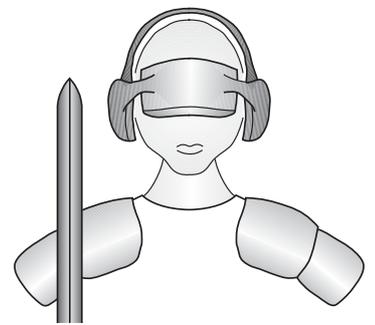


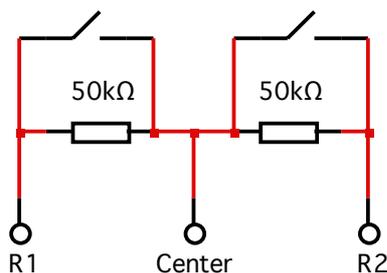
AN2: Connecting switches to analog inputs

Applicable for JoyWarrior



Code Mercenaries

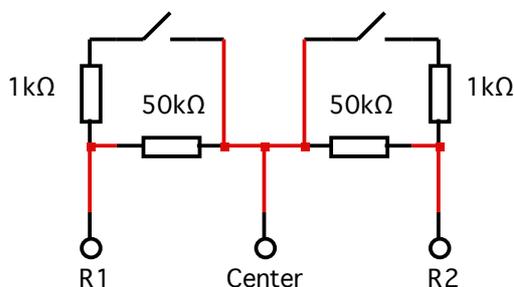
For some applications it may be desirable to have an axis that is not operated by a potentiometer but just by two switches indicating a direction. The following circuit shows how to build a circuit that can be used instead of a pot in such situations:



In default state the two 50k resistors produce a neutral center position for the axis. Closing either of the switches will produce a maximum or minimum value for the axis. Closing both switches at the same time should not be done.

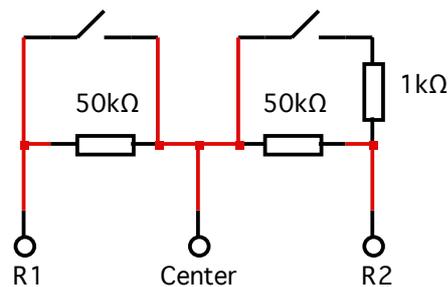
For use with the JW24A8-x chips the circuit is sufficient.

If you are using a JW20A8-x or JW20A10-x it is advisable to add resistors in line with the switches to avoid a short circuit in case both switches are closed at the same time:

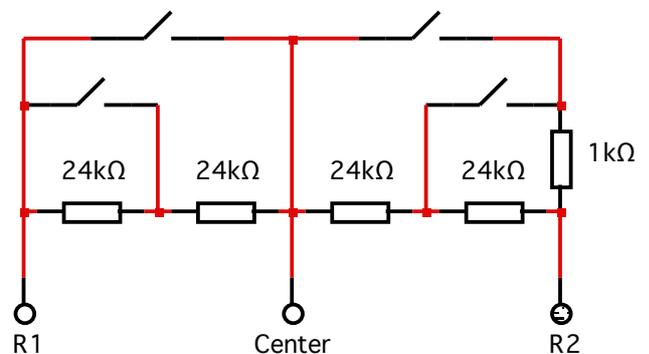


The series resistors will prevent the axis from reaching the absolute maximum or minimum values, but they prevent your circuit from getting fried.

Putting in just one series resistor will have the same protection function and has the rather negligible side effect of a slightly asymmetric axis:



Using the same basic principle it is possible to connect more than two switches to one analog input to generate multiple discrete positions on the axis:



This above circuit allows four discrete axis values in addition to center. The method is extendable to more switches, however the tolerance of the resistors and the resolution of the JoyWarrior can put restrictions on the number of stages you can successfully detect (at some point you should consider to use a potentiometer).