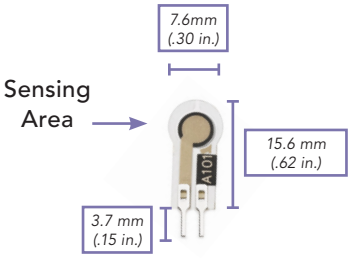
FlexiForce™
Standard Model A101

Actual size of sensor



The FlexiForce A101 is our smallest standard piezoresistive force sensor. The A101 design is optimized for high volume manufacturing and is ideal for embedding into products and applications. This sensor is available off-the-shelf for easy proof of concept. The A101 can be used with our test & measurement, prototyping, and embedding electronics, including the FlexiForce Sensor Characterization Kit, FlexiForce Prototyping Kit, FlexiForce Quickstart Board, and the ELF™ System*. You can also use your own electronics, or multimeter.

Physical Properties

Thickness	0.203 mm (0.008 in.)
Length	15.6 mm (.62 in.)**
Width	7.6 mm (0.30 in.)
Sensing Area	3.8 mm (0.15 in.) diameter
Connector	2-pin Male Square Pin
Substrate	Polyester
Pin Spacing	2.54 mm (0.1 in.)

Benefits

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

✓ROHS COMPLIANT

** Sensor will require an adapter/extender to connect to the FlexiForce Sensor Characterization Kit, FlexiForce Prototyping Kit, and ELF Systems. Contact your Tekscan representative for assistance.*

***Length does not include pins. Please add approximately 3.7 mm (0.15 in.) for pin length for a total length of approximately 19.3 mm (0.75 in).*

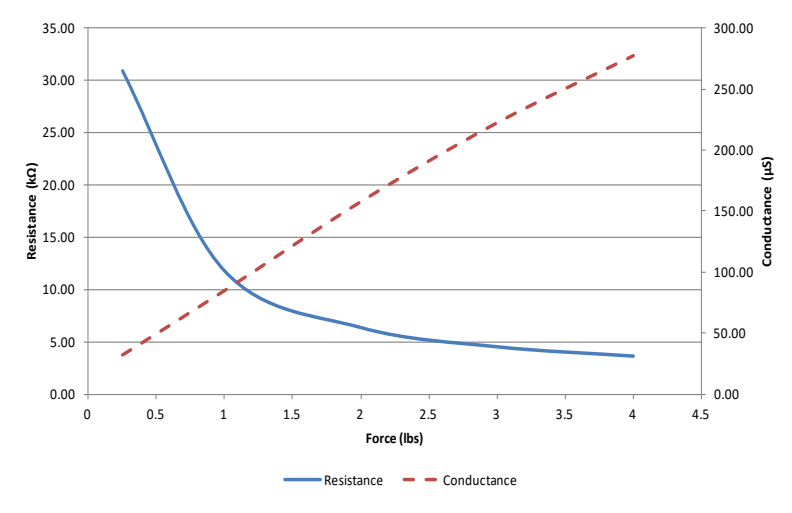
	Typical Performance ***	Evaluation Conditions ***
Linearity (Error)	< ±3% of full scale	Line drawn from 0 to 50% load
Repeatability	< ±2.5%	Conditioned sensor, 80% of full force applied
Hysteresis	< 4.5% of full scale	Conditioned sensor, 80% of full force applied
Drift	< 5% per logarithmic time scale	Constant load of 111 N (25 lb)
Response Time	< 5µsec	Impact load, output recorded on oscilloscope
Operating Temperature	-40°C - 60°C (-40°F - 140°F)	Convection and conduction heat sources
Acceptance Criteria	±40% sensor-to-sensor variation	Output considered at test pressure
Durability	≥ 3 million actuations	Perpendicular load, room temperature, 22 N (5 lb)
Temperature Sensitivity	0.36%/°C (± 0.2%/°F)	Conductive heating

***All data above was collected utilizing an Op Amp Circuit (shown on the next page).** If your application cannot allow an Op Amp Circuit, visit www.tekscan.com/flexiforce-integration-guides, or contact a FlexiForce Applications Engineer.

ISO 9001:2008 Compliant & 13485:2016 Registered

Tekscan™

Typical Performance



Voltage (V)	Force (lbs)	Resistance (kΩ)	Conductance (µS)
0.5	0.25	30.85	32.41
0.5	1	11.73	85.20
0.5	2	6.33	158.00
0.5	3	4.49	222.59
0.5	4	3.60	277.53

- Sensor acceptance criteria ±40% of nominal
- Sensor resistance measured 20 seconds after applied load
- Sensor loaded through a polycarbonate puck equal to 68% (0.0123 in^2) of total active area
- Sensor was not attached to any drive circuitry

Standard Force Ranges
as Tested with Circuit Shown

18 N (0 - 4 lb) †

† **This sensor can measure up to 44 N (10 lb).** In order to measure higher forces, apply a lower drive voltage (-0.5 V, -0.25 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.

Recommended Circuit