



Code Mercenaries

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Pressrelease

Chip brings rotary encoders to the USB

The SpinWarrior chip family offers a simple way to connect incremental rotary encoders to the USB. SpinWarrior comes in three variants handling three, four, or six rotary encoders. Movement data is reported as steps since last report by the four and six axis models and as an absolute value that can be reset by an index pulse on the three axis model.

Common Characteristics

All three SpinWarrior chips are low speed USB devices using the HID class. This keeps the requirements on the electrical environment simple and makes installing special drivers unnecessary since system drivers can handle the chips. Sample software for Linux and Windows is available for download from our website.

The required external components are just one capacitor and one resistor. When supplying the power to the encoders via USB an additional transistor or other power switch is required to disable the encoders in suspend mode.

Chips are available in DIL24 and SOIC24 packages.



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SpinWarrior24A3

SpinWarrior24A3 supports up to three rotary encoders with index pulse. The incremental pulses are added and reported as a 16 bit absolute value. The index pulse does reset the position to zero. This allows SpinWarrior24A3 to be used for distance, angle, and rotation speed measurement. When only one encoder is used a maximum frequency of 5kHz is possible, with all three encoders active the maximum frequency is 3.9kHz.

6 inputs are available for general purpose digital signals.

SpinWarrior24R4

Up to four encoders are supported by SpinWarrior24R4. Each report transmitted by SpinWarrior24R4 contains the number of impulses since the last report, indicating the relative movement. Encoder frequencies up to 3.5kHz are possible. In applications that can afford to lose some impulses (i.e. a jog shuttle or other input device) significantly higher frequencies may be used. Additionally 7 debounced inputs are available to connect switches or other digital signals.

SpinWarrior24R6

Up to six encoders are supported by SpinWarrior24R6. Each report transmitted by SpinWarrior24R6 contains the number of impulses since the last report, indicating the relative movement. Encoder frequencies up to 2.5kHz are possible. In applications that can afford to lose some impulses (i.e. a jog shuttle or other input device) significantly higher frequencies may be used. Additionally 3 debounced inputs are available to connect switches or other digital signals.



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About us and our products

Code Mercenaries is a supplier for the industrial input device and peripheral market since 1998. The keyboard controller family "KeyWarrior", combined keyboard and mouse controller family "KeyWarrior Combo", and mouse controller family "MouseWarrior" serve as basis for a significant number of the European industrial input device manufacturers. During the last few years we also saw a significant number of design wins in North America.

A small but vital customer base are the manufacturers of products for the disability market and other speciality input devices.

The joystick controller family "JoyWarrior" serves a broad range of customers from industrial machine/vision control, professional and semiprofessional simulator control, to hobby and model building. A good option for front panel design is the joystick/mouse hybrid controller MW24J8 which is switch selectable to work as a mouse or joystick allowing cursor control or data input. Applications for the IO-Warrior are very diverse. Basically only the number of pins and the data rate put limits on the use of IO-Warrior. It is used in laboratory setups, test equipment as well as in hobby projects or full scale device production either as the core of a device or "just" the interface to USB. IO-Warrior chips control robots and telescopes, do quality control on production lines, take measurements in labs, control switches and displays in front panels or simulator cockpits, or work as the USB interface in many kinds of products.

Our philosophy is to provide complete solutions that allow our customers to concentrate on their own strength in developing their end products. The necessary know how for controlling interfaces like the USB or PS/2 is encapsulated in our chips so that the device manufacturer does not need to care about these details but rather can concentrate on what they can do best. Like a manufacturer does not need to care about details of USB but can fully devote their engineering to creating rugged and reliable keyboards.