

CONTROLS

CONTROLSGROUP



CONSTRUCTION MATERIALS TESTING SOLUTIONS

AUTOMAX Multitest

Automatic Control Console for
Concrete, Cement and Steel Testing

Ultimate versatility

Standards ISO 6784 | ASTM C469 | DIN 1048 | UNI 6556 | EN 13412 | EN 13286-43 | EN 12390-13 | BS 1888:121 | ASTM C1550 | ASTM C1609 | EN 14651 | EN 14488-5

Versatile and modular Automatic Computerized Control Console for concrete, cement and steel rebar testing allowing modular upgrades from basic failure tests to advanced displacement controlled tests for FRC Fiber Reinforced Concrete.



Rev-up your testing system with additional frames, accessories and dedicated software packages to perform many tests including compression, flexural, cyclic modulus of elasticity and Poisson's Ratio, steel tensile tests and more.

Suitable for

All test methods

from basic failure (compression, flexure, splitting, tension) through cyclic tests for Elastic Modulus and Poisson's Ratio determination up to advanced displacement controlled tests for FRC Fiber Reinforced Concrete.

All sample types

tested by connecting up to four frames ranging from 15 kN to 5,000 kN in compression and 500 kN in tension.

All budgets

systems can be upgraded incrementally by adding suitable testing frames, accessories and dedicated software packages.

All users

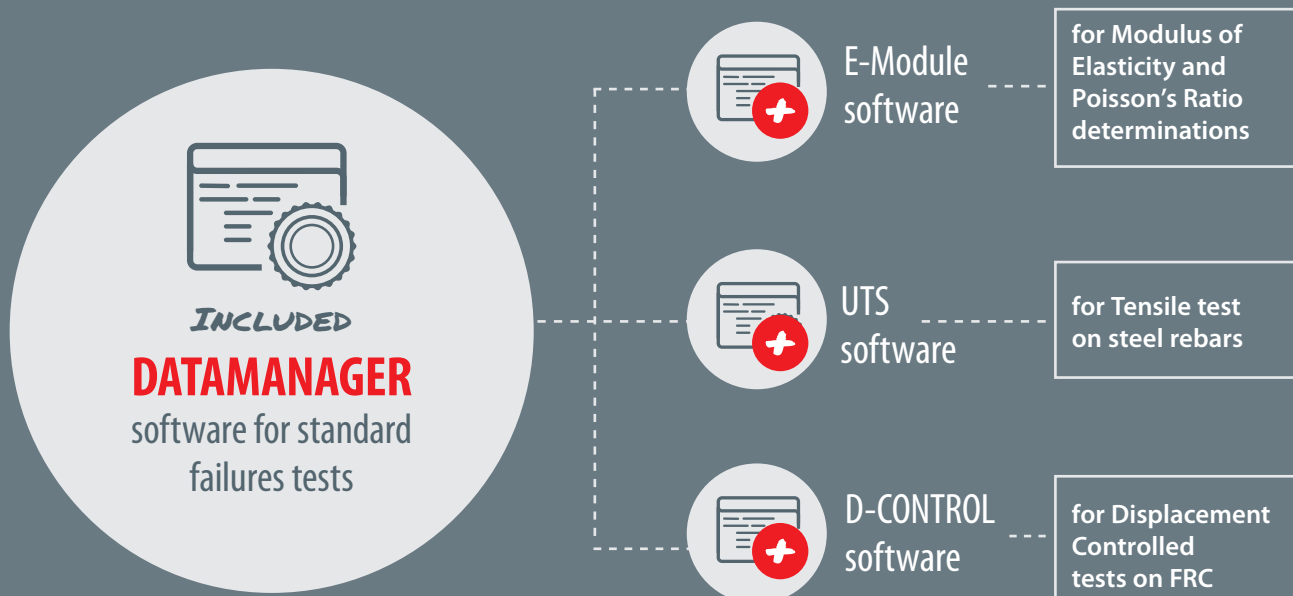
system suitable to any user thanks to four easy-to-use software packages tailored to guide the operator through all test phases.

DEDICATED SOFTWARE PACKAGES

DATAMANAGER ■ E-MODULE ■ UTS ■ D-CONTROL

Automax Multitest is supplied complete with the DATAMANAGER software package for standard failure tests including compression, flexural and indirect tensile tests. Three optional software modules (E-Module, UTS and D-CONTROL)

are available to perform the main test methods of a construction laboratory from basic failure tests to advanced displacement controlled tests, previously only possible with costly research type equipment.



CONNECT UP TO FOUR FRAMES



Elastic Modulus and Poisson's Ratio Determination

Run loading/unloading customized sequences for Modulus of Elasticity (MOE) and Poisson's Ratio determination in fully automatic mode.

The Automax Multitest console allows the fully automatic control of the whole loading/unloading steps sequence and strain measurement in MOE and Poisson's Ratio tests. The E-Module software package automatically calculates test results and generates test reports for easy analysis.



Wide range of test methods available through the addition of software packages



High productivity

Double stage Hydraulic Power Unit (HPU) with rapid approach and precise oil flow control allowing high throughput of accurate test (up to 40/hour).

Environmentally friendly

Adopts the latest ES (Energy Saving) technology for reduction of power consumption and silent operation.



Less human error

Test cycle, with closed-loop digital feedback, is automatically performed by pressing the start button via PC.

Ease of maintenance

Automatic software calibration procedure.

Modular and expandable

Double frame control, expandable to four, with active frame selection via software.

Ultimate accuracy

Soft platen-to-specimen contact and smooth load rate control from very beginning of the ramp.

Displacement Controlled Tests

The ductility of Fiber Reinforced Concrete and Polymers, Shotcrete and other special construction materials, can be accurately measured using the system's precise displacement-control to assess their residual bearing capacity after first concrete matrix cracking.

Our know-how in Fiber Reinforced Concrete Displacement Controlled Testing derives from 20 years of collaborative research with universities and well known private enterprises and has resulted in the new AUTOMAX Multitest System.

SUPERIOR CONTROL IN CRITICAL TEST

Precise control, achieved by a quiet DC-driven pump and highly accurate drop-by-drop oil flow adjusted every 2 milliseconds by the PID closed-loop algorithm, makes it easy to perform complex tests.

PERFORM FRC TEST WITH EASE

Following step-by-step instructions, requiring minimal training to improve repeatability, reduces variability and delivers accurate results.

COMPLETE FRC TESTING SOLUTION

By adding accessories from the wide range available, you'll be equipped to perform many tests complying with the main international Standards such as:

- Deflection test on Steel Fiber Reinforced Concrete beams to EN 14651 [CMOD Method]
- Flexural behaviour of FRC beams to ASTM C1609
- Energy absorption test on square slabs to EN 14488
- Flexural toughness of round panels to ASTM C1550



Technical Specifications

Hydraulics

Dual stage HPU: centrifugal low pressure for fast approach with 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

High frequency closed-loop: P.I.D. control

Control frequency: 500 Hz

Sampling rate: 500 Hz

4 channels for load sensors (pressure transducers and load cells)

6 channels to measure strain values with transducers (LVDT, magnetostrictive, potentiometric)

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)

PC and Software

The AUTOMAX Multitest Console's easy-to-follow interface and dedicated software packages with specific test profiles matched to all the main Standards, make it easy to perform all types of tests, following step-by-step instructions with minimal training improving repeatability, reducing variability and delivering accurate results.

The PC allows:

- Remote control of the whole system and the automatic execution of test including: fast approaching, zeroing, application of user-defined loading history, automatic interruption at the end of the test, numerical and graphical management of test results, etc.
- Active frame selection via software.
- Printing and saving of customized test reports both for single and batch tests in Excel format .
- Choice of several languages plus ability to customize with a further local language (only latin characters).
- Automatic load measurement verification procedure including data acquisition and printing of traceable calibration certificates when connected to the digital readout unit (model 82-P0801/E) and the suitable load cell.

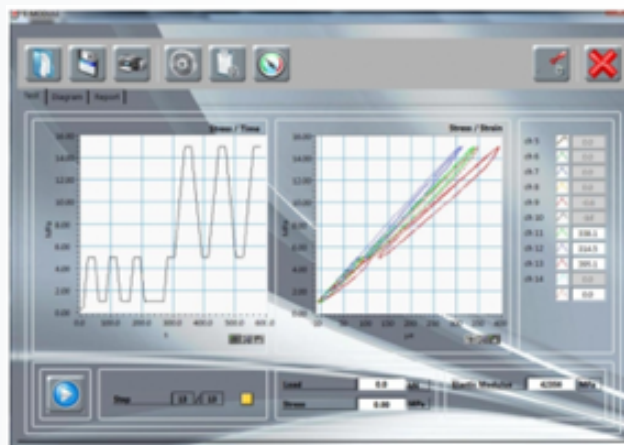
Software applications included:

Supplied with **DATAMANAGER software package** for compression, indirect tensile, 3 points and 4 points flexural tests on different types of specimens.

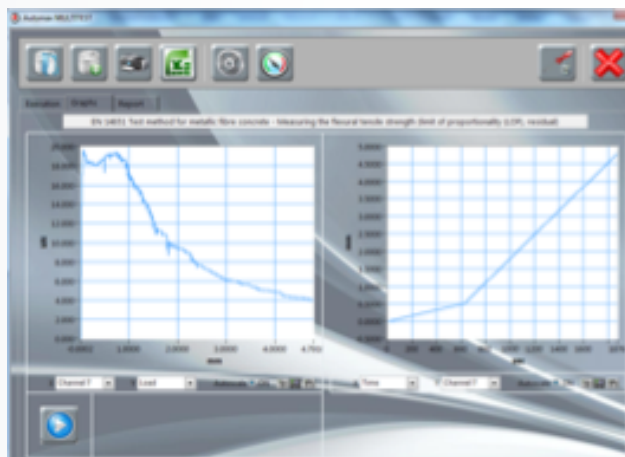


PC and Software (continued)

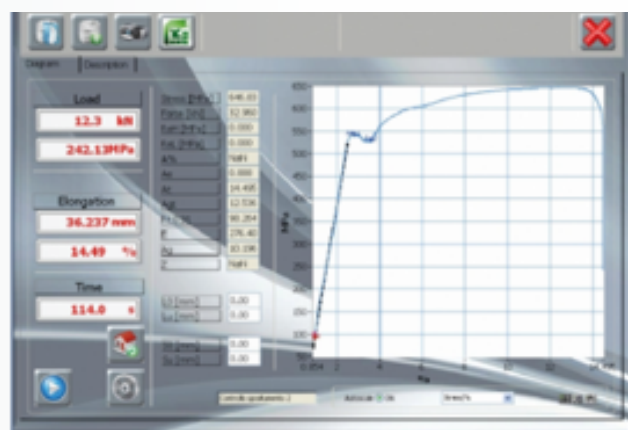
- **E-MODULE software package (optional, code 82-SW/EM)** for Elastic modulus and Poisson ratio determination allowing:
 - Free unlimited programmable load/stress cycles to fulfil any kind of test procedure
 - Real time monitoring of test data, stress/time, stress/axial strain, stress/lateral strain graphs
 - Automatic verification of sample positioning and sensors functionality, as per Standards requirements.
 - Automatic calculation of Elastic Modulus and Poisson's Ratio values.



- **D-CONTROL software package (optional, code 82-SW/DC)** for Displacement Controlled Tests allowing:
 - 8 test pre-set testing procedures according to EN 14651, 14488-3, 14488-5, UNI 11039-2, ASTM C1550, C1609, C947, UNE 83515
 - Automatic calculation of test results according to the above Standards.
 - Customizable test procedure allowing desired loading history.
 - Possibility to change in real time the test parameters: target load/displacement, control variable, test speed.
 - Data saving rate 250/sec.



- **UTS software package (optional, code 82-SW/UTS)** for Steel Tensile Testing allowing:
 - 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)



▶ Ordering Information

Ordering information

50-C20M82

Automax Multitest 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-C20M84

Automax Multitest 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.

Upgrading information

The AUTOMAX Multitest which initially can control two frames can be upgraded to control, not simultaneously, a third and fourth frame. This integration must be factory-fitted or implemented by CONTROLS-authorized engineers.

THIRD FRAME FACILITY

50-C10D/3F

AUTOMAX System upgrade for a third frame connection and control. Frame selection will be made via PC.

FOURTH FRAME FACILITY

50-C20E/4F

AUTOMAX System upgrade for a fourth frame connection and control. Frame selection will be made via PC.

▶ CONTROLS Customer Care

At CONTROLS we are proud of our products. As one of the longest established manufacturing companies in the world of Construction Materials Testing solutions, we are dedicated to supplying high quality, accurate, affordable, easy to use systems.

As a valued customer of CONTROLS, you will receive continuous, expert support and advice for your equipment. Furthermore, we can offer full installation and training in the correct operation of your CONTROLS equipment.

- ▶ For support from our expert Customer Care Team, contact your local CONTROLS office / distributor or email customercare@controls-group.com.
- ▶ To order or upgrade your product, please contact our sales department at sales@controls-group.com.

For more information, please visit www.controls-group.com.

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