

Project description

Verification of a flexible clamp

Sefag Components AG developed a flexible current clamp for connecting power rails for energy transport for a customer. Now, to reduce the test effort and the test costs, FEM simulations should be used to check whether the clamp design met the thermal and mechanical specifications.

I modelled the clamp parametrically and calculated the coupled eddy current, thermal and mechanical fields. Although the clamp is operated with mains frequency, the eddy current effects were not negligible. My simulations showed that the equilibrium temperature at maximum current load and the mechanical strength in the event of a short circuit was within the customer's specification.

Thanks to the parametric model structure, I was able to optimize the geometry of the clamp and thus reduce manufacturing costs.

Objectives and key figures



- ✓ The simulation effort reduced by 30%
- ✓ Geometry optimized with multi-physics simulation
- ✓ Simplified the final test with simulations



October 2016 – March 2017



Budget 50'000 CHF



Cooperation with four employees



Energy and electrical industry

Testimonial

“The collaboration was always solution-oriented and very pleasant. Mr. Müller-Siebert is open and easy to deal with him. The operational readiness was very high.”

Jonathan Hausheer, Project manager – Sefag Components AG

