

Development of a Dual Voltage Contact-wire/Battery Hybrid Power Conversion Circuit and Control Sequence

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As a dual voltage contact-wire/battery hybrid power conversion circuit which enables a through operation of vehicles between three types of power supply section, namely d.c.1500 V electrified, d.c.600 V electrified, and non-electrified sections, the authors have developed a new type of PWM converter-chopper/inverter that has an intermediate circuit. By handling the supply mode select switch of the driving panel and turning on/off the battery breakers, five running modes of power supplies are available: only the contact-wire of the voltage of 1500 V or 600V, only the battery of the voltage of 600 V, and hybrid sources from the contact-wire of 1500 V or 600 V simultaneously from the battery of the voltage of 600 V. We report on the dual voltage hybrid traction circuit and control sequence as well as the running test results.