

Building connections that last™



# Series ESR

## Spring Return Electric Actuator Datasheet



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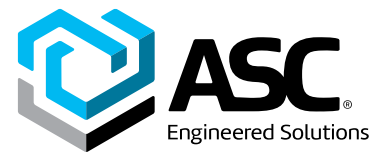
## 1. Standard Specifications

<b>Enclosure</b>	IP67, Dust-tight, weather-tight, Type 4/4x
<b>Ambient Temperature</b>	-4°F to 131°F (-20°C to 55°C)
<b>Power Supply</b>	120v or 220v 1-Phase Also 380v, 440v 3-Phase, 24v
<b>Limit Switches</b>	Motor: Open / Close Auxiliary Dry Contact: Open / Close
<b>Stall Protection</b>	Built-in Thermal Protection Cut-off at 248°F (120°C)
<b>Governor</b>	Standard: E1730SR, E2600SR and E4340SR
<b>Travel Angle</b>	90 ± 5
<b>Indicator</b>	Continuous Position Indication
<b>Manual Operation</b>	De-clutchable Hand Wheel
<b>Worm Gear</b>	Permanently lubricated and self locking
<b>Space Heater</b>	20-Watt Heater
<b>Conduit Entries</b>	Two ¾" NPT
<b>Lubrication</b>	Grease (Shell Gadus S2-V220-2)
<b>Materials</b>	Aluminum Alloy (enclosure), Steel (gears)
<b>Surface Treatment</b>	Anodizing
<b>External Coating</b>	Dry Powder Polyester (TGIC-Free)
<b>Mechanical Stops</b>	Factory set. Field adjustable.

## 2. Options

<b>Enclosure Options</b>	(X) Explosion Proof ATEX Ex d IIB T4 Gd, Dust-tight, Weather-tight, IP67 (W) Water-tight, Dust-tight, IP68
<b>Temperature Options</b>	(L4) -40°F to 131°F (-40°C to 55°C) (L6) -76°F to 131°F (-60°C to 55°C)
<b>Dry-Contacts</b>	(A2) Add 2 additional dry-contact switches
<b>Control Options</b>	AC Motor Interface with speed control (On / Off service) Integral Motor Starter 3-Phase (Latching or Non-Latching) Digital High Resolution Controller mA and Vdc (modulating service) Slide-wire Control Position Feedback 4-20mA/0-10v Modbus Communication
<b>Local Control Options</b>	Base model LCU: Local / Remote, open-stop-close with indicator lights Full Featured LCU: LCD Display, Cycle Counter, Auto-calibration including limits, Phase Protection

# Spring Return Electric Actuator Series ESR



## 3. Performance

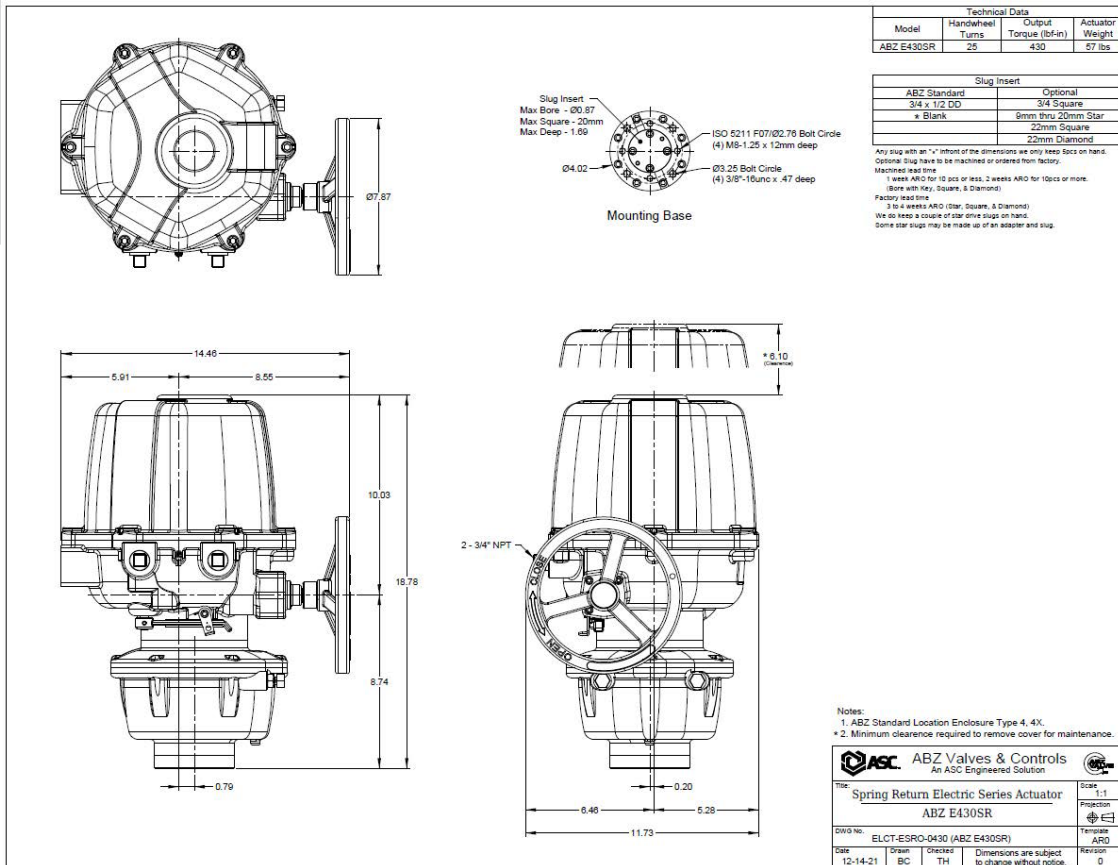
		Model:	ESR430	ESR860	ESR1730	ESR2600	ESR4340
<b>Maximum Torque</b>	lbf-in		430	860	1730	2600	4340
	Nm		50	100	200	300	500
<b>Voltage &amp; Rated Current AMPs</b>	110V	50Hz	2.8	2.8	2.8	2.8	2.8
		60Hz	3.6	3.6	3.6	3.7	3.7
	120V	60Hz	3.6	3.6	3.6	3.7	3.7
		220V	50Hz	1.6	1.6	1.7	1.6
	60Hz		2	2	2.1	2	2.1
	230V	50Hz	1.6	1.6	1.7	1.6	1.6
		380V	50Hz	0.24	0.4	0.38	0.35
	60Hz		0.25	0.4	0.35	0.29	0.31
	440V	50Hz	0.28	0.5	0.5	0.62	0.62
		60Hz	0.24	0.4	0.36	0.31	0.31
	24Vdc		12	12	13	15	15
	<b>Duty Cycle (S2)</b>	minutes		15	15	15	15
<b>Motor – Watts</b>	Vac		90	90	90	90	90
	Vdc		120	120	120	120	120
<b>Motor Operating Time in seconds</b>	110V	50Hz	17 / 16	20 / 19	60 / 56	85 / 81	116 / 110
		60Hz	15 / 14	17 / 16	51 / 46	72 / 68	99 / 93
	120V	60Hz	15 / 14	17 / 16	51 / 46	72 / 68	99 / 93
		220V	50Hz	17 / 16	20 / 19	59 / 55	87 / 83
	60Hz		14 / 13	17 / 15	50 / 44	75 / 70	99 / 87
	230V	50Hz	17 / 16	20 / 19	59 / 55	87 / 83	116 / 110
		380V	50Hz	17 / 15	21 / 19	62 / 57	87 / 82
	60Hz		15 / 13	19 / 16	52 / 47	74 / 68	110 / 93
	440V	50Hz	17 / 15	21 / 19	62 / 57	86 / 82	122 / 110
		60Hz	15 / 13	17 / 16	52 / 42	73 / 67	99 / 93
	24Vdc		14 / 10	23 / 13	55 / 35	100 / 56	133 / 75
	<b>Spring Return Time (90°) Seconds</b>			1 - Second	1 - Second	1 - 2 Seconds	2 ± 1 Seconds
			Optional Governer*	Optional Governer*	Standard Governer	Standard Governer	Standard Governer
<b>Mounting Dual Drilling</b>	ABZ		3.25"	3.25" / 5.0"	3.25" / 5.0"	3.25" / 5.0"	3.25" / 5.0"
	ISO 5211		F07	F07 / F10	F10 / F12	F10 / F12	F10 / F12
<b>Number of Handle Turns</b>			25	25	75	113	145
<b>Weight</b>	Lbs		69.5	88.2	112.5	148	181
	Kg		31.5	40	51	67	82

\* Contact Factory

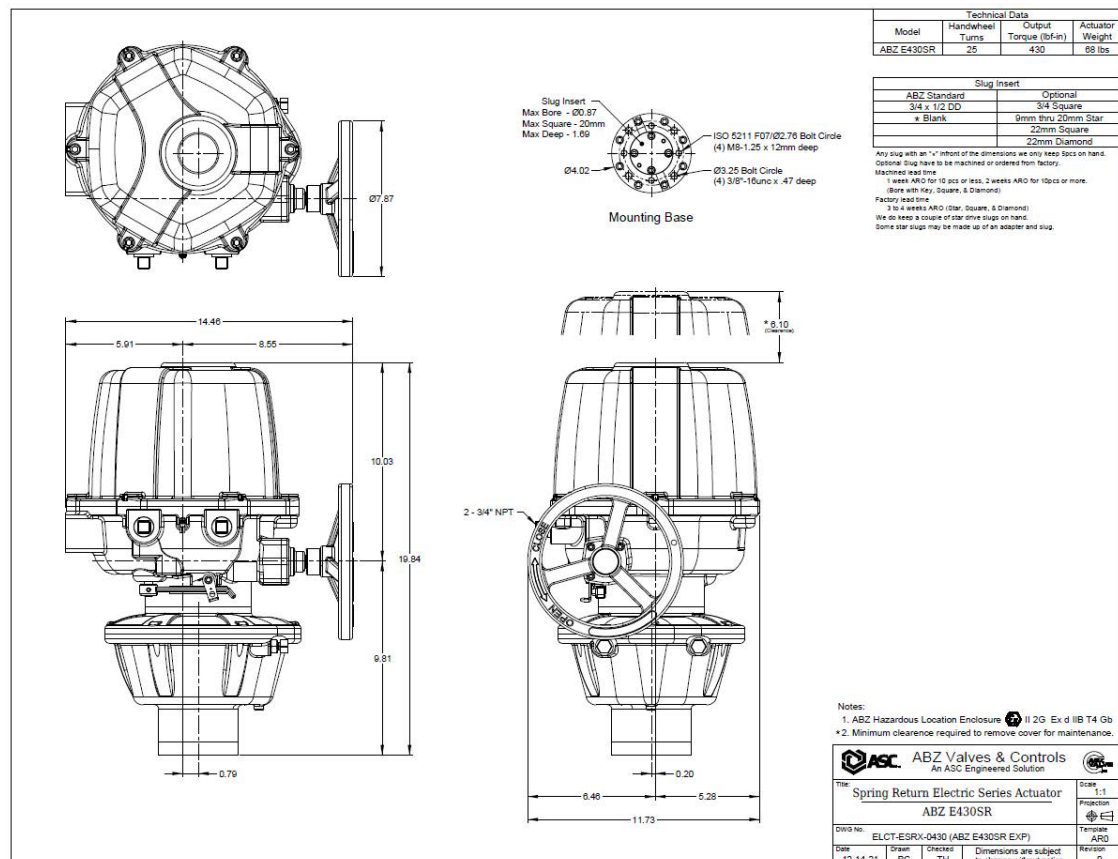
# Spring Return Electric Actuator Series ESR

## 4. Dimensions

ESR430



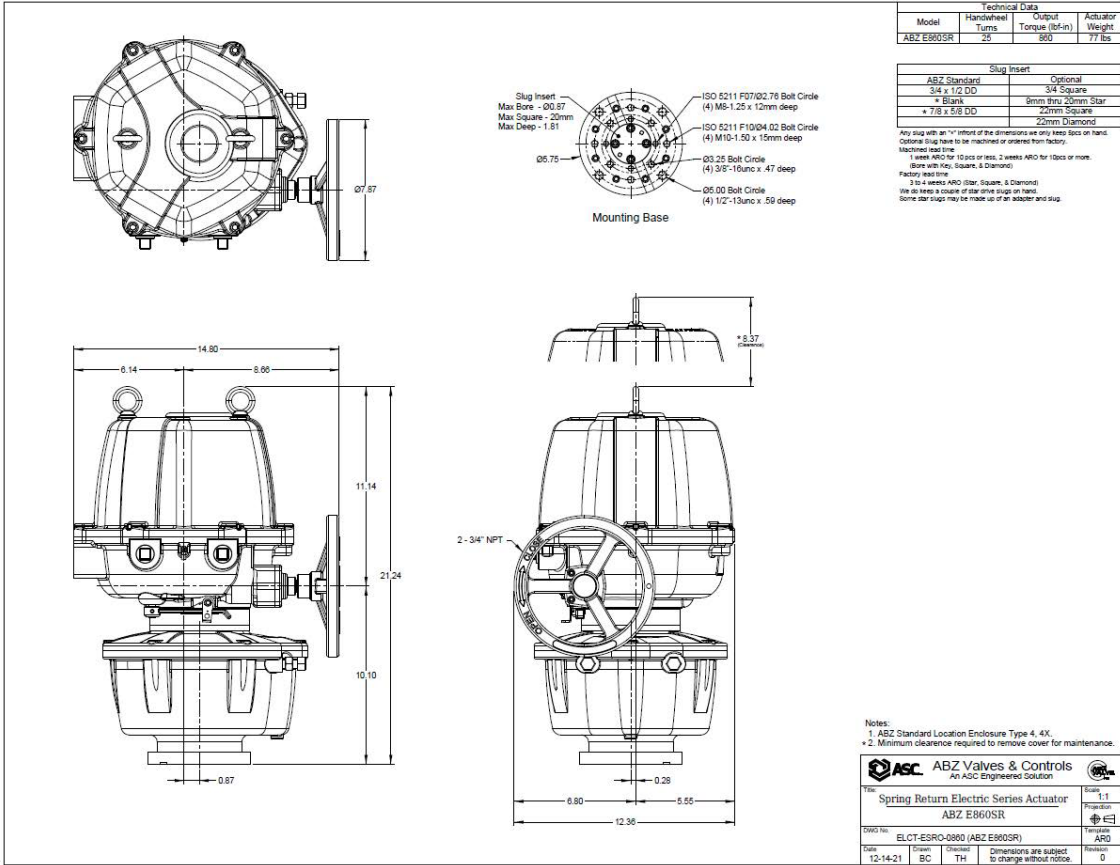
ESR430X



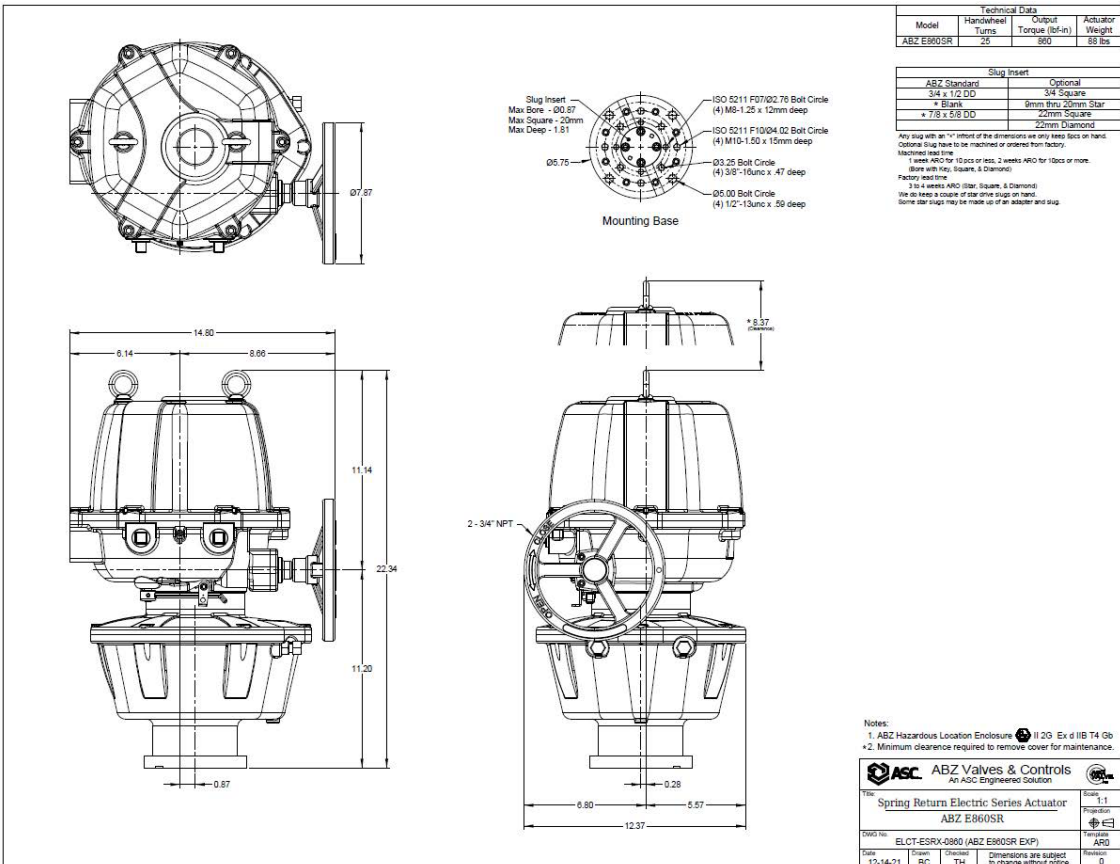
# Spring Return Electric Actuator Series ESR

## 4. Dimensions

ESR860



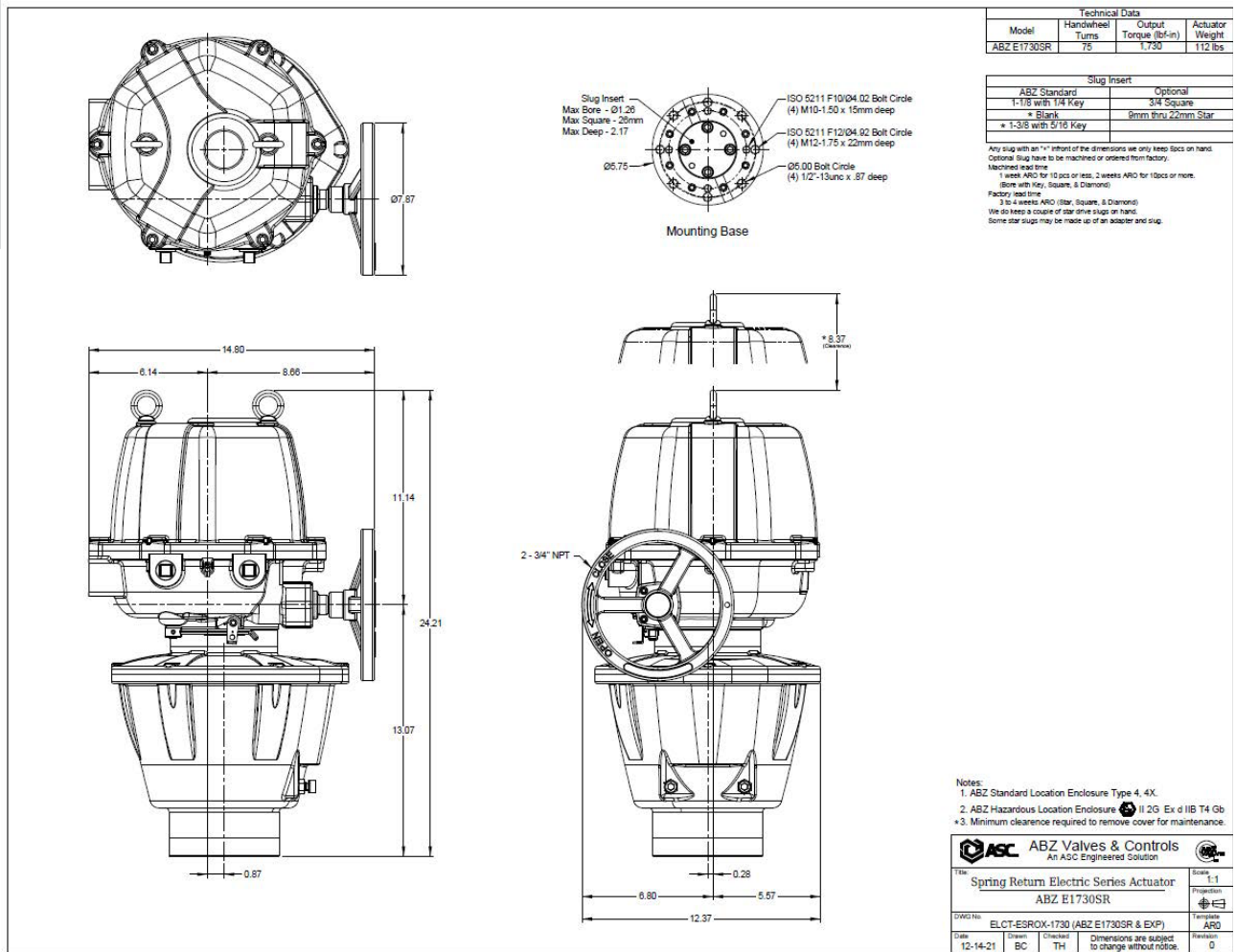
ESR860X



# Spring Return Electric Actuator Series ESR

## 4. Dimensions

1730SR &  
1730SRX

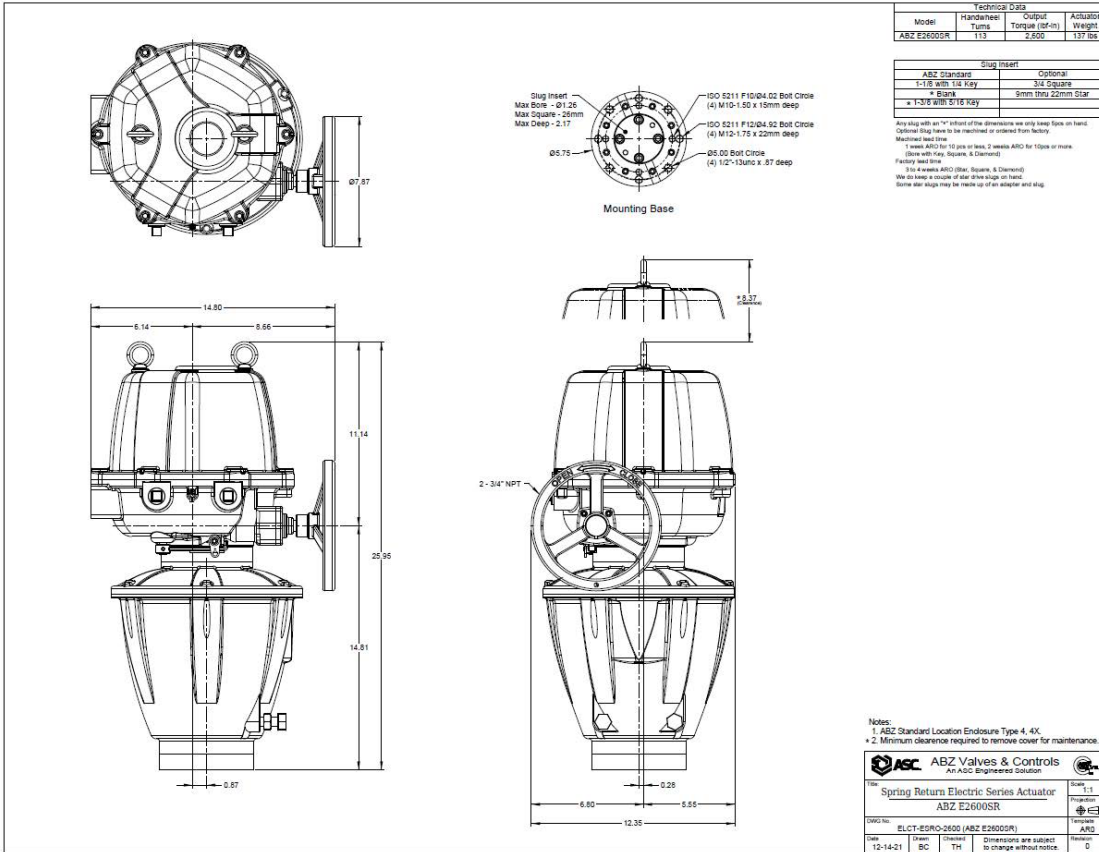




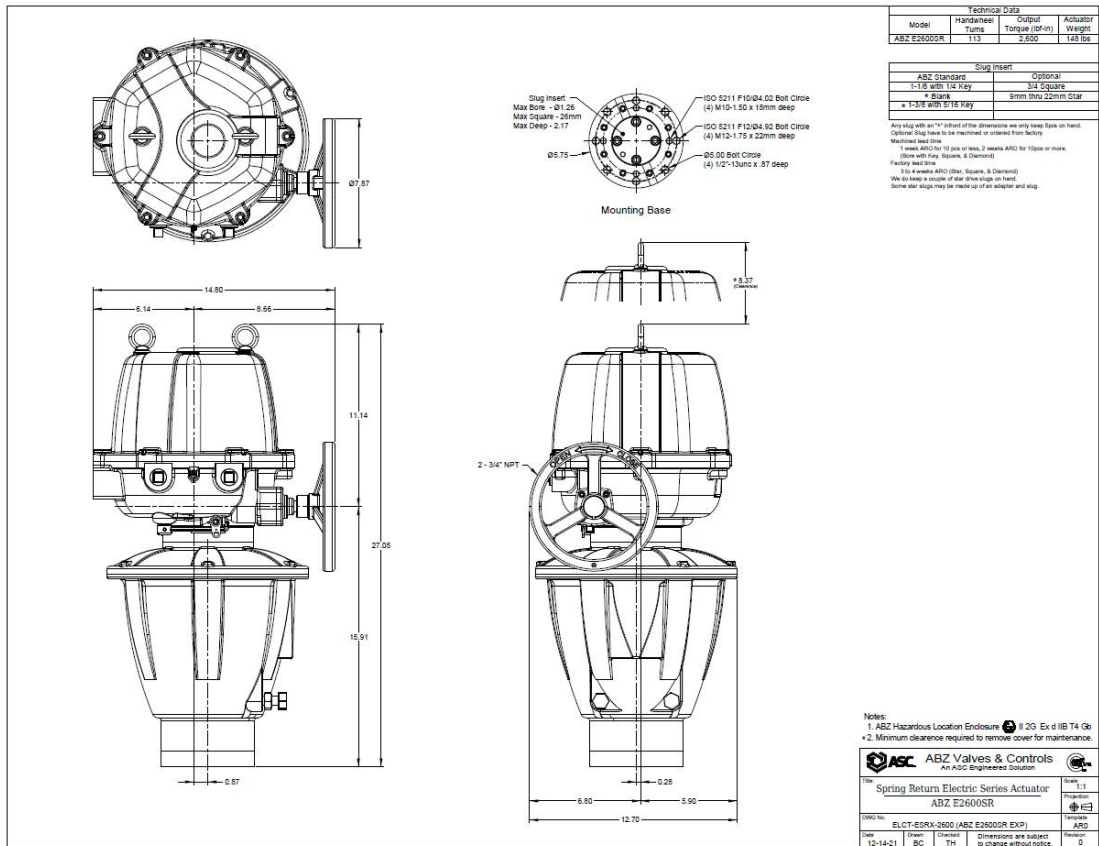
# Spring Return Electric Actuator Series ESR

## 4. Dimensions

ESR2600



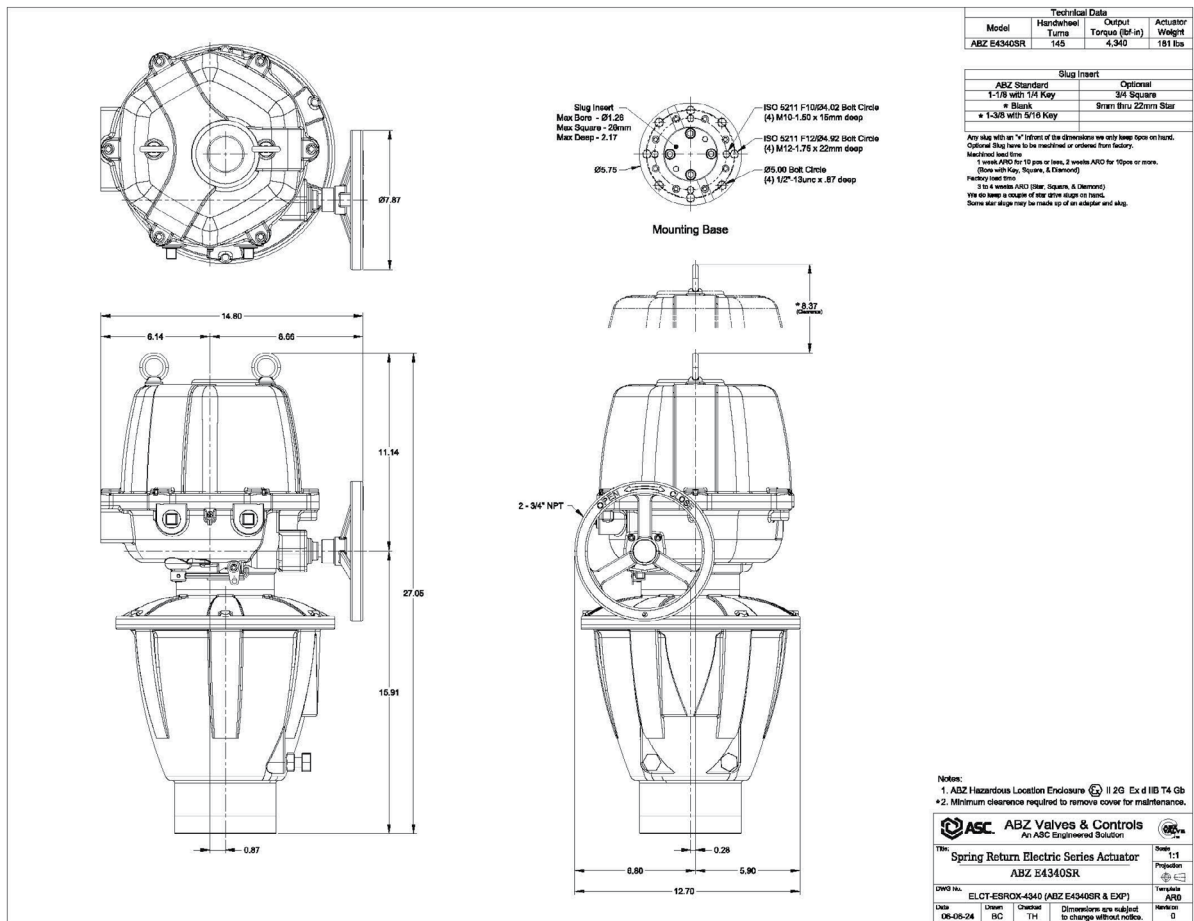
ESR2600X



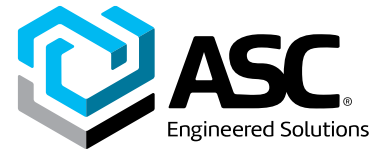
# Spring Return Electric Actuator Series ESR

## 4. Dimensions

ESR4340



# Spring Return Electric Actuator Series ESR



**Example:** E-SR860X-A4N-A1N2M-CW

A size 860, spring return, electric actuator (860 lbf-in), with Explosion Proof enclosure (X), 120 Vac / 1 PH power supply (A), full featured Local Control Unit (4N), and two limit switches (A1). Configured for modulating service including position feedback (N2M). Fail Close (CW).

## How to Order Series ESR

**E** - **SR860** - **X** - **A** - **4N** - **A1** - **N2M** - **CW**  
 1 Size    2 Type    3 Voltage    4 Service    5 ALS    6 Feedback    7 RCT    8 Temp    9 LCU    10 Suffix-2    Fail Mode

1 Model / Size	
Code	
SR430	430 lbf-in
SR860	860 lbf-in
SR1730	1730 lbf-in
SR2600	2600 lbf-in
SR4340	4340 lbf-in

2 Type	
Code	
<blank>	IP67, Dust-tight, weather-tight, Type 4 / 4x
X	IP67, Dust-tight, weather-tight, ATEX II 2 G Ex d IIB T4 Gb [explosion proof]
W	IP68, Dust-tight, water-tight, Type 4 / 4X / 6

3 Voltage	
Code	
A	120 Vac / 1PH
B	220 Vac / 1PH
D	24 Vdc
E	380 Vac / 3PH
F	440 Vac / 3PH



4 Service & Control Type (Card)	
Code	
4N	Full Featured Local Control Unit - Selection #9 (LCU) is N1 to N3M.

Open / Close (On-Off):	
<b>Standard</b>	
1A	On / Off, 2-Position Control (All Voltages)
<b>With Motor Interface</b>	
1B	AC Motor Interface with speed control [120 Vac]
1C	AC Motor Interface with speed control [220 Vac]
1K	AC Motor Interface with speed control [3-phase]
<b>With Motor Starter</b>	
1E	Integral Motor Starter, Latching type [3-phase]
1M	Integral Motor Starter, Non-Latching type [3-phase]

Modulating:	
<b>Digital Controller</b>	
2A	Digital High-Resolution Controller, Vdc or mA signal [120 Vac]
2B	Digital High-Resolution Controller, Vdc or mA signal [220 Vac]
2D	Digital High-Resolution Controller, Vdc or mA signal [3 phase]
2E	Digital High-Resolution Controller, Vdc or mA signal [24 Vdc]
3A	Digital High-Resolution Controller, 0-135 Ohm slidewire signal [120 Vac]
3B	Digital High-Resolution Controller, 0-135 Ohm slidewire signal [220 Vac]
3D	Digital High-Resolution Controller, 0-135 Ohm slidewire signal [3-phase]
3E	Digital High-Resolution Controller, 0-135 Ohm slidewire signal [24 Vdc]

5 Auxiliary Limit Switches (ALS)	
Code	
A1	Standard: 1-Set Auxiliary Switches (2-switches, Dry Contacts) NOTE: Use code A1 when selecting Full Featured Local Control Unit - Selection #9 (LCU) is N1 to N3M.
A0	Special: No Auxiliary Limit Switches
A2	2-sets Auxiliary Limit Switches (4-switches, Dry Contacts) [Service Code & Control Type 1A, 1E, 1M Only]

(Continued on next page)

## How to Order Series ESR (Continued)

6 Position Feedback	
Code	
<blank>	None <b>NOTE:</b> Use this code when selecting Full Featured Local Control Unit.
<b>Potentiometer – Position Feedback:</b>	
B	Potentiometer Feedback, 1000 Ohm (On / Off only)
<b>Transmitter – Position Feedback:</b>	
On / Off Configurations (Service & Control Type 1A to 1M)	
C	Position Feedback Transmitter, 4–20mA
D	Position Feedback Transmitter, 0–5 or 0–10v
E	Position Feedback Transmitter, 2–wire Loop Powered
<b>Modulating, Digital Controller</b>	
G	Position Feedback Transmitter, 4–20 mA / 0–10 Vdc [for Vac Digital Controllers only]
H	Position Feedback Transmitter, 4–20 mA [for all Digital Controllers]
J	Position Feedback Transmitter with Relays, 4–20 mA / 0–10 Vdc [for Vac Digital Controllers only]
K	Position Feedback Transmitter with Relays, 4–20 mA [for all Digital Controllers]
<b>Modbus:</b>	
<b>Modulating, Digital Controller</b>	
L	Modbus Option Module [all voltages]

7 Repeat Cycle Timer	
Code	
<blank>	None <b>NOTE:</b> Use this code when selecting Full Featured Local Control Unit.
K	Repeat Cycle Timer (On / Off Service ... code 1A Only); 120 & 220V 1-Phase

8 Temperature	
Code	
<blank>	Standard: -4°F to 131°F (-20°C to 55°C)
L4	Low Temp -40°F to 131°F (-40°C to 55°C)
L6	Low Temp -76°F to 131°F (-60°C to 55°C)

9 Local Control Unit / Local Override – Mounted to Actuator	
Code	
<blank>	None
<b>Base Model:</b>	
M1	<ul style="list-style-type: none"> <li>• IP67. For use with standard actuator (Type = blank)</li> <li>• Vac only</li> <li>• If modulating, a Digital Controller (code #4) is required.</li> </ul>
<b>Full Featured Local Control Units:</b>	
▷	LCD Display
▷	Cycle counter
▷	Auto-calibration, including limits
▷	Phase Protection / Detection
<b>NOTE:</b> "Service & Control Type" = code 4N	
<b>Open-Close / On-Off</b>	
N1	<ul style="list-style-type: none"> <li>• IP67. For use with standard actuator (Type = blank)</li> <li>• Vac only</li> </ul>
N2	<ul style="list-style-type: none"> <li>• Explosion Proof, ATEX II 2 G Ex d IIB T4. For use with Type "X" actuator</li> <li>• Vac only</li> </ul>
N3	<ul style="list-style-type: none"> <li>• IP68. For use with Type "W" actuator</li> <li>• Vac only</li> </ul>
<b>Modulating</b>	
N1M	<ul style="list-style-type: none"> <li>• Includes modulation and feedback package</li> <li>• IP67. For use with standard actuator (Type = Blank)</li> <li>• Vac only</li> </ul>
N2M	<ul style="list-style-type: none"> <li>• Includes modulation and feedback package</li> <li>• Explosion Proof. For use with "X" type actuator</li> <li>• Vac only</li> </ul>
N3M	<ul style="list-style-type: none"> <li>• Includes modulation and feedback package</li> <li>• IP68. For use with "W" type actuator</li> <li>• Vac only</li> </ul>

10 Suffix-2	
Code	
<blank>	None

11 Fail Mode	
Code	
CW	Clockwise
CCW	Counter Clockwise

**Note:**  
Responsibility for proper selection, use and maintenance of any product remains solely with the purchaser and end user.  
We reserve the right to modify or improve the designs or specifications of any product at any time without notice.

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