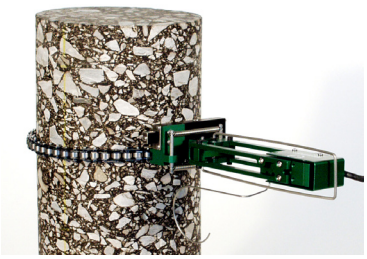
Designed for concrete and rock compression testing or for compression tests on other large samples. This model may be used simultaneously with the Model 3542RA axial extensometers.



Model 3544 in a horizontal body style

Circumferential extensometers measure the change in circumference as the sample is compressed. This is considered by many researchers to be a more accurate way to determine diametral strain, since the measurement is taken over the entire material inside the circumference.

A high precision, custom roller chain with special rollers mounts the extensometer to the specimen. As the specimen diameter enlarges during the test, the chain causes the extensometer to expand. The unit is self-supported on the sample with integral springs. Links are easily added or removed to adjust for different size specimens. A mechanical adjustment allows the output to be set to zero. A breakaway device protects the extensometer in the event of specimen rupture. Often rock specimens are tested in tri-axial pressure cells. Versions of the Model 3544 are available to fit inside the vessel and operate in oil environments at up to 1360 bar at 200 °C (20,000 psi at 400 °F).

Model 3544 is the best choice for large diametral strains in large compression samples when performing non-reversed, compression-only tests. Epsilon's diametral rock and concrete extensometer, the Model 3975, is recommended for small strain measurements such as Poisson's ratio and for strain-controlled, cyclic, or tensile tests.

Model 3544 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 with electronics for a strain channel, and Epsilon will equip the extensometer with a compatible connector that is wired to plug directly into the controller. For systems lacking the required electronics, Epsilon can provide a variety of signal conditioning solutions that enable connecting to data acquisition systems or other equipment.

Model 3544 with a 4 inch diameter specimen

See the Model 3544 extensometer setup video

Features

- Full bridge, 350 ohm strain gaged design for compatibility with nearly any test system.
- Adapts to a wide range of specimen sizes by adding or removing chain links.
- Self-supporting on the specimen.
- May be used simultaneously with Model 3542RA axial extensometers.
- Versions available for use in tri-axial confining pressure cells, at high pressures and temperatures.
- Includes the Epsilon Shunt Calibration System for on-site electrical calibration.
- Rugged, dual flexure design for strength and improved performance.
- 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:	≤0.25% of full scale measuring range
Temperature Range:	Standard (-ST) is -40 °C to +100 °C (-40 °F to 210 °F) Optional (-HT2) is -40 °C to +200 °C (-40 °F to 400 °F)
Cable:	Integral, ultra-flexible cable, 2.5 m (8 ft) standard
Specimen Sizes:	Fits round specimens with diameters from 50 mm up to 200 mm (2-8 inches), depending on configuration

Options

Horizontal, vertical or user convertible orientations
Connectors to interface to nearly any brand of test equipment

CE CERTIFIED

Model 3544
Used with Model 3542RA dual averaging extensometer.

Ordering Information

Model 3544 Available Versions: Any combination of diameter range, measuring range and temperature range is available, except as noted. *Other configurations may be available with special order; please contact Epsilon to discuss your requirements.*

Diameter Range

METRIC	
-100M	50 mm to 100 mm
-150M	50 mm to 150 mm
-200M	50 mm to 200 mm
U.S.A.	
-0400	2.00" to 4.00"
-0600	2.00" to 6.00"
-0800	2.00" to 8.00"

Circumferential Measuring Range

METRIC	
-020M	+2.0 mm
-030M	+3.0 mm
-060M	+6.0 mm
-120M	+12.0 mm
U.S.A.	
-080T	+0.080"
-125T	+0.125"
-250T	+0.250"
-500T	+0.500"

Model Number 3544-__ __ __ __ - __ __ __ __ - __ __

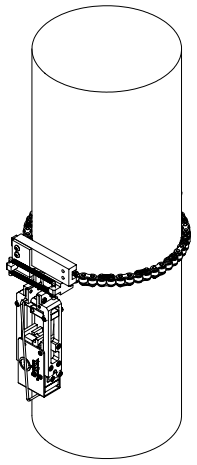
Temperature Range

-ST[1]	-40 ˚C to 100 ˚C (-40 ˚F to 210 ˚F)
-HT1[1]	-40 ˚C to 150 ˚C (-40 ˚F to 300 ˚F)
-HT2[1]	-40 ˚C to 200 ˚C (-40 ˚F to 400 ˚F)

[1] *Use below 0 °C (32 °F) may cause ice buildup, requiring chain assembly drying between tests. Use above 100 °C (212 °F) may reduce the service life of the chain assembly bearing.*

Example: 3544-200M-120M-ST: 50 mm to 200 mm diameter range, +12 mm measuring range, standard temperature option (-40 °C to 100 °C)

Visit our website at www.epsilontech.com
Contact us for your special testing requirements.



MODEL 3544 EXAMPLE