

ABSTRACT

EMERGENCY SELF-PROPELLED TRACTION SYSTEM FOR MULTIPLE-UNIT TRAIN

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An emergency self-propelled traction system for a multiple-unit train is provided, which includes a four-quadrant rectifier (11), a traction inverter (12), a traction motor (13), a high frequency isolated bidirectional DC/DC converter (14), a bidirectional DC/DC converter (15), and a power battery (16). If power is supplied from the external alternating-current power grid normally, the four-quadrant rectifier (11) is configured to convert an alternating-current voltage supplied from the external alternating-current power grid into a first direct-current voltage, and the traction inverter (12) is configured to convert the first direct-current voltage into a target alternating-current voltage, and supply power to the traction motor (13) by using the target alternating-current voltage. The high frequency isolated bidirectional DC/DC converter (14) is configured to convert the first direct-current voltage into a second direct-current voltage, and the bidirectional DC/DC converter (15) is configured to charge the power battery (16) by using the second direct-current voltage. If no power is supplied from the external alternating-current power grid, the power battery (16) is configured to supply power to the traction inverter (12) via the bidirectional DC/DC converter (15) and the high frequency isolated bidirectional DC/DC converter (14), to supply power to the traction motor (13). With the emergency self-propelled traction system for a multiple-unit train, the propelling of the traction system for a multiple-unit train can be maintained in a case that no power is supplied from a power supply catenary.

25 Figure 1