

ABSTRACT

DC GROUND FAULT DETECTION SYSTEM AND DC GROUND FAULT DETECTION METHOD FOR DC ELECTRIC RAILWAY

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In a DC electric railway to supply DC power to an electric railway car through feeder lines from a plurality of feeding substations, a task is to discriminate a section of a ground fault accident accurately. A VLD control and data collection device 51 is provided in each of feeding
10 sections of the feeding substations. The device 51 includes a short-circuit switch (VLD 50) connected between a rail 37 and an earth 38 and arranged to be closed when a rail-earth voltage between the rail and the earth becomes higher than or equal to a preset voltage. The device 51 collects electric information including the rail-earth voltage
15 and a passage current passing through the short-circuit switch after closure of the short-circuit switch. A ground fault discrimination device 60 is provided to discriminate a ground fault accident from a current magnitude, a conduction time and a conduction direction of the passage current flowing through the short-circuit switch by using the electric
20 information collected by each of the VLD control and data collection devices 51.

FIG.1