AUTOMAX E-Modulus console for Elastic Modulus and Poisson ratio determination

ISO 6784 | ASTM C469 | DIN 1048 | UNI 6556 | EN 13412 | EN 13286-43 | EN 12390-13 | BS 1888: 121

MAIN FEATURES

- **E-MODULE software for automatic determination of Modulus of Elasticity and Poisson's ratio**
- **DATAMANAGER software for automatic execution of compression, flexure and indirect tensile tests**
- **E MODULE** software **allows user defined test cycles and automatic verification of sample centering**
- **Test cycle** with closed loop digital feedbacks **automatically performed** by pressing the start button via PC
- **Soft platen-to-specimen contact** and smooth load rate control from every beginning of the ramp
- **Double frame control, expandable to four**, with active frame selection via software
- **Double stage hydraulic pump** with rapid approach and precise oil flow control allowing high throughput of accurate test (up to 40/hour)
- **Flow-sharing technology** for the execution of loading and unloading cylces
- Adopts the latest **ES (Energy Saving) technology** for reduction of power consumption and **silent operation**
- Connects to **laboratory network via LAN port/Software**
- **Automatic software calibration procedure**
- **Internet** remote technical **assistance** and diagnostic
- Ready to perform **automatic tensile test on steel specimens** once upgraded with tensile test kit including a suitable testing frame and accessories. Ask our technical department for more details

GENERAL DESCRIPTION

The **AUTOMAX E-Modulus** is specifically designed for the determination of Elastic Modulus and Poisson's Ratio. It is also used for automatic execution of compression, flexure and splitting tests on concrete and cement when connected to a suitable testing frames. The console consists of an ergonomic cabinet which houses the hydraulic system, the electronic boards and the all-in-one PC.

PC and software ensure the remote control of the complete system (frame and console) for automatic E-Modulus test execution: rapid platen approach, zeroing, application of user-defined cycles of load/unload ramps, identification of failure load, verification of conformity to the selected Standard, calculation of results, graphical and numerical management of results.
The console is supplied also with DATAMANAGER software for compression, flexure and splitting tests execution to EN and ASTM.

TECHNICAL SPECIFICATIONS

Hydraulics:

- Dual stage pump: centrifugal low pressure for fast approach and automatic switching to radial multi-piston high pressure for loading
- DC motor. 720 W, 50-60 Hz
- Maximum working pressure 650 bar
- Third and fourth frame option, active frame selection by software
- Flow-sharing technology to perform loading and unloading cycles
- ES Energy Saving technology to reduce power consumption and silent operation

Hardware:

- 131.000 points effective resolution
- Closed-loop P.I.D. control
- 4 channels for load sensors (pressure transducers and load cells)
- 6 channels to measure strain values with transducers (LVDT, magnetostrictive, potentiometetric)
- 4 channels for strain measurement with strain gauges
- Memorization of the calibration curve enables sensors to be connected and used immediately
- Digital linearization of the calibration curve (multi-coefficient)

User-interface:

- fully PC controlled
- E-MODULE and DATAMANAGER software packages included
- DATAMANAGER: software dedicated to compression, indirect tensile, 3 point and 4 point flexural tests on different types of specimens
- E-MODULE software dedicated to Elastic modulus and Poisson ratio determination allowing:
  - Free unlimited programmable load/stress cycles to fulfill any kind of test procedure
  - Real time monitoring of test data, stress/time, stress/axial strain, stress/lateral strain graphs
  - Automatic verification of sample centering and sensors functionality, as per standard requirements
  - Real time and deferred management of tests data and results, either in numeric and in graphic format
  - Active frame selection via software
  - Printing and saving of customized test reports both for single and batch tests in Excel form
- Multi-language software, customizable with a further local language (only latin characters)
- Diagnostic system to highlight system malfunctions allowing remote service via Internet (if available)
- The PC may be connected to the digital readout unit mod. 82-P0801/E and the suitable load cells in order to perform automatic load measurement verification procedure including data acquisition and printing of traceable calibration certificates.

ORDERING INFO

50-C20E82
Automax E-Modulus stand alone power and control console for the control of up to 2 (expandable to 4) testing frames. PC included.
230 V, 50-60 Hz, 1 ph.

50-C20E84
Automax E-Modulus stand alone power and control console for the control of up to 2 (expandable to 4) testing frames. PC included.
110 V, 60 Hz, 1 ph.

ACCESSORIES

ACCESSORIES FOR ELASTIC MODULUS
Compressometer-Extensometer for Elastic Modulus determination
Strain gauges
Axial-circumferential compression device

UPGRADING

The AUTOMAX E-Modulus which can control two frames, can be upgraded to control, not simultaneously, a third and fourth frame adding. This integration shall be fitted in factory or by Controls authorized engineers.

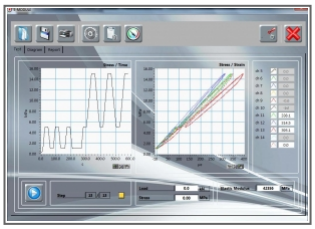
Third frame facility
50-C10D/3F
Upgrading the Automax System for a third frame connection and control. Frame selection via PC

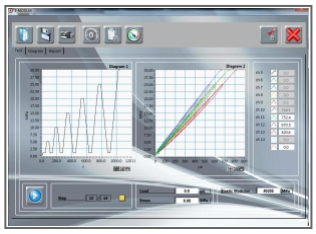
Fourth frame facility
50-C20E/4F
Upgrading the Automax E Modulus consol for a fourth frame connection and control. Frame selection via PC

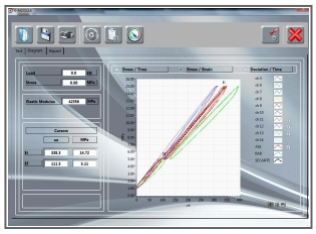
Steel tensile testing software
82-SW/UTS
UTS software dedicated to steel tensile testing. Allows:
- load/stress control
- crosshead separation control
- simultaneous display of: stress/elongation, stress/time; elongation/time with possibility to display multi-diagrams
- elaboration of tension test results: ReH, ReL or Rp, final elongation, etc. in conformity to EN ISO 6892-1 (method B) and EN 15630-1 (for steel rebars)
- unit selection
- multi-language software, customizable with a further local language (only latin letters)

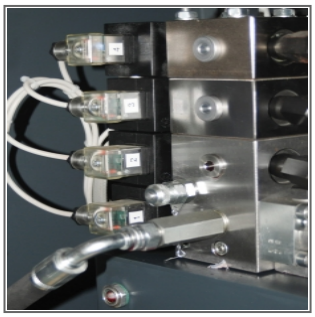
50-C20E82 AUTOMAX E-Modulus controlling a EN compression frame with three electronic compressometer-extensometer fitted to a cylindrical specimen

AUTOMAX E-Modulus automatic control console, code 50-C20E82


Elastic modulus test performed according to EN 12390-13 (Procedure A)

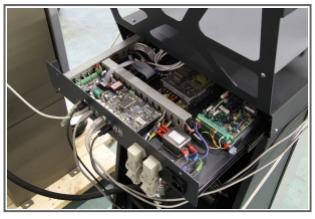

Elastic modulus test performed according to customized sequence of steps to fulfill any test procedure

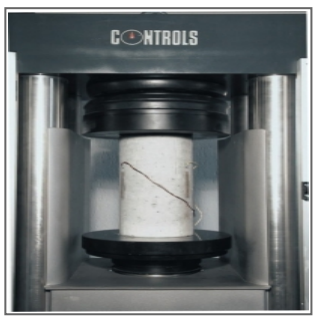

Detail of stress/strain graph showing measurements of each transducer and avarage readings (dashed red line)


50-C10D/3F AND 50-C20E/4F hydraulic valves for connection and control of four frames

50-C20E82 AUTOMAX E-Modulus connected to four testing frames


AUTOMAX E-Modulus. Determination of modulus of elasticity


Detail of electronic boards housed in the removable drawer of Automax E-Modulus console



Determination of Elastic Modulus using surface-mounted strain gauges