

Media Release

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Robust TripCon Trip Block from Voith Provides Even More Safety for Turbomachinery Equipment

- **Electro-hydraulic safety control unit for triggering trip valves**
- **Triple modular redundancy (TMR) with integrated 2 out of 3 (2oo3) voting**
- **Typical shutoff times of < 300 ms can be achieved**

Crailsheim, Germany: Avoiding overspeed is a fundamental requirement in safety management for gas and steam turbines. The TripCon trip block enables continuous triple modular redundancy from the speed sensor to the hydraulic cylinder of the trip valve. It has a modular and compact design which allows for the economical implementation of all standard safety concepts for turbine control systems. The Mean Time Between Failures (MTBF) is over 100,000 years. This increases the reliability of the turbine and increases the productivity of the entire system.

The TripCon has a wide pressure range from 6 to 180 bar (87 to 2,610 psi). It is therefore suitable for high-pressure and low-pressure hydraulic systems. Large discharge volumes up to 320 l/min (85 gpm) with a differential pressure of 6 bar (87 psi) enable fast shutdown times – usually less than 300 ms. The TripCon is available in various types. All variants of the trip block have a triple-redundant design with a 2oo3 selection (2 out of 3 voting). An integrated 1oo1 partial stroke test enables a simple check of the function of the trip valve, even during operation. The partial stroke test is available with optional 2oo2 redundancy. An expansion module is also available, which allows the replacement of all solenoid valves during operation.

The trip block is certified with Safety Integrity Level 3 (SIL 3 compatible) as per IEC 61508. This responds to the requests of many Voith customers who design products and systems according to this standard. The

engineers also paid particular attention to the magnetic forces of the valves. Specially developed valves with very high magnetic forces are used. This makes the TripCon highly resistant to dirt and other contamination in the operating medium – turbine lubrication oil is sufficient in most cases.

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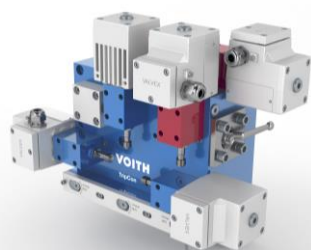
Typical applications for the TripCon are trip valves on gas and steam turbines in high-availability plants. Furthermore, the trip block is suitable for retrofitting non-redundant trip systems. Additional applications are conceivable, for example, for water turbines or generally for safety valves in process engineering.

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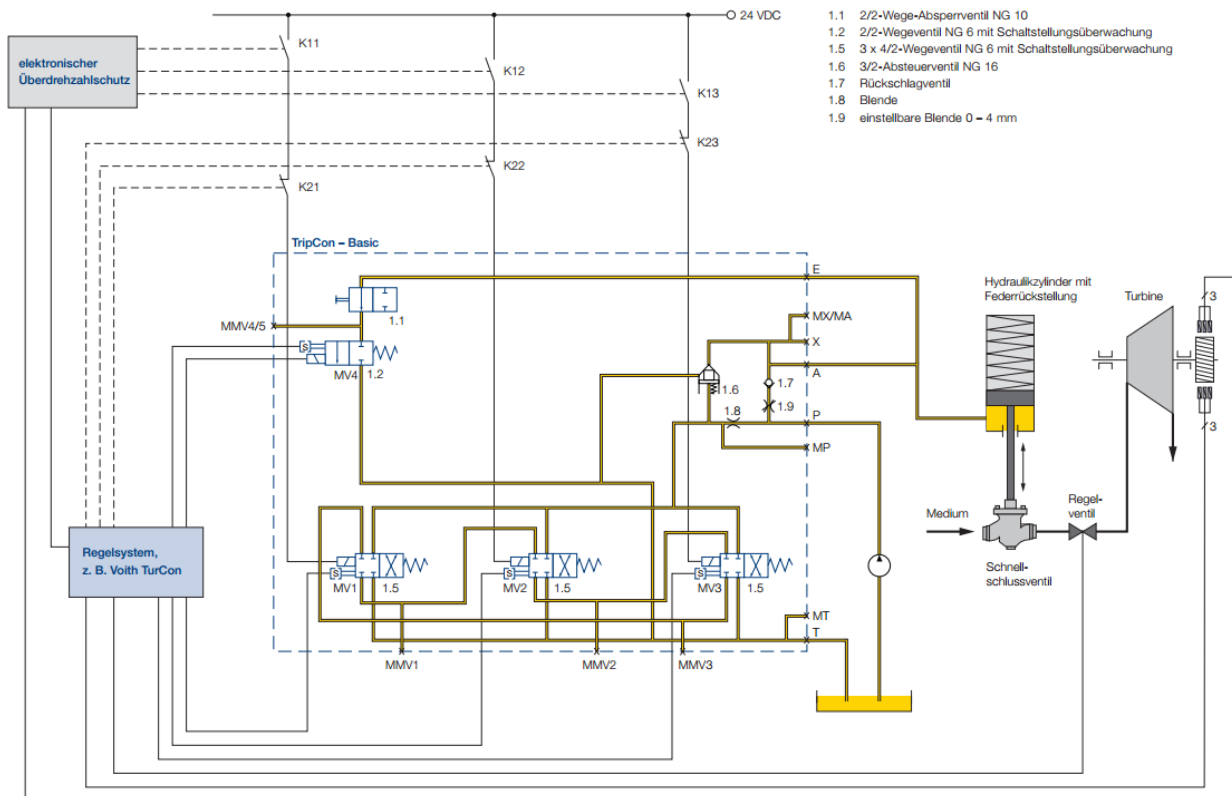
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TripCon electrohydraulic trip block for releasing trip valves on steam turbines, gas turbines and process safety valves.



Control schematics of the Voith trip block in its basic design.

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