

(yntronics

SMART Electro-Hydraulic Actuators (SHA) Support Sustainable Manufacturing



Environment Friendly:

- · Leak-Free. Sealed System
- Minimal fluid, no replenishment required
- No need to dispose of fluid waste

Employee Safety & Ergonomics:

- · No leaks improve safety
- Quiet operation
- Smaller footprint

Cost Reduction:

- Power-on-Demand saves significant energy
- Reduced maintenance
- . No hoses or filters to replace
- Improves process control and quality
- Saves machine design and installation time

6565 Davis Industrial Parkway Solon, OH 44139 PH: 440.220.5990 FX: 866.854.4578 Toll Free (US only): 855.596.8765

Kyntronics and Rockwell Automation Introduce a New Actuation Partnership

Eliminate Traditional Hydraulics..





With The SMART Electro-Hydraulic Actuator





Electro-Mechanical Actuators (EMAs) vs. Hydraulics What If...

You can combine the benefits of both?

EMA Benefits

- Power on Demand
- Clean Operation No Leaks
- Easy to Precisely Control in SHA 4 Quadrants
- Fieldbus
- Diagnostics

Hydraulic Benefits

- High Force Density
- **Shock Load Tolerant**
- Fluid Characteristics
- Cost Effective
- **Ingress Protection**

EMA Challenges

- Metal-to-Metal Wear
- Susceptible to extensive Damage from Shock Loads
- Requires Ongoing Maintenance / Lubrication
- Very Expensive and Large Size at Higher Load Ratings Backlash

And...

eliminate the challenges of both?

Hydraulic Challenges

- Highly Prone to Leaks -
- Messy Energy Inefficient & Noisy
- Expensive to Precisely Control
- Require Excessive Maintenance
- HPUs Take Up Valuable Space

Kyntronics SMART Electro-Hydraulic Actuator Accomplishes This and More



Innovation in Motion www.kyntronics.com





Kyntronics

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SMART Electro-Hydraulic Actuators (SHA)

The Modular SHA provides a Multitude of Flexible Configurations to Fit Your Application!



Parallel Standard













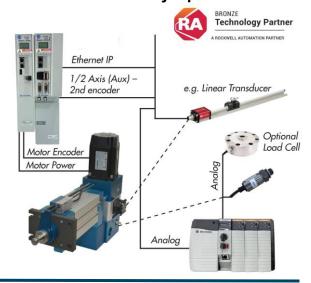
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Kyntronics / Rockwell Automation Co-Developed Add-On-Instruction

AOI Features:

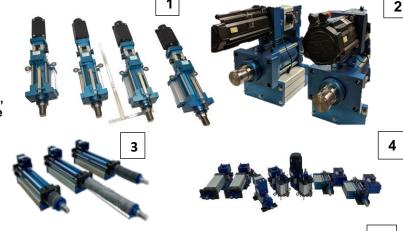
- 0-10vdc feedback inputs
- Hyperface linear encoder input
- Position Control
- Force Control
- Position & Force Control
- Position Control with Force & Speed Limiting
- Compound Moves
- Multi-Axis Synchronization

Connectivity Options



Kyntronics SHAs with Rockwell Automation Motors and Drives... Hundreds of Actuators Successfully Installed in a Variety of Industries

- 1. Appliance: Metalform Presses, 170,000 lbf (755 kN) Multi-axis Synchronized
- 2. Appliance: Coining and Piercing, 58,000 lbf (258 kN)
- 3. Automotive: Press Welding, 84,000 lbf (374 kN), protective bellows for weld flash
- 4. Energy Infrastructure: Die-Set, Pressing, Testing. 1,500 lbf (6.7 kN) to 30,000 lbf (133 kN)
- 5. Heavy Truck Axle: Assembly Press, 45,000 lbf (200 kN)
- 6. HVAC: Metal Forming 14 axis Positioning, Bending, 12,000 lbf (53 kN) to 46,000 lbf (203 kN)
- 7. Automotive Chassis: Bending, Clamping, Positioning. 15,000 lbf (67 kN) to 23,000 lbf (103 kN)







The Kyntronics SHA...

Fusing the Power of Hydraulics with the Precision of Servo Control



