

Name:

Date:

Class:

Activity Part 1 Worksheet: Force Sensitive Resistors

Equipment Needed Per Group:

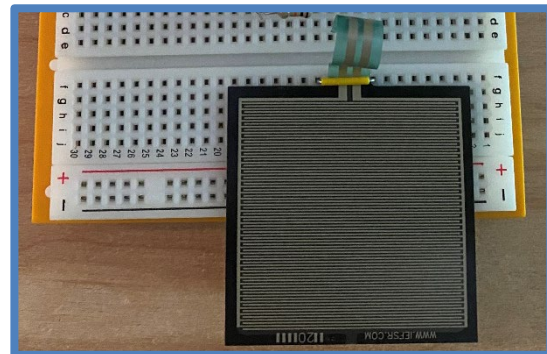
- One force-sensitive resistor (FSR)
- One solderless breadboard
- Two jumper wires
- One multi-meter capable of monitoring resistance

Objective:

Determine the relationship between physical pressure and resistance. Is it linear? Is it proportional? Inversely proportional?

Instructions:

1. Insert the two pins of the FSR into two different rails of a breadboard. Note: Since an FSR behaves like a variable resistor, there is no polarity in the connection.
2. Set your multimeter to Resistance. Use AUTO if that's an option because the resistance is highly variable and you may need to change the scale for different pressures.
3. Attach jumper wires between the breadboard and the multimeter leads. If you have alligator clip leads, you can skip over the breadboard and attach directly to the FSR. In that case, you will need one person to hold the leads while another presses on the FSR.



Measuring resistance with a multimeter and alligator clips



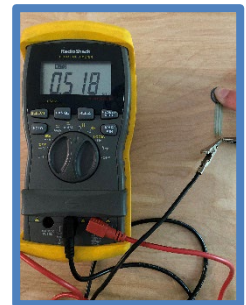
Clipping to FSR



Light Touch



Medium Touch



Hard Press

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4. If the built-in FSR leads are too short to lay the sensor flat as shown in the picture, use a jumper wire to hold the sensor in place on the breadboard. Make sure to not jumper together the two FSR connectors.
5. Fill in the table using your measured values, not the values shown in the photos.

Pressure versus resistance data.	
Physical Pressure Applied to FSR	Resistance Measured (include units)
Light Touch	
Medium Touch	
Hard Press	

6. Answer the questions:
 - a. Were you expecting the resistance to increase or decrease as you increased pressure on the FSR?
 - b. What was the observed relationship between physical pressure and resistance across the FSR?
 - c. Is there a way to determine if the relationship between physical pressure and resistance across an FSR in a linear function from your above information? Why or why not?