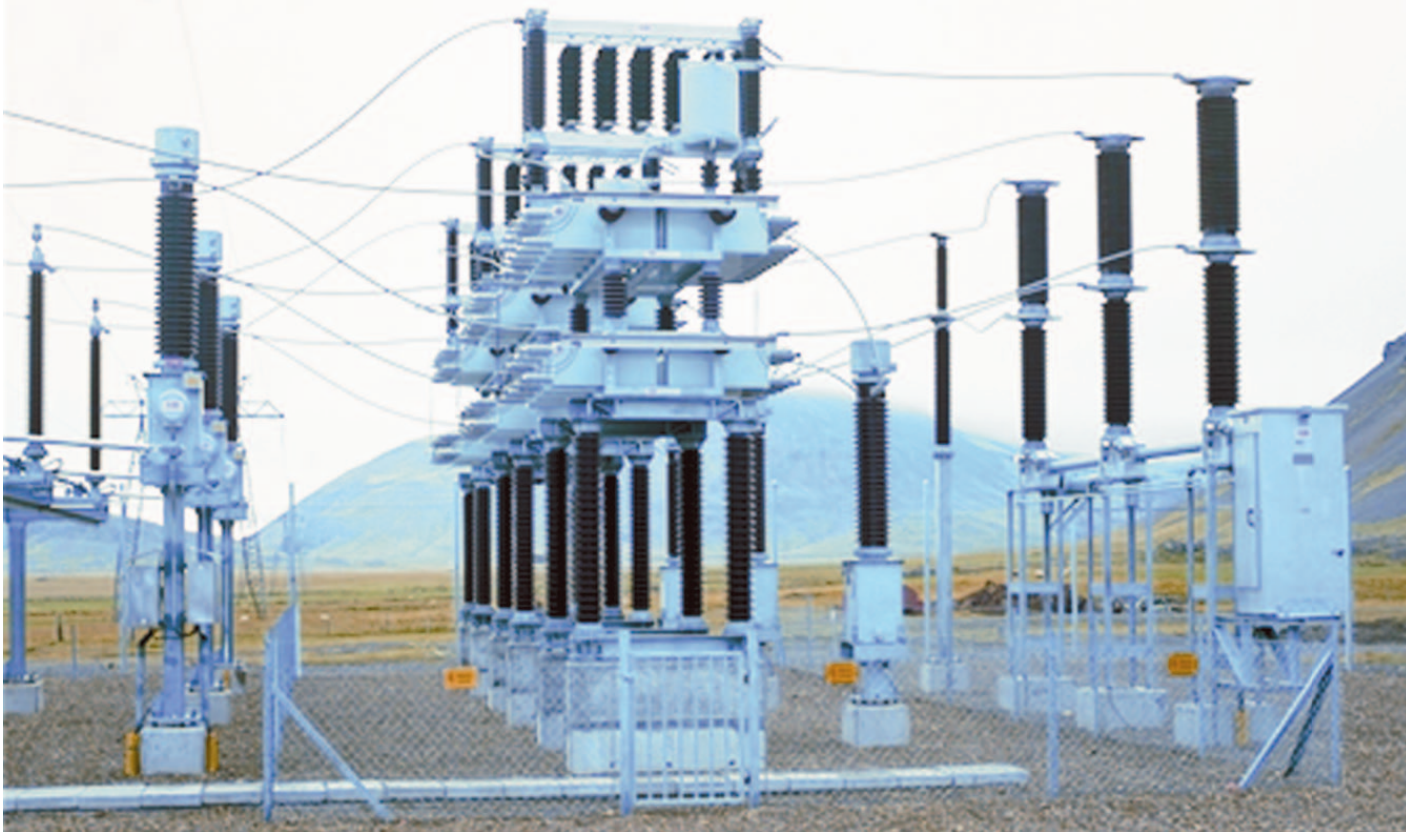


# Series Capacitor for improved power transmission capability in a 132 kV network in Iceland



At the end of 1992, the first Series Capacitor in Iceland was commissioned in the 132 kV network of Landsnet, the National grid company, less than a year after the awarding of the contract to ABB.

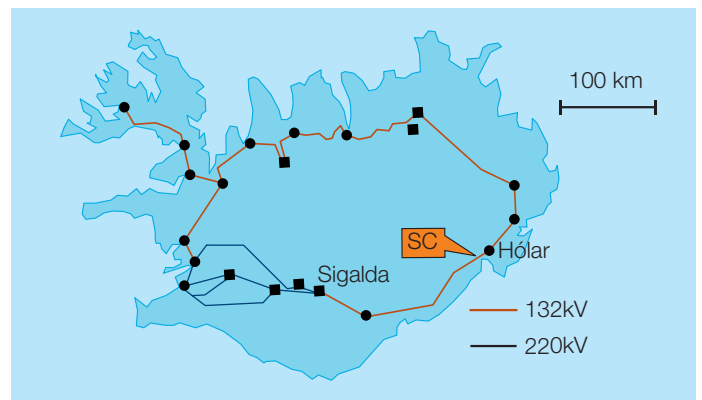
The Icelandic 132 kV grid forms an extensive ring around the country, and ties into the 220 kV system in the southwestern part of the territory. The Series Capacitor is located at Hólar substation in the eastern part of the 132 kV system, where power generation is low.

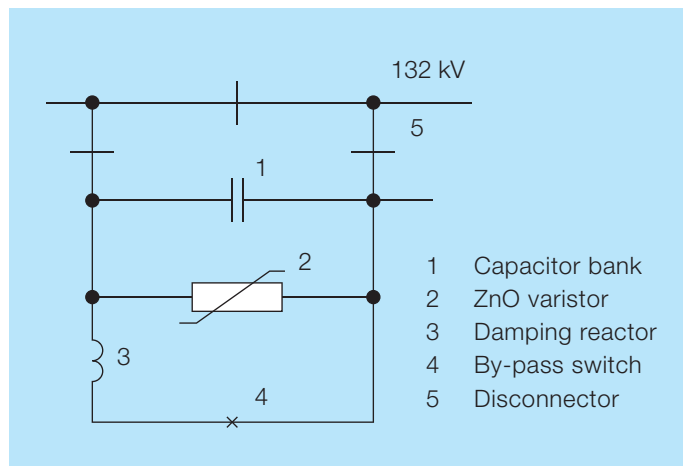
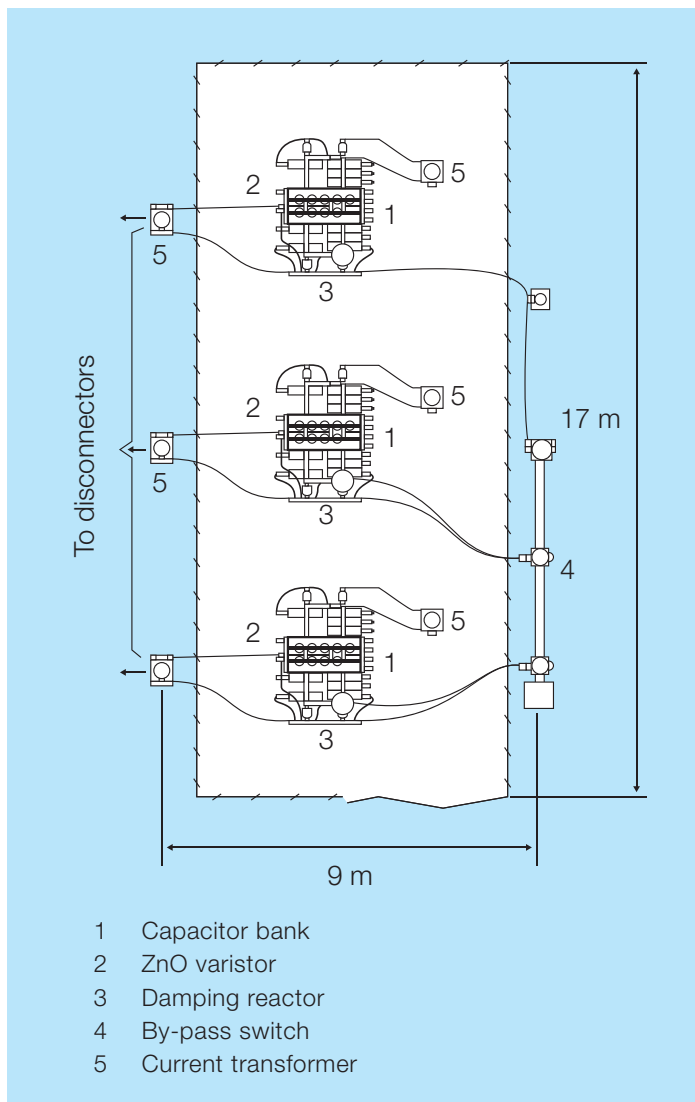
The Series Capacitor is rated at 43 Mvar at 132 kV. It compensates approximately 70% of the line reactance of the 132 kV line between Hólar substation and Sigalda, the site of 150 MW hydro generation. The purpose of the Series Capacitor is to increase the power transmission capability and stability of the 132 kV line.

The Series Capacitor is protected against overvoltages due to faults elsewhere in the system by means of a gapless scheme comprising a zinc-oxide varistor in parallel with the capacitor bank. For faults external to the compensated line section, the varistor is able to absorb all the energy diverted into it, without any need to bypass the Series Capacitor.

Reinsertion of the Series Capacitor is performed immediately after fault clearing, thanks to the inherent non-linear characteristics of the ZnO varistor. This rapid reinsertion is an important feature from a network stability point of view.

For faults internal to the compensated line section, the ZnO varistor will carry the fault current until the by-pass switch operates, thereby by-passing the Series Capacitor. After the fault has been cleared, the Series Capacitor is reinserted again by opening the by-pass switch.





Single-line diagram

## Technical data

Rated voltage	132 kV
Rated reactive power	43 Mvar
Rated current	450 A
Degree of compensation	70%

### Layout

For more information please contact:

**ABB AB**

**FACTS**

SE-721 64 Västerås,  
SWEDEN

Phone: +46 (0)21 32 50 00

Fax: +46 (0)21 32 48 10

[www.abb.com/FACTS](http://www.abb.com/FACTS)