

E5000 series SVG static var generator

Product overview



Grid voltage quality is usually measured with stability, symmetry and sine and other indicators. As a large amount of modern power electronic equipment and other non-linear loads are connected to the power grid, the power supply quality of the grid has been seriously affected, in which the application of various power electronic switching devices and frequent fluctuations of the load are the most important interference sources, resulting in series of adverse effects. At present, the use of SVG is the most ideal solution. SVG (Static var generator) is used to improve grid stability, increase power transmission capacity, eliminate reactive power impacts, filter out harmonics, and balance the three-phase grid.

E5000 series SVG static var generators (STATCOM Static synchronous compensator) developed and manufactured by our company, including 3kV-35kV direct mounting type and 35kV step-down type and the products of other series, have been widely used in industry, wind power and photovoltaics and other new energy fields with or near impact loads. They have played important roles in saving energy and reducing consumption, improving the safety, stability and power factor of the power grid, and increasing power quality, etc.

Technical characteristics

- Repeated learning BOOST control strategy is adopted to achieve zero steady-state error control. System reliability is assured by improved protection algorithm and online system state self-inspection. Patented flexible start technology to ensure zero current impact during grid interconnection.
- Real-time detection of state of control system and power unit, and digital quantitative analysis.
- Industrial-level storage media, complete data record, wave recording, "fault query expert system" .
- Advanced hardware platform + real-time multi-tasking operating system to ensure fast processing of "avalanche events" .
- It supports RS485, Ethernet and DCS hard contact interface. Multiple communication protocols are integrated.
- Excellent anti-electromagnetic interference characteristics; severity level reaches up to IV.

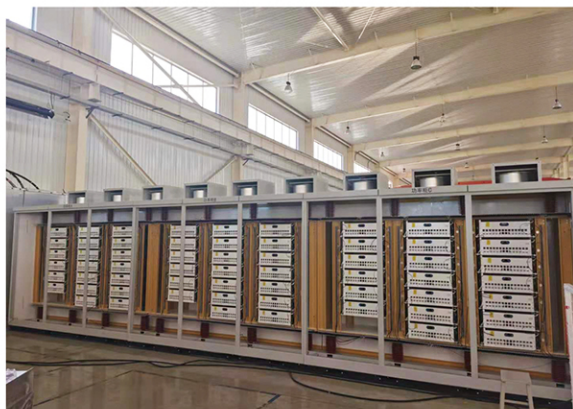
E5000 series SVG static var

Application field

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Application Case

The reactive power compensation equipment renovation project of a wind farm is a systematic project in which our company participated in the general contracting. The reactive power compensation equipment of the wind farm included TCR valve block + three to five times filtering, which had been unable to meet the requirements of relevant national standards for a long time. In addition, the active power consumption of the equipment is large. Based on above two factors, the Owner determined to upgrade and transform existing equipment.



The main engineering contents of the project were to replace the TCR valve block + three to five times filtering system on site with directly mounted SVG system; the control object of the SVG system were the power quality of 110kV busbar on site. In the SVG system, the HV switch cabinet of the original TCR valve block was connected with 35kV busbar, thus the communication between the SVG system and the background, that between the online reactive power monitoring device and local grid dispatching and provincial grid dispatching could work. SVG system receives command of local grid dispatching to control large output reactive power operation at the same time. After equipment transformation, the requirements on power factor and power quality of the wind power access system were met, the system response time was improved, the impact of system disturbances on the wind turbine was reduced, and the effect of reducing energy consumption and improving operating conditions was realized.