

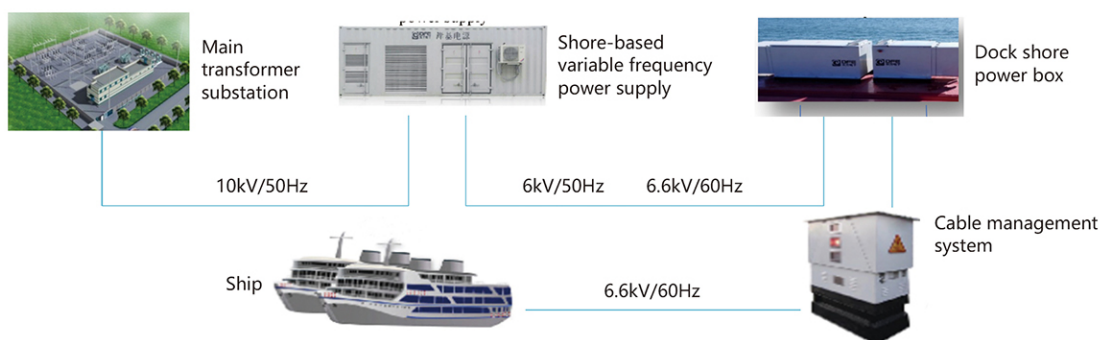
DF5010 series shore-based variable frequency power supply

Product overview

It needs to burn a large amount of fuel to generate electricity when the ship is docking, thus a lot of waste gas pollution and noise pollution is generated. The emission control of port ship exhaust has become gradually an important part of air pollution control in coastal port cities, while shore power technology is one of the effective means for the control of air pollution at ports. In recent years, the number of ships adopting shore power technology has increased significantly, and most domestic ports have gradually begun to build and use shore power.

DF5010 series shore-based variable frequency power supply system is divided into HV and LV variable frequency power. It converts the power input from the substation to the power consistent to that of the ship power receiving system and transmits it to the access point of the ship on the port (shore power box). It can withstand various load impacts of ships and ensure stable voltage/frequency output. The system is reliable and the power supply frequency is high.

Working principle and structure



Technical characteristics

- The power supply of the ship will not be interrupted during the connection, exit and switching process of the ship power, so that it can realize seamless switching, load transfer and synchronous grid-interconnection.
- Phase sequence detection and adjustment: There are two adjustment methods for power output phase sequence, i.e. automatic and manual methods.
- The software and hardware platform developed independently by DFE is used in the control system.
- An open protocol is used for external communication of the control system. It has Ethernet, ModBus and other communication methods, which facilitate the connection with various ship control systems. Optical fiber is used for communication.
- The control system can carry out state monitoring, parameter modification, real-time control and fault recording & diagnosis for the switching state and electricity billing of relevant equipment.
- Display function: It enables the display of frequency, voltage, current, three-phase unbalance, active power, reactive power, power factor and other parameters of output power supply, and the statistical measurement of active power and reactive power in kwh.
- It has harmonic suppression function. The harmonics meet the requirements of IEE 519-1992 and GB/T14549-93 standards.

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Application field

Main applications of shore power system: Shipbuilding industry and port industry.

Shipbuilding industry

It mainly refers to the shipyards and repairing yards. Shore power equipment is generally installed on the shore or in the dock in shipyards and repair yards to mainly provide temporary power for the commissioning of the electrical equipment on board.

Port industry

It mainly refers to ports, including sea ports and river ports; mainly installed on the port wharf to provide electricity to the ships docked.



Application Case

We had contracted the shore power facilities procurement and installation project for a Bulk Terminal Co., Ltd. For the project, we were responsible for the supply of all devices necessary for the project and the construction of the project. Two sets of shore power systems were purchased and installed, in which one was installed at the bulk cargo terminal and the other set was installed at the container terminal.

The two sets of shore power system arrived and were installed on site in November 2017; the commissioning of the two sets of shore power supply with power on was completed on November 27, 2017; thus the construction of the two sets of shore power systems were complete, and the systems were ready for power supply.

On November 28, 2017, DFE carried out ship power supply connection test of shore power system together with the Bulk Terminal Co., Ltd. The shore power equipment operated well, the ship receiving the power run normally. The ship connection test was successful.