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## Design and Analysis of the High Power DC Water-Cooled Busbar Connecting Type

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High power aluminum water-cooling DC busbar is used to connect the converter and the reactor for the ITER PF converter. The water temperature difference between import and export is less than 20°C, and the temperature rise of the busbar does not exceed 70°C according to the ITER standards. Three DC busbar connection types is designed to resolve soft connection overheat under the rated current. This paper mainly presents the temperature rise of DC busbar connection in different water flow and different steady state current. A temperature simulation of directly weld connection, lamination weld connection and soft connection are investigated by finite element method (FEM). The test is carried out to verify the correctness of simulation. The comparison results of three type's shows that directly weld connection method has a better performance.

### Eligible for student paper award?

Yes

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