

MULTI-POWER SUPPLY MODE TRACTION SYSTEM FOR MULTIPLE-UNIT TRAIN

ABSTRACT

A multi-mode power supply traction system for a multiple-unit train is provided, which includes an alternating-current pantograph, a direct-current pantograph, an isolation switch, an alternating-current high-voltage box, a direct-current high-voltage box, a traction transformer, a traction auxiliary converter, and a traction motor. The alternating-current high-voltage box is connected to the alternating-current pantograph, the isolation switch is connected to the direct-current pantograph, and the direct-current high-voltage box is connected to the isolation switch. The traction transformer is connected to the alternating-current high-voltage box and the direct-current high-voltage box, a primary side of the traction transformer is connected to a grounding device, and each of the primary side of the traction transformer and a grounding terminal is arranged with a current transformer. An input terminal of the traction auxiliary converter is connected to the traction transformer, and an output terminal of the traction auxiliary converter is connected to the traction motor. Therefore, the multi-mode power supply traction system for a multiple-unit train can operate both in an alternating-current power supply mode and in a direct-current power supply mode, improving the diversity of the multiple-unit train. In addition, a secondary-side winding of the traction transformer can be used as a smoothing reactor, saving an occupancy space of a circuit and improving economic performance.

Figure 1