

SingleTact is the most refined miniature force sensor that is performance oriented. Ultra-thin, single-element capacitive sensor with industry-leading sensitivity and repeatability that accurately and reliably quantifies forces.



REPEATABILITY

SingleTact has repeatability errors that are less than 1.0% of FSR.



ACCURACY

SingleTact has the best accuracy among thin film force sensors.



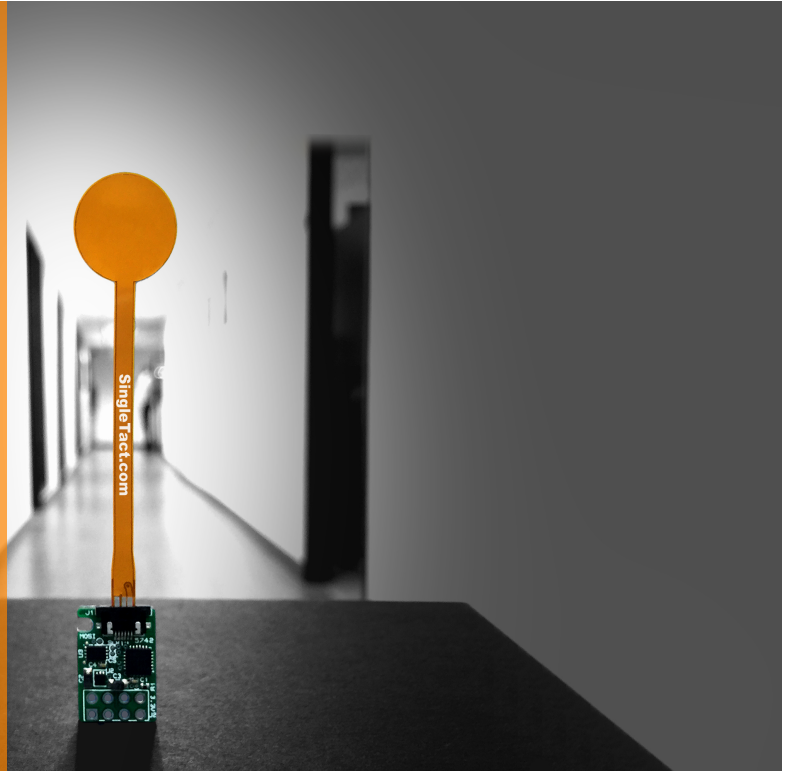
EASY TO USE

SingleTact Sensors are designed to be versatile, but user-friendly.



CUSTOM DESIGN

SingleTact can be customized for your OEM applications.



SingleTact FEATURES

Ultra-thin force sensors come in sizes of 8mm and 15mm diameter that is only 0.35mm thick.

Highly sensitive and repeatable sensors provide high dynamic range and errors less than 1.0%.

Simple Analog 3-wire interface for immediate DAQ integration.

I2C interface for digital integration.

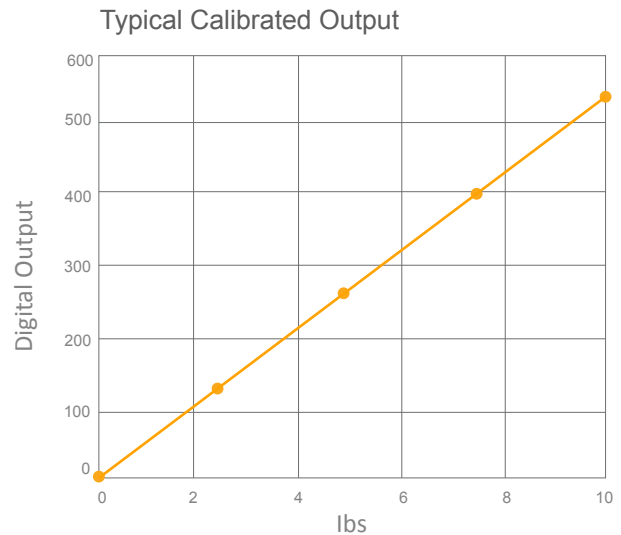
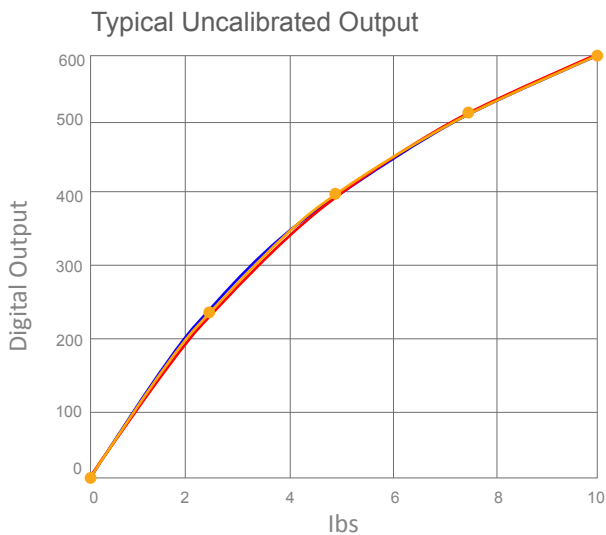
Arduino and DAQ Software to begin collecting data right out of the box.

Custom designed solutions available for OEM applications.

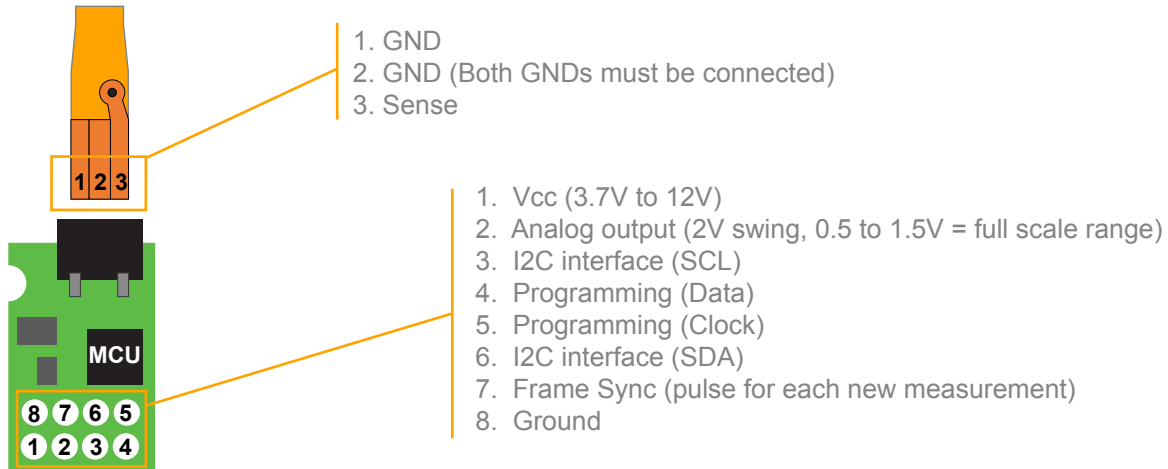
SENSOR PERFORMANCE

Typical Signal to Noise Ratio (SNR)	500:1
Force Resolution	< 0.2% of Full Scale (FS)
Maximum Force	300% of FS
Typical Repeatability Error	< 1.0% (1 sigma of FS)
Operating Temperature	-40°C – 200°C
Temperature Sensitivity	Up to 0.2%/°C
Linearity Error	< 2.0%
Drift	< 2% per logarithmic time scale
Hysteresis	< 4.0%
Response Time	< 1ms(Measured using Oscilloscope)
Contact Surface Material	Polyimide
Sensor Thickness	0.35mm
Tail Length	50mm
Typical Baseline Capacitance	8mm: 75 pF; 15mm : 230 pF @ 100kHz
Typical Capacitance Change	8mm: 2.2 pF; 15mm : 5.5 pF @ 100kHz
ESD Sensitivity	Not sensitive to ESD
Material Grade	UL grade 94 V-1 or better

SENSOR CHARACTERISTICS



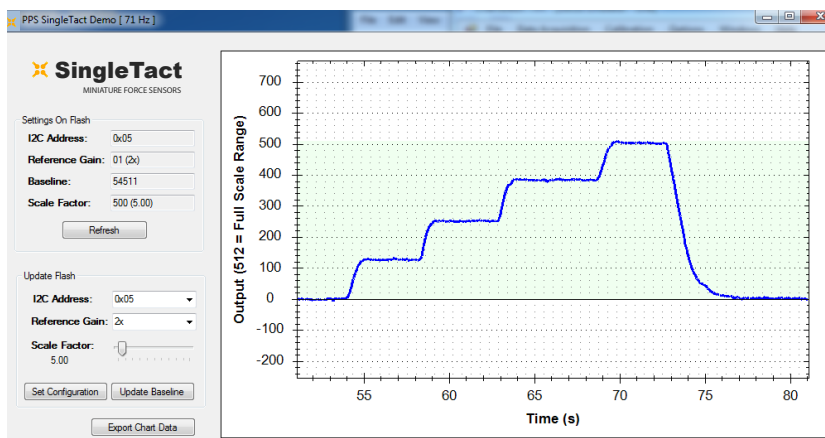
PINOUTS DIAGRAM FOR SENSOR & I2C BOARD



ELECTRONICS SPECIFICATIONS

Update Rate	>300 Hz
Analog Out	0.5–1.5V
Digital Interface	I2C (100kHz), 10-bit resolution
IO Voltage	3.3V
Supply Voltage	3.7-12V
Input Current	2.5mA running at 3MHz
Weight	Sensor 0.23g/ Electronics 1.6g
RoHS	Compliant
Operating Temperature	-40°C – 85°C

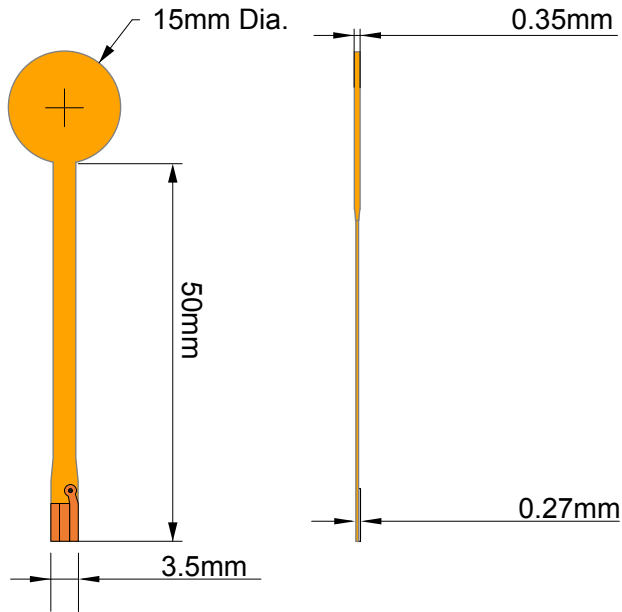
SOFTWARE



Download SingleTact Software

www.singletact.com/software-download

SENSOR MECHANICAL SPEC-15mm



SENSORS

S15-4.5N

+Full scale Range: 0.45kg (1.0lbs)

+Minimal Detectable Force: 0.9g

S15-45N

+Full scale Range: 4.5kg (10lbs)

+Minimal Detectable Force: 9g

S15-450N

+Full scale Range: 45kg (100lbs)

+Minimal Detectable Force: 90g

CALIBRATED SENSORS

CS15-4.5N

+Full scale Range: 0.45kg (1.0lbs)

+Minimal Detectable Force: 0.9g

CS15-45N

+Full scale Range: 4.5kg (10lbs)

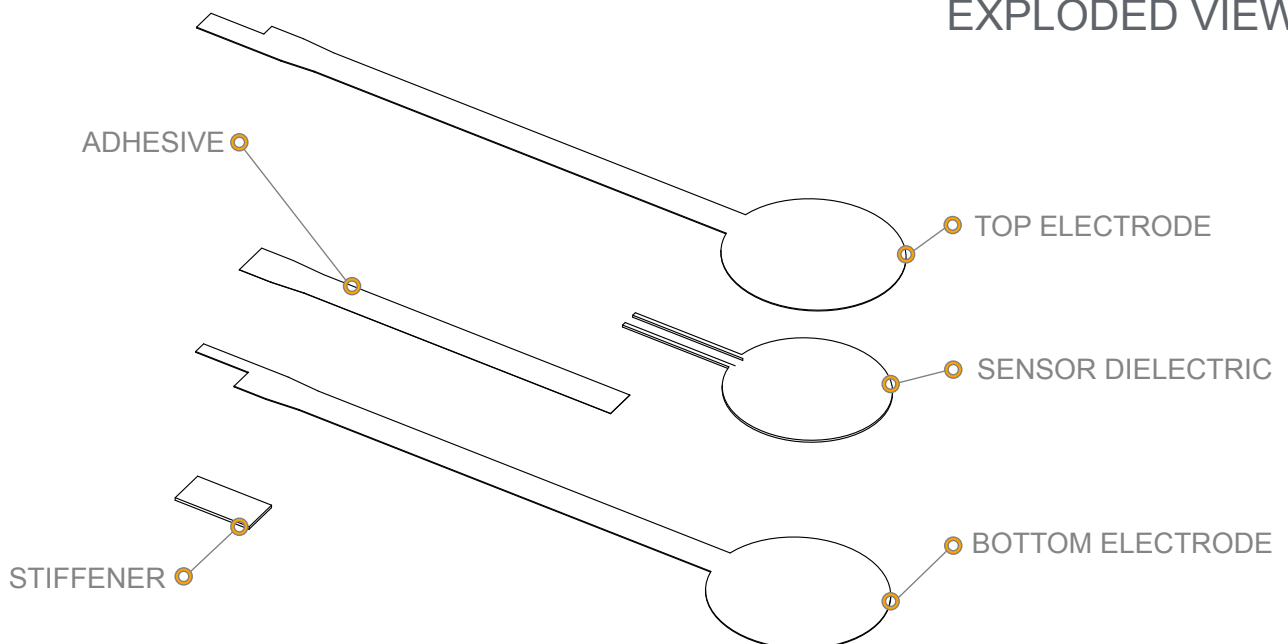
+Minimal Detectable Force: 9g

CS15-450N

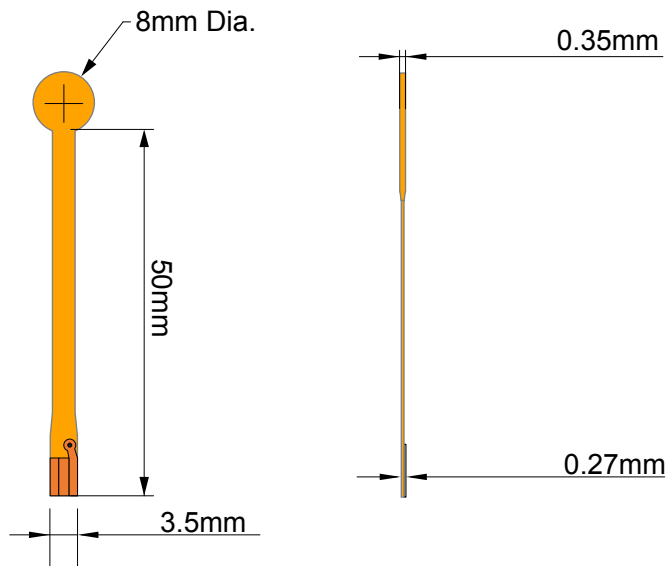
+Full scale Range: 45kg (100lbs)

+Minimal Detectable Force: 90g

EXPLODED VIEW



SENSOR MECHANICAL SPEC-8mm



SENSORS

S8-1N

+Full scale Range: 100g (0.22lbs)

+Minimal Detectable Force: 0.2g

S8-10N

+Full scale Range: 1.0kg (2.2lbs)

+Minimal Detectable Force: 2g

S8-100N

+Full scale Range: 10kg (22lbs)

+Minimal Detectable Force: 20g

CALIBRATED SENSORS

CS8-1N

+Full scale Range: 100g (0.22lbs)

+Minimal Detectable Force: 0.2g

CS8-10N

+Full scale Range: 1.0kg (2.2lbs)

+Minimal Detectable Force: 2g

CS8-100N

+Full scale Range: 10kg (22lbs)

+Minimal Detectable Force: 20g

EXPLODED VIEW

