

Serie UTM-E 600 kN Universal Testing Machines

Rev. 03-2024-EN



Product Information

Universal, servocontrolled, electro actuated, computerized testing machines to perform load, displacement or strain-controlled tests in tension, compression, bending, and flexure with appropriate accessories, optional and/or customized on request. The machine is suitable for testing medium to high strength materials and large specimens in various areas of use such as quality control in industry, certification of materials by Accredited Testing Laboratories, research and development of new technologies in Universities and Research Centers, education in Technical Institutes.



Characteristics

Frame with 2 opposite columns, with double test space, movement actuated by pair of high precision ball screws, with external covering in modern aluminum profile, sealed by extendable bellows to ensure cleanliness of the mechanical transmission components. The lower base accommodates the mechanical transmission system and the fast and silent brushless motor unit.

The standard configuration includes hydraulically operated wedge jaws. Accessories for performing compression and bending tests are, in addition, available.

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Machine Control System – Testing XE

The Testing Computerized Control System consists of a state-of-the-art datalogger (user/machine interface) equipped with an electronic module with TCP/IP network interface, analog and digital inputs and outputs of IN and OUT signals, firmware and software.

All signals related to the physical quantities coming from the machine's electronic sensors (load cell and displacement transducer), as well as those of electronic strain gauges (optional) applied to the sample for direct measurements of material deformation, are captured in real time by means of an analog/digital converter with resolution up to 24bit and sampling rate up to 1 kHz.



When the testing machine is equipped with a video extensometer, the Testing system is also capable of synchronously acquiring up to 8 different measurements from the video extensometer itself (e.g. radial and axial deformation, elongation and stretching, etc.).

The testing machine is controlled by a closed-loop P.I.D. control with a frequency of 1 kHz; the machine can perform tests in load, displacement and strain control with the possibility of modifying the control parameters in real time. It is possible to perform load and unload ramps, maintain constant load or position and perform cyclic tests.

The Software Testing, allows the introduction of the necessary test parameters, through input masks adaptable to the specific needs of the operator, then proceed to the execution and display in real time of each test parameter.

The results are automatically captured and stored in a database to ensure easy traceability for subsequent processing.

Thanks to the test modules fully customizable by the user, graphically accurate document and final printout are possible, which can be used both for certification and for any internal distribution.

The database can be shared over a network (intranet) and the software can be used simultaneously on different PCs allowing the visualization and processing of test data from different locations, with automatic and advanced functions of data loading and export of the results according to the requests related to the **Industry 4.0** guidelines.



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Main reference standards

ASTM A615	Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A370	Standard Test Methods and Definitions for Mechanical Testing of Steel Product
ASTM E4	Standard Practices for Force Verification of Testing Machines
ASTM E8	Standard Methods for Tension Testing of Metallic Materials
ASTM E9	Standard Methods of Compression Testing of Metallic Materials at Room Temperature
ASTM E2658	Standard Practices for Verification of Speed for Material Testing Machines
UNI EN ISO 6892	Metallic materials. Tensile testing at room temperature
UNI EN ISO 6892-2	Metallic materials. Tensile testing at high temperature
UNI EN ISO 7438	Bend test
UNI EN ISO 7500-1	Calibration and verification of uniaxial static test machines
UNI EN 15630	Steel for reinforced concrete and prestressed concrete. Test methods
UNI EN 10080	Concrete reinforcing steel - Weldable reinforcing steel. Test methods

Technical features

Model	UTM600E
Load capacity	600kN
Accuracy	Class 1 (or better) to 1 % of full scale ISO-7500
Speed range	from 0.001 to 200 mm/min
Maximum stroke	600 mm
Vertical test area space	550 mm
Test area width	800 mm
Frame dimensions	1250 x 1225 x 3100 mm
Weight of the frame	5000 kg
Weight of Hydraulic jaws power pack	250 kg
Power supply	7.5 kW 400 VAC / 50 Hz / 3 Phases (5 poles)
ADC converter	24 bit / 1 kHz



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Optional accessories

Accessories are available for many test requirements: grips, compression plates, manual extensometer, Automatic extensometer, video extensometer.



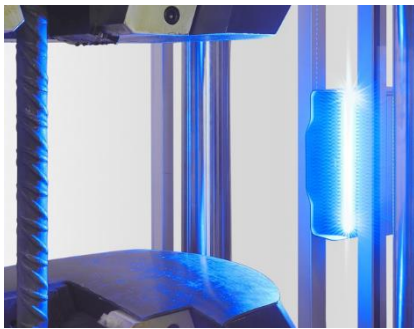
Extensometer for strands



Stranded wires grips



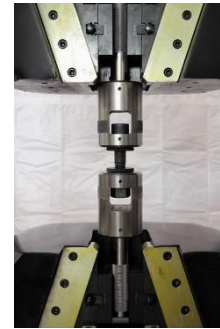
Extensometer for rebars



Video Extensometer M5



Automatic Extensometer



Bolts and nuts fixture

