

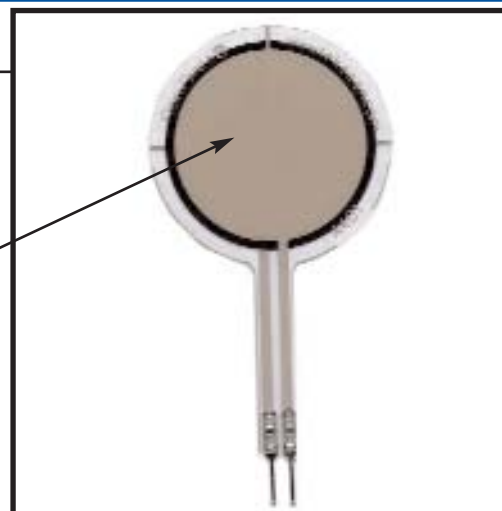
FlexiForce®

A401 Standard Force & Load Sensors

Physical Properties

Thickness	0.008" (0.208 mm)
Length	2.24" (56.8 mm)
Width	1.25" (31.8 mm)
Sensing Area	1.0" diameter (25.4 mm)
Connector	2-pin Male Square Pin
Substrate	Polyester (ex: Mylar)

Sensing area

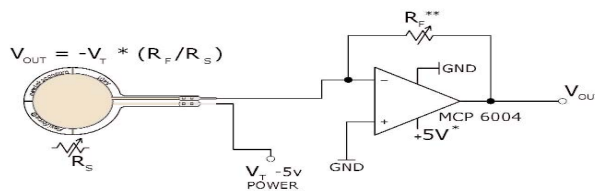


Actual size of sensor

Standard Force Ranges (as tested with circuit shown below)

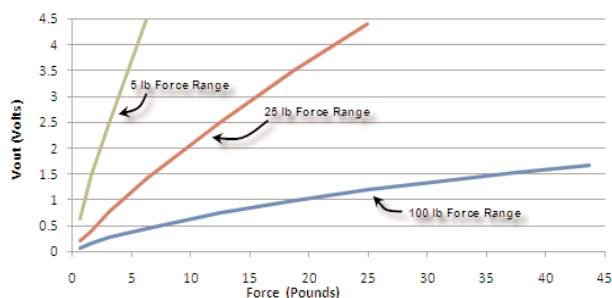
0 - 25 lb. (110 N)

Recommended Circuit



- * Supply Voltages should be constant
- ** Reference Resistance R_F is 1k Ω to 100k Ω
- Sensor Resistance R_S at no load is >5M Ω
- Max recommended current is 2.5mA

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 .



Typical Performance

Linearity (Error)	< $\pm 3\%$
Repeatability	< $\pm 2.5\%$ of full scale
Hysteresis	< 4.5 % of full scale
Drift	< 5% per logarithmic time scale
Response Time	< 5 μ sec
Operating Temperature	15°F - 140°F (-9°C - 60°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

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

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