

DATA SHEET

TMI-Orion Dynamics

Electrical Linear Actuator Type 2



Underwater Electrical Linear Actuator

The Electrical Linear Actuator (ELA) is a high-performance, compact and reliable actuator designed for underwater operation down to a depth of 600 meters. It features integrated control, programmable in position and/or speed. Add-on connector for additional modules or actuator chaining. Versatile and easy to integrate, it is suitable for various underwater applications where large thrust, precision and motion control are needed.

Two models are available:

- ELA Type 2 - 4 mm/s
- ELA Type 2 - 16 mm/s.

Applications include:

- Component of the TMI-Orion Dynamics 5F Electrical Manipulator Arm (EMA).
- ROV/AUVs: Maneuvering systems (rudders, stabilizers).
- Stabilization & systems (ballast, flaps, ailerons).
- Underwater motion system (camera, projector, pan and tilt, sonar, thruster...).
- Subsea valves: regulation of oil/gas flow.
- Sampling and locking systems.
- Energy generation system : Adjust turbines for marine current projects.
- For scientific research, environment, energy, aquaculture, defense...

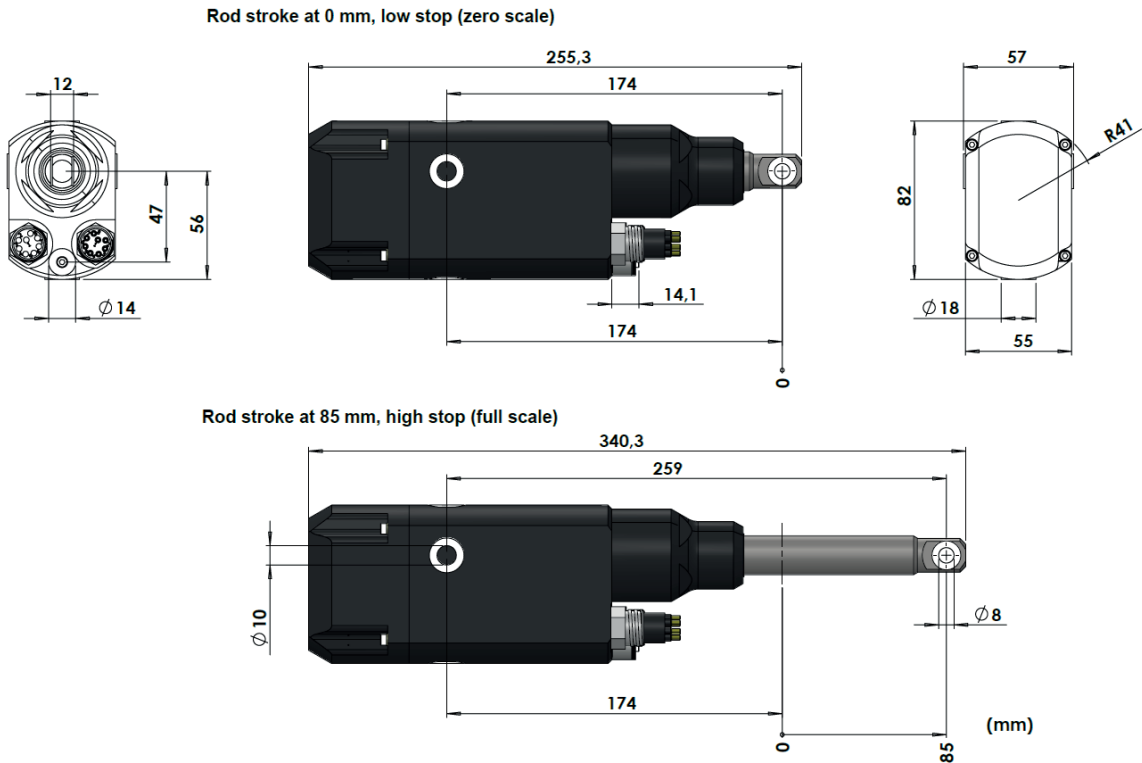
SPECIAL FEATURES

- Position feedback in velocity and position mode.
- Customizable settings (speed, thrust, depth) upon request.
- 1 connector available for add-on capacity (chaining actuators, camera, projector...).
- Embedded electronic controller (no external POD required).

TECHNICAL SPECIFICATIONS

Material	Hard anodized aluminum (body), Stainless steel (rod)	
Depth rating	600 m (air filled)	
Dimensions	D. 82 mm x L. 256 mm	
Range	up to 85 mm	
Weight	2 kg in air / 1.2 kg in fresh water	
Operating temperature	From -10°C to +60°C	
Storage temperature	From -20°C to +60°C	
Connector	In: SubConn MCBH8M / out: SubConn MCBH8F (chainable with other TMI-Orion actuators)	
Power supply	10-24 VDC. The characteristics are done with 24 VDC nominal	
Electrical power	ELA Type 2 - 4mm/s : 40 W maximum / ELA Type 2 - 16 mm/s : 60 W maximum	
Serial control bus	RS485 half-duplex (115 200 bauds 8-N-1)	
Termination resistor	By default 120 ohm, switchable via a command on the serial control bus	
Thrust capability	ELA Type 2 – 4 mm/s	200 kg (maximum)
	ELA Type 2 – 16 mm/s	100 kg (maximum) at 200 m depth rating
Rod speed	ELA Type 2 – 4 mm/s	Up to 4 mm per second (configurable)
	ELA Type 2 – 16 mm/s	Up to 16 mm per second (configurable)
Cathodic protection	Sacrificial anode	
Internal telemetry	Motor temperature, humidity/temperature and internal pressure	
Alarms	Automatic management of temperature alarms (configurable)	
Feedback	Position, torque, power supply and telemetry	

Dimensions (in millimeters)

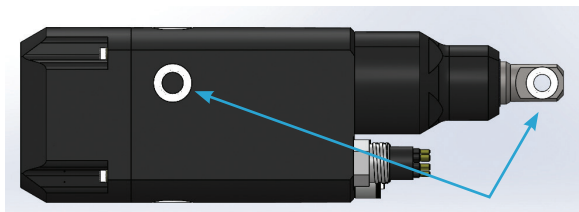


The linear actuator is articulated in 2 points: on the body and at the end of the rod.

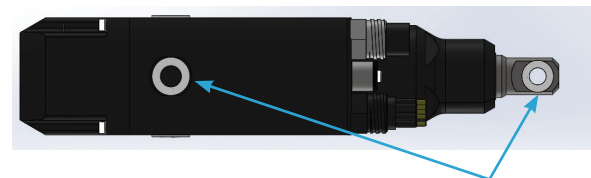
The articulation on the rod allows an axis of diameter 8 mm.

The articulation on the body allows 2 half-axes of diameter 10 mm.

The rod of the ELA can be rotated by 90°.



Position 1



Position 2

SOFTWARE AND RELATED PRODUCTS

Monitoring software

The Electrical Linear Actuator comes with a monitoring software (under Windows®).

Other products

Please visit our website for more information.

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