

NEWS RELEASE

PR0507E

ALPS Develops Micropumps for Use in Various Portable Devices*Approach to New Energy Market Initiated*

Duesseldorf, Germany, February 01, 2007 – ALPS ELECTRIC EUROPA GmbH today announced the development of micropumps and microvalves for fuel cell systems that are attracting attention as the next-generation energy source.

Fuel cells that produce electricity from hydrogen and oxygen are regarded as a next-generation energy source, and R&D is being conducted in various circles. Their CO₂ emissions are dramatically lower than fossil fuels and other fuels, so they are attracting attention as a new energy market from the environmental protection standpoint.

There are three types of fuel cell applications: automobiles powered by fuel batteries, electricity-generating boilers for household co-generation, and portable devices such as laptop computers and mobile phones. These portable devices tend to consume larger amounts of electricity the more multifunctional and advanced they become. Against this backdrop, one of the major challenges for the portable device industry is to assure a longer-lasting power supply.

ALPS has commenced its approach to the new energy market through the development of pumps and valves, which are auxiliary machines that circulate or control fuel like methanol within the fuel cell system.

ALPS achieved optimal design through structural design technologies such as structure analysis simulation in addition to control technology, which have both been cultivated over many

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years through Mechatronic product development. These features, along with high-precision processing technologies have helped to realize miniaturization of this product. The micropump is 6.0mm in diameter and 24.0mm in length, the microvalve measures 3.5mm in diameter and 10.3mm in length (excluding the nozzle). The products are small but ensure high functionality by incorporating fluid, structure and magnetic field analysis simulations. Development will contribute to enhanced miniaturization, an indispensable prerequisite for portable device fuel cells.

Through the optimal design of diaphragm^{*1} operations, valve configuration to prevent fluid backflow, materials and layout, ALPS achieved the effective control of larger amounts of fluid in a small chassis for its micropump. It employs low-voltage electromagnetic drive systems, which contribute to easy control and fuel cell system engineering. Microvalves also attain high reliability with a small but assured passage blocking structure.

^{*1} Diaphragm: A thin layer in a pump that detects pressure and changes differences in fluid pressure into driving power

Features

Pumps and valves for portable device fuel cells under development

- Micropump
 1. Small, light and high performance
 2. Easy control with auto-aspiration system^{*2} and low-voltage drive system

^{*2} Auto-aspiration system: Fluid rises when pipe is not fully filled with fluid

- Microvalve
 1. Small and lightweight with high blocking pressure. Best suited for blocking gas and fluid flow

Principal Applications

Fuel cells for portable devices such as laptop computers, mobile phones, digital video cameras. In addition to the use as fuel cells there are further industrial or medical electronics applications possible.

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Specifications

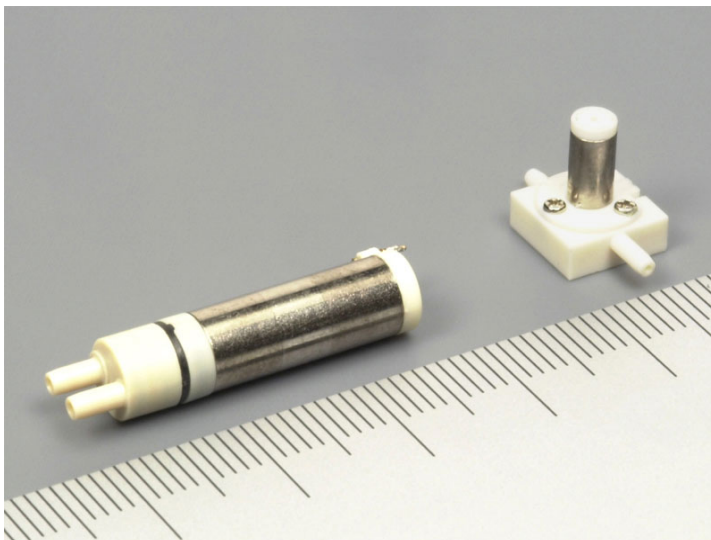
Micro pump

Product name	Micro pump
Dimensions (φ x L)	6.0mm x 24.0mm
Pump system	Electromagnetic driving system
Rated flow	4ml/min(@10Hz/2kPa)
Rated voltage	DC3V

Micro valve

Product name	Micro valve
Dimensions (φ x L) (W x D x H)	3.5mm x 10.3mm (Nozzle: 8.5mm x 8.5mm x 3.0mm)
Valve system	Electromagnetic driving system
Blocking pressure	40kPa
Rated voltage	DC12V

This news release and a press photo are available electronically at <http://www.presseagentur.com/alps/en/>



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ALPS Electric Co., Ltd.

Since its establishment in 1948 ALPS has grown as a comprehensive manufacturer of electronic components. At present ALPS is creating innovative high-value-added products in its main business segments – Components, Magnetic Devices, Communications, Peripheral Products, and Automotive Electronics – which are contributing to the advance of a digital society. ALPS is a global company that carries out its operations with 22 production bases in 9 countries as well as 57 sales bases in 14 countries. Consolidated net sales in the year ended March 31, 2005 amounted to YEN 644 billion.

ALPS ELECTRIC EUROPA GmbH, a subsidiary of ALPS Electric Co., Ltd., was established in 1979. Since 1989, the European Head Office has been located in Düsseldorf, where a team of specialists works in Sales, Marketing, and Product Engineering. The activities of our branch offices in Munich, Paris and Milton Keynes, our sales office in Milan and our European distribution work are co-ordinated from Düsseldorf. ALPS Nordic AB, a 100 percent subsidiary of ALPS ELECTRIC EUROPA GmbH, is based in Sweden and services the Scandinavian market.

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