BESMAK – HIGH STIFFNESS

SERVO HYDRAULIC COLUMN TYPE FLEXURAL TEST MACHINE, 600 kN capacity

Capacity:	600 kN
Frame Type:	Rigid frame in 4-Column construction.
Electronic Unit:	New generation EDC Electronic Control Unit with 1kHz (1000 data/sec) data acquisition and control system
Controller:	1) Hydraulic Unit, Servo-Valve controlled 2) Sematron Controller 3) Besmak Universal Testing Software (Load and Deformation/Displacement Control)
Load Measuring Range:	2% - 100% of Total Capacity
Speed of Load Control:	0,05 kN/s – 25kN/s (depends on samples)
Adjustable upper rollers:	80 - 500 mm
Adjustable Lower rollers:	80 - 2000 mm
Piston stroke:	450

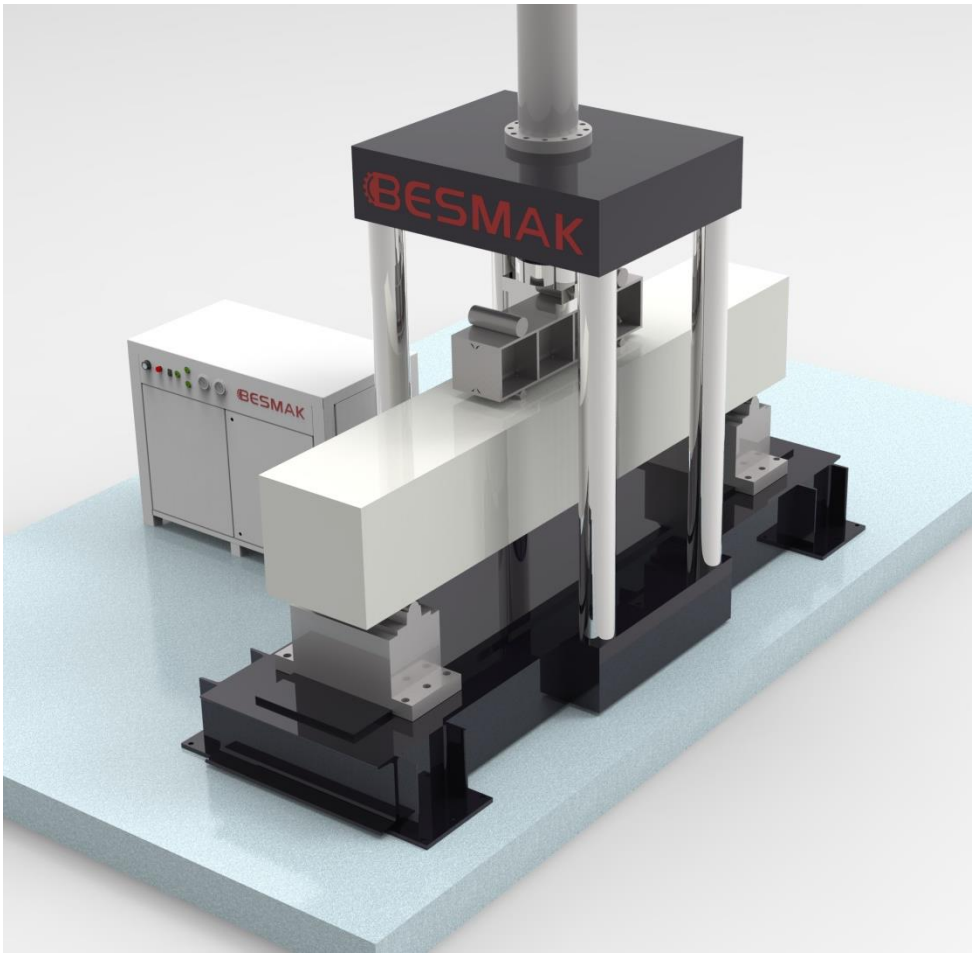
FEATURES:

BESMAK BCO-FC / High Stiffness Series Flexural Test Machine, designed with highly stiff frame in Column type construction and single workspace. Load measurement is made by a Load Cell. It is suitable for testing long samples or the samples having high strain capacity with its long range piston stoke.

- Ideal system for testing common sized specimen with non-adjustable crosshead design
- Convenient working height and ergonomic controls improve operator productivity and comfort
- Long stroke, high speed actuator is well-suited for tension applications requiring repetitive testing of similar-sized specimens
- Anti-rotation system prevents actuator from rotating during test stroke

Load Measurement:

- High precision load measurement with sensitive load cell class 1
- Load Cells can be replaced according to different load ranges to make much more accurate and sensitive measurements
- Load measurement resolution is 20 bit



Applied Standards:

BESMAK BCO-FC Series Flexural Test Machine conform to many international standards, including (but not limited to):

Testing Applications:

- Concrete
- Construction, etc..
- Cement
- Composite
- Cycling Tests

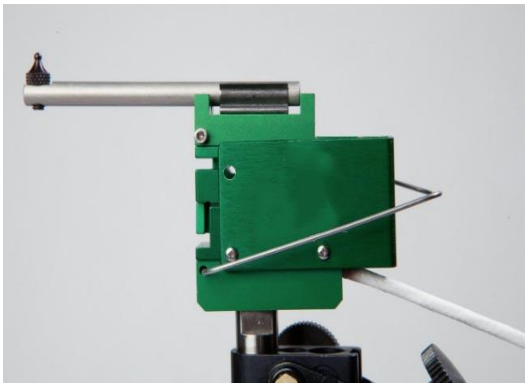
Standart Accessories:

Flexural / Bending Fixture:

Machine comes with Flexural/bending fixture including support rollers. Adjustable upper supports .

Flexural Deflexion Apparatus:

- Measurement Length Lg :50 mm
- Excitation: 5 to 10 VDC recommended 12 VDC or VAC max.
- Output: 2 to 4 mV/V, nominal, depending on model
- Linearity: ≤0.25% of full scale measuring range



ELECTRONIC CONTROL SYSTEM:

BESMAK BCO-FC/High Stiffness series Flexural Test Machine is controlled by "**New generation Sematron Electronic Control Unit**". Sematron electronic control system is world's one of the sensitive electronic control systems and used since 2000. It controls hydraulic and/or electromechanical systems by closed-loop control method.

Test can be done with both load and displacement/deformation control mode with closed loop control technology. With displacement/deformation control, user can obtain much more accurate and sensitive readings. Load of failure, strain of failure, max load, max strain, etc. can be obtained real-time at 1 kHz (1000 data/sec).

Load cell, video extensometer, automatic extensometer, etc. can be connected automatically to electronic control units. Besmak Universal Testing Software and Sematron controller can recognize these sensors automatically due to sensor Eeprom connectors, and calibration can easily be done with the software.

Controller has the excessive load protection system and can detect the failure automatically. Also, user can reset the load at the beginning of the test which gave easiness in daily tests.

User can control test, can adjust device settings and can control hydraulic grip by PC software and/or Remote control panel. Tests can be carried out by a single button.

Controller can detect indirect loads before the test (these loads can occur because of grips and mechanical system, etc.) and can prevent them affecting the test results. *Sample protection feature.

Return of piston can be done automatically by electronic controller unit and Display panel.

Besmak Universal Testing Software has all SI and metric units of sensors. Electronic control unit can be connected to computer via USB.

Machine has emergency button which stops the test immediately when activated. User can use the button whenever an unwanted situation occurs.

Touch Screen Display Unit (optional):

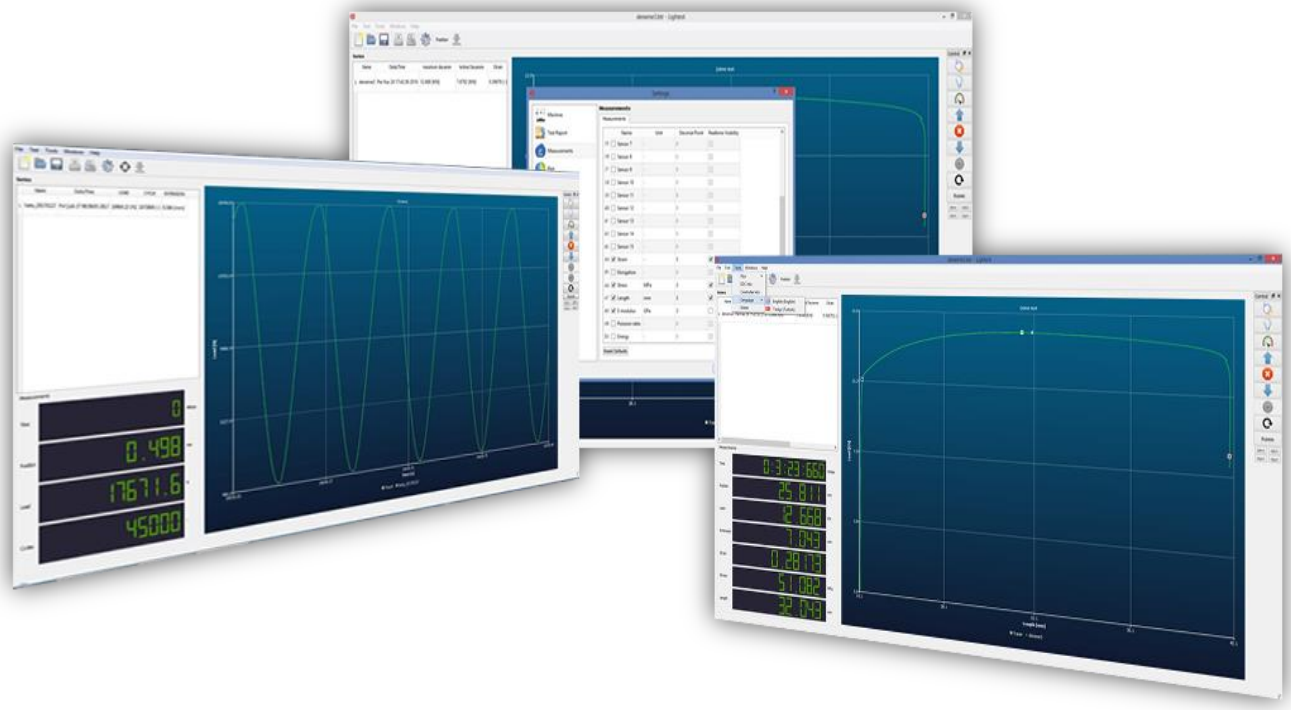
- Internal Storage: 8 GB eMMC
- External Storage: TF card, Up to 32GB SDHC
- Display: 10.1 Inch IPS LCD,1280*800 Pixel Resolution, 16:9

- Touch: Ten-Point Capacitive Touch
- USB: 2 x USB 2.0 Host,
- LAN: 1 GB LAN, Support POE.
- Working Temperature: -20°C to +70°C
- OS: Linux
- RAM: 2 GB DDR3
- CPU: iMX6Q, Quad Core -A9, 1GHz (Arm v7)
- Dimension: 280*185.5*27.5mm
- Audio: 3.5mm Audio In/Out Connector,2W Speaker Internal
- Other: HDMI, WIFI, Bluetooth, RTC, Buzzer

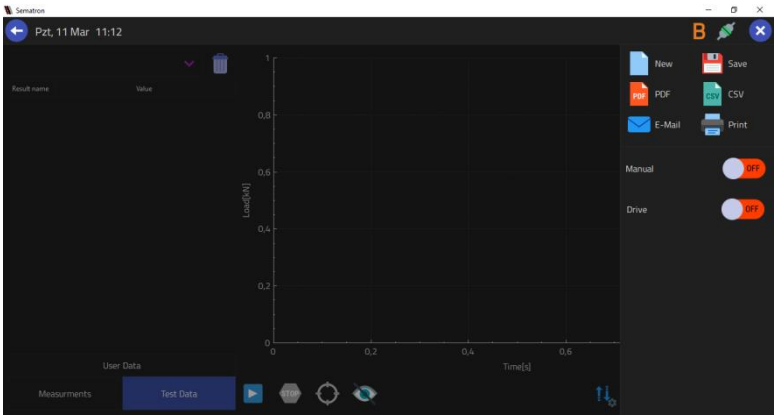
Note: Display Unit has built-in test software having same features as PC. Software.

BESMAK UNIVERSAL TESTING SOFTWARE:

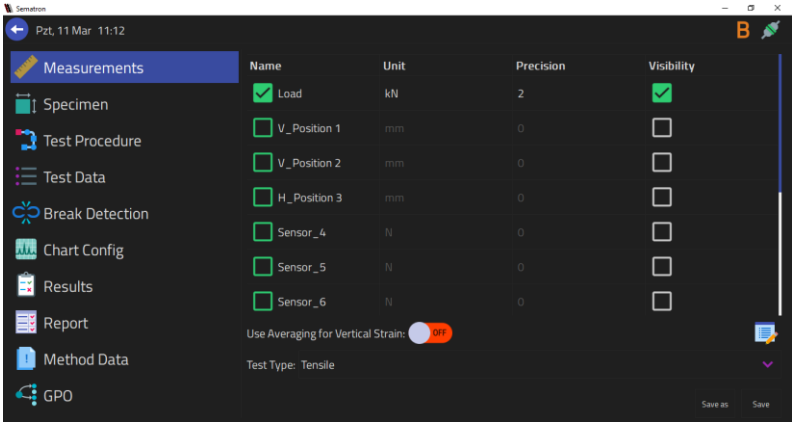
Tests can be carried out on computer by Besmak Universal Testing Software. Real time data, test graphs and results can be observed on software. Results and graphs can be saved on computer and printed. User can personalize the software and report format according to company/corporation etc. Besmak Universal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



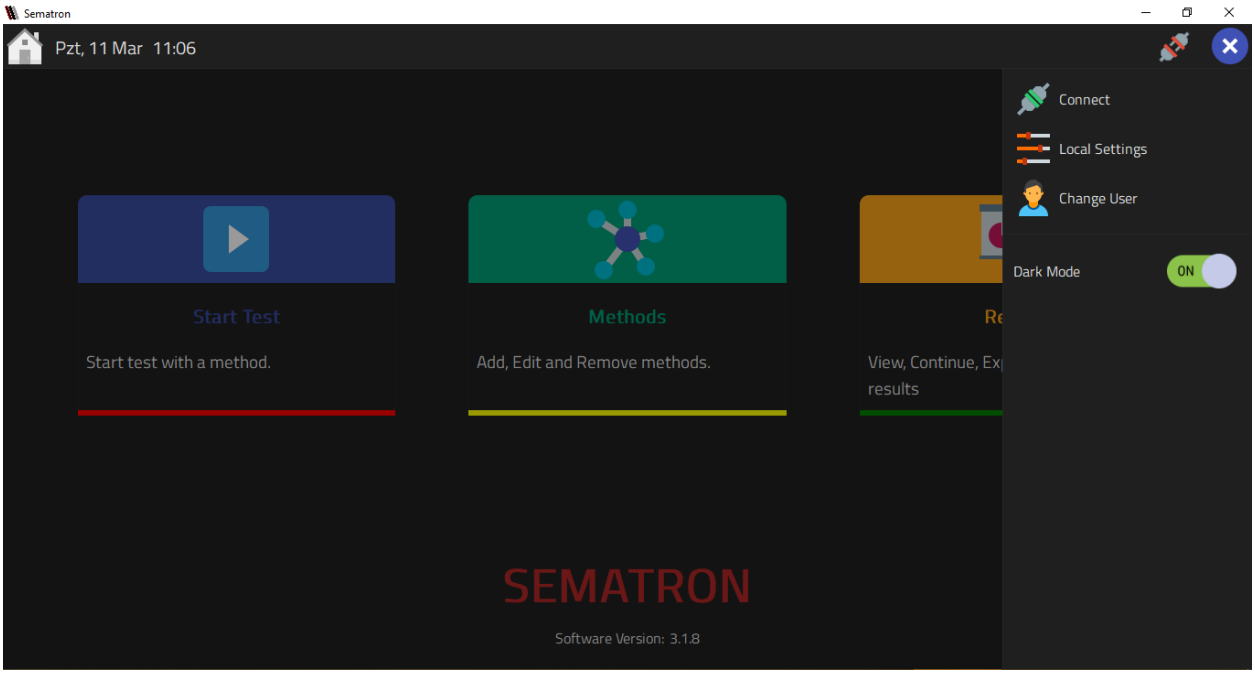
Key Features of Software:



- 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
- PC connection with USB cable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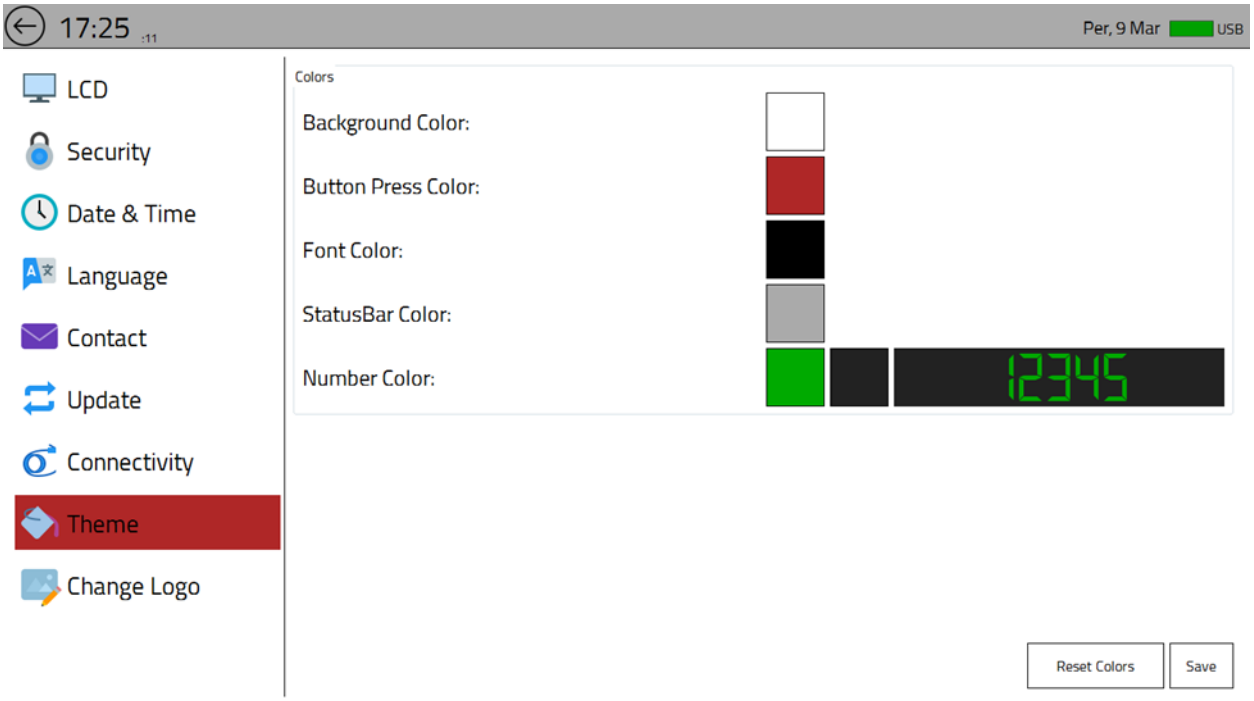
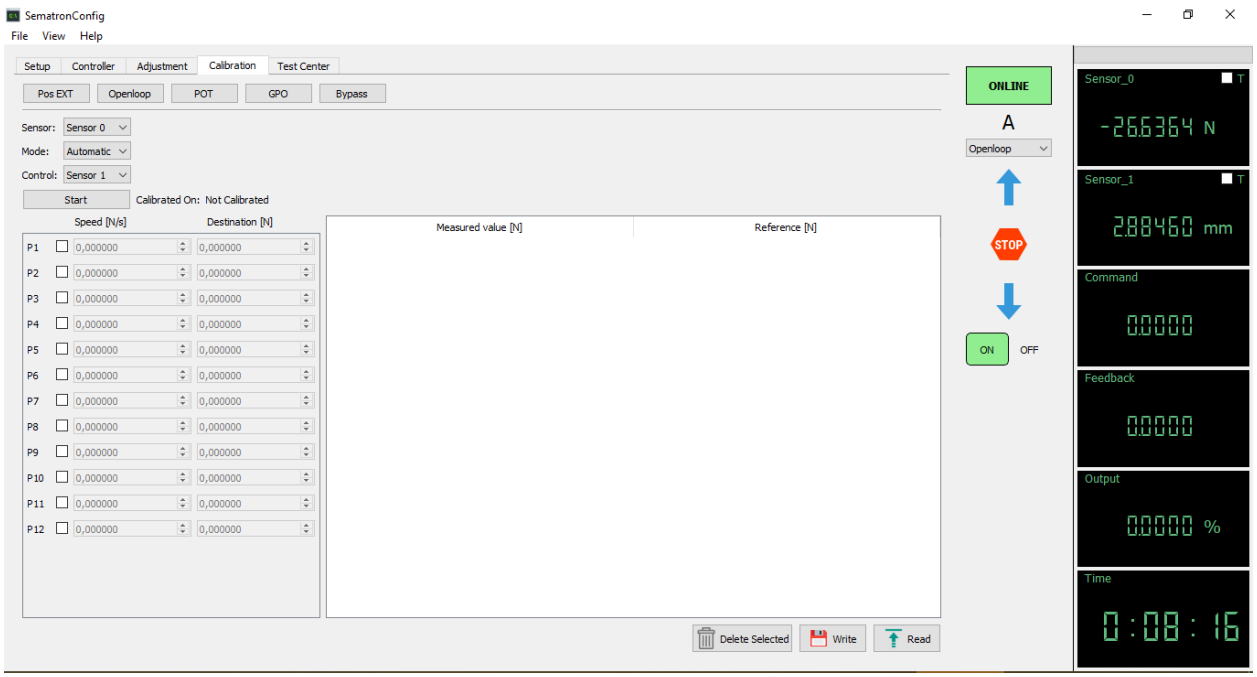
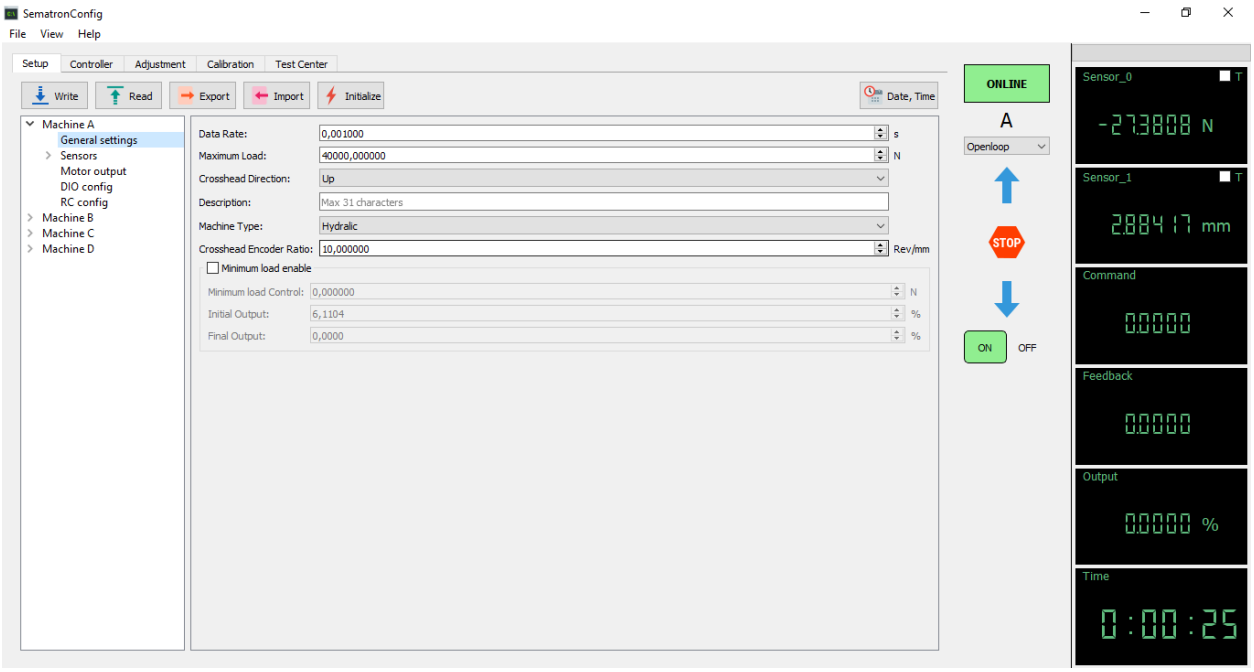
Pzt, 11 Mar 11:06
Connect
Local Settings
Change User
Dark Mode
ON
Start Test
Start test with a method.
Methods
Add, Edit and Remove methods.
SEMATRON
Software Version: 3.1.8


17:25
Per, 9 Mar
USB
LCD
Security
Date & Time
Language
Contact
Update
Connectivity
Theme
Change Logo
Colors
Background Color:
Button Press Color:
Font Color:
StatusBar Color:
Number Color:
12345
Reset Colors
Save


SematronConfig
File View Help
Setup Controller Adjustment Calibration Test Center
Pos EXT Openloop POT GPO Bypass
Sensor: Sensor 0
Mode: Automatic
Control: Sensor 1
Start
Calibrated On: Not Calibrated
Speed [N/s]
Destination [N]
Measured value [N]
Reference [N]
P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12
Delete Selected
Write
Read
ONLINE
A
Openloop
STOP
ON
OFF
Sensor_0
-26.6364 N
Sensor_1
2.88460 mm
Command
0.0000
Feedback
0.0000
Output
0.0000 %
Time
0:08:16


SematronConfig
File View Help
Setup Controller Adjustment Calibration Test Center
Write
Read
Export
Import
Initialize
Date, Time
Machine A
General settings
Sensors
Motor output
DIO config
RC config
Machine B
Machine C
Machine D
Data Rate: 0,001000 s
Maximum Load: 40000,000000 N
Crosshead Direction: Up
Description: Max 31 characters
Machine Type: Hydralic
Crosshead Encoder Ratio: 10,000000 Rev/mm
Minimum load enable
Minimum load Control: 0,000000 N
Initial Output: 6,1104 %
Final Output: 0,0000 %
ONLINE
A
Openloop
STOP
ON
OFF
Sensor_0
-27.3808 N
Sensor_1
2.8841 mm
Command
0.0000
Feedback
0.0000
Output
0.0000 %
Time
0:00:25

Hydraulic Unit:

- Independent servo-hydraulic unit connected to test actuator
- Gear type low noise hydraulic pump with necessary equipment for safe operation
- Servo valve to control test actuator for wide range of testing applications

System comes with advanced hydraulic Power Unit with hydraulic pump driven by electrical motor, smooth and high flow rate, with manifold and pressure limit and actuator safety valve, oil tank , comes with necessary joints and hose. Hydraulic power unit is equipped with high response and accurate servo valve. Hydraulic power unit also equipped with heat exchanger(Chiller Unit). The system is suitable for operation with 3 phase 380 V, 50 Hz.