

Electric Low-Power Rotary Actuator

Cost-effective, operationally efficient solution for deepwater and long-offset production

APPLICATIONS

- Offshore production, particularly in deepwater and long-offset fields

BENEFITS

- Greater control and precision of actuation
- Cost and rig-time savings
- Optimized uptime
- Reduced intervention requirements

FEATURES

- Decreased power consumption
- High output shaft angle accuracy
- Minimized equipment complexity and maximized reliability
- Low- and high-torque designs
- Efficient, precise installation

OneSubsea offers a first-of-its-kind, truly comprehensive electric subsea production system that comprises electric valves, trees, chokes, and manifolds. This system represents state-of-the-art technology based on a decade of experience gained and lessons learned. The result is an integrated solution that improves system efficiency, mitigates HSE considerations, and enhances readiness for future operations.

Each component of the electric subsea production system is operated by electrically driven actuators. The OneSubsea portfolio of electric actuators includes high-power rotary actuators, low-power rotary actuators, and electric gate valve linear actuators.

Innovative design principle

The low-power electrical rotary actuator implements a Subsea Instrumentation Interface Standardization (SIIS) Level 2 interface to enable easy integration in brownfield and greenfield applications. Depending on desired performance, power requirements, and stepout distance, the actuator can be configured as either a medium-power (48-W) or high-power (96-W) device. This actuator can be equipped with Norsk Sokkels Konkuransesposisjon (NORSOK) Class II or Class IV ROV interface. Incoming commands through the SIIS-compliant CANopen interface are processed by the motor controller unit.

Optimized load profile

The valve operation torques are usually far below the maximum mechanical interface torque value. Therefore, the controller adapts the motor current and frequency, and the actuator adjusts the motor speed to the actual torque. This enables the valve and actuator to always operate at the best-achievable performance level.

Maximized reliability through streamlined design

OneSubsea selects all main components for a simplified drive chain that yields maximum reliability. Actual speed, input voltage, and other diagnostic values are reported on an event-driven basis.

Efficient installation

The mechanical interface is equipped with a spring-mounted shaft, eliminating the need to consider the valve position and enabling faster, more precise installation. The spring-driven valve seat slides in within the first quarter-turn of the actuator. After installation of the actuator, calibration is required to determine the physical boundaries of the valve.



Electric low-power, low-torque rotary actuator.



Electric low-power, high-torque rotary actuator.