"Compensates reactive power requirements. Clean up the grid by removing the harmonics and unbalance"

STATCOM

Static Compensators for Mitigation of Power Quality Issues

STATCOMs are inverter based solutions used for compensation of reactive power, harmonic currents, unbalance currents and neutral currents caused by reactive and non-linear loads. STATCOMs are realised with current controlled PWM voltage source inverters connected to grid through an interconnecting impedance. Inverters are constructed with advanced switching devices like IGBTs. When compared to conventional power quality solutions like switched capacitors and tuned filters, STATCOMs feature excellent dynamic performance under fluctuating load conditions, increased life, better efficiency, insensitiveness to grid frequency etc. Solutions for single phase, 3 phase-3 wire and 3 phase 4-wire are available for transfer of technology. Developed by CDAC(T), sponsored under NaMPET.

SPECIFICATIONS

Single Phase STATCOM

Rating (typical)	: 5A @ 230V, 50 Hz AC input
Configuration	: Single Phase, full bridge IPM/IGBT PWM controlled inverter
Switching frequency	: 10 kHz
Control	: DSP based digital control
Cooling	: Forced air cooling

3 Phase 3 wire STATCOM

Rating(typical)	: 500 kVA, 415V 3 Phase, 3 Wire
Configuration	: 3 Phase, full bridge IGBT PWM controlled inverter
Switching frequency	: 10 kHz
Control	: Using DSP/FPGA based digital controller
Cooling	: Forced air cooling
Panel fabrication	: Suitable for indoor deployment
User interface	: Graphic LCD and Keypad
Protections	: Over current, short circuit, over voltage (AC/DC), over temp.

3 Phase 4 wire STATCOM

Rating(typical)	: 500 kVA, 415V 3 Phase, 4 Wire
Configuration	: 3 Phase, 4 leg IGBT PWM controlled inverter
Switching frequency	: 10 kHz
Control	: Using DSP/FPGA based digital controller
Cooling	: Forced air cooling
Panel fabrication	: Suitable for indoor deployment
User interface	: Graphic LCD and Keypad
Protections	: Over current, short circuit, over voltage (AC/DC), over temp.

Functions :

- Reactive power compensation to maintain grid side PF unity
- Harmonic current compensation as per IEEE 519-1992 standard with in the current rating of the STATCOM
- Unbalance current compensation
- Neutral current compensation

ADVANTAGES

- Maintains programmed power factor during highly fluctuating load conditions
- Keeps harmonic currents within the limits(as per IEEE 519-1992) during fluctuating load conditions
- No switching transients as in switched AC capacitor solutions
- Insensitive to grid frequency fluctuations
- Digitally controlled system providing more flexibility
- Fast protections and indicators for faults
- 4 wire STATCOM is a composite solution for load dependent power quality issues

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End Users

STATCOM FOR
POWER QUALITY IMPROVEMENT IN IT PARKS

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POWER QUALITY IMPROVEMENT IN WEG