

FlexiForce™

Standard Model A201

The FlexiForce A201 is our standard sensor and meets the requirements of most customers. The A201 is a thin and flexible piezoresistive force sensor that is available off-the-shelf in a variety of lengths for easy proof of concept. These ultra-thin sensors are ideal for non-intrusive force and pressure measurement in a variety of applications. The A201 can be used with our test & measurement, prototyping, and embedding electronics, including the OEM Development 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	191 mm (7.5 in.)** (optional trimmed lengths: 152 mm (6 in.), 102 mm (4 in.), 51 mm (2 in.))
Width	14 mm (0.55 in.)
Sensing Area	9.53 mm (0.375 in.) diameter
Connector	3-pin Male Square Pin (center pin is inactive)
Substrate	Polyester
Pin Spacing	2.54 mm (0.1 in.)

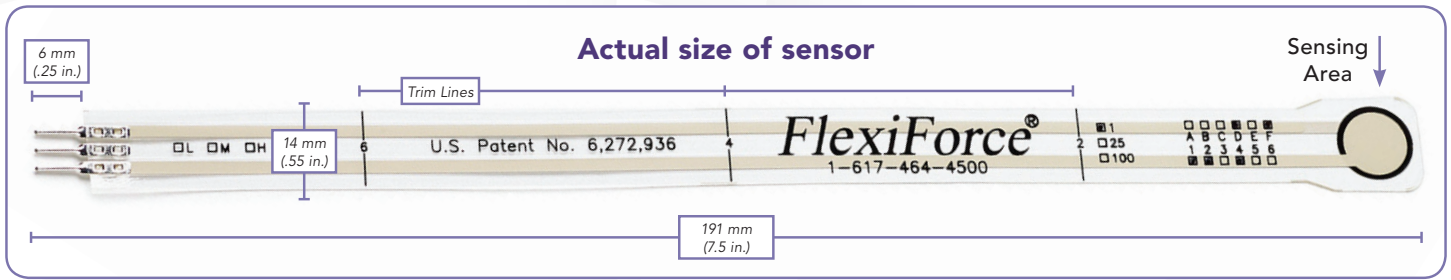
Benefits

- Thin and flexible
- Easy to use
- Convenient and affordable

✓ 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 197 mm (7.75 in.).



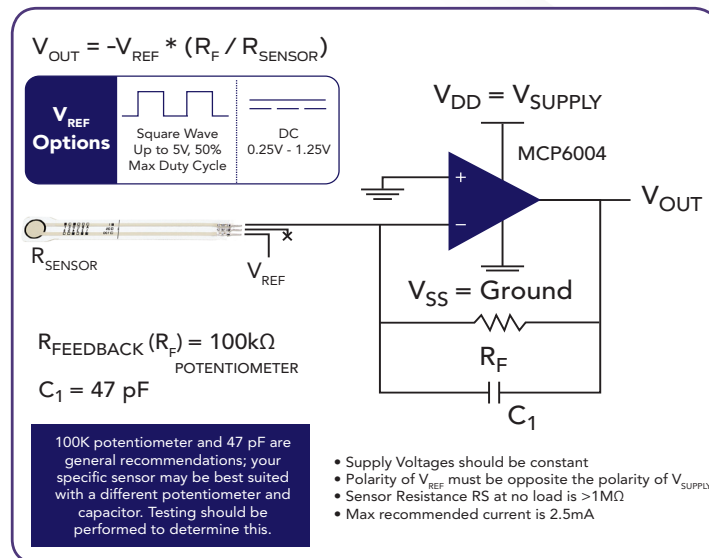
Standard Force Ranges as Tested with Circuit Shown

- 4.4 N (0 - 1 lb)
- 111 N (0 - 25 lb)
- 445 N (0 - 100 lb) †

† This sensor can measure up to 4,448 N (1,000 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



	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	

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

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

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