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Flex Sensor with an ADC Port Tutorial

Here is a companion tutorial to go with the ADC tutorial. The ADC ports on the EZ-b v4 can host a number of different kinds of sensors that run on 3.3 volts. There are some sensors however that need a helping hand to work and the v4's analog ports, and flex sensors are one such sensor.
In this tutorial, I will go through the steps for how to get a flex sensor up and running on an ADC port.

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Parts Needed

It's a pretty straight forward process and only requires a few parts, which are...
A 1x Flex/Bend Sensor,
One 10 Kohm pull up resistor,
A soldering iron and some solder (preferably lead free solder to keep you healthy),
One servo extension wire,
A pair of wire cutters/strippers,
And an EZ-B v4 with power supply and EZ-Builder running on your computer.
OPTIONAL:
You can use a solder-less breadboard or make your own circuit board.
The following steps will now guide you through the process.

Step 1

Using a servo extension cable, snip off the male connector and strip the white and red wires. Then tin the ends with solder.

In the middle of the White and black wires, strip back the outer casing to bare the wire, and tin with some solder.

Step 2

Solder a 10 Kohm pull up resistor to the tinned White and black wires mentioned in step #2.

Step 3

Carefully and quickly (as has been mentioned in above posts), solder the White and red wires to the sensor connections.

Step 4

Add some heat shrink to insulate the solder joins.

Step 5

Connect the servo wire plug to an ADC port (we will use ADC port "0" for this tutorial), with the wires matching the pins (white to white, and black to black).
In the next step, we will go through the process of getting readings from the flex sensor.

Step 6

Now you will need your computer on with EZ-Builder running, and your EZ-B powered on and connected to EZ-Builder.
In the EZ-Builder menu ribbon, click on **"Project"** then click on **"Add Controls"**.

Step 7

Now click on **"ADC"** then click on **"ADC Value"** to add this control to you EZ-Builder project.

Step 8

On the ADC Value control, click on the configuration menu icon (little gear icon), then click on the **"Port"** drop down menu, then select the ADC port number the sensor is connected to. In this example, we will be using "Port 0"). Once you have selected the port, Click **"Save"**.

Final Step

You should now see a static numeric reading . To test the sensor, gently start to bend the flex sensor strip. You should now see the numeric readings change. The further the sensor is bent, the lower this value will drop (as seen in video below).
A similar type of sensor, are Preasure sensors and can be connected in a similar way the the flex sensors outlined in this tutorial.
I hope you found this tutorial helpful, and as always, if you have any questions, then please feel free to ask, and either myself or someone else from the EZ-Robot community will be happy to help.
Happy building.
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