The FlexiForce A301 is our smallest standard piezoresistive force sensor. The A301 design is optimized for high volume manufacturing and is ideal for embedding into products and applications. This sensor is available in low and high quantities off-the-shelf, ideal for an easy proof of concept. The A301 sensor is designed to use with your own electronics or multimeter.

**BENEFITS**
- Small size is ideal for prototyping and integration
- Thin and flexible
- Easy to use

**PHYSICAL PROPERTIES**
- **Thickness**: 0.203 mm (0.008 in.)
- **Length**: 25.4 mm (1 in.)*
- **Width**: 14 mm (0.55 in.)
- **Sensing Area**: 9.53 mm (0.375 in.) diameter
- **Connector**: 2-pin Male Square Pin
- **Substrate**: Polyester (ex: Mylar)
- **Pin Spacing**: 2.54 mm (0.1 in.)

✓ **ROHS COMPLIANT**

*Length does not include pins, please add approximately 6mm (0.25 in.) for pin length for a total length of approximately 32 mm (1.25 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 higher forces, apply a lower drive voltage (-0.5 V, -0.10 V, etc.) and reduce the resistance of the feedback resistor (1kΩ min.) To measure lower forces, apply a higher drive voltage and increase the resistance of the feedback resistor.

Sensor output is a function of many variables, including interface materials. Therefore, Tekscan recommends the user calibrate each sensor for the application. The graph below is an illustration of how a sensor can be used to measure varying force ranges by changing the feedback resistor (the graph below should not be used as a calibration chart).

<table>
<thead>
<tr>
<th>Typical Performance</th>
<th>Evaluation Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linearity (Error)</td>
<td>&lt; ±3% Line drawn from 0 to 50% load</td>
</tr>
<tr>
<td>Repeatability</td>
<td>&lt; ±2.5% of full scale Conditioned sensor, 80% of full force applied</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>&lt; 4.5 % of full scale Conditioned sensor, 80% of full force applied</td>
</tr>
<tr>
<td>Drift</td>
<td>&lt; 5% per logarithmic time scale Constant load of 111 N (25 lb)</td>
</tr>
<tr>
<td>Response Time</td>
<td>&lt; 5µsec Impact load, output recorded on oscilloscope</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C - 60°C (-40°F - 140°F) Time required for the sensor to respond to an input force</td>
</tr>
</tbody>
</table>

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