NEWS RELEASE

PR0615E

ALPS Develops and Commences Mass Production of "HSFPAR Series" Force Sensor

Industry's Smallest Size and High Sensitivity Realized with MEMS Technology

Munich, Germany, August 06, 2015 – ALPS has developed the "HSFPAR Series" Force Sensor, ideal for force sensing in input devices and posture control in industrial equipment and robots, using MEMS technology to achieve the industry's smallest size. Mass production is already underway.

Demand for high-precision pen-shaped input devices (stylus pens) has been growing recently with the rising popularity of digital drawing and painting. Stylus pens, or styli, contain force sensors that are used to trace the trajectory of the pen tip, as well as to reproduce different thicknesses in the artwork corresponding to the pressure applied. To enable smoother tone transitions, however, styli require sensors with high resolution, leading to pen shafts that are too thick.

The Internet of Things (IoT) and robot markets have also drawn a lot of attention in recent years and demand for compact, highly sensitive force sensors for applications like load detection on touch or contact, and load balance and grip strength control is expected to rise.

Force sensors today are generally either semiconductor strain gauge or metallic strain gauge types, and both have their issues. Semiconductor strain gauge force sensors offer high precision, but are big. Metallic strain gauge force sensors, on the other

hand, can be made compact, though this comes with diminished sensitivity.

Responding to these issues, Alps Electric has developed and commenced mass production of an exceptionally versatile, high-precision force sensor, the HSFPAR Series. The force sensor was developed by applying to a semiconductor strain gauge original MEMS and packaging technologies built up over the years. Not only does the HSFPAR Series have outstanding compact, low-profile dimensions of 2.00 × 1.60 × 0.66mm, the sensor can detect stress as low as 0.01N, enabling high-precision sensing of, for example, minor variations in pen pressure and load shift in robots.

The HSFPAR Series is also available as a unit type with a FPC (Flexible Printed Circuit) included for easy integration into end products. It is suitable for diverse applications, including such input devices as styli and touch panels, as well as industrial equipment and robots.

Features

Industry-smallest, high-precision force sensor

1. Compact, low-profile dimensions allow integration even into thin end products
2. Detects stress as low as 0.01N
3. Long operating life of more than 1 million cycles
4. Unit type with FPC (Flexible Printed Circuit) also available

Principal Applications

- Stylus pens and various other input devices
- Load balance and grip force detection for robots
- Various industrial equipment

Specifications

Model	HSFPAR Series	
	SMD type	Shock-resistant unit type
Dimensions (W×D×H)	2.00 × 1.60 × 0.66mm	4.00 × 2.70 × 2.06mm
Measurement range	0.01N - 8N	0.01N - 7N
Sensitivity	3.7mV/V/N	3.7mV/V/N
Linearity	<3% FS	<3% FS
Operating life	1 million cycles (@8N)	1 million cycles (@7N)
Supply voltage	1.5 - 3.7V	1.5 - 3.7V
Impact resistance	50N	200N

ALPS Electric Co., Ltd.
ALPS Electric (Tokyo: 6770) is a leading global manufacturer of high-quality electronic components for mobile devices, home electronics, vehicles and industrial equipment. With the philosophy of “Perfecting the Art of Electronics” ALPS Electric supplies over 40,000 different components to about 2,000 companies all over the world. For more information, visit www.ALPS.com.

ALPS ELECTRIC EUROPE GmbH, a subsidiary of ALPS Electric Co., Ltd., was established in 1979. Since 2013 the European Head Office has been located in Munich and as such co-ordinates the Sales, Marketing and Product Engineering activities of our branch offices in Munich, Düsseldorf, Paris, Milton Keynes, Gothenburg as well as our sales office in Milan.

Contact:

ALPS ELECTRIC EUROPE GmbH
Phone.: +49-89-321421-0
Fax: +49-89-321421-205
Email: info@ALPS-europe.com
Internet: www.ALPS.com

PR Agency:

MEXPERTS AG
Kurt Loeffler / Peter Gramenz
Phone.: +49-8143-59744-00
Fax: +49-8143-59744-49
Email: kurt.loeffler@mexperts.de
Internet: www.mexperts.de
Press Portal: www.presseagentur.com

This news release is available electronically at
http://www.presseagentur.com/ALPS/en/