



The Encoder Rotary Torque package is perfect for testing any application which involves 360 degree rotation and torque. Equipped with the USB520, torque, RPM, and power can be monitored and viewed using the included SENSIT software.

The USB520 provides the end to time consuming wiring guides, countless stray wires, and noisy amplifiers. A 12-pin sensor mating cable, USB cable, and the SENSIT software are included in the package to measure and record data. When paired with a laptop, the USB520 will provide an essential solution to mobile data acquisitions.

**APPLICATIONS**

- Motor Testing
- Industrial Robot Automation
- Torque Verification/Calibration

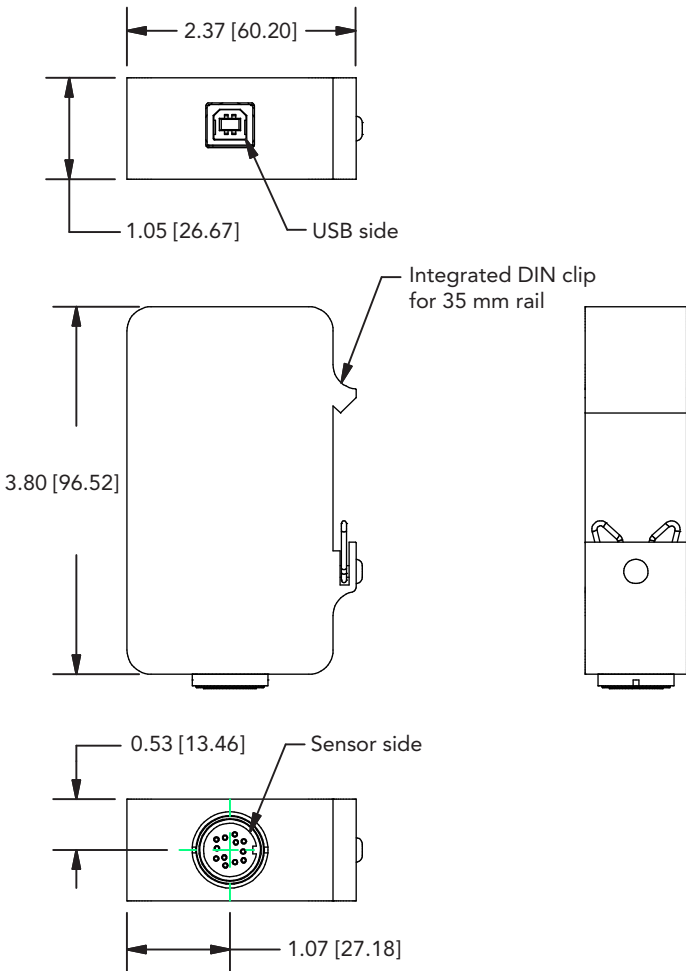
**ADVANTAGES**

- Extends equipment life expectancy
- Enhances productivity
- Clean setup
- Easy connection
- Plug & play system

- Provides a ready to go system with a prewired, five point system calibration enabled solution to ease setup and disregard messy wiring.
- The USB520 can save up to four different system calibrations locally on its internal memory, allowing precise data readings for multiple sensors with just one device.
- The USB520 uses a clean power source from a computer USB port and can provide up to 24VDC to the sensors while only using 5V from the USB port. Therefore no additional power supplying source is needed.



## DIMENSIONS inches [mm]



## OUTPUT & CONFIGURATIONS



### Configuration #1: SENSIT Software

The included SENSIT software is an ideal tool for acquiring data using the USB520.

## ASCII

### Configuration #2: ASCII Output

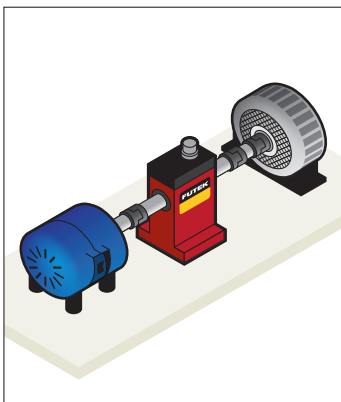
The USB520 provides ASCII output, enabling the user to read the output from the device. ASCII output can be read using programs such as Hyperterminal or programmed macros.



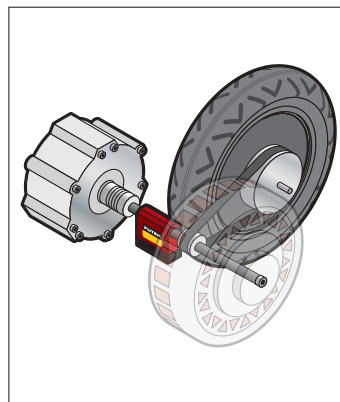
### Configuration #3: DLL File

The associated USB520 DLL file can be used in various programs to command the USB520 such as LabVIEW, and Visual Studio. [Find out more.](#)

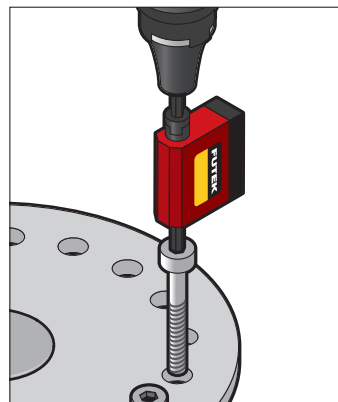
## APPLICATION EXAMPLES



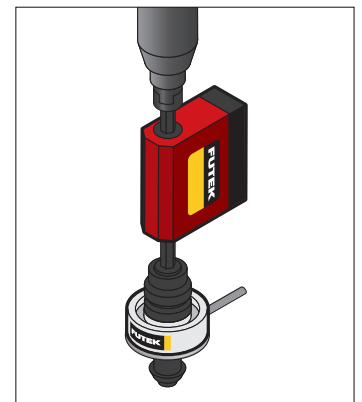
TORQUE/MOTOR TEST STAND



STANFORD SOLAR CAR DYNO

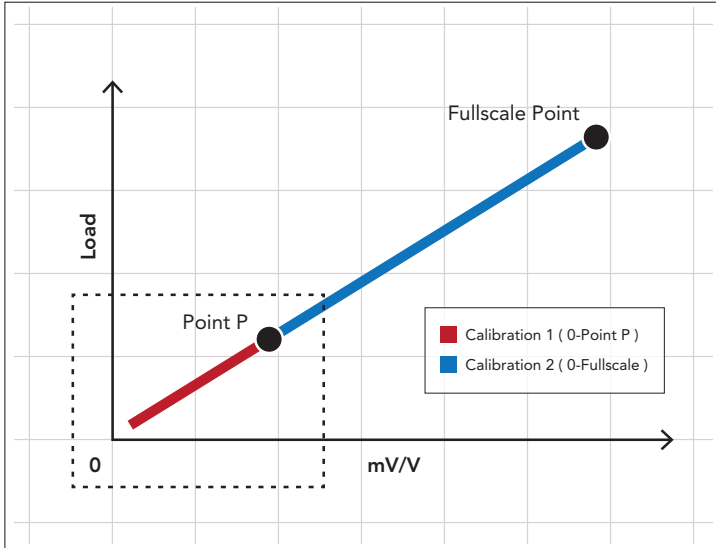


POWER TOOL MEASUREMENT



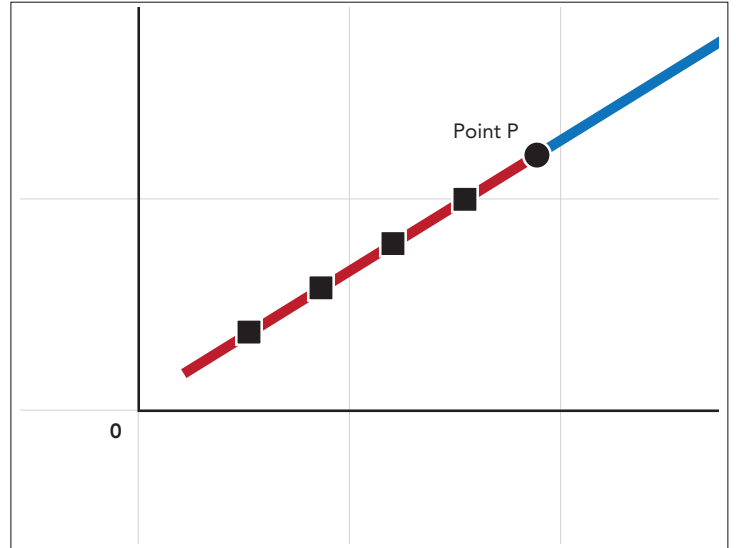
NUT RUNNER FORCE/TORQUE

The multi configuration feature of the USB520 consists of multiple calibrations stored internally in the device.



The graph above shows the multi configuration feature of the USB520 with one calibration profile for 0 to load point P and second profile for load 0 to FullScale Point.

This allows for higher precision and accuracy in certain load ranges, with the ability to measure the fullscale load value for the same sensor.



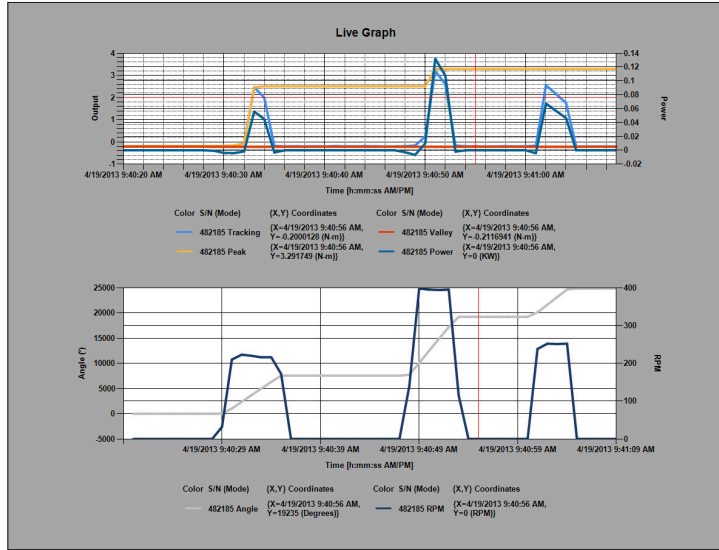
Each calibration profile consist of 5 loading points in each selected calibration direction.

In the figure above, the red calibration from 0 to point P is calibrated more accurately than the blue fullscale calibration.

This is because a 5 point calibration is done throughout 5 points from 0 to point P for the red line. This ensures much less non-linearity than a fullscale calibration from 0 to point P.

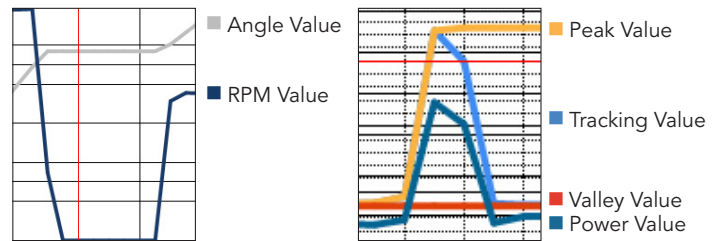


The included SENSIT software serves as an ideal data acquisition solution for load verification. A software that collects, graphs and interprets your data. The SENSIT software expands the capabilities of a traditional sensor platform into an ultimate test measurement solution.



### LIVE GRAPHING MODE

- Live Graphing provides a real-time graph for simultaneous Torque and Encoder readings.
- In the picture on the left, the top graph shows Torque measurements such as Peak, Valley, Tracking, and Power.
- The graph below the Angle and RPM are presented.
- Torque sampling rate up to 4800 samples per second.
- Encoder sampling rate up to 10 samples per second.



Display Mode   Data Logging Mode   <b>Live Graphing Mode</b>   Calibration Mode										
Display Table   Sum Channel   Math Channel										
Device	Status	S/N	Reading 1	Units 1	Reading 2	Units 2	Reading 3	Units 3	Reading 4	Units 4
1	Enabled	485...	49.909	N-m	484.50	Degrees	209	RPM	1.092	KW

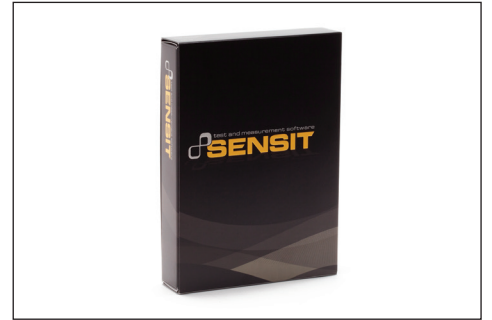
### ALL MEASUREMENTS IN ONE SCREEN

- The SENSIT software automatically detects the USB520 and displays Torque, Angle, Speed, and Power Respectively.
- All the readings are viewed in the main screen.

## Items Included in the Package



System Calibrated Encoder Rotary Torque Sensor USB520



SENSIT Test and Measurement Software

Drawing Number: EM1055

FUTEK reserves the right to modify its design and specifications without notice.  
Please visit <http://www.futek.com/salesterms> for complete terms and conditions.  
Copyright © 2020. All rights reserved.

FUTEK® Advanced Sensor Technology, Inc.

10 Thomas, Irvine, CA 92618 USA

Tel: (949) 465-0900

Fax: (949) 465-0905

[www.futek.com](http://www.futek.com)



RoHS



U.S. Manufacturer