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.

🔀 SingleTact

MINIATURE FORCE SENSORS



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
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%
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





Typical Calibrated Output



PINOUTS DIAGRAM FOR SENSOR & I2C BOARD



ELECTRONICS SPECIFICATIONS

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

SOFTWARE



Download SingleTact Software

www.singletact.com/software-download

X SingleTact

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

CABIBRATED 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

CABIBRATED 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

