FlexiForce™ Standard Model HT201

The FlexiForce HT201 is our enhanced thin and flexible piezoresistive force sensor ideal for high temperature applications. The HT201 is capable of measuring force and pressure in environments as hot as 400°F (approximately 200°C). These ultra-thin sensors are ideal for non-intrusive force and pressure measurement in a variety of applications. The HT201 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

- **Operates in temperatures up to approximately 200°C (400°F)**
- **Thin and Flexible**
  Easily integrates into tight spaces for non-intrusive force measurement between mating surfaces.
- **Easy to Use**
  Compatible with a variety of electronics and ready-to-use for testing, prototyping, or embedding.
- **Off-the-Shelf Availability**
  Customizable options, and consistent performance reduce development time and costs.

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.)

* 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 31.75 mm (0.25 in.) for pin length to equal a total length of 203.2 mm (8 in.).

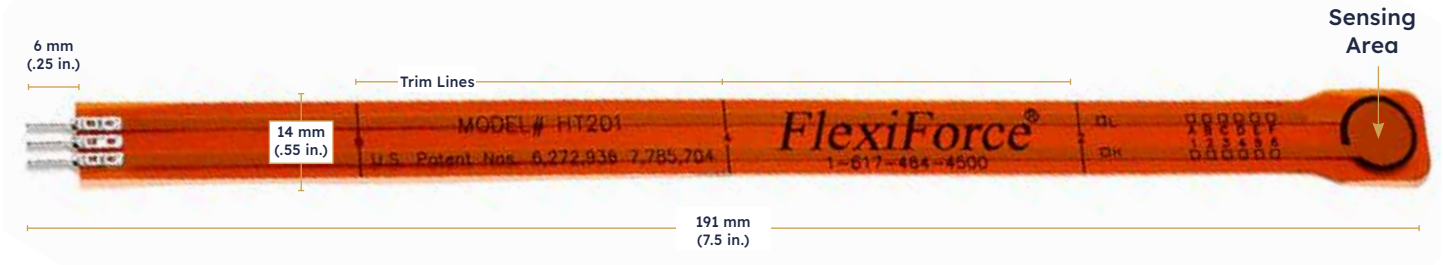
	Typical Performance (Ambient Temperature)	Evaluation Conditions
Linearity (Error)	< ±3% of full scale***	Line drawn from 0 to 50% load
Repeatability	< ±3.5%	Conditioned sensor, 80% of full force applied
Hysteresis	< 3.6% of full scale	Conditioned sensor, 80% of full force applied
Drift	< 3.3% per logarithmic time scale	Constant load of 111 N (25 lb)
Response Time	< 5µsec	Impact load, output recorded on oscilloscope
Operating Temperature	-40°C - 240°C (-40°F - 400°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. Specifications based on pressures up to 500 psi and represent the average value throughout a range of temperatures up to 400°F.

*** Linearity up to 889 N (200 lb).

ROHS COMPLIANT

Sensor Measurements



Standard Force Ranges
as Tested with Inverting Op-Amp Circuit

222 N (0 - 50 lb) †

† This sensor can measure up to 2,224 N (500 lb). In order to measure forces outside specified ranges, use recommended circuit and adjust drive voltage and/or reference resistance.

Sensor output is a function of many variables, including interface materials. Calibration is recommended. See FlexiForce Best Practices for details. The graph below is an illustration of how a sensor can be used to measure varying force ranges by changing the feedback resistor (**Figure 1** should not be used as a calibration chart).

Recommended Circuit

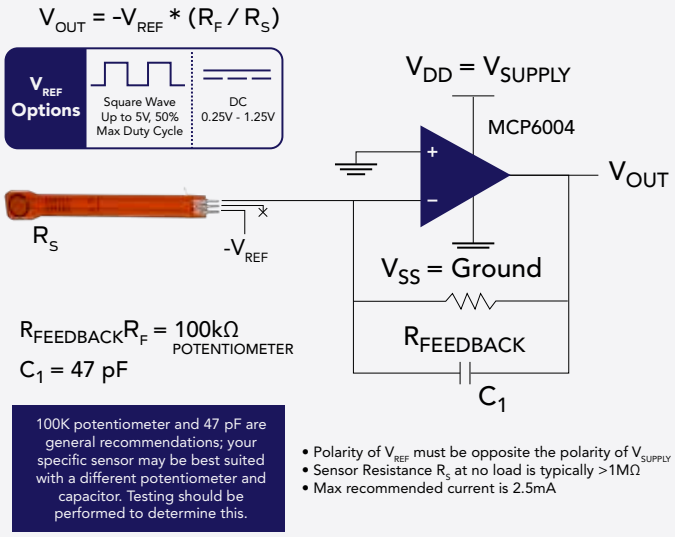
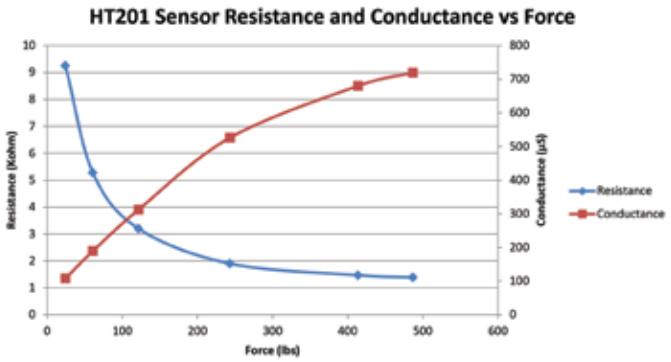


Figure 1



617.464.4500 1.800.248.3669 info@tekscan.com tekscan.com

Sensor Datasheet
SD_Rev L_121224

Contact us for more information.
Volume discounts available.