840L Servo-All-Electric™ Test System

For Static, Fatigue, Dynamic Testing

Force Range: 0.0001 - 2500 N (580 lb)
Speed Range: Static to 50 Hz

System Overview

The 840 system is used to characterize and test materials, devices and components over a wide spectrum of load and stroke. Each servo-all-electric 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.

Systems include:

- Compact load frame.
- E2 or M Series Actuators
- Load cell, extensometers, and LVDTs
- 2370 Servocontroller with Power Pack
- MS Control Software
- PC with USB port
- Accessories - Grips, Extensometers, Baths, Software

System Highlights

840 systems cover a wide range of force, speed, and travel combinations with more than 25 different actuators and three controllers to choose from.

Mechanical

- Horizontal or vertical mode.
- Lightweight load frame - 0.05 m² (0.5 ft²) space. Frame features adjustable test space and crosshead or baseplate mounted actuator.
- Compact system powered by single phase 110V (or 220V) power pack.

Controller

- 2370 Servocontroller includes load, strain, stroke and encoder measurement and control channels.
- Adjustable high speed data acquisition (to 12.5 kHz) on four feedback channels concurrently.
- High resolution measurement and control technology:
  - Expanded Transducer ranging (down to 1% of full scale
  - 24 bit expanded range resolution
  - Low noise floor through high speed data averaging.
- 2360 Servocontroller option expands to control 16 test stations or actuators, 96 analog input channels or signal conditioners.

Powerful Software Suite

- MS32 Control Software is a general purpose software program that enables the creation and storage of test setups including test profiles, waveshapes, data acquisition, real time scopes, data analysis, data export and report generation. MS32 is common to both the 2370 and 2360 controllers and is used for single channel, multistation and multichannel test setups.
- MTL32 Machine Builder Software and firmware enables machine set up and configuration, calibration, Servotuning, and interfacing functions associated with managing the test machine hardware. MTL32 and MS32 programs are both GDS compatible.
- Global Data Sharing (GDS) is a proprietary software technology that allows multiple programs to be operating concurrently using real time input and output data originating from the controller. The GDS Developers Kit allows you to create special applications with Visual Basic or C programming tools.
- Applications test software is available to selected list of test standards or made-to-order. Reduce effort running standard tests where control or analysis is time consuming – including static tests, dynamic materials characterization, fracture mechanics, and other tests. These optional modules automate test control and analyses.

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TESTRESOURCES

840LE Servo-All-Electric Test Systems

Sample Specifications – for two actuators

Actuator Model	M80 High Speed	E216 High Force	Options
Max Static Force	± 206 N (46 lb)	± 2.5 kN (575 lb)	Higher load
Fatigue Rating	± 285 N (65 lb)	± 1200 N (270 lb)	Higher load
Stroke	± 25 mm (±1")	±63 mm (±2.5")	Longer stroke
Cyclic performance	Static to 50 Hz	Static to 15 Hz	Higher Freq
Velocity Max	3.8 m/s (150 in/s)	200 mm/s (8 in/s)	Faster
Example Performance at 10 Hz:	± 25 mm (± 1")	± 3 mm (± 0.125")	Higher Freq
Peak Impact Load (1 s duration)	± 1860 N (415 lb)	± 3 mm (± 0.125 in)	-
Max load at max velocity	50% load	100% load	-

Dimensional and Utility Requirements

Load Frame Model	840L	Options
Crosshead Type	Adjustable	Fixed
Column Clearance	202 mm (8")	Made to order
Frame height (min test space)	445 mm (17.5") H	Made to order
Test space	0 to 350 mm (14")	Made to order
Frame height (max test space)	795 mm (31") H	Made to order
Footprint	3.5"D x 11"W	Made to order
Weight	18 kg (40 lb)	Made to order
Power Pack Enclosure	12"H x 16"W x 10"D	
Power Requirements	110V (220V optional)	

840L Horizontal Setup

Notes – Specifications are based on typical test samples and may vary depending on actual conditions. Performance curves are available.
All speed specifications based on 220 V Power Pack. Discuss all critical specifications with an application engineer.

Options

Load Frame

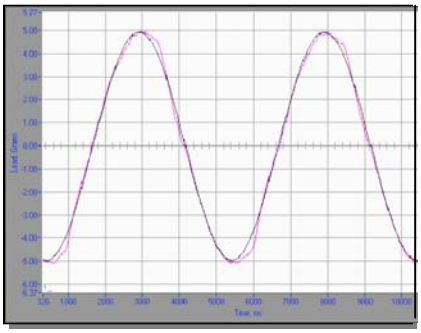
- Frames engineered for use inside incubators
- Frames engineered to requirements & made to order
- Larger test space – see 800 series load frames
- Higher force actuators – see E3 actuators

Accessories

- Load Cell Selections – from 50 grams to full rating of machine.
- Grips and fixtures - for regular and irregular specimens.
- Saline baths, environmental chambers and furnaces
- Extensometers – contacting and non contacting

Control Products & Software

- Dynamic Properties Application Program - for solids
- Automated Multistep Stress Relaxation and Creep
- Global Data Sharing Developers Toolkit



Example of high resolution load control

Load controlled waveform at 0.5% (± 5 g) of load cell full scale (±1000 g).

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