

# Load Monitor Analyzer

Version 1.0

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## Introduction

Load Monitor Analyzer (LMA) is a comprehensive solution for measuring & testing of push in strength and pull out strength of an object. It is very useful tools which record online data and store it for future analyses. It has interface to view old data and even export & printing of captured data. It has software and a micro controller based smart device. Which collects analog or digital signals, process them and transfer it to computer. It is fast, accurate and easy to operate.

The entire system has tow physical parts:

- ❖ Software
- ❖ Load Monitor

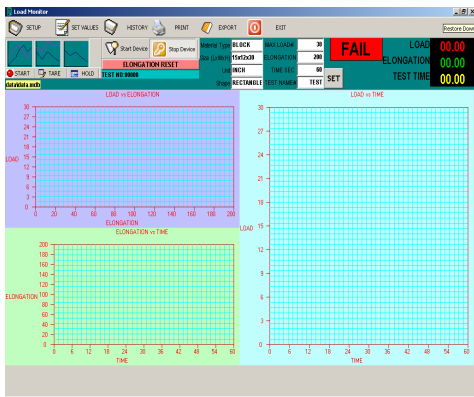


Figure 1 Software

Figure 2 Load Monitor

This manual is applicable only for software installation, setup and operations.

## Software

Software is an integral of the LMA or you can say software is the brain of the entire system. This will not work without software. So, it is important to understand software.

The software manual is organized in following sections:

- ❖ Installation of the software
- ❖ Configuration of the software
- ❖ Operation on the software
- ❖ Export of software data to other software.

## Installation

The process of loading the software on computer is called software installation. Before installing the software it is important to note that computer has following minimum requirements:

1. Computer with Pentium 4 processor, 1 GB RAM, 500 MB free space for software installation and 1 GB Free hard disk space for software running.
2. The software is perfectly tested on windows 2000 Profession and XP with service pack 2.0 and 3.0. Hence it is observed that it can be installed on windows 95 and other flavors of windows yes you need following extra components to be loaded on those computers:
  - a. MDAC 2.8
  - b. DCOM for Windows 95/98
  - c. Above software are free and can be downloaded from <http://www.microsoft.com>.
3. One DB9 RS232 Serial port free to connect the device.

Loading the software on the Computer is very easy. Just insert the CD into the CD Drive and locate either Setup.exe or Setup.MSI and double click on it. Just provide the information asked by the installation wizard and software is ready. Note: - if you don't understand just press next button on the screen would install the software to default location on your computer. Followings are the default location:

1. "C:\program files\Loadana" is the path where your software is installed.
2. "C:\program files\Loadana\data" is the path where your data will be saved.
3. "C:\programfiles\Loadana\Server.cfg" is the main file where all software settings are stored.
4. "C:\program files\ Loadana\data\data.mdb" is the default data file.
5. You can open the "C:\program files\FMS\Server.cfg" using notepad windows standard program to update the data settings.
  - a. You will find DATA=data\data.mdb line by default.
  - b. You can change this to your desired location and file name.
  - c. Just make sure that the path you have changed is exists and data.mdb file is copied and renamed with name you have given.

## Software Configuration

Just click on the start button and you will find on the FMS Icon. On click it software start running. If your computer does not have com1 it will give error that “Com1 is not found on the computer” and you will see following main window of the software.

The screenshot shows the main window of the software with several callouts:

- Device Setup password = day X 2 month X 3 i.e. say today's date id 08/08/08 then pwd is 1624 and On next day pwd is 1824.** (Yellow callout pointing to the top left)
- Start collecting data from device** (Yellow callout pointing to the 'Start Device' button)
- Online graph** (Yellow callout pointing to the 'START' button)
- DATA STORAGE** (Yellow callout pointing to the 'data\data.mdb' file name)
- Current Test No** (Yellow callout pointing to the 'TEST NO: 00000' field)
- Result** (Yellow callout pointing to the 'FAIL' status)
- Online Readings** (Yellow callout pointing to the 'LOAD 00.00', 'ELONGATION 00.00', and 'TEST TIME 00.00' fields)
- Various graphs** (Yellow callout pointing to the three graph areas)

The software interface includes a menu bar (HISTORY, PRINT, EXPORT, EXIT), a toolbar (Start Device, Stop Device), and a data table with the following information:

Material Type	BLOCK	MAX LOAD#	30
Size (LxWxH)	15x12x30	ELONGATION	200
Unit	INCH	TIME SEC	60
Shape	RECTANGLE	TEST NAME#	TEST

The graphs show 'LOAD vs ELONGATION', 'ELONGATION vs TIME', and 'LOAD vs TIME' plots. The 'LOAD vs ELONGATION' graph has a y-axis labeled 'LOAD' (0-30) and an x-axis labeled 'ELONGATION' (0-200). The 'ELONGATION vs TIME' graph has a y-axis labeled 'ELONGATION' (0-200) and an x-axis labeled 'TIME' (0-60). The 'LOAD vs TIME' graph has a y-axis labeled 'LOAD' (0-15) and an x-axis labeled 'TIME' (0-60).

### Device Setting Password scheme

Device Setup password = day X 2 month X 3 i.e. say today's date id 08/08/08 then pwd is 1624 and On next day pwd is 1824.

### Setting Device Settings

These device settings are controlling the behavior of Load Monitor device.

Com Port = number (1-99) DB9 connection number on the computer.

Pol delay = Milliseconds max value 31000. Request for data from device after given interval.

Re-Try Delay = Milliseconds max value 31000. Incase no response from device of a given command then send same command again.

Next CMD Delay = Milliseconds max value 31000. Delay between successful data receiving from one command to next command.

Max Tries = Max no(s) of tries software should made to device before declaring it communication failure.

Multification factor = Is the Zoom size of given value of load.

Decimal Value DP1 = Dot point position selection in red display.

Decimal Value DP2 = Dot point position selection in green display.

Load Unit = Select your load Unit.

Elongation Unit = select elongation unit.

Threshold value = Minimum value after which data will be treated as valid data and automatically new test start.

Calibration Value = is the load value by which load cell is calibrated. This command only effective if you press the calibrate button and receive a successful reply.

Set Decimal points button - is need to be pressed if you wish to change the display format changed on DP1 & DP2 display immediately.

Com Port	1	Next CMD Delay	6
Pol Delay	200	Max Tries#	6
Re-try Delay	100	Multification Factor	1
Decimal Value DP1	00.00	Decimal Value DP2	000.0
Load Unit	KG	Threshold Value#	.2
Elongation Unit	MM	Company Address	TEST ADDRESS
Company Name	TEST		
Calibration Value#	200		

## Set Values

Set values are the values on which load monitor would ignite the relay on reaching the load value to set values. Pass/Fail result is shown if load values are between setval1 and setval2.

Set Value1	Set Value2	Set Value3	Set Value4
10	16	40	100

## History

This option is taking input of the test no to display the graph on the screen. In case of not valid test no nothing will happen.

### Main Screen Settings

There are certain settings provided on the screen, which required on the fly when performing the test. It is important to understand these settings:

- Material Type - would be printed on the report
- Material Size- would be printed on the report
- Unit- would be printed on the report
- Shape- would be printed on the report
- Max Load - required for setting Maximum value of the graph
- Elongation - required for setting Maximum value of the graph
- Time Sec - required for setting Maximum value of the graph
- Test Name - - would be printed on the report
- SET - clicking on set button would save and set the options.

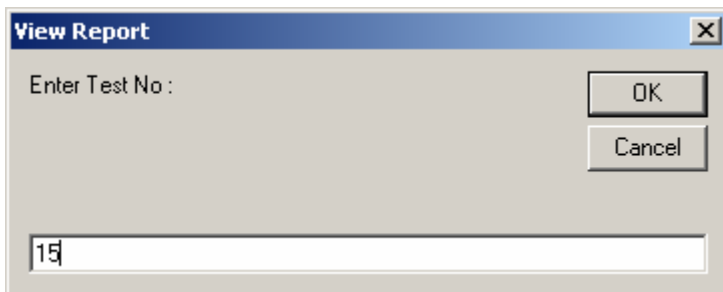
### Resetting Elongation value to Zero

Pressing the light red button captioned as RESET ELONGATION would reset the elongation.

### Printing Report & Graph

Report and graphs can be printed by clicking on the print button on the main screen. When click on the print button you will get two option

- Print Test Report
- Print Graph

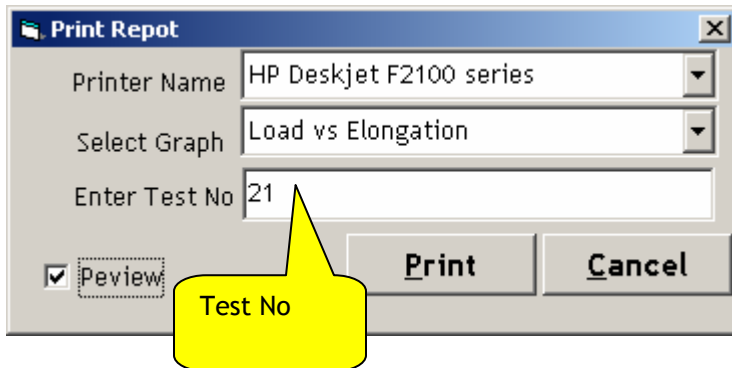


Clicking on the print test report option would ask you to enter test no. input a valid test no would print open the report in a new window. There may be chances that you will not get proper formatting of the report. To resolve this problem just do the following:

Click on the Format->font Window. Select Font Name = "Courier New" press OK.

Printing can be done by selecting the print command or just press Ctrl+P to print the report.

Printing Graph can be done by selecting the print graph option. Input the test no and select a graph to print. You have an option to view the graph before printing.



## Data Storage

Data storage is shown on the main screen on the upper left hand of the screen. You can change the storage location and file to the location of your preference. To change the data storage location, you have to click on the yellow strip of the current data storage location. Say you want to set data location to d:\loadmonitor\data\_jan2008 then click on the current data location would open the browse location window, you have to locate the above location and give a file name of your choice would create the new data file and data storage location.

## Data Export

You can Export data by clicking on the Export button on main window. You have option to export report data to text format or excel file format.

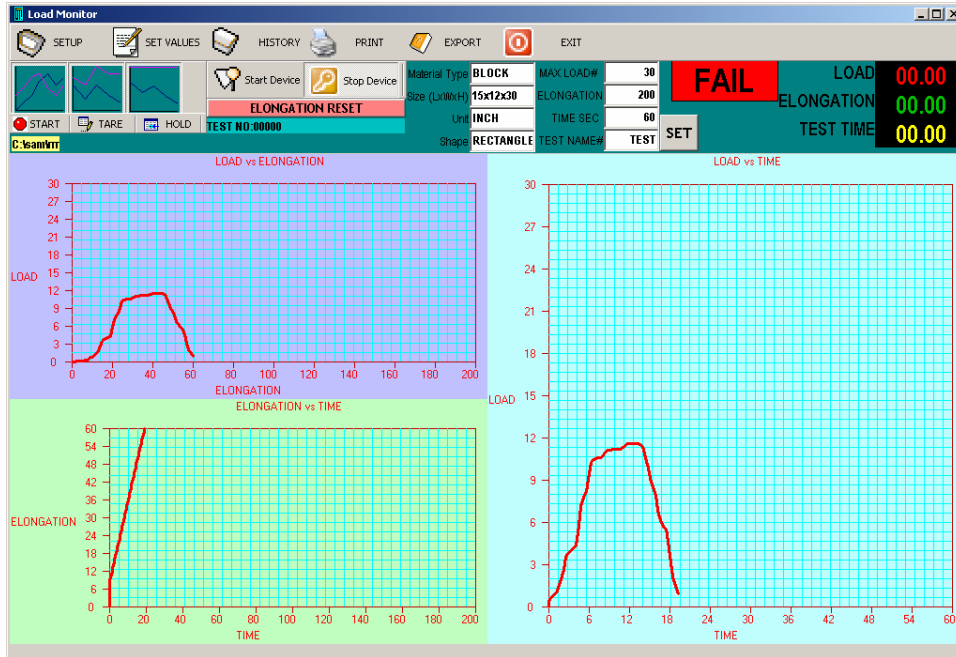
## Integration with ERP

If you have any software you standard ERP system you can integrate this software directly to your system using its COM based SDK (Not free).

## Support

Paid telephonic service can be obtained by 9:00-17:00 IST for the software. Email at [support@nutronicsindia.com](mailto:support@nutronicsindia.com)

# Sample Graphs



# Sample Print Preview of Graph

