Multifunctional Grid Simulator

Mobile Test platform-multifunctional grid simulator

HOPEWIND

Mobile Test Platform-Multifunctional Grid Simulator

▶ Overview:

The multifunctional grid simulator independently developed by Hopewind can not only accurately simulate three-phase three-wire power grid systems with different voltages and frequencies and their dynamic disturbance characteristics, but can also be used to test wind power generation systems, photovoltaic power generation systems, energy storage systems, etc. The equipment conducts grid adaptability tests such as voltage deviation, frequency deviation, three-phase voltage imbalance, voltage flicker, grid harmonics, inter-harmonics, etc., and can truly simulate high voltage and low voltage fault characteristics of various types of power grids, including symmetry and asymmetrically changing fault states, used for high-voltage ride-through testing and low-voltage ride-through testing of equipment under test such as wind power generation systems, photovoltaic power generation systems, and energy storage systems.

(Operation interface)

Diverse Functions

Grid adaptability test

1. Voltage
2. Frequency
3. Three-phase voltage unbalance
4. Flicker
5. Harmonic voltage
6. Harmonic wave

Grid fault ride-through test

1. High
2. Low voltage
3. Cascading failure

Grid support test

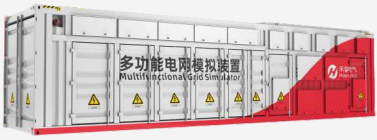
1. Primary Frequency modulation
2. Inertial response
3. Frequency domain analysis of unit characteristics
4. Weak grid connection characteristics test

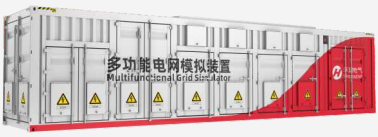
Product

▶ 2.5MVA

▶ 6MVA

▶ 10MVA





Note: Silk printing on the outside of the container can be customized by customers, the pictures are for reference only.

Performance Characteristics

- Product capacity covers**1MVA~60MVA**, supporting customization of multiple voltage levels and different test functions.
- It has isolated impact resistance and is especially suitable for testing in weak power grid environments.
- Equipped with frequency domain analysis function of unit characteristics.
- Harmonic output accuracy reaches ±0.2%.
- High quality of output voltage waveform, rated no-load output THD u≤0.5%.
- Supports multi-machine parallel connection expansion.

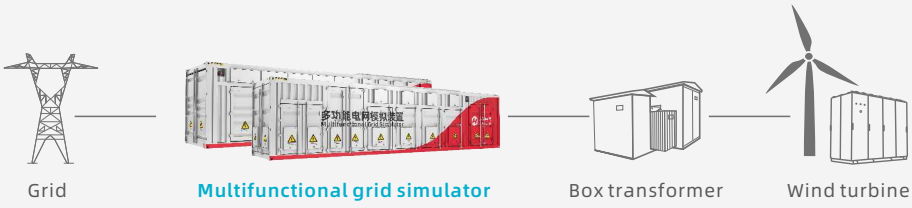
Technical Parameters

Power Lever / parameter	2.5MVA	6MVA	10MVA
Product type	Coupled type	Cascade type	
Input voltage	AC35kV±10% / AC10kV±10%		
Input frequency	50Hz±5%		
Steady state output voltage range	80%~110%		
Steady state voltage accuracy	0.5%		
High voltage output range	110%~130%		
Low voltage output range	0%~90%		
Output frequency range	45Hz~66Hz		
Output frequency accuracy	0.01Hz		
Output waveform distortion rate	≤1%		
Three-phase voltage unbalance output range	1%~10%		
Output flicker-Pst	1~10		
Output harmonics	2~25Times		
Overall machine efficiency	≥95%		
Noise	≤70dB	≤90dB	
Storage temperature	-40℃~+70℃	-30℃~+55℃	
Operating temperature	-30℃~+40℃	-25℃~+40℃	
Altitude	≤2000m		
Cooling	water cooling	air cooling	
Protection Degree	IP54	IP23	

Note: Some functional parameters can be customized according to customer needs.

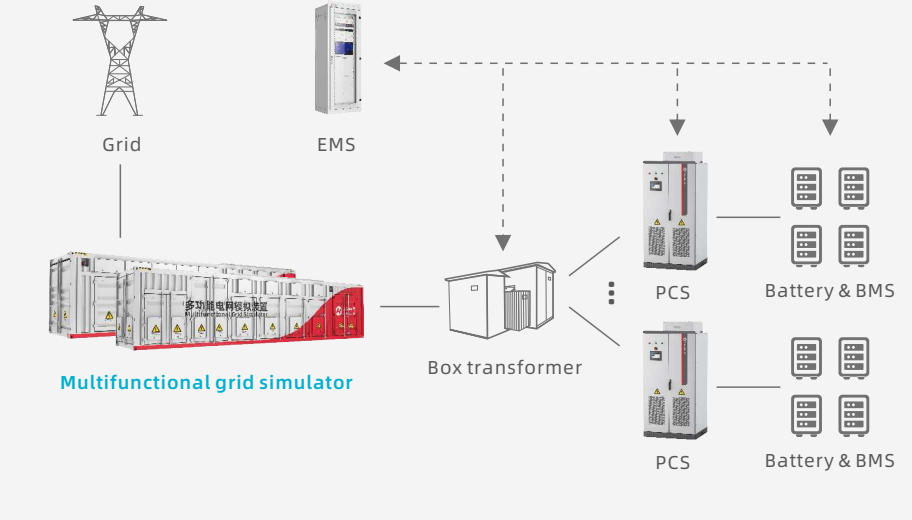
Industry application

• Wind turbine test



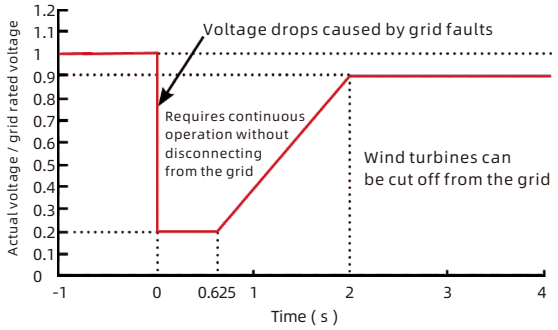
• PV power generation unit test

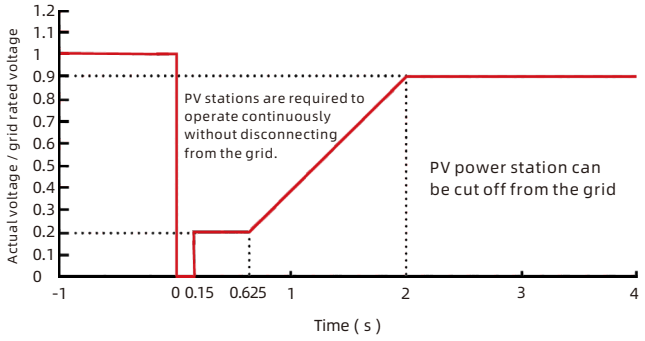
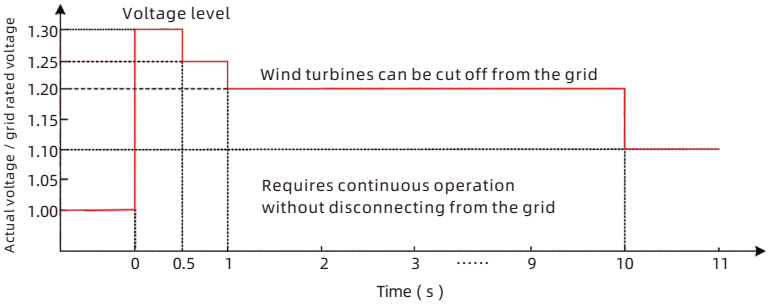
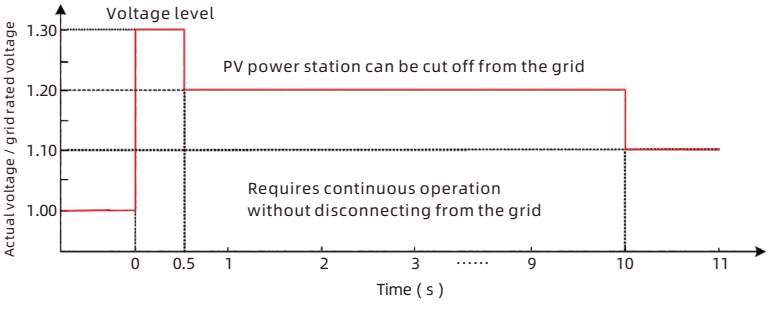
• Energy storage system test



Testing Curve

• LVRT curve





• HVRT curve