The Model 3542RA is available in a variety of configurations. All are self-supporting on the specimen and mount very easily. For tests where a single-diameter specimen is typically used, the fixed diameter Model 3542RA1 is recommended. For applications where a continuously adjustable diameter extensometer is required, the Model 3542RA2 is available. The standard configuration for this model allows it to work on samples from 2 inches to 6 inches (50 mm to 150 mm). If desired, the two readings can be independent, providing two outputs. Many rock tests are done in tri-axial pressure vessels. Epsilon has versions for use in oil to 1360 bar at 200 °C (20,000 psi at 400 °F). These will fit in unusually small inside diameter vessels. For small diameter specimens, we suggest the Model 3442RA averaging axial extensometer.

All Model 3542RA extensometers are designed so they may be used together with the Model 3544 circumferential or Model 3975 diametral extensometer. Epsilon’s rock extensometers can withstand the punishment of daily, high volume testing. Some units have been used for several thousand tests without damage. The conical point contacts included with the extensometer are made from tungsten carbide.

The Model 3542RA 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. The signal conditioning electronics for the extensometer is typically included with the test machine controller or may often be added. In this case the extensometer is shipped with the proper connector and wiring to plug directly into the electronics. For systems lacking the required electronics, Epsilon can provide a variety of solutions, allowing the extensometer output to be connected to data acquisition boards, chart recorders or other equipment.

See the electronics section of this catalog for available signal conditioners and strain meters.

**Features**
- Full bridge, 350 ohm strain gage design for compatibility with nearly any test system.
- High accuracy, averaging output or optional dual independent outputs.
- All standard units meet existing ASTM class B-1 and ISO 9513, class 0.5 requirements for accuracy.
- Rugged, dual flexure design for strength and improved performance.
- Includes high quality foam lined case.
- Easy mounting, attaches with integral springs.
- Self-supporting on the specimen.
- May be used simultaneously with Model 3544 circumferential extensometers or Model 3975 diametral extensometer.
- The 3542RA1 is configured for a single diameter size (customer specified), and the 3542RA2 works on sample diameters from 2 inches to 6 inches (50 mm to 150 mm). Special configurations of the 3542RA2 will allow for smaller diameter sizes.

**Specifications**
- Excitation: 5 to 10 VDC recommended, 12 VDC or VAC max.
- Output: 2 to 4 mV/V nominal, depending on model
- Linearity: ±0.20% of full scale measuring range, depending on model
- Temperature Range: Standard (-ST) is -40 °C to +100 °C (40 °F to 210 °F)
- Specimen Size: Wide range of specimen sizes available, including Ax, Bx, Nx and larger, to 6 inches (and 200 mm) diameters standard (larger sizes on special order)
- Operating Force: <30 g typical per side

**Options**
- Fixed or variable diameter configurations
- Dual, independent outputs
- Connectors to interface to nearly any brand test equipment
- Shunt calibration module (see page 104)

**Ordering Information**
Model 3542RA Available Versions: Any combination of gauge length, measuring range and temperature range listed below is available, except as noted. Test specimen diameters(s) must be specified at the time of order. 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>
<th>Temperature Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>Metric</td>
<td></td>
</tr>
<tr>
<td>-010</td>
<td>±0.050”</td>
<td>265 °C to 1100 °C (450 °F to 2100 °F)</td>
</tr>
<tr>
<td>-020</td>
<td>±0.100”</td>
<td>265 °C to 1100 °C (450 °F to 2100 °F)</td>
</tr>
<tr>
<td>-030</td>
<td>±0.150”</td>
<td>265 °C to 1100 °C (450 °F to 2100 °F)</td>
</tr>
<tr>
<td>-040</td>
<td>±0.200”</td>
<td>265 °C to 1100 °C (450 °F to 2100 °F)</td>
</tr>
<tr>
<td>-050</td>
<td>±0.250”</td>
<td>265 °C to 1100 °C (450 °F to 2100 °F)</td>
</tr>
</tbody>
</table>

**Model Number 3542RA**

- **Diameter Type**: 1.000” to 6.000”
- **Gauge Length**: 2” or 50 mm gauge length
- **Measuring Range**: ±0.050” to ±2.5 mm
- **Nominal**: ±0.050”
- **Options**: Fixed or variable, Dual or independent
- **Certified**: Epsilon Tech – Broadest product range with unrivaled quality.

![Model 3542RA Averaging Axial Extensometers](Image)

**Ordering Format**
- Model 3542RA Available Versions: Any combination of gauge length, measuring range and temperature range listed above is available, except as noted. Test specimen diameters(s) must be specified at the time of order. Other configurations may be available with special order; please contact Epsilon to discuss your requirements.

![Epsilon Tech – Broadest product range with unrivaled quality.](Image)