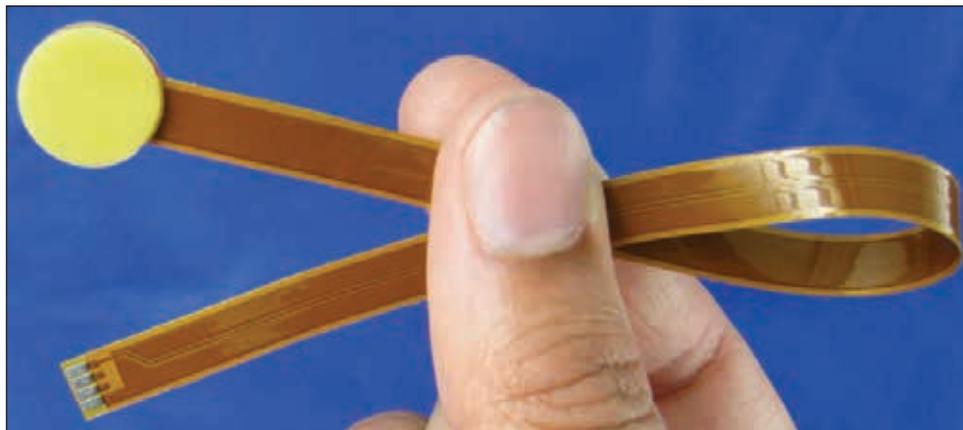# iLoad Flex Capacitive Sensors
Intelligent Tactile Pressure & Force Measurement

> " The Flex series of sensors are designed to address applications where size is of critical importance. "

Highlights

Mechanical
* Diameters as low as 15 mm
* Thickness as low as 2.5 mm
* Compression/Tension forces

Integrated Load Cell Electronics
* Excellent signal stability
* Very high sensitivity
* No additional signal conditioning needed
* Output Options
  * Analog: 0 - 5V DC
  * Digital: Serial/USB

Rugged & Reliable
* Rugged packaging

Rugged & Reliable
* Reasonably prices for 1 Qty
* Attractive volume pricing

Multiple Sensor Capacities	
	Bundled Kit Part No.
10 pounds	FLEX-010-KIT
100 pounds	FLEX-100-KIT
10 pounds	FLEXP-010-KIT*
100 pounds	FLEXP-100-KIT*
1000 pounds	FLEXP-01K-KIT*

Kit includes sensor, interface & software.

*Available in Tension

Overview

The Flex series of sensors are designed to address applications where size is of critical importance. They are based on our patented capacitive force sensing technology which offers unprecedented sensitivity in a rugged and tiny package. The high level analog (0-5V DC) or digital Serial/USB outputs, makes it easy to incorporate into OEM products or into test & measurement and process control applications.

How it Works

Actual Size

Analog Signal   Digital USB

iLoad Flex™   CI-2000   LoadVUE Software

Sense   CI-2000   **View & Process**
LoadVUE, LoadVUE Lite

Simply connect the load cell to the CI-2000 Capacitive Interface & use the USB out port on the CI-2000 to connect to a PC via the USB port. The sensor appears on the PC as a virtual COM port. Using a standard terminal emulator send commands to the sensor to display loads on screen. They can either be one at a time or in continuous operation mode. Alternatively, use an application (LoadVUE or LoadVUE Lite) to simplify load measurements on a PC.

Potential Applications

These sensors enable a wide variety of OEM applications at an attractive and affordable cost point. We provide generous application prototyping, testing and development support to OEM customers who want to utilize this revolutionary technology.

*Industrial Applications: Robotics*   *Automotive Applications: Tire Pressure*   *Medical Applications: Spinal Disk Pressure*

Dimensions

Capacity	lb		
	10 lb.	100 lb.	1000 lb.
A	1.00	1.00	1.40
B	0.30	0.30	0.52
C	0.235	0.235	0.49
D	0.18	0.18	0.49
E	0.046	0.046	0.228
F	0.046	0.046	0.228
G	#2-56 UNC-2B	#4-40 UNC-2B	#5/16-18 UNC-2B
H	0.12	0.15	0.32
J	R0.01	R0.01	C0.05 X 45°

(All dimensions are in inches)

7.25

"G" THREAD
"H" DEPTH
BOTH ENDS

.25

øA
øB
R
C
D
E
F
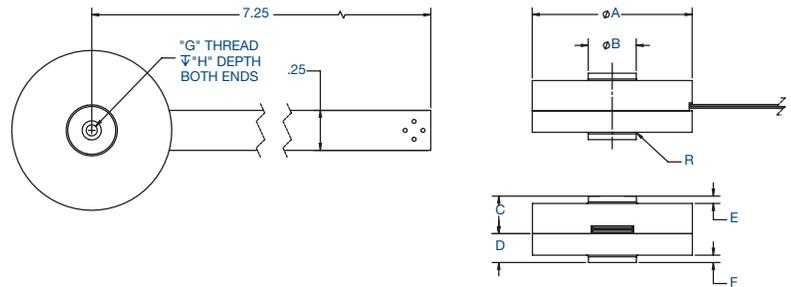
Accuracy Specifications At Room Temperature ~25°C

| Accuracy · with tare (% of FS)	iLoad Flex	iLoad Flex Pro
Non-linearity	± 2.5% of Full Scale Output	± 1.0% of Full Scale Output
Hysteresis	± 5.0%	± 1.0%

Load Cell Specifications

Sensor Diameter	0.5/0.1 inch (Customizable)	see table above
Sensor Height	0.1 inch (Customizable)	see table above
Force Range	0-10 & 0-100 lbs.	0-10, 0-100 & 0-1000 lbs.
Output	Serial, USB or Analog (0-5V DC)	Serial, USB or Analog (0-5V DC)
Interface	CI-2000	CI-2000
Operating Temperature Range	10°C to 40°C, non-condensing	10°C to 40°C, non-condensing
Long-term Drift	± 2.5% over 20 min.	± 0.5% over 20 min.
Data Output Rate	1 Hz	1Hz

Available Configurations

iLoad Flex

iLoad Flex Pro

Compatible Accessories

Recommended Interfaces	Applicable Software · w/DQ-1000U, DQ-4000 or DS-4000			
	LV-100	see page 127	LV-4000R	see page 128
	LV-400	see page 128	LV-4000HS	see page 128
	LV-1000	see page 127	LV-4000CG	see page 129
	LV-4000	see page 128	SensorVUE	see page 128
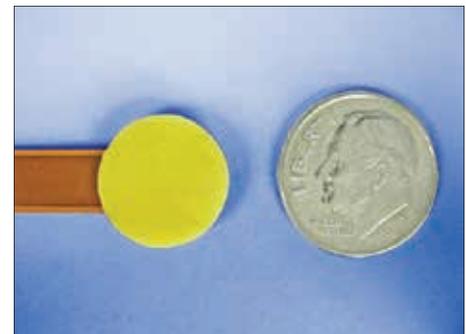
CI-2000

Digital Interfaces · requires CI-2000 to obtain USB Signal

| DS-3000U Display & Controller | HX-400 Wired USB Hub | HX-700 Wired USB Hub | WX-100 Wireless USB Hub | WX-400 Wireless USB Hub | EX-500 Ethernet Hub | SC-1200 Sensor Concentrator | UX-100 USB Extender |