Service Unique Nice Youthful Energy Honesty

SUNYEH

S

SERIES

SPRING RETURN FAIL-SAFE
ELECTRIC VALVE ACTUATORS

SUN YEH®

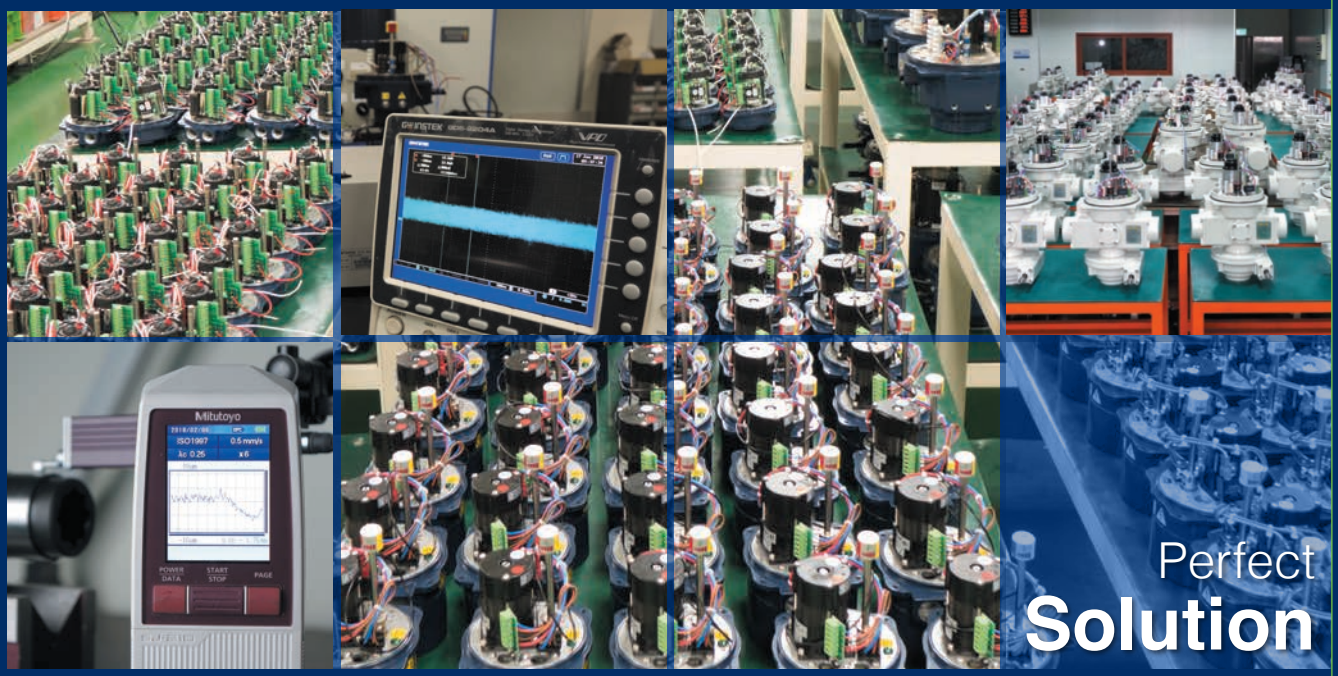
www.sunyeh.com

Company Profile

Sun Yeh Electrical Ind. Co., Ltd. was established in 1986 and it is committed to continuous technological innovation, the most advanced product quality management, organizational excellence, and outstanding customer satisfaction.

Our sustainable development drives the product line extension to include quarter-turn actuators, spring return fail-safe actuators, SuperCap fail-safe actuators, linear actuators, multi-turn actuators, and explosion-proof actuators. Sun Yeh offers various products that can be widely applied to the control of industrial processes, fluid control, water treatment, HVAC, chemical engineering, food processing, etc.

Sun Yeh is dedicated to providing you with high-quality products, which have been certified with CE, CSA, CCC, ATEX, IECEx, CNEx, TS, UKCA, UKEx, JPEx and SIL approvals, as well as meet RoHS, REACH and China RoHS environmental regulations, in addition to ISO 9001, ISO 14001, ISO 45001, and AEO.



Perfect
Solution

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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 12944-2.
- NEMA Type 4X, 5, IP68 (7m, 72 hrs) intended for outdoor use.

Position Indication

- All models come with a visible mechanical position indicator.

Duty Cycle

Model	Control Mode	Duty Rating / Ambient Temperature
S-500 / S-1300 / S-2000 / S-2600 / S-3600	On-Off / Floating	50% duty cycle: -30°C to +40°C (-22°F to +104°F) 30% duty cycle: +41°C to +65°C (+105°F to +149°F)
S-500 / S-1300 / S-2000 / S-2600	Modulating	50% duty cycle: -20°C to +40°C (-4°F to +104°F) 30% duty cycle: +41°C to +65°C (+105°F to +149°F)

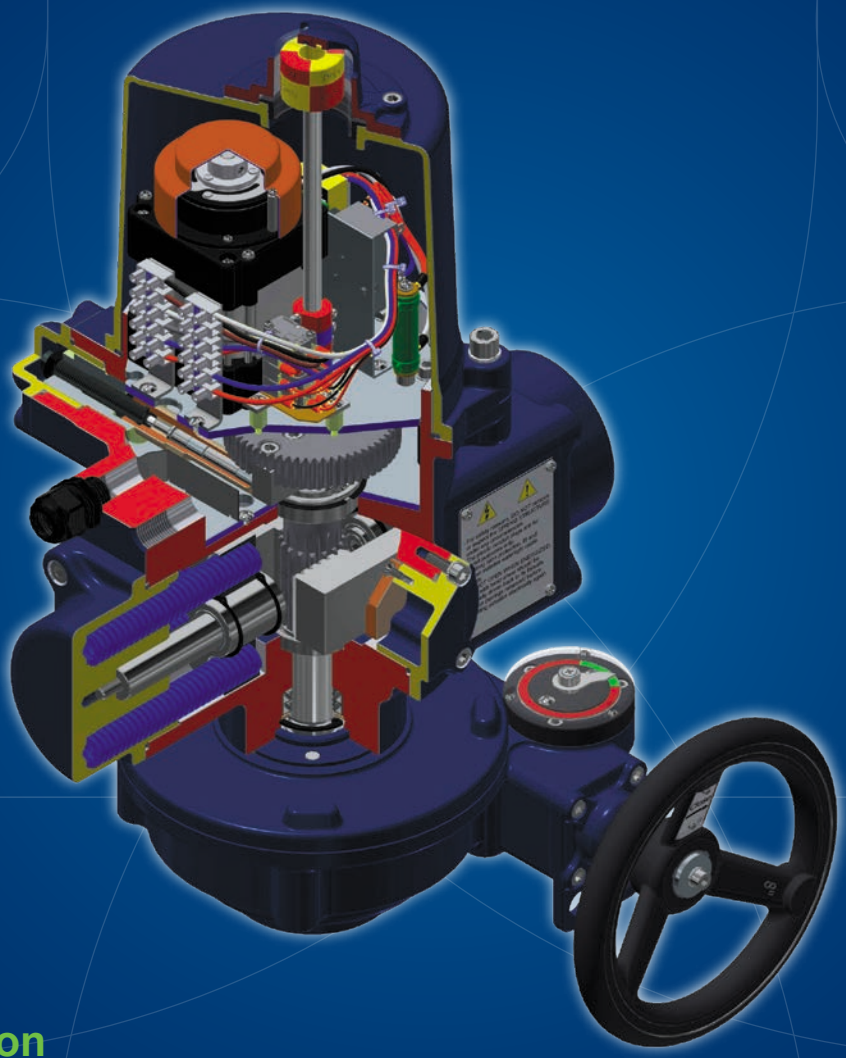
Lubrication

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

Supply Voltages and Control Mode

Power Supply	24 V AC	24 V DC	110-120 V AC	220-240 V AC	220-240 V AC 3PH	380-415 V AC 3PH	440-480 V AC 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.



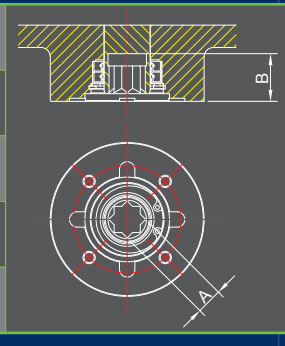
Service Condition

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

Certifications

- CE
- CSA
- UKCA

Technical Data

Model		Torque		Nominal Motor Power (W)	Weight				Mounting Base		
		Nm	in-lb		Standard		With Manual Override		Flange	Output Drive (A)	Output Drive Depth (B)
					kg	lb	kg	lb	ISO 5211	mm	mm
S-500		50	445	50	27	60	37	82	F07	17	30
S-1300		130	1150	130	57	126	77	170	F10	22	41
S-2000		200	1770	130	93	205	131.5	290	F12	27	45
S-2600		260	2300	130	95	210	133.5	295	F12	27	45
S-3600		360	3185	130	103	228	152	336	F12	36	46

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Hazardous Area Enclosures

- TS Taiwan Hazardous Areas Certification

Marking	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, IEC60079-31	

- CNEx China Hazardous Areas Certification / CCC

Marking	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: GB / T3836.1, GB / T3836.2, GB / T3836.31	

- ATEX Hazardous Areas Certification for European Union

Directive	Marking		Ambient Temperature
ATEX II 2 GD	Ex db IIB T4 Gb (Standard)	Ex db h IIB T4 Gb (with manual override)	-30°C to +70°C (-22°F to +158°F)
ATEX II 2 GD	Ex tb IIIC T130°C Db (Standard)	Ex tb h IIIC T130°C Db (with manual override)	-30°C to +70°C (-22°F to +158°F)
Standards: EN IEC 60079-0, EN 60079-1, EN 60079-31, EN ISO 80079-36, EN ISO 80079-37			

- IECEx Hazardous Areas Certifcation for International Market

Marking		Ambient Temperature
Ex db IIB T4 Gb (Standard)	Ex db h IIB T4 Gb (with manual override)	-30°C to +70°C (-22°F to +158°F)
Ex tb IIIC T130°C Db (Standard)	Ex tb h IIIC T130°C Db (with manual override)	-30°C to +70°C (-22°F to +158°F)
Standards: IEC 60079-0, IEC 60079-1, IEC 60079-31, ISO 80079-36, ISO 80079-37		

- CSA Hazardous Locations Certification for North America

Zone System						
Code	Class	Permitted Zone	Type of Protection	Group	Temperature Class	Ambient Temperature
AEx / Ex	I	1	db	IIA, IIB	T4	-30°C to +70°C (-22°F to +158°F)
AEx / Ex	II	21	tb	IIIA, IIIB, IIIC	T130°C	-30°C to +70°C (-22°F to +158°F)
Standards: 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 System				
Hazard Class	Permitted Division	Group	Temperature Class	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: CSA C22.2 No. 30-M1986, CSA C22.2 No. 25-17, FM 3600, FM 3615, FM 3616				

- UKEX Hazardous Areas Certification for the UK market

Directive	Marking		Ambient Temperature
UKCA II 2 GD	Ex db IIB T4 Gb (Standard)	Ex db h IIB T4 Gb (with manual override)	-30°C to +70°C (-22°F to +158°F)
UKCA II 2 GD	Ex tb IIIC T130°C Db (Standard)	Ex tb h IIIC T130°C Db (with manual override)	-30°C to +70°C (-22°F to +158°F)
Standards: EN IEC 60079-0, EN 60079-1, EN 60079-31, EN ISO 80079-36, EN ISO 80079-37			

Safety Integrity Level

- SIL2

Anti-condensation Heater

- The heater is used to raise the internal temperature of actuators to prevent lubricants from freezing and keeps inside of actuator dry to avoid damage caused by too much humidity.
- Heater is not recommended if the ambient temperature is over 35°C (95°F).
- If the temperature varies much from day to night or between summer and winter, heater and thermostat are recommended.

Optional Items

Heater Thermostat

- Heater thermostat switches off the heater when the internal temperature of actuators is higher than 25±5˚C (77±9˚F).

Low Ambient Temperature

- -40˚C

Model	Control Mode	Ambient Temperature / Duty Rating
S-500 / S-1300 / S-2000 / S-2600	On-Off, Floating	-40°C to +65°C (-40°F to +149°F) Note: -40°C to +40°C (-40°F to +104°F) : 50% duty cycle +41°C to +65°C (+105°F to +149°F) : 30% duty cycle
S-3600	On-Off	

Auxiliary Limit Switches

- Actuators come standard with two limit switches, LS1 for fully-open and LS2 for fully-closed positioning. Two auxiliary limit switches (LS3 & LS4) are optional for fully-open and fully-closed position feedback.

Modulating Control

- A proportional control unit.

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

Floating Controller

- To allow the actuator to be controlled by an external signal to open, close, or stop at any position between 0 and 90 degrees; when the actuator power fails, regardless of the position of the actuator, it can be driven by using the springs to rotate in either clockwise or counter-clockwise direction.

Conduit Entries

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

Atmospheric-corrosivity Category (ISO 12944-2)

- Standard: C3
- Optional: C4 / C5

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)

Standard:
Fail clockwise spring return.
(viewed from the top of the actuator)

Manual Override

Standard:
Without manual override

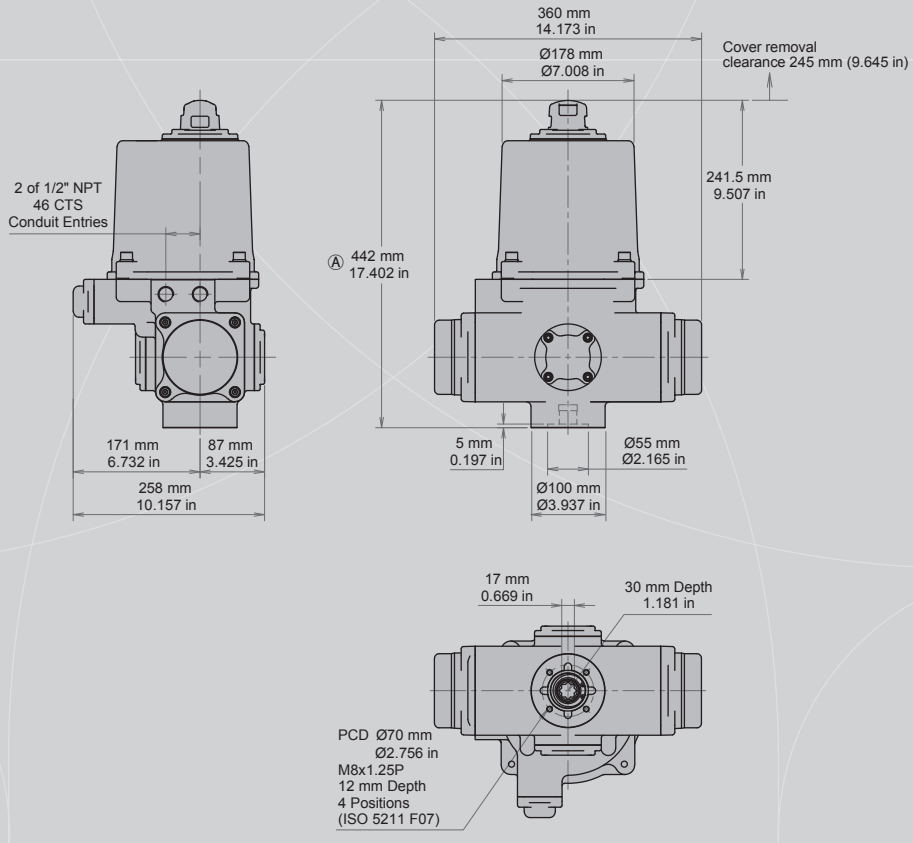
Optional:
With manual override

Optional:
Fail counter-clockwise spring return.
(viewed from the top of the actuator)

Standard

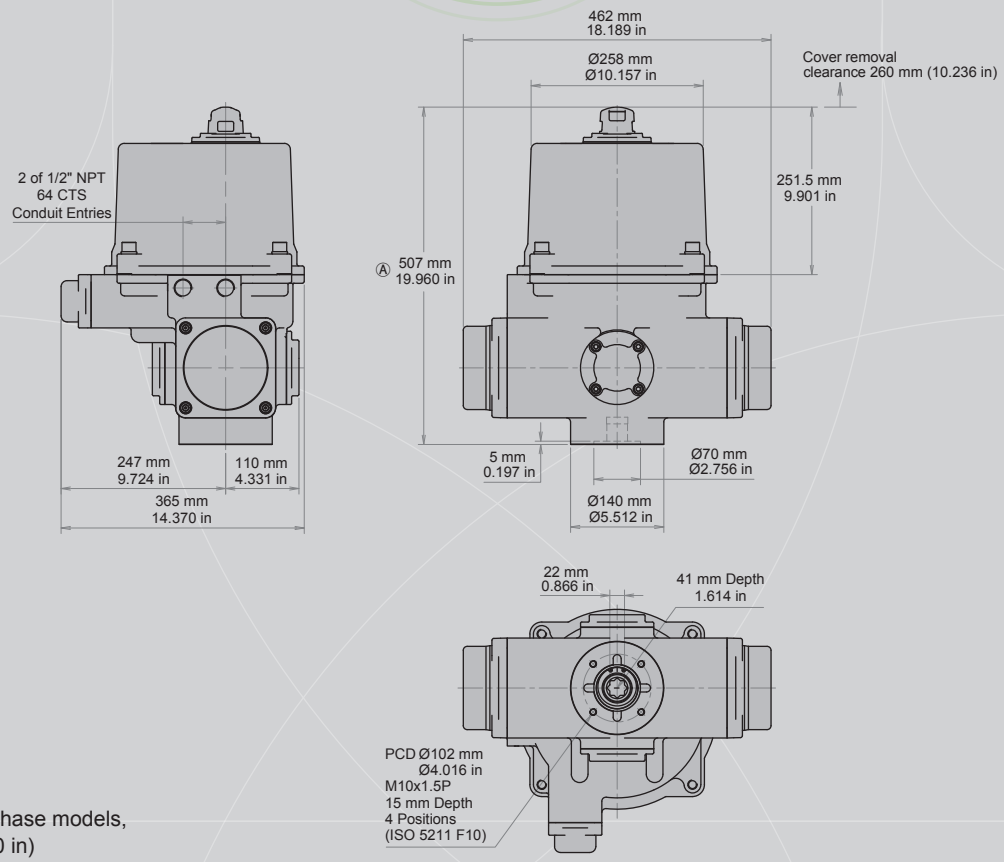
● The drawing is based on actuator in power fail clockwise spring return.

S-500



● Apply to 3 phase models, Ⓐ 479 mm (18.858 in)

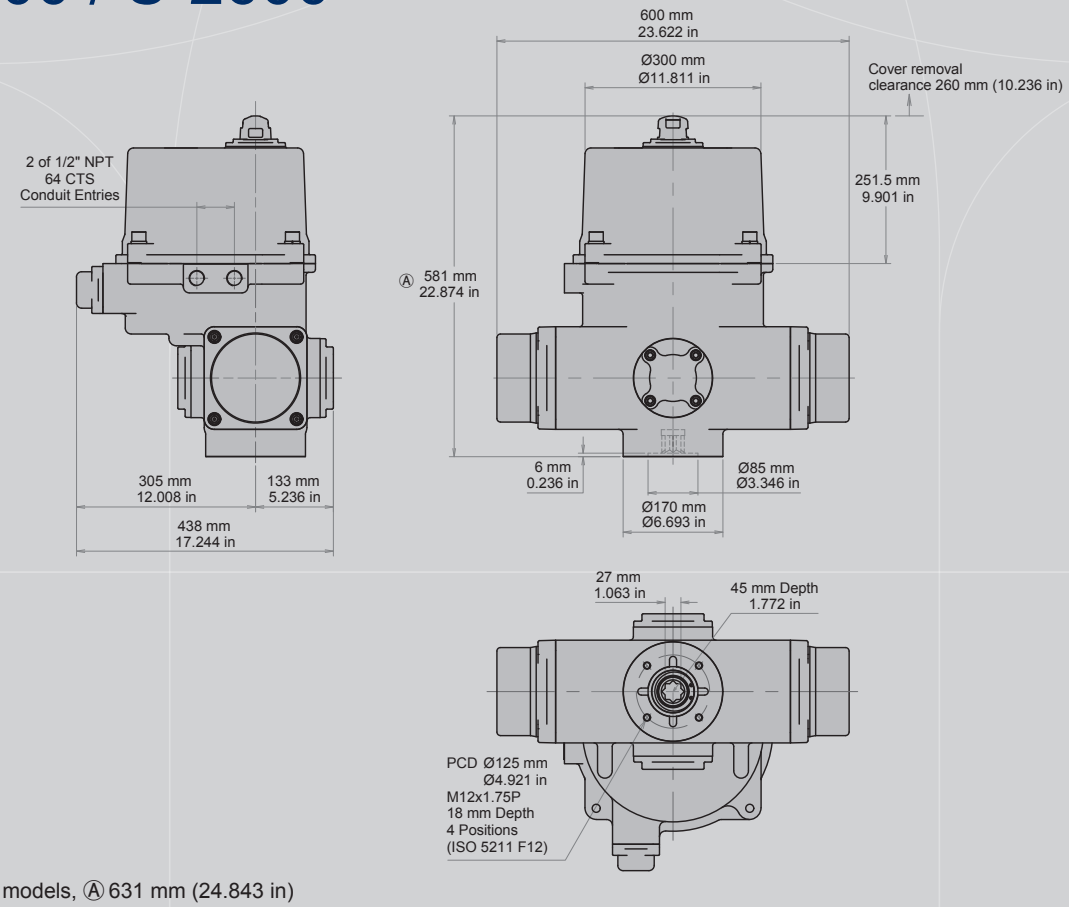
Outline Dimensions



- Apply to DC or 3 phase models, Ⓐ 572 mm (22.520 in)

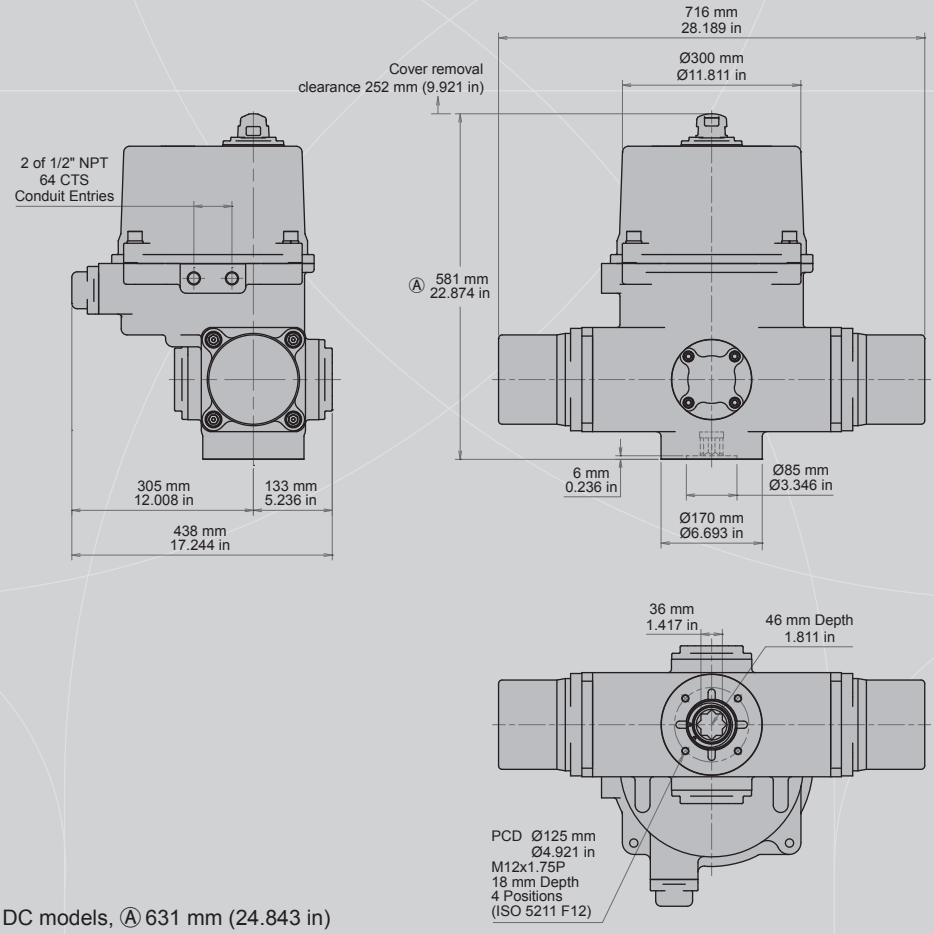
S-1300

S-2000 / S-2600



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

S-3600

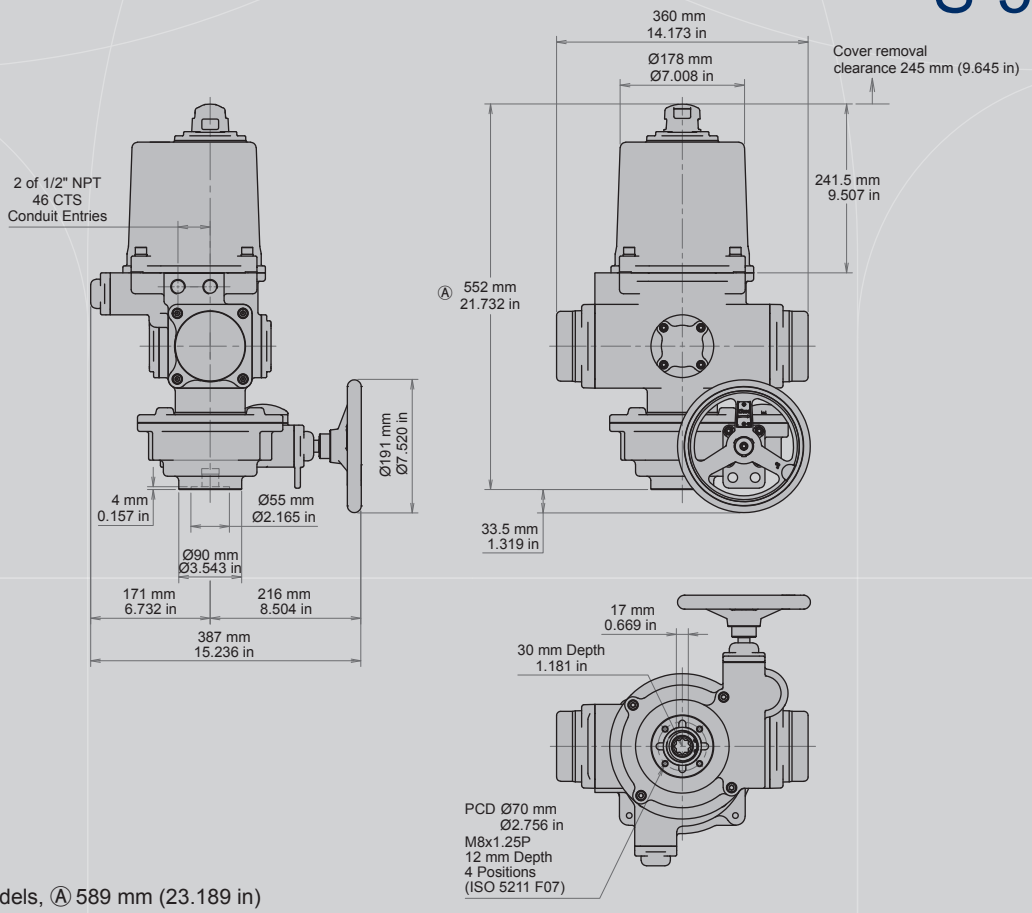


• Apply to DC models, Ⓐ 631 mm (24.843 in)

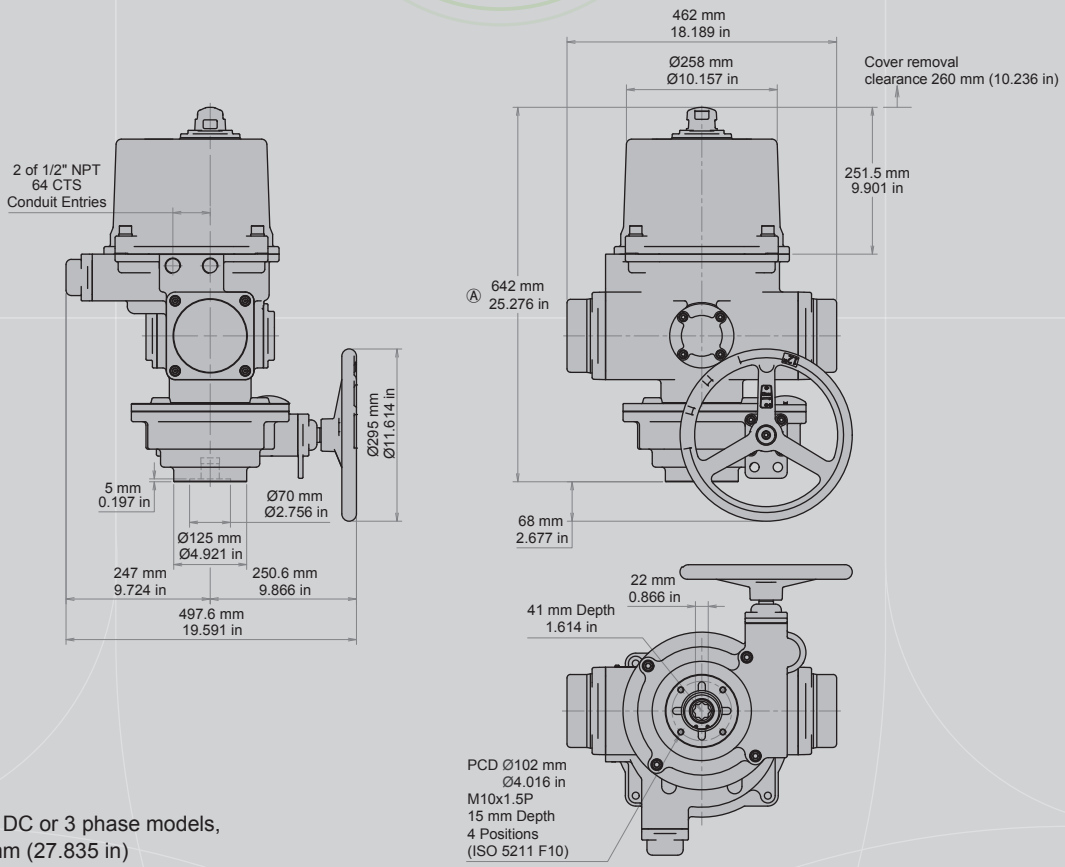
W/ Manual Override

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

S-500



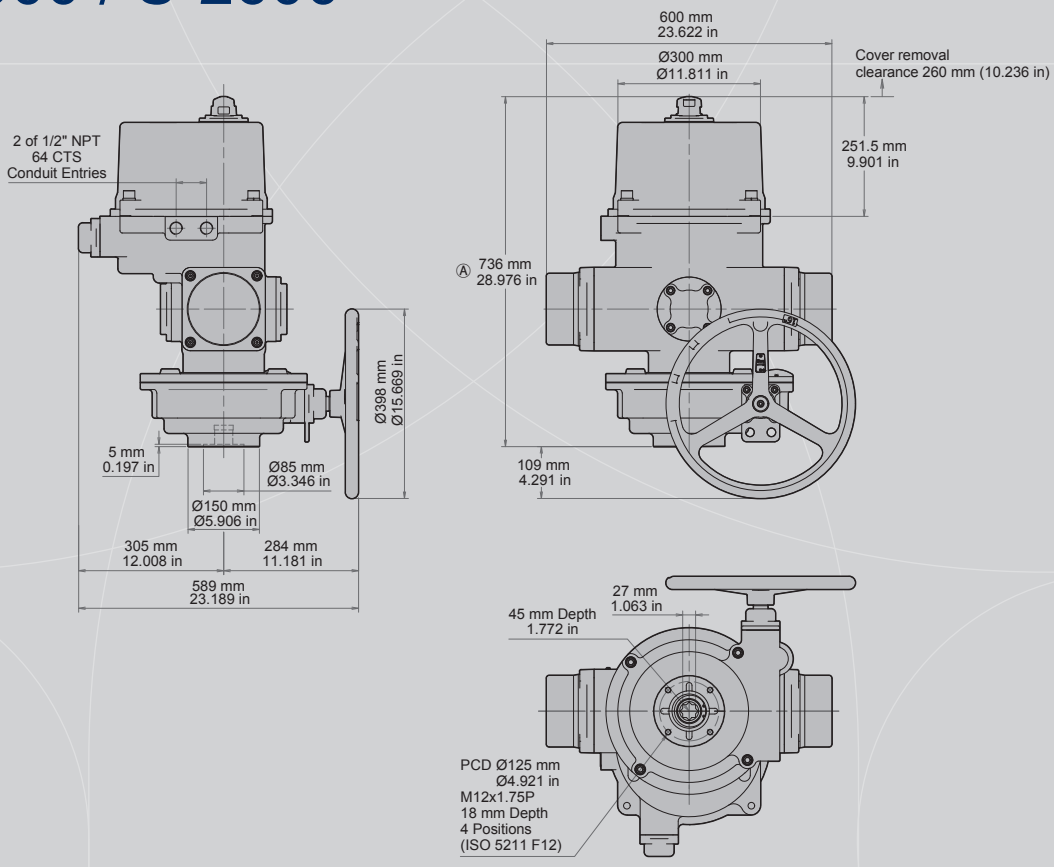
- Apply to 3 phase models, Ⓐ 589 mm (23.189 in)



- Apply to DC or 3 phase models, Ⓐ 707 mm (27.835 in)

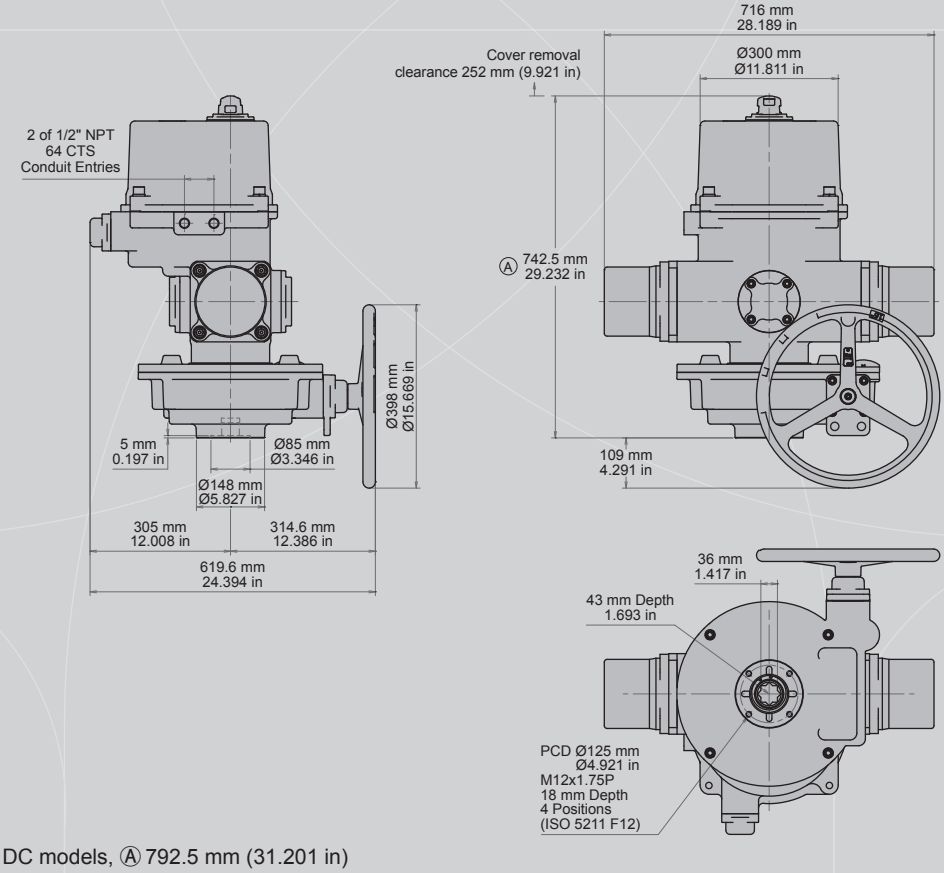
S-1300

S-2000 / S-2600



- Apply to DC models, Ⓐ 786 mm (30.945 in)

S-3600



• Apply to DC models, Ⓐ 792.5 mm (31.201 in)

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SUNYEH

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