

accurate  
reliable  
ultra-thin  
flexible  
non-intrusive  
durable  
customizable  
cost-effective  
force & load  
sensing

**FlexiForce: (Noun)**

Pronunciation: flex'ē'fôrs

1. a: a versatile, durable piezoresistive force sensor that can be made in a variety of shapes and sizes; b: a piezoresistive sensing device in which resistance is inversely proportional to applied force;
2. a customizable, economical force measurement tool that is easily integrated into OEM products;
3. a: a patented, ultra-thin (0.008"), flexible printed circuit that senses contact force; b: a force and load sensor that is available in three standard force ranges, suiting a variety of applications for research and product development/testing.

**FlexiForce®**  
The Leader in Standard & Custom  
OEM Force Sensing Solutions



## Serving many applications with proven solutions.

Founded in 1987, Tekscan is the world's leading provider of advanced tactile force and pressure measurement sensors and systems. Tekscan's *FlexiForce* sensors are at work in a variety of applications, performing a multitude of functions. The sensors are utilized to:

- Detect and measure a relative change in force or applied load
- Detect and measure the rate of change in force
- Identify force thresholds and trigger appropriate action
- Detect contact and/or touch

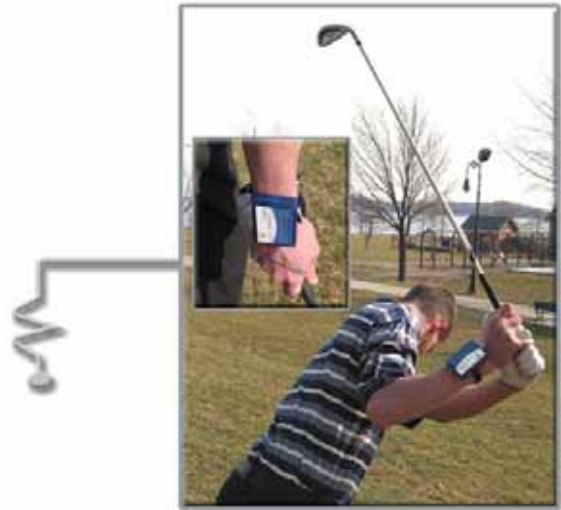
## Superior Sensors & Service: An integral part of your product development.

The *FlexiForce* product line was developed in response to the unique needs of companies that require cost-effective force sensing solutions in their products. We offer standard and custom-designed sensors to satisfy the needs of your application. We are as proud of our support and service capabilities as we are of our technology. As a customer, you can be confident that our experienced, qualified staff will work with you to define, develop, and integrate a unique sensing solution. Our team works closely with you throughout each stage of the design process. This allows you to concentrate on your core business while we work on what we do best: developing the right sensors for you.

## Get a better sense of our offerings:

### *FlexiForce* Sensors

With its flexible, paper-thin construction, the standard *FlexiForce* sensor can measure force between virtually any two surfaces. It is also durable enough to stand up to most environments. In fact, our high-temperature model can measure forces in environments as hot as 400°F. The highly adaptive sensor, composed of polyester material and semi-conductive inks, is a piezoresistive sensing device which can be customized to suit a variety of large quantity OEM applications. We also offer a standard off-the-shelf model, ideal for prototyping or for low-quantity requirements.



### *ELF*™ Product Line

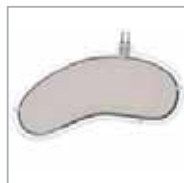
Each *ELF*™ system includes software, electronics, and *FlexiForce* sensors. The *ELF* system allows you to view and record one channel of force data, while the *MELF* System enables you to view and record multiple channels of force data. Wireless *ELF* is an indispensable tool for force measurement applications involving moving subjects or objects. Wireless *ELF* enables you to easily capture and store force data from distances up to 200 feet.



PUMP



TOUCH



HIGH-TEMPERATURE PROCESSING



AUTOMOTIVE





## Providing you with the right force sensing solution.

*FlexiForce*®, a division of Tekscan, is committed to providing the most advanced, thin, tactile force and pressure sensors in the world. These sensors are accurate, simple to use, and cost-effective. Our knowledgeable, experienced staff works with companies of all sizes to deliver standard and custom sensing solutions for a wide variety of OEM products and applications. We dedicate ourselves to identifying and meeting our customers' needs by producing sensing solutions of the highest quality and value.

The smart sensing solution

### Applications:

#### Medical Equipment Manufacturers

- Drug delivery systems
- Surgical studies & tools
- Diagnostic devices

#### Automotive Manufacturers

- Braking, impact, vibration
- Occupant detection
- Airbag force on occupant

#### Recreational/Entertainment Industry

- Video games/virtual reality
- Sports equipment
- Training devices

#### Industrial

- Security devices
- Packaging and sealing
- Automation

#### Other Studies

- Grip forces
- Equipment monitoring
- Robotics
- And much more!

The applications are limited only by your imagination!



APPLIANCE



SECURITY DEVICES



COMPUTER INTERFACES



GAMING APPLICATIONS



## Don't just take our word for it; here's what some of your peers have to say:

*"We were thrilled to finally discover Tekscan and their FlexiForce sensors. The reliability of the FlexiForce sensors is superb, and the Tekscan engineers have been a joy to work with. In helping to develop our sensor, the Tekscan engineers were exceptionally professional, accommodating, and friendly. I like these guys! Two thumbs up for Tekscan."*

Carl Smith  
President  
Applied Fitness

*"Work is spectacular, and more exceptional than I thought it would be. The sensors work great. They can detect the slightest pressure accurately. It is way beyond my expectations."*

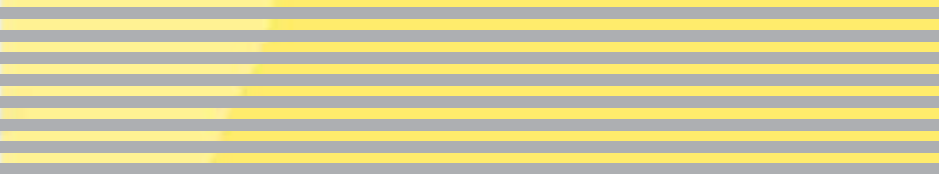
Mark Goldstein, Ph.D.  
MammaCare®

*"Tekscan has provided a terrific product, and service to match, to compliment our product to be at the leading Edge of technology for the trailer braking industry. It has been a pleasure dealing with a company that has customized their product to suit our application."*

John Sharp  
General Manager  
Edge International Ltd.  
New Zealand

*"We are thrilled with our decision to work with Tekscan to create a custom sensor for our product. Tekscan's team has been vital to the development of our product by working closely with our engineers to ensure the best sensor design and most effective electronics. They are responsive, knowledgeable, honest, and willing to go the extra mile to get the job done, and done well. Thank you Tekscan, for first-rate service and a superior product."*

Andrew Austin  
President  
Category Solutions



## Standard Sensor Specifications

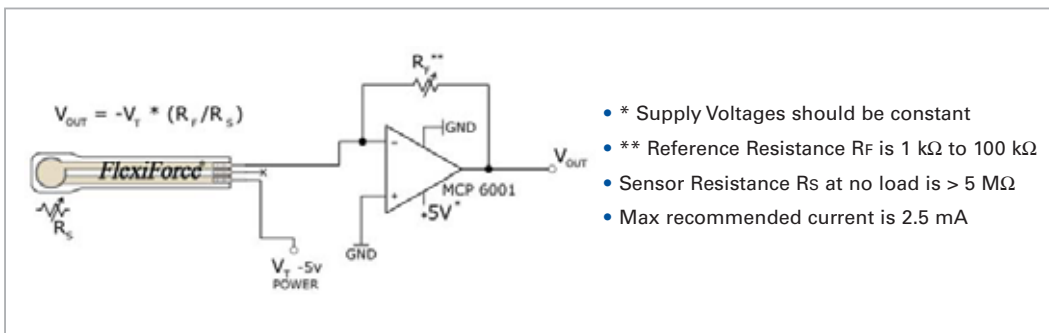
	A201 Model	B201 Model (ELF Sensor) WB201 (Wireless ELF Sensor)	HT201 Model (High-Temp Sensor)
<b>Physical Properties</b>			
Thickness	0.008" (0.208 mm)		
Length	≈ 8" (203 mm) 6" (152 mm) 4" (102 mm) 2" (51 mm)	B201: 9" (229 mm) end-to-end WB201: ≈8" (203 mm) end-to-end	≈ 8" (203 mm) 6" (152 mm) 4" (102 mm) 2" (51 mm)
Width	0.55" (14 mm)		
Sensing Area	0.375" diameter (9.53mm)		
Connector	3-pin male square pin (Center pin not used)	Interface to ELF Data Acquisition System	3-pin male square pin (Center pin not used)
<b>Typical Performance</b>			
Linearity (Error)	<± 3%		<± 1.2%
Repeatability	<± 2.5% of full scale (conditioned sensor, 80% force applied)		<± 3.5% of full scale
Hysteresis	< 4.5% of full scale (conditioned sensor, 80% force applied)		<± 3.6% of full scale
Drift	< 5% per logarithmic time scale (constant load of 90% sensor rating)		< 3.3% per logarithmic time scale
Response Time	< 5 microseconds (impact load, output recorded on oscilloscope)		TBD
Operating Temperature	15° F to 140° F (-9° C to 60° C)		15° F to 400° F (-9° C to 204° C)
Force Ranges	0-1 lb (4.4 N) 0-25 lb (110 N) 0-100 lb (440 N)*	Low (L) Medium (M) High (H)**	Low: 0-30 lb (133 N) High: 0-100 lb (445 N)*
Temperature Sensitivity	Output variance up to 0.2% per degree F (0.36% per degree C)		Output variance up to 0.16% per degree F (0.29% per degree C)

\*To measure forces above 100 lb (up to 1000 lb), apply a lower drive voltage and reduce the resistance of the feedback resistor (1 k min). See recommended circuit (below.)  
 \*\*See recommended maximum force chart (below.)

### (ELF sensors) Recommended Maximum Force Chart

	High Gain	Low Gain
B201-L / WB201-L	0-1 lb (4.4 N)	0-25 lb (110 N)
B201-M / WB201-M	0-25 lb (110 N)	0-150 lb (667 N)
B201-H / WB201-H	0-150 lb (667 N)	0-1000 lb (4400 N)

### Typical Drive Circuit for A201 Sensor



A201 Sensor (Actual Size)



## The Bottom Line.

Tekscan works as your partner to develop the optimal force sensing solution for your application or product.

To discuss your specifications or for more information, call 800.248.3669, 617.464.4500 or email [marketing@tekscan.com](mailto:marketing@tekscan.com).



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