

SIEKA valve actuator with rotating limiter

Increase reliability and safety of valve movements with less space requirements

Framatome's SIEKA valve actuators feature very compact, lightweight and robust design in combination with high actuating torque. It enables you to retrofit and replace actuators for a wide spectrum of valve installations providing prolonged operation and adherence to future environmental conditions requirements.

Challenge

Around the world, changes in environmental conditions require increased resilience against seismic loads affecting i. a. safety classified valve/valve-actuator setups. Other possible issues include confined installation spaces and changing requirements regarding valve actuating torques. Many typical valve actuators are bulky, heavy and non-concentric due to the required high actuating torques. Large and heavy actuator designs result in increased seismic loads which can permanently damage the valves and therefore require additional space for supports and related qualification efforts.

Solution

The solution is to use a SIEKA Valve Actuator that combines a very compact, lightweight and robust design with high actuating torques and two mechanical gear stages.

The new integrated adjustable rotating limiter extends SIEKA range of applicability to a even larger variety of valves including butterfly and ball valves, qualified and non-qualified applications in nuclear power plants, fossil-fired and chemical plants.

The actuator's compact design is owed to a gearing mechanism which allows the gear transmission ratio to change:

- For traversing to a limit position, the actuator provides a defined, low torque.
- For moving out of a limit position, the actuator provides a breakaway torque which is three times higher.
- The switch over from high torque to low torque gear is performed automatic by a mechanical mechanism.



Technical information

- Integrated adjustable rotating limiter for e.g. butterfly and ball valve applications
- Low power consumption < 200 W
- Surface-cooled, squirrel-cage motor and self-changing planetary gear
- Reliable breakaway from limit position and (mechanical) torque limitation
- Low weight (~15 kg)
- Suitable for employment under severe conditions and especially in nuclear applications
- meets KTA 3504 and IEEE 382 standards

Customer benefits

- Retrofitting on existing valve bodies possible
- Broad applicability due to integrated adjustable rotating limiter (e.g. butterfly and ball valves)
- Low power consumptions < 200 W during operation.
- Easily installed without the need for separate actuator support standardized adaption (ISO 5210)
- Reduced space requirements due to the compact actuator design
- Reduced seismic requirements due to relative lightweight and concentric design.
- Very long lifetime due to rigid and robust design (qualified for 60 years)
- Available in KTA and IEEE qualification

Key parameters

225 Nm release torque

Compact: 300 mm height/140 mm diameter

Total mass of ~15 kg

Over 20 facilities use the FRAMATOME SIEKA system worldwide

**Contact: integrated-systems@framatome.com
www.framatome.com**

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