

ARIA

**Fast Electrically
Actuated Control Valves**



FAIL-SAFE CONTROL VALVES

*FOR MODULATION CONTROL OF INSTANTANEOUS
WATER HEATERS & HEAT EXCHANGER APPLICATIONS*

WARREN CONTROLS

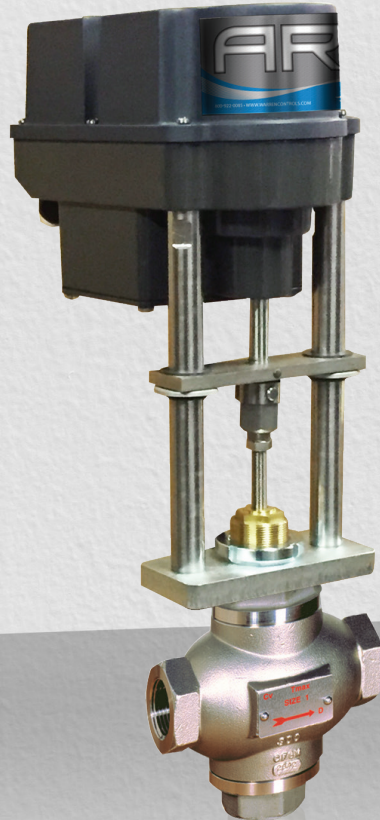
ARIA Overview

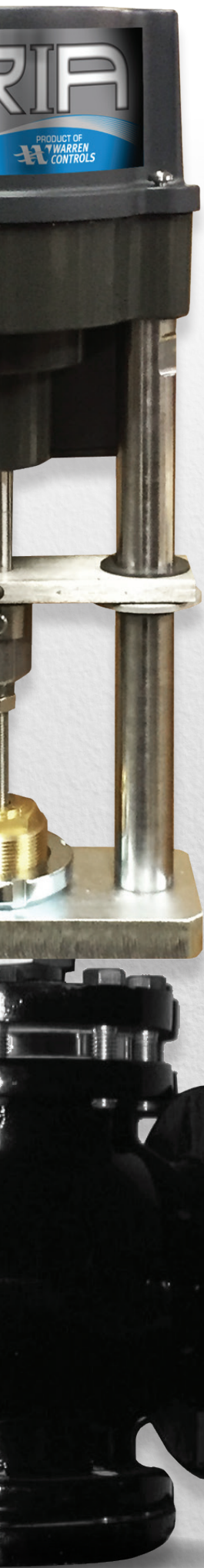
At 2mm/sec travel speed (12 seconds/inch), the ARIA Series Actuators incorporate **SPRING-FAIL OPEN OR CLOSED** (model dependent) on loss of power or signal. The actuator is mounted onto the control valve via pillars and mounting base and attached via a yoke locknut. The actuator stem and valve stem are connected as well via a convenient coupling nut.

Based on a Brushless DC motor (BLDC) the generated torque is transmitted via a multi-stage spur gear onto a spindle nut. the spindle nut transmits the input torque into an axial thrust force of 450 lbf, via a spindle.

The linear stroke is transmitted to the valve spindle by a coupling piece. The stroke is precisely measured and controlled by a linear 12-Bit Hall Sensor. Electrical wiring is terminated at a terminal block under the actuator cover of the **IP67 / NEMA 4X ENCLOSURE**, using standard 1/2" NPT, water-tight electrical connections.

THE ARIA SERIES ACTUATED CONTROL VALVES ARE IDEALLY SUITED FOR CHALLENGING, MODULATING, INDUSTRIAL PROCESSES THAT REQUIRE ELECTRIC ACTUATION WITH THE ACTUATION SPEED AND RELIABILITY OF PNEUMATICS.





ARIA Series actuators are an exclusively designed product for Warren Controls, rising-stem globe control valves.

FOUR DIFFERENT VALVE SERIES INCLUDE THE FOLLOWING, FOR A WIDE RANGE OF APPLICATION NEEDS:

ARA - 1/2" - 2", cast steel, flanged, 3-Way mixing body, two inlets, one outlet, common port in the side.

ARC - 2 1/2" - 6", Cast Iron Flanged Bodies in ANSI 125 Lb. or 250 Lb., 2-way or 3-Way, Mixing or Diverting, Balanced or standard trim in a variety of trim materials.

ARB - 1/2" - 2", NPT threaded or butt weld ends, 2-Way Standard or Low-Flow trim, 3-Way, Mixing or Diverting, reduced ports and a variety of trim materials for options, Bronze or CF8M bodies in ANSI 250 Lb. or 300Lb.

ARD - 1/2" - 2", cast steel, flanged, ANSI 150 or 300 Lb., Standard or Low-Flow, caged trim, reduced ports and a variety of trim materials for options, WCB or CF8M bodies.

***A pure industrial product
with performance and
reliability to match.
Unparalleled construction
at this price point!***



ARIA SERIES: *The modulating electric control valve actuator you can count on!*

User Selectable DIP switches are factory preset and user may reconfigure for their needs. Uncommon features like:

- Control Action: Reverse or Direct
- Ability to split command signal for HI / Lo operation with two control valves
- Flow Curve Re-characterization (for when field-based correction need is realized)
- Control and feedback signal ranges, all common standards

The 12-Bit, Hall Effect Sensor is the key element for linear positioning feedback, allowing for over 4,000 incremental steps of resolution. Very High Accuracy, and as this is non-contact, Very High Reliability.

Optional, Wide-Range, High Voltage Power Supply allows for 100 - 230 VAC, 50/60 Hz, a plug in module at the factory or at the job. Standard power is 24 VAC/ VDC

The Brushless DC Motor offers precision and high reliability in a very cool running package

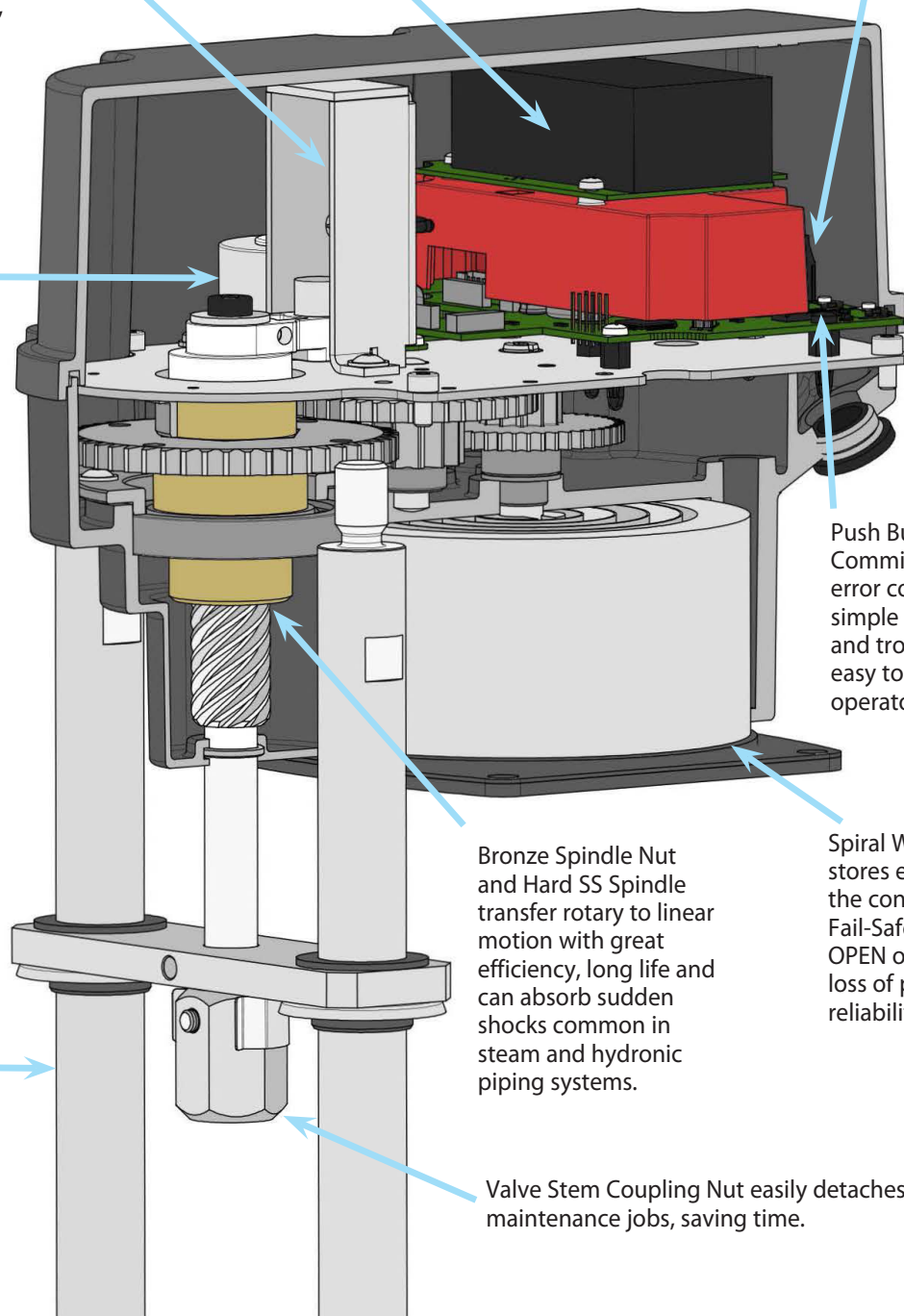
Push Button Valve Commissioning with LED error codes allows for simple set up, replacement and troubleshooting with easy to follow, detailed operator instructions

Bronze Spindle Nut and Hard SS Spindle transfer rotary to linear motion with great efficiency, long life and can absorb sudden shocks common in steam and hydronic piping systems.

Spiral Wound Steel Spring stores energy to return the control valve to a Fail-Safe position, either OPEN or CLOSED on loss of power. Very high reliability.

All Corrosion Resistant Steel Frame Construction offers required rigidity.

Valve Stem Coupling Nut easily detaches for quick valve maintenance jobs, saving time.



ARIA ACTUATORS SPECIFICATIONS

Delivers 450 Lbf Thrust at a stroke velocity of 12 Seconds / inch. Designed for over 1.5 Million Cycles of use. For smaller sized control valves, this compact design packs a nice set of features at an economical price point. The Brushless DC motor ensures long life.

The Industrial Linear Electric Actuators (ARIA Series) is a best-in-class, robust and proven design with features and options not available elsewhere and now available at an attractive price point.

DEPENDING ON MODEL WITH THE ARIA SERIES, HERE IS A LISTING OF THE POSSIBLE FEATURES, ATTRIBUTES & OPTIONS:

- ✓ 24Vac/Vdc, 115 Vac, 230 Vac
- ✓ Spring Fail Safe (Open or Closed)
- ✓ Electric, Manual Override / Commissioning
- ✓ 12 Second / Inch Travel Speed
- ✓ Enclosure Heater
- ✓ Limit Switches
- ✓ High Reliability, Brushless DC Motor
- ✓ Analog Modulating Control or 3-Wire Binary Control
- ✓ Analog Control & Feedback signals mA or Vdc
- ✓ Tested for EMC conducted and radiated emissions to EN55014-1, EN55022 and EN61000 specifications
- ✓ Galvanically Isolated Inputs and Outputs
- ✓ Flow Curve Correction
- ✓ Split - Ranged inputs for Hi/Low Configurations

DESIGN FEATURES

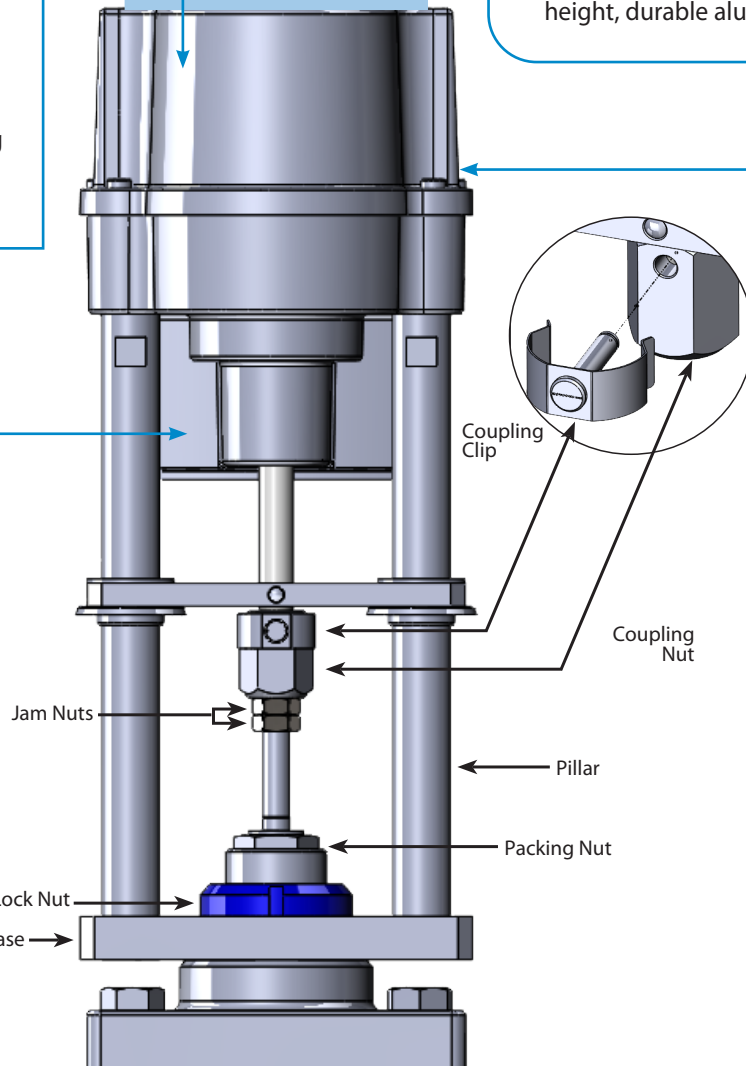
Robust industrial design with polycarbonate cover, enclosure IP67 / NEMA 4X



Integrated power spring for fail safe function in case of loss of power supply, either extending or retracting actuator stem

SPRING FAIL

Compact design with low installation height, durable aluminium gearbox



DESIGN FEATURES

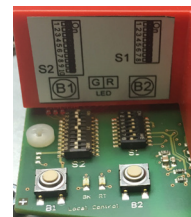


Contactless, non-wearing travel detection with Hall sensor for exact positioning



Brushless DC motor (BLDC). Controller with integrated positioner function. Status display and automatic commissioning

Manual operation with push buttons or handwheel. Parameter setting via DIP switches



	UNITS	SPECIFICATIONS
Thrust / Force	(Lbf)	450
MAX Stroke	(Inches)	1.3125
Pillar distance, C to C	(Inches)	4
Weight, approx. kg 5.6	(Lbs.)	12.3
Stroke Speed	(Secs / Inch)	12
Approximate Height	(Inches)	11
Approx. clearance above to remove cover	(Inches)	3.25
Manual Override	Electrically via 2 push buttons	
What happens under the condition of Overvoltage/Undervoltage on the power supply or loss of power.	Actuator engages Spring Fail, to Open or Closed, Depending on model.	
What happens under the condition of Loss of Control Signal.	Actuator engages Spring Fail, to Open or Closed, Depending on model.	

ADDITIONAL ARIA SPECIFICATIONS	
Power Supply	24 VAC/DC, optionally wide range power supply (100-240 VAC)
Motor Protection	Electronic motor current monitoring with safety cut-off
Duty cycle as per IEC 60034-1,8	S2 30 min / S4 1200c/h - 50% ED
Permitted ambient temperature	-4°F to 140°F (-20 to +60°C)
Resolution	200 Parts to full scale stroke
Accuracy	±0.1 mA or ±50 mV
Linearity	±1.0%
Repeatability	±0.2%
Internal fault monitoring	Thrust, set value, temperature, power supply
Binary control	24 - 230 VAC for Binary Positioning or ON/OFF service
Control Signal and Feedback	0-20 mA, 4-20 mA, 0-10 V, 2-10 V, selectable (or split - ranges)
Mounting position	Any position, except below horizontal
Conduit entries	Up to 3 each 1/2 NPT
Enclosure Rating	NEMA 4X/IP67
Cover material	Polycarbonate
Gear case material	High quality aluminium die casting, powder-coated (60 µm thickness)
Pillar material	Steel 1.4104

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DEPENDABLE, RUGGED, PRECISION CONTROL VALVES AND ACCESSORIES