

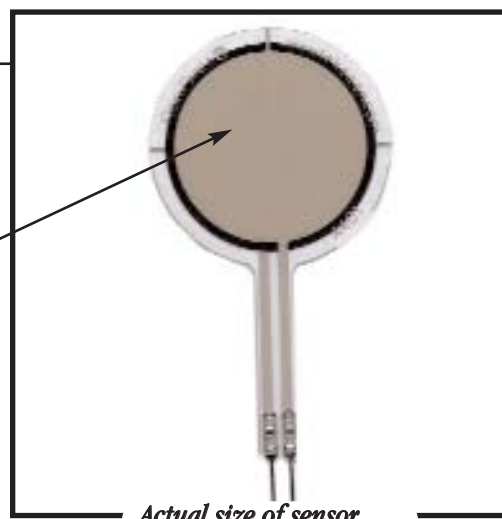
# FlexiForce®

## Standard Force & Load Sensors Model # A401

### Physical Properties

Thickness	0.208 mm (0.008 in.)
Length	56.8 mm (2.24 in.)
Width	31.8 mm (1.25 in.)
Sensing Area	25.4 mm (1 in.) diameter
Connector	2-pin Male Square Pin
Substrate	Polyester (ex: Mylar)
Pin Spacing	2.54 mm (0.1 in.)

Sensing area



Actual size of sensor

### Standard Force Ranges (as tested with circuit shown below)

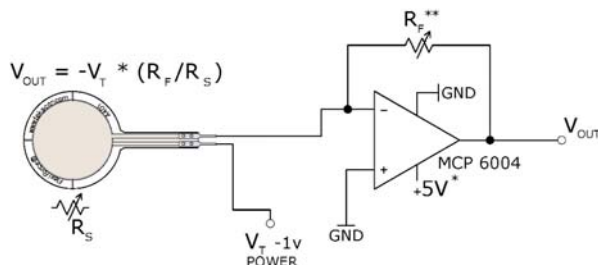
#### Force Range:

0 - 25 lb. (110 N)

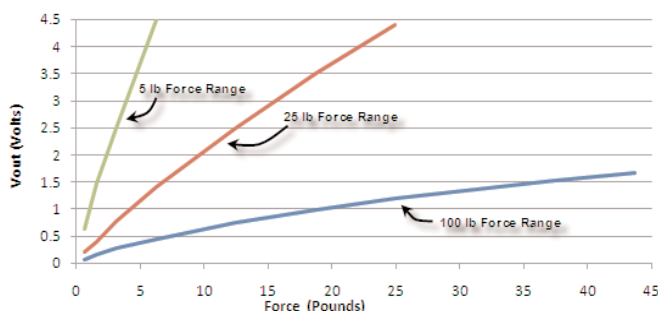
#### Force Range Adjustments

Measurement ranges of 0-1 lb and 0-7000 lb are achievable with the A401 sensor by utilizing the recommended circuitry. The force range can be extended by reducing the drive voltage,  $V_T$ , or the resistance value of the feedback resistor,  $R_F$ . Conversely, the sensitivity can be increased for measurement of lower forces by increasing  $V_T$  or  $R_F$ .

#### Recommended Circuit



- \* Supply Voltages should be constant
- \*\* Reference Resistance  $R_F$  is 1kΩ to 100kΩ
- Sensor Resistance  $R_S$  at no load is >5MΩ
- Max recommended current is 2.5mA



### Typical Performance

Linearity (Error)	< ±3%
Repeatability	< ±2.5% of full scale
Hysteresis	< 4.5 % of full scale
Drift	< 5% per logarithmic time scale
Response Time	< 5 μsec

Operating Temperature 15°F - 140°F (-9°C - 60°C)\*

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

\*For loads less than 10 lbs., the operating temperature can be increased to 165°F (74°C)

### Evaluation Conditions

- Line drawn from 0 to 50% load
- Conditioned sensor, 80% of full force applied
- Conditioned sensor, 80% of full force applied
- Constant load of 25 lb (111 N)
- Impact load, output recorded on oscilloscope
- Time required for the sensor to respond to an input force