PASPort

Force Sensor

PS-2104

Sensor Specifications

Sensor Range:	±50 newtons (N)
Accuracy:	1 %
Resolution:	0.03 newtons (N)
Max. Sample Rate:	1,000 sps
Default Sample Rate:	10 sps
Over-limit Protection:	Prevents damage from forces greater than 50 N
ZERO Button:	Tares the output to zero newtons before each use. Always tare with the sensor in the orientation used during the experiment.

Force Quick Start

The PS-2104 Force Sensor measures force in newtons.

Additional Equipment Needed

- PASPORT Link Device (USB Link, **Xplorer**, etc.)
- EZscreen or DataStudio™ software (version 1.5 or later)
- Hook and rubber bumper attachments (included)
- Thumbscrew (included) used to mount on cart or Accessory Bracket (CI-6545)

Equipment Setup

1. Connect the PASPORT Link Device to a USB port on your computer or USB hub.
2. Connect the sensor plug to a PASPORT Link Device.
3. The software launches when it detects a PASPORT sensor. From the PASPORTAL screen, select a point of entry:
   - an activity in the Workbook window,
   - EZscreen, or
   - DataStudio.

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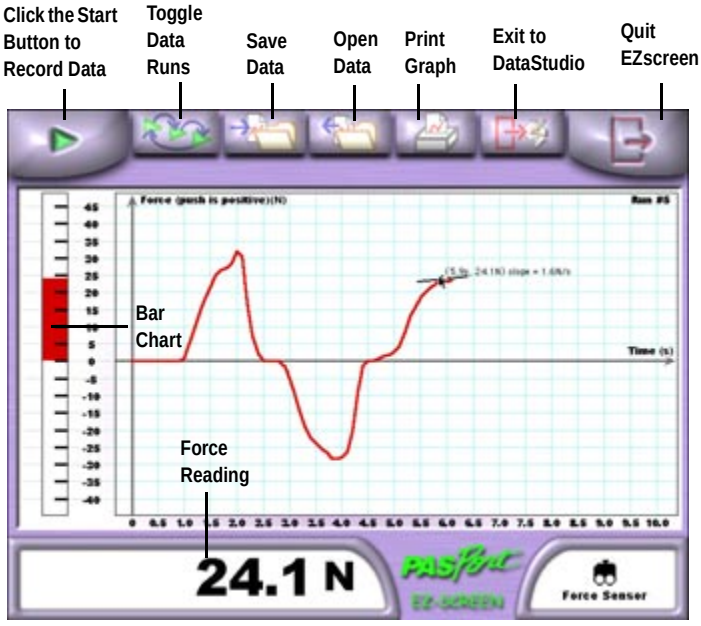

EZscreen Specifications

EZscreen Range:	±50 newtons (N)
Recording Time:	up to 120 seconds
Scale-to-Fit:	Double-click the Graph to scale data
Information Tool:	Drag cursor over graph to display X,Y coordinate and slope at a point
Export to DataStudio:	Click **Exit to DataStudio** button

Force EZscreen

EZscreen Activity - Acceleration Due to Gravity

1. Mount the Force Sensor on a horizontal support rod with hook pointing down.
2. Press the **Zero** button on the Force Sensor to tare it.
3. Obtain a variety of objects of known mass, such as the Hooked Mass Set (SE-8759). Hang a mass from the Force Sensor hook.
4. Click the **Start** button and record data for 10 seconds.
5. Click the **Stop** button.
6. Repeat Steps 2–5 for each mass.
7. Using your data and the formula:

   F = mg

   (where **F** equals the force exerted by the mass, **m** equals the mass, and **g** is the acceleration due to gravity), calculate an average value for the acceleration due to gravity.
8. Imagine that you performed this experiment on the Moon (where **g** is 1.63 m/s^2). How would this experiment change? Explain.

Note: Masses between 200–1000g yield best results.