PR: 1000028788

Rfx: 6100001263

Technical Specification

Electromechanical Universal Tester - 250 kN Capacity

A. General Description:

Automatic 250 kN electromechanical UTM machine designed to perform the following tests:

   i.   Compression, flexure, indirect tensile strength with Data manager software module.
   ii.   Elastic modulus and Poisson ratio determination on cement and mortar.
   iii. energy absorption by displacement/strain-controlled test - Fiber Reinforced Concrete
   iv.   tensile strength of rebars up to 150 kN
   v.   Marshall, CBR, SCB and Duriez

The machine consists essentially of a robust two column high stiffness frame (200 kN/mm) with an upper crosshead and of a lower mobile bi-directional crosshead adjustable by using the dedicated push button or via the PC software.

Advanced closed loop PID control system assuring very fast reaction time and extremely accurate test control, particularly important for critical tests, such as those on FRC and FRP specimens.

The stress is measured by a load cell incorporated in the upper crosshead and the displacement by a high-resolution encoder with 0.1-micron resolution. A emote push-button is used to quickly position the lower crosshead.

B. Technical Specification:

1. Frame:

   a) Maximum load in compression: 250 kN
   b) Maximum load in tension: 150 kN
   c) Max. vertical clearance, without accessories: 930 mm
   d) Distance between columns: 650 mm
   e) Crosshead travel: 400 mm
   f) Crosshead displacement resolution: 0.0001 mm
   g) Test speed range: 0.0001 to 175 (105 at full load) mm/min
   h) Load rate range: 1 to 9999 N/sec
   i) Power: 1 kW

2. Hardware:

   a) 131.000 points effective resolution
   b) High frequency closed-loop P.I.D. control

c) Control frequency 500 Hz
d) Sampling rate 250 Hz
e) 4 channels for load cells (not simultaneously)
f) 6 channels to measure displacement values with transducers (LVDT, magneto strictive, potentiometric)
g) 4 channels for strain measurement with strain gauges
h) High resolution encoder (0.0001 mm)
i) Memorization of the calibration curve enables sensors to be connected and used immediately
j) Digital linearization of the calibration curve (multi-coefficient)

3. SOFTWARE:

a) remote control of the whole system and automatic execution of test including: fast approaching, zeroing, test execution numerical and graphical management of test results, etc.
b) printing and saving of customized test reports both for single and batch tests in Excel format
c) DATAMANAGER software: compression, indirect tensile, 3 points and 4points flexural tests on different types of specimens.
d) UTS software package for steel tensile testing: Load stress control, simultaneous display of: stress/elongation, stress/time; elongation/time with possibility to display multi-diagram selaboration of tension test.

4. Accessories:

a) Grips for round specimens 7 to 14 mm dia.
b) Grips for flat specimens 0 to 8 mm. Grip length 60 mm x 40mm width.
c) Grips for flat specimens 8 to 15 mm. Grip length 60 mm x 40mm width.
d) Upper and lower tensile heads to be completed with grips for round and flat specimens
e) 50 kN capacity strain gauge load cell

5. Warranty: One Year warranty from the date of installation and commissioning of the equipment.