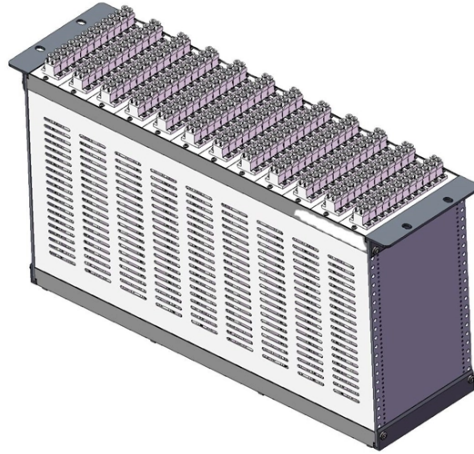


# Performance parameters of Sudanese high-voltage distribution box



## AI Overview

Sudanese high-voltage distribution boxes are designed to handle system voltages up to 220 kV, with performance optimized for load flow, short-circuit tolerance, reactive power compensation, and voltage stability.

### Voltage and Current Ratings

High-voltage distribution boxes in Sudan typically operate at 132 kV to 220 kV, depending on the substation and network configuration. The current-carrying capacity is determined by the connected transformers and feeders, with protective devices rated to handle peak load currents and short-circuit conditions. Busbars are configured in single or double bus arrangements to ensure reliability and flexibility in switching operations.

### Protection and Fault Management

These distribution boxes incorporate fuses, protective relays, and instrument transformers to detect and isolate faults. Short-circuit studies follow IEC 60909 standards, ensuring that equipment can withstand symmetrical and asymmetrical fault currents without damage. Thyristor-controlled devices, such as TCSC (Thyristor Controlled Series Capacitors), are sometimes integrated to manage line impedance and enhance power transfer capability.

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For more information, pricing, or custom solutions, please contact us:

Website: <https://ntmmgroup.co.za>

Email: [sales@ntmmgroup.co.za](mailto:sales@ntmmgroup.co.za)

Phone: +27 82 471 2596

Address: Unit 7, Optic Park, 24 High-Tech Lane, Century City, Cape Town, 7441, South Africa

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