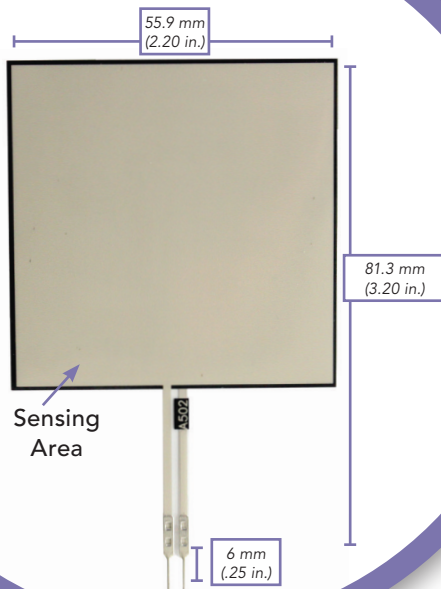


## Actual size of sensor



# FlexiForce™

## Standard Model A502

The FlexiForce™ A502 is a square sensor, with a sensing area measuring 50.8 mm x 50.8 mm (2 in. x 2 in.). This sensor is available off-the-shelf for easy proof of concept. The A502 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	81.3 mm (3.20 in.)**
Width	55.9 mm (2.20 in.)
Sensing Area	50.8 mm x 50.8 mm (2 in. x 2 in.)
Connector	2-pin Male Square Pin
Substrate	Polyester
Pin Spacing	2.54 mm (0.1 in.)

## Benefits

- Thin and flexible
- Low-power
- Ideal for prototyping & integration
- Easy to use

✓ ROHS COMPLIANT

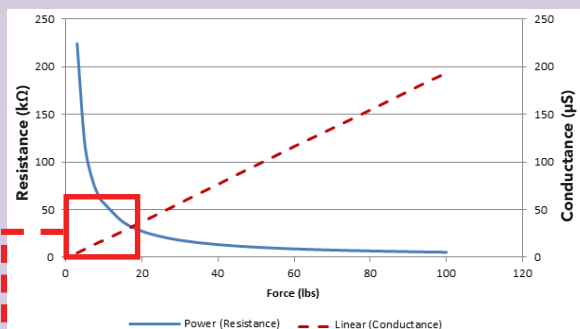
\* Sensor will require an adapter/extender to connect to the ELF System. Contact your Tekscan representative for assistance.

\*\* Length does not include pins. Please add approximately 6 mm (0.25 in.) for pin length for a total length of approximately 87 mm (3.4 in.).

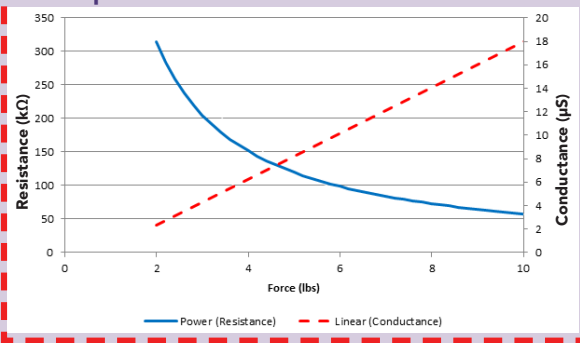
	Typical Performance	Evaluation Conditions
Linearity (Error)	< ±3% of full scale	Line drawn from 0 to 50% load
Repeatability	< ±2.5%	Conditioned sensor, 80% of full force applied
Hysteresis	< 4.5% of full scale	Conditioned sensor, 80% of full force applied
Drift	< 5% per logarithmic time scale	Constant 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](http://www.tekscan.com/flexiforce-integration-guides), or contact a FlexiForce Applications Engineer.

## Typical Performance



**Superior performance and range compared to other sensors of its kind**



Voltage (V)	Force (lbs)	Resistance (kΩ)	Conductance (μS)
0.5	20	34.36	29.11
0.5	40	17.14	58.33
0.5	60	11.57	86.41
0.5	80	8.71	114.76
0.5	100	6.97	143.54

- Sensor acceptance criteria  $\pm 40\%$  of nominal
- Sensor resistance measured 20 seconds after applied load
- Sensor loaded through a polycarbonate puck equal to 68% (2.72 in<sup>2</sup>) of total active area
- Sensor was not attached to any drive circuitry

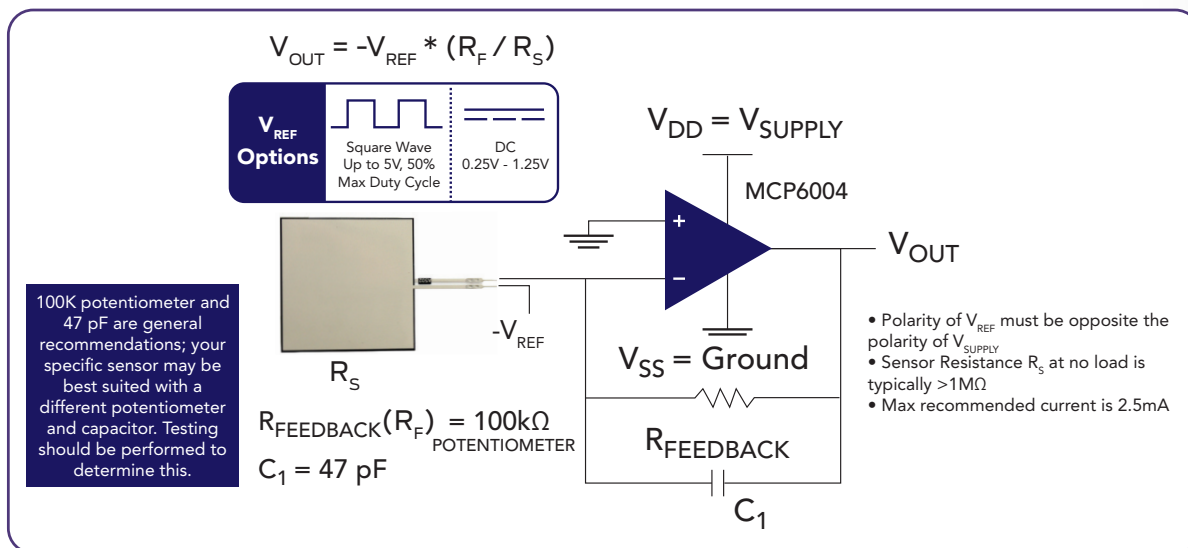
### Standard Force Ranges as Tested with Circuit Shown

222 N (0 - 50 lb) †

† This sensor can measure up to 44,448 N (10,000 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



**PURCHASE TODAY ONLINE AT [WWW.TEKSCAN.COM/STORE](http://WWW.TEKSCAN.COM/STORE)**



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