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Thu-Mo-Po4.11-06 [79]: Current Limiting and Interrupting Characteristics of Flux-Lock Type SFCL with Mechanical Switch

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In this paper, the flux-lock type superconducting fault current limiter (SFCL) with the mechanical switch (MS), which can be driven by self-driving coil to drive the MS unlike the previous SFCL, was suggested. The operational principle of the suggested SFCL with the MS is same as one without the mechanical switch, except that the MS is driven by electromagnetic repulsion force generated by the magnetic flux which generated between the coils comprising the suggested SFCL. To certify the operation characteristics of the suggested SFCL, the mechanical contact with the fixed plate (FP) and the moving plate (MP), which were located just above open round bobbin wound by two parallel connected coils, was designed and manufactured. The short-circuit tests of the SFCL using magnetic coupling of the coils with the suggested mechanical switch were carried out. Through the analysis on the results of the short-circuit tests, the operation time of the SFCL using magnetic coupling of the coils could be confirmed to be shortened effectively.

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