

Project Information



Subject: Development of a 50 watt PEM fuel cell for portable applications

Applicant: Masterflex AG
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Project duration: 1.3.2002 – 30.04.2004

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Project description:

The Masterflex fuel cell is an all purpose fuel cell. In the first step, it is supposed to be applied in portable applications, e.g. notebooks and printers, in mobile office systems independently of the network. Thus, it offers new perspectives of application that are not provided by traditional batteries. The capacity (750 Wh) of the 50 watt fuel cell system is about 15 times as big as that of a traditional battery and can operate e.g. a notebook up to 35 hours. Due to a modular design the fuel cell can be integrated into many different kinds of applications.

A mobile office system is a carrying system designed for the mobile use of communications technology (e.g. notebooks, printers etc). Usually, these mobile office solutions consist of a notebook and a printer which are integrated in the carrying system and are ready to use. However, those systems run network-independent for a short period of time only. For the time being, the user of the mobile office system has to connect the system to the electric grid to be able to work for longer time periods. In order to be fully grid-independent it is necessary to integrate a power source directly in the mobile office system. The appropriate solution is the fuel cell technology.

The fuel cell system has been developed in cooperation with the Fraunhofer Institute for Solar Energy Systems ISE in Freiburg. The feasibility of the new technology has been proved by the Fraunhofer Institute. Many projects have been conducted which demonstrated the beneficial correlation of capacity, weight and volume.

The focal point of this project is the development of a fuel cell system ready for series production. The system should provide the user with a safe, reliable and convenient mode of operation.



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