MTS Fundamental™ Automatic Extensometer (FAX)

Accurate axial and transverse strain measurement

Benefits

- High-resolution strain measurement up to 0.05 µm
- Axial with optional transverse deformation measuring
- Compliant to ISO 9513 Accuracy Class 0.5
- Synchronized axial movement with specimen
- Ability to track to failure
- Designed for longevity and high-volume testing

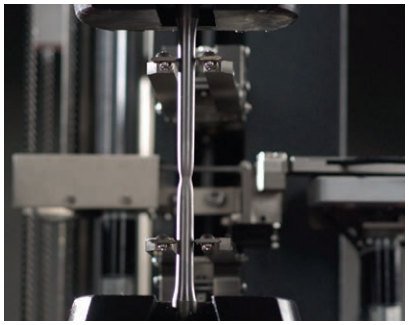
Reduce inconsistencies and improve the accuracy of test results with an MTS Fundamental™ Automatic Extensometer (FAX). The high-resolution automatic extensometer is suitable for a wide variety of applications that require linear strain measurement. The FAX can determine a variety of calculation including modulus, offset yield and plastic elongation to failure.

FAX offers a fast and highly accurate contact measurement for tensile testing on a wide range of materials such as plastics, composites, metals and rebar. Designed to automatically trace and measure specimen deformation, the MTS FAX performs standard axial and transverse measurement. Improve lab productivity with the automatic self-adjusting gage length positioning to ensure test consistency.

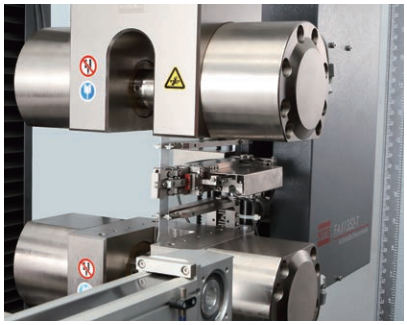
The FAX enables higher accuracy and greater versatility of axial and transverse deformation measurements. The innovative design of the support can keep the extensometer moving along the center of the specimen synchronously to ensure measurement precision. It is designed with a high precision measure up to 0.05 µm in resolution and meets the requirements of ISO and ASTM test methods.

Tensile testing for the following materials:

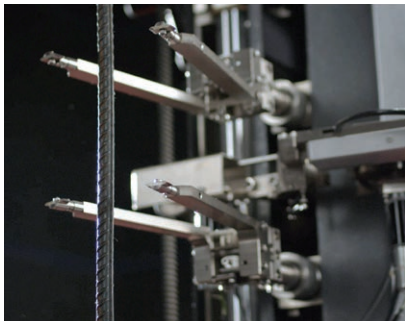
» Metals
» Plastics
» Composites
» Rebar



Round specimen



Sheet metal



Rebar

Two Mounting Options

Intuitive design allows operators to quickly position the extensometer out of the test area.

FIXED MOUNT
Used to prop up the FAX and keep it moving with the main units' crossbeam simultaneously within the test area.

PIVOTAL MOUNT
Allows the operator to quickly withdraw the device from the test area from two positions.

Testing Results

E (elastic modulus)

Rt (specified total elongation intensity)

n (strain hardening index)

At (total elongation at break)

Agt (total elongation at maximum force)

μ (Poisson's ratio)

Rp (specified plastic elongation length)

r (plastic strain ratio)

Ae (yield point elongation)

Ag (plastic elongation at maximum force)

A (percentage elongation after fracture)

Fixed Mount

Pivotal Mounts

Specifications

Axial Measurement

Model	FAX1352 (axial) FAX1352-T (axial & transverse)	FAX1452 (axial) FAX1452-T (axial & transverse)
Arm length	350 mm	450 mm
Range of gage (mm)	10 – 200	10 – 200
Relative error (%)	±0.5	±0.5
Deformation measurement range (mm)	0 – 80	0 – 100
Resolution (μm)	≤0.2	≤0.3
Indication error	Deformation: 0-0.3 mm, <0.0015 mm Deformation: 0.3-80 mm, <0.5%	Deformation: 0-0.3 mm, <0.0015 mm Deformation: 0.3-100 mm, <0.5%
Thickness or diameter range (mm)	Plates 0.2-40; bar Φ0.2-Φ40	Plate 0.2-40; bar Φ0.2-Φ40

Transverse Measurement

Specimen width (mm)	10 – 25	10 – 25
Sample thickness (mm)	0.2 – 5	0.2 – 5
Deformation measuring range (mm)	Up to 25% of specimen width	Up to 25% of specimen width
Resolution (μm)	0.05	0.05
Indication error	Deformation: 0-0.3 mm, <0.0015 mm Deformation: 0.3-8 mm, <0.5%	Deformation: 0-0.3 mm, <0.0015 mm Deformation: 0.3-8 mm, <0.5%

Test Standards

ISO 9513	Metal material – calibration of extensometer for uniaxial test
ASTM E83	Standard methods for verification and classification of extensometer system
ISO 6892-1	Metal material – ambient temperature tensile test method
ASTM E8	Metal material – tensile test method
ISO 527-1	Plastic measurement of tensile performance – Part 1

Learn More Today

Contact your MTS representative to learn more about how the MTS Fundamental Automatic Extensometer can meet your contact extensometry needs, easily and affordably.

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