

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.



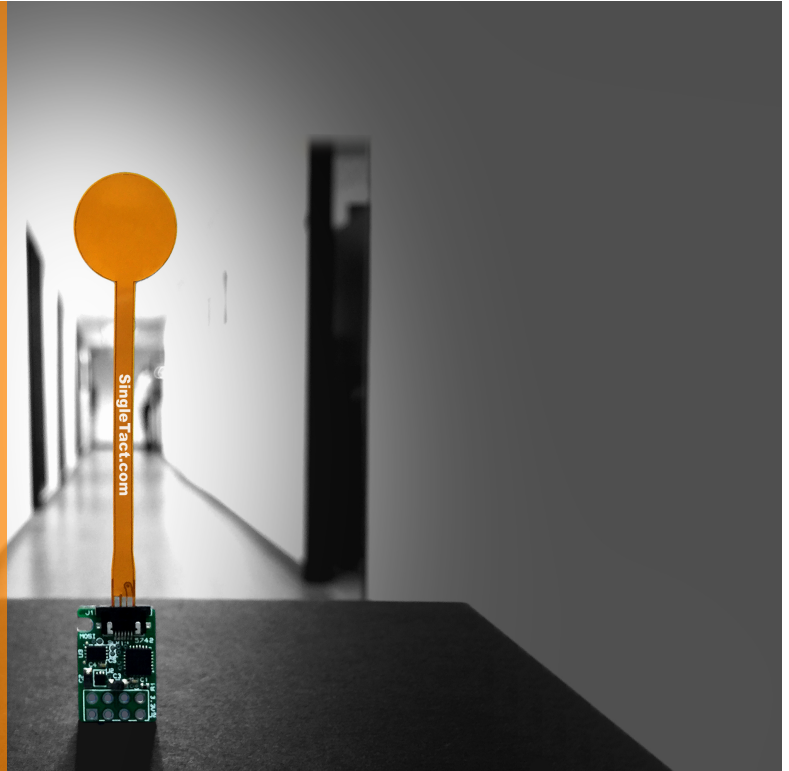
### EASY TO USE

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.

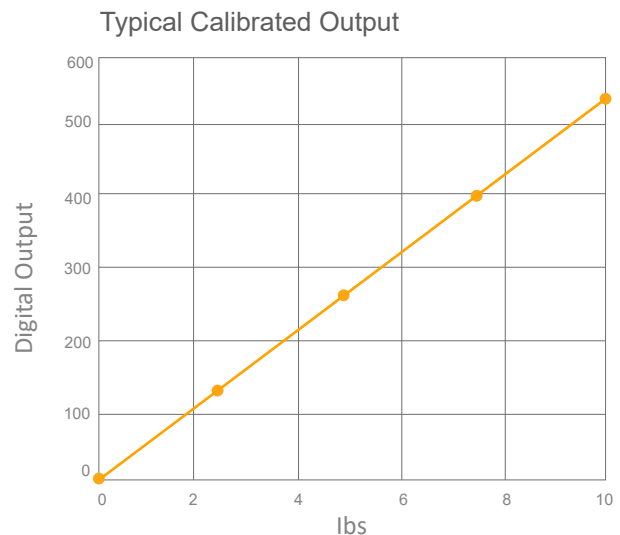
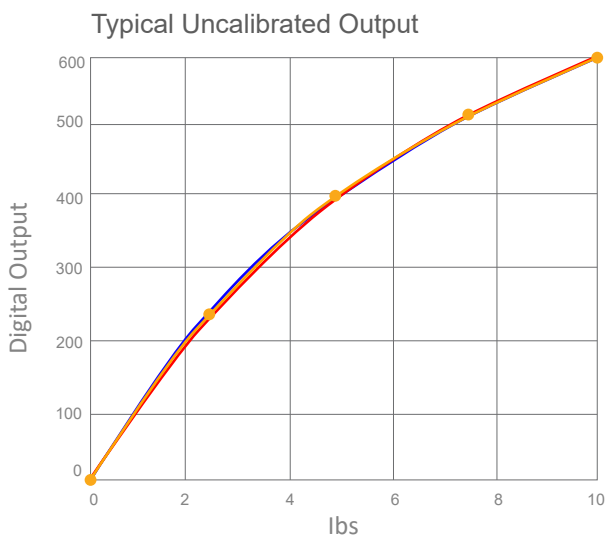
**Arduino and DAQ Software** to begin collecting data right out of the box.

**Custom designed solutions available for OEM applications.**

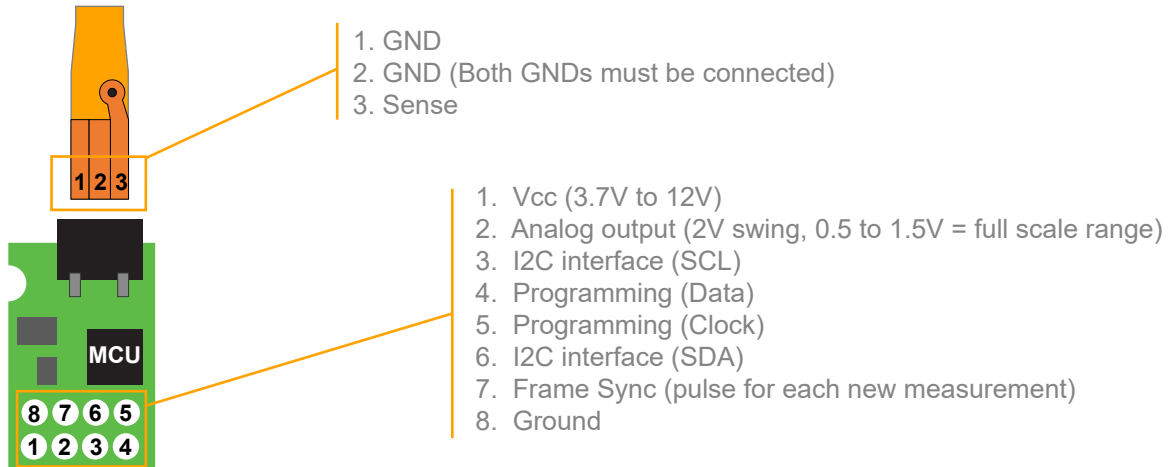
## SENSOR PERFORMANCE

Force Resolution	< 0.2% of Full Scale (FS)
Maximum Force	300% of FS
Sensor Compression	10µm at full load
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% in 1 min, 4% in 10min; at 50% load
Hysteresis	< 4.0%
Sensor 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



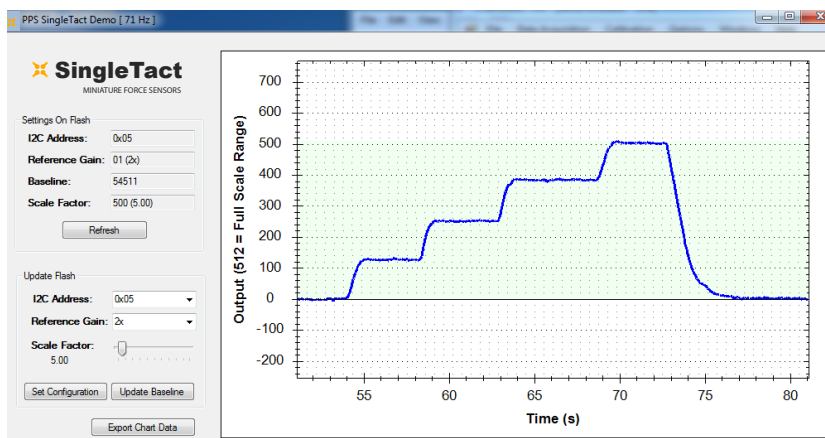
## PINOUTS DIAGRAM FOR SENSOR & I2C BOARD



## ELECTRONICS SPECIFICATIONS

Update Rate	>100 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	2.7mA
Weight	Sensor 0.23g/ Electronics 1.6g
RoHS	Compliant
Operating Temperature	-40°C – 85°C

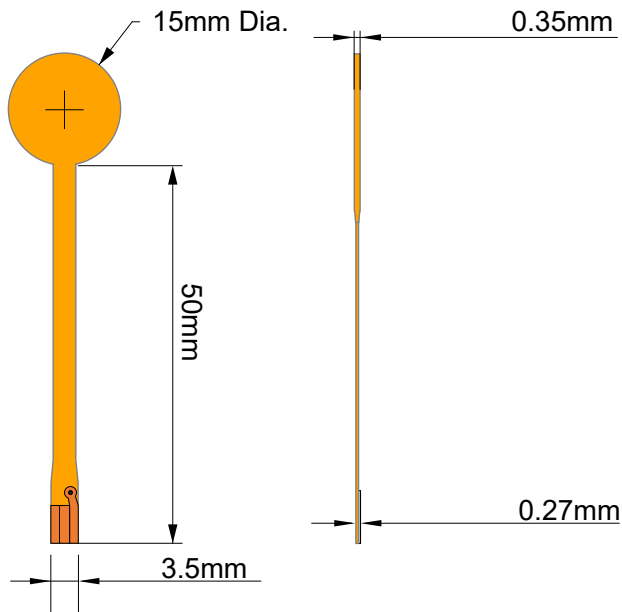
## SOFTWARE



Download SingleTact Software

[www.singletact.com/software-download](http://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)

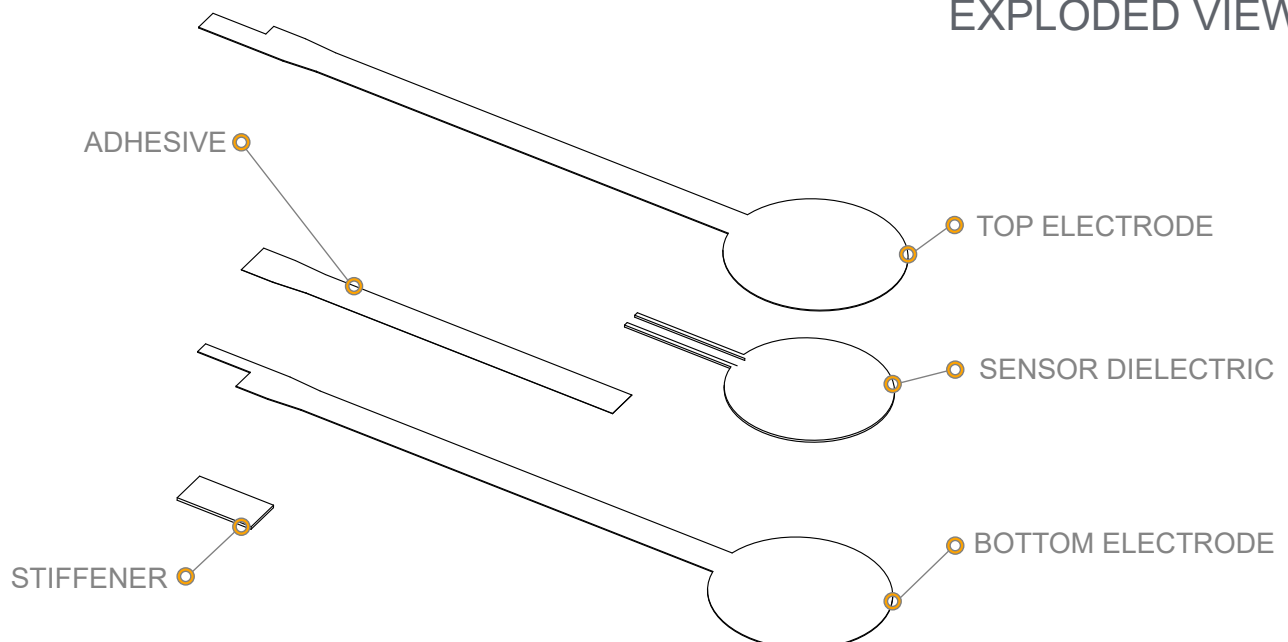
+Minimal Detectable Force: 9g

CS15-450N

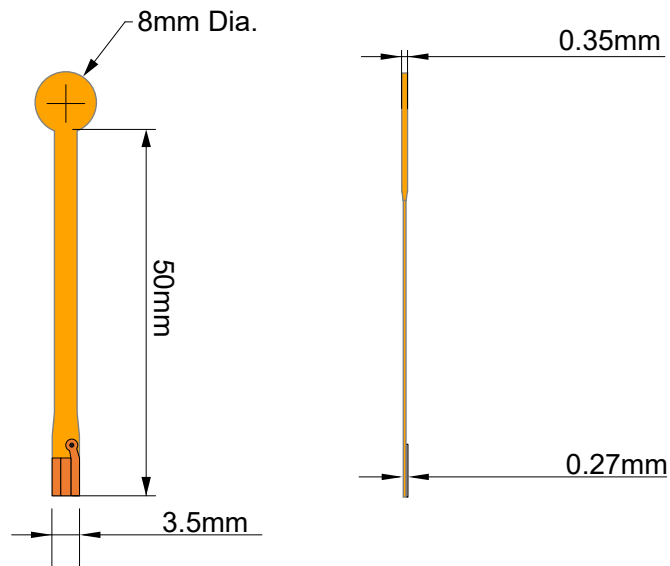
+Full scale Range: 45kg (100lbs)

+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

