

NOM Series

Quarter-Turn Electric Valve Actuator



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Go Together, Move Forward.

Anything can be accomplished with Nippon Gear

Company Introduction

Since our establishment in 1938 as a specialty manufacturer of auto-gears, our advanced technologies have pushed us to expand our business as an assembly manufacturer.

After more than half century, our products are widely used in industrial infrastructure, starting with the precision gears inserted into various industrial machinery, to jack lifting devices used in IT-related production facilities, liquid crystal panels and steel, and valve actuators used in power plants and water and sewage, receiving high appraisal from domestic and global markets.

We aim to continue improving our special technology together with innovating our production process, providing our customers with better service and products, and contributing to society while caring for the environment.

In doing so, we would like to ask for your continued support.



Product Overview

The NOM series electric actuators are the most suitable for butterfly valves, ball valves, and small sized valves.

They offer torque ranging from 35 Nm/310 inlb to 4,500 Nm/40,000 inlb.

A unique feature of this actuator is that the manual override can be operated without a clutch and a brake.

These actuators come with a standard NEMA 4X, 5 & IP67 enclosure for outdoor use.

All of the models are ISO 5211 compliant and are equipped with a continuous mechanical position indicator and manual override (except NOM-B & NOM-A).

- FEATURES 1**
Self-locking Gear System
- FEATURES 2**
ISO 5211 Mounting Flange
- FEATURES 3**
Domed Position Indicator
- FEATURES 4**
Mechanical Stop
- FEATURES 5**
Clutchless Manual Transmission
- FEATURES 6**
Built-in Thermal Protection
- FEATURES 7**
NEMA 4X, 5 & IP67 Enclosure for Outdoor Use

Standard Specification

Housing

- Aluminum alloy, polyester powder coated. Corrosion protection C3 according to ISO 12944-6.
- NEMA 4X, 5 & IP67 (CSA Standard. Waterproof and dustproof enclosure intended for outdoor use).

Starting Frequency

- 30% duty cycle

Position Indicator

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

Usage Environment

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

Gear Mechanism

- High alloy-steel gear trains with self-locking prevent back-drive.
- Gear trains are factory lubricated for actuators' full life cycle.

Motor

- Insulation class F
- Built-in thermal protection prevents motor burnout.
AC motor: 125±5°C / 257±9°F
DC motor: 90±5°C / 194±9°F

Mechanical Stop

- Adjustable mechanical stops are provided on NOM-2 to NOM-13, NOM-F, NOM-G and NOM-H actuators.

Operation Procedure

- Non-clutch design means no lever, clutch, or brake required for manual operation.
- When the actuator is electrically activated, for safety reasons, the handwheel will not rotate.

Working Power Supply

Model	12V		24V			1-Phase				3-Phase						
	DC	AC	DC	AC	DC and AC	100V	110-120V	200V	220-240V	200V	220V	220-240V	380-415V	400V	440V	440-480V
NOM-1	✓	✓	✓	✓	✓	✓	✓	✓	✓							
NOM-A, NOM-AM	✓		✓	✓	✓	✓	✓	✓	✓							
NOM-F			✓	✓	✓		✓		✓							
NOM-2	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NOM-B									✓			✓	✓			✓
NOM-G			✓	✓	✓		✓		✓							
NOM-H	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NOM-3~NOM-5	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NOM-6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NOM-7~NOM-9	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NOM-10	✓		✓	✓					✓			✓	✓			✓
NOM-11~NOM-13			✓	✓					✓			✓	✓			✓

*Please contact your salesperson if other voltages are required.



Model No.: NOM-AM



Model No.: NOM-1



Model No.: NOM-2



Model No.: NOM-4



Model No.: NOM-8



Model No.: NOM-10

Enclosure

- Non-Hazardous Area Enclosures

IP Rating	Standard	Ambient Temperature
IEC 60529 Edition 2.1:2001	IP68, 7m / 72hrs	-30°C to +65°C(-22°F to +149°F)

- Hazardous Area
IEC-IECEX | USA explosion-proof certification-CSA
European Union explosion-proof certification-ATEX
Taiwan explosion-proof certification-TS | China explosion-proof certification-CNEx

Motor

- Thermal Class H

Communication Protocols

- Modbus RTU RS485

Anti-condensation Heater

- When temperatures vary significantly between day and night or between summer and winter, heater and heater thermostat (25±5°C / 77±9°F)are recommended.

Heater Thermostat

- This option can switch the anti-condensation heater off when the temperature inside the actuator is higher than 25±5°C / 77±9°F.



Auxiliary Limit Switches

- Actuators come standard with two limit switches, LS1 for fully-open and LS2 for fully-closed positioning. Two auxiliary limit switches are optional for fully-open and fully-closed position feedback.

Isolating Relay Module

- When using one control switch to operate two or more actuators, the isolating relay module is recommended.

Potentiometer Unit

- Recommended to use with a floating control actuator to output signal for position indicator. Two resistors, 1K ohm or 5K ohm are available for selection.

- A proportional control unit.

Analog signal input | 4-20mA, 1-5V, 2-10V | Analog signal output | 4-20mA, 2-10V

- Recommended to use with a floating actuator for position indication.

Analog signal output | 4-20mA, 0-20mA, 0-5V, 0-10V, 1-5V, 2-10V

- Time Delay Controller enables the running time to be delayed from a standard to 30s, 60s, etc. (Max. 200s, 300s or 600s) per system requirements.

Available for | NOM-2~NOM-13 220VAC/1PH, NOM-2~NOM-8 110VAC/1PH

Time Delay Controller Set-up Table (sec.)										
Dip switch(SR1)	1	2	3	4	5	6	7	8	9	0
200	Rated speed	30	60	90	120	150	200	200	200	200
300		60	90	120	150	180	210	240	270	300
600		60	100	150	200	250	300	400	500	600

- This option is suggested for extending duty cycle.

Model	75% Duty Cycle	50% Duty Cycle
NOM-A, NOM-AM	✓	
NOM-1~NOM-8, NOM-H	✓	
NOM-9~NOM-13		✓

- 3s, 8s and 150s

Please contact your salesperson if other operating times are required.

- 125VDC, 575VAC/3PH, 208VAC/3PH

Please contact your salesperson if other voltages are required.

- SS316

Available for | NOM-1~NOM-6, IP68

Please contact your salesperson if outline drawings of SS316 material are required.

Modulating Control

Analog Signal Output

Time Delay Controller

Extended Duty Cycle Controller (IEC standard)

Other Running Times

Voltages

Enclosure Material

Torque Switch

- This option provides torque overload protection. It must be ordered with actuator, installed and calibrated at the factory.

Available for | NOM-2~NOM-13, NOM-F, NOM-G, NOM-H

- Standard: 0° to 90°
- Optional: 91° to 270°

Available for | NOM-1~NOM-8, NOM-F, NOM-G, NOM-H

Extended Travel

Junction Box

- Wiring can be done through the junction box without removing the actuators' cover.



NOM-A BOX



NOM-2 BOX

- Standard: PS 1/2
- Optional: PF(G) 3/4, NPT 1/2, NPT 3/4, M20

Please contact your salesperson if other conduit entries are required.

Conduit Entries

Local Control Unit

- This option contains LOCAL / REMOTE and CLOSE / OFF / OPEN rotary switches. Under LOCAL control mode, the controlled valves or dampers can be driven to open, stop, or close by CLOSE / OFF / OPEN rotary switch.



NOM-A LCU



NOM-2 LCU

- Standard: C3
- Optional: C4

Available for | NOM-A, NOM-AM, NOM-1~NOM-13, NOM-F, NOM-G, NOM-H

Please contact your salesperson if other corrosion classes are required.

Corrosivity Category (ISO 12944-6)

Chain Wheel

- This option converts the handwheel to chain wheel for overhead-mounting.

Available for | NOM-2~NOM-13, NOM-F, NOM-G, NOM-H



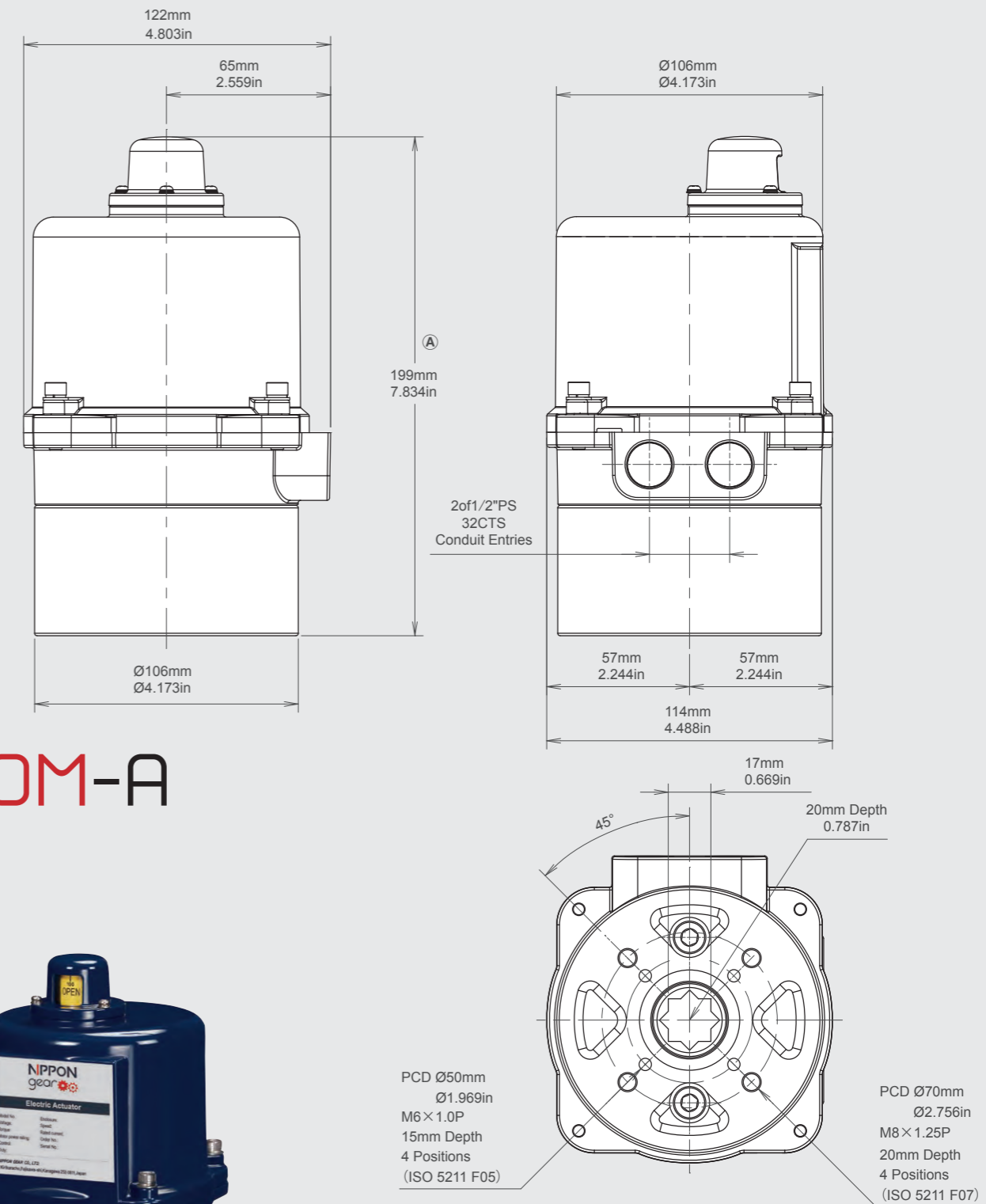
NOM-2 CHAIN

Technical Data

Model	Torque		Weight		Nominal Motor Power	Running Time (sec./90°) 60Hz/50Hz	Manual Override	Flange Type
	N·m	in·lb	kg	lb				
NOM-1	35	310	2	4.4	10	12/17	Lever	F03/F05
NOM-A	50	445	3	6.6	10	27/37	N/A	F05/F07
NOM-AM	50	445	3	6.6	10	27/37	Lever	F05/F07
NOM-F	65	575	11	25	60	6/6	Handwheel	F07/F10
NOM-2	90	800	11	25	40	17/20	Handwheel	F07/F10
NOM-B	120	1065	5.5	13	40	9/11	N/A	F07
NOM-G	120	1065	11	25	60	8/8	Handwheel	F07/F10
NOM-3	150	1330	11	25	40	26/31		F07/F10
NOM-H	300	2655	17	38	60	24/28		F07/F10
NOM-4	400	3540	20	45	80	19/23		F10/F12
NOM-5	500	4430	20	45	80	26/31		F10/F12
NOM-6	650	5755	20	45	80	34/41		F10/F12
NOM-7	1000	8855	32	71	120	50/61		F12 or F14
NOM-8	1500	13280	32	71	120	51/62		F12 or F14
NOM-9	2000	17710	71	157	180	62/76		F14 or F16
NOM-10	2500	22140	71	157	180	62/76		F14 or F16
NOM-11	3000	26565	72	159	180	62/76		F14 or F16
NOM-12	3500	31000	72	159	220	62/76		F14 or F16
NOM-13	4500	40000	106	234	220	88/104		F16/F25

*The open/close time are based on floating (ON/OFF) control.

Outline Dimensional Drawing



NOM-A

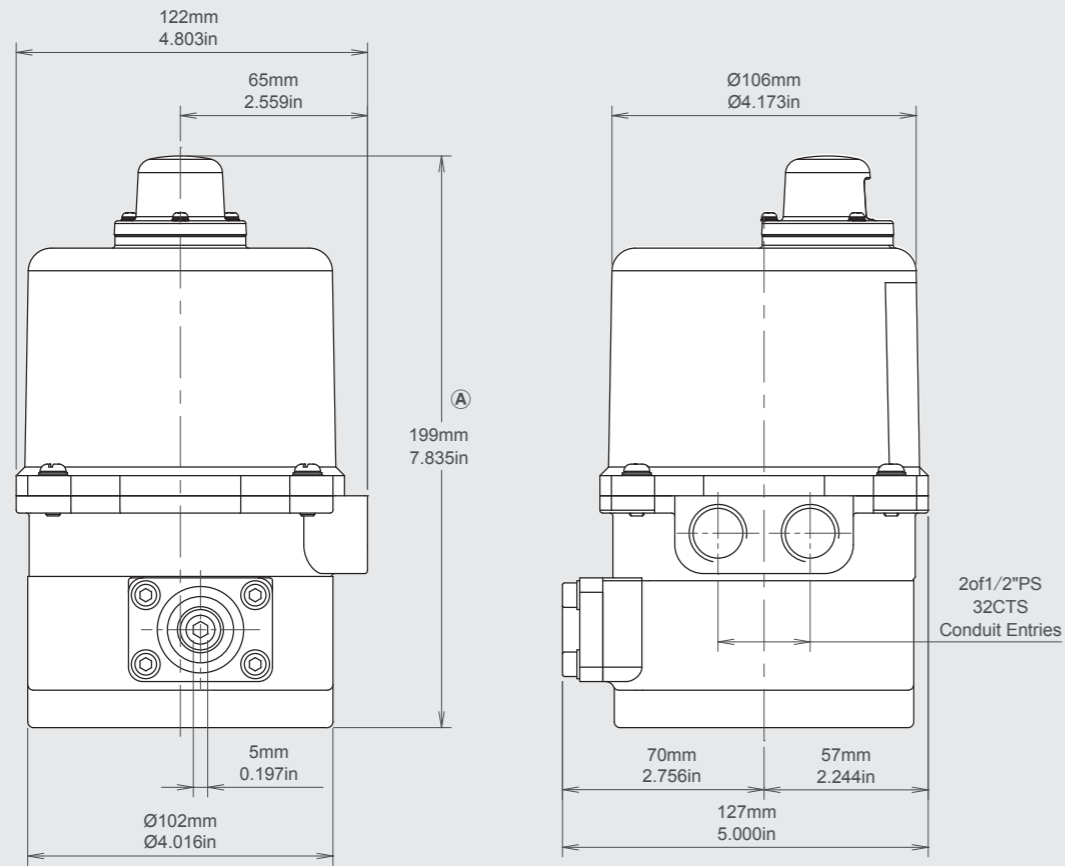


Apply to modulating control models, A=232mm (9.133in)

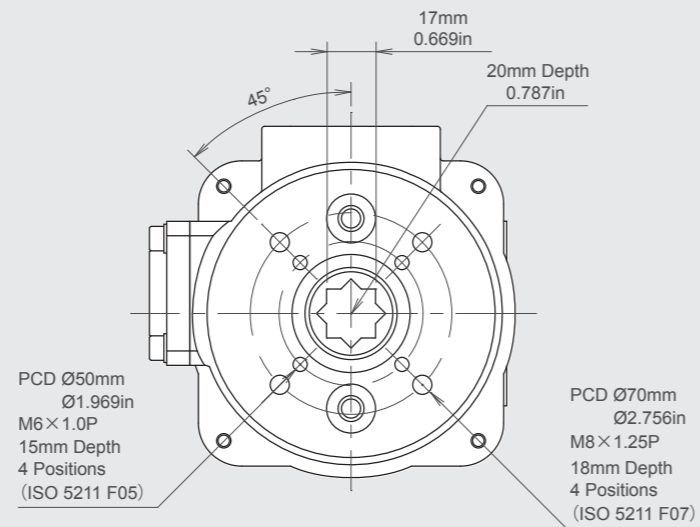
No mechanical stops

No manual override

Outline Dimensional Drawing



NOM-AM

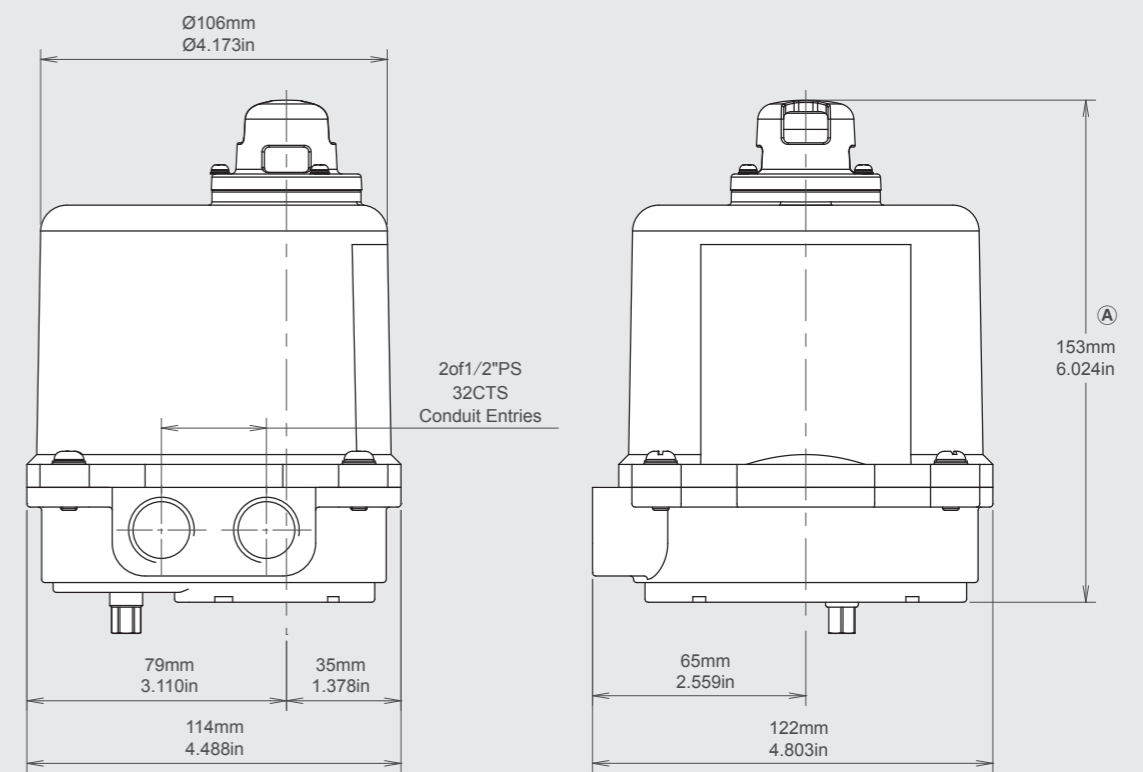


Apply to modulating control models,
A=232mm (9.133in)

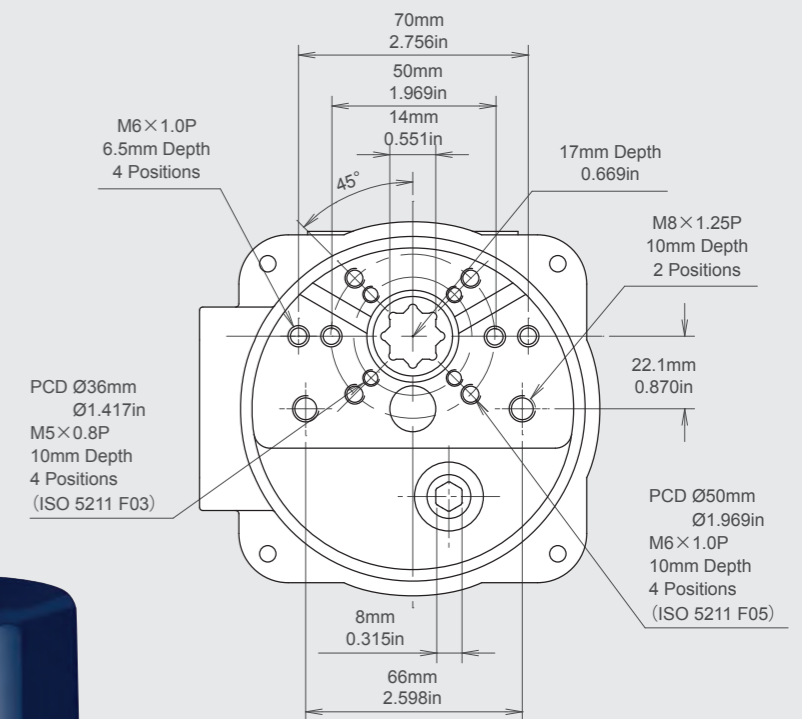
No mechanical stops

Recommended wrench: 5mm Hex wrench

Outline Dimensional Drawing



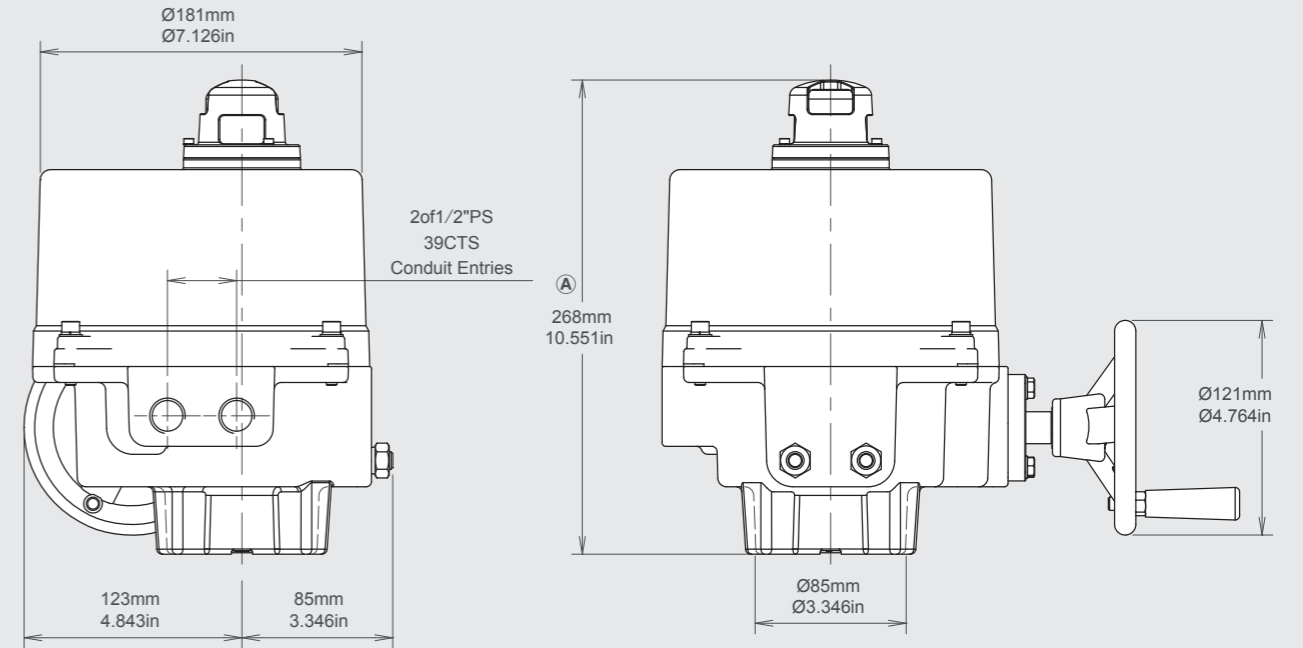
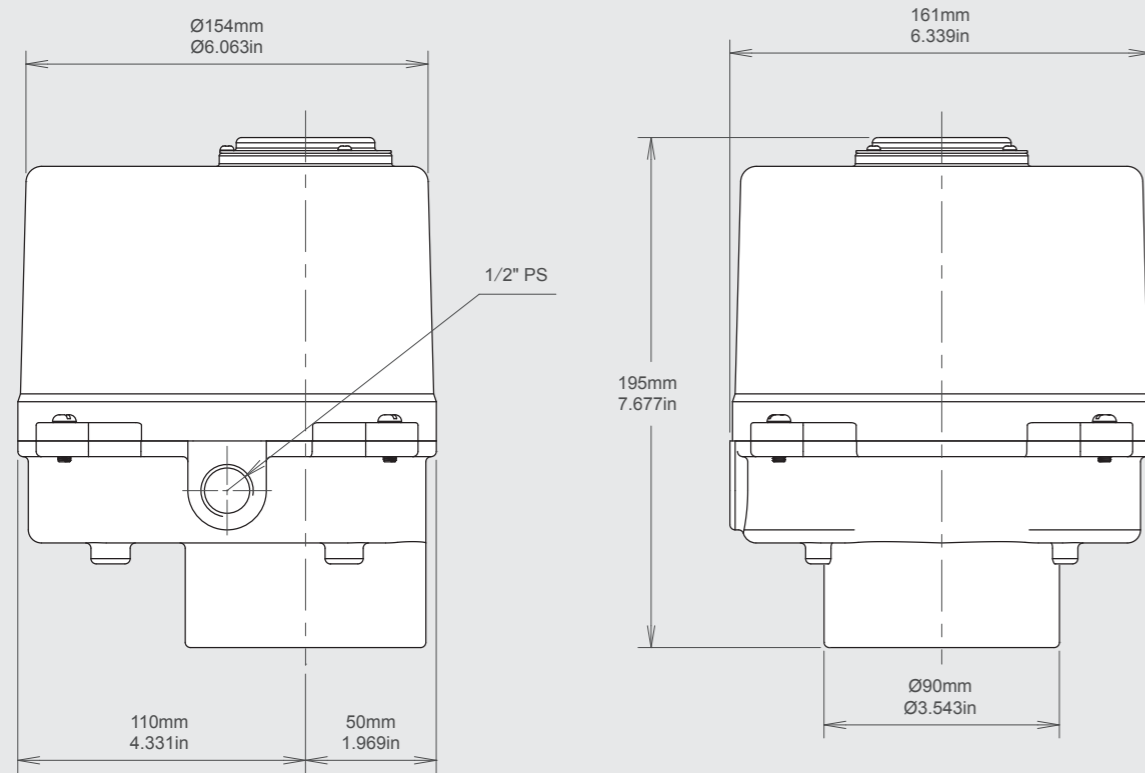
NOM-1



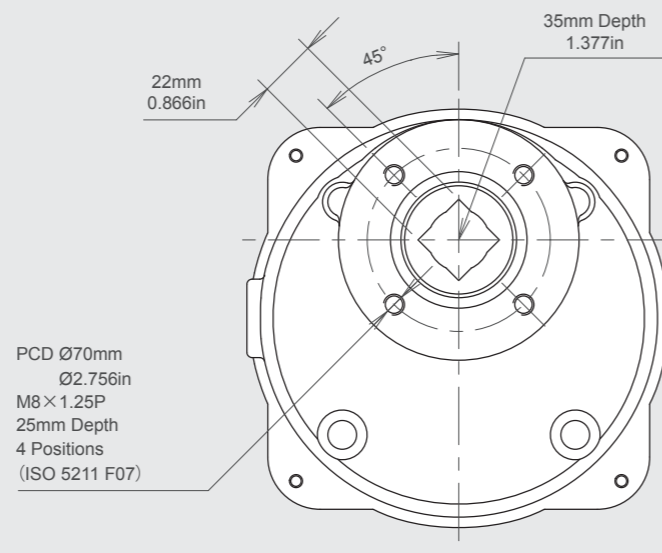
Apply to modulating control models,
A=186mm (7.323in)

No mechanical stops

Recommended wrench: 8mm Hex wrench



NOM-B



PCD Ø70mm
Ø2.756in
M8 × 1.25P
25mm Depth
4 Positions
(ISO 5211 F07)

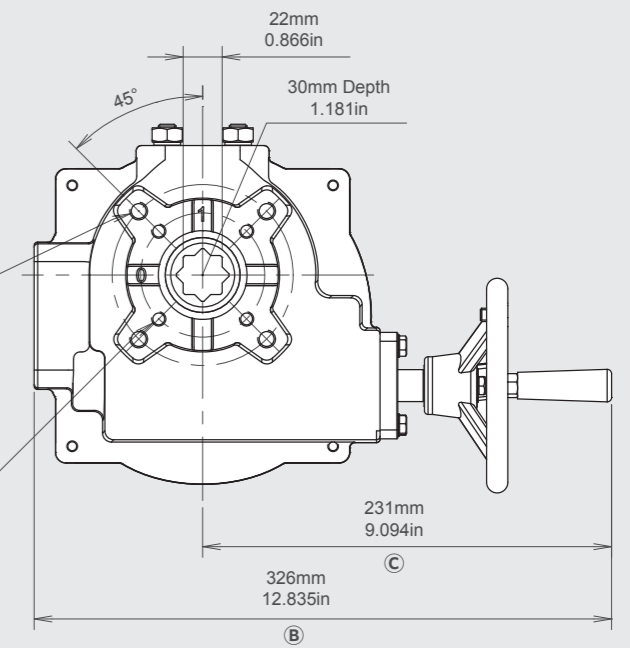
Plastic cover(material: ABS Impact Resistance)No manual override, mechanical stops and certificates

NOM-2/3



PCD Ø102mm
Ø4.016in
M10 × 1.5P
24mm Depth
4 Positions
(ISO 5211 F10)

PCD Ø70mm
Ø2.756in
M8 × 1.25P
20mm Depth
4 Positions
(ISO 5211 F07)

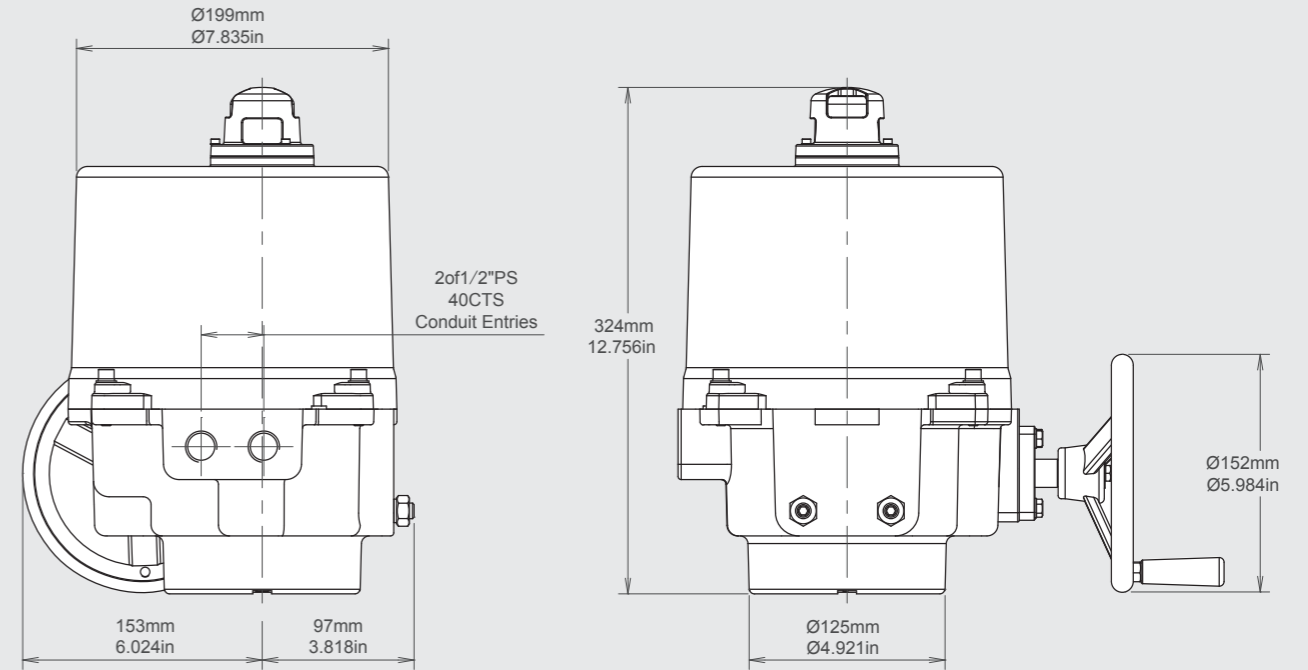
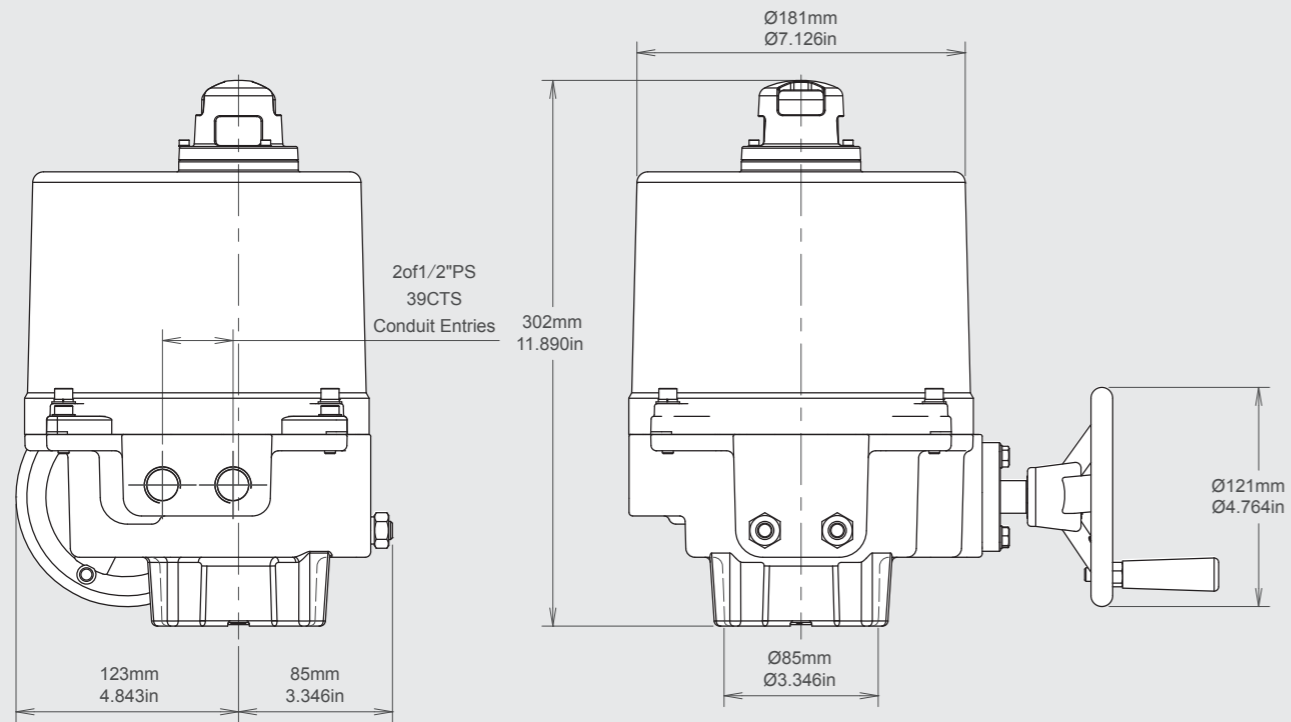


Apply to DC models or 75% duty cycle, A=302mm (11.890in)

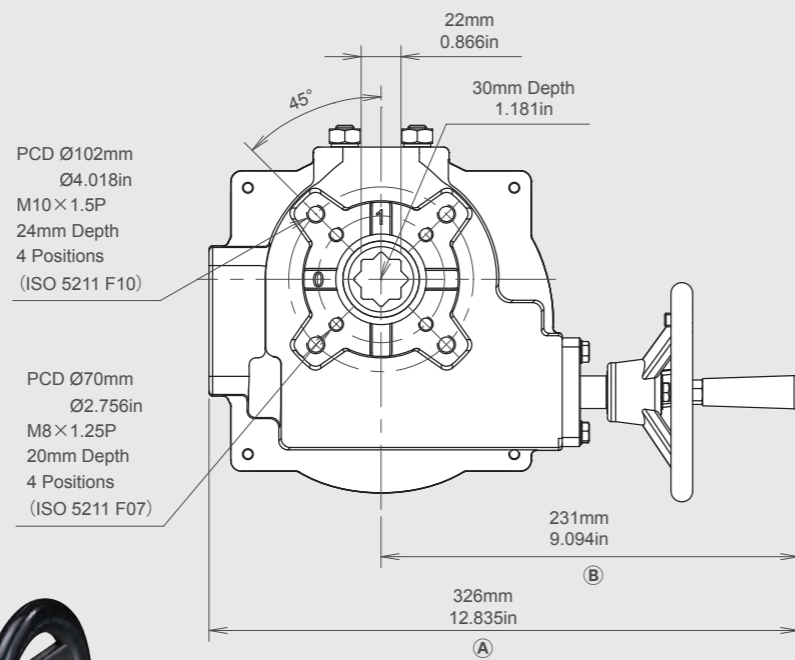
With torque switch, B=363mm (14.291in), C=268mm (10.551in)

Outline Dimensional Drawing

Outline Dimensional Drawing

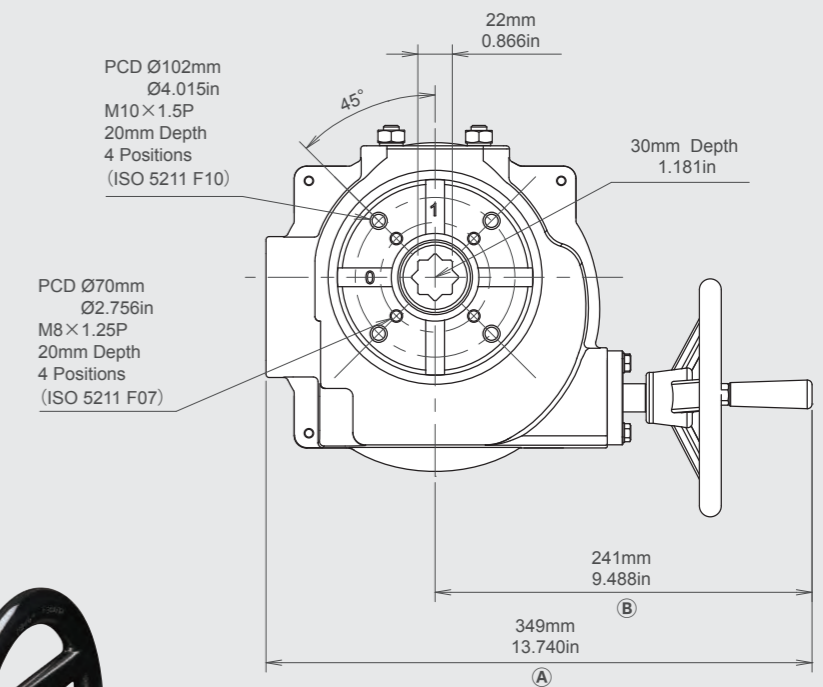


NOM-F/G

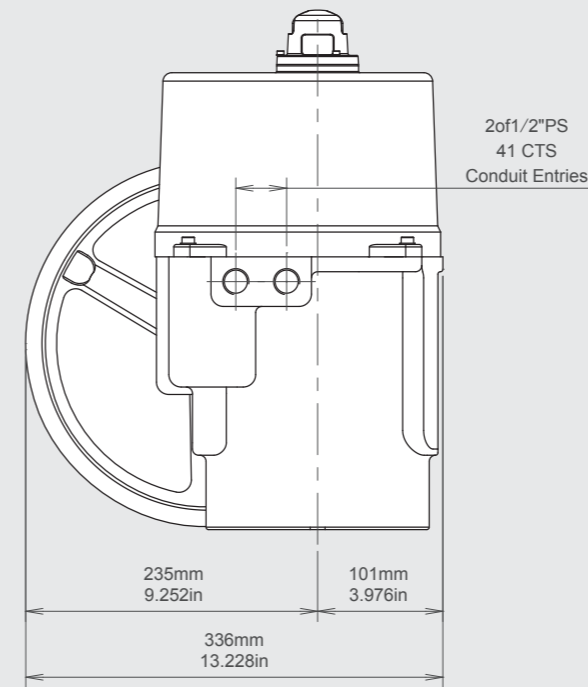
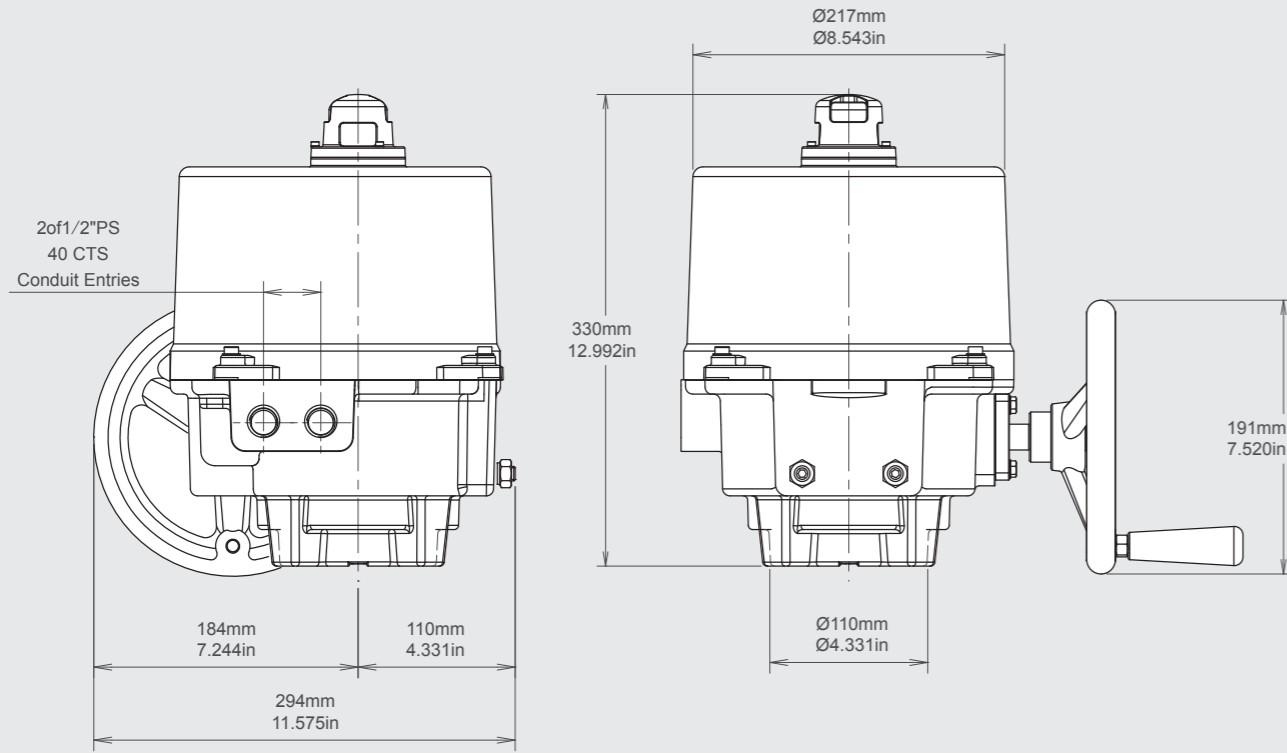


With torque switch, A=363mm (14.291in), B=268mm (10.551in)

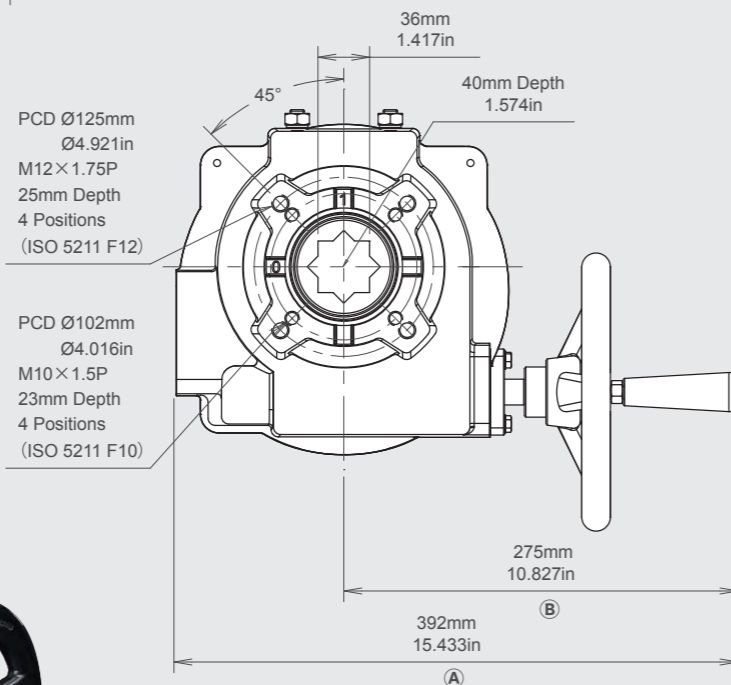
NOM-H



With torque switch, A=400mm (15.748in), B=292mm (11.496in)



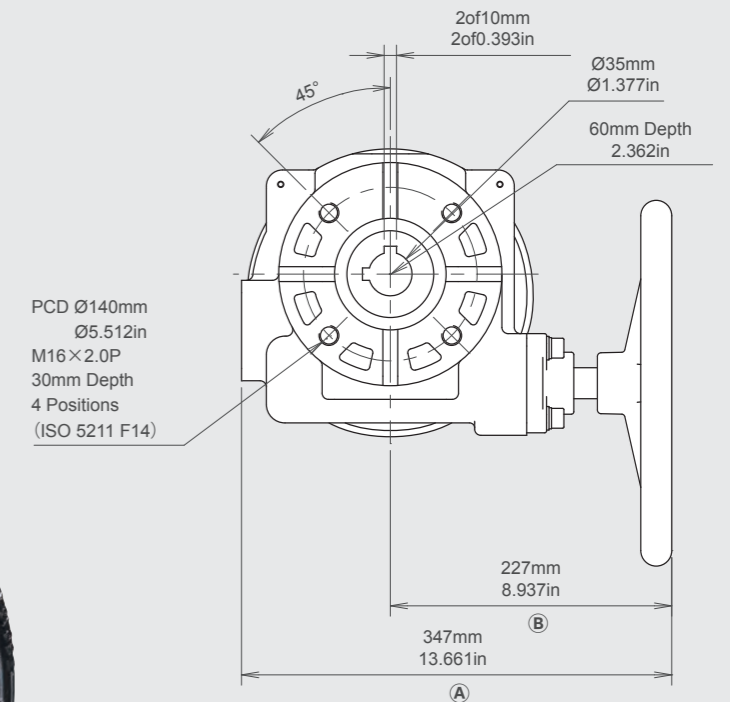
NOM-4/5/6



With torque switch, A=458mm
(18.031in), Ø=341mm (13.425in)



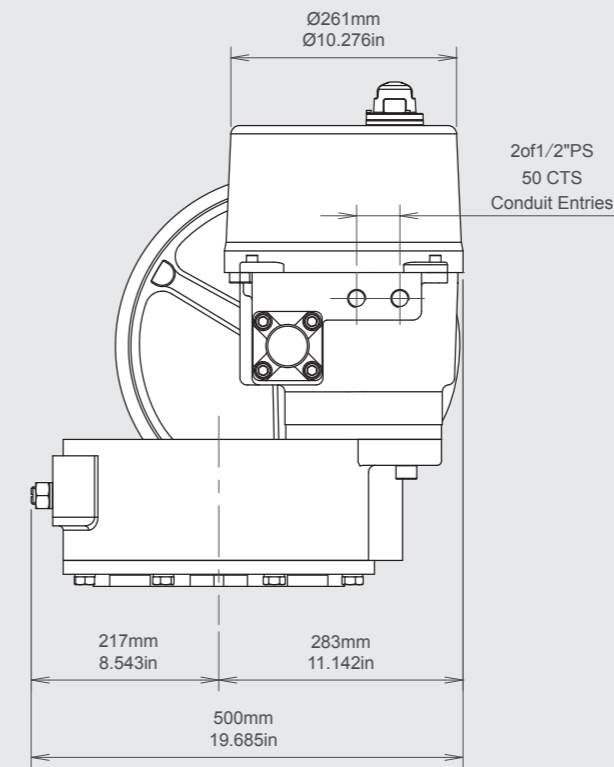
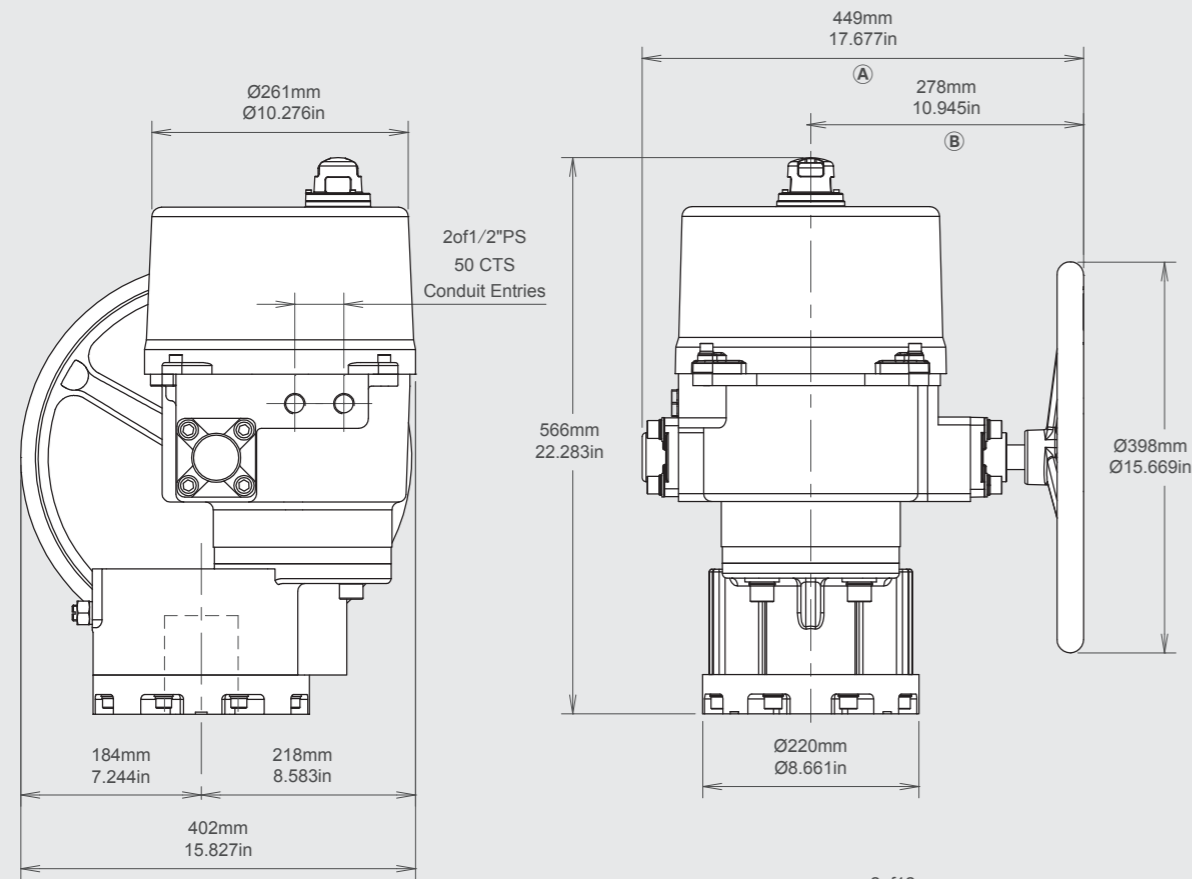
NOM-7/8



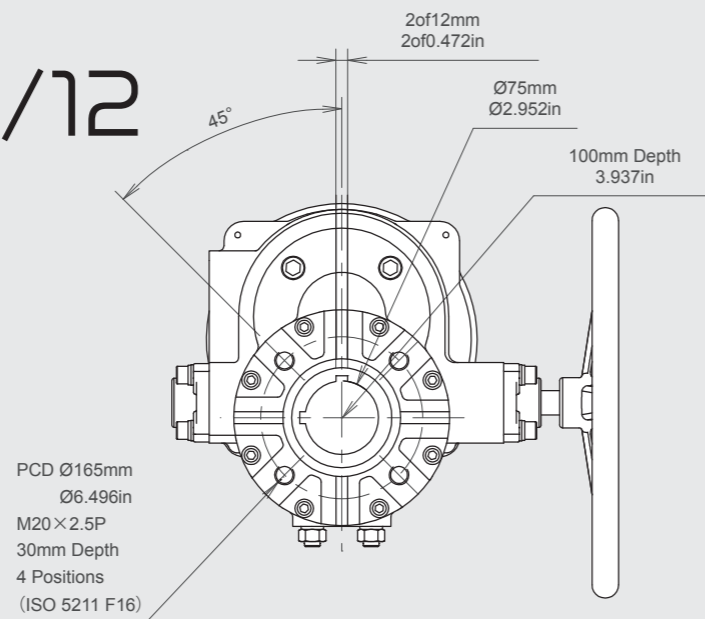
With torque switch, A=435mm
(17.126in), Ø=315mm (12.402in)

Optional flange size: F12(M12×1.75P)





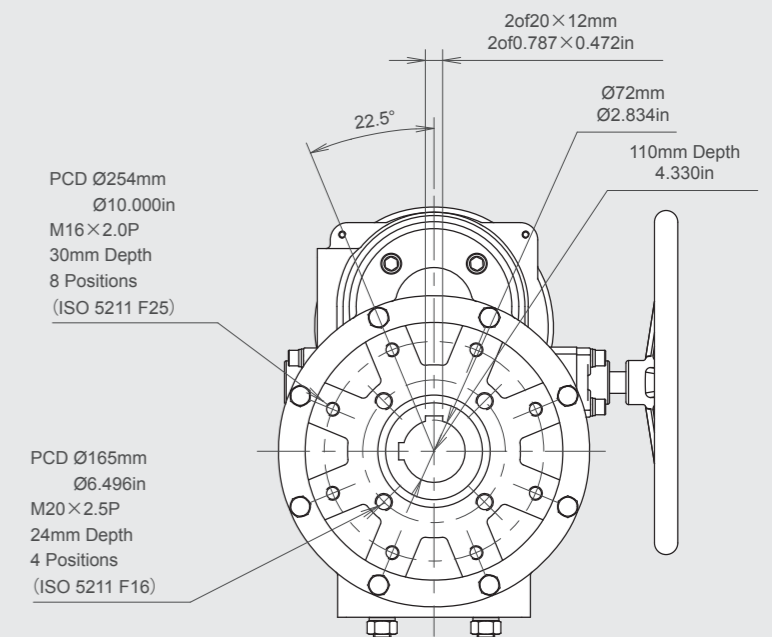
NOM-9/10/11/12



With torque switch, A=459mm (18.071in), B=288mm (11.339in)

Optional flange size: F14(M16x2.0P)

NOM-13



With torque switch, A=472mm (18.583in), B=292mm (11.496in)

NOM Series Model Code

Please contact sales as all of the available models are not included.

NOM - 2 - 220 - F - 30 - A - AAXABX

Code	Model	Code	Voltage	Code	Control type	Code	Duty Cycle	Code	Conduit Entries	Code	Option
1	NOM-1	D24	DC24V	F	Floating (ON-OFF)	30	30% Duty Cycle	A	2×PS 1/2"		
A	NOM-A	24	AC24V	M	Modulating OP※4	50	50% Duty Cycle (NOM-9~13) OP	B	2×M20 OP		
AM	NOM-AM	100	100V/IPH ※1	P	Modbus RTU RS485(110/220V)OP	75	75% Duty Cycle OP	C	2×NPT 1/2" OP		
F	NOM-F	110	110~120V/IPH	※4: There must be a Local Control Unit for 3-phase voltage.							
2	NOM-2	200	200V/IPH ※1	※OP=Option							
B	NOM-B	220	220~240V/IPH	Class:EN15714-2 provisions of the Duty Cycle.							
G	NOM-G	320	200V/3PH ※2	ClassA: Only for ON-OFFtype, 5, 10, 15cycles/1hr							
3	NOM-3	322	220V/3PH ※2	ClassA*: Only for ON-OFFtype, 10, 20, 30cycles/1hr							
H	NOM-H	324	220~240V/3PH※3	ClassB: Only for ON-OFFtype, 30, 60, 120starts/1hr							
4	NOM-4	338	380~415V/3PH※3	ClassB*: Only for ON-OFFtype, 60, 120, 240starts/1hr							
5	NOM-5	340	400V/3PH ※2	ClassC: Only for Modulating type, 300, 600, 1200starts/1hr							
6	NOM-6	344	440V/3PH ※2	1 cycle=90°Open+Rest time+90°Close+Rest time							
7	NOM-7	348	440~480V/3PH※3	1start=Running time+Rest time							
8	NOM-8	※1: Only for NOM-1~9, H, A, AM									
9	NOM-9	※2: Only for NOM-2~9, H									
10	NOM-10	※3: Only for NOM-2~13, H									
11	NOM-11										
12	NOM-12										
13	NOM-13										



Code	Option	Applicable
XXXXXX	N/A	
AXXXXX	Heater	
BXXXXX	Heater with Thermostat	
XAXXXX	Auxiliary Limit Switch	
XXAXXX	Analog Signal Output	Floating (ON-OFF)
XXBXXX	Potentiometer (5k Ω)	
XXCXXX	Potentiometer (1k Ω)	
XXXAXX	Torque Switch	NOM-2~13, F, G, H
XXXBXX	Torque Switch+Auxiliary Limit Switch	NOM-2~13, F, G, H
XXXXAX	Local Control unit (IP 65)	
XXXXBX	Local Control unit (IP 67)	
XXXXCX	Junction Box	
XXXXXA	IP68	NOM-2~8
XXXXXB	Stainless steel Housing	NOM-2~6
XXXXXC	Corrosivity Enclosure:C4	
XXXXXH	Chain Wheel	
XXXXXZ	Others(Additional description needed)	



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