



S

SERIES

SPRING RETURN FAIL-SAFE ELECTRIC VALVE ACTUATORS





Company Profile

Sun Yeh Electrical Ind. Co., Ltd. was founded in 1986. Ever since it is committed to designing and manufacturing actuators for meeting clients' requirements and satisfying market demands. In the meantime, it constantly strive for the highest level of technical excellences and good management processes.

A wide range of products including quarter-turn actuator, spring return fail-safe actuator, linear actuator, explosion-proof actuator can be applied to the control of industrial processes, fluid control, water treatment, HVAC, chemical engineering, food processing, etc.

Sun Yeh high quality products have been certified with CE, CSA, TS, SIL, CCC, ATEX, IECEx, and CNEx as well as conform to RoHS, REACH and China RoHS environmental regulations, in addition to ISO 9001, ISO 14001, ISO 45001, and AEO.





Perfect
Solution

Product Overview

S series spring return fail-safe electric actuators, in addition to the normal function (floating control, On / Off control, modulating control) are designed to provide fail-safe positioning of valves and dampers upon loss of supply voltage. A mechanical spring set is utilized to position the controlled device to either the fully OPEN or fully CLOSED position without any external power source. For On / Off type, a mechanical BUFFER is employed at the end of the spring stroke, in order to reduce the dynamic effects of the spring return system. Manual override is optional for manual positioning of the controlled device.

Product Features

- Controls: On / Off, floating (optional), modulating (optional).
- Manual override (optional).
- ISO 5211 mounting flange.
- Built-in motor thermal protection.
- Springs are utilized to store kinetic energy to close a valve or a damper every time to ensure failsafe operation in time of emergency without relying on batteries or other external power supplies.

Enclosure

- Aluminum alloy, polyester powder coated. Corrosion protection C3 according to ISO 12944-6.
- NEMA 4X, 5 & IP68 (Waterproof and dustproof enclosure intended for outdoor use).

Domed Position Indicator

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

Duty Cycle

- 50%: Ambient temperature: -40°C to 40°C (-40°F to 104°F)
 - 30%: Ambient temperature: 41°C to 65°C (105°F to 149°F)
- (in accordance with IEC standard)

Lubrication

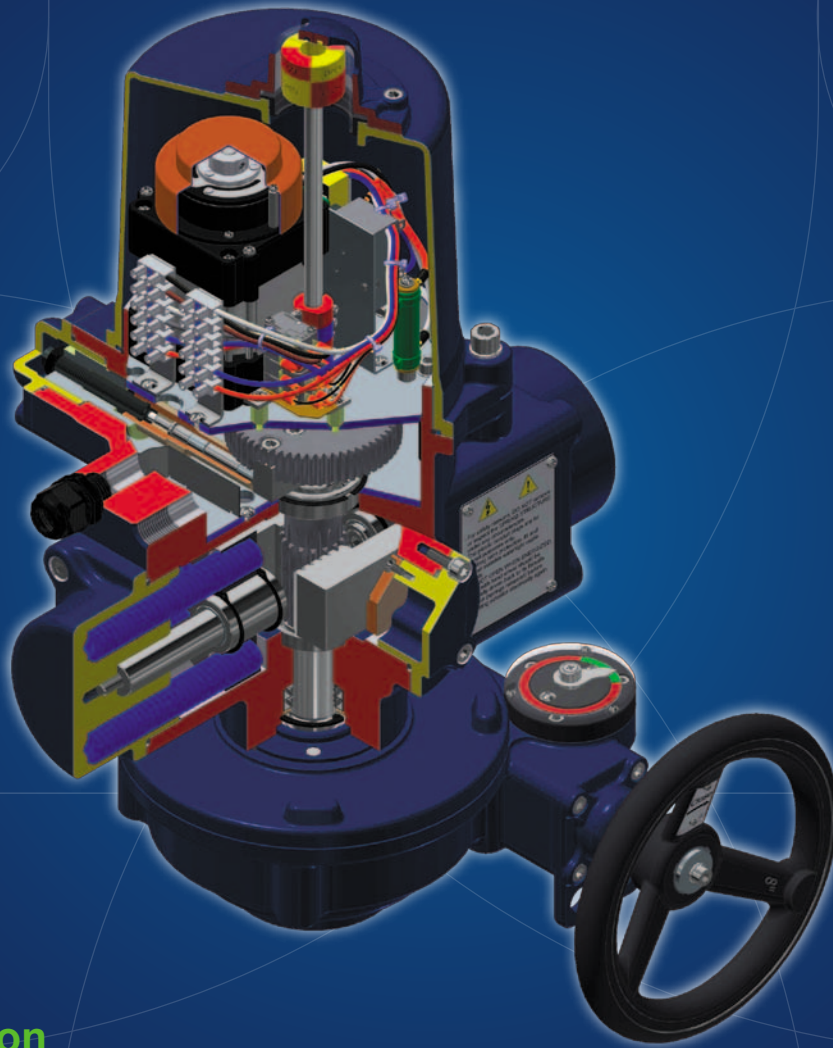
- Gear trains are lubricated for life at the factory.
- No need to re-lubricate regularly under normal service life.

Operating Voltages and Control Mode

Power Supply	24VAC	24VDC	110-120VAC /1PH	220-240VAC /1PH	220-240VAC /3PH	380-415VAC /3PH	440-480VAC /3PH
Model	Control Mode						
S-500	On / Off	On / Off	On / Off Floating Modulating	On / Off Floating Modulating	On / Off	On / Off	On / Off
S-1300							
S-2000							
S-2600							
S-3600			On / Off	On / Off	N / A	N / A	N / A

- Please contact your salesperson if other voltages are required.

Standard Specification



Service Condition

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

Certifications

- CE • CSA • RoHS • REACH • SIL

Technical Data

Model		Torque		Nominal Motor Power (Watt)	Weight				Mounting Base					
		N·m	in·lb		Standard		W/ Manual Override		Flange Type		Shaft (A)		Depth of Shaft (B)	
					kg	lb	kg	lb	ISO 5211	mm	inch	mm	inch	
S-500		50	445	50	27	59	37	81	F07	17	0.669	30	1.181	
S-1300		130	1150	130	57.5	127	74.5	164	F10	22	0.866	41	1.614	
S-2000		200	1770	130	95	209	135	297	F12	27	1.063	45	1.772	
S-2600		260	2300	130	95	209	135	297	F12	27	1.063	45	1.772	
S-3600		360	3185	130	108	238	156	344	F12	36	1.417	46	1.811	

- Motor power is based on 110VAC @60Hz, 50% duty cycle, On / Off control.

Hazardous Area Enclosures

- TS Taiwan Hazardous Area Certification
- CNEx China Hazardous Area Certification
- ATEX Certification

Directive	Group	Ambient Temperature
ATEX II 2 GD	Ex db IIB T4 Gb	-30°C to +70°C / -22°F to +158°F
ATEX II 2 GD	Ex tb IIIC T130°C Db	-30°C to +70°C / -22°F to +158°F

Standards: EN 60079-0, EN 60079-1, EN 60079-31

- IECEx International Certification

Group	Ambient Temperature
Ex db IIB T4 Gb	-30°C to +70°C / -22°F to +158°F
Ex tb IIIC T130°C Db	-30°C to +70°C / -22°F to +158°F

Standards: IEC 60079-0, IEC 60079-1, IEC 60079-31

- CSA Hazardous Area Certification

Zone						
National Conformity	Class	Zone	Protection Method	Groups	T-Code	Ambient Temperature
AEx / Ex	I	1	db	IIB, IIA	T4	-30°C to +70°C / -22°F to +158°F
AEx / Ex	II	21	tb	IIIC, IIIB, IIIA	T130°C	-30°C to +70°C / -22°F to +158°F

Standards: CAN/CSA-C22.2 No. 0-10, CAN/CSA-C22.2 No. 60079-0, CAN/CSA-C22.2 No. 60079-1, CAN/CSA-C22.2 No. 60079-31, UL 60079-0, UL 60079-1, UL 60079-31

Division				
Class	Division	Groups	T-Code	Ambient Temperature
I	1	C, D	T4	-30°C to +70°C / -22°F to +158°F
II	1	E, F, G	T130°C	-30°C to +70°C / -22°F to +158°F

Standards: CAN/CSA-C22.2 No. 0-10, CSA C22.2 No. 30-M1986, CSA C22.2 No. 25-17, FM 3600, FM 3615, FM 3616

Safety Integrity Level

- SIL2

Anti-condensation Heater

- An anti-condensation heater increases the internal temperature of the actuator to prevent the freezing of lubricants and keeps the interior of the actuator dry to prevent product damage from moisture.
- Heater is not recommended if the ambient temperature is over 35°C (95°F).
- 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).



Low Ambient Temperature

- -40°C
- Available for On / Off and floating control.

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.

Modulating Control

- A proportional control unit that could efficiently control the flow via analog signal and position the valve to open/close in the system as well.

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

Floating Controller

- The actuator can be controlled by external controller to open, close and stop at any intermediate positions between 0 and 90 degrees and will fail either clockwise or counter-clockwise to the end position.

Operating Direction

- The spring return direction cannot be changed and must be configured by the manufacturer. Please select the fail action according to the required application, i.e. based on clockwise or counter-clockwise operation.

- Standard: Fail clockwise spring return.
 - Optional: Fail counter-clockwise spring return.
- (See the figures on the right)

Conduit Entries

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

Manual Override



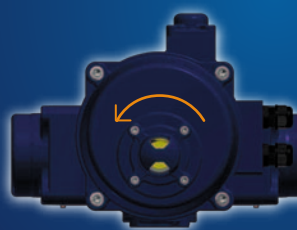
Standard:
Without manual override



Optional:
With manual override



Standard:
Fail clockwise spring return.



Optional:
Fail counter-clockwise spring return.



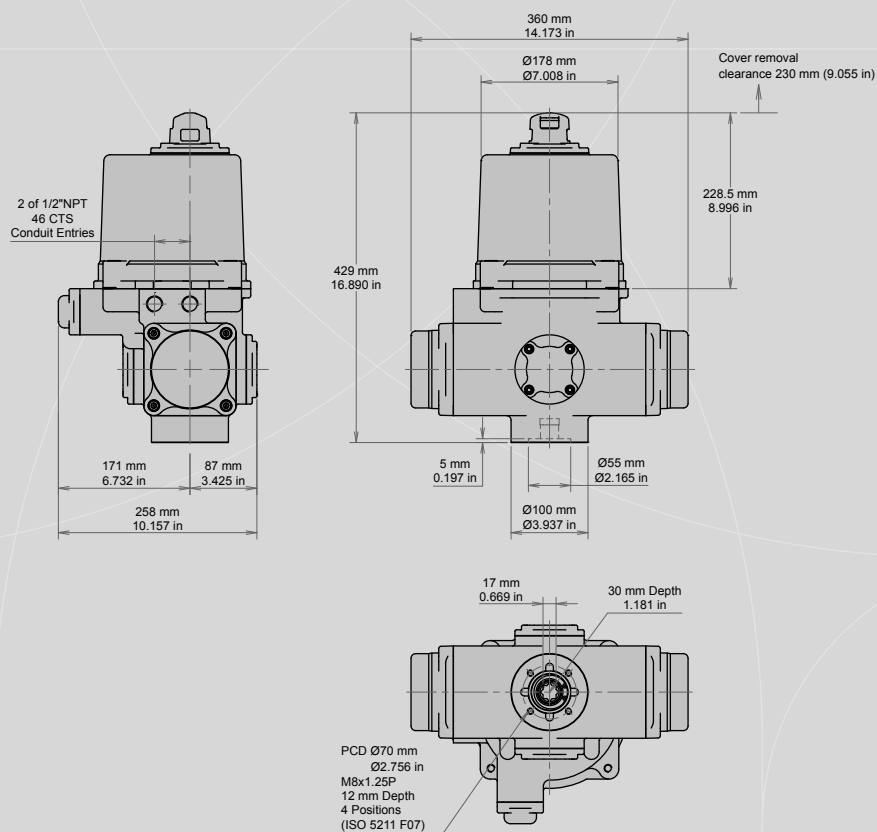
(Running direction is base on viewing of actuator from the top)



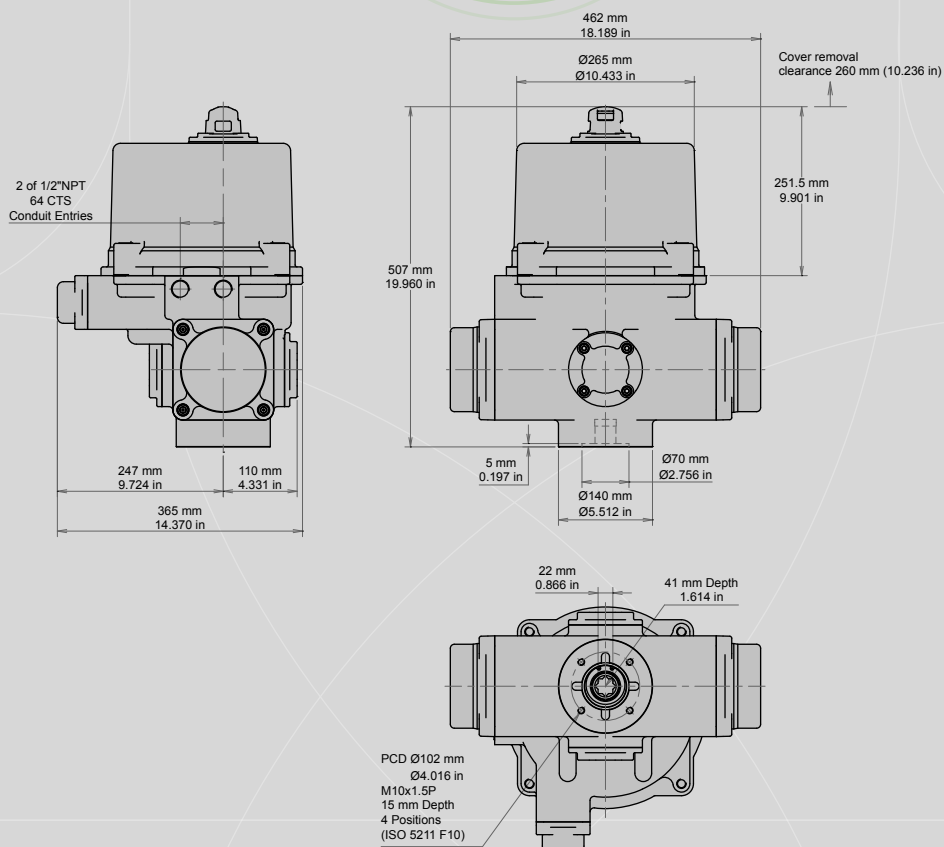
Standard

- The drawing is based on actuator in power fail clockwise spring return.

S-500

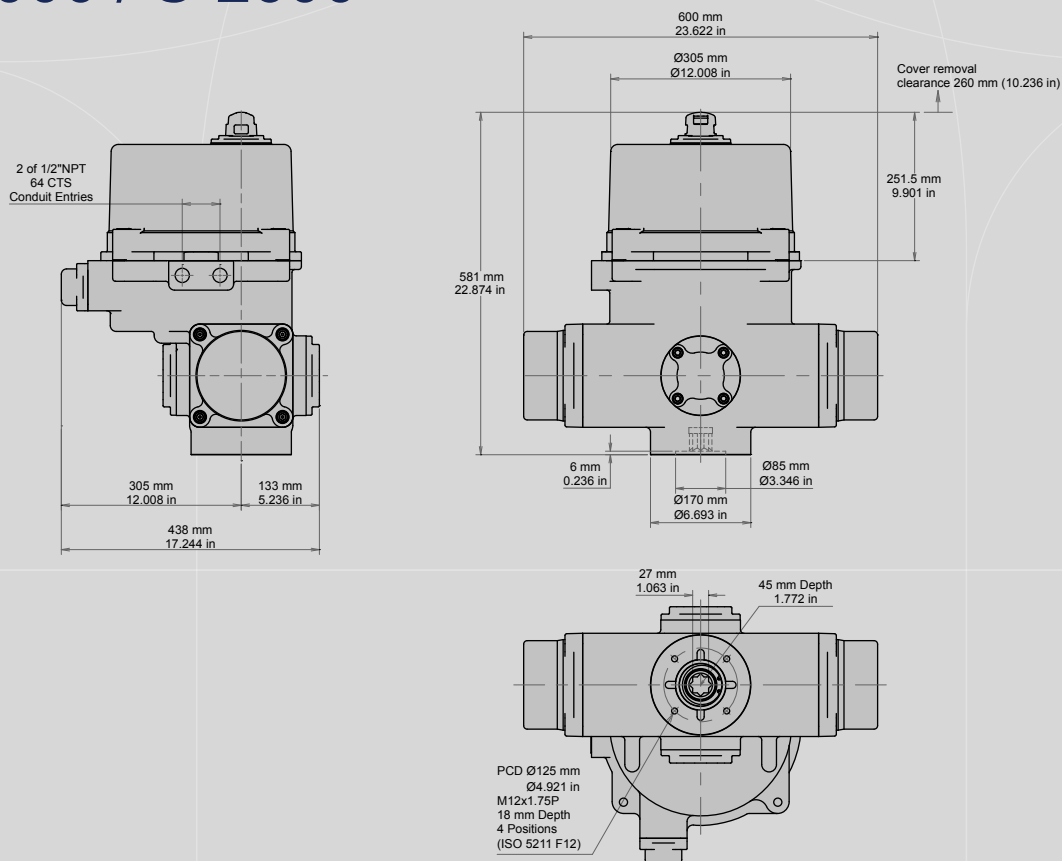


Outline Dimensions



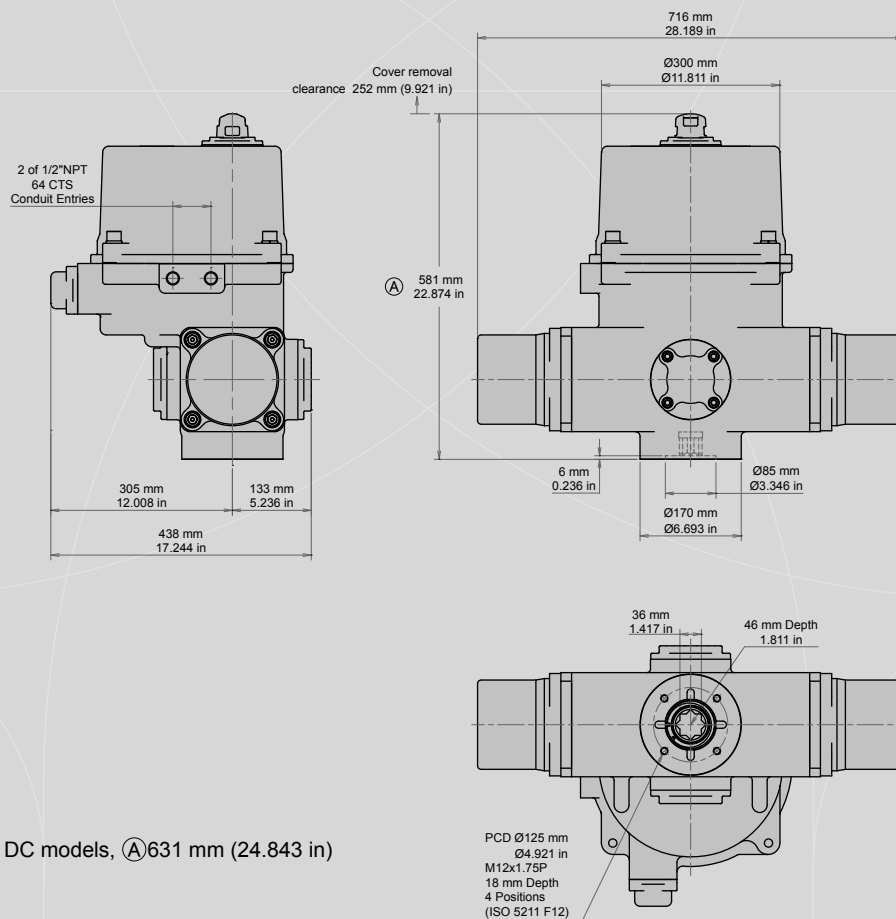
S-1300

S-2000 / S-2600





S-3600



- Apply to DC models, (A) 631 mm (24.843 in)

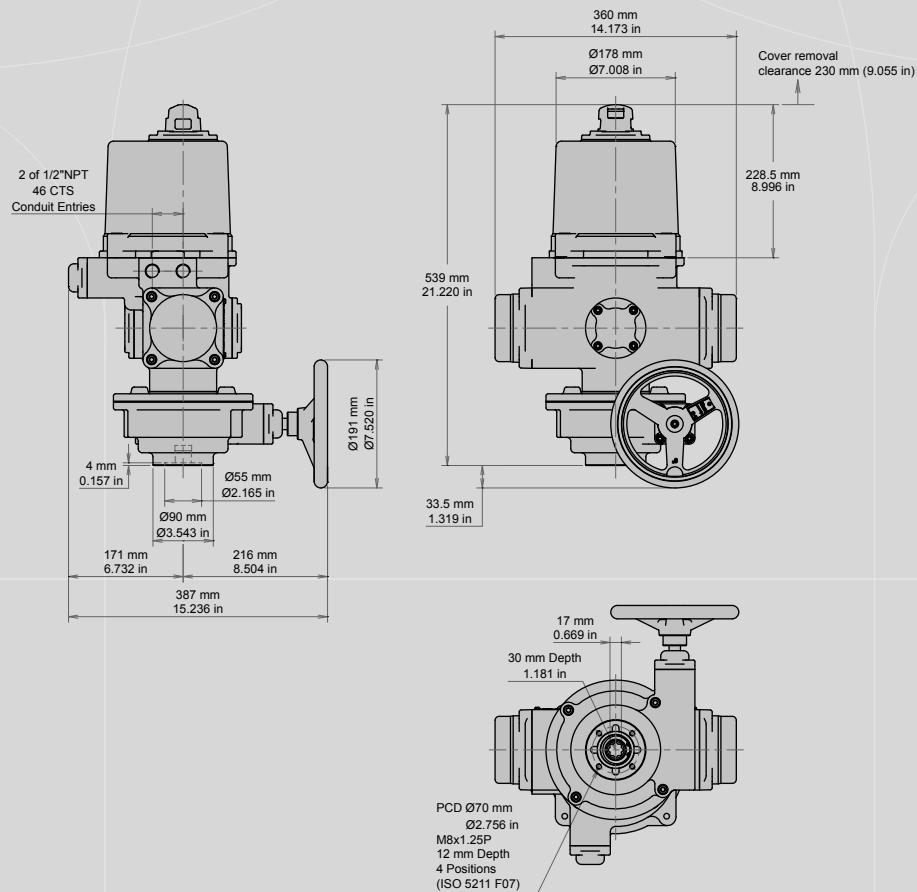
Outline Dimensions



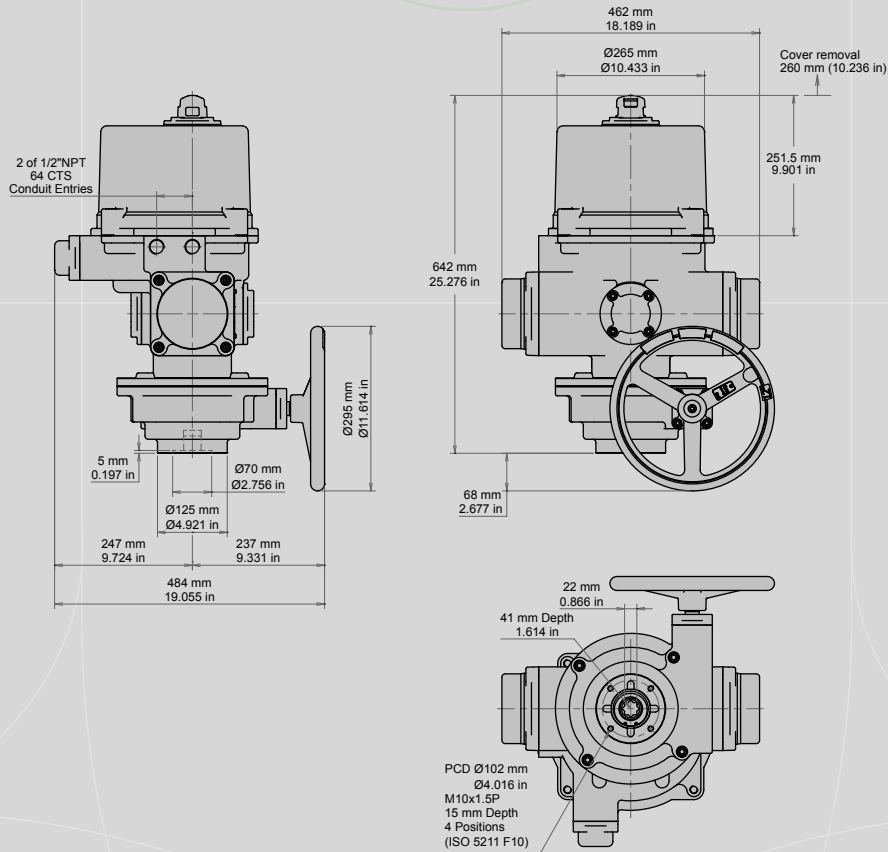
W/ Manual Override

- The drawing is based on actuator in power fail clockwise spring return.

S-500

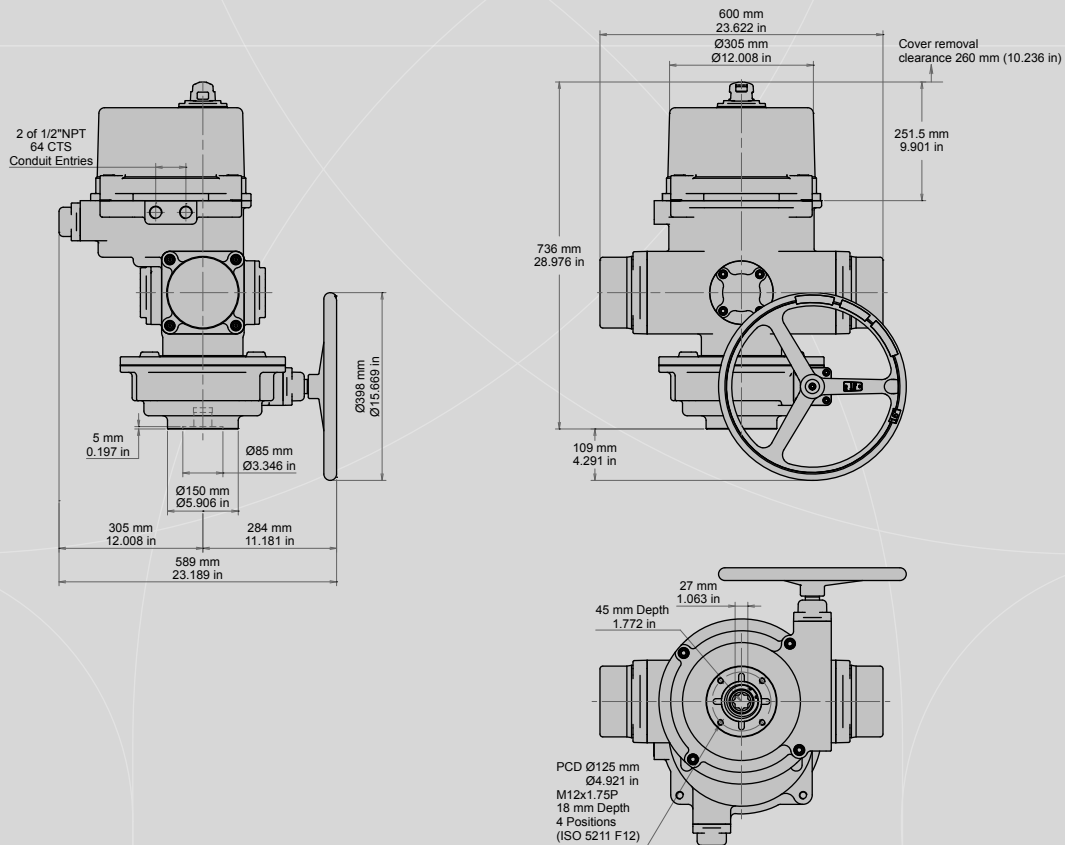


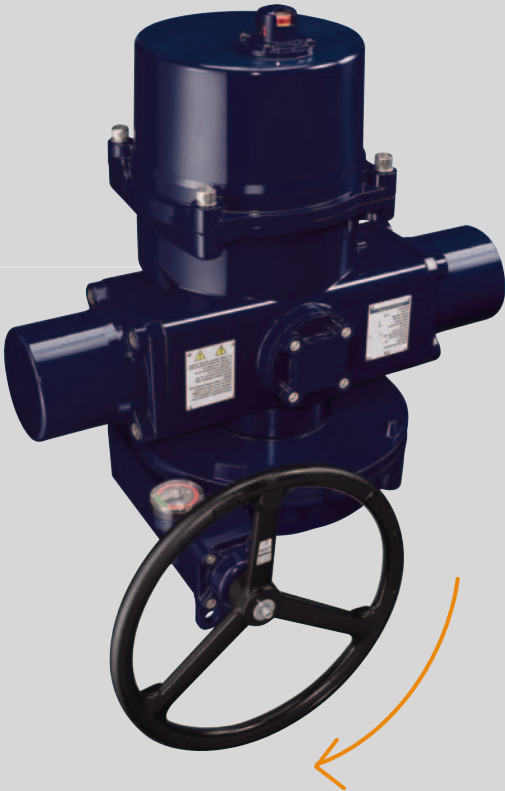
Outline Dimensions



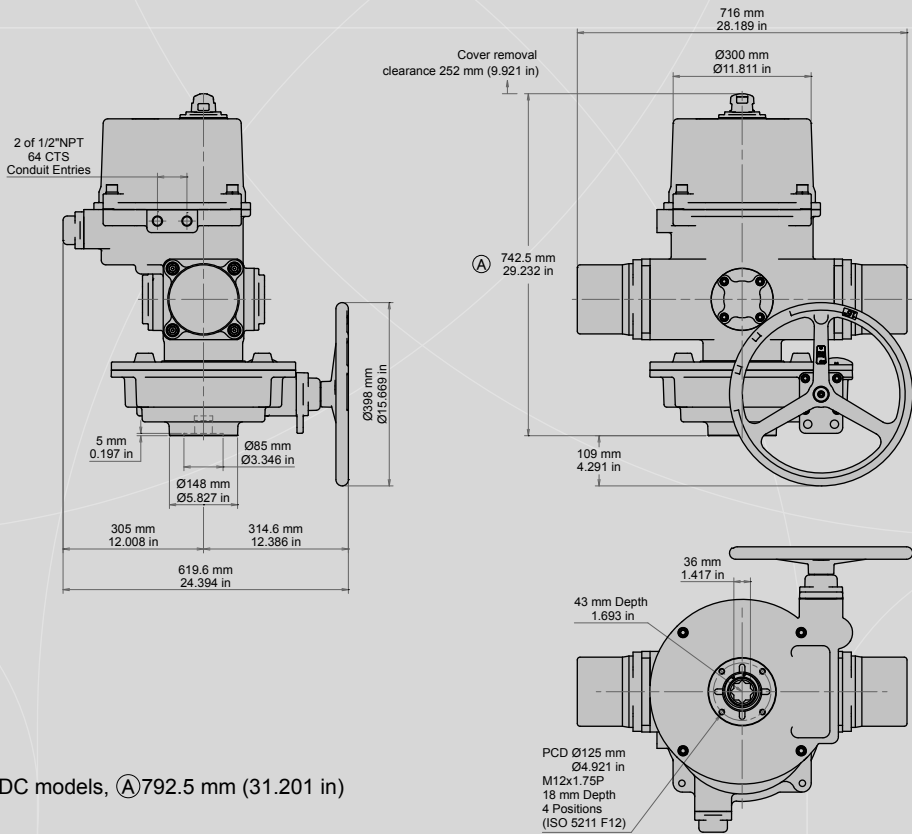
S-1300

S-2000 / S-2600





S-3600





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