



3-axis High Resolution Tactile (Pressure) Sensor

Model: FTS3

Datasheet

The **FTS** line offers a range of pressure sensors from by Seed Robotics, providing high resolution and high integration with the Robot Hands produced by Seed Robotics.

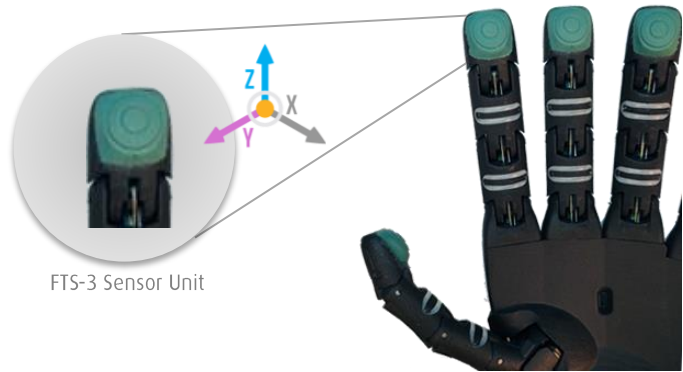
The FTS3 sensor measures the magnitude of force applied on the X, Y and Z axis of the sensor, providing a wide range of measurement.

The sensor measures the force applied (1 point) in all 3 axis, from perpendicular (**gripping force**) to 90° angle (**shear force** - parallel or tangent - to surface)

These sensors are recommended for applications where high resolution contact force measurement is necessary. The high resolution and low cost make it possible to build highly sensitive hands for next generation research in A.I., industrial robots and medical applications.

Key Benefits:

- High resolution
- High measurement range
- High overload tolerance
- Mechanical shock resistant
- Cost efficient
- Compensated for Temperature
- Immune to Magnetic interference



Sensors Mounted on a Seed Robotics' RH8D hand

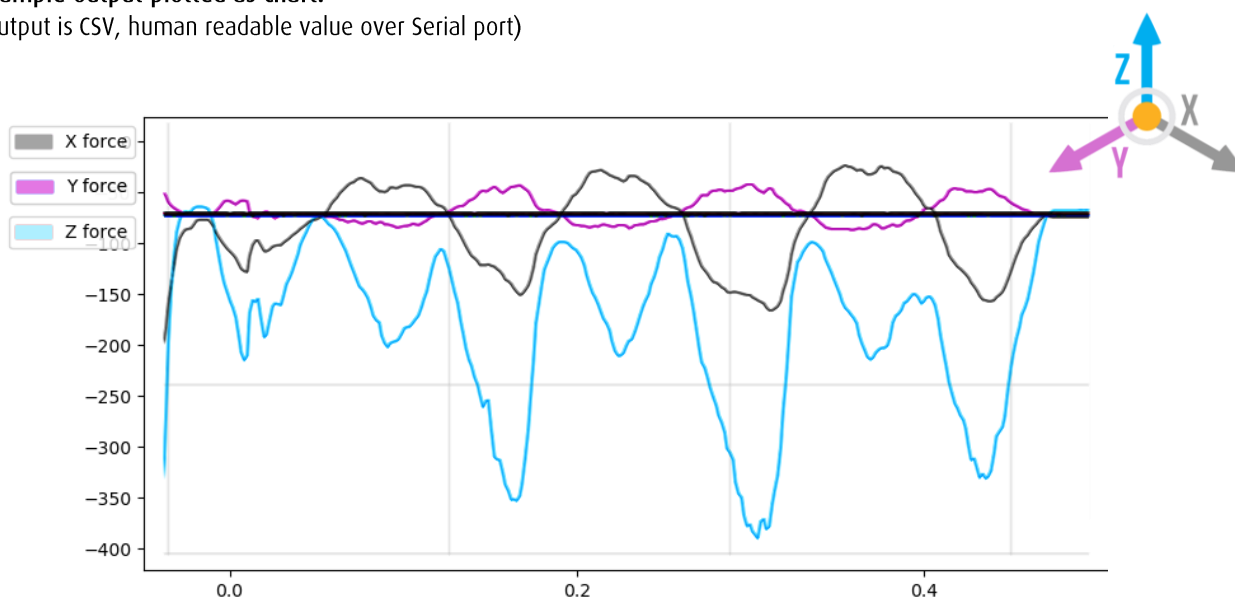
Sensor Type	3 axis contact pressure sensor	
Dimensions of Preferential contact area	Circular, 12mm diameter	Perpendicular to 90° from center of fingertip.
Nominal Capacity	Standard Range: 0-10N	Extended Range: 10N – 30N
Maximum Resolution	Standard Range Resolution: 1mN	Extended Range Resolution: 10mN
Non linearity	Standard Range: 2.5%	Extended Range: 5%
Overload capability	Up to 50N	
Hysteresis (typical)	< 2%	
Sampling Frequency	50Hz	
Output	Standard Output: force reading in X, Y and Z axis in mN Alternative Output: higher resolution force reading in X, Y, Z axis, in counts (~200counts per mN)	
Working temperature range	10°C – 35°C (operation is possible outside this range but non-linearly may increase)	
Interface	UART over RS422 (Full Duplex) Sensors are grouped in one single Acquisition Board for each hand. One interface of RS422 provides data for all sensors in one hand.	
Power requirement	2mA per sensor	Power is supplied by the DAQ.

In addition to providing the vector (direction) and magnitude of the force applied, the FTS-3 sensor can also be used to detect shear force – parallel or tangent – to the fingertip.

The sensor is optimized for measuring in the 0-10N range, where it can provide its highest resolution and precision. For measurement above 10N and up to 30N, an extended range model is used, achieving the additional measurement.

Example output plotted as chart:

(output is CSV, human readable value over Serial port)



Remarks:

- Seed Robotics is a registered trademark by Seed Cognitiva, Robotics Innovation, Lda
- The information shown is accurate at the time of writing and may be subject to change without notice.

