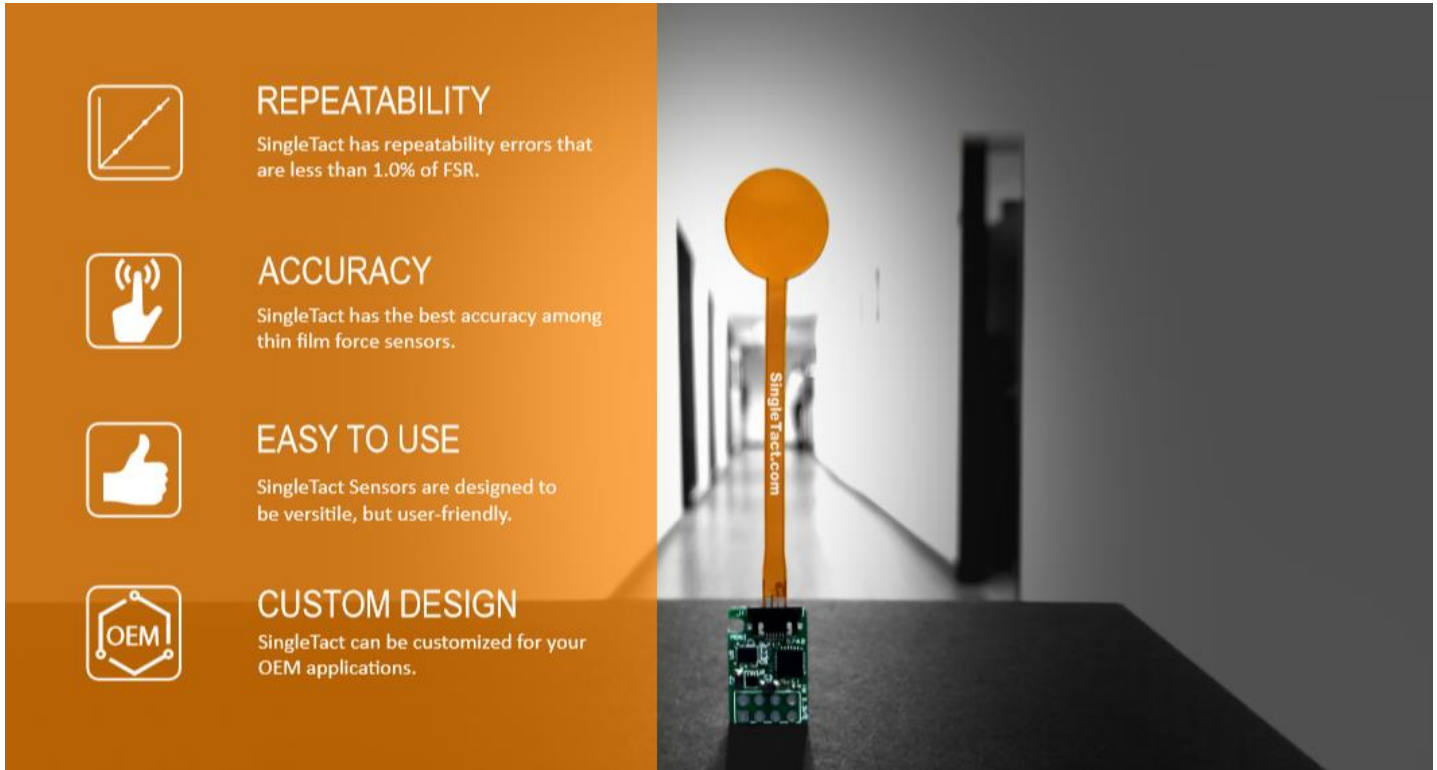


SingleTact capacitive force sensing technology delivers superior sensitivity and repeatability than resistive sensors. They provide truly incredible performance, especially considering that they are only 0.3 mm thick.



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 8 mm and 15 mm diameter, at only 0.3 mm 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.

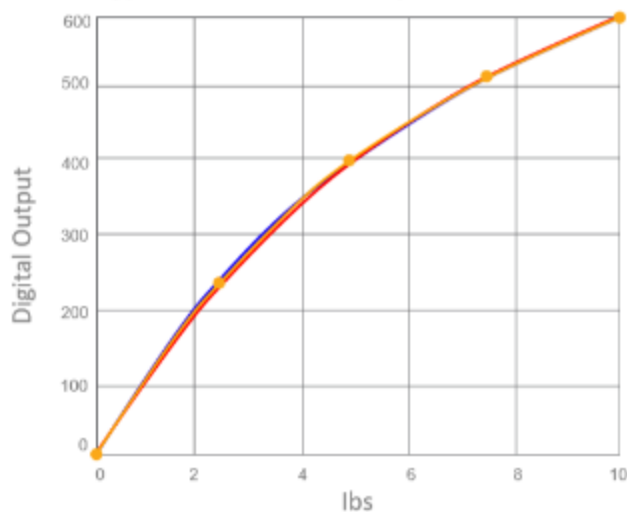


SENSOR PERFORMANCE

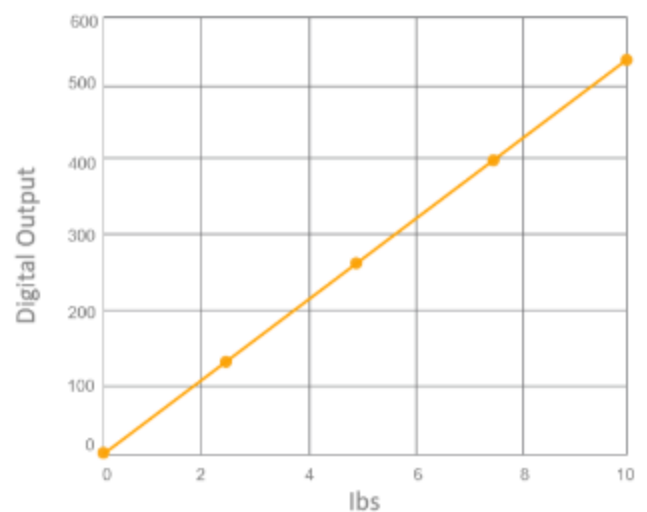
Force Resolution	< 0.2% of Full-Scale Range (FSR)
Maximum Force	300% of FSR
Typical Repeatability Error	< 1.0% (1 sigma of FSR)
Operating Temperature	-40 °C < T < 85 °C
Temperature Sensitivity	< 0.2%/°C
Linearity Error	< 2.0%
Drift	2% in 1 min, 4% in 10 min; at 50% FSR load
Hysteresis	< 4.0%
Sensor Response Time	< 1ms
Contact Surface Material	Polyimide
Typical Baseline Capacitance	8 mm: 75 pF; 15 mm: 230 pF @ 100 kHz
Typical Capacitance Change	8 mm: 2.2 pF; 15 mm: 5.5 pF @ 100 kHz
ESD Sensitivity	Not sensitive to ESD
Material Grade	UL grade 94 V-1 or better

SENSOR CHARACTERISTICS

Typical Uncalibrated Output

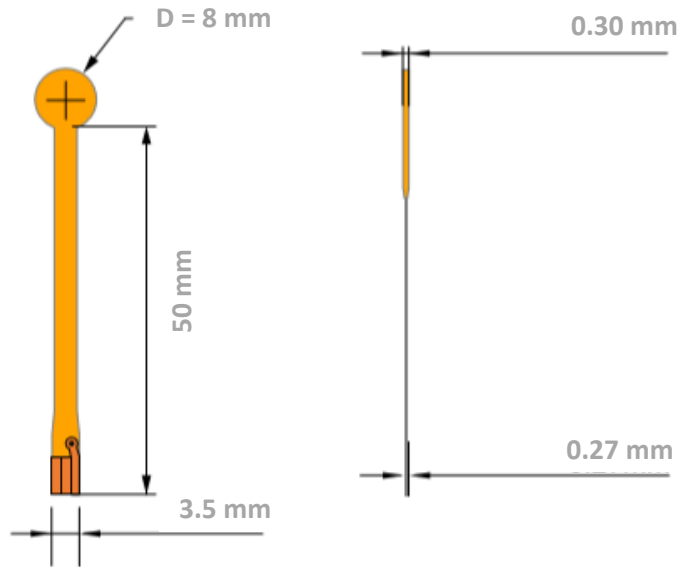


Typical Calibrated Output





SENSOR MECHANICAL SPECIFICATIONS – 8MM DIAMETER



SENSORS

S8-1N

- +Full Scale Range: 100 g (0.22 lbs)
- +Minimal Detectable Force: 0.2 g

S8-10N

- +Full Scale Range: 1.0 kg (2.2 lbs)
- +Minimal Detectable Force: 2 g

S8-100N

- +Full Scale Range: 10 kg (22 lbs)
- +Minimal Detectable Force: 20 g

CALIBRATED SENSORS

CS8-1N

- +Full Scale Range: 100 g (0.22 lbs)
- +Minimal Detectable Force: 0.2 g

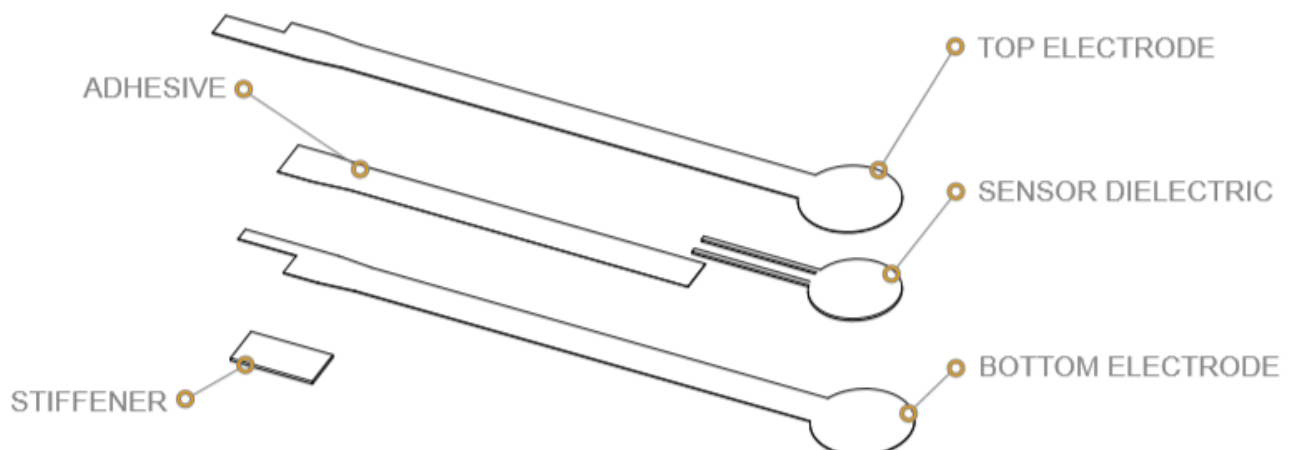
CS8-10N

- +Full Scale Range: 1.0 kg (2.2 lbs)
- +Minimal Detectable Force: 2 g

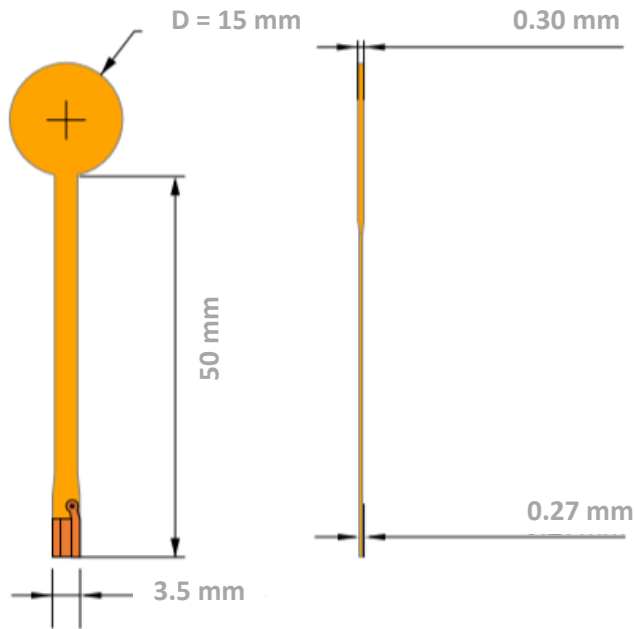
CS8-100N

- +Full Scale Range: 10 kg (22 lbs)
- +Minimal Detectable Force: 20 g

EXPLODED VIEW



SENSOR MECHANICAL SPECIFICATIONS – 15 MM Diameter



SENSORS

S15-4.5N

- +Full Scale Range: 450 g (1.0 lbs)
- +Minimal Detectable Force: 0.9 g

S15-45N

- +Full Scale Range: 4.5 kg (10 lbs)
- +Minimal Detectable Force: 9 g

S15-450N

- +Full Scale Range: 45 kg (100 lbs)
- +Minimal Detectable Force: 90 g

CALIBRATED SENSORS

S15-4.5N

- +Full Scale Range: 450 g (1.0 lbs)
- +Minimal Detectable Force: 0.9 g

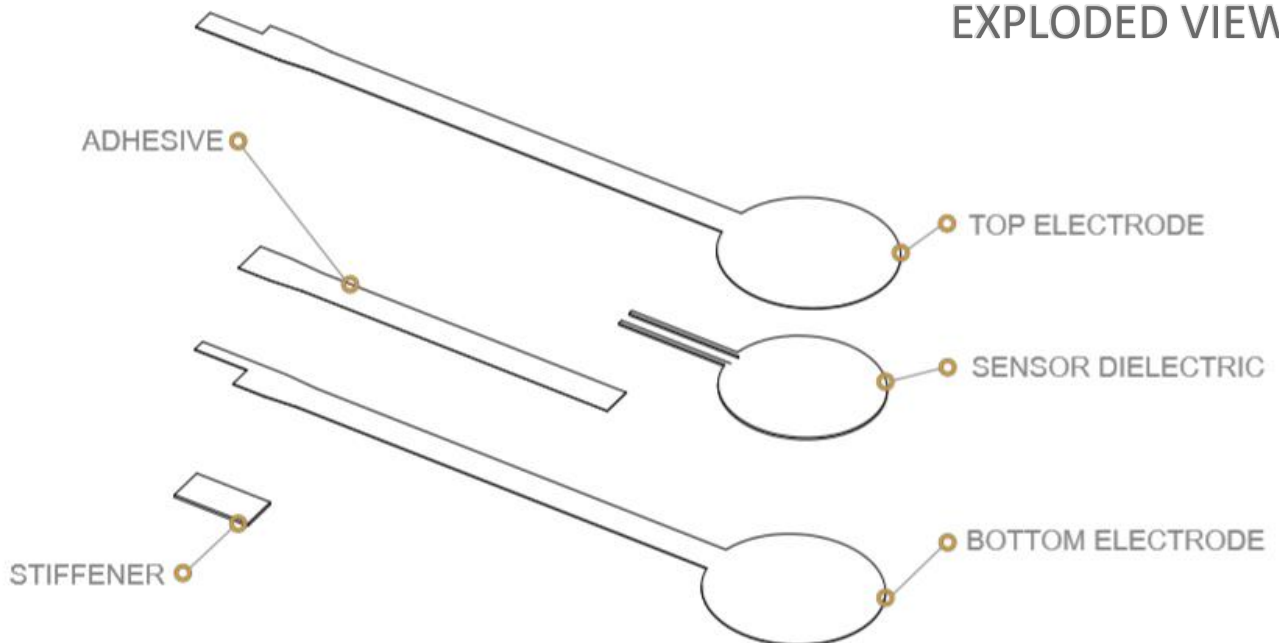
S15-45N

- +Full Scale Range: 4.5 kg (10 lbs)
- +Minimal Detectable Force: 9 g

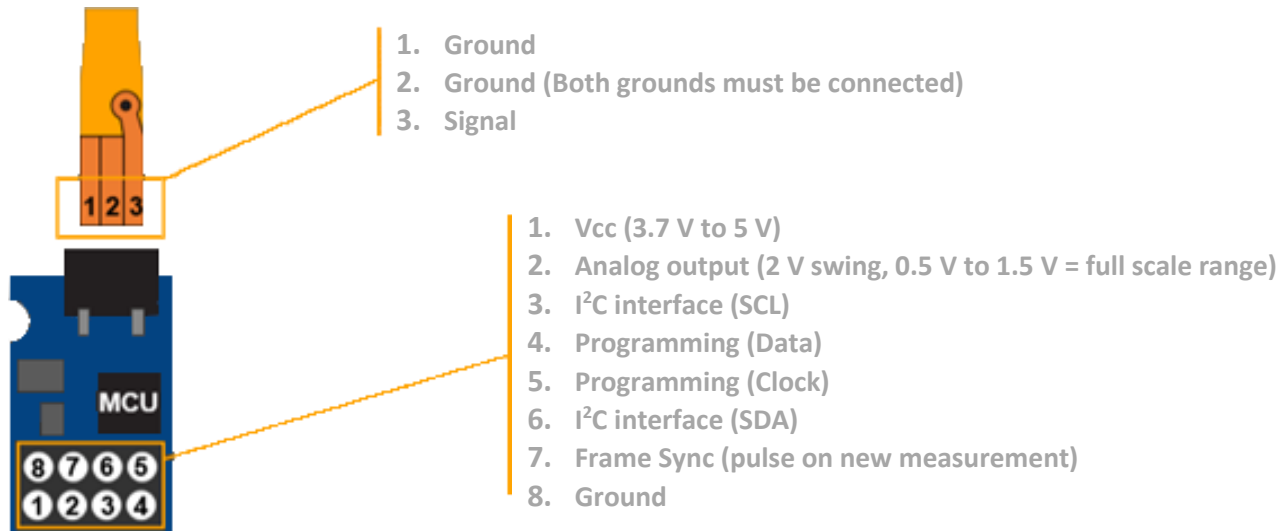
S15-450N

- +Full Scale Range: 45 kg (100 lbs)
- +Minimal Detectable Force: 90 g

EXPLODED VIEW



PINOOTS DIAGRAM FOR SENSORS AND I²C BOARD



I²C BOARD ELECTRICAL SPECIFICATIONS

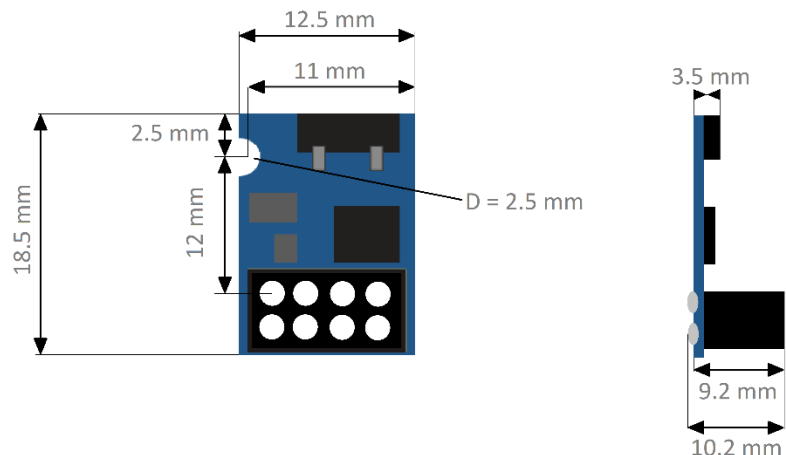
Update Rate	Up to 120 Hz
Analog Out	0.5 V – 1.5 V
Digital Interface	I ² C (100 kHz), 10-bit resolution
IO Voltage	3.3 V
Supply Voltage	3.7 V – 5 V
Input Current	2.7 mA
Weight	Sensor 0.23 g/ Electronics 1.6 g
RoHS	Compliant
Operating Temperature	-40 °C < T < 85 °C

I²C BOARD MECHANICAL SPECIFICATIONS

Typical tolerance: ± 0.2mm

Diagrams are not to scale.

Header socket pitch is 0.1" (2.54mm)



USB BOARD ELECTRONICS SPECIFICATIONS

	~100 Hz
Update Rate	Sensor values: 10-bit precision (115200 BAUD)
Digital Interface	5 V (No IO available)
IO Voltage	5 V USB via USB Mini B
Supply Voltage	5.1 mA
Input Current	0.34 g
Weight	Compliant
RoHS	-40 °C < T < 85 °C
Operating Temperature	

USB BOARD MECHANICAL SPECIFICATIONS

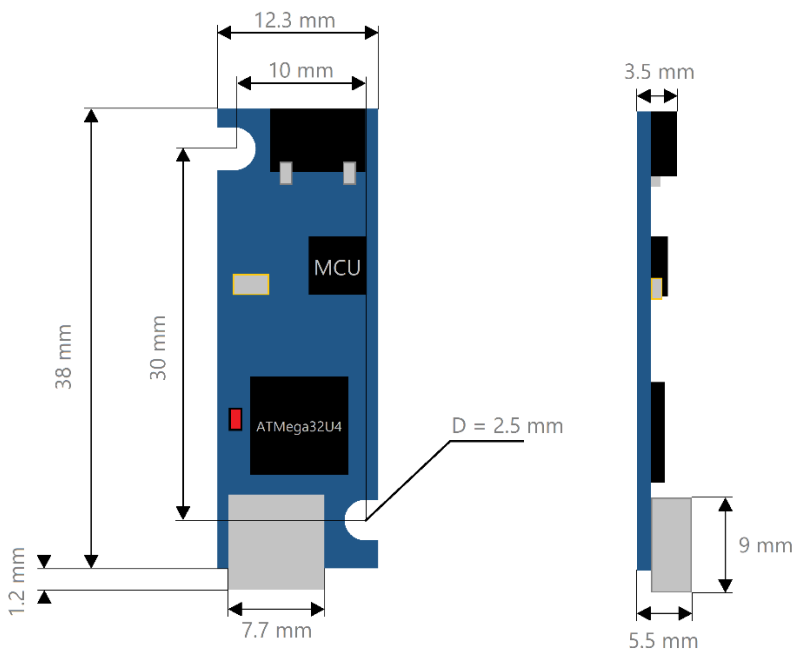
Typical tolerance: $\pm 0.2\text{mm}$

Diagrams are not to scale.

No user serviceable pin breakout is available.

Red LED is used for simple load visualization.

Output port is USB Mini B



TAIL EXTENDER GENERAL SPECIFICATIONS

Diagrams are not to scale.

