

TESTING Control System for Upgrade of Hydraulic and Electromechanical Testing Machine

Rev. 01-2024-ENG



Product Information

The advanced Computerized Control System “TESTING” comes with all CERMAC Testing Machines, whether hydraulic or electromechanical, and is specifically for managing the results of tensile, compression, flexural, etc. tests.

Thanks to the versatility of the dedicated Software, the System is also recognized as the ideal solution to automate and modernize any other machine, even very dated ones, whether electromechanical or hydraulic, manual or servo controlled, already present in the laboratory.

In fact, this truly complete and innovative System is particularly suitable in production control laboratories in the industrial sector, materials certification in Accredited Testing Laboratories, research and development of new technologies in Universities and Research Centers, and training in Technical Institutes.



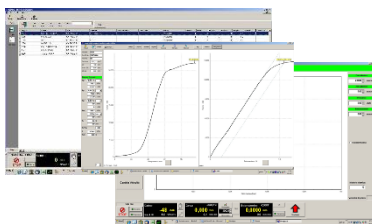
Main Features

The TESTING Control System consists of a state-of-the-art datalogger (interface) with electrical protections, equipped with an electronic module and TCP/IP network interface, analog and digital inputs and outputs of IN and OUT signals, firmware and software (PC not included).

Available in two versions, for hydraulic or electromechanical machines, it acquires in real time by means of an analog-to-digital converter with resolution up to 24bit and speed up to 1 KHz, the signals related to physical quantities from the machine's electronic sensors, i.e., load cell or pressure transducer and ENCODER or moving crosshead displacement transducer (for load and total deformation detection, respectively).

In addition to the above signals, the TESTING System can also acquire and display, again in real time, signals from electronic extensometer placed directly on the specimen.

The firmware, as the interface between the Software and the sensors, ensures the servo control of the machine and the correct and complete execution of the tests.



The software, developed and updated appropriately with respect to regulatory changes over time, allows the introduction of the necessary test parameters through adaptable input masks, to meet the specific needs of even the most demanding operators, and then proceed to the real-time execution and visualization of each individual test.

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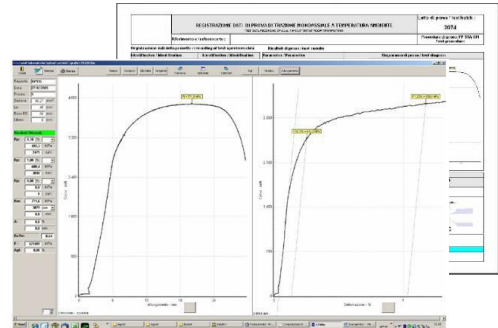
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Test results are fully automatically acquired and stored in a database, and the Software ensures easy traceability over time for subsequent processing.

Through fully user-customizable test forms, graphically accurate final document printouts are available, which can then be used for both certification and internal use.

Shareable over a network (intranet), the software can be used on several PCs, enabling remote viewing and processing of data and printing of archived test reports.



TESTING software therefore allows you to:

- manage the movement of the machine for pre-test positioning (in case of hydraulic machine, only if equipped with hydraulic system with servo valve)
- perform the test fully automatically, allowing changing in real time test speed parameters
- automatic repositioning at the end of the test
- all operations can be activated and configured by the operator
- use of different types of extensometers (optional) selectable via software
- detect and calculate yielding point (R_p) and elastic modulus
- display in real time the diagram and all related data
- display in real time the rate of loading and strain rate
- display the maximum load, yield strength, elongation%, Agt, elastic modulus and strain
- transform the displayed units of measurement,
- record, display and print two test curves: total and yield, separately
- store in a MS ACCESS or SQL database (following the Customer need) format the test data of each test, allowing to make dedicated selections, statistics and export data to other programs
- interface other measuring instruments, such as gauges, micrometers or instrumentation otherwise equipped with a serial interface
- manage with protected access the calibrations of the sensors connected to the machine
- be shared over a network.

The Testing by CERMAT Computerized Control System consists of:

- expandable datalogger, equipped with electronic module complete of TCP/IP network interface, analog/digital converter with resolution up to 24bit and sampling rate up to 1 KHz, analog and digital inputs and outputs of IN and OUT signals, firmware
- dedicated software for performing tensile, compression and flexure tests.

Extensions, customizations and Software interfacing to Customer's management systems (on request).

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