

ZES LMG310 terminal software

Data transfer of measuring values from LMG310 to PC
with RS232 - / GPIB - interface for Windows 95/98/NT

„L31TERM“
Vers. 6.62

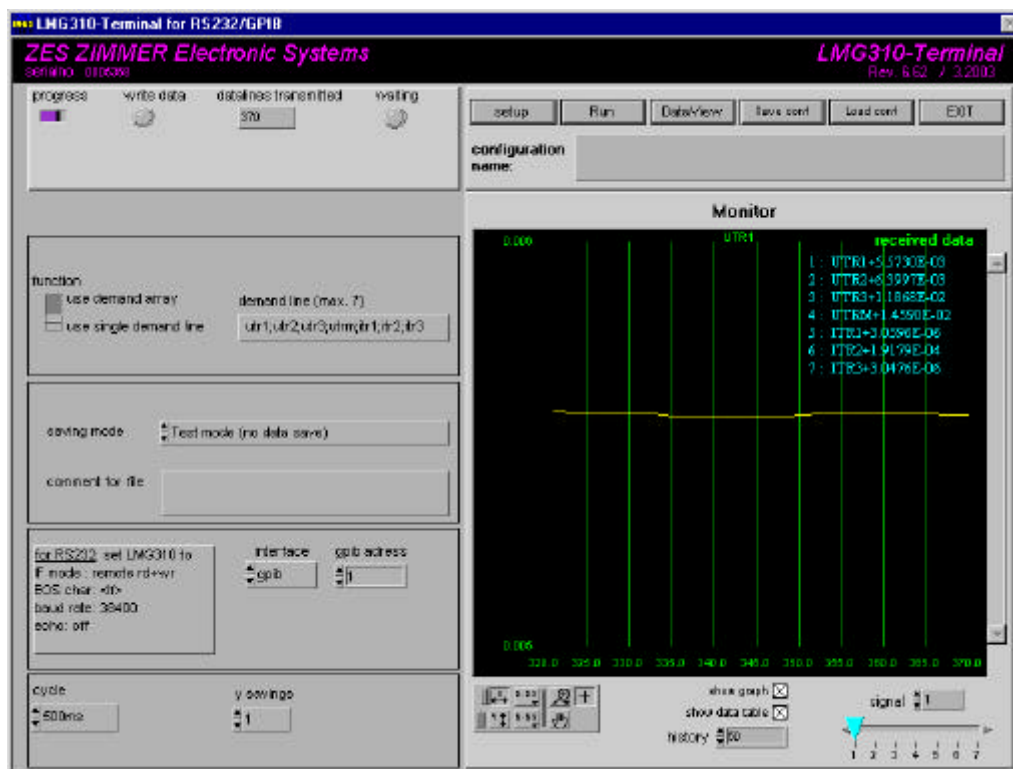
With the ZES LMG310 terminal software you can display, store and print LMG310 measuring values.

In different modes you can either store values continuous after each measuring cycle or trigger a single measuring by pressing a button. The single triggered measuring can be one ore more cycles long.

If you want to store measuring values to a file you can choose between several file formats. So you can create ASCII data for further use in ZESVIEW or MS-EXCEL or other software.

With the RS232 interface or a National Instruments IEEE488-Card in the PC you can communicate with your LMG310.

While measuring you can display one of the measuring values in a graph. You can display all values as list.



Pic. L31TERM – Main

Installation

The L31TERM software uses interface functions that needs a special driver, the VISA driver. **Please install the National Instruments VISA driver on your PC at first.**

The setup program ‘..\L31term\Disks\Setup.exe’ installs the terminal program on your system. The default directory is c:\zesapps\l31term.

After installation of L31TERM and VISA, connect a standard RS232 cord to the LMG’s RS232 port and your PC’s COM1. Setup the PC and the LMG interface to the parameters shown on the L31term’s panel.

Start L31TERM. By clicking the ‘Run’ button you start data transmission.

If your software is not registered, you the registration window. At the bottom you see your instruments serial number. If not, the communication seems to be not OK.

Enter your registration key. Your software is now ready to work.

If you have problems while registering your L31TERM please have a look to your WIN\SYSTEM directory.

In the L31term.ini file you need to enter the path to this directory. By default it is set to c:\windows\system.

Set this entry to the correct path e.g. ‘C:\WinNT\SYSTEM’ if you use Windows NT. Use the windows explorer

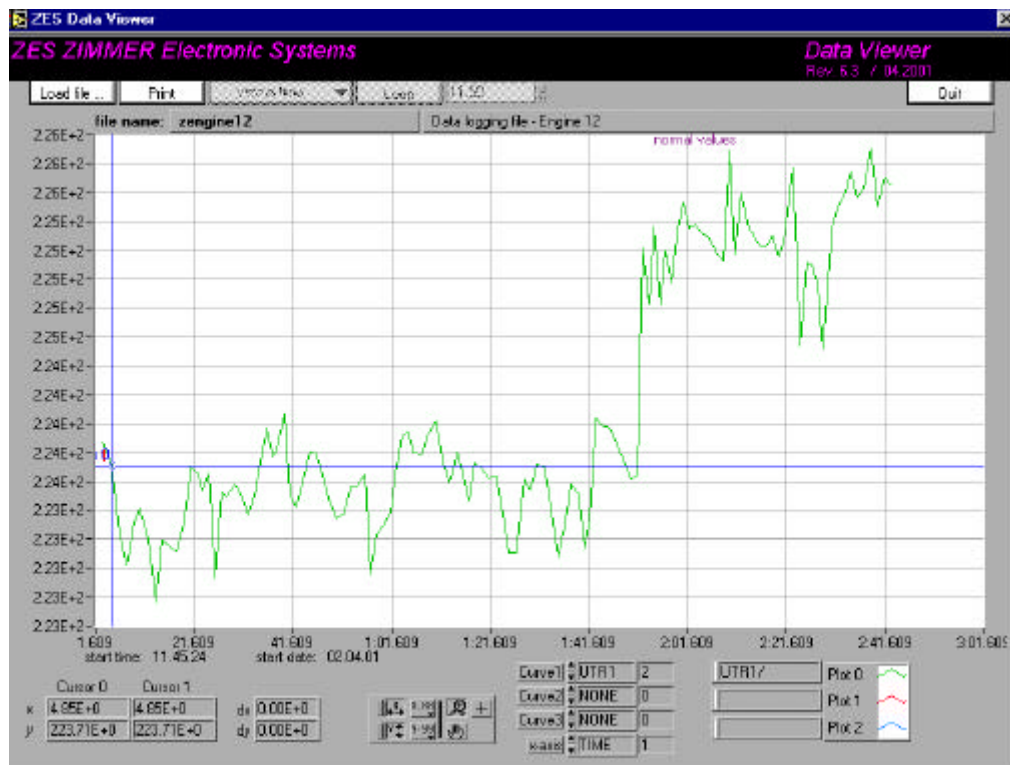
To find the correct name.

Now the ‘received data’ box will show you a new set of measuring values after each measuring cycle.

L31_TERM controls and indicators

- “ Select the desired interface. Depending on the ‘*interface*’ settings there will be some controls for setting up the transmission parameters. Please setup these parameters in the way shown on the programs panel.
- “ ‘*saving mode*’ selects the way and the format of saved measuring data. The data log files give the possibility to use measuring data in any third party software.
- “ With ‘*comment for file*’ you can save some explaining text and remarks to the log file. These function is not available if you chose ‘save ZES-Format’.
- “ Set ‘*cycle*’ to the same cycle time like your LMG310. LMG310 TERMINAL gets new measuring values from the LMG310 after each measuring cycle, so the amount of values you can receive in a time depends on the cycle time
- “ Selecting ‘x values’ for ‘cycle’ will display the x-value selector. Here you can set the number of values that you want to receive after pressing ‘run’ and ‘Send Once’.
- “ All settings including the data arrays can be saved by clicking the ‘*Save conf*’ button. By clicking the ‘*Load conf*’ button you can reload some old configuration.
- “ By clicking the ‘*Run / Stop*’ button you start measuring. Measuring in the ‘single demand mode’ will be done continuously after each measuring cycle until the button is pressed again. In the ‘demand array mode’ measuring is not triggered by the instruments cycle time. The time between two measurings is dependent on system performance and the amount of values to measure.
- “ The ‘*received data*’ box shows the LMG310 measuring values. This box is refreshed after each cycle.

- .. The answer string from the LMG310 is formatted displayed. Each value is shown in a separate numbered line.
- .. The 'Monitor' section makes it possible to display measuring data in a graph online. With a signal selector you can select one of the ordered values to show it in the graph. From the moment you change the signal selection all following measurements will be plotted in the graph. The graph begins to scroll after a number of 'history length' measurements.
With the 'autoscale y' button you can enable autoscaling for y-axis. After each measurement the graph will be resized to his maximum zoom factor.
With the 'cartesian axis attributes' you can change scaling and display style of the graph.
- ◆ To leave L31Term press **'Exit'**.
- ◆ With the **'Data View'** button you can open a window for viewing previously stored data (Pic. L31TERM - Data Viewer).
You can print Displayed graphs of the data view window.



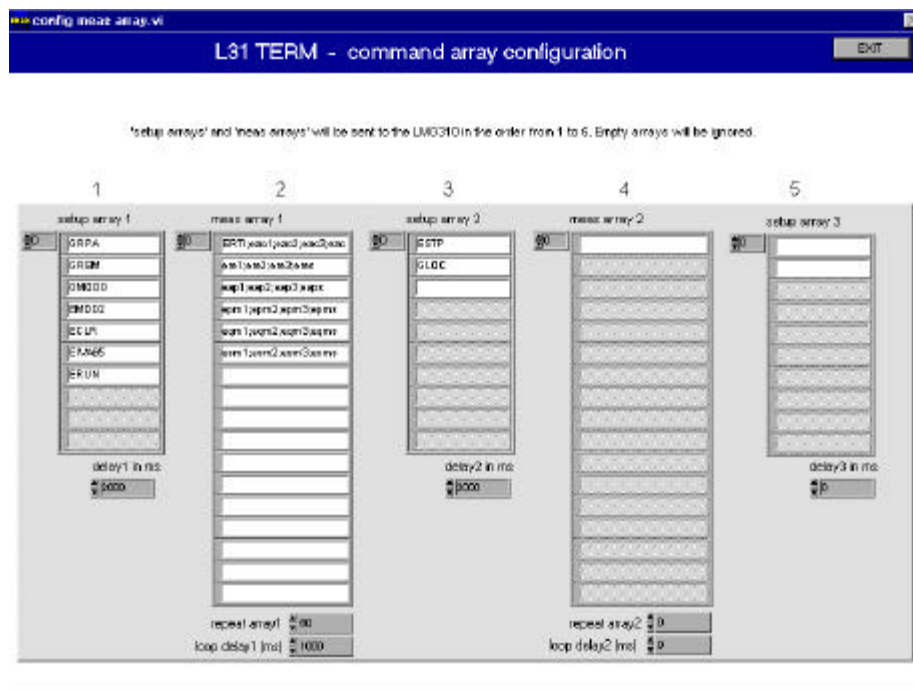
Pic. L31TERM - Data Viewer

- ◆ With the **'x-axis'** control you can select the x-axis values. In most cases this will be the time. With the **'curve1'**, **'Curve2'** and **'Curve3'** controls you can select the data array for y-axis. Please select the x-axis data before selecting the y-axis. Otherwise the graph may not be refreshed.

Measuring values

After starting the program you can write the desired command list into the ‘demand line’ box. Each command should be separated with ‘;’ from the next. A complete list of possible commands is shown in the LMG310 User manual. Because of the limited size of the interface buffers, please do not enter more than 7 demands in the ‘demand line’ field.

If you want to measure more than 7 values you must switch to the ‘use demand array’ mode by switching the function switch. In this measuring mode the L31TERM does not use the ‘demand line’. Instead of this the value arrays that you can change in the setup menu will be sent to the LMG310 (pic.1).



Pic. 1

There are 5 arrays numbered from 1 to 5 where you can insert interface commands. The Arrays are divided in two groups, ‘setup arrays’ and ‘meas arrays’. ‘Setup arrays’ are for interface commands that will cause the LMG310 to answer like all setup commands. You can use this arrays to setup the measurement environment of the LMG310 like setting the instr. to ‘remote’ and to ‘normal mode’.

After this changes the LMG310 needs some time to get correct measuring values (depending on cycle time and average).

Meas arrays include the measurement commands like ‘utr1,utr1,...’. All this commands will cause the LMG310 to answer with the measuring value. You can display these values in the graph (only one at a time) and show them as list simultaneous during measurement.

! Please note, that measuring results in the ‘demand array’ mode may be measured in different measuring cycles. You cannot do exact calculations with this values because they are not measured at the same time.

Array data will be sent to the LMG310 in sequence, starting with array ‘1’ and ending with array ‘5’. After sending the last value of every array the program will wait for ‘delay in ms’ before the next array starts sending data. This delay is very important to give the instrument time for initialisation.

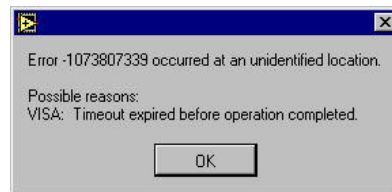
Trouble shooting

VISA: Timeout expired before operation Completed

For using L31TERM it is important to install VISA driver first. Visa driver are product of National Instruments and can be downloaded from internet address: www.ni.com/visa/visa_dl.htm

This error occurs when communication between LMG310 and your PC is corrupt. In that case check interface settings on both machines. You have to use a standard RS232 cord (no NULL modem) to connect PC and LMG310 for serial communication.

Error - 1073807339



If everything seems to be correct try to check the general interface functionality of the PC.

Use a terminal software like `Windows Hyperterminal` and set interfaces like: baud=9600, echo=off, protokoll = no, EOS=mode2 (only LMG310).

Attention: While using a terminal software like Hyperterminal you must setup the LMG310 EOS character to `mode2` and not `lf`.

Type a LMG310 if-command on the Hyperterminal console like `UTR1` followed by `ENTER`. The LMG's answer should be displayed without any delay. This looks like: NUTR1+2.2263E+02.

If not anything happens check the functionality of your RS232 cord and the PC's RS232 port with any other hard- and software, to be sure that your PC's port is working. Is the PC-RS232 works in other applications, there may be some problem with the LMG310 interface. In that case connect ZES to get a quick repair of your unit