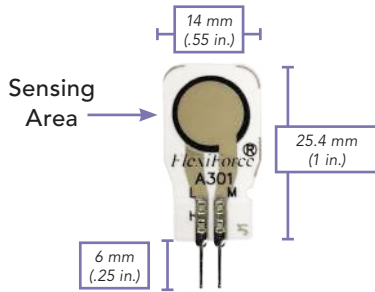


FlexiForce™

Standard Model A301

Actual size of 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 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.

Benefits

- Small size is ideal for prototyping and integration
- Available with Enhanced Stability Series (ESS) pressure sensitive ink for high-temperature and high-humidity environments
- Thin and flexible
- 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 32 mm (1.25 in.).

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
Pin Spacing	2.54 mm (0.1 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
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.

Standard Force Ranges as Tested with Circuit Shown

4.4 N (0 - 1 lb)

111 N (0 - 25 lb)

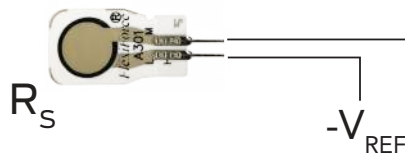
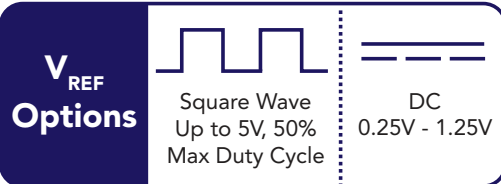
445 N (0 - 100 lb)[†]

[†]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

$$V_{OUT} = -V_{REF} * (R_F / R_S)$$



$R_{FEEDBACK}(R_F) = 100k\Omega$
POTENTIOMETER
 $C_1 = 47 \text{ pF}$

100K potentiometer and 47 pF are general recommendations; your specific sensor may be best suited with a different potentiometer and capacitor. Testing should be performed to determine this.

- Polarity of V_{REF} must be opposite the polarity of V_{SUPPLY}
- Sensor Resistance R_S at no load is typically $>1M\Omega$
- Max recommended current is 2.5mA



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