

GUJARAT POWER RESEARCH & DEVELOPMENT CELL
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GPRD Cell has developed an innovative Dynamic Reactive Power Compensation System for medium voltage radial feeders, utilizing advanced IGBT-based Static VAR Compensator (SVC) technology. The system offers stepless reactive power compensation in both capacitive and inductive modes, ensuring precise power factor correction and voltage regulation controlled by an IIoT-based local slave controller.

It enables automatic switching based on voltage, VAR, or current, with configurable prioritization. The system reduces overvoltage, enhances capacitor bank utilization, and improves overall feeder performance.



A Dynamic Capacitor Bank System for Var Compensation of Feeder

Features

- IGBT-Based SVC Technology Provides stepless 150 kVAr reactive power compensation in both capacitive and inductive modes
- IoT-Enabled Local Slave Controller Facilitates automatic switching based on voltage, VAR, or Volt/VAR, with configurable prioritization
- Remote access and operation via IIoT technology for enhanced system flexibility
- Configurable priority system for automatic switching based on voltage or VAR thresholds

Benefits

- Provides seamless and accurate compensation, avoiding overvoltage and overcompensation risks
- Real-time stabilization of voltage levels, improving feeder performance
- Ensures efficient and full utilization of the capacitor banks, minimizing energy losses
- Improves overall system efficiency and reduces line losses
- The system can be deployed across multiple feeders, ensuring reliable grid operation and easier network expansion
- Improves feeder reliability by maintaining optimal power quality and preventing voltage instability

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