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 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

- Operates in temperatures up to approximately 200°C (400°F)
- Thin and flexible
- Easy to use
- Available off-the-shelf

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

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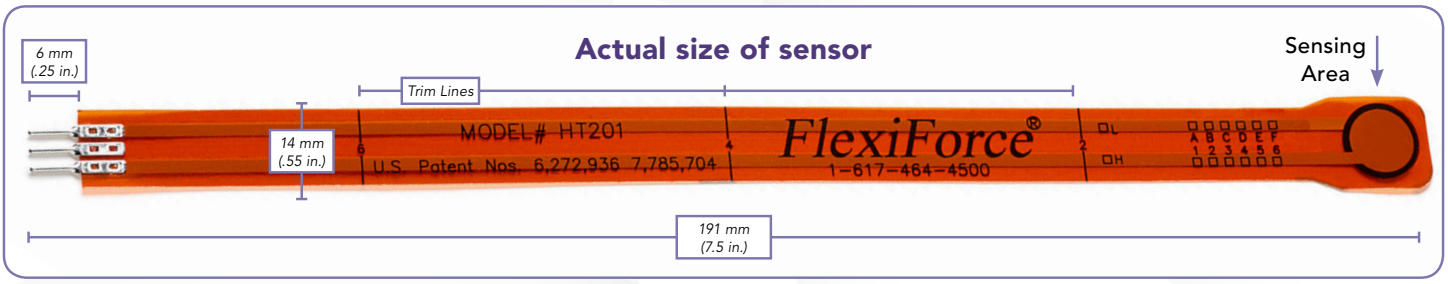
	Typical Performance (Ambient Temperature)	Evaluation Conditions
Linearity (Error)	< ±3% of full scale****	Line drawn from 0 to 50% load
Repeatability	< ±3.5%	Conditioned sensor, 80% of full force applied
Hysteresis	< 3.6% of full scale	Conditioned sensor, 80% of full force applied
Drift	< 3.3% per logarithmic 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
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. 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).



Standard Force Ranges
as Tested with Circuit Shown

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. Therefore, Tekscan recommends the user calibrate each sensor for the application. 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

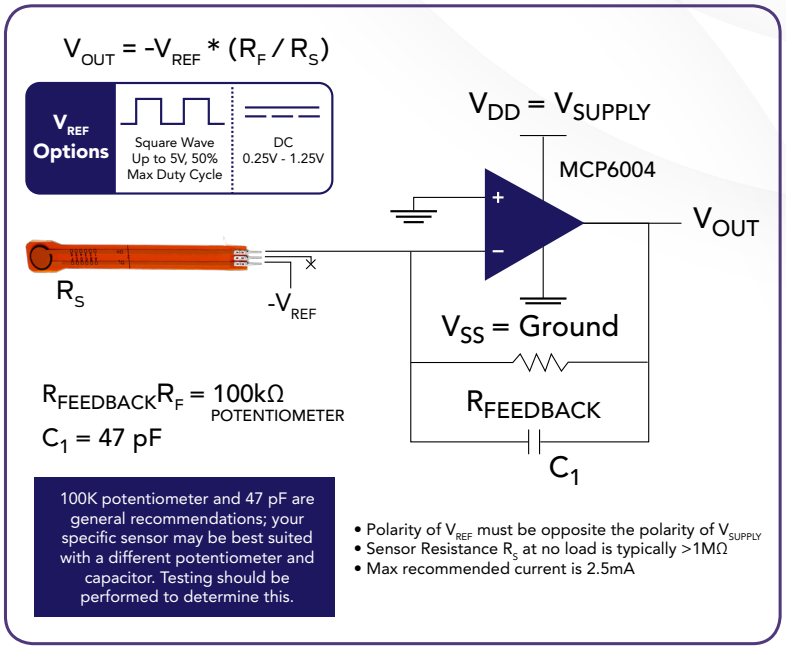


Figure 1
HT201 Sensor Resistance and Conductance vs Force