

NEWS RELEASE

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**ALPS Supports Reflow Soldering with “EC21C,”
“EC28C” and “EC35CH” Series Ring Type Encoders***Reducing the Workload for Customers*

Munich, Germany, November 17, 2015 – ALPS has included the reflow-compatible “EC21C,” “EC28C” and “EC35CH” series in its lineup of ring type encoders and will start mass producing the models in turn before the end of the year. The products are ideal for use as controls for HVAC and audio systems inside vehicles, as well as major home appliances.

Dial-type devices are often used as controls for HVAC and audio systems inside vehicles and are increasingly fitted with an LCD or other display showing information such as the temperature. To achieve this kind of design, ring type encoders are used for the dial.

Reflow soldering is used a lot in automotive component assembly these days as a way to solder components to circuit boards. The method involves first printing solder paste onto the board then soldering on the component by passing it through a zone of high temperature. The industry has likewise been searching for encoders that suffer minimal heat distortion under high-temperature conditions and are therefore reflow-compatible so they can be soldered at the same time as other components.

Listening to these needs, ALPS has improved heat resistance by making changes to the material used for existing encoder shafts and has included three reflow-compatible models – the EC21C, EC28C and EC35CH Series – to its product lineup. The EC21C Series is in fact the industry’s first reflow-compatible encoder with dimensions in the 22mm range. These three new series com-

plementing existing encoder varieties improve design freedom for customers and help to reduce the assembly workload.

A special cap accessory compatible with pick-up nozzles used for mounting is available with these series. Furthermore, original mechanical design and precision processing technologies were applied to minimize shaft rattle and achieve a premium operating feel.

Features

Reflow-compatible ring type encoders able to be mounted at the same time as other components

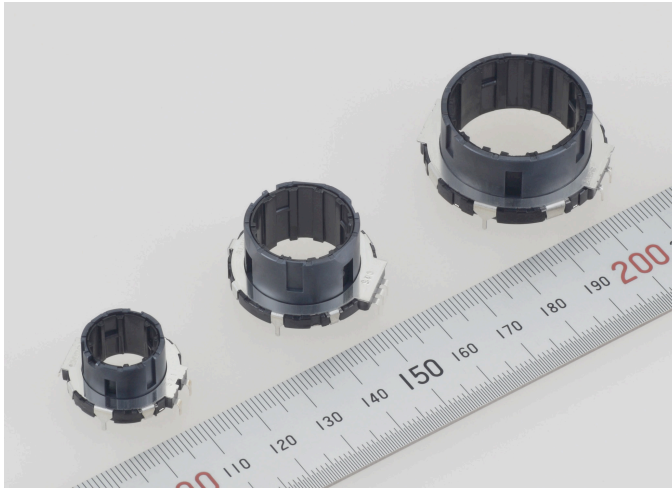
- Compatible with reflow soldering, achieved by improving heat resistance
- Excellent operating feel during rotation and smooth click sensation
- Also available with suction cap for mounting
- Improves end product design flexibility

Principal Applications

- Controls for car audio, car HVAC or other systems
- Controls for major home appliances such as microwaves and washing machines

Specifications

Model	EC21C	EC28C	EC35CH
Dimensions (W×D×H; ring inside diameter)	21.6 × 22 × 12mm; 10.8mm	28 × 29.5 × 15mm; 17mm	35.2 × 36 × 14.9mm; 23.8mm
Rating (max.)	10mA 5V DC	10mA 5V DC	10mA 5V DC
Output signal	Incremental (2-phase)	Incremental (2-phase)	Incremental (3-phase)
No. of pulses/detents	15 / 30	15 / 30	6 / 18
Detent torque	Initial: 17±8 mN·m After reflow: 12(+7,-4) mN·m	Initial: 30±15 mN·m After reflow: 20±10 mN·m	Initial: 22±11 mN·m After reflow: 18±7 mN·m
Operating life	50,000 cycles	50,000 cycles	50,000 cycles



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.

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