

### Multi-Turn Capable Precision Electric Actuators for Valve Automation



S-Series



X-Series

Available in 400, 600, 1200, 2500, and 5000 In-Lbs Rated Models

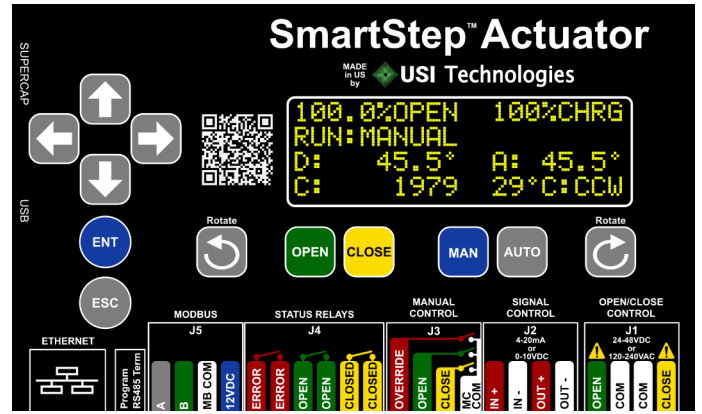
### Key Features:

- Robust design engineered for 100% Modulation, 100% Continuous Duty Cycle and Open/Close operation
- UL/CUL and CE approved with Class 1, Division II, Group A, B, C, and D Hazardous Location Rating
- SuperCap Backup option provides enough power for at least 90° stroke during power or signal loss, has a life expectancy greater than 10 years!
- Maintenance-free; low cost of ownership
- Easily calibrate and setup end points in a matter of seconds
- ISO 5211 direct mounting for F05, F07, and F10 compatible valves
- Power input modules support 12-24VDC, 24VAC, or 100VAC to 240VAC
- Unlimited programmable cycle span. Multi-turn capable!
- Manual override available
- Common Firmware base; consistent user experience across models
- Modular Design: SuperCap and Electronic Controls are field replaceable in minutes!
- 2-year parts warranty covers actuator under standard usage



## Software Features:

- Endpoints Easily Calibrated
- $\pm .3$  Degree position accuracy. (MODBUS control)
- $\pm .5$  Degree position accuracy. (4-20mA control)
- Valve status, power backup status, system faults, and service advisories available from main screen
- Important diagnostics stored, including last detected stall, max temp, and cycle counts.
- MODBUS RTU/TCP and 4-20mA feedback monitoring available for all run modes.
- Intuitive menu structure makes it easy to find settings
- Ten stage programmable drive speed with multi-turn boost option.
- Separately programmable safe position for loss of system power (EPB required) and control signal.



Color-coded 12-button keypad simplifies wiring and allows easy access to many functions

## Hardware Features:

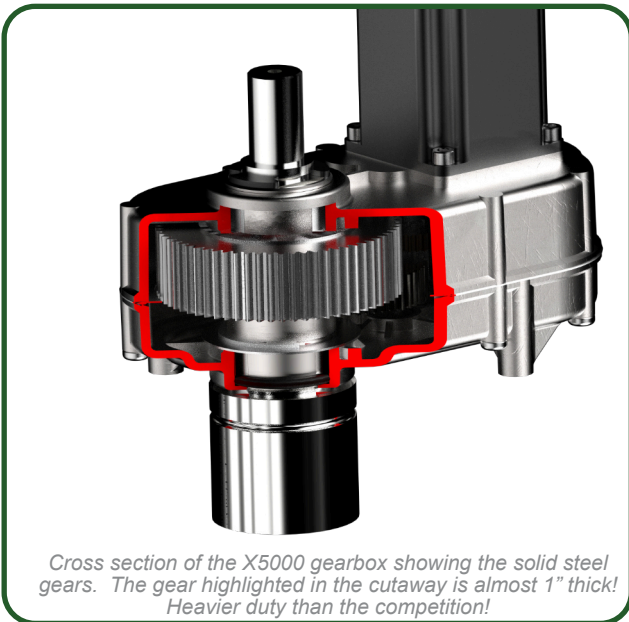
- Five torque options available between the two models : 400, 600, 1200, 2500, or 5000 in-lbs torque.
- Non-contact position sensing increases reliability. No mechanical switches or contacts to wear out.
- Bright four-line OLED display
- Three relay outputs allow external monitoring of Open Position, Closed Position, and Error Condition.
- Robust drive-train permanently lubricated.
- Powered 4-20mA output provides position feedback.
- S-Series includes a 17mm double-square standard female drive to allow direct mount to F05 or F07 compatible valves.
- X-Series includes a 27mm double-square standard female drive to allow direct mount to F07 or F10 compatible valves.
- Simple navigation with twelve button keypad.
- Clamping terminal blocks for secure connection with color coded terminals for straight-forward wiring.
- Heavy duty aluminum NEMA4 enclosure.
- Enclosure cover has captive screws.
- Can exceed 6000 starts per hour.
- All mounting hardware has threadlock applied

## Networking Features:

- Ethernet port standard for MODBUS TCP protocol

## Environmental Ratings/Certifications:

- CE Certified
- UL/CUL Certified.
- UL Class 1, Div 2, Groups A, B, C, D Hazardous Location Rated
- -40°C to 60°C (-40°F to 140°F) Operating Temperature.



Cross section of the X5000 gearbox showing the solid steel gears. The gear highlighted in the cutaway is almost 1" thick! Heavier duty than the competition!

## System Protection:

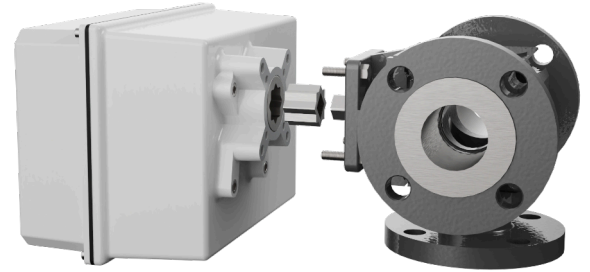
- 4-20mA input protected to 240 VAC
- 4-20mA output protected to 24 VDC
- Isolated MODBUS
- Crowbar circuit protects XCTRL in case of wrong voltage on power input module
- Hardware & software EMI mitigation, including keypad lockout and input filtering

## Electrical:

Voltage In	X-Series Max Operating Amp Draw	S-Series Max Operating Amp Draw	X-Series Typical Standby Amp Draw	S-Series Typical Standby Amp Draw	X-Series Power Save Standby Amp Draw	S-Series Power Save Standby Amp Draw
24 VDC	3.3 A	3.3 A	0.47 A	0.36 A	0.3 A	0.135 A
120 VAC	0.65 A	0.65 A	0.14 A	0.11 A	0.08 A	0.05 A

## Model Comparison

Feature	X-Series	S-Series
Multi-Turn Capable	●	●
ISO 5211 F05 Mounting		●
ISO 5211 F07 Mounting	●	●
ISO 5211 F10 Mounting	●	
Disable unused run-mode circuitry for further power use reduction		●
Enable/Disable Motor Holding Torque	●	●
Display Backup Battery to see valve position during power loss		●
Battery Backup Capable to move valve to safe position	●	●
Field-Replaceable Electronics	●	●
Certified for Class 1 Div 2 Groups A, B, C, D Hazardous Locations	●	*In Test
Advanced Software EMI Mitigation	●	●
4-20mA/0-10VDC modulated signal input standard	●	●
MODBUS RTU and TCP standard	●	●
27mm Double Square Drive	●	
17mm Double Square Drive		●



X-Series Actuator shown with 2" valve and 17mm to 27mm adapter

## Specifications/Ordering Information

Part Number	Type	Description   Torque Rating   Power Input	Default 90° Stroke Speed*	90° Stroke Speed Range	Weight**
S0400	Actuator & SCTRL	400 in-lbs S-Series Actuator	2.5 secs	1.8-6 seconds	19 lbs
S0600	Actuator & SCTRL	600 in-lbs S-Series Actuator	4 secs	3 - 10 seconds	19 lbs
S1200	Actuator & SCTRL	1200 in-lbs S-Series Actuator	8 secs	7 - 20 seconds	19 lbs
X0600	Actuator & XCTRL	600 in-lbs SmartStep actuator	4 secs	3 - 10 seconds	26 lbs
X1200	Actuator & XCTRL	1200 in-lbs SmartStep actuator	8 secs	7 - 20 seconds	26 lbs
X2500	Actuator & XCTRL	2500 in-lbs SmartStep actuator	14 secs	12 - 36 seconds	27 lbs
X5000	Actuator & XCTRL	5000 in-lbs SmartStep actuator	33 secs	27 - 85 seconds	28 lbs
PS024	Power In Module	12VDC-24VDC & 24VAC power input	-	-	-
PS120	Power In Module	100-240 VAC power input	-	-	-
PS024-EPB	Power In Module	12VDC-24VDC & 24VAC power input with SuperCap backup	-	-	-
PSUNI-EPB	Power In Module	12VDC-24VDC, 24VAC, or 100-240 VAC power input with SuperCap backup	-	-	-
SCTRL	Replacement Module	Controller Replacement for S-Series Actuator	-	-	-
XCTRL	Replacement Module	Controller Replacement for X-Series Actuator	-	-	-
MOHNDL	Accessory	Handle for Manual Override	-	-	-

All items may be ordered individually. To order an actuator with the module factory installed hyphenate the module part number behind the actuator part number as shown below. Otherwise all items will be separate line items and boxed separately as well. XCTRL is standard on all Base Model actuators and should only be ordered if a replacement is needed.

Examples: Actuator without module: **X0400**

Actuator with module: **X0400 - PSUNI-EPB**

\*All actuator models are shipped at 70% max speed by default. Adjustable via user menu. For a range greater than 360°, OPEN & CLOSE speed may be increased by 20%. Full user manual and actuator specifications available at [usi-technologies.com](http://usi-technologies.com)

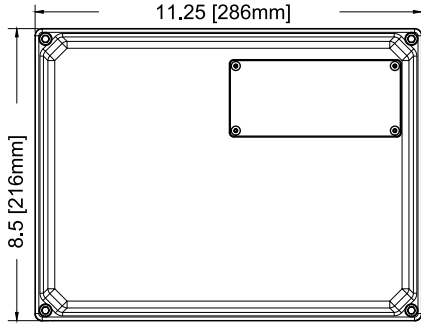
\*\*Weight listed is boxed shipping weight of a base model actuator with PSUNI-EPB modules installed. PS024 Models and Base actuators weigh less

For sales inquiries reach out to your local distributor or [sales@update-systems.com](mailto:sales@update-systems.com) to find yours!

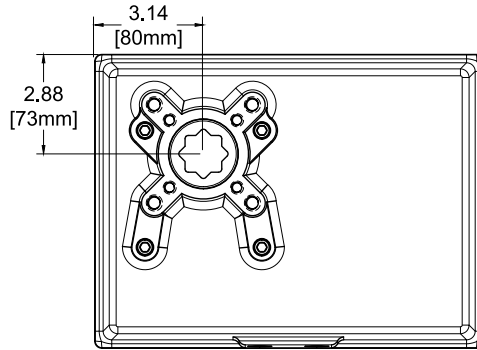
### Mechanical Dimensions

#### X-Series

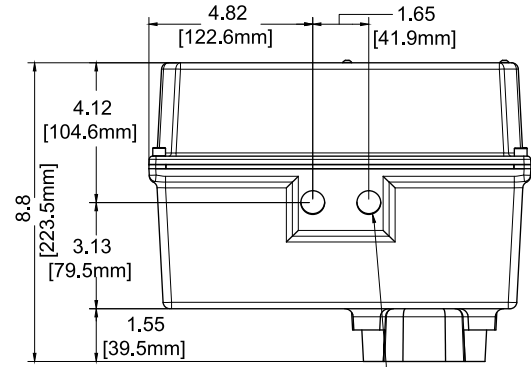
**Front**



**Rear**



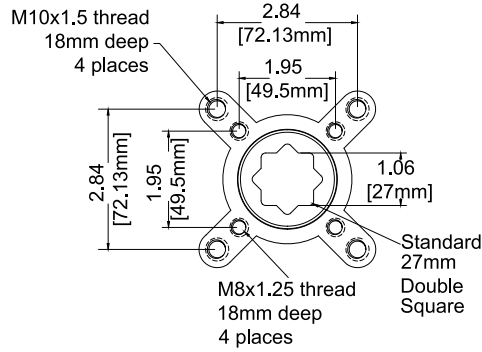
**Bottom**



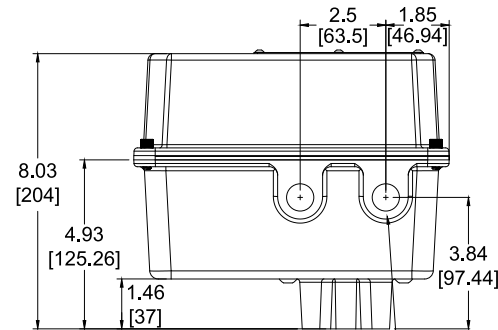
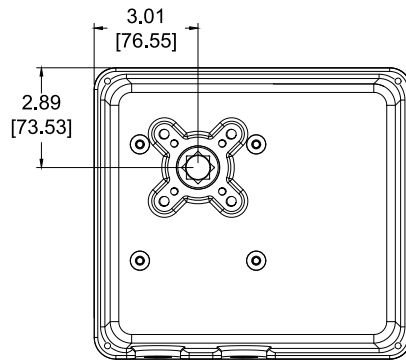
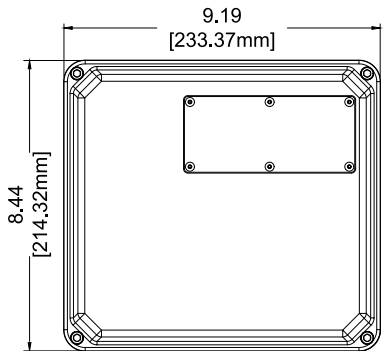
1/2x14 NPT  
Conduit  
Entry  
2 places

Note: add 3.5" clearance for cover removal

**Mounting Detail**



#### S-Series



1/2x14 NPT  
Conduit  
Entry  
2 places

Note: add 3.5" clearance for cover removal

