

SANTAM

Materials Testing Equipment



ENA-800

Non-Contact Electromechanical Extensometer ENA-Series

Features

- Non-contact measuring (no drag force, no clipping force)
- Automatic finding gauge length marks (no need precise marks, no need lighting conditions)
- High resolution over whole of travel (0.1 μm for all of 15~820 mm travel)
- Wide range of gauge lengths (15 ~800 mm, step less)
- Suitable for many kinds of materials (Rigid, Flexible, Transparent, Micro Fibers, Foams, Films, Papers)
- Wide range of specimen geometry (Bars, Sheets, Wires, Tubes, Parts,...)
- Easy to use and versatile application



Low Cost , High Performance

Description

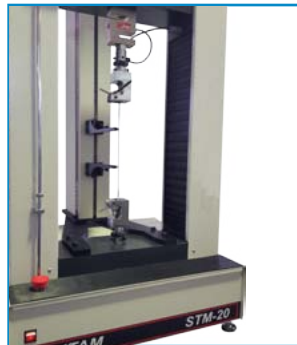
Extensometers are generally applied for measuring specimen extension (strain and/or displacement) in mechanical properties tests. They directly measure the specimen extension and omit the errors resulting from redundant displacements (specimen extensions, grip mechanisms, load cells, frame & slipping).

Extensometers cover a wide variety but are mainly divided in two groups of Contact and Non-Contact respective to their installation. Non-contact extensometers have more advantages by avoiding any contacts with the tested specimen as:

- Capable of measuring the extension all through the test till the rupture without facing any impact thus, avoiding any damages to the extensometer.
- Elimination of the errors resulting from stress concentration on the specimen.
- Omission of the extensometers arms opening loads on the specimen.

In 2017 Santam managed to benefit high tech knowledge and innovate Non-Contact Electromechanical Extensometers for the first time in materials testing industry which resolved the problems confronted in laser and video types:

- Wide measurement range (stroke & gauge length) preserving the high resolution throughout the measurement (No FOV limitation).
- No requirement for precise arms placement near to specimen and calibration.
- Totally free of any lighting conditions.
- Capable of testing high rigidity materials (metals) and/or high elongation (polymers) with one system without changing the accessories and related hardware.
- Real time high data output in seconds
- Easy operation and no need for highly skilled operator.
- Capable to test all types of materials with different dimensions and geometry (from very tiny like micro fibers to extremely thick like steels)
- Capability to install on common tensile test machines without additional hardware requirement.
- Capable of providing average strain measurement for elimination of the bend strain in tensile test (on request).
- ASTM E83 Class A accuracy for measuring lengths above 100 mm (on request).
- Economic (about 30% of price compare to advanced video and laser extensometers)



High Elongation Measurement



High Rigidity Measurement



Modular Design

Application

- Measuring precise axial extension till the end of the rupture for common UTM (Quasi Static Testing)
- Determination of Max. Elongation & Proof Stress points and Elastic Module for all materials (high rigidity and/or high elongation) such as metals, polymers, ceramics, composites, fabric, foam, yarn, paper, cellulose, parts ...

Technical Specifications

Code	ENA-800
Standard	ASTM E 83 , ISO 9513
User Interface	Remote control and software control panel
Control System	Electromechanical (Mark Line Tracker)
Extension Resolution	0.1 μ m for the whole of travel
Measuring Accuracy ¹	Class B1 for gauge length range 15 ~ 800 mm Class A for gauge length above 100 mm (on request)
Clamping Type	Non-Contacting (No clamp force , No drag force)
Test Speed	0-520 mm/min
Maximum Travel	820 mm
Gauge Length	15 ~ 800 mm (Step less)
Gauge Length Determination	Two marks on specimen, Automatic mark finding system
System Lag ²	10 ms or 0.02% Set speed (mm/min) mm
Data Output	Incremental encoder pulse (A , B) , 100 kHz
Power supply	220 VAC , 2 Amp
Dimensions(W*D*H)	150 × 550 × 1135 mm
Weight	15 kg

1- Ambient Temperature 20 ± 0.5 °C
2- Zero lag available on request

Agent



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