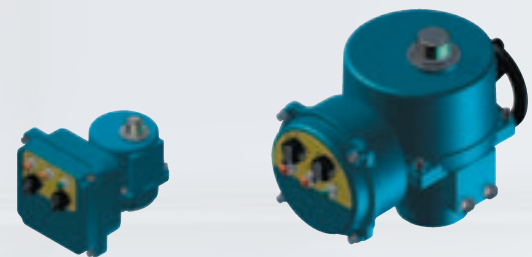
The standard model equips with the 1st & 2nd switches for fully-open and fully-closed. The option consists of the 3rd & 4th auxiliary switches which provide dry contacts for fully-open and fully-closed.

## Heater thermostat



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

## Local control unit



OM-1, OM-A, OM-A-M

OM-2~OM-13, OM-F, OM-G

The option can be used in field control. It provides Local/Remote selection switches and Open/Close selection switches.

## Torque switches

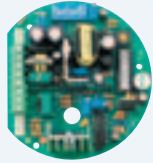


The option can provide over-load protection. It is available for OM-2 to OM-13, OM-F, OM-G actuators and must be ordered with actuator.



## Modulating controller

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



OM-1, OM-A, OM-A-M

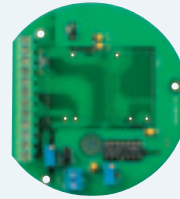


OM-2~OM-13, OM-F, OM-G

The pictures are based on AC 110/220V

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

## Analog signal output



OM-1, OM-A, OM-A-M  
The picture is based on DC 24V



OM-2~OM-13, OM-F, OM-G  
The picture is based on AC 110/220V

The option can provide various output signals for position indicator and etc.

Output signal : 0-20mA, 4-20mA, 0-5V, 0-10V, 1-5V, 2-10V

## 75% duty cycle (IEC standard)



OM1, OM-A, OM-A-M :  
75% duty cycle

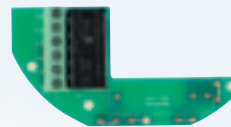


OM-2~OM-8 : 75% duty cycle  
OM-9~OM-13 : 50% duty cycle

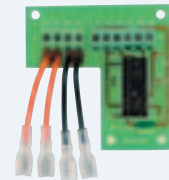
The pictures are based on AC 110/220V

The option is suggested for higher starting frequency.

## Coupling wiring



OM-1, OM-A, OM-A-M



OM-2~OM-13  
OM-F, OM-G

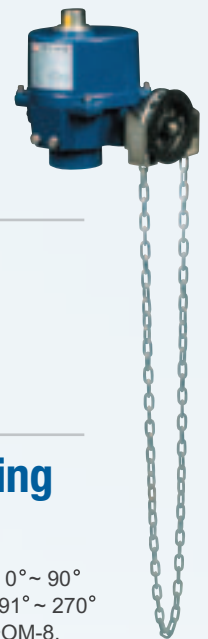
The option is recommended when a set of control wire or switch needs to control two or more actuators at the same time.

## Adjustable speed board

The option can adjust the actuator speed (running time) from standard to 30s, 60s, 90s and so on (Max. 200s, 300s or 600s) according to user's need. The fastest speed is the standard speed. It is available for OM-2 to OM-13 AC 110/220V, 1-PH actuators.

## Chain wheel

The option can convert the hand-wheel override to a chain driven override in application of actuator mounted at a distance above the floor. It is available OM-2 to OM-13, OM-F, OM-G actuators.



## Motor

Motor insulation class :  
Standard : F class  
Optional : H class

## Enclosure

Nylon coating  
E.D. coating  
Epoxy coating

## Conduit entrance

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

## Fieldbus connectivity

Modbus

## Various voltage

AC/DC 12V  
AC/DC 24V  
AC 110/220V, 1-Phase  
AC 220/380/440V, 3-Phase  
Customized voltages

## Working angle

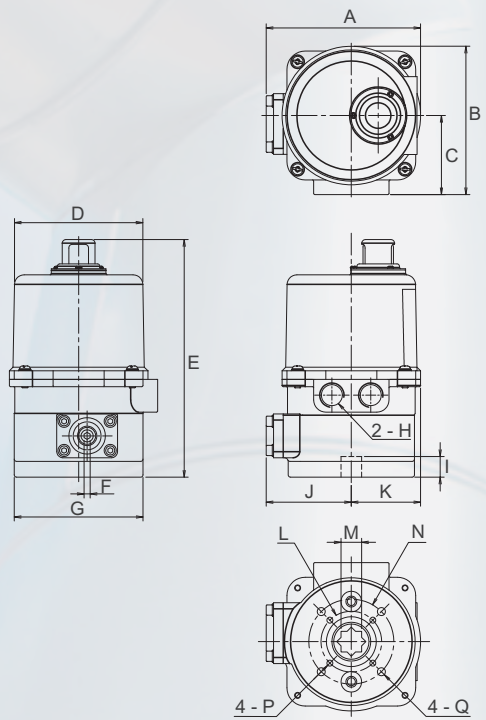
Standard : 0°~ 90°  
Optional : 91°~ 270°  
For OM-1~OM-8,  
OM-F, OM-G

## Water-proof rating

IP 68



# Outline Dimensions



mm ▾

Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	Flange Type
OM-A	114	122	65	Ø106	196	-	Ø106	1/2" PS	20	57	57	Ø50	17	Ø70	M6*1.0	M8*1.25	F05 / F07
OM-A-M	127	122	65	Ø106	196	5	Ø102	1/2" PS	20	70	57	Ø50	17	Ø70	M6*1.0	M8*1.25	F05 / F07

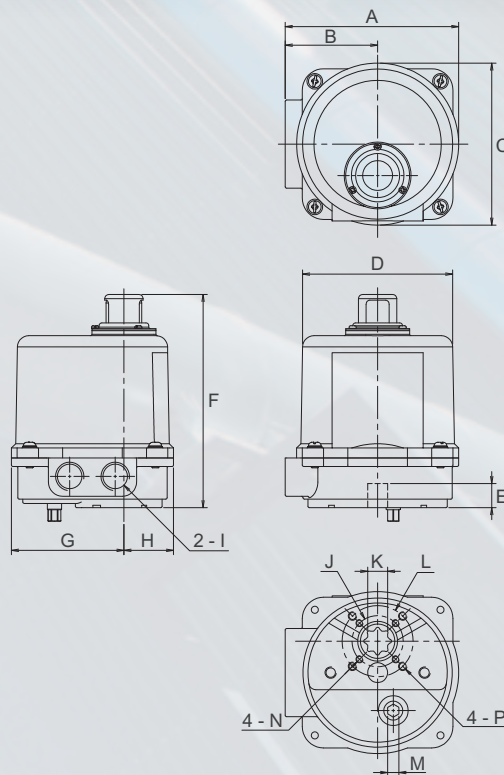
inch ▾

- With modulation card E=229
- No mechanical stops

Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	Flange Type
OM-A	4.49	4.8	2.56	Ø4.17	7.71	-	Ø4.173	1/2" PS	0.78	2.24	2.24	Ø1.97	0.67	Ø2.76	M6*1.0	M8*1.25	F05 / F07
OM-A-M	5.0	4.8	2.56	Ø4.17	7.71	0.2	Ø4.016	1/2" PS	0.78	2.76	2.24	Ø1.97	0.67	Ø2.76	M6*1.0	M8*1.25	F05 / F07

- With modulation card E=9.01
- No mechanical stops

# OM-A, OM-A-M



Model No.	A	B	C	D	E	F	G	H	I	J	K Max	L	M	N	P	Flange Type
OM-1	122	65	114	Ø106	17	150	79	35	1/2" PS	Ø36	14	Ø50	8	M5*0.8	M6*1.0	F03 / F05

- Option : (1)K=11 (2)K=9
- With modulating card F=183
- No mechanical stops

Model No.	A	B	C	D	E	F	G	H	I	J	K Max	L	M	N	P	Flange Type
OM-1	4.80	2.56	4.49	Ø4.17	0.67	5.9	3.11	1.38	1/2" PS	Ø1.42	0.551	Ø1.968	0.314	M5*0.8	M6*1.0	F03 / F05

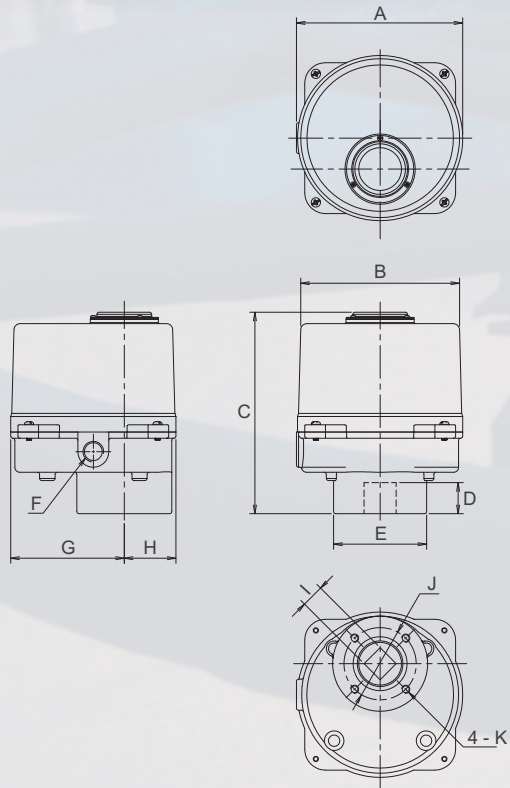
- Option : (1)K=0.43 (2)K=0.35
- With modulating card F=7.2
- No mechanical stops

OM-1





# Outline Dimensions



mm ▾

Model No.	A	B	C	D	E	F	G	H	I Max	J	K	Flange Type
BM-2	161	Ø154	195	30	Ø90	1/2" PS	110	50	22	Ø70	M8*1.25	F07

● Plastic cover. No manual override.  
No mechanical stops. No certificates

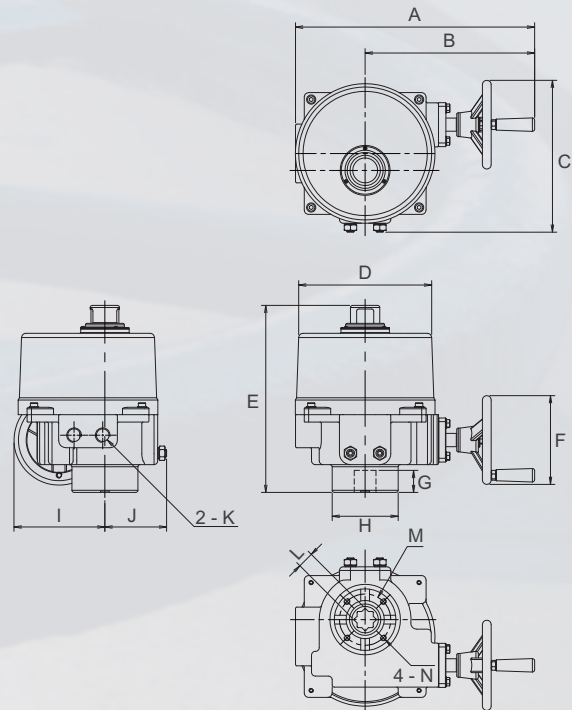
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Model No.	A	B	C	D	E	F	G	H	I Max	J	K	Flange Type
BM-2	6.33	Ø6.06	7.67	1.18	Ø3.54	1/2" PS	4.33	1.97	0.866	Ø2.755	M8*1.25	F07

● Plastic cover. No manual override.  
No mechanical stops. No certificates

BM-2





Model No.	A	B	C	D	E	F	G	H	I	J	K	L Max	M	N	Flange Type
OM-2~OM-3	326	231	207	Ø181	255	Ø121	30	Ø90	124	84	1/2" PS	22	Ø70	M8*1.25	F07

- With DC motor E=289 (apply to DC model or 75% duty cycle)
- Note: with torque switch A=361

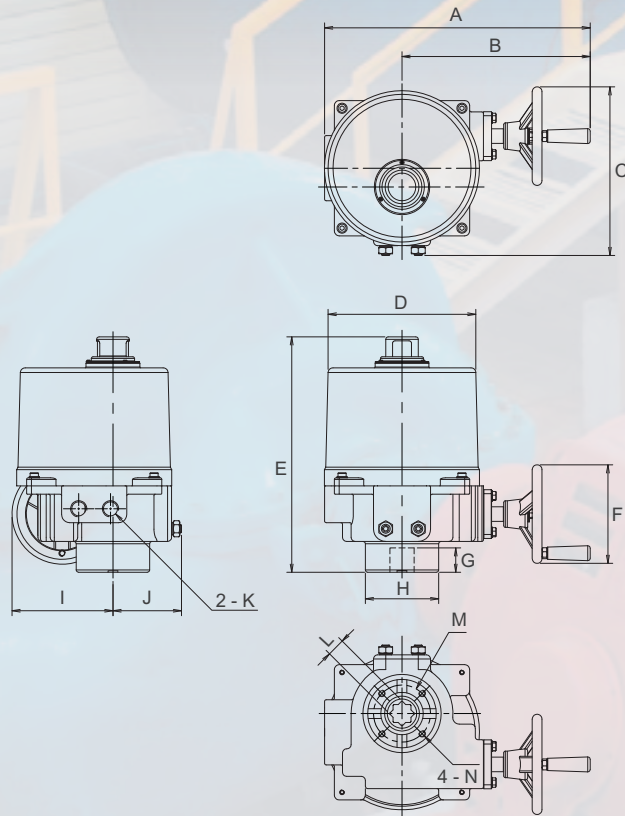
Model No.	A	B	C	D	E	F	G	H	I	J	K	L Max	M	N	Flange Type
OM-2~OM-3	12.83	9.09	8.15	Ø7.13	10.04	Ø4.76	1.18	Ø3.54	4.88	3.31	1/2" PS	0.866	Ø2.755	M8*1.25	F07

- With DC motor E=11.38 (apply to DC model or 75% duty cycle)
- Note: with torque switch A=14.21

# OM-2~OM-3



# Outline Dimensions



mm ▾

Model No.	A	B	C	D	E	F	G	H	I	J	K	L Max	M	N	Flange Type
OM-F, OM-G	326	231	207	Ø181	289	Ø121	30	Ø90	124	84	1/2" PS	22	Ø70	M8*1.25	F07

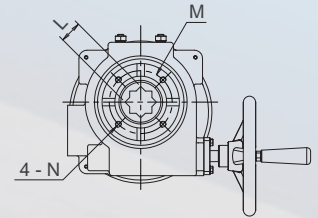
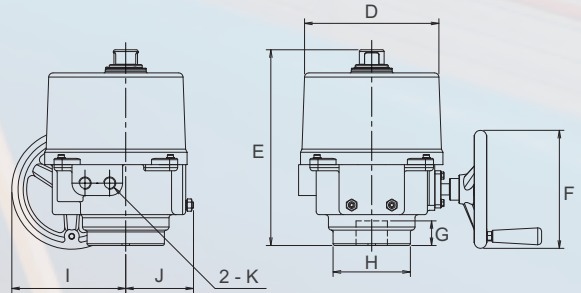
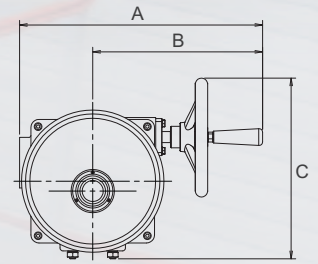
● Note: with torque switch A=361

inch ▾

Model No.	A	B	C	D	E	F	G	H	I	J	K	L Max	M	N	Flange Type
OM-F, OM-G	12.83	9.09	8.15	Ø7.13	11.38	Ø4.76	1.18	Ø3.54	4.88	3.31	1/2" PS	0.866	Ø2.755	M8*1.25	F07

● Note: with torque switch A=14.21

# OM-F, OM-G



Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Flange Type
OM-4~OM-6	394	275	292.5	Ø217	317	Ø191	40	Ø125	184	110	1/2" PS	36	Ø102	M10*1.5	F10

● Note: with torque switch A=460

Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Flange Type
OM-4~OM-6	15.51	10.83	11.515	Ø8.54	12.48	Ø7.52	1.57	Ø4.92	7.24	4.33	1/2" PS	1.417	Ø4.015	M10*1.5	F10

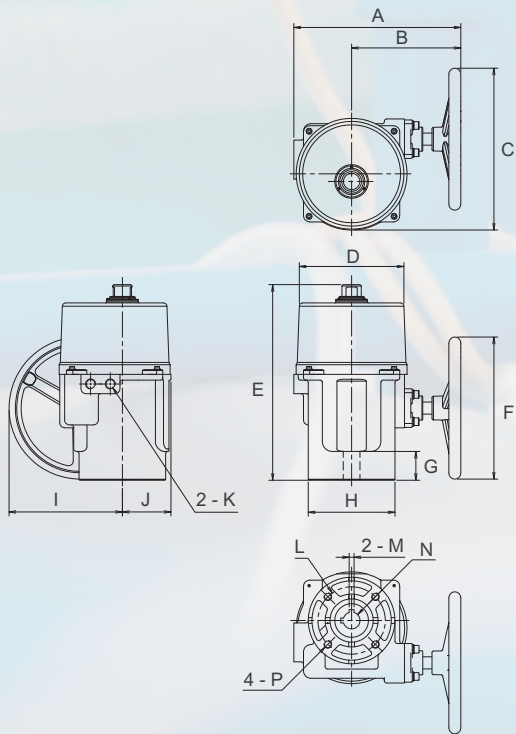
● Note: with torque switch A=18.11

# OM-4~OM-6





# Outline Dimensions



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Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N Max	P	Flange Type
OM-7~OM-8	347	227	336	Ø217	406	Ø295	60	Ø180	235	101	1/2" PS	Ø125	10	Ø35	M12*1.75	F12
	347	227	336	Ø217	406	Ø295	60	Ø180	235	101	1/2" PS	Ø140	10	Ø35	M16*2.0	F14

● Note: with torque switch A=435

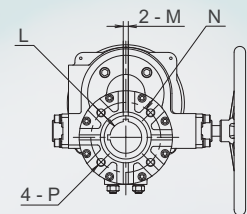
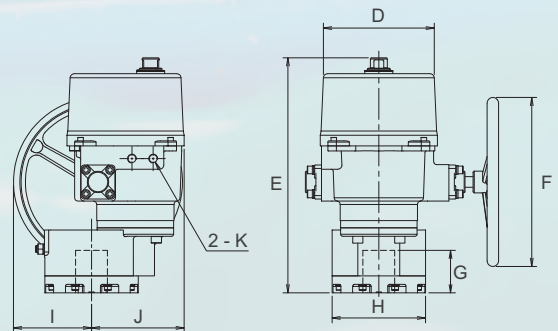
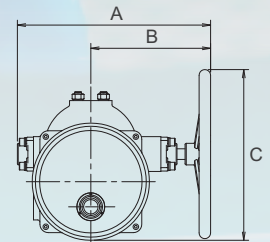
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Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N Max	P	Flange Type
OM-7~OM-8	13.66	8.94	13.23	Ø8.54	15.98	Ø11.61	2.36	Ø7.09	9.25	3.98	1/2" PS	Ø4.92	0.393	Ø1.378	M12*1.75	F12
	13.66	8.94	13.23	Ø8.54	15.98	Ø11.61	2.36	Ø7.09	9.25	3.98	1/2" PS	Ø5.51	0.393	Ø1.378	M16*2.0	F14

● Note: with torque switch A=17.13

# OM-7~OM-8





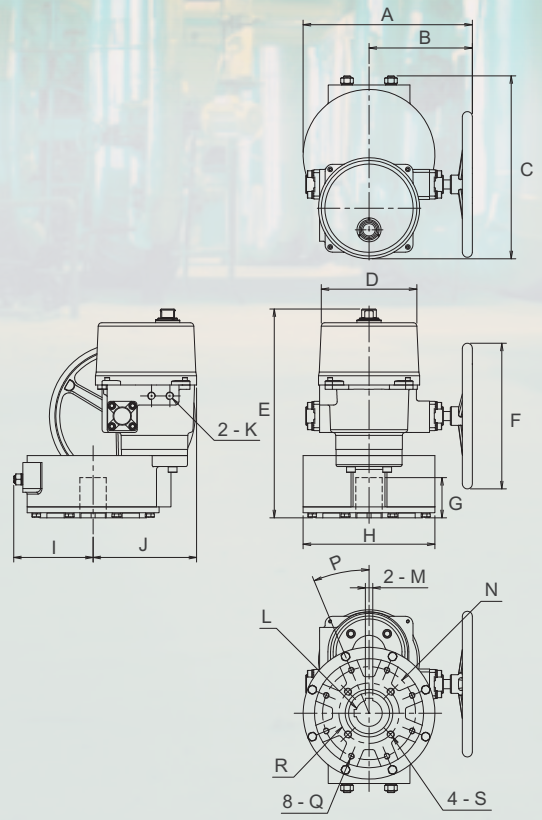
Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Flange Type
OM-9~OM-12	455	282	402	Ø261	554	Ø398	100	Ø220	184	218	1/2" PS	Ø75	12	Ø140	M20*2.0	F14
	455	282	402	Ø261	554	Ø398	100	Ø220	184	218	1/2" PS	Ø75	12	Ø165	M20*2.5	F16

Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Flange Type
OM-9~OM-12	17.91	11.1	15.83	10.28	21.81	15.67	3.94	8.66	7.24	8.58	1/2" PS	2.95	0.472	5.511	M16*2.0	F14
	17.91	11.1	15.83	10.28	21.81	15.67	3.94	8.66	7.24	8.58	1/2" PS	2.95	0.472	6.496	M20*2.5	F16

OM-9~OM-12



# Outline Dimensions



mm ▾

Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P ISO 5211	Q	R	S	Flange Type
OM-13	462	282	500	Ø261	571	Ø398	110	Ø360	217	283	1/2" PS	Ø72	20*12	Ø254	22.5°	M16*2.0	Ø165	M20*2.5	F16 / F25

inch ▾

Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P ISO 5211	Q	R	S	Flange Type
OM-13	18.19	11.1	19.69	Ø10.28	22.48	Ø15.67	4.33	Ø14.17	8.54	11.14	1/2" PS	Ø2.834	0.787*0.472	Ø10	22.5°	M16*2.0	Ø6.5	M20*2.5	F16 / F25

# OM-13

Actuator	Valve Spec.		
Model No.	Type	Size (inch)	Material
OM-1	Screwed Ends Ball Valve	1/2" ~ 1-1/2"	SUS 316/Bronze/PVC/PP
OM-A/AM	Screwed Ends Ball Valve	2"	SUS 316/Bronze/PVC/PP
BM-2	Screwed Ends Ball Valve	2" ~ 3"	SUS 316/Bronze/PVC/PP
OM-2	Screwed Ends Ball Valve	1-1/4" ~ 2"	SUS 316/Bronze/PVC/PP
OM-3	Screwed Ends Ball Valve	2-1/2" ~ 3"	SUS 316/Bronze/PVC/PP
OM-4	Screwed Ends Ball Valve	4"	Bronze/PVC/PP
OM-1	Socket Welded Ends Ball Valve	1/2" ~ 1-1/2"	PVC/PP
OM-A/AM	Socket Welded Ends Ball Valve	2"	PVC/PP
BM-2	Socket Welded Ends Ball Valve	2" ~ 3"	PVC/PP
OM-2	Socket Welded Ends Ball Valve	1-1/4" ~ 2"	PVC/PP
OM-3	Socket Welded Ends Ball Valve	2-1/2" ~ 3"	PVC/PP
OM-4	Socket Welded Ends Ball Valve	4"	PVC/PP
OM-1	Flanged Ends Ball Valve	1/2" ~ 1"	Cast Iron/SUS 304/SUS 316
OM-A/AM	Flanged Ends Ball Valve	1-1/4" ~ 2"	Cast Iron/SUS 304/SUS 316
BM-2	Flanged Ends Ball Valve	1-1/4" ~ 3"	Cast Iron/SUS 304/SUS 316
OM-2	Flanged Ends Ball Valve	1-1/4" ~ 2"	Cast Iron/SUS 304/SUS 316
OM-3	Flanged Ends Ball Valve	2-1/2" ~ 3"	Cast Iron/SUS 304/SUS 316
OM-4	Flanged Ends Ball Valve	4" ~ 5"	Cast Iron/SUS 304/SUS 316
OM-5	Flanged Ends Ball Valve	6"	Cast Iron/SUS 304/SUS 316
OM-6	Flanged Ends Ball Valve	8"	Cast Iron/SUS 304/SUS 316
OM-7	Flanged Ends Ball Valve	10"	Cast Iron/SUS 304/SUS 316
OM-8	Flanged Ends Ball Valve	12"	Cast Iron/SUS 304/SUS 316
OM-1	3-Way Screwed Ends Ball Valve	1/2" ~ 1-1/2"	Bronze/SUS 316
BM-2	3-Way Screwed Ends Ball Valve	2"	Bronze/SUS 316
OM-2	3-Way Screwed Ends Ball Valve	1-1/2"	Bronze/SUS 316
OM-3	3-Way Screwed Ends Ball Valve	2"	Bronze/SUS 316
OM-1	3-Way Flanged Ends Ball Valve	1"	Cast Iron/SUS 304/SUS 316
BM-2	3-Way Flanged Ends Ball Valve	1-1/2" ~ 2"	Cast Iron/SUS 304/SUS 316
OM-2	3-Way Flanged Ends Ball Valve	1-1/2"	Cast Iron/SUS 304/SUS 316
OM-3	3-Way Flanged Ends Ball Valve	2"	Cast Iron/SUS 304/SUS 316
OM-4	3-Way Flanged Ends Ball Valve	2-1/2" ~ 3"	Cast Iron/SUS 304/SUS 316
OM-5	3-Way Flanged Ends Ball Valve	4"	Cast Iron/SUS 304/SUS 316
OM-A/AM	Butterfly Valve	2" ~ 3"	Cast Iron/SUS 304/SUS 316/PVC/PP
BM-2	Butterfly Valve	2" ~ 4"	Cast Iron/SUS 304/SUS 316/PVC/PP
OM-2	Butterfly Valve	2" ~ 3"	Cast Iron/SUS 304/SUS 316/PVC/PP
OM-3	Butterfly Valve	4" ~ 5"	Cast Iron/SUS 304/SUS 316/PVC/PP
OM-4	Butterfly Valve	6" ~ 8"	Cast Iron/SUS 304/SUS 316/PVC/PP
OM-5	Butterfly Valve	10" ~ 12"	Cast Iron/SUS 304/SUS 316/PVC/PP
OM-6	Butterfly Valve	14"	Cast Iron/SUS 304/SUS 316/PVC/PP
OM-7	Butterfly Valve	16"	Cast Iron/SUS 304/SUS 316/PVC/PP
OM-8	Butterfly Valve	18"	Cast Iron/SUS 304/SUS 316/PVC/PP

Notes:

1. Please check valve torque before mounting.
2. Please check working pressure, service fluid, and temperature.



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