

Fig. 1 - Steam turbine

Electrohydraulic systems for energy sector

World-class solutions for efficient power generation

The worldwide growing demand for power generation requires increased thermal and electrical efficiency, together with improved environmental protection and resources preservation.

In order to accomplish these strict requirements, power plants manufacturers need to deeply review their traditional motion control technologies, introducing suitable innovations in their electrohydraulic systems.

With this target, Atos has developed advanced drive & control solutions thanks to its extensive experience in this specific field.

These innovative solutions perform smooth, accurate and flexible controls of the regulation of steam or gas valves, thus permitting the best management of the turbine rotation speed, with consequent improved efficiency of the power generation plant.

Atos advanced electrohydraulic systems for turbine control consist of:

- ex-proof servoproportional valves, ATEX / IECEx / EAC multicertified with on board digital axis motion controller, perform closed loop repetitive and precise positioning control of the turbine regulation speed in all operational conditions together with powerful diagnostic and optional fieldbus communications (Fig. 2)
- special ruggedized servocylinders are equipped with double inductive transducer, for redundant safety, PTFE seals + Viton O-Rings, for low friction, able to operate with working temperature up to 200°C. The contactless construction of the transducer LVDT is specifically engineered for harsh environments with a protective shell and IP68 cable glands. Largely sized built-in stackable disc springs ensure the full extension of the cylinder rod in emergency conditions to fast shut down the steam or gas valve and thus avoid overspeeds of the turbine rotor up to its breakdown (Fig. 3)
- power units with accumulator group for energy storage are designed with stand-by electric motor-pump groups fitted into duplex hydraulic circuit, grants 24/7 cycle operation and makes easier the replacement of components with running system (Fig. 4). Two redundant accumulators on board of the HPU guarantee fast shut down of the steam or gas valve for best system safety

Atos innovative solutions comply with the stringent requirements of modern energy sector and grant a valuable turbine downtime reduction.

For further information look at www.atos.com



Fig. 2 - Ex-proof digital servoproportionals

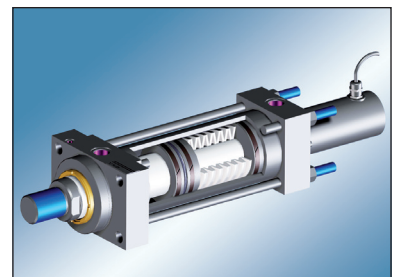


Fig. 3 - Servocylinder with safety device



Fig. 4 - Power unit with accumulator



Ex-proof digital servoproporcionais

Electrohydraulics for power generation

New generation of power plants utilize state-of-the-art motion technologies to achieve the high thermal and electrical efficiency required to comply with the increasing demand of environmental protection and resources preservation.

Atos has developed an innovative control system for steam valve's, performing accurate and flexible regulation of the steam to grant a constant rotation of the turbine with max safety level.

It consists of digital axis motion controller and servoproporcional operating a ruggedized servocylinder with built-in magnetostrictive transducer and intrinsic safety devices to prevent the turbine breakdown and reduce plant downtime.

The digital axis card drives the servoproporcional and performs repetitive and precise positioning control together with powerful diagnostic for safety purpose.

Atos power packs are designed with stand-by electric motor-pump groups fit into duplex hydraulic circuit to grant 24/7 cycle operation and to make easier the replacement of components with running system.

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