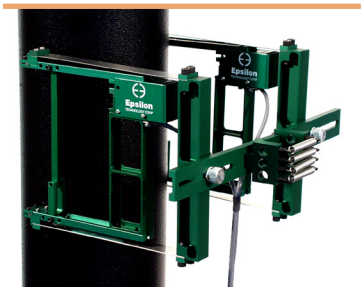
Designed primarily for compressive strength tests on rock, concrete and other large compression samples, this model measures axial strain on opposite sides of the test specimen, and the output is an average of the two readings. Gauge lengths from 25 to 200 mm (1 to 8 inches) and measuring ranges from 1.2 to 6 mm (0.050 to 0.250 inches) are available.



Model 3542RA2 dual averaging rock and concrete extensometer

Model 3542RA1 extensometer with 50 mm gauge length

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 50 mm to 150 mm (2 inches to 6 inches). 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 3442RA1 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.

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 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.

Features

- Full bridge, 350 ohm strain gaged design for compatibility with nearly any test system.
- High accuracy, averaging output or optional dual independent outputs.
- The 3542RA1 is configured for a single specimen diameter, specified when ordering, in the range of 50 to 200 mm (2 to 8 inches). The 3542RA2 is adjustable to work on any specimen diameter from 50 to 150 mm (2 to 6 inches). Special configurations of the 3542RA2 will allow for smaller diameter sizes.
- 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.
- 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
Accuracy:	Standard configurations meet ASTM E83 class B-1 and ISO 9513 class 0,5 requirements for accuracy. A test certificate is included.
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) Optional (-LHT) is -270 °C to +200 °C (-454°F to 400 °F)
Cable:	Integral, ultra-flexible cable, 2.5 m (8 ft) standard
Specimen Size:	Fits a wide range of specimen sizes: AX, BX, NX and larger specimens Diameters from 50 to 200 mm (2 to 8 inches) 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 of test equipment

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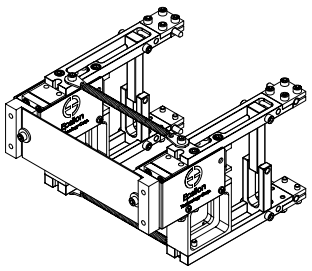


50 mm (2") gauge length

MODEL 3542RA1 EXAMPLE

Ordering Information

Model 3542RA Available Versions: ANY combination of gauge length, measuring range and temperature range listed above is available, except as noted. Specify specimen diameter(s) when ordering. *Other specimen diameters and extensometer gauge lengths may be available with special order; please contact Epsilon to discuss your requirements.*

Gauge Length

METRIC	
-025M	25.0 mm
-050M	50.0 mm
-080M	80.0 mm
-100M	100.0 mm
-150M	150.0 mm
-200M	200.0 mm
U.S.A.	
-0100	1.000"
-0200	2.000"
-0300	3.000"
-0400	4.000"
-0500	5.000"
-0600	6.000"
-0800	8.000"

Measuring Range

METRIC	
-120M	±1.2 mm
-250M	±2.5 mm
-600M	±6.0 mm
U.S.A.	
-050T	±0.050"
-100T	±0.100"
-250T	±0.250"

Model Number 3542RA __ - __ __ __ __ - __ __ __ - __ __

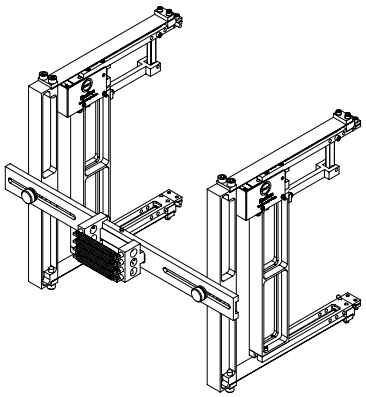
Diameter Type

1	Fixed
2	Adjustable

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: 3542RA1-100M-600M-ST: Fixed size, 100 mm gauge length, 6.0 mm measuring range, standard temperature option (-40 °C to 100 °C)



150 mm (6") gauge length, fits samples from 50 to 150 mm (2" to 6") diameter

MODEL 3542RA2 EXAMPLE