

Dynamic Voltage Restorer (DVR)



Product Overview

The interference of system voltage causes short-term voltage dip on the load side (lasting from several to dozens of cycles), which is the primary cause of malfunctions in sensitive loads, particularly in computer equipment.

Dynamic Voltage Restorer (DVR) adopts the latest PWM interleaving technology. In case of a voltage dip, the DVR can quickly compensate for voltage fluctuations, correct three-phase voltage imbalances, mitigate flicker, and adjust voltage deviations to maintain stable output voltage, thereby protecting loads.

Product Type

Online DVR-X: The product is composed of an inverter, isolation transformer, supercapacitor, SCR switch, etc., with the supercapacitor providing energy to the grid for compensation. In case of a voltage dip, the grid voltage can be disconnected, allowing the supercapacitor to supply energy to the load without being affected by fluctuations in the grid voltage. Compensation depth can cover 0-130%.

Offline DVR-D: The product consists of a rectifier, inverter, compensation transformer, and bypass. The compensation energy is sourced from the power grid via the converter. It offers a voltage dip compensation depth of 40%, completely correcting the voltage dip, and effectively addressing the voltage dips and surges, which helps prevent economic and production losses caused by voltage fluctuations to users.

Application Scenarios

It is applied in industries with continuous operations, such as chip manufacturing, automotive, pharmaceuticals, petrochemicals, hospitals, power plants, food processing, chemical fibers, glass production, data centers, and tobacco.

The DVR device can be installed in series between the data center, servers, and system power supply to protect against voltage dips, preventing server failures and data loss, and enhancing the safety and reliability of computer systems;

The DVR device can also be installed in series between sensitive loads and system power supplies to protect against voltage disturbances, preventing malfunctions in sensitive loads. For example, in semiconductor factories, it safeguards against voltage dips and short interruptions that could otherwise lead to significant economic losses and a large amount of scrapped products;

For UPS applications that do not require long-term power backup, the DVR device offers superior dynamic voltage compensation capabilities and a better cost-performance ratio compared to UPS systems, making it an effective solution for improving voltage quality on the load side.

Technical Parameters

System Rated Voltage	400V (208V-750V)							
Working Voltage for Compensation	Low Voltage Compensation Range: 0-85% of rated voltage; High Voltage Compensation Range: 115%~130% of rated voltage							
Compensation Capacity (kVA)	≤ 100	150	200	300	400	500	600	800
Compensation Time	3s	3s	2s	3s	2s	4	3s	2s
Dimensions (mm)	1000*800	1200*800		1800*800		2600*1000	4000*1000	
Compensation Capacity (kVA) - Continued	1000	1250		1600		2000	2500	
Compensation Time - Continued	1s	1s		0.4s		0.4s	0.4s	
Dimensions (mm) - Continued	4400*1000	5000*1000		5000*1000		6400*1000	8000*1000	
Operating Frequency	48.5Hz~51.5Hz							
Device Response Time	<2ms							
Compensation of Voltage Unbalance	<3%							
Accuracy of Voltage Compensation	<2%							
Overall Efficiency	>99% (non-compensation state, P≥300kW equipment)							
Total Harmonic Distortion of Voltage	<4%							
Operating Temperature	-25℃ ~ +45℃							
Testing Accuracy	Not less than 2% within 0.2pu~1.5pu							
Protection	Necessary protections are provided, and the protective actions do not affect the normal power supply to the load							
Operating Humidity	0 - 95%, no condensation							
Noise	≤ 60dB under non-compensated and charging conditions (measured 1 meter from the device)							
Lifespan	Maintenance life of 20 years							
<p>Note: The standard height of the cabinet in the above table is 2200mm. Actual device dimensions depend on project configuration; specific dimensions can be consulted with the manufacturer.</p>								

Selection Guide

