

MICRO SERVOVALVE

E024-700

FOR SUBSEA SYSTEMS



Compact Design: Significantly reduced in size and weight compared to standard aerospace valves.

High Flow Capability: Retains a flow capability of up to 7.5 l/min (1.98 US g/min).

High Ambient Pressure Operation: Incorporates a vented motorcap for operation in high ambient pressure environments, suitable for subsea and downhole applications.

Proven Design: Developed from the proven E030 series aerospace servo valve, which is widely used for flight control in civil and military aircraft. This ensures its reliability and effectiveness.

Robust Construction: Features a two-stage nozzle flapper construction, ensuring durability and reliability in extreme performance and environmental conditions.

High Power Control: Capable of controlling hydraulic actuators with powers up to 3.0 kW.

Precise Control: Suitable for hydraulic actuation systems requiring precise control of position, force, or velocity.

BENEFITS

- + Ultra light-weight **95gm (3.35 oz)**
- + Compact package
- + High power density
- + Low input signal (**10mA**) allows operation remote from control electronics
- + Fast response to command inputs
- + High peak flow capacity
- + Precise, repeatable characteristic control
- + High ambient pressure operation

TYPICAL APPLICATIONS

Subsea manipulators, thruster control, process valve actuation, exploration drilling, completion tool actuation.

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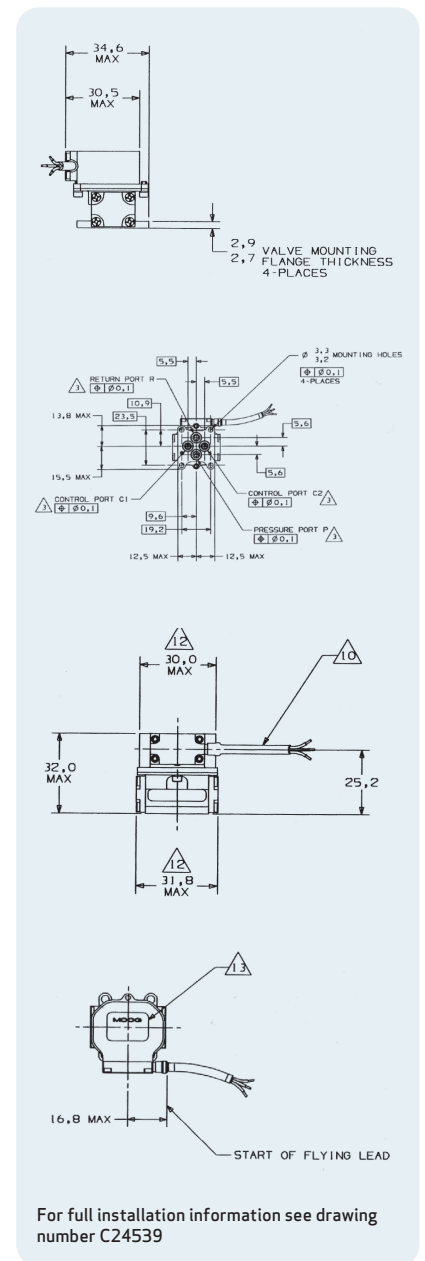
SPECIFICATIONS

TECHNICAL DATA E024-700 SUB MINIATURE SERVO VALVES

	High Response	High Efficiency
Maximum Supply Pressure:	280 Bar (4061 PSi)	
Valve Function:	Axis-cut linear flow control. Axis-cut flow control with dual gain [Ratio 1.2:5]. Contact Moog for slightly over-lapped variants.	
Rated Flow: @ 70 Bar (1015 PSi) Valve Pressure Drop	Axis-cut valves: 0.4, 1.0, 1.5, 2.0, 3.8, 5.0, 7.5 l/m. (0.1, 0.3, 0.4, 0.5, 1.0, 1.3, 2.0 USg/min). NB Flow Tolerance +/-10%.	Option: Dual Gain Flow Rate 3.8, 7.0 l/min (1.0, 1.8 USg/min). NB: Flow tolerance +/-10%.
Main Stage Pilot Leakage Flow:	Pilot stage flow: < 0.30 l/min (0.08 USg/min) (std version). Spool leakage at null: < 5% of rated flow (Axis-cut versions).	Pilot stage flow: < 0.20 l/min (0.05 USg/min).
Electrical Input Signal: (coils in parallel)	+/- 10mA into a 360 ohm. Inductance 1.4 Henry.	
Dynamic Performance:	25% signal @ 210 Bar (3045 PSi) & 40°C (104°F) 90° phase lag > 250 Hz -3dB attenuation > 250 Hz. 100% slew response <1.8 s	25% signal @ 210 Bar (3045 PSi) & 40°C (104°F) 90° phase lag > 250 Hz -3dB attenuation > 150 Hz. 100% slew response <2.6 s
Null Shift:	With supply pressure: < 3% of full signal over the range of 124 Bar (1798 PSi) -228 Bar (3307 PSi). With fluid temperature < 5% of full signal over a range of 35-135 °C (95°F-275°F).	
Accuracy of Flow Control:	Hysteresis < 3%. Threshold < 0.5%.	Hysteresis < 3% Threshold < 1%
Environmental Survivability Limits:	-40°C (-40°F) to +165°C (329°F) & 50G shock in any direction.	
Mass:	95g (3.35 oz).	

ENVIRONMENTAL OPERATING ENVELOPE FOR ALL E024 SERVO VALVES

Pressure Supply:	140 (2030 PSi) - 280 bar (4061 PSi).
Return Line Pressure:	2 (29 PSi) - 5 Bar (72 PSi).
Temperature Range:	-20°C (-4°F) - 135 °C (0 - 275°F).
Fluids Viscosity:	> 4 CSt.
Filtration:	NAS 1638 CLASS 3 / ISO 4406 14/12/9 or better. It may be possible to operate the valve in certain applications outside of these design limits, but this must be checked and validated by the customer.
Operation of Valves in Close Proximity:	Valves mounted in close proximity may experience magnetic interaction. The degree of interaction depends on the installation and may be minimized by the use of external shielding.



For further information, visit:
www.moog.com/miniature

This technical data is based on current available information and is subject to change at anytime by Moog. Performance for specific systems or applications may vary.

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