

METROWIN FUNCTIONS

MetroWin is the software used to operate the Metrolog recorders and to produce various reports from the data acquired. It runs under Windows 98, NT 4.0, 2000, Millenium, XP, Vista and 7. It allows to :

- test a recorder,
- program it (thus erasing its memory) and start data acquisition,
- read it after the operation is completed,
- produce various reports and plots of the data acquired and
- export the data under various formats for further treatment by other software.

EQUIPMENT REQUIRED

Any computer running comfortably under Windows, 100 Mb of free hard disk space and a pointing device. A serial RS232 or USB port is convenient since the recorder must be connected to that port but. An Internet link or a USB port or a CD or DVD recorder is needed for software installation and data export. Color screen (and printer) and fast processor are not strictly compulsory but are of great help for readability of the data and speed of processing respectively.

METROWIN MENUS

MetroWin is menu driven. The main and most used functions are repeated in a tool bar with clear-to-understand-and-remember icons. The function of each icon, menu and sub-menu is repeated in the status bar. Main functions also have keyboard shortcuts.

As any Windows based software, MetroWin has general functions common to all recorders and type of operations.

The 'File' menu has sub-menus to 'Open', 'Save', 'Save As' and 'Close' a data file stored on the hard disk (see below data file and data file type) which are standard Windows functions.

The 'Windows' menu allows selecting, arranging and closing the various windows open by MetroWin.

The 'Help' menu allows to display the current version parameters and to have access to the help file.

MetroWin has specific menus for the operation of recorders and the reporting of their data:

The 'Programming' menu allows to:

- test a recorder. This test is a compulsory step before being able to access the programming and starting sequence of a recorder,
- program a recorder and thus erase its memory (see the 'Programming modes and parameters' technical data sheet for more details on programming possibilities) and
- start data acquisition.

The programming menu is extremely simple: from beginning to end, only two mouse clicks on the relevant icons are needed to test and start a recorder. Testing, reprogramming and starting a recorder takes less than 20 s.

The 'Data' menu allows to:

- read a recorder after the operation: data are transferred from the recorder to hard disk,
- display the recorded data as:
 - a list of data showing the date, the time, the value, the unit and the name of the measure recorded,
 - a plot of data showing the measures versus time. For a pressure and temperature recorder, the date and time appear on the X axis, the pressure appears on the left Y axis and the temperature on the right Y axis. Scales are entirely automatic. Zooming functions are available with a simple click-and-drag. Plot colors can be customized.

Various functions on the data list and plot allow to display the measure values at a given date and time and to enter notes, events and gradient steps (see below).

The 'Reporting' menu allows to:

- print a list of the recorded data on a column format (one line per date and time) and
- print a graph (plot) of the recorded data.

These reports and plots can be generated under various formats either predefined (to save time for the user) or entirely user-defined. User-defined report templates can be saved by the user for future treatment and re-use.

The reports and plots can be displayed, printed on the printer currently installed under Windows or sent to the clipboard (to be used in a text edit report). Reports can be exported into an ASCII file which format can be defined by the user to match the requirements of the analysis software.

The 'Configuration' menu allows to:

- select the file directories, the software language and the communication port,
- choose the favorite units (all current units are available, user-defined units can also be entered),
- edit the report print parameters and
- edit the plot print parameters.

The print parameters include type of printer, page orientation, margins, font type and size, page numbering and header parameters. It also allows inserting a company logo in the report and the plot header.

METROWIN DATA FILES AND DATA FILE TYPES

MetroWin creates a new data file each time a recorder is read (or each time a multi job report is created). This file is saved on the hard disk or on a memory stick. MetroWin always stores the original (raw) data on a binary form and these data cannot be altered nor modified.

MetroWin creates different data file type for each type of recorder. Every type of file has a different extension: .p3w for a pressure and temperature tool, .d1w for a Deptholog, .mrp for multi-jobs report for example but any type of Metrolog file can be loaded at the same time by MetroWin.

NOTES, EVENTS AND GRADIENT STEPS

Within MetroWin, the user can store much more than the measured data in the file. He can enter and edit:

- Notes, which are general comments worth keeping in the file and concerning the operation,
- Events, which are particular facts happening at a given date and time during the operation,

- Gradient steps, which are the date and time of the stops (start and end) during a gradient measurement operation. The step description may also include comments and the type of gradient.

Gradient steps can also be produced automatically if the Depthlog has been used for the operation. In this case, reading the Depthlog first and then the downhole recorders link the data file together for an automatic production of the gradient reports and plots.

All information is kept in the same data file and is transparent to the user. Copying a data file also copy all the information (notes, events and gradient steps) contained in that file.

WELL DATABASE AND LINK WITH A DATA FILE

MetroWin keeps a well data base that includes the well description (name, reservoir, depth correlation data, perforations depth, etc...), its completion description (completion elements and depth), its deviation table and even notes that are worth keeping with that well. Each job in a data file can be linked to a well entered in the database for the well data to be taken into account for the various reports produced from this data file. For example, if a gradient data file is linked to a well which data includes a deviation table, the gradient report will automatically be produced with a TVD (True Vertical Depth) corrected with that deviation table. Copying a data file containing a job linked to a well automatically copies the well data with the data file.

MULTI JOB REPORTS AND PLOTS

MetroWin allows producing reports and plots from the data of any number of recorders. For example, it is possible to report and plot on the same report or graph the measures of two (or more) recorders run together.

Mathematical functions are also available in order, for example, to print the difference (or the average) between the two pressures recorded by two recorders run in tandem for a complete and accurate control of data quality. The user can define variables and values that will then be used by the report or plot. There is practically no limit in the creation of these variables and values since all main mathematical operators can be used.

The type of recorders and type of data files are irrelevant for the creation of a multi job report or plot. For example, it is perfectly feasible to plot the pressure of a pressure downhole recorder versus the depth acquired by a Depthlog.

REPORT TYPES TO BE PRINTED, DISPLAYED OR EXPORTED

The types of report produced by MetroWin are:

- Conventional: the date and time and the value of all acquired measures appear on each line
- User defined: the content of each column can be edited by the user
- Events only: creates a sequence of events (if they have been entered in the data file)

The time between two printed data (print rate) can be edited in order to reduce the number of printed pages. It can be either the acquisition rate or longer. It is also possible to print data only if a measure has changed by more than a given value. The user can edit the measure to be monitored and its trigger value. In addition and only if gradient steps have been entered, MetroWin can produce:

- Pressure gradient report where fluid gradients are calculated between two depths (which can be either actual gradient step depths or any other depths: in this case, MetroWin uses a straight extrapolation)
- Temperature gradient report with the same features than the pressure gradient report
- Pressure and Temperature gradient: the two reports described above are produced together.

Report header and report templates can be edited and saved for future use.

PLOT TYPES TO BE PRINTED OR DISPLAYED

The types of plots produced by MetroWin are:

- Conventional: the date and time appear on the X axis, the pressure (or the first measure) on the left Y axis and the temperature (or the second measure) on the right Y axis, a.s.o.
- User defined: the user can edit the measure on each axis. In addition, the user can define each axis scale to be linear or log.
- Horner: creates a Horner plot. The user must enter a production time.

In addition and only if gradient steps have been entered, MetroWin can produce:

- Pressure gradient plot with the standard presentation: pressure on the X axis and depth on the Y axis
- Temperature gradient plot with the same features than the pressure gradient plot.

Plot header and plot templates can be edited and saved for future use.

CALIBRATION

MetroWin includes all functions to calibrate Metrolog recorders. After the application of the calibration procedure (see the operation manual or the on-line help within MetroWin for more details on that procedure), MetroWin allows for the full treatment of the calibration data file. Its functions include the edition of the Dead Weight Tester parameters (for setting up the calibration parameters and environmental corrections) and the automatic calculation of the true applied pressures. After a manual or graphic selection of the calibration steps, MetroWin automatically calculates the new coefficients and allows the user to record them into the recorder.

The calibration data file is automatically saved in the calibration database for future reference and a calibration report can be printed.

METROWIN OPTIONS

MetroWin is a complete package that includes all functions to operate a Metrolog recorder and to produce quality reports and plots. However, some of its functions are optional and must be ordered separately:

- the gradient option allows to produce gradient reports and plots and to access the well database,
- the multi-job report option allows to produce combined reports plots for multiple recorders,
- the calibration option allows the calibration of all Metrolog recorders.

These options can be acquired at any time by a MetroWin user and are unlocked by software without need for de-installation or installation of new software (the equivalent procedure allows to upgrade Metrolog recorders or at least some of their characteristics).

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