

## Designed for ISO 13849 safety-related applications

**The 3K keypads and the 3J human machine interface devices by Grayhill (USA) are entirely re-engineered to meet functional safety requirements. Both product lines feature CAN connectivity.**

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The shown products feature shock resistance and a long mechanical lifetime according to the company (Photo: Grayhill)

These CAN-connectable devices have been entirely re-engineered to snap in to the front of any control panels and require no tools for installation. The CAN interfaces are already CAN FD tolerant. The products are particularly designed for ISO 13849 safety-rated vehicles and maintains features from the first generation such as shock resistance. They support low-current sleep mode, which requires less than 1,5 mA. The wake-up is possible by means of bus messages, button press, or an input pin signal. There are various custom options for backlight and indicator colors.

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The J3 HMI module integrates a rotary encoder (Photo: Grayhill)

The 3K keypads by Grayhill, a privately held firm, come with up to three dimmable LED indicators per key. The LED indicators are integrated on key ridges for a wider viewing angle. The self-diagnostics include supply-voltage monitoring and button-short detection.

The J3 multi-functional control unit for intuitive operation comes with rotary encoder (16 positions), digital joystick (20 positions), or proportional joystick (with optional momentary rotation) functionality. All models provide a push-button feature. The CAN interface available at a 4-pin connector supports J1939 messages and soon also CANopen. According to the supplier, the products are made for more than 500 000 operations.

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