

Instantaneous High Voltage Drop Compensator (High Voltage MPC)

Features

- The instantaneous high voltage drop compensator contributes to the stable operation of manufacturing plants and the like, used for power supply failure countermeasures during power outages, instantaneous voltage drops and the like.
 - (High voltage MPC).** The MPC5000 series product lineup incorporates the latest technology
- 1) High quality
 - Power supply reliability is improved through a multi-module converter configuration (maximum 8 units). Even in the unlikely event of a converter module failing, the operation continues with the remaining modules.
- 2) Energy saving
 - A maximum efficiency of 99.5% is achieved by optimizing and downsizing the semiconductor switch (HSS: High Speed Switch) configuration, as well as through the highly efficient operation control of each converter module.
- 3) Low maintenance
 - Large exhaust fans are eliminated from converter panels, by separating the heat generating and cooling sections from the control section and by optimizing the flow of air. Maintenance costs are reduced through the incorporation of long-life parts and components, as well as long-life mini fans (with a recommended replacement cycle of eight years).
- 4) User friendly
 - Verification of the operating status of each converter panel, as well as the starting and stopping operations achieved through the utilization of the system integration monitor. Customer operational management is supported by substantial features, such as displays and records of instantaneous drop history, as well as power trends and the like.



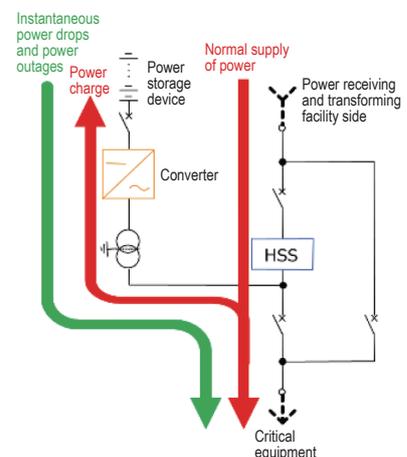
Overview & Principles

■ Stable supply of power

The high voltage instantaneous drop compensator (high voltage MPC) is a device that protects the whole manufacturing plant from power failures. A high-speed switch (HSS) is installed on the direct supply path to supply power to the load equipment, with a parallel connection of the converters for compensating all voltages.

In the event a problem occurs with the incoming power supply, the HSS disconnects the direct supply circuit, while simultaneously providing a stable supply of power from the converters connected in parallel, with this whole series of operations taking place within one millisecond.

The greatest feature of this device is its ability to instantaneously shut off the power system, in which a failure occurs and start providing a stable supply of power.



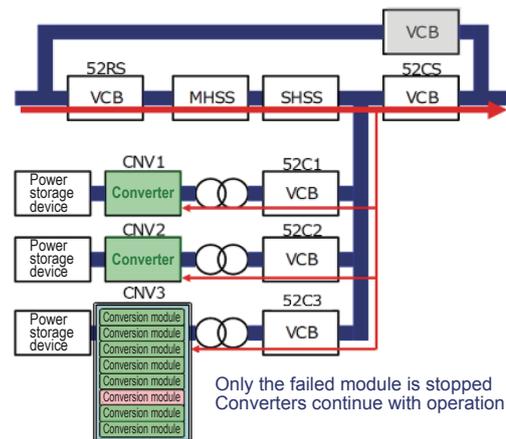
■ HSS achieves both high-speed operation and high efficiency

The HSS achieves a high-speed operation and a device efficiency of 99.5%, through the integration of a semiconductor switch that offers a superior high-speed cutoff performance and a superior mechanical switch, with a low conduction loss.

■ Advanced redundancy features

Converters and storage units can be expanded in the future and since in the unlikely event of a converter failing, the affected converter alone can be disconnected, while the remaining converters continue to operate, a redundant configuration (n + 1) of the converter, improving power supply reliability.

Furthermore, the converters of the MPC5000 series, which are the latest model products, consist of converters that are modular in configuration, therefore each module operates independently and for that reason the whole converter can continue to operate by stopping only the failed module, while the remaining modules continue to operate with the load distributed among all units, thereby improving the power supply reliability of the device.



Item	Standard specifications	Remarks	
Rated output summary	1,000kVA~12,000kVA	Up to 6,000 kVA for 3.3 kV implementation	
AC input	Number of phases	Three-phase, three-line	
	Rated voltage	6.6 kV or 3.3 kV ±10%	
	Frequency	50Hz or 60Hz ±5%	
AC output (during guaranteed power supply)	Voltage accuracy	Within ±5%	
	Rated load power factor	0.8 (delay)	0.9 (delay),1.0 also supported
	Load power factor variation range	0.7 (delay) to 1.0	Within rated W
	Voltage waveform distortion rate	3% or less	Under linear load
Switching time	Instantaneous power drop switching time	within 1 ms	
	Power restoration switching time	Uninterrupted	
Others	Cooling system	Forced-air cooling type	
	Ambient temperature	0~40°C	The storage device is at average of 35°C
	Relative humidity	15%~85%	
	Altitude	1000 m or less	
	Installation environment	Indoor and outdoor (contained in a package housing)	A location free from dust, corrosive gases and condensation

Energy-Saving Effects & Special Remarks

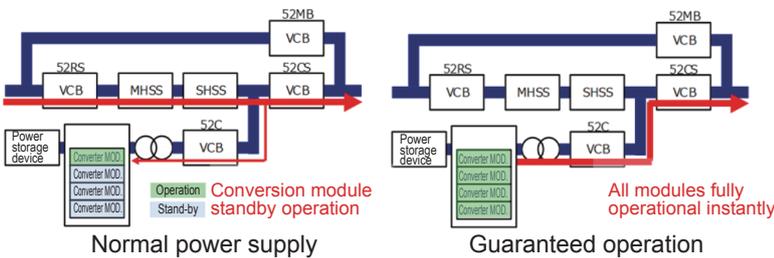
The MPC5000 series of products achieve a maximum efficiency of 99.5%, due to the incorporation of the low-loss semiconductor devices and ECO drive function.

- Utilization of the latest low-loss semiconductor devices

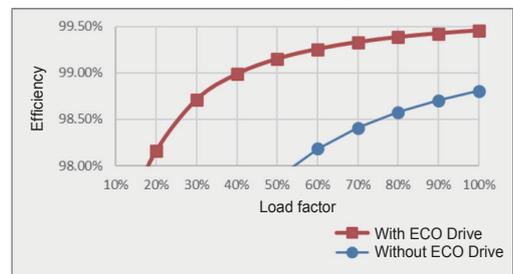
The latest low-loss semiconductor devices have been incorporated for the semiconductor HSS and converters, reducing the loss occurrence of the device.

- Converter equipped with ECO driver function

Up to eight converter modules, built in the converter, can be individually set to operate or in the stand-by mode, according to the operating conditions, to reduce operational losses.



Maximum efficiency 99.5%



Track Record or Implementation Plans

281 systems, 1,040 MVA
Current as of January 2025

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