

810 Electrodynamic Test Machine For Static, Fatigue, Dynamic Testing

Force Ratings to 30 kN (7000 lbf)

Speed Range: Static to 15 Hz

Overview

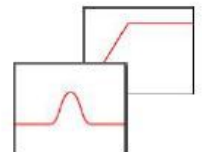
The 810 test system is used to characterize and test materials, devices and components over a wide spectrum of load, strain and stroke. Each system is configured from a wide number of actuators and transducers to serve specific customer needs. When configured with short travel LVDT's or small load cells – the package delivers unmatched accuracy and control in micromechanical test applications.

810 Systems include:

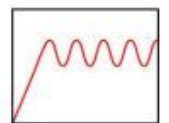
- Dual Column load frame
- E4 and E5 Series Electrodynamic Actuators with Power Pack
- Load cell and encoder
- Software products
- PC

Static, Dynamic and Fatigue Tests

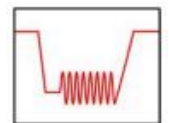
Monotonic Static and Dynamic Tests including Tensile, Compressive, Flexural, Stress Relaxation, Indentation or Creep Tests. Slow or quick ramps in load, strain or position control. Set up and collect force, strain, and displacement data for materials characterization, perform stress - strain plotting, and calculate strength properties. Special applications software products available to automate multi-step creep and stress relaxations tests to get more data out of each test run. Generate impact loads and capture high speed force, strain, and displacement data for materials characterization or product performance.



Constant Amplitude Fatigue & Cyclic Tests including Tension / Tension, Compression / Compression, and Tensile / Compression (thru zero) Fatigue Tests. Run load or strain controlled cyclic fatigue tests to determine cycles to failure or to prove your device meets endurance requirements. Adaptive peak valley control feature adjusts amplitude as test sample responds.



Dynamic Characterization Tests including Tension, Compression and Shear. Sweep time and temperature, change strain and load rates and gather accurate stress and strain data to measure time -development characteristics of viscoelastic materials using special test software. Analyze and report the full dynamic properties of gels, elastomers, polymers, tissues and biomaterials.



Random Fatigue including spectrum and point loading - Create your own test, Mix n' match - Import your loading profile from a spreadsheet and produce customized point by point waveforms. You can mix ramps and sinusoids, switch control modes during a test condition, or customize your data collection process.



810 Configurations

Linear Actuators - Overview

The following list shows popular actuator ratings. Select a linear actuator to match long term force, speed and stroke requirements. Linear actuators include a digital position encoder with 1 micron or better resolution. The table below highlights standardized configurations.

Series	E4 Family	E5 Family
Max Force	± 15.3 kN (3450 lbf)	± 30.5 kN (7000 lbf)
Max Velocity*	950 mm/s (37 in/s)	1 m/s (40 in/s)
Stroke	Most common: ± 75 mm (6 in) - Optional Strokes ± 225	
Position Resolution	0.1 micron	
Speed Range	0.00001 to 15 Hz	

*Max velocity at lower max forces

Note - Actuator family ratings provide overview of family attributes. The optimal configuration and specific model is determined between customers and application engineers. Specific models within a family have varying load and speed specifications. Fatigue rating information is available separately.

Dimensional and Utility Requirements

Load Frame Model	810 - 36	810 - MTO
Column Clearance	405 mm (16 in)	To 810 mm (32 in)
Column Length	900 mm (36 in)	To 1500 mm (60 in)
Vertical Test Space	0 to 810 mm (32 in)	To 1350 mm (54 in)
Footprint without outriggers	165 mm (6.5 in) D x 560 mm (22 in) W	165 mm (6.5 in) D x 660 mm (26 in) W
Weight	45 kg (100 lb)	90 kg (200 lb)

Applications

Many materials and products require static and fatigue tests to determine their fit to design requirements. Many options are available, including T slotted tables, grips, and chambers as well as the addition of a second actuator to produce biaxial motions (torsional or planar).

