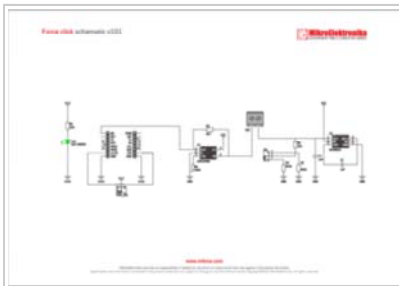


## Force click

From MikroElektronika Documentation

**Force click** is a mikroBUS™ add-on board with circuitry for implementing Interlink Electronics' Force Sensing Resistors into your projects (with a single zone force sensing resistor included with the click). The Force Sensing Resistor is a thin sensor made of two membranes that are separated by a spacer around the edges. When pressed, the gap between two membranes gets closed. This shorts the two membranes together, with a resistance that is proportional to applied force. The outputted analog voltage is thus a measure of force applied. The force sensitivity range is from about 0.2N to 20N (although it depends on the implementation). Force click communicates with the target MCU through the mikroBUS™ AN pin. It is designed to use either a 3.3V or 5V power supply.

### Features and usage notes



Schematic also available in PDF ([http://cdn-docs.mikroe.com/images/6/65/Force\\_click\\_schematic](http://cdn-docs.mikroe.com/images/6/65/Force_click_schematic))

Force click is shipped with a Force Sensitive Resistor you can use right away. The sensor, however, is not permanently affixed. It's connected to the click through screw terminals. This allows you to swap the existing sensor with different models. Interlink Electronic's offer Force Sensitive Resistors in different packages. Interlink even offers to create custom sensors in different shapes, sizes, with graphic overlays and from different materials, depending on customer's needs.

Force click



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<b>IC/Module</b>	Interlink Electronics FSR® Force Sensing Resistor® ( <a href="http://www.interlinkelectronics.com/datasheets/Datasheet_FSR.pdf">http://www.interlinkelectronics.com/datasheets/Datasheet_FSR.pdf</a> )
<b>Interface</b>	AN
<b>Power supply</b>	3.3V, 5V
<b>Website</b>	<a href="http://www.mikroe.com/click/force">www.mikroe.com/click/force</a> ( <a href="http://www.mikroe.com/click/force">http://www.mikroe.com/click/force</a> )

The Force Resistive Sensor has a declared value range from ~0.2 to 20N but the achieved accuracy depends on the implementation.

For best implementation results, adhere to the FSR integration guide document. Page 29 lists an assortment of do's and don't's.

### Programming

The following code snippet reads voltage on the analogue pin and displays the result on LCD.

```

1 adc_rd = ADC_Get_Sample(2);
2 Delay_ms(10);
3
4 if(adc_rd > 0)
5 {
6     adc_rd = ((double)adc_rd * Vadc_33);
7
8     FloatToStr(adc_rd, &txt);
9     txt[5] = 0;
10
11     Lcd_Out(2,8,txt);
12     Delay_ms(200);
13 }

```

Code examples that demonstrate the usage of Force click with MikroElektronika hardware, written for mikroC, mikroBasic and mikroPascal for ARM, AVR, dsPIC, FT90x, PIC and PIC32 are available on Libstock (<http://libstock.mikroe.com/projects/view/1863/force-click>).

### Resources

- FSR® 400 Series Data Sheet ([http://www.interlinkelectronics.com/datasheets/Datasheet\\_FSR.pdf](http://www.interlinkelectronics.com/datasheets/Datasheet_FSR.pdf))
- Force Sensing Resistors integration guide ([http://www.interlinkelectronics.com/integration\\_guides/FSR400Series\\_IG.zip](http://www.interlinkelectronics.com/integration_guides/FSR400Series_IG.zip))
- Force Sensing Resistor CAD Model ([http://www.interlinkelectronics.com/cad\\_models/FSR400Short\\_CM.zip](http://www.interlinkelectronics.com/cad_models/FSR400Short_CM.zip))
- Force click code example on Libstock (<http://libstock.mikroe.com/>)

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