



Quarter-Turn Electric Valve Actuator



## Product Overview

OM series electric actuators offer torque ranges from 35 Nm to 4,500 Nm. The actuator comes standard with NEMA 4X & IP67 outdoor use. All Models are ISO 5211 compliant and equipped with a visual position indicator. The manual override can be operated without clutch and brake under our research and development. It has already won patent in Taiwan, Mainland China, and USA.

## Product Features

- Self-locking Gear System.
- Clutch-less Manual Override.
- Dry-powder coated aluminum alloy enclosure conforms to NEMA 4X, 5 & IP 67 outdoor use.
- ISO 5211 Mounting Flange.
- Mechanical Stops.
- Domed Position indicator.
- Built-in thermal protection prevents motor burnout.

# Standard Specification

## Enclosure

- IP 67, NEMA 4X, 5 rating (Waterproof and dustproof enclosure intended for outdoor use).
- Material : Dry powder coated aluminum alloy.

## Motor

- Insulation class F.
- Built-in thermal protection prevents motor burnout.  
AC motor :  $125\pm 5^{\circ}\text{C}$  /  $257\pm 41^{\circ}\text{F}$  DC motor :  $90\pm 5^{\circ}\text{C}$  /  $194\pm 41^{\circ}\text{F}$

## Domed Position Indicator

- All models are equipped with continuous mechanical position indicator on the top of actuator cover.

## Duty Cycle

- 30% duty cycle.

## Mechanical Stops

- Externally adjustable mechanical stops are provided on OM-2 ~ OM-13, OM-F, OM-G, OM-H actuators.

## Manual Override

- Non-clutch design, no lever, clutch or brake required for manual operation.
- When electric motor is operating, the hand-wheel won't rotate for personal safety.





## Gear Train

- High alloy steel gear trains with self-locking against back-driving.
- Gear trains are factory lubricated with high temperature resistant lubricant.

## Operating Voltages

Model	12V / 24V		1-Phase		3-Phase		
	12V DC / AC	24V DC / AC	110V-120V	220-240V	220V	380V	440V
OM-A \ OMA-M \ OM-1	✓	✓	✓	✓			
BM-2			✓	✓	✓	✓	✓
OM-F, G, H		✓	✓	✓			
OM-2 ~ 10	✓	✓	✓	✓	✓	✓	✓
OM-11 ~ 12		✓	✓	✓	✓	✓	✓
OM-13			✓	✓	✓	✓	✓

- Contact sales person for other voltage requirements.

## Service Condition

- Ambient temperature : -30°C ~ +65°C / -22°F ~ +149°F
- Relative humidity : 30% ~ 95%

## Certifications

- CE
- CSA
- CCC
- TR
- RoHS
- Reach
- China RoHS



# Technical Data

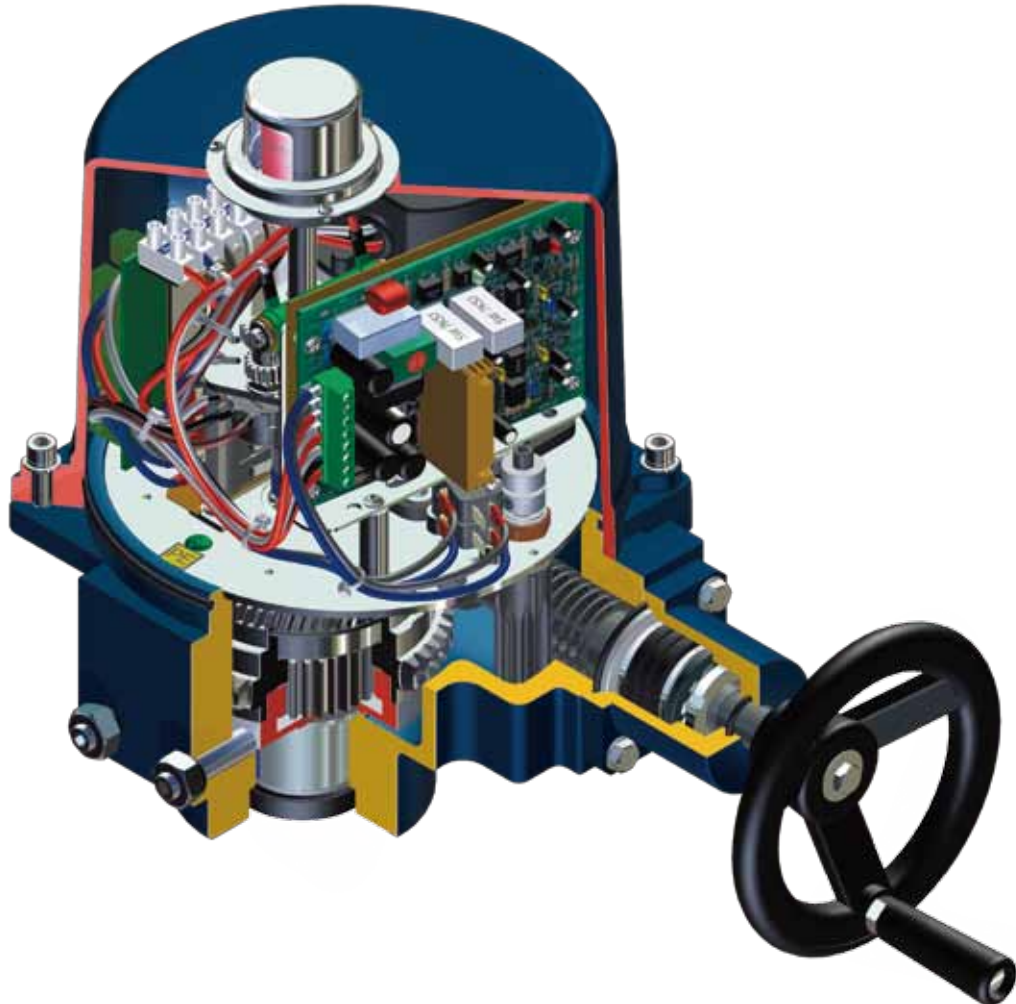
Model	Torque		Weight		Nominal Motor Power	Speed	Manual Override	Mounting Flange
	Nm	in-lbs	kg	lbs	w	(sec / 90°)		ISO 5211
OM-A	50	445	3	6.6	10	20	N / A	F05 / F07
OM-A-M	50	445	3	6.6	10	20	Lever	F05 / F07
OM-1	35	310	2	4.4	10	12		F03 / F05
BM-2	120	1065	5.5	13	40	8	N / A	F07
OM-F	65	575	11	25	60	6	Hand-Wheel	F07
OM-2	90	800	11	25	40	15		F07
OM-G	120	1065	11	25	60	8		F07
OM-3	150	1330	11	25	40	22		F07
OM-H	300	2655	17	38	60	23		F07 / F10
OM-4	400	3540	20	45	80	16		F10
OM-5	500	4430	20	45	80	22		F10
OM-6	650	5755	20	45	80	28		F10
OM-7	1000	8855	32	71	120	46		F12 or F14
OM-8	1500	13280	32	71	120	46		F12 or F14
OM-9	2000	17710	71	157	180	58		F14 or F16
OM-10	2500	22140	71	157	180	58		F14 or F16
OM-11	3000	26565	72	159	180	58		F14 or F16
OM-12	3500	31000	72	159	220	58	F14 or F16	
OM-13	4500	40000	106	234	220	80	F16 / F25	

- The motor power and speed data are based on 110V AC 60Hz.



## Important Notices and Maintenance

- Make sure that the supply voltage is correct.
- Turn power off before servicing or for maintenance purpose.
- Use proper sealant to seal the conduit connection after wiring procedure to prevent dust or water from entering the actuator.
- The electric actuators should be installed in between 0 to 180 degree. Do not mount the assembly with the actuator top below a horizontal position or upside down. The conduit entrances can not face up.
- Not intended for vacuum spaces.
- The actuator should be stored in clean, dry area and with an outer box to protect against excessive temperature differentials or vibration and prevent from affecting the function of the product.
- 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.
- When more than one actuator needs to operate simultaneously, please connect with the individual cable or install the coupling board.
- The warranty period is one year from original ship date.



# Optional Items

## Enclosure

### • Non-Hazardous Area Enclosures

Standard	Rating	Standard Temperature
IEC 60529 (Edition 2.1 : 2001)	IP68 - 7meter / 72hrs	-30°C ~ +70°C (-22°F ~ +158°F)

### • International Hazardous Area-IECEX

Group	Ambient Temperature
Ex db IIB T4 Gb	-30°C ~ +70°C (-22°F ~ +158°F)
Ex tb IIC T130 Db	-30°C ~ +70°C (-22°F ~ +158°F)



### • European Hazardous Area Directive-ATEX

Directive	Group	Ambient Temperature
ATEX II 2 GD	Ex db IIB T4 Gb	-30°C ~ +70°C (-22°F ~ +158°F)
ATEX II 2 GD	Ex tb IIC T130 Db	-30°C ~ +70°C (-22°F ~ +158°F)

## Anti-condensation Heater

- A space heater can increase the internal temperature and keep the inside of actuator dry 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 over 35°C (95°F).
- When the temperature varies much from day to night or between summer and winter, heater and thermostat (25±5°C / 77±41°F) are recommended.



24V AC / DC



110V AC



220V AC



380V ~ 440V AC / 3PH

## Heater Thermostat

- This option can switch the anti-condensation heater off when the temperature inside the actuator is over 25±5°C / 77±41°F.



## Additional Limit Switches

- The standard model are equipped with the LS1 & LS2 switches for fully-open and fully-closed position setting. This option consists of the LS3 & LS4 as auxiliary switches provides dry contacts for fully-open and fully-closed position feedback.

## Motor

- Insulation class H

## Network Communication

- Modbus



## Proportional Control

- A proportional control unit will follow input signal for positioning and output signal for indicator.
  - Input signal : 4-20mA, 1-5V, 2-10V
  - Output signal : 4-20mA, 2-10V

## Potentiometer Unit

- This option should be ordered with ON / OFF actuators to output signal to position indicator. Two different resistance values, 1K ohm or 5K ohm are available for selection.

## Analog Signal Output

- This option enables signal output to position indicator and etc.
  - Output signal : 0-20mA, 4-20mA, 0-5V, 0-10V, 1-5V, 2-10V

## Slow Speed Board

- This option makes the speed (running time) adjustable from standard to 30s, 60s, 90s and so on (Max. 200s, 300s or 600s) according to user's need.
  - Available for OM-2 to OM-13 AC 110 / 220V AC, 1-Phase.

Slow speed board set-up table (unit : second)

Dip switch (SR1)	1	2	3	4	5	6	7	8	9	0
200 (J2)		30	60	90	120	150	200	200	200	200
300 (J1)	Rated speed	60	90	120	150	180	210	240	270	300
600 (J3)		60	100	150	200	250	300	400	500	600

## Coupling Board

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

## Extended Duty Cycle Controller (IEC standard)

- This option is suggested for extending duty cycle.

Model	75% Duty Cycle	50% Duty Cycle
OM-A, OM-A-M	√	
OM-1 ~ OM-8, OM-H	√	
OM-9 ~ OM-13		√

## Operation Time

- 3s, 8s, 150s
  - Please contact your sales representatives when other operating times are needed.

## Voltage

- 125VDC 、 575V / 3PH 、 208V / 3PH
  - Please contact your sales representatives when other voltages are needed.



# Optional Items

## Torque Switch

- This option provides torque overload protection. It must be ordered with actuator and set by factory.
- Available for OM-2 ~ OM-13, OM-F, OM-G, OM-H.

## Junction Box

- All wiring can be done through this option without removing actuator cover.



## Local Control Unit

- This option contains LOCAL / REMOTE and CLOSE / OFF / OPEN rotary switches. When it is placed in LOCAL position, the controlled valves or dampers can be driven to open, stop, or close by CLOSE / OFF / OPEN rotary switch.
- Ingress Protection : IP 65.
- Optional : IP67



## Chain Wheel

- This option can convert the hand-wheel manual override to a chain driving override in application of actuator mounted at a distance above the floor.
- Available for OM-2 ~ OM-13, OM-F, OM-G, OM-H.



## Working Angle

- Standard : 0° ~ 90°
- Optional : 91° ~ 270°
- Available for OM-1 ~ OM-8, OM-F, OM-G, OM-H.

## Conduit Entries

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

## Material

- Standard : Aluminum alloy
- Optional : SS316

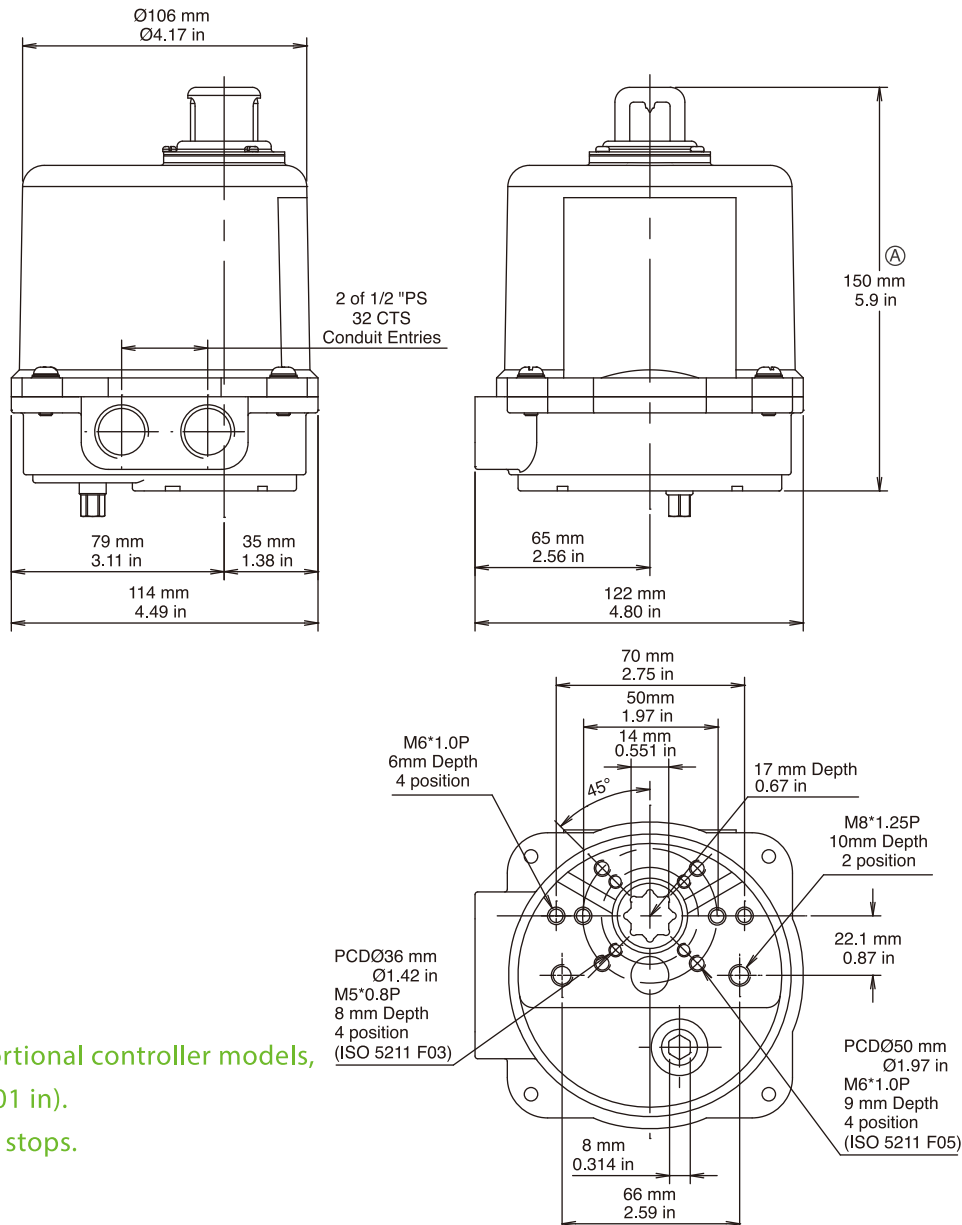


## Coating

- Optional : Nylon coating, ED (Electro Deposition) coating, Epoxy coating.
- Please contact your sales representatives when other coatings are needed.



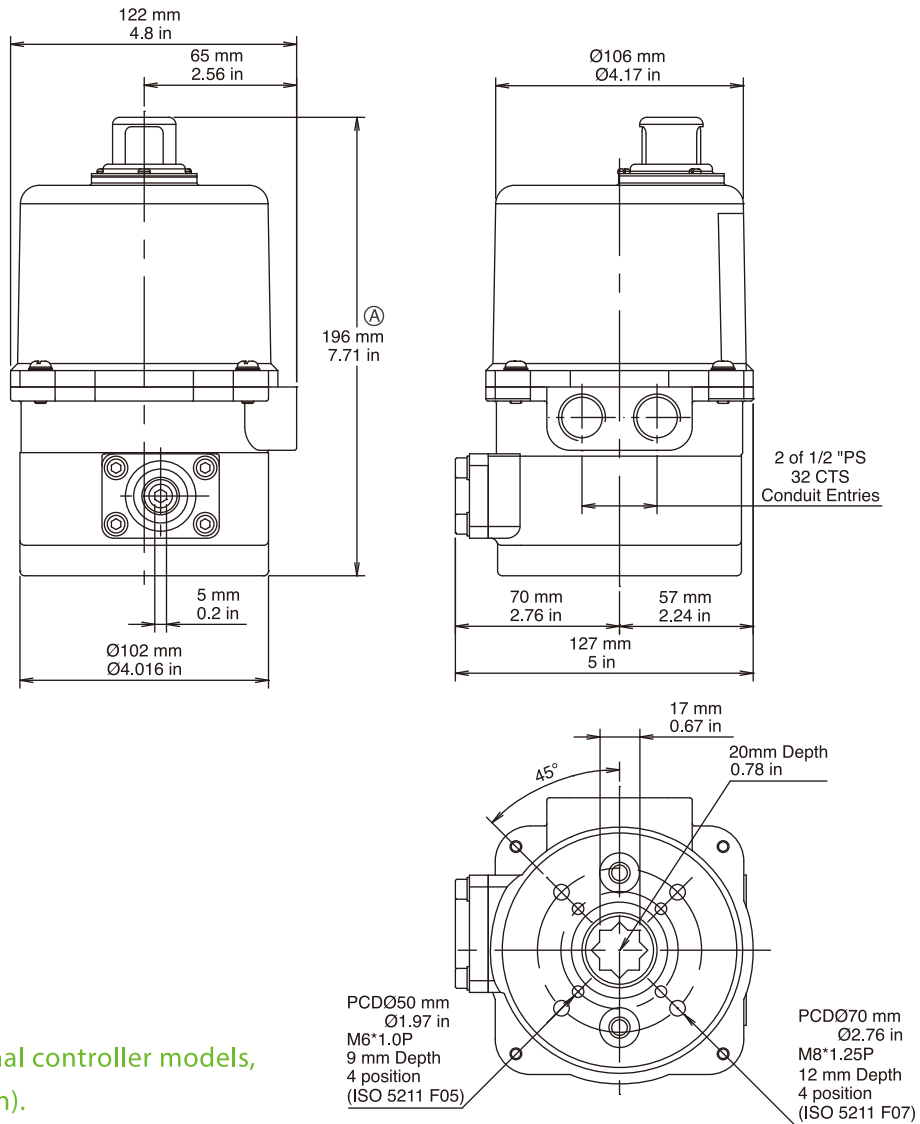
# OM-A



- Apply to proportional controller models,  $\text{Ⓐ}=229\text{mm}$  ( $9.01 \text{ in}$ ).
- No mechanical stops.

# Outline Dimensions

## OM-A-M



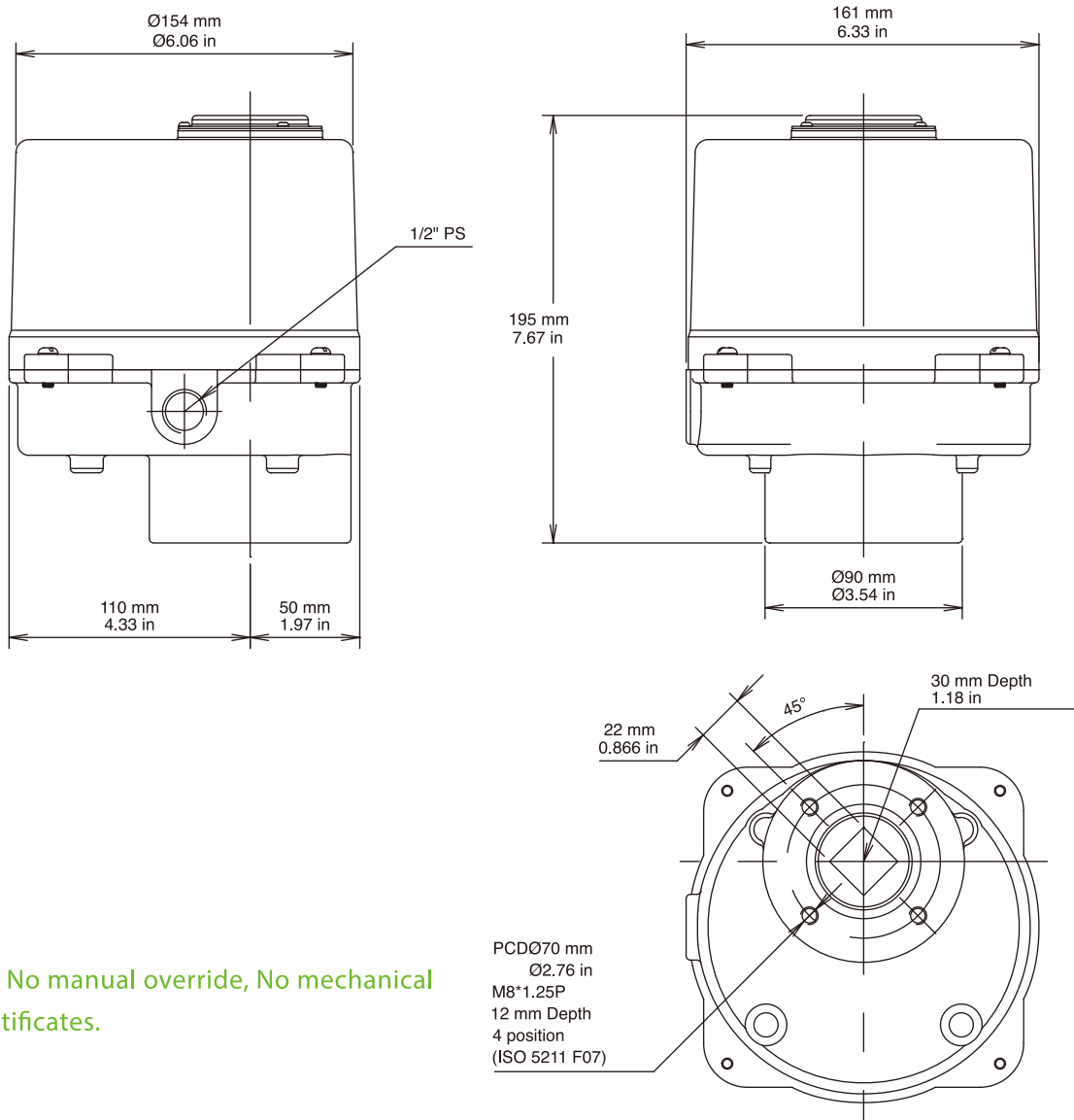
- Apply to proportional controller models,  $\textcircled{A}$  = 229mm (9.01 in).
- No mechanical stops.
- Recommended wrench : Hex wrench (5mm)



# Outline Dimensions



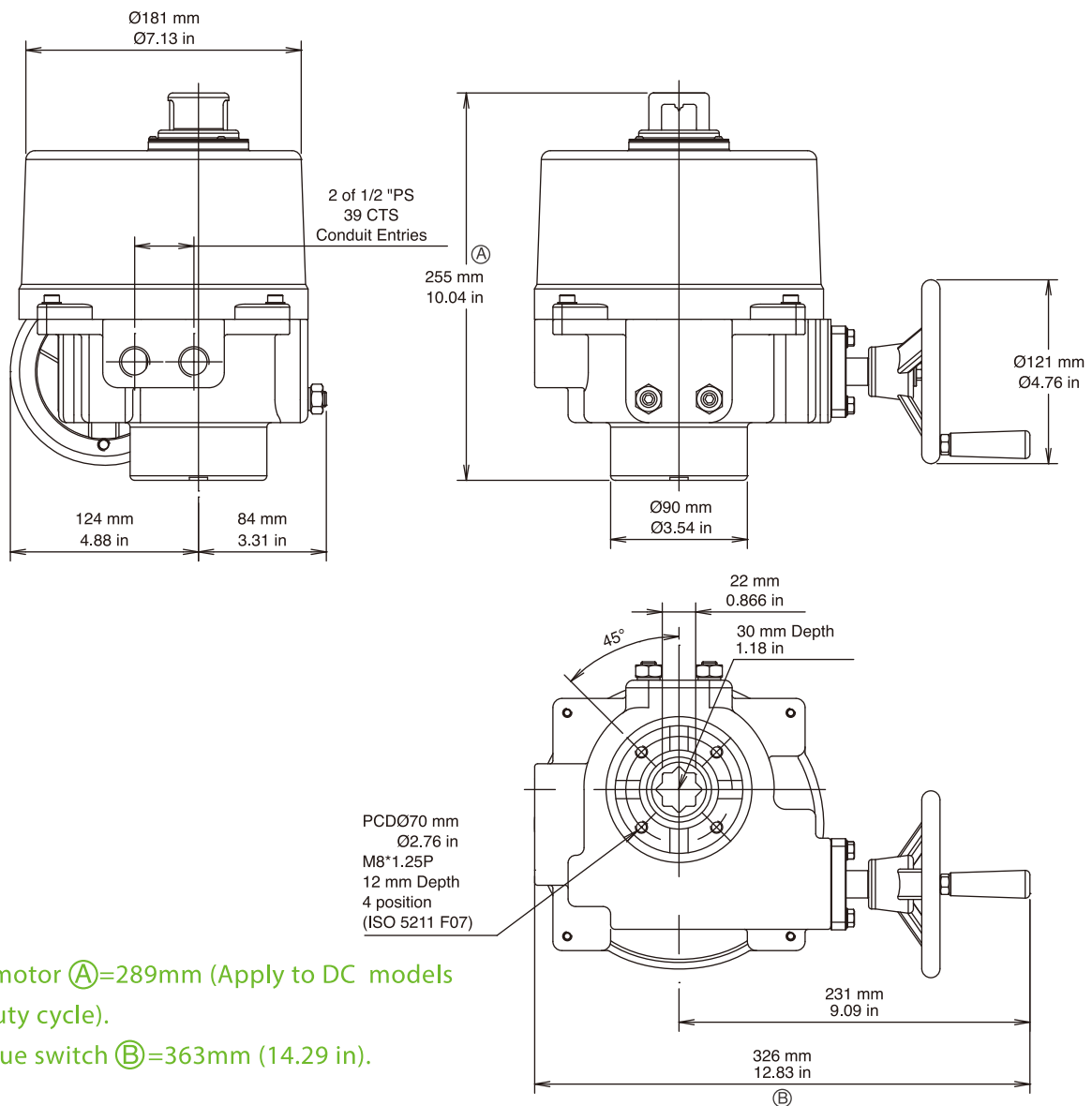
## BM-2



- Plastic cover, No manual override, No mechanical stops, No certificates.



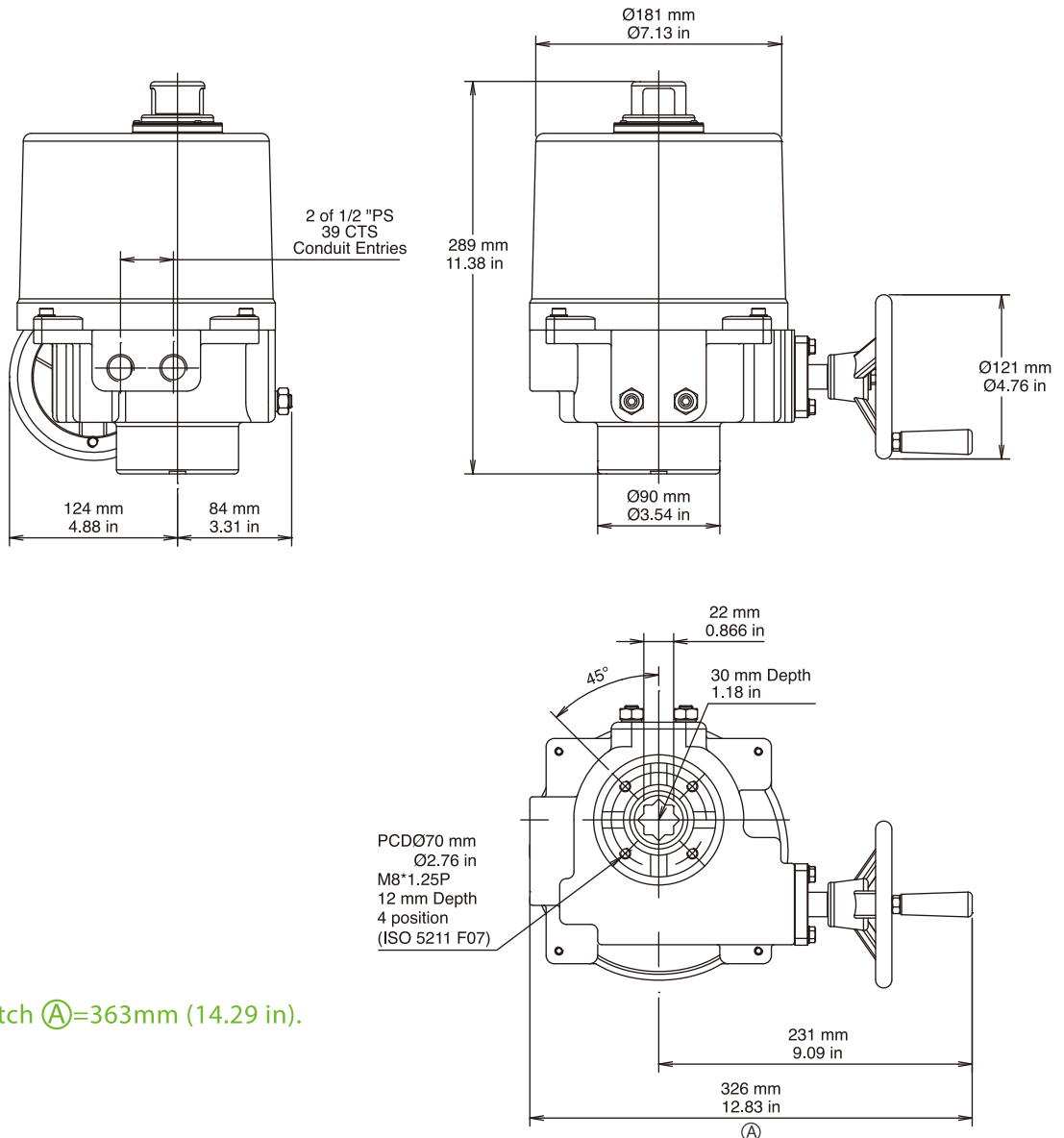
# OM-2~OM-3



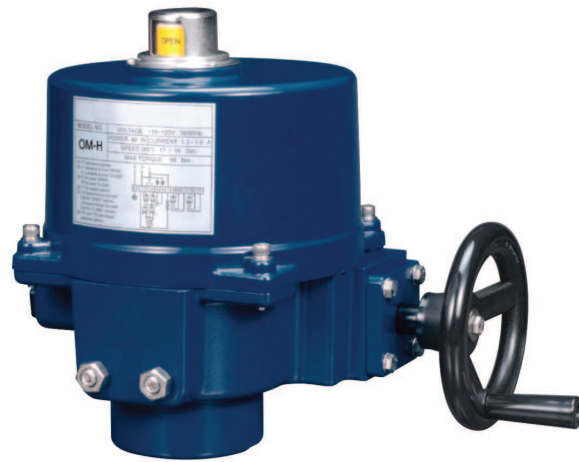
- With DC motor  $\text{A}$ =289mm (Apply to DC models or 75% duty cycle).
- With torque switch  $\text{B}$ =363mm (14.29 in).

# Outline Dimensions

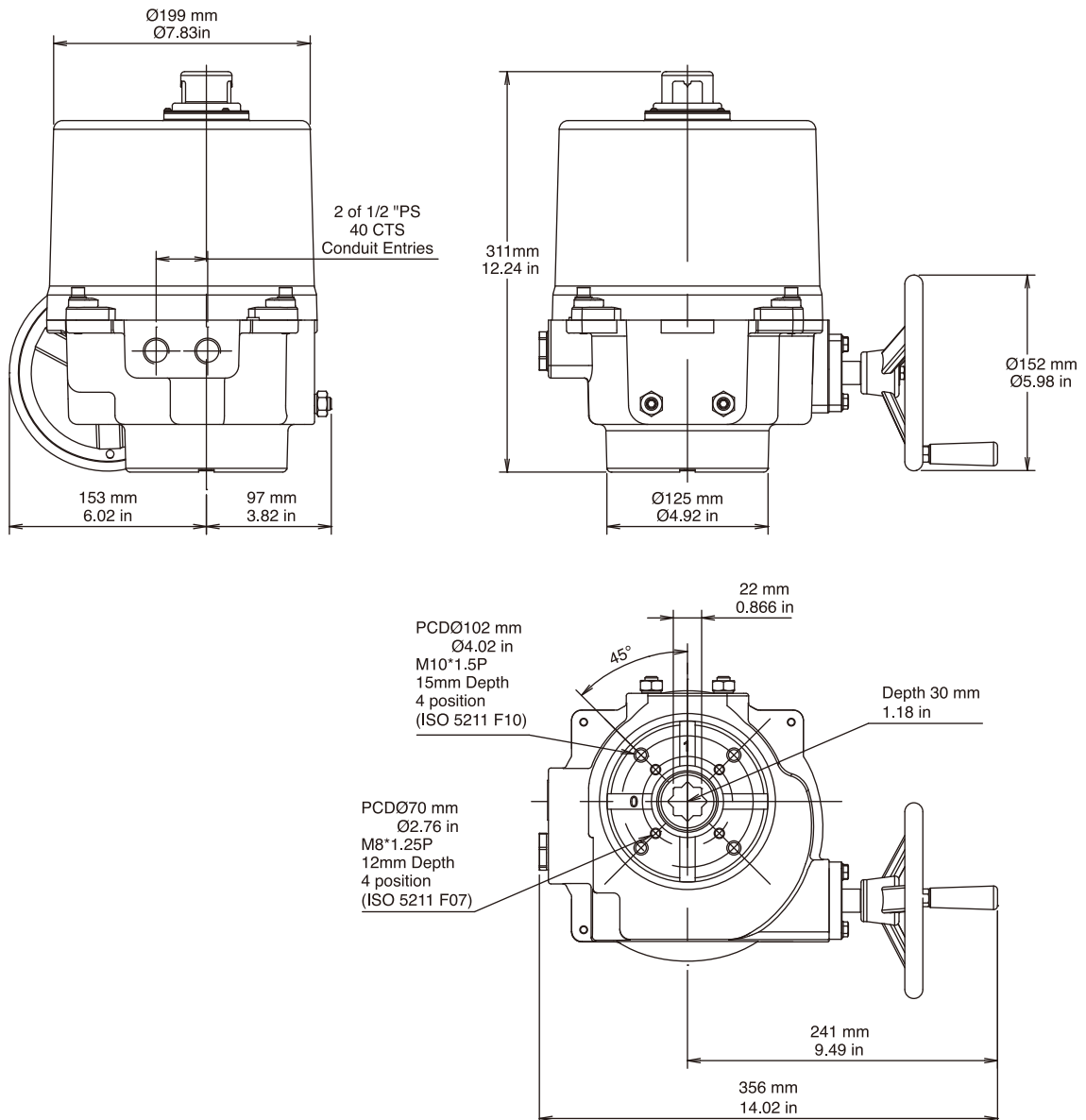
## OM-F, OM-G



- With torque switch Ⓐ=363mm (14.29 in).



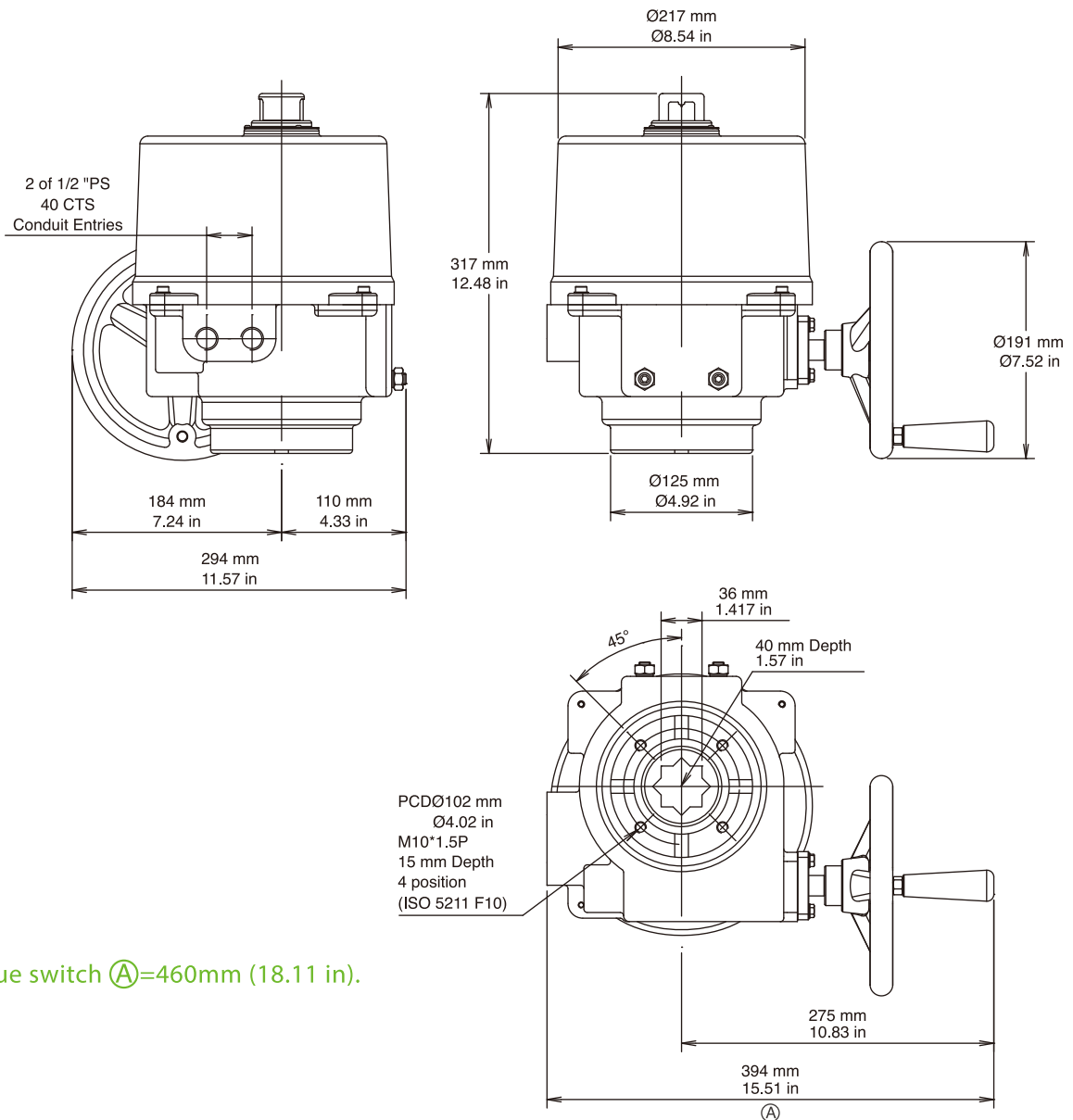
# OM-H





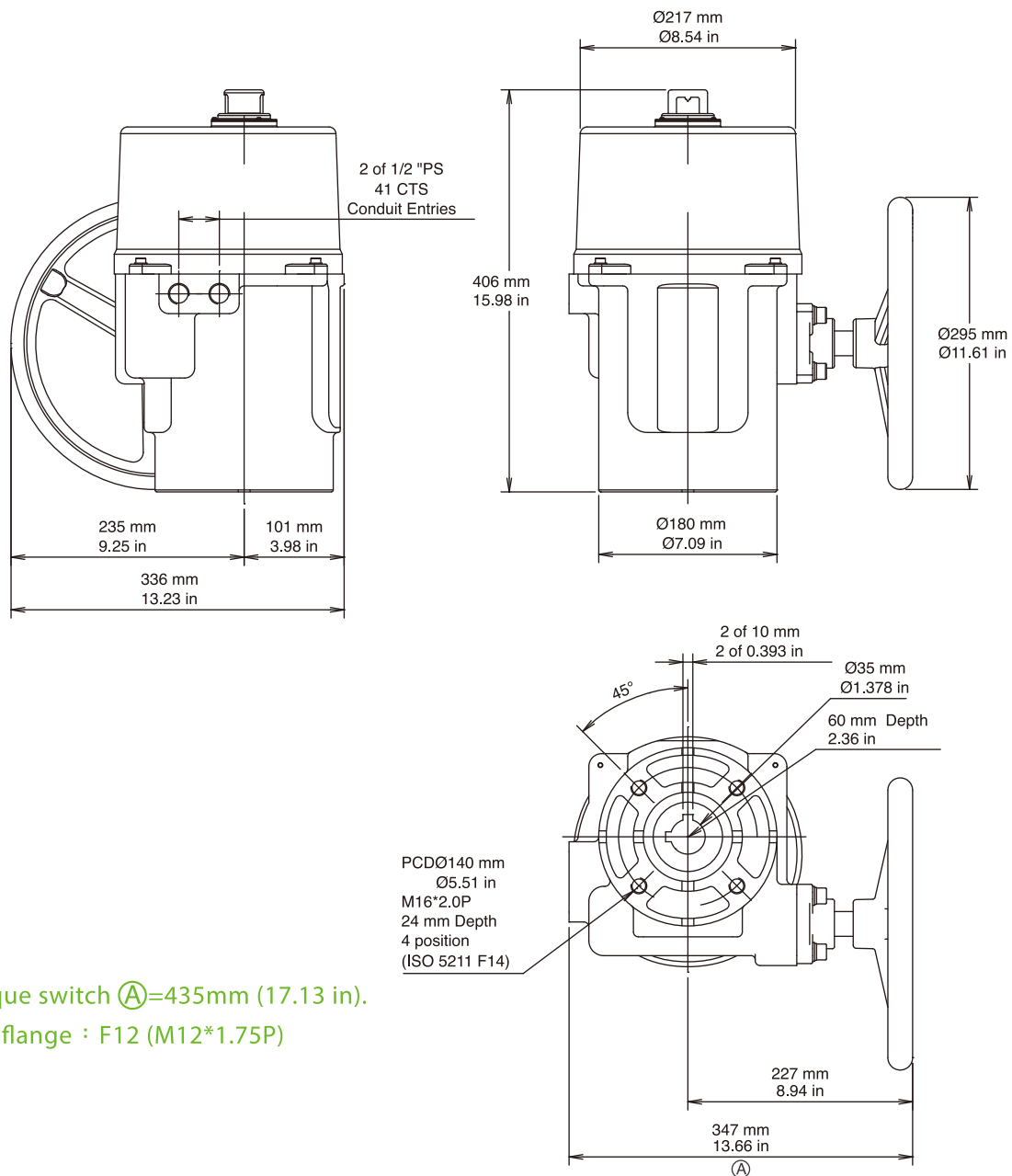
# Outline Dimensions

## OM-4~OM-6



- With torque switch (A)=460mm (18.11 in).

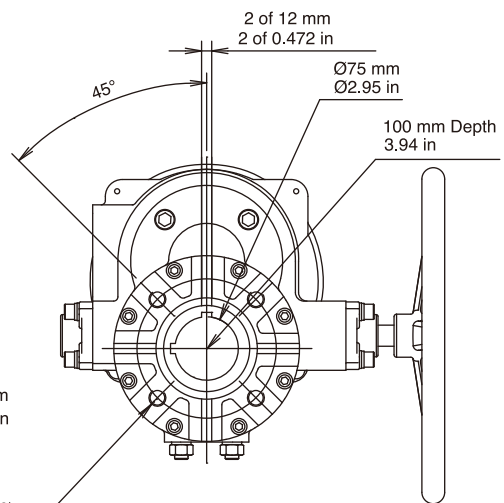
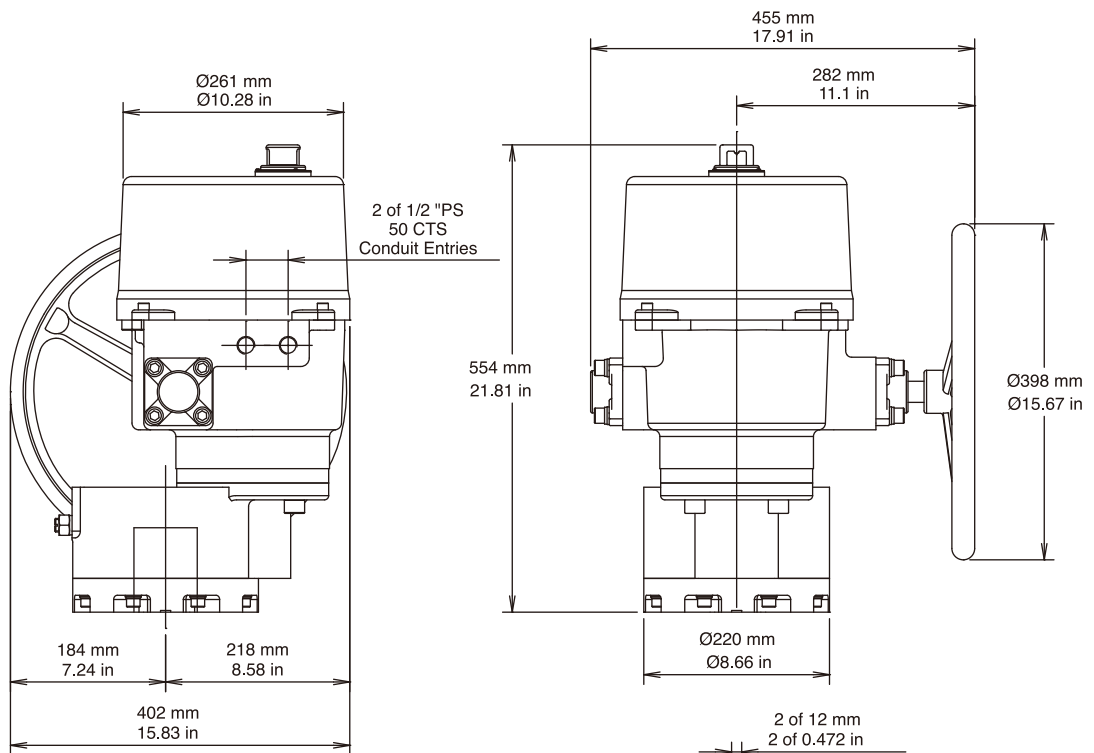
# OM-7~OM-8



- With torque switch Ⓐ=435mm (17.13 in).
- Optional flange : F12 (M12\*1.75P)



# OM-9~OM-12

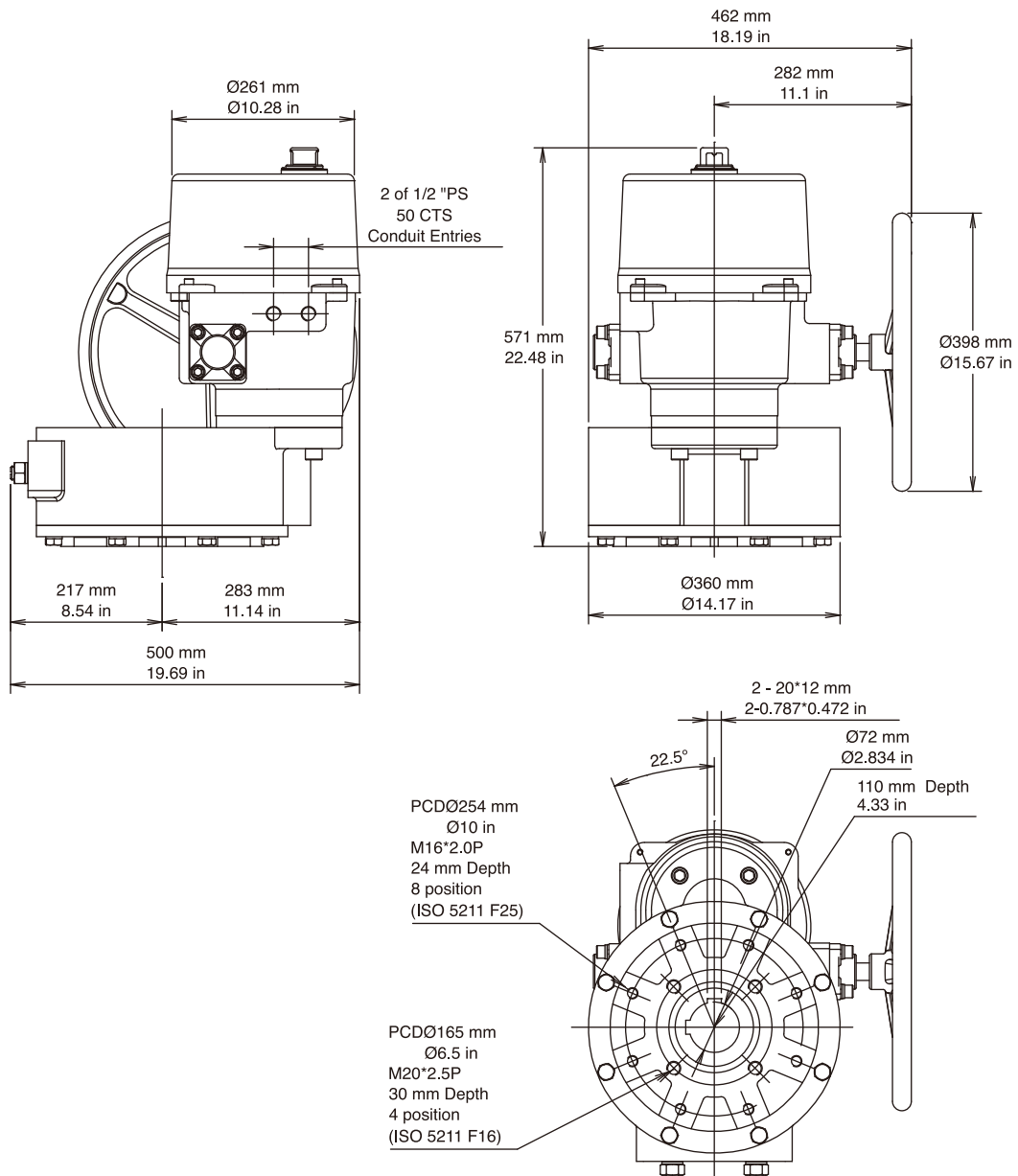


● Optional flange : F14 (M16\*2.0P)

PCD $\text{Ø}165 \text{ mm}$   
 $\text{Ø}6.496 \text{ in}$   
 M20\*2.5P  
 30 mm Depth  
 4 position  
 (ISO 5211 F16)



# OM-13





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