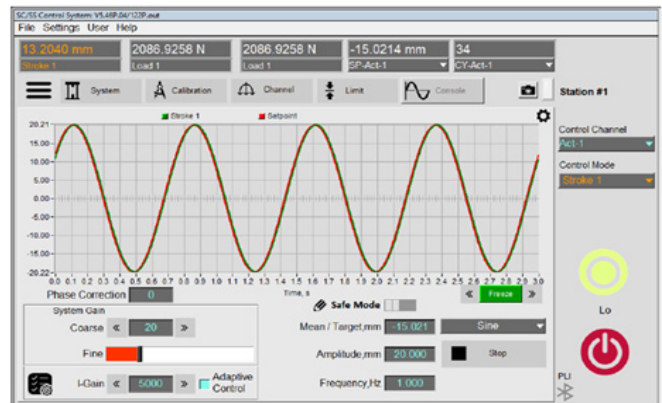
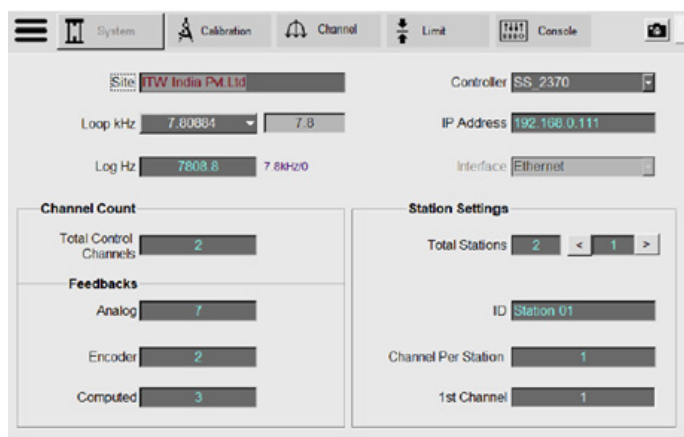


## MTL32 BASIC SOFTWARE AC-0X-XXXX

MTL32 basic controller software is a unified platform on which single-station single-actuator, single-station multi-actuator, multi-station single-actuator or multi-station multi-actuator test systems can be run. The same software is used for any system using 2370 Series 32-bit controllers. It allows multiple custom applications (instances) to get connected through the Global Data Sharing (GDS) concept.



MTL32 is a front-end application of control software that runs on Windows based computers and directly communicates with our controllers via either Ethernet or USB interface and associated set of device libraries. It facilitates configuring the controllers for multi-station multi-channel test systems that are typically used in evaluation of mechanical properties of engineering materials or engineering structures. It also facilitates hooking up to Test Specific Applications via a set of C-library functions and executing the test sequence as per the specified standard test protocol.



MTL-32 once installed and being online the home page with all relevant settings and menus will be enabled and available for further settings to be performed. The home panel has 4 primary tabs

- System panel
- Channel assignment panel
- Calibration panel
- Limit settings panel

The relevant panels allow respective entries and help in performing the required tasks with defined settings used.

## COMPATIBLE APPLICATIONS

Tension, compression, flexural

Low cycle, High cycle fatigue

Fracture mechanics

Multi actuator structural testing

Earthquake simulation

Flight simulation

Elastomer testing

Biomedical testing

Creep, stress relaxation

Stress rupture testing

## TECHNICAL FEATURES

### CONTROL CHANNELS:

1 to 128 channels

### STATIONS:

Supports 1 to 8 stations

### DAQ CHANNELS:

1 to 256 data acquisition channels

### TRANSDUCER CALIBRATION:

Auto calibration for a wide range of transducers: Load, Strain Bridge, Encoders, etc. Two-point calibration for transducers such as LVDT, Hi-level, etc.

### LOOP UPDATE RATES:

Up to 60 kHz (optionally up to 32 kHz)

### DATA ACQUISITION RATES:

Up to 60 kHz from all channels

### MASTER CLOCK FOR SAMPLING:

ADC data sampling up to 25 MHz

### CONTROL MODES:

Stroke, Load, Strain, and other derived channels

### SOFTWARE FILTERS:

Butterworth, Chebyshev, and Elliptic filters on logged data

### REAL-TIME DISPLAY:

Live monitoring of all control and feedback channels in the form of graphs and numerical values.

### WAVEFORM PARAMETER ADJUSTMENT:

Change frequency, amplitude, and other parameters while online

### PID ALGORITHM:

Advanced PID control algorithm for channel tuning

### ADAPTIVE CONTROL:

Fast adaptive control for auto gain setting

### SERVO-TUNING PANEL:

Displays set point, feedback signal, command, and error signals

### WAVEFORM GENERATION:

Standard waveforms: Sine, Ramp, Triangle, Square  
Arbitrary/random waveform generation and spectrum loading through custom applications  
Trapezoid, Haversine, Haversquare and computed (logical & arithmetic) waveforms through the Test Builder application.

### INTELLIMOUNT SUPPORT:

Via Programmable Logic Interface application

### SYSTEM UNITS:

Selectable between SI, Metric, and English units

### FIRMWARE:

Easy downloadable firmware for updates

### INTERLOCKS:

Upper/Lower Limit Interlocks on all control and feedback channels.  
Error Limit Interlock on each control channel

### EXTERNAL SERVO SIGNAL INTERFACE:

Supports interfacing with external servo signals

### SAFETY FEATURES:

Pop-up alarms triggered when limits are exceeded, with configurable actions.  
Options to hold by set point or position.  
Safe system shutdown, including emergency shutdown capabilities.  
Ability to set independent safety limits for Bridge A and B, or for errors between Bridge A and B.  
Safety limits for control errors.  
Safe system shutdown in case of communication loss between the controller and PC.

### EXPORT AND IMPORT FEATURES:

Export and import complete or partial test data, configurations, calibration data, and safety settings into separate files. It also supports input from ASCII and Excel files for test data.

[www.instron-biss.com](http://www.instron-biss.com)



Worldwide Headquarters  
825 University Ave, Norwood, MA 02062-2643, USA  
Tel: +1 800 564 8378 or +1 781 575 5000

India Headquarters  
#497 E, 14th Cross, Peenya Industrial Area,  
Bangalore - 560058, Karnataka, India.  
Tel: +91 80 28360184, sales.india@instron.com

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