

## High-precision automatic gauge length extensometer

**Compatible with**  
Tinius Olsen ST and  
SL series of materials  
testing systems

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- + Accuracy class 0.5 (EN ISO 9513) across the full measuring range
- + Resolution max. 0.01 $\mu$ m (1 Vpp) or 0.05 $\mu$ m (RS422/TTL)
- + Gauge length from 10mm
- + Fully automatic positioning, gauge length setting, and specimen attachment
- + Measuring travel 200mm minus gauge length
- + Operation in both upper and lower testing spaces
- + Rugged, precise mechanical design for long term reliability
- + Quick release measuring heads for fast configuration changes

# Automatic Extensometer Series

**Application :** The AEX200 is suitable for nearly all test specimens with gauge lengths from 10 mm, making it a universal solution for linear strain measurement, including:

- + Modulus determination (E modulus)
- + Tensile testing of metals, plastics, and composites
- + Quality control and R&D testing
- + Measurements up to specimen fracture

High accuracy and robust construction helps the AEX200 cover almost all standard extensometer applications required in routine and advanced materials testing.

**Design and Operating Principle :** The AEX200 features smooth running, nearly frictionless linear guidance of the measuring heads to ensure highly accurate strain measurement. A non contact optical incremental measurement system guarantees consistent performance and allows the extensometer to meet ISO accuracy class 0.5 over the entire measuring travel.

## Fully Automated Operation:

- + Automatic movement to the predefined specimen position
- + Automatic setting of the initial gauge length
- + Automatic attachment and detachment from the specimen
- + Strain measurement from test start up to specimen fracture

The extensometer operates without restriction in both the upper and lower test space, providing maximum flexibility for different testing configurations.

## TO order numbers

AE-006-0000	AEX 200 :Auto Extensometer , SRC ; 200 mm GL 10 mm, Single Output
AE-006-0001	AEX 200D: Auto Extensometer, SRC ; Down direction, 200 mm GL10 mm, Single Output
AE-005-0012	Standard Measuring Head Fit AEX models, 250 mm Arm length (2 per device Rqd)
99-1009083	AE/AEX Rotating/Swivel Bracket - S/T/L & ST Twin Column
99-994-0990/06	Signal Conditioner Module, 3X I/O-DAC-Encoder Device inc cables+plugs,ST/SL

## Standard specimen dimensions

Round specimens	up to Ø 80mm / 3.15in
Square specimens	up to 70 x 70mm / 2.76 x 2.76in
Rectangular specimens	Width 360mm / 14.17in
	Thickness 50mm / 1.97in

Other dimensions are available on request

## Device options

- + Measuring arms with tilting mechanism
- + Adjustable clamping force 0.02 to 1 N
- + Extended measuring arms +45mm or +90mm
- + Bending test measuring arms:
- + Arm lengths: 400mm or 490mm

# Specifications

Accuracy class EN ISO 9513	0.5
Indication error (rel.)*	0.5%
Indication error*	1.5µm
Error in gauge length ( $L_e$ )	± 0.5%
Gauge length ( $L_e$ )	10 to 200mm minus travel
Activating force	max. 0.01 N
Clamping force	0.5-1 N
Operating temperature range	0-50°C
Weight	approx. 24kg

## Measuring system

	Standard	Optional
Name	LIDA 48	LIDA 47
Interface (each output)	1 Vpp	RS422/TTL
Measurement principle	Optic-incremental	-
Travel	200mm minus $L_e$ and position	-
Signal period	20µm	0.2µm
Resolution max.	0.01µm	0.05µm
Voltage supply	DC 5V ± 0.25V	-
Current consumption	< 100mA	< 255mA (without load)
Integrated interpolation	-	100-fold
Sampling rate	-	25kHz
Edge distance	-	0.080µs
Movement speed	≤480m/min	≤30m/min
Input frequency of the subsequent electronics	-	8MHz
Edge separation of the subsequent electronics	-	≥0.05µs

\* The larger of the values is admissible