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Automax PRO-M SMART line, Fully Automatic Control Console for Advanced Testing

AUTOMAX PRO-M Power Control System

General description

AUTOMAX PRO-M Power Control System fitted with superior hydraulics can also perform, in addition to standard failure tests, the **Modulus of Elasticity Determination** tests, Characterizations of **Fiber Reinforced Concrete** (FRC) under **displacement-control** and **tensile tests on steel** specimens

AUTOMAX PRO-M introduces new features and capabilities that will revolutionize the operations of any progressive construction quality testing laboratories.
LinkLAB is CONTROLS' new proprietary Laboratory Connectivity Package.
It allows your AUTOMAX PRO-M to be a connected part of your laboratory infrastructure by taking inputs from any number of ancillary measuring systems and devices increasing efficiency and eliminating transposing errors.

Main features

Smart automatic and connected concrete Power and Control System for standard failure testing.

AUTOMAX PRO-M is CONTROLS' new top-of-the-range Compact-Line compression machine and is the first choice for automatic **standard failure tests** and **advanced concrete mechanical properties** assessment.

- **Huge boost in efficiency and error elimination:** LinK-LAB – Integrated testing station solution for seamless connection and data inputs from many ancillary devices for dimensional measurement, weight, bar code, etc.
- **Fully automatic – time saving:** Full test-cycle automation maximizes productivity and ensures tests are performed accurately according to pre-set methods, eliminating operator variables.
- **Highly accurate and energy saving:** Our DC motor technology quietly and efficiently delivers super accurate load control at both low-speed and low-loads.
- **Intuitive, quick and simple operation:** The integrated control system features an intuitive 7" color graphical display, which works like a tablet or smart-phone, and makes AUTOMAX PRO-M quick and simple to operate.
- **Standards compliant – peace of mind:** Automatic performance of Elastic Modulus tests according to the main International Standards with automatic calculation of tests results.
- **Advanced:** Allowing the execution of displacement-controlled tests on beams, notched beams, round or square slabs
- **Easy rebar testing**: simply attach the stand- alone tensile frame and carry out rebar testing as well as all the compression tests.

Specifications

AUTOMAX PRO-M AUTOMATIC POWER AND CONTROL SYSTEM

Hydraulics

DC motor, 720W, 50-60Hz
Maximum working pressure 700 bar
Load/unload electrovalve for test execution via display/PC and automatic stop at specimen failure
Active control of up to 4 frames by selection via display/PC (third and fourth frame as option). See accessories.
ES Energy Saving technology to reduce the power consumption and enable silent operation
Flow-sharing technology to perform loading and unloading cycles at controlled rate

Hardware

524,000 points high-resolution/stability analog channels
6 channels to be factory configured:

- 2 channels for load sensors
- 2 channels for load or displacement/strain sensor
- 2 channels for displacement/strain sensors

Control frequency 250 Hz
Sampling frequency 250 Hz
7”, 800 x 480 pixel, 16 M colors, icon-driven capacitive sensing touchscreen graphic display
Unlimited storage capacity for test data on internal 16 GB SD card
USB port for test data storage on external USB memory stick and for firmware upgrade
Ethernet port for PC / Internet /network communication
Optional integrated graphic printer including Load-Time plot (for standard failure tests)
RS 232 port for data downloading in ASCII format

Firmware

Execution of compression, flexure, indirect tensile, ACV tests, Elastic Modulus, Poisson Ratio Determination plus Displacement-controlled tests (with 50-FW/DC) and tensile tests (with 50-FW/UTS) in automatic mode with test speed controlled by a closed-loop PID system.
Simultaneous display of:

- load, stress, actual load rate, load / time graph in standard failure test
- load, stress, strain, stress / strain graph in Elastic Modulus and Poisson ratio tests
- load, displacement, stress / displacement in displacement controlled tests (with 50-FW/DC)
- load, stress, displacement and % elongation (crossbeam), displacement and % elongation (extensometer, if connected), stress/%elongation graph in tensile tests (with 50-FW/UTS)

Saving of the specimen failure type (to EN or ASTM) in concrete compressiont tests results
Automatic performance of Elastic Modulus tests according to the main International Standards with automatic calculation of tests results
Execution (with 50-SW/DC) of displacement controlled tests on beams, notched beams, round or square slabs
Execution (with 50-FW/UTS) of automatic tensile tests with:

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- Control up to yield by:
  * Stress (method B to EN 6892-1)
  * Strain by using extensometer (method A1 to EN 6892-1)
  * Strain by using crosshead (method A2 to EN 6892-1)
- Control after yield by grips' separation
- elaboration of tension test results: ReH, ReL, Rp, final elongation, etc. conforming to EN ISO 6892-1 and EN 15630-1

Download data to internal printer (optional) or to PC via RS 232 port or to USB memory stick

PC / network communication via Ethernet

Multi-coefficient linearization of the calibration curve for better accuracy at low loads thus avoiding the use of a second pressure transducer

Recording facility for up to 9 test profiles for each channel including: type of test (e.g. compression, flexural, splitting, elastic modulus, displacement control, tension), specimen size and shape, test speed and other general information. Each one of the recorded test profiles can be recalled automatically to save time.

Improved PID algorithm and multi PID selection. Up to three different PID settings can be tuned for each channel for a variety of materials (e.g. cylinder with neoprene pads, low strength specimens) and test methods (e.g ACV, flexure, elastic modulus, displacement control)

Compatible with the newly released DATAMANAGER software, E-Module, D-Control and UTS software packages, tailored for construction material testing laboratories, for remote control, real-time data acquisition and results calculation.

Peripheral devices integration with Link-LAB

Automatic load measurement verification procedure, by connecting suitable load cells and our digital readout unit to PC

Language selection (including Cyrillic and Chinese)

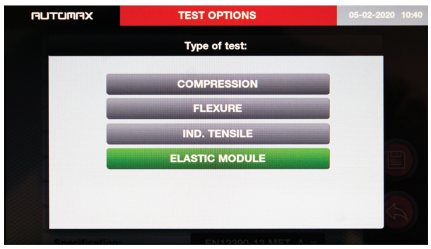
Unit selection (kN, ton, lbf)

USB port for firmware upgrade and safe backup of the original configuration data (PID, calibration, etc.), in case of loss and/or data corruption. The restore of the machine to the factory settings is easy avoiding the need of any technical support.

Phisical specifications

Overall dimensions: (hxlxd) 1292x350x450 mm

Weight approx .: 80 kg



Easy selection of test method

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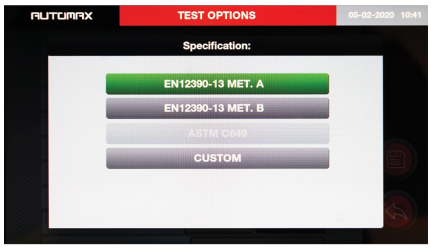
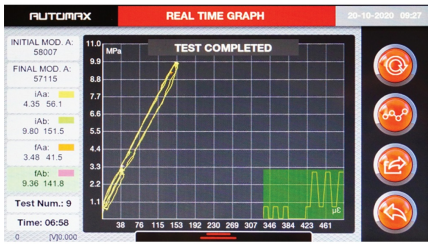
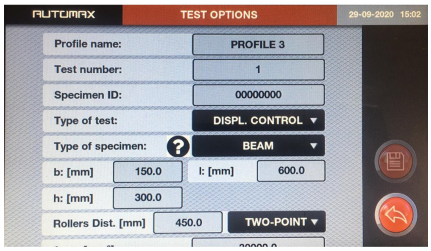


Easy selection of test procedure



Elastic Modulus determination



Diplacement-controlled tests settings

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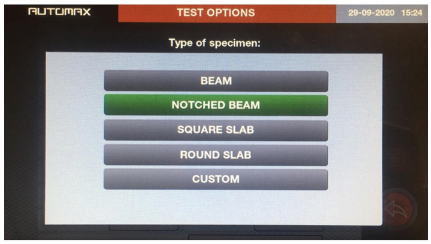
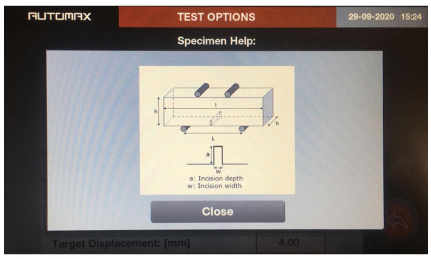


Easy selection of test specimen



Handy Specimen Help panel for guidance

Products

50-C10F02/M

AUTOMAX PRO-M SMART Line fully automatic console for compression and flexure frames including hydraulic power and control unit with touch screendisplay. Suitable for Elastic Modulus and Poisson ratio determination. 230 V, 50-60 Hz, 1 Ph.

50-C10F04/M

AUTOMAX PRO-M SMART Line fully automatic console for compression and flexure frames including hydraulic power and control unit with touch screendisplay. Suitable for Elastic Modulus and Poisson ratio determination. 110 V, 60 Hz, 1 Ph.

Accessories and consumables

50-SW/DM

DATAMANAGER PC software compatible with DIGIMAX, PILOT, AUTOMAX, PILOT PRO, AUTOMAX PRO and PRO-M. Suitable for remote control of the system (except DIGIMAX), data acquisition, processing and filing. LAN cable included.

65-L1400/X5

Hydraulic pressure regulator for 15kN frames (bothsingle and double chamber models) connected to PILOT and AUTOMAX control unit.
50-SW/DC

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D-Control software package for energy absorption, displacement/strain controlled tests.

50-SW/EM

E-MODULE software package for Elastic modulus and Poisson ratio determination.

50-Q60P/PRINT

Upgrading the AUTOMAX PRO and PILOT PRO series to incorporate a serial graphic printer in the rear panel allowing load/time plot (printing available for languages with latin charcters only)

50-C10D/3F

Third frame facility for AUTOMAX series. Frame selection via display/PC.

50-C20E/4F

Fourth frame facility for AUTOMAX Multitest e and AUOTMAX PRO series. Frame selection via PC.

50-KLAB/E

LinK-LAB Enterprise laboratory connectivity package for machines controlled by PC via DATAMANAGER Software.

50-KLAB/L

LinK-LAB Local laboratory connectivity package for PILOT and AUTOMAX PRO, PRO-M machines. Note: caliper and barcode cannot be both connected on the compression machine.

50-FW/DC

Firmware package to perform displacement-controlled tests with an AUTOMAX PRO-M compression tester.

50-FW/UTS

Firmware package to perform tensile tests on steel specimens with an AUTOMAX PRO-M control unit connected to suitable tensile frame.