

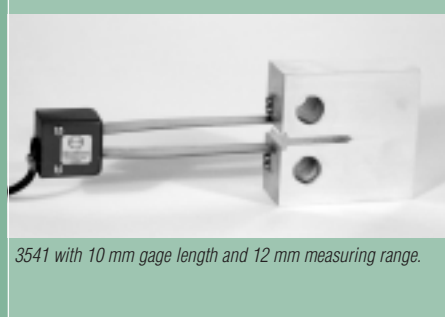


3541 with 3 mm gage length and 4 mm measuring range.

For fracture mechanics studies, these gages are in compliance with standardized test methods, such as ASTM E1820 for determination of fracture toughness properties of metallic materials.



Optional bolt-on knife edges.



3541 with 10 mm gage length and 12 mm measuring range.

These gages conform to the requirements of ASTM E399 for fracture toughness and E1820 and E813 for J_{IC} and R-curve determination. In addition, the modified groove design complies with E1820 tests where greater stability and accuracy results from the sharper groove root. Clip-on gages are used for a variety of fracture mechanics tests, including compact tension, arc shaped, disk shaped, bend specimens or other specimen geometries in compliance with ASTM and other standards organization's test methods. Clip-on gages can be used directly on test specimens where the knife edges are integral with the test specimen or, alternately, with optional bolt-on knife edges mounted on the test specimen.

The Model 3541 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.

Contact Epsilon for your special testing requirements.

Features

- Full bridge, 350 ohm strain gaged design for compatibility with nearly any test system.
- Fully enclosed gages to protect from accidental damage.
- All standard units meet existing ASTM requirements for accuracy.
- Sharp grooves per ASTM E1820, E813, and E399 for improved stability when mounted.
- Includes high quality foam lined case.
- All capable of high frequency operation (50 Hz or faster, depending on version).

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% for measuring ranges less than 0.25 inch (6 mm), 0.20% for greater measuring ranges
- Temperature Range:* Standard (-ST) is -40 °C to +100 °C (-40 °F to 210 °F)
- Cable:* Ultra-flexible cable, 8 ft. (2.5 m) standard
- Operating Force:* Exerts 2 to 3 lbs (9 to 14 N), depending on model

OPTIONS

- Connectors to interface to nearly any brand test equipment
- Shunt calibration module (see page 96)
- Bolt-on knife edges
- Available in special versions
- Severe environment versions available

Special Model for Other Fracture Mechanics Testing
Special units are available for other fracture mechanics tests. This example shows a gage for ASTM E1304, Standard Test Method for Plane-Strain (Chevron-Notch) Fracture Toughness of Metallic Materials. This example was produced for a 1 inch diameter bar, with 0.4 inches of measuring range. Its performance, design and accuracy is an enhancement of the design recommended in E1304.



ORDERING INFORMATION

Model 3541 Available Versions: The following combinations of gage length and measuring range listed below are available as standard, except as noted. All are available in any temperature range listed.

Gage Length		Measuring Range	
U.S.A.		DESIGNATION	
-0010	0.100"	-100T	+0.100"/-0.050"
-0020	0.200"	-150T	+0.150"/-0.050"
-0030	0.300"	-200T	+0.200"/-0.050"
-0040	0.400"	-250T	+0.250"/-0.050"
-0047	0.475"	-500T	+0.500"/-0.100"
-0050	0.500"	METRIC	
METRIC		-025M	+2.5 mm/-1.0 mm
-003M	3.0 mm	-040M	+4.0 mm/-1.0 mm
-005M	5.0 mm	-070M	+7.0 mm/-1.0 mm
-008M	8.0 mm	-100M	+10.0 mm/-1.0 mm
-010M	10.0 mm	-120M	+12.0 mm/-2.0 mm
-012M	12.0 mm		
-020M	20.0 mm		

Model Number 3541- _____ - _____ - _____

Temperature Range	
-LT	-265 °C to 100 °C (-450 °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) ¹
-HT2	-40 °C to 175 °C (-40 °F to 350 °F) ¹
-LHT	-265 °C to 175 °C (-450 °F to 350 °F) ¹

¹ Short term use to 200 °C (400 °F) acceptable.

Example: 3541-0050-200T-LT: 0.50 inch gage length, +0.20 inch measuring range, low temperature option (-450 °F to 210° F)

