

# 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. This sensor is designed to use with 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 (ex: Mylar)		
Pin Spacing	2.54 mm (0.1 in.)		
VROHS COMPLIANT			

\* Length does not include pins, please add approximately 6mm (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 below)

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

### In order to measure forces above 100 lb (up

**to 1000 lb**), apply a lower drive voltage (-0.5 V, -0.10 V, etc.) and reduce the resistance of the feedback resistor (1k $\Omega$  min.) Conversely, the sensitivity can be increased for measurement of lower forces by increasing the drive voltage or resistance of the feedback resistor.

# $V_{OUT} = -V_{T} * (R_{F}/R_{S})$ FlexiForce $V_{OUT} = -V_{T} * (R_{F}/R_{S})$ $V_{T} + V_{T} + SV$ $V_{T} + SV$ $W_{T} + SV$ $W_{$

**Recommended Circuit** 

	Typical Performance	Evaluation Conditions
Linearity (Error)	< ±3%	Line drawn from 0 to 50% load
Repeatability	$<\pm2.5\%$ of full scale	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	< 5µsec	Impact load, output recorded on oscilloscope
Operating Temperature	-40°C - 60°C (-40°F - 140°F)	Time required for the sensor to respond to an input force

• Force reading change per degree of temperature change = 0.36%/°C (±0.2%/°F)



ISO 9001 & 13485

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