


HOME

PRODUCT CATEGORIES

FLEX / FORCE

FLEXIFORCE PRESSURE SENSOR - 25lbs (1" AREA)

(1)



FlexiForce Pressure Sensor - 25lbs (1" area)

SEN-11207 ROHS


DESCRIPTION


DOCUMENTS


This is a **piezoresistive** force sensor from Tekscan. The harder you press, the lower the sensor's resistance. Pressing hard, the resistance changes from infinite to ~50k. The sensor itself is thin and flexible, but the resistance does not change while being flexed. Resistance changes only when pressure is applied to the round area at the end of the sensor. Used as a presence sensor (someone standing), weight sensor, pressure sensor (impact testing), etc.


The overall length is about 2.25". The sensor comes with a 0.1" spaced, reinforced, breadboard friendly connector.

This sensor ranges from 0 to 25lbs of pressure.













Images are CC BY 2.0




FlexiForce Pressure Sensor - 25lbs (1" area) Product Help and Resources

SKILLS NEEDED

Core Skill: Electrical Prototyping

If it requires power, you need to know how much, what all the pins do, and how to hook it up. You may need to reference datasheets, schematics, and know the ins and outs of electronics.




Skill Level: Noob - You don't need to reference a datasheet, but you will need to know basic power requirements.
See all skill levels

COMMENTS 17

REVIEWS 0

Customer Comments

Log in or register to post comments.


- 

Member #671957 / about 2 years ago / ★ 1


I want to detect a difference in pressure of about 15 grams to 50 grams. Would this sensor work?

To give more details: I will have a block that weights about 300g on top of this sensor (all the time), so that is the baseline weigh. THEN, on top of that block, I will add subjects that weights between 15g to 50g. Would this sensor detect that difference in weight?

I do NOT need it to be precise. I just need a YES/NO answer, to whether the extra weight is present or not.


Thanks
- 

Member #758490 / about 2 years ago / ★ 1


I want to place 3 of them in a "triangle" so I can increase the measurement surface, or is there a sensor that has a larger surface area ? I need to measure up to ounce(grams) pounds, is there a way to wire them, series ? Parallel ?
- 

tbotary / about 6 years ago / ★ 2

This has a sensor area of about 1/4 square inch (the "one inch area" is clarified as diameter in the data sheet), making the "weight" measured by the pressure sensor (what a weird way to spec) close to two pounds per fathom of water. So the "25 pound" rating can measure up to the pressure of a little more than 70' of water.


Which raises the obvious question: is the sensor end of this waterproof? The datasheet gives no insight on this, but it is pretty clear from the picture that the wire end is not unless additional treatment is applied.
- 

Member #667917 / about 3 years ago / ★ 1


I wired it and got it to work with the code, but I'm having trouble balancing loads on it to take their measurements. Any ideas? I have access to a 3D printer, so I was thinking of printing a platform, but I wanted to do some research to see if anyone has had a similar problem.
- 

Charles7328 / about 3 years ago / ★ 1


When I use this sensor with Arduino as in the Quickstart Guide (put the sensor and a 1M ohm resistor in series as voltage divider), I saw a periodic waveform on my Arduino Serial Monitor when the sensor is loading with constant pressure or no pressure. I tried this with both sensors I bought and saw same problem. The amplitude of the waveform is about maybe 0.1, 0.2 V and the frequency is about 0.2-0.3 Hz, but it is still not ideal for my application.

Does anyone know what happened and why?
- 

Member #575592 / about 4 years ago / ★ 1


Is it possible to out the pressure sensor to diameter with 20mm only? will it spoiled the pressure sensor? thank you.
- 

AgliaJedi / about 4 years ago / ★ 1


Why are these so much more expensive than the FSRs?
- 

badground / about 4 years ago / ★ 1


I need to connect this sensor to a PCB using a receptacle-connector. I didn't see spec for the flat pin dimension from the manufacture, but I measured them to be ~0.1" (2.54mm) apart.

Does anyone know of a 2-position flat pin receptacle for this sensor? (through-hole)
- 


Member #418670 / about 5 years ago / ★ 1

BUYER BEWARE, The description says "The sensor itself is thin and flexible, but the resistance does not change while being flexed." However, when flexed the resistance changes by a very large amount.
- 


Micko / about 5 years ago / ★ 1

I had a look at Bldc Tutorial & your Quickstart Guide, you guys are using a positive supply to the sensor but the manufacture recommend a different setup using a negative supply with a inverting op-amp. Have you tested if the positive supply effects the accuracy of the sensor?
- 


MikeGustin / about 5 years ago / ★ 1

The sensor is a variable resistor, and there are a number of ways to measure resistance. We like using it in a voltage divider because of the simplicity of the circuit. The advantage of an op-amp design is that it buffers the voltage output for high impedance. Both techniques have their place, use whichever one is appropriate for your application.
- 


Member #342515 / about 3 years ago / ★ 1

More importantly, the op-amp design provides a linear output. The voltage divider output is very non-linear.
- 


Member #393374 / about 5 years ago / ★ 1

How long will it take to ship the item to Malaysia? And this is a Strain gauge right?
- 


Member #338917 / about 5 years ago / ★ 1

When I connect two of these to the arduino, one on pin A0 and the other on pin A1, if I press on one sensor, the second sensor's resistance changes also. How do I wire these up so that each sensor registers it's own reading independent of the other? I currently have them wired according to the examples above.
- 

Member #388071 / about 5 years ago / ★ 1

Have you tried to filter de inputs?? Use electrolytic capacitors between pins A0, A1 and GND
- 








SeanReynoldsCS / about 6 years ago / ★ 1

Will this sensor register a small pressure size, say from the end of a ball point pen? Or will this sensor only register large distributed forces?
- 

Tom_K / about 6 years ago / ★ 1

The sensor will register pressure as long as it is inside the sensing area (in this case, the gray circular end). If you are only looking to sense pressure from something as small as a pin, we do have other force resisters with smaller sensing areas-check the related products below.

START SOMETHING



SUBSCRIBE TO NEWSLETTER

SUBSCRIBE TO NEWSLETTER

In 2003, CU student Nate Seidle blew a power supply in his dorm room and, in lieu of a way to order easy replacements, decided to start his own company. Since then, SparkFun has been committed to sustainably helping our world achieve electronics literacy from our headquarters in Boulder, Colorado.

No matter your vision, SparkFun's products and resources are designed to make the world of electronics more accessible. In addition to over 2,000 open source components and widgets, SparkFun offers curriculum, training and online tutorials designed to help demystify the wonderful world of embedded electronics. We're here to help you start something.

About Us

About SparkFun

SparkFun Education

Feeds

Jobs

Contact

Help

Customer Service

Shipping

Return Policy

FAQ

Chat With Us

Programs

Become a Community Partner

Community Stories

Custom Kit Requests

Tell Us About Your Project

Sell Your Widget on SparkFun

Become a SparkFun Distributor

Large Volume Sales

Community

Forum

SparkFun IRC Channel

Tell the SparkFun Quiz

SparkFun Kickstarter Projects


Distributors

What's on your mind?

For which department?

General

Please include your email address if you'd like us to respond to a specific question.



email address

SUBMIT

Candela / Rick Mann / Terms of Candela / Donors' Dilemma