NEWS RELEASE

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AirInput™ Solutions Trialed for Mid-Air Control of Elevators and Lighting in New Building of Recruit Co., Ltd.

For No-Touch Scenarios in Public Spaces While Preventing Disease

Munich, Germany, June 10, 2021 – Alps Alpine Co., Ltd. is trialing use of AirInput™ solutions for elevator control panels and light switches inside a new office building of Recruit Co., Ltd. (President: Yoshimura Kitamura). The mid-air input solutions, employing original high-sensitivity capacitive sensors to allow touchless operation, were jointly installed with Cosmos More Co., Ltd. (CEO: Hisao Edahiro), the company in charge of the facility management project. Knowledge learned from the trial as the solutions are put to actual use will be applied to accelerate AirInput™ commercialization in diverse markets. Our aim is to support society as it transitions to a "New Normal" by responding to demand for no-touch options in public spaces, particularly in light of fears of contracting a disease like COVID-19.

There are many situations where people would prefer to avoid directly touching elevator buttons, toilet flush buttons, train ticket machines or other input devices in public places. After all, who else might have touched them? What if they are not clean? What if their own hands are dirty? This aversion to touching has become even more pronounced of late due to the global COVID-19 pandemic. While public facilities have adopted measures to stop the spread of disease – provision of alcohol-based hand sanitizers, for example – more needs to be done to prevent transmission in public spaces as we transition to a New Normal.

Alps Alpine has been developing mid-air input devices through application of original high-sensitivity capacitive sensors since 2008. At CES 2020, the world's largest electronics trade show, held in Las Vegas in January last year, we presented a mid-air input solution* specifically envisaging a variety of scenes where hygiene

considerations are required, such as medical and care settings, and public transport. We then responded to the spread of COVID-19 by accelerating market research with an eye to quickly commercializing the solution. We also filed an application for the "AirInput" trademark to represent our lineup of products enabling mid-air input through application of high-sensitivity capacitive sensors.

Last summer, Alps Alpine developed a mid-air input demo kit for elevators and put forward a proposal. Recruit praised the solution, recognizing its operability and level of completion. Now our AirInput™ Panel and AirInput™ Switch are being trialed inside Recruit's new building in Kudanshita (Chiyoda-ku, Tokyo), which opened in April this year after renovations to embody the company's ideas for offices of a new generation.

The AirInput™ Panel (Fig. 1) was adopted for light switches inside the building so they could be turned on and off without touching. Bring a finger to within around 3cm from the icon representing the section of the floor you wish to illuminate and a circle indicating the selection appears around the icon. Once the circle does a full revolution, the lights turn on, or off. To prevent mistakes, pulling your finger away before the revolution is complete aborts the action.

Figure 1. AirInput™ Panel

The AirInput™ Switch (Fig. 2) was adopted for elevator control panels. Bring your finger to within around 4cm from the number of the floor you wish to travel to and a soft light will appear around it to show it has been selected. Move your finger even closer, to within 2cm, and the selection is finalized, indicated by a white light that stays on. The light turns off automatically when the floor is reached. The AirInput™ Switch is also installed in waiting areas outside elevators, as up and down arrows, meaning all input actions for riding an elevator can be performed without touching. The project entailed adding non-contact operability to existing elevators that were first installed 30 years ago. In both products, inserting an interval between icon selection and activation based on different finger proximities ensures comfortable, intuitive control even without contact. Naturally, touch operation is also an option.

In addition, the AirInput™ Switch makes use of Alps Alpine's original decorative printing technology to produce a sophisticated lacquer black finish to give the elevator a luxury feel. Materials like wood and metal are not easily shaped into complex forms, but it is possible to realistically recreate their look and feel on a relatively low-cost and easily shaped material such as resin. Alps Alpine's decorative printing technology achieves this with a proprietary printer based on melt transfer printing, whereby color is applied to a thin film around 1µm thick by melting solid ink with heat. Special ink developed in-house is used to create stealth icons that only appear when illuminated from behind, such as a circle that lights up as a finger approaches to make a selection. Because the printer is an on-demand printer, requiring no printing plate, jobs can begin once the printing data is ready. Furthermore, colors are easily changed, enabling speedy and flexible accommodation of customer requirements.
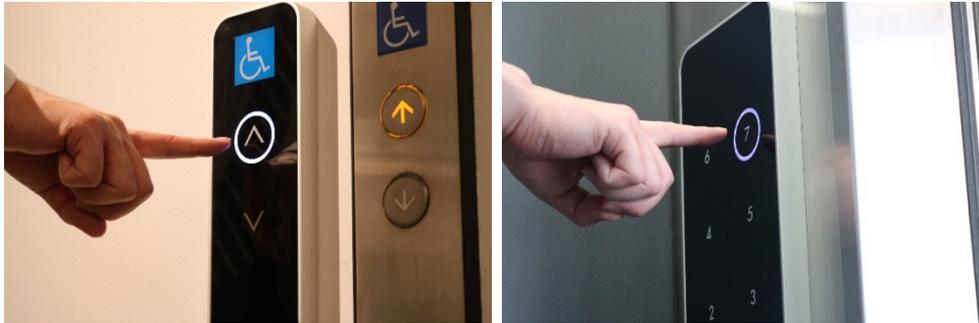Movie: https://youtu.be/GKU9r2ngdQA

Figure 2. AirInput™ Switch

Alps Alpine has advantages in the human-machine interfaces (HMI) domain and applies know-how gained over many years in product development to enhance the mid-air input experience, paying attention to the fine detail, in particular the control icons and how they are displayed, and the aesthetic appearance of parts not associated with control. Through the trial, we will examine issues that arise during actual use, as well as operability from the user's viewpoint, and work to refine AirInput™ with an aim to commercialize solutions during the current fiscal year. Concurrent efforts will be made to market other solutions besides elevator and lighting control applications. By providing users with reliable and comfortable mid-air input solutions, we will aid the transition to a New Normal.

* Press release, May 15, 2020: "Alps Alpine Presents New Touchless Control Panel Proposal with Hygiene Benefits"
https://www.alpsalpine.com/e/news_release/2020/0515_01.html

Alps Alpine Co., Ltd. On January 1, 2019, Alps Electric Co., Ltd. and Alpine Electronics, Inc. integrated their businesses and started out afresh as Alps Alpine Co., Ltd with 42,289 employees. Alps Alpine will steadily bring about synergies by drawing on the two companies' advantages in core devices, system design and software development.
The new company will endeavour to create its own unique value for not only the automotive market, but also mobile devices and consumer electronics, as well as new sectors such as energy, healthcare and industry. For more information please visit www.alpsalpine.com

Alps Alpine Europe GmbH, a subsidiary of Alps Alpine 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 offices in

Dusseldorf, Stuttgart, Wolfsburg, Paris, Milton Keynes, Coventry, Gothenburg, Frolunda and Milan, as well as the production activities of our manufacturing site in Dortmund. Alps Electric Europe GmbH changed its name on 01.04.2020 to Alps Alpine Europe GmbH.

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