Small profile and ultra-light weight, these units are appropriate for testing small and delicate samples yet rugged enough for daily use on standard specimens. Ideal for strain measurement of wire specimens, sheet materials, and standard ASTM or ISO specimen geometries, and excellent for low and high cycle fatigue testing.

Weighing as little as 8 grams, these miniature extensometers are designed to have very low operating force with minimal specimen influence. All use an improved version of Epsilon’s dual flexure design which makes them very rugged for their size. With a compact module that is 15.2 mm (0.6 inches) high, they will fit in the limited space between grips that is typical with small test samples. Gauge lengths can be as short as 3 mm or as long as 50 mm. A newly designed gage setting pin and assembly allows the gauge length to be set accurately and repeatably to ASTM and ISO requirements for all gauge lengths. Reengineered quick attach wire forms provide simple and secure specimen attachment. Wire forms for round and flat specimens are included, as well as knife edges in flat, 3-point, and vee configurations. The wire forms may be removed to enable mounting using elastic bands or springs. A tethering attachment point provides fall protection and enables counterbalancing of the extensometer’s weight when testing delicate specimens.

Model 3442 extensometers are strain gaged devices, making them compatible with any electronics designed for strain gaged transducers. Most often they are connected to a test machine controller, and Epsilon will equip the extensometer with a compatible connector wired to plug directly into the controller. For systems lacking the required electronics, Epsilon can provide a variety of solutions for signal conditioning and connection to data acquisition systems, chart recorders, or other equipment.
Features

- May be left on through specimen failure.
- Gauge length pin helps set gauge length accurately for all gauge length configurations.
- All models can measure in both tension and compression and can be used for cyclic testing.
- Mechanical overtravel stops in both directions.
- Rugged, dual flexure design for strength and improved performance. Much stronger than single flexure designs, this also allows cyclic testing at higher frequencies.
- Standard units meet ASTM class B-1 requirements for accuracy. A test certificate is included. ISO 9513 class 0,5 test certificates are available upon request.
- Gauge length adapter kits enable configuration of multiple gauge lengths with one extensometer.
- Replaceable arms and spacers for ease of repair.
- High and low temperature options extend operation from as low as -270 °C to +200 °C (-454 °F to +400 °F).
- Full bridge, 350 ohm strain gaged design for compatibility with nearly any test system.
- Includes high quality foam lined case.

Specifications

Excitation: 5 to 10 VDC recommended, 12 VDC or VAC max.
Output: 2 to 4 mV/V nominal, depending on model
Linearity: <0.15% of full scale measuring range
Temperature Range: Standard (-ST) is -40 °C to +100 °C (-40 °F to 210 °F)
Optional (-LHT) is -270 °C to +200 °C (-454°F to 400 °F)
Cable: Integral, ultra-flexible cable, 2.5 m (8 ft) standard
Standard Quick Attach Kit: Fits round samples up to 13 mm (0.5 inch) diameter and flats up to 13 mm thick by 15 mm wide (0.5 inch by 0.6 inch); attach to larger specimens using rubber bands or springs (included)
Operating Force: 10 to 20 g typical

Options

Adapter kits to change gauge lengths
Connectors to interface to nearly any brand test equipment
Special coatings and stainless steel knife edges available for biomedical tests
Shunt calibration module (see page 120)
Specialty knife edges (see page 100)

Ordering Information

Model 3442 Available Versions: ANY combination of gauge length, measuring range and temperature range listed above is available, except as noted. The measuring range should not exceed the gauge length. Other configurations may be available with special order; please contact Epsilon to discuss your requirements.

<table>
<thead>
<tr>
<th>Gauge Length</th>
<th>Measuring Range</th>
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<tbody>
<tr>
<td>METRIC</td>
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<tr>
<td>-005M</td>
<td>±0.5 mm</td>
</tr>
<tr>
<td>-010M</td>
<td>±1.0 mm</td>
</tr>
<tr>
<td>-020M</td>
<td>±2.0 mm/-1.0 mm</td>
</tr>
<tr>
<td>-025M</td>
<td>±2.5 mm/-1.0 mm</td>
</tr>
<tr>
<td>-050M</td>
<td>±5.0 mm/-1.0 mm</td>
</tr>
<tr>
<td>-100M</td>
<td>±10.0 mm/-1.0 mm</td>
</tr>
<tr>
<td>-125M</td>
<td>±12.5 mm/-1.0 mm</td>
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<table>
<thead>
<tr>
<th>U.S.A.</th>
<th></th>
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<tbody>
<tr>
<td>-005T</td>
<td>±0.050&quot;</td>
</tr>
<tr>
<td>-010T</td>
<td>+0.100&quot;/-0.050&quot;</td>
</tr>
<tr>
<td>-025T²</td>
<td>+0.250&quot;/-0.050&quot;</td>
</tr>
<tr>
<td>-050T²</td>
<td>+0.500&quot;/-0.050&quot;</td>
</tr>
</tbody>
</table>

Temperature Range

- LT -270 °C to 100 °C (-454 °F to 210 °F)
- ST -40 °C to 100 °C (-40 °F to 210 °F)
- HT1 -40 °C to 150 °C (-40 °F to 300 °F)
- HT2 -40 °C to 200 °C (-40 °F to 400 °F)
- LHT -270 °C to 200 °C (-454 °F to 400 °F)

Example: 3442-008M-010M-ST: 8 mm gauge length, ±1.0 mm measuring range, standard temperature range (-40 °C to 100 °C)

Ordering Information

Model Number 3442-__-__-__-__-__

See more extensometers at www.epsilontech.com
Contact us for your special testing requirements.