NEWS RELEASE

PR0407E

ALPS Develops Piezoelectric-type Slim-format Pump

Slim Construction Achieved for Original Piezoelectric Actuator Technology

Duesseldorf, Germany, January 29, 2007 – ALPS ELECTRIC EUROPA GmbH has completed development of a piezoelectric-type pump compatible for all broadcast systems, which offers long operational life as well as high-discharge output.

The audio-visual equipment and personal computers that are now so common in our daily lives are getting smaller, yet their functions are increasing and their performance is improving. This has created the problem of heat generated by the screen-processing IC, the CPU and other components, which determine the upper limit of their functions. Until now, each form of heat has been addressed by heat-conducting parts and cooling fans. However, in terms of ease of construction and operating performance, these methods are lacking and have now reached their limit in tackling the essential issue of cooling. Additional problems are noise generated by fans as well as particles that become trapped inside components.

For these reasons, new liquid-based cooling systems have been receiving a great deal of attention. Liquid cooling systems are a superior method of heat transfer that minimizes the load on the fan, abates the operating noise and reduces the potential for damage caused by foreign particles.

Using a piezoelectric element, ALPS has succeeded in developing a light and slim pump with a low current drain. It is far less susceptible to tilt, and its long and slim channel affords strength in load pressure. Because of these factors, the pump contributes greatly to the creation of liquid cooling systems in

ALPS ELECTRIC EUROPA GmbH
Hansaallee 203
40549 Düsseldorf
Tel. +49-(0) 211-59 77-0
Fax +49-(0) 211-59 77-146
www.alps.de

small and portable devices, where heat dissipation measures are particularly important.

ALPS' Magnetic Devices Division has accumulated considerable expertise in the development and manufacture of all kinds of magnetic heads and in the application of sintering technologies for ferrite materials. This magnetic materials technology was applied in the development of the piezoelectric material for the slim-format pump; then using the green sheet method* 1, we accomplished high-quality volume production of a superior piezoelectric element. In addition, the diaphragm* 2 used in the pump function is a bimorph construction using two layers of piezoelectric elements bonded together, which affords it great displacement value and discharge volume. Furthermore, the original diaphragm and pump construction offers a long operational life of more than 44,000 hours of continuous usage.

* 1 The green sheet method: A method of obtaining the thickness of a form using a raw sheet, known as the green sheet, before ceramics are sintered to it.
* 2 Diaphragm: A thin elasticated membrane (separation barrier) inside the pump, which keeps the fluid separate from the machinery.

Features
Development of the original Piezoelectric-type Slim-format Pump that achieves long operating life a low energy consumption

Principal Applications
Liquid cooling, fuel cell and other solution-sending systems

- Compatible with liquid-cooling, fuel cell and all solution sending systems
- Piezoelectric element enables slim, small and light format with low energy consumption
- Bimorph structure achieves high output volume and power
- Operational life of 44,000 hours of continuous use
- Original structure achieves low vibration and low-noise operation
- Use of Auto-suction function* 3 allows automatic cleaning of air-borne particles from inside of pump
- Increased internal pressure does not greatly affect output volume or performance

* 3 Auto-suction function is enabled when there is insufficient fluid in the pipe.

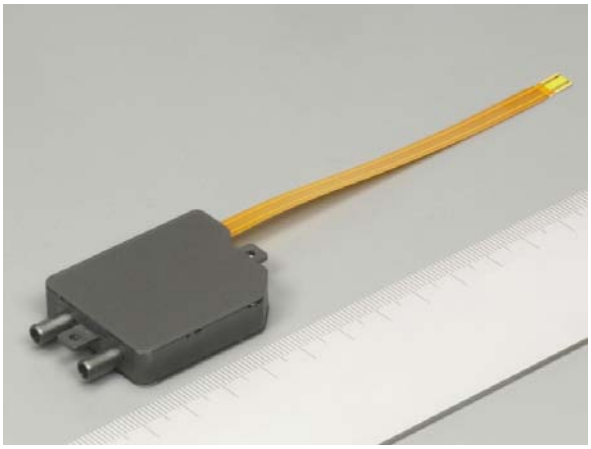
ALPS ELECTRIC EUROPA GmbH
Hansaallee 203
40549 Düsseldorf
Tel. +49-(0) 211-59 77-0
Fax +49-(0) 211-59 77-146
www.alps.de

Specifications

Product name	Piezoelectric-type Slim-format Pump
Dimensions (W x D x H)	34.0mm x 38.0mm x 8.0mm (pump) 35.0mm x 35.0mm x 7.0mm (driver)
Flow volume	250 ml / min (when not loaded)
Drive frequency	50 Hz typ. * 4
Drive voltage	DC5V
Current drain	Less than 1.5W

* 4 Output frequency from driver. Input DC5V only

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



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
Hansaallee 203
40549 Düsseldorf
Tel. +49-(0) 211-59 77-0
Fax +49-(0) 211-59 77-146
www.alps.de

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.

Contact:

ALPS ELECTRIC EUROPA GmbH
Paul Garratt / Sandra Koßmann
Phone.: +49-211-59 77-170 / -171
Fax: +49-211-59 77-146
Email: presse@alps.de
Internet : www.alps-europe.com

PR Agency:

MEXPERTS AG
Kurt Loeffler / Peter Gramenz
Phone.: +49-89-897361-0
Fax: +49-89-87 29 43
Email: kurt.loeffler@mexperts.de
Internet: www.mexperts.de
Press Portal: www.presseagentur.com

ALPS ELECTRIC EUROPA GmbH
Hansaallee 203
40549 Düsseldorf
Tel. +49-(0) 211-59 77-0
Fax +49-(0) 211-59 77-146
www.alps.de