

# HYDRAULIC COMPRESSION TEST MACHINE WITH TOUCH SCREEN CONTROLLER



## General Specifications of the Control Unit

<b>Load Capacity</b>	0,1 – 5000 KN (Depends on frame features)
<b>LCD Screen</b>	10" Capacitive Touch Screen (Changeable by request )
<b>Communication Port</b>	USB
<b>USB Connection</b>	Available – Internally; <ul style="list-style-type: none"> <li>• Data Transfer (Report, Raw data etc.)</li> <li>• Communication with PC Software</li> <li>• For all external hardware connection.</li> </ul>
<b>LAN Connection</b>	Available – Internally; <ul style="list-style-type: none"> <li>• Communication with computer,</li> <li>• Can be set direct internet connection. Results can be sent directly as e-mail without using computer.</li> </ul>
<b>Memory</b>	<ul style="list-style-type: none"> <li>• 4 GB internal memory,</li> </ul>
<b>Data Acquisition</b>	1000 data per second (Different sampling speeds can be provided on demand )
<b>Data and Experiment Operating System</b>	Can save, open and operate method based test parameters.
<b>Reporting Types</b>	<ul style="list-style-type: none"> <li>• By separate charts,</li> <li>• By serial reporting. (More than one result in the same graphic)</li> </ul>
<b>Number of Channels</b>	2 channel ( up to 7 channel (Optional)) <ul style="list-style-type: none"> <li>• 4 piece of Analog (Load cell, Strain Gauge, Pressure Transducer etc.) ( optional)</li> <li>• 3 pieces of Digital (Encoder, LVDT, Linear Transducer etc.) ( optional)</li> </ul>
<b>Control Type of Machine</b>	Closed Double Loop PID
<b>Control Type – Loading Procedure</b>	<ul style="list-style-type: none"> <li>• Automatic and Manual Mod options,</li> <li>• Constant Loading,</li> <li>• Ramp Loading,</li> <li>• Step Loading,</li> </ul>
<b>Fast Preloading</b>	Available (With automatic contact detection.)
<b>Modulus of Elasticity and Poisson Ratio Calculations</b>	Available (Optional)
<b>Calibration Types</b>	<ul style="list-style-type: none"> <li>• Single Point Calibration,</li> <li>• Automatic calibration up to 12 Points (Machine makes automatic loading up to first calibration point and after entering reference value continues to loading for the next point.)</li> </ul>
<b>External Device Connectivity</b>	Eligible to Connect Mouse, Keyboard and Printer (A4 Printers and Mini Printers can be connected without using computer.)
<b>Report Formats</b>	PDF, Excel - CSV
<b>Report Customization</b>	User defined logo and test information,

<b>Capacity Compression Side:</b>	0,1 – 5000 kN (Depends on frame features) other
<b>Frame Type:</b>	Rigid frame in 4-Column construction.
<b>Controller:</b>	Sematron Touch (Touch Screen) 2 Channels Controller with 1kHz Data Acquisition Speed
<b>Load Measuring Range:</b>	4% - 100% of Total Capacity
<b>Speed of Load Control:</b>	0,05 kN/s – 25kN/s
<b>Speed of Unloading:</b>	0,05 kN/s – 25kN/s
<b>Max. Compression Test Space:</b>	Up to 330 mm (contact us for other dimensions)

### General Specifications:

- It complies with TS EN 12390-4 standard.
- Fully automatic 2000 kN (200 tons) capacity.
- 100 \* 100 \* 100, 150 \* 150 \* 150, 200 \* 200 \* 200 mm cube and 100 \* 200, 150 \* 300, 160 \* 320 mm cylindrical concrete samples are testable.
- For samples of different sizes, 2 pieces of 50 mm with 200 mm diameter used for height adjustment, 1 pieces of 70 mm anti-corrosion intermediate distance blocks.
- The body is solidly built and consists of upper and lower blocks attached to 4 cylindrical columns.
- The total length of my site is 160 cm.
- The piston with 250 mm diameter and 50 mm working distance is placed in the body independently.
- The piston is equipped with a limit-switch device for safety.
- Piston and movable head mounted test tables have a minimum hardness of 55 HRC and a diameter of 300 mm.
- Vertical test distance is 330 mm, horizontal opening is 330 mm.
- Top cap is made spherical for homogeneous distribution of the load.
- There is a safety switch on the door for device security. Test operation with the door open can't be done!
- There is a fixed door behind the body and a door that can be opened and closed in front of it.
- The hydraulic unit is independent of the body.
- The test speed can be adjusted to the desired value between 0.1 kN/sec and 25 kN/sec.
- It has fast pre-loading.

- Fracture load, stress and graphic information can be viewed online on the LCD screen.
- Concrete test program and connection cable are supplied with the press as standard.
- In the program; test information, company information and sample information can be entered. Reporting and archiving can be done.

## BESMAK CONTROL UNIT

### Controller Features:

BESMAK BCO-Series Compression Testing Machines are controlled by Sematron Touch Screen controller unit.

The controller unit (Sematron Touch Controller) has 2 channels. Due to these channels the controller unit allows to attach different frames with single hydraulic power pack.

Controller unit can read and control all type of different sensors like LVDT, strain gauge, load cell and pressure transducers with high precision.

User can calibrate each attached sensor and set PID values separately.

Controller unit allows **Automatic Calibration** and adjustment up to 12 points. Due to special High Accuracy Sematron Touch Controller;

- User can perform ordinary compression tests with desired pace rate and high precision.
- User can hold the load at any desired point for a specific time.
- User can perform **Module of Elasticity** tests according to different standards. **Optional (This option need LVDTs to read strain)**

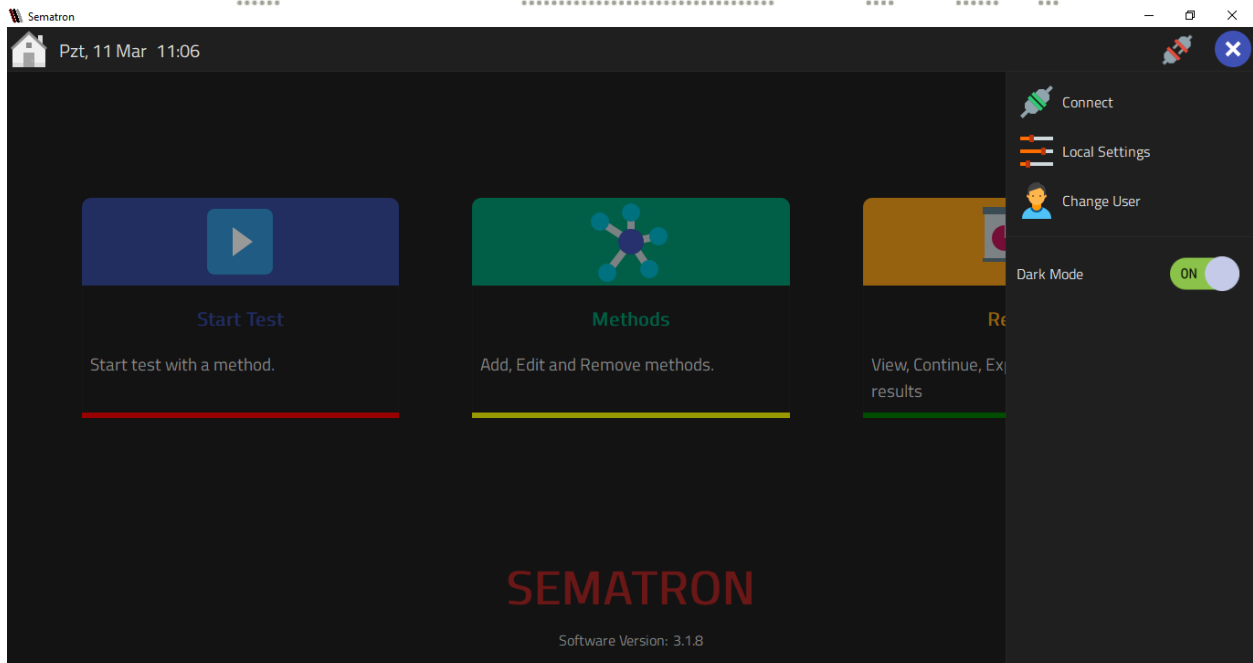


Figure: Sematron Control Unit



## General Features of Data Acquisition and Control System:

- Capacitive touch screen.
- USB port to get results directly from LCD without use of pc.
- Accurate loading with high accuracy.
- User can attach internet modem directly to LCD controller
- User can email results directly from LCD by using internet.
- User can update test software by using USB drive.
- LCD has Linux based test software.
- Automatic calibration and adjustment.
- 1000Hz (1kHz) data acquisition speed of each channel.
- Closed loop PID and open loop control option is available.
- Results in pdf and can be converted in Excel.
- All type of printers can be attached directly to LCD without PC. And user can take print out of results.
- LCD controller also supports mini printer: **(Optional)**
- User friendly, easy to customized.
- Communication with PC through USB.



Name	Unit	Precision	Visibility
<input checked="" type="checkbox"/> Load	kN	2	<input checked="" type="checkbox"/>
<input type="checkbox"/> V_Position 1	mm	0	<input type="checkbox"/>
<input type="checkbox"/> V_Position 2	mm	0	<input type="checkbox"/>
<input type="checkbox"/> H_Position 3	mm	0	<input type="checkbox"/>
<input type="checkbox"/> Sensor_4	N	0	<input type="checkbox"/>
<input type="checkbox"/> Sensor_5	N	0	<input type="checkbox"/>
<input type="checkbox"/> Sensor_6	N	0	<input type="checkbox"/>

Use Averaging for Vertical Strain:  OFF

Test Type: Tensile

Buttons: Save as, Save

Result name: \_\_\_\_\_ Value: \_\_\_\_\_

Y-axis: Load [kN] (0 to 1.0)

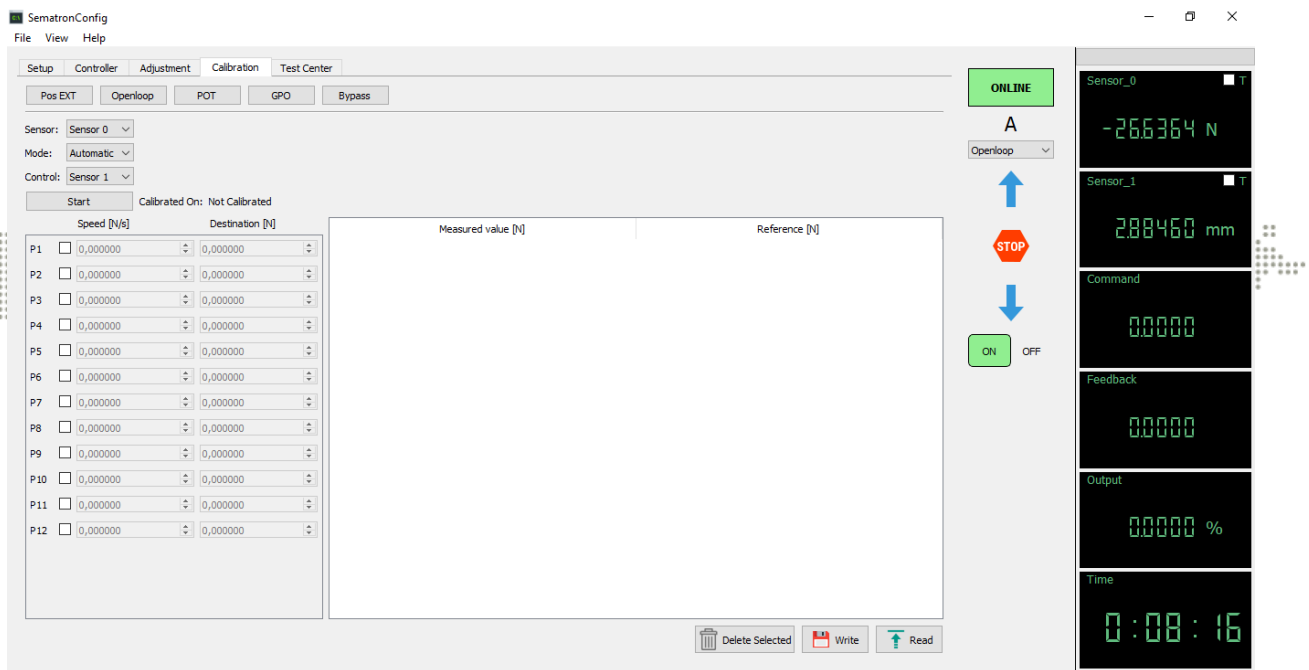
X-axis: Time [s] (0 to 0.6)

Right-hand menu options:

- New
- Save
- PDF
- CSV
- E-Mail
- Print
- Manual:  OFF
- Drive:  OFF

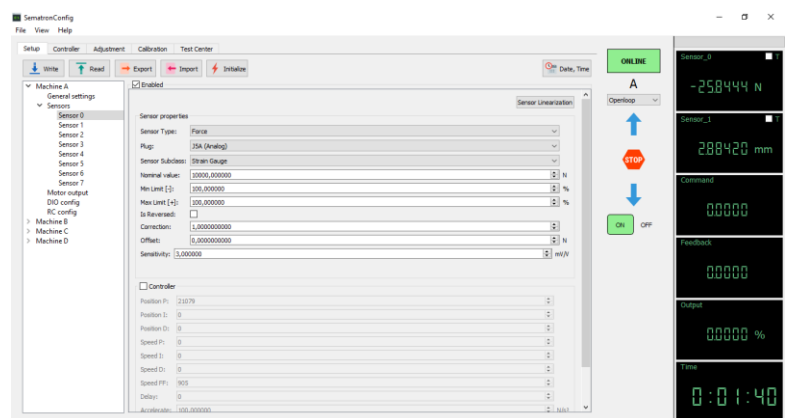
Bottom toolbar: Measurements, Test Data, Play, Stop, Refresh, Eye

Tests can be carried out on computer by Besmak Universal Testing Software. Real time data, test graphs and results can be observed on software. Results and graphs can be saved on computer and printed. User can personalize the software and report format according to company/corporation etc. Besmak Universal Testing Software is compatible with Windows7 and higher operating systems. Universal Testing Software provides solutions to all type of test applications.



## Key Features of Software:

- User Friendly, easy to use interface
- Easy-to-understand icons and workflows make it easy to train new or experienced users, simplifying operator training, and allowing you to start testing even faster
- Meticulously crafted visual design, gives the most comprehensive view of the test workspace
- User can make and save test templates with specific name / test standard etc.
- Automatic Save option for test report and/or raw values
- User defined graph axis to get real time vales of desired sensor
- User defined report setup and results definition



- High speed data display with 1 kHz data acquisition speed
- Automatic sensor and setup identification
- Series test option to combine test graphs and results of multiple samples
- Real time graphic analyzing feature to see graph data point to point
- User can perform tensile, compression, bending, shear and special test easily
- Test settings, test templates, loading sequences and device settings can be easily done by the software
- Besmak Universal Testing software supports multi languages which make it attractive for international users
- Besmak provides 24/7 online support to our customers.
- Over load detection and sample protection features for advance testing applications to protect sensitive samples
- Auto tare option for each connected sensor
- Auto positioning and return after test feature for actuator
- Software supports All SI and Matric units for sensors and measurements

