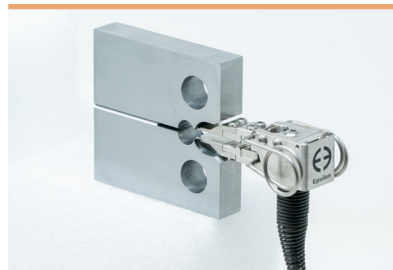




Designed for fracture mechanics testing in environmental chambers

where the entire gage must be exposed to elevated temperatures.

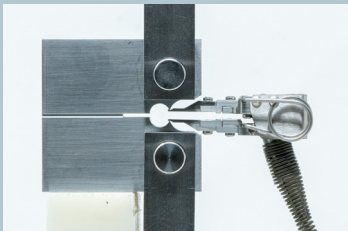
These capacitive sensors may be used up to 700 °C (1300 °F) without any cooling.



Model 7641 COD gage

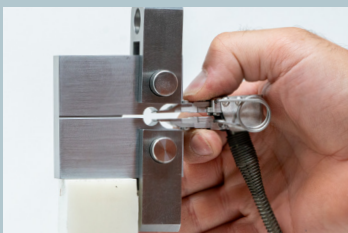
These COD gages use a high-temperature capacitive sensor and do not require any cooling. They will operate up to the maximum temperature limit of most environmental chambers used in materials testing.

The Model 7641 is ideal for determination of fracture mechanics parameters such as JIC, KIC, R-curve, fatigue crack growth rate (da/dN), and testing to standards such as ISO 12135, ASTM E1820, E399, E647, etc. All units can be displaced slightly in compression for ease of installation.



Model 7641 COD gage fits in tight spaces

The COD gage is supplied with the advanced DT6229 controller. The standard output is a 0-10V analog signal, factory calibrated with the COD gage. This system provides a number of functional enhancements including: built in calibration and tare functions, multi-point linearization, analog and digital filters, high speed digital output, and more.



Mounting the Model 7641 COD gage

The 7641 is readily interfaced with most existing test controllers or may be directly connected to a data acquisition system, chart recorder, or a PC. The 7641 may be used for strain-controlled tests such as JIC.



Model 7641 COD gage with signal conditioner

The 7641 Gen2 now includes improved overtravel protection. The enhanced mounting tips accommodate even more specimen geometries, while simultaneously improving handheld ergonomics and ease of installation. Additionally, the improved design now comes standard with an attachment point for tethers and/or counterbalances. The Gen2 model maintains the same high-temperature performance, capable of withstanding temperatures up to 700°C (1500°F), and is available in whole-millimeter gauge lengths ranging from 3mm to 12mm with a variety of measuring ranges.

 See the Model 7641 COD gage video

Features

- **May be left on through specimen failure.**
- All standard models are suitable for cyclic testing.
 - >10 Hz typical for 5mm GL and larger
 - Typically limited by the user's test apparatus, software settings, and filter selection
- Digital controller and power supply included. Provides high level DC voltage output with low noise. Easily interfaced to test controllers, data acquisition boards and chart recorders.
 - Includes high speed analog and digital outputs
 - Intuitive web-based user interface for setup, calibration, and data acquisition
 - Built-in calibration reference and auto-zero features
 - Multiple extensometer calibration files may be loaded for use with one controller
 - Multiple temperature-specific calibrations may be stored
 - Selectable analog and digital filter options from 2 Hz to 3 kHz
- Ships fully calibrated with electronics (traceable to NPL (UK)) with user specified voltage output.
- Mechanical over-travel protection.
- Rugged, dual flexure design for strength and improved performance.
- Includes high quality foam lined case.

SPECIFICATIONS

Analog Output: User specified, $\pm 10V$ typical, $\pm 10.8V$ rail
Digital Output: 24 bit high speed Ethernet output with built-in web interface
Accuracy: All standard configurations meet ASTM E1820, ISO 12135, ISO 9513 Class 0.5, and ASTM E399 (up to 3mm) requirements for accuracy

Linearity: 11 point linearization, $\leq 0.15\%$ FS typical linearity

Resolution: <55 PPM (0.006%FS) RMS @4 kHz, <6 PPM (0.0006%FS) @100 Hz

Cyclic Testing: Models available for 10-50Hz testing; see website

Analog Filter: Selectable 100 Hz analog and 2 Hz - 3 kHz digital filters

Temperature Range: Ambient to 700 °C (1300 °F). Use up to 800 °C is possible – contact Epsilon for details. Springs may require periodic adjustment or replacement after long-term testing above -600 °C.

Temperature Sensitivity (Gain): <100 PPM/°C (0.01%FS/°C) typical

Sensor Cable: 0.7 m (2.5 ft) tri-axial high temperature cable, plus 1.5 m (5 ft) room temperature extension cable

Operating Force: 10-50 N typical, depending on model

Environment: Recommended for elevated temperature testing in dry air, inert / non-corrosive gases, or vacuum

Overall Dimensions: See website for overall dimensions

Power: Includes power supply

OPTIONS

- Connectors to interface to nearly any brand of test equipment
- Bolt on knife edges for attachment to test specimens without machined attachment points
- Bulkhead adapter for vacuum chambers

ORDERING INFORMATION

Model 7641 Available Versions: ANY combination of gauge length and measuring listed below is available, except as noted. *Make sure that model 7641 fits your specimens, grips, and chamber/furnace - see the web page for details.*

Gauge Lengths		Measuring Ranges		
Model #	Gauge Length	Model #	Measuring Range	Total Length
-030M	3.0 mm(0.12")	-055MV ¹	5.5 mm(0.22")	47.6mm(1.88")
-040M	4.0 mm(0.16")	-070MV ²	7.0 mm(0.28")	56.5mm(2.23")
-050M	5.0 mm(0.20")	-080MV	8.0 mm(0.31")	60.3mm(2.38")
-060M	6.0 mm(0.24")	-090MV	9.0 mm(0.35")	66.7mm(2.63")
-070M	7.0 mm(0.28")	-035MA ^{*1}	3.5 mm(0.14")	51.1mm(2.01")
-080M	8.0 mm(0.31")	-045MA ^{*2}	4.5 mm(0.18")	59.9mm(2.36")
-090M	9.0 mm(0.35")	-050MA [*]	5.0 mm(0.20")	63.8mm(2.51")
-100M	10.0 mm(0.39")	-055MA [*]	5.5 mm(0.22")	70.1mm(2.76")
-110M	11.0 mm(0.43")			
-120M	12.0 mm(0.47")			

Installed Gauge Length is set by your specimen. Round DOWN to the nearest available size.

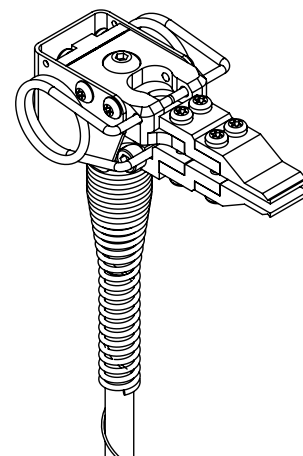
Model Number 7641- - - - -

* -xxxMA = angled cable exit

¹ Best dynamics and stability; recommended for front face specimen

² Good dynamics and stability; best ergonomics; recommended for load line specimens

Example: 7641-010M-055MV: 10.0 mm gauge length, +5.5 mm measuring range, vertical cable exit



MODEL 7641 EXAMPLE