

FlexiForce[™]

Standard Model A201



The FlexiForce A201 is our standard sensor and meets the requirements of most customers. The A201 is a thin and flexible piezoresistive force sensor that is available off-the-shelf in a variety of lengths for easy proof of concept. These ultra-thin sensors are ideal for non-intrusive force and pressure measurement in a variety of applications. The A201 can be used with our test & measurement, prototyping, and embedding electronics, including the OEM Development Kit, FlexiForce Quickstart Board, and the ELF[™] System*. You can also use your own electronics, or multimeter.

BENEFITS

- Thin and flexible
- Easy to use
- Convenient and affordable

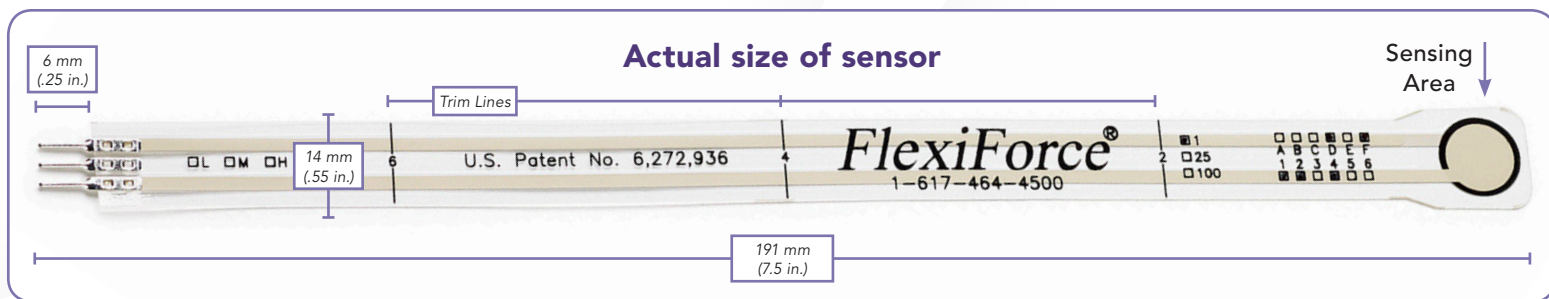
PHYSICAL PROPERTIES

Thickness	0.203 mm (0.008 in.)
Length	191 mm (7.5 in.)** (optional trimmed lengths: 152 mm (6 in.), 102 mm (4 in.), 51 mm (2 in.))
Width	14 mm (0.55 in.)
Sensing Area	9.53 mm (0.375 in.) diameter
Connector	3-pin Male Square Pin (center pin is inactive)
Substrate	Polyester
Pin Spacing	2.54 mm (0.1 in.)

✓ **ROHS COMPLIANT**

* Sensor will require an adapter/extender to connect to the ELF System. Contact your Tekscan representative for assistance.

** Length does not include pins, please add approximately 6 mm (0.25 in.) for pin length for a total length of approximately 197 mm (7.75 in.).

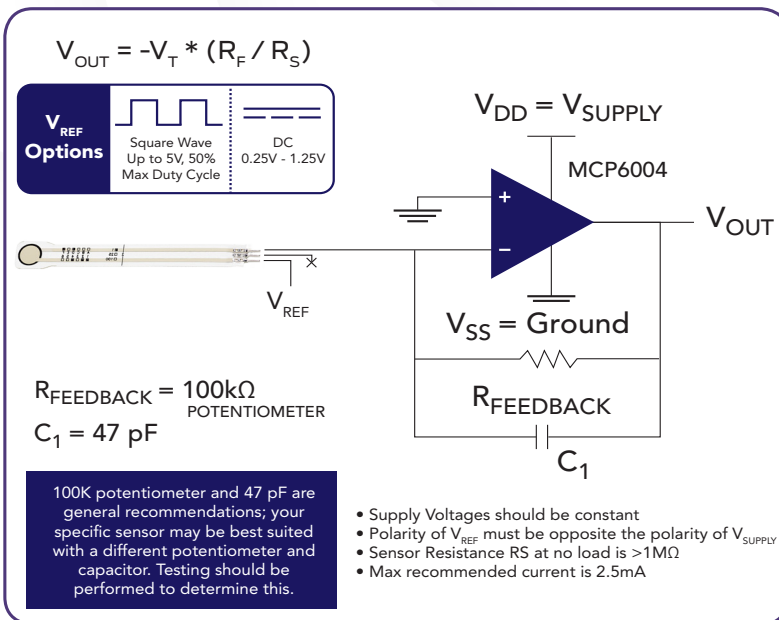


STANDARD FORCE RANGES (as tested with circuit shown)

4.4 N (0 - 1 lb)
111 N (0 - 25 lb)
445 N (0 - 100 lb)

In order to measure forces above 445 N (100 lb) and up to 4,448 N (1,000 lb), apply a lower drive voltage (-0.5 V, -0.25 V, etc.) and reduce the resistance of the feedback resistor (1kΩ min.) Conversely, the sensitivity can be increased for measurement of lower forces by increasing the drive voltage or resistance of the feedback resistor.

Recommended Circuit



Typical Performance		Evaluation Conditions
Linearity (Error)	$< \pm 3\%$ of full scale	Line drawn from 0 to 50% load
Repeatability (CoV)	$< \pm 2.5\%$	Conditioned sensor, 80% of full force applied
Hysteresis	$< 4.5\%$ of full scale	Conditioned sensor, 80% of full force applied
Drift	$< 5\%$ per logarithmic time scale	Constant load of 111 N (25 lb)
Response Time	$< 5\mu\text{sec}$	Impact load, output recorded on oscilloscope
Operating Temperature	$-40^\circ\text{C} - 60^\circ\text{C}$ ($-40^\circ\text{F} - 140^\circ\text{F}$)	Time required for the sensor to respond to an input force

- Force reading change per degree of temperature change = $0.36\%/^\circ\text{C}$ ($\pm 0.2\%/^\circ\text{F}$)



ISO 9001 & 13485

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