

Variable shunt reactors with a record control range successfully tested

For the first time, a shunt reactor with voltage range of 400 kV and a control range of 50–250 MVAR, a previously unattainable level, has been successfully tested. Siemens Transformers is leading in the design and manufacturing of shunt reactors and has developed a new version adjustable to the necessary network requirements in the Siemens Transformer Nuremberg plant.

The exceptionally large control range of the new coil enhances grid stability and particularly energy transmission efficiency. Grid operators benefit from this wider control range, which need a higher level of compensation due to the increase in use of renewable power sources in the European grid. Grid operators are prepared for additional manufacturing or a change of overhead power lines to cables with the new shunt reactor.

Variable reactors combine the proven design of shunt reactors with the reliability of the tap changers that have been successfully used in transformer fabrication for decades. Variable reactors display their full advantages especially for varying voltages and load fluctuations: With a large control range of 20 to 100%, variable reactors offer grid flexibility, enabling operators to achieve the highest grid efficiency. Depending on the actual demand, the reactive power can be adjusted to the actual grid. Further advantages of flexibility:

- if the variable shunt reactor operates at low power rating, the operator profits from lower losses and less noise emissions
- switching in the variable shunt reactor with a low reactive power rating results in a lower switching impulse



This product also increases grid resilience as promoted in our [Siemens Transformers Pretact®-concept](#).

“The energy world finds itself increasingly confronted with considerable challenges to ensure Grid stability and Efficiency. We are committed to offer our customers across the globe innovative and efficient products addressing these needs. This variable shunt reactor not only increases today’s grid security, but also enables flexibility for future changes in the German power grid” says Beatrix Natter, CEO of Siemens Transformers.

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