

Project Information

Subject: Development of an air supply system for fuel cells in a power range between 0,5 and 100 kW

Applicant: Gebr. Becker GmbH
D-42279 Wuppertal

Project duration: 8.6.2004 – 31.12.2006

Project partner: FEV Motorenteknik GmbH
D-52078 Aachen

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Project description:

Project target is research and development of air supply modules for use in fuel cell systems.

The development is focused on two different power classes:

- 0,5 - 10kW stack power
- 20 - 100 kW stack power

For the lower power range high speed side channel blowers with brushless DC-drives are used.

The drive electronics are completely integrated. This gives a very compact and powerful blower with a wide range of available interfaces.

With 3 different drives a volume flow range between appr. 10 – 120m³/h up to 400 mbar pressure difference is covered. To optimize efficiency it is possible to adapt the unit to the specific point / range of operation.

Power voltage: AC 90 – 264V 50 / 60 Hz or DC 24 / 48V

A humidifier can be adapted to the blower.

For the higher power range radial blowers with frequency controlled AC drives are used.

For the specific volume flows different impellers are available.

Testing of different type and arrangements of bearings are one of the main issues in this part of the project.