Webcomm Application Utility

For use with
Webster MC100 & MC104
Portable Data Loggers

User Instructions

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Introduction

Webcomm is a utility application for use in conjunction with the Webster MC100 and Webster MC104 portable flow computers. For simplicity this manual will refer only to the MC100, but all commands are equally valid for both MC100 and MC104 unless otherwise stated.

The purpose of Webcomm is to extend the reporting and graphical functions of the MC100 by downloading data to a personal computer through a serial link.

The data are then treated in a variety of ways:

- A tabulated screen display is available in a format similar to the MC100 'wide' report.
- Graphs can be plotted on-screen, scaled in ways similar to the MC100 graphical reports.
- Hard copy graphs can be obtained on a variety of printers and plotters.
- Data can be exported to a file format compatible with Lotus 1-2-3, allowing the operator to treat the data in ways not covered by the application.
- An online log facility allows the MC100 to act as the data capture device and the 'PC' to handle data logging and real-time graphic display.

This manual relates specifically to the Webcomm application. It is assumed that the reader is already familiar with the MC100 flow computer. No attempt is made to duplicate its own User Manual, apart from the operations required to initiate data transfer.

- END OF SECTION 1 -

Handy Hints

Getting Started

System requirements

The application requires an IBM PC-compatible computer with these features:

- MS-DOS operating system v3.3 or later.
- Minimum 640k RAM.
- VGA colour graphics.
- Serial port for MC100 communications.
- Printer port (serial or parallel).
- Hard disk (optional).
- Serial mouse (optional).

The communications system will work with all versions of MC104 and MC100 version 5.0 or later.

MC100 Versions 1.x, 2.x, 3.x, 4.x do not support the system.

The version number of your MC100 meter can be seen on its LCD display at power-up.

Installation

Insert the distribution diskette into one of the drives.
Example: insert in drive A:

Run the install program.
Example: A: INSTALL **Enter**

The install program will then run…

Loading WEBCOMM installer . . . please wait

Install WEBCOMM files from diskette

Expanded memory is required by WEBCOMM
Do you want to update your C:\CONFIG.SYS file? Y/N [Y]

When installation is complete, you will see the following message…

Installation complete.
See file C:\WEBCOMM.LOG for progress report
Please remove diskette and restart the computer
Then to run the program, type
WEBCOMM <Enter>

Handy Hints

Note: Where Webcomm is being run under Windows OS, we strongly recommend that you re-boot in MS-DOS rather than running Webcomm in an MS-DOS window.

Handy Hints

Running the application

After restarting your PC, change directory to C:\WEBCOMM. To do this:

At the C:> prompt type: CD Webcomm

You will then get the prompt: C:\WEBCOMM

Run the application by entering

WEBCOMM **Enter**

The first time the application is run (or when a revision has been installed); the message 'All settings initialised' is displayed to indicate that all the configuration settings have been fixed to their default values. Press Enter to continue.

If the configuration needs to be changed then run the application by entering

WEBCOMM /e **Enter**

If the **/e** suffix is omitted the configuration menu will not be available.

Leaving the application

There are several methods to exit the program.

Menu option Quit Select the menu options Quit - Yes.

Hot key exit Type **Alt-X.** If a data entry window is active, first press Esc until it closes.

Break Type **Ctrl-C** or **Ctrl-Break** for a hard exit. This is not recommended for normal use.

Example test

There is an example test loaded when WEBCOMM is installed. To access the test, go to the ‘File menu – Get test file’ and type ‘PST’. This will open the test file ‘PST.TST’.

Serial link

The serial link to the MC100 flow computer may be connected to port COM1 or COM2.

When the application is first run, it is assumed that the COM2 port is used with protocol 9600 baud, 8 bits, 1 stop, and no parity. It stays that way unless the operator alters it (see section 10 Configuration).

At the MC100 end, the serial settings for 'wide' format are used. The settings will normally match the above unless the MC100 set-up has been altered.

It is essential that the PC and MC100 both have the same serial protocol settings.

Handy Hints

Getting data from MC100

The system has been designed to make data transfer as simple as possible.

There are several settings available to give flexibility to the graph plotting process, but they can be ignored entirely until the operator is familiar with the system.

The only essential requirement is that the serial port and protocol are correctly set. All other settings have useful values assigned automatically.

Fuller descriptions are given in the relevant sections below, but essentially to import one test file:

In WEBCOMM

- Go to 'File menu - Open layout file' and open MC100.LAY or MC104.LAY – as appropriate for your device.
- Select 'MC100 menu - Receive from MC100'
- Enter a file name for the disk file that will be made.
- Start Webcomm receiving.

On MC100 \ MC104

- Set MC100 to 'Webcomm one test'.
- On completion, the tabulated data is displayed.
- Hit **F5** to plot a graph on the screen.

Help system

Webcomm includes an on-line help system that gives information relevant to the current situation. It is invoked by pressing 'F1' and responds under almost all circumstances.

- No help is available when:
- Printing is in progress.
- Serial communications are in progress.
- File load or save are in progress.

More general help is available under the menu option Help, which gives a list of topics.

Menu Options

Handy Hints

Operating the menus

The menu system consists of a main tool bar, which lists available options. Most of these options, when selected, open a vertical menu window containing further options.

Options can be selected from the main tool bar by any of these methods:

- Move across with the left/right **Arrow** then press **Enter**.
- Type the initial letter.
- Click the item with the mouse.

Options can be selected from the vertical menu windows by similar methods:

- Move to another option with the up/down **Arrow** then press **Enter**.
- Type the initial letter.
- Click the item with the mouse.

Some of the options can be selected with a 'hot key'. All hot keys are indicated beside the menu options.

These are the hot keys available:

F1 On-line help (there is no menu for this).

F4 Display Error list.

F5 Re-display previous graph (or draw if not done).

F6 Re-display tabulated data.

F7 Input a block number to view in tabulated data.

F8 Review test.

F9 Print snapshot.

ALT-X Exit the program.

Handy Hints

The menu system

The main menu tool bar displays these options:

File	Loading and storing, file information.
MC100	Communicating with the MC100
Limits	Setting display range limits.
Print	Tabular hard copy and settings.
Graph	Screen/Print graph and settings.
View	Select what is to be seen on the display.
Config	Configure panels, printer, comms, colours, styles etc.
Help	Help on various topics.
Quit	Exit the program, version notice.

- END OF SECTION 3 -

File Menu

Introduction

Four types of file are stored on disk; they can be identified from the filename suffix.

.INI	Initialisation file MC100.INI determines the global behaviour of the application.
.LAY	Layout files record the channel setup and panel layouts. They are used as source information for measurement, data logging and reporting tests.
.TST	A test data file stores the results of one test and is associated with a layout file. These files are stored as text to ensure accessibility. If required, they can be printed directly using MS-DOS (see your computer manuals). The file name has the form Txxx.TST where xxx is the test number. Please do not attempt to alter any test file.
.PRN	A formatted data file stores the results of one test for import by Lotus 1-2-3.

Get test file

Disk files (.TST) that were created by the data logging process can be reloaded for review or reporting.

This menu option requests the name of the file to load. The default given is either the name of the last test logged, or the last test reloaded – which ever was done more recently.

The data is loaded from disk and tabulated on the screen. Webcomm is now ready to draw/print a graph, print a report, or create another file to suit Lotus1-2-3.

The layout file that was associated with the test is also loaded, and replaces the layout in memory.

There is no difference between data loaded from disk, and data received directly from the MC100. Once data is in memory Webcomm does not care about its source. Any test that was previously in memory is discarded.

There is an alternative method of loading a disk file, see 'Directory information' below.

Handy Hints

Note: Both '.TST' and '.PRN' files are comma delimited and can easily be loaded into all common spreadsheet programs.

Handy Hints

Open layout file

This menu option opens an existing layout file (.LAY), replacing the layout in memory. Any logged test that was in memory is discarded (but remains intact on disk). The name of the layout file in memory is displayed under the panel.

All the channel input assignments etc and the panel layouts are reconfigured as dictated by the layout file that is opened.

Note that loading a test file (see 'Get test file' above) automatically loads the required layout.

There is an alternative method of opening a layout file, see 'Directory information' below.

New layout file

This menu option is the first step in configuring a new layout file and is not normally needed.

You are asked to enter a file name. This will be the name of the new layout file. All that happens next is that an identical copy of the layout in memory is made on disk, with the new name. It becomes the current layout in memory too, ready to begin the configuration process.

Save as Lotus 1-2-3

Any test that is in memory (see 'Loading data from MC100' and 'Loading data from disk') can be written to another disk file in a format that suits Lotus1-2-3.

From the Webcomm main menu, select File - Save as Lotus 123. Enter the name of the file to create and press Enter. If the file already exists, a query to overwrite is issued. The test data is written from memory to the new file.

Webcomm cannot reload lotus 1-2-3 format files.

Directory information

Menu options give directory information for test (.TST) files, layout (.LAY)files and Lotus (.PRN) files. Selecting the required file type from the menu produces a directory listing.

If a test was in memory, it is not affected, and the display can be restored by<F6> for the table, or <F8> to review the test.

If there are too many files to view in one screen, this is shown by the word(more) bottom right. You can then page up and down with <Home>, <Page Up>, etc.

Handy Hints

There is an alternative method of loading a disk file that requires a mouse. Any file name visible on the display after a 'Directory information' operation can be clicked with the mouse, taking you straight into the 'Get test file' procedure (.TST and .PRN files), or into the 'Open layout file' procedure (.LAY files).

- END OF SECTION 4 -

MC100 menu

Handy Hints

Receive from MC100

Brief details of loading one test file were given above in section 2 - 'Getting Started'. Here follow step-by-step instructions for loading one test file.

1 Check the MC100 RS-232 protocol. Ensure that the 'wide' protocol matches the Webcomm protocol. If neither have ever been altered, they will match. Consult the MC100 User Manual for details.

2 Select the MC100 menu function. From the MC100 main menu, select Data Logger -Process Test - Webcomm one Test. Then enter the test number to export. (Note that there is no need to specifically set 'wide' format prior to exporting, this is automatic.)

3 The MC100 is now ready to send the data. Do not continue until Webcomm is ready to receive.

4 Check the Webcomm serial port and its configuration. Details are given in section 10 'Configuration'. Once the port details are set, there is no need to keep checking.

5 From the Webcomm main menu, select MC100 - Receive from MC100. Then enter the destination file name for storage on the PC. If the file already exists, a query to overwrite is issued.

6 Webcomm is now trying to receive data. Start the MC100 export immediately by pressing the **<ENT>** key.

7 On completion the test data will exist in the disk file that was specified, and in the PC's memory. The data is tabulated on the screen, and Webcomm is ready to draw/print a graph, or create another file to suit Lotus 123.

All from MC100

1. You can import either one test from the MC100 or all of them.

2. The procedure for loading all tests is similar, except that you are not prompted for a file name. Instead, all the tests are stored on the current directory with the file name MC1.TST, MC2.TST etc. up to the number of tests logged in the MC100.

3. If any of these test files exist from an earlier session, you are prompted for their deletion. At this point all the previous tests with these names in the current directory are lost (but not in the MC100). It is up to the operator to ensure that he no longer needs the files, or has backed them up.

Handy Hints

4. You can run Webcomm from any current directory, so you can import the set of tests into any directory you choose. Sets of test files in other directories(individual files will have the same names) will be unaffected.

Online from MC100 / MC104

MC100

When running an ‘Online test’ the MC100 transmits data from the active channels to be logged and displayed by the 'Webcomm' utility program.
For each active channel three pieces of information are transmitted :-

For FLOW1	FLOW1, FLOW3, FLOW5
For FLOW2	FLOW2, FLOW4, FLOW6
For SPEED1	SPEED1, SPEED3, SPEED5
For SPEED2	SPEED2, SPEED4, SPEED6
For TEMP1	TEMP1, TEMP3, TEMP5
For TEMP2	TEMP2, TEMP4, TEMP6
For PRESSURE1	PRESS1, PRESS3, PRESS5
For PRESSURE2	PRESS2, PRESS4, PRESS6

The significance of the numbering system is as follows :-

For FLOW1

FLOW1= The current or actual value.
FLOW3= The minimum value during the last block time.
FLOW5= The maximum value during the last block time.

For FLOW2

FLOW2= The current or actual value.
FLOW4= The minimum value during the last block time.
FLOW6= The maximum value during the last block time.

And so on for TEMP, SPEED and PRESSURE.

MC104

When running an Online test the MC104 transmits data from the active channels to be logged and displayed by the 'Webcomm' utility program. The data transfer for the MC104 differs from the MC100. For each active channel three pieces of information are transmitted: -

For DIGITAL1	FLOW 1, FLIM 1, FLIM 11
For DIGITAL2	FLOW 2, FLIM 2, FLIM 12
For TEMP1	TEMP 1,TLIM 1, TLIM 11
For TEMP2	TEMP 2,TLIM 2, TLIM 12
For PRESSURE1	PRESS 1, PLIM 1, PLIM 11
For PRESSURE2	PRESS 2, PLIM 2, PLIM 12
For PRESSURE3	PRESS 3, PLIM 3, PLIM 13
For PRESSURE4	PRESS 4, PLIM 4, PLIM 14

The significance of the numbering system is as follows: -

For DIGITAL 1

FLOW 1 = The current or actual value.
FLIM 1 = The minimum value during the last block time.
FLIM 11 = The maximum value during the last block time.

For DIGITAL 2

FLOW 2 = The current or actual value.
FLIM 2 = The minimum value during the last block time.
FLIM 12 = The maximum value during the last block time.

And so on for TEMP, SPEED and PRESSURE.

Running an Online test
To start an on-line test the MC100 should be connected to the PC via the serial cable provided. (FT7083, Red connector cover.)

1. Select the MC100 menu function. From the MC100 main menu, select ‘Configuration - Active inputs'.

2. Set to 'On' only those inputs required , this will keep the subsequent data file sizes to a minimum.

3. Check the MC100 RS-232 protocol. Ensure that the 'wide' protocol matches the Webcomm protocol. If neither have ever been altered, they will match. Consult the MC100 User Manual for details.

4. Select the MC100 menu function. From the MC100 main menu, select ‘Data Logger - Start Test - Online Test'. Then pick the test name , the number of blocks and the time between blocks.

5. The MC100 is now ready to send the data. Do not continue until Webcomm is ready to receive.

6. Check the Webcomm serial port and its configuration.

7. Load an appropriate layout file, and select the display mode required by pressing the 'Tab' key.

8. From the Webcomm main menu, select - MC100 - Online from MC100. Then enter maximum number of blocks to log and the number of plots across the graph, press enter, the message 'waiting for online test' will be displayed.
9. Webcomm is now trying to receive data.

10. Start the MC100 immediately by pressing the **<ENT>** key.

11. The message 'waiting for online test' will change to 'receiving online test' for a brief moment, the display will then show the data as it arrives from the MC100.

Handy Hints

Handy Hints

12. During the test the display mode can be changed by pressing the **<TAB>** key. All four display modes are available i.e. Super panel, Normal panel, Histogram and real-time graph.

13. The test can be terminated before the preset number of blocks has been logged. This can be achieved by pressing the 'SEL' key on the MC100 or the space bar on the 'PC'.
14. It should be noted that after pressing the space bar on the 'PC' the MC100 is still transmitting data. So to avoid any further 'comms' problems, after stopping the test early at the 'PC', you should then stop the MC100 by pressing its 'ESC' key.

15. If the number of blocks set at the MC100 exceeds the maximum set at the PC then the test will be truncated to the number set at the 'PC'.

Send test Names

1. Select the MC100 menu function. From the MC100 main menu, select ‘Configuration- Names and title - Import all Names'.

2. Start the MC100 by pressing its <ENT> key.

3. The MC100 should display 'Receiving'.

4. From the Webcomm main menu, select – ‘MC100 - Send Test Names’ .

5. Enter the file name of the names file i.e. Names.txt (it is not necessary to add the ‘.txt’ suffix but the file must have a .txt extension).
6. Press return and the 'transmitting' message should be displayed on the PC screen.

7. After a few seconds the MC100 display should return to the 'NAMES AND TITLE' menu.

8. The test name file should be created with a plain text editor or with a word processor and saved as ASCII text.

9. There should be 21 lines, the first being the title and the subsequent 20 lines being unique test names.

10. The title should be 20 characters or less.

11. The test names should be 14 characters or less.

12. The file should be saved with a '.TXT' extension.

Edit test Sheet
This option lets you edit the report headers for the test in memory.

Move around the fields with the up/down arrows. Pressing <Esc> restores all the fields to their original state. Pressing <Enter> accepts the entries and writes the new test back to the disk file, replacing the original headings.

- END OF SECTION 5 -

Handy Hints

Handy Hints

Limits menu

This value is used in the same way as 'BAND' or 'FULL' are used in the graph plotting menus. The 'LIMIT' value is a manual version of 'BAND' the difference being that at the start of an online test the highest and lowest data values are not known, so the 'LIMIT' values are estimated and entered before the test. The 'LIMIT' value can now be used throughout the four main displays.
Note the 'LIMIT' value is just a number and has no relationship to engineering units.

Bar graph Limits

This option lets you edit the 'Super panel' limit values.

Each item (column) of the entry window is discussed below:

Panel position — This shows which panel position the row relates to. You cannot edit it; it is the row heading.

Bar graph — Enables/disables the bar graph.

Min bar — Sets the lower limit of the bar graph scaling.

Max bar — Sets the upper limit of the bar graph scaling.

Histogram Limits

This option lets you edit the 'Histogram' limit values.

Each item (column) of the entry window is discussed below:

Panel position — This shows which panel position the row relates to. You cannot edit it; it is the row heading. If a channel has not been allocated a number indicating the column position is shown.

Min bar — Sets the lower limit of the bar graph scaling.

Max bar — Sets the upper limit of the bar graph scaling.

Graph Limits

This option lets you edit the 'Graph' limit values. The limit values for all inputs can be set here, (i.e. FLOW, PRESS, TEMP, SPEED, PEAK).

Handy Hints

Handy Hints

Each item (column) of the entry window is discussed below:

Channel no. This shows which channel the row relates to. You cannot edit it; it is the row heading.

Min bar Sets the lower limit of the bar graph scaling.

Max bar Sets the upper limit of the bar graph scaling.

- END OF SECTION 6 -

Print menu

Handy Hints

Introduction

Logged tests may be reloaded from disk and processed in various ways. This section describes the ways in which data can be reported in a tabular form on a printer. Other sections deal with viewing on screen and graphs.

Three report styles are available, two in tabular style and one in panel style. In addition, snapshot reports allow a single set of readings to be printed.

The printer is the standard DOS printer driver (PRN), which should be configured in your autoexec.bat file (see the computer manuals). The printer must have an IBM-compatible character font.

If you have just logged some test data, it is ready in memory for reporting, otherwise load a test file from disk (see 'Filing system / Get test file').

Select the report style wanted, and an entry window lets you edit various controls for the report. Pressing <Enter> starts the report printing, <Esc>exits from the operation. The controls are:

Header & footer	Set to 'on' to print full headings and the signatures footer.
Starting block	You can print a section of the test, this is the first block to print.
Ending block	The last block of the range to be printed.
Printer width	The width of the printer in characters.
Printable depth	The number of lines to print per page. This is not the paper depth itself, but smaller to allow a margin at page breaks.

Narrow reports

Narrow reports are a listing of test data results with headings drawn from the super panel display, so a partial report is obtained. This is the same as the tabulated screen display.

They use one printer line per data block.

When reporting a profile test, the narrow report lists the profiled channels only, regardless of the super panel.

Handy Hints

Wide reports

Wide reports are a listing of test data results with headings drawn from the normal panel display, so the full test results are printed.

They use as many printer lines as required for each data block, and each block is divided from the next with a line.

Panel reports

Panel reports are modelled on the normal screen panel, not just the measurements but the whole panel is copied as visible. This is the formal test report, with headers and footers for signature.

The headings may be edited, see 'MC100 / Edit test sheet'.

Snapshot reports

Instant reports may be sent to the printer if it is on-line as a single block of a logged test.

Select menu item Print / Snapshot, or just press the hot key <F9>. One set of readings is printed.

The style of the report depends on the panel visible. If the normal panel is displayed, a 'wide' style report is done. If the super panel is displayed, a 'narrow' style report is done.

- END OF SECTION 7 -

Graph menu

Handy Hints

Introduction

Graph plotting in general imitates the way the MC100 does it, but with more comprehensive features. Any quantity or feature can be assigned to either y-axis. For example, the left axis (trace 1) can be Flow, and the right axis (trace 2) can be Temperature - or the other way round.

Each y-axis can have up to 2 channels assigned, which must be of the same type, for example Flow 1 and Flow 2. So up to 4 traces can be plotted at once, 2 on each y-axis.

Draw

When test data has been loaded into memory, an instant graph may be drawn by selecting the menu option ‘Graph-Draw’ and then pressing <Enter>.

Alternatively, the menu options View - Last graph will re-display the most recent graph for the current data. If no graph has yet been drawn, it will be done using the default settings (see 'Tailoring the graph'). As a shortcut, press the hot key F5.

Tailoring the graph

When the menu option Graph-Draw is selected, a table of graph parameters is displayed. Many of these work in the same way as the MC100 does.

Alter the settings as required, moving round the list with up/down **Arrow** or **Tab**. Press **Enter** to draw the graph.

Each item is now discussed.

X-axis scale — This item controls how the time axis is drawn.

AUTO — The entire test is drawn, at the expense of skipping blocks as needed to make the graph fit the screen.

1/1 1/2 etc — are scale factors. Every 1st, 2nd etc block is plotted around the centre block defined (see 'X-axis centre blk'), so only a portion of the test is visible.

X-axis feature — The master control for the axis, selecting time (including block number) or any one of the measured quantities, for example flow, pressure, etc. When a measurement, you must also set the channel reference below, for example- Flow1.

Handy Hints

X-axis channel Specifies the particular channel of the measurement type defined. Time graphs ignore it.

X-axis time units Selects one of several time units, including block number. Measurement graphs ignore it.

X-axis centre blk Only taken into account during the 'scaled' time graphs, when it is the block number that will be drawn centrally.

Y-axis trace Controls the method of scaling the y-axis with these options:

Off No traces are plotted.

Full The axis is scaled from zero to the maximum value.

Band The axis is scaled from the minimum to the maximum value.

Limit The axis is scaled from the minimum to the maximum limit value.

Y-axis feature This item selects what type of measurement is plotted on they-axis - flow, pressure, etc.

Y-axis channel Up to two channels per y-axis are allowed. Enter 1 for example for Flow1. Enter 0 for 'off'.

Other general features can also be set:

Grid lines Controls whether grid guidelines are drawn. Because the lefty-axis markings are unlikely to match up with the right, you can decide which of them to align the grid with.

Plot marks Enables the plot markers at each data point. When there are large numbers of plots, no markers are drawn regardless. They are useful for small tests, for example 'Log on Key press'. Scatter diagrams drawn for measurement based graphs (see x-axis descriptions) use plot markers only.

Handy Hints

Manipulating the graph

TAB	Change to the next display mode.
Ctrl-Home	Redraw the graph from block 1.
Ctrl-<- Pan L	Redraw the graph by moving the left block to the centre (i.e., half the graph width).
Ctrl-Pan R ->	Redraw the graph by moving the right block to the centre (i.e. half the graph width).
Ctrl-End	Redraw the graph so it finishes on the last block.
Ctrl-Home	Redraw the graph so it starts on the first block.
Mouse	Clicking in the region above the graph, i.e. on the test number information or at the bottom of the screen (on the line beginning Graph centre), will change the scale factor. Where the graph is only part of a test clicking to the right or left of the graph will cause it to pan and redraw.

In some situations options are not available. For example, an Auto graph cannot be panned, because the entire test is already visible.

Print

Webcomm makes use of driver modules to control various kinds of hard copy device.

Most types of dot matrix printers, pen plotters, ink-jet and laser printers are supported, and at various resolutions.

The Postscript control language is also supported.

Before any graph can be printed, the operator will need to set up the printer type, and other details (see section 10 'Configuration').

Obtaining hard copy

A graph is printed by using exactly the same procedure as plotting on the display.

Select the menu option Graph-Print. A table of settings is displayed, the same table seen when the Draw option is selected.

Handy Hints

Alter the settings as required, referring to section 8 'Tailoring the graph'. When **Enter** is pressed, the operator is reminded of the printer type and port, press **Enter** to start printing or **Esc** to quit.

The printer driver puts out cues on the display instead of the data table. There may be a noticeable pause between starting the operation, and an image appearing on the printer. This is because the graph is first drawn (unseen) in memory before being sent to the printer.

When printing is finished, the data table is re-displayed.

Tailoring the printed graph

Section 8 'Tailoring the graph' applies to printed graphs as well as to screen graphs.

In addition, the image can be rotated from Landscape to Portrait mode if required (see 'Configuration').

Also, some printers/plotters may clip the edges off the graph, and a margin can be set that applies only to the printer (see 'Configuration').

Note that colours specified in 'Configuration' apply to some printers, even monochrome ones. In these cases, the colours are interpreted as half-tone effects.

- END OF SECTION 8 -

View menu

Handy Hints

Errors list
Gives a list of current errors, these are usually given as you build up a new layout and have not yet configured the whole system. When a layout is complete the display will show 'No Errors listed'. As a shortcut, press the hot key F4.

Last Graph
Displays graph of the data currently in memory, a message 'There is no data in memory' will be displayed if there is no data loaded. As a shortcut, press the hot key F5.

Data table
When the display has been used for a directory listing, the data table can be restored by using the menu options ‘View - View data table’. As a shortcut, press the hot key F6.

Block No.
A specific data block can be displayed by using the menu options View – Block No. As a shortcut, press the hot key ‘F7’. Then enter the required block number. The table will be re-drawn with the required block number central.

Review test
By using one of the three panel layouts Normal panel, Super panel or Histogram the test can be replayed and examined in detail. The block number is increased or decreased with the cursor control keys. To change between panels press the 'TAB' key and the display will cycle around all display modes. As a shortcut, press the hot key ‘F8’.

Configuration
All configuration settings are displayed. These are displayed in succession by pressing the space bar, press 'ESC' to exit.

- END OF SECTION 9 -

Configuration menu

Handy Hints

Introduction

If you want to edit or configure the system set up you must run the application by entering WEBCOMM /e <Enter>.

Most of the configuration is stored in a layout file, which acts like a template for measurement and reporting. There can be many layout files.

Permanent settings are stored in a single initialisation file.

Display is through front panel simulations. There are three panels, the normal (master) panel, the superpanel that displays a selection of measurements in large numerals and the histogram panel.

The normal panel layout dictates what is measured, displayed, logged and reported.

Configuration settings are stored in a disk file. Whenever the operator alters a setting, the change is automatically written to the disk file.

The first time the application is run (or when a revision has been installed) the message 'All settings initialised' is displayed to indicate that all the configuration settings have been fixed to their default values. Press Enter to continue.

To change settings, select the menu option Config, and then the particular set of features from the next menu that appears.

Each set of features is discussed below.

Panel layout

The normal panel editing works somewhat like a spreadsheet. It is divided into cells. Pressing <Enter> or clicking on a cell opens a menu of options for that cell. Each item of the menu is described in 'Normal panel menu' below, except the last item ‘Region’, which opens a further menu, described in 'Panel regions menu' below.

The super panel is set up after the normal panel. The editing process is described in 'Super panel editing' below.

Normal panel menu

Select main menu ‘Config / Panel layouts / Normal panel’ to edit the panel.

Select the cell of the panel with the usual cursor keys and <Enter>, or by clicking. A menu opens for you to select the contents of the cell, each item is explained below.
Each cell can contain only one thing.

Handy Hints

Clear cell	Deletes the contents of the cell, leaving it blank.
Measurement	The cell displays an input measurement. An entry window allows you to specify the measurement type (e.g. Flow), the channel ref (e.g. 1 for Flow1)and the display colour.
Eng. units	Engineering units are displayed. An entry window allows you to select the channel type (e.g. Flow). The units can later be further selected from - alternatives within the type, see 'Configuration / Engineering units'.
Channel name	The name of the channel is displayed as text. An entry window allows you to specify the measurement type (e.g. Flow) and the channel ref. (e.g. 1for Flow1).
Title	Free text is displayed. You can justify it with leading or trailing spaces. A sentence or long word will have to be split across other cells.
Region	Opens another menu described below. The options control groups of cells.
Panel regions menu	This menu is selected from the normal panel cell editing menu described above. It controls groups of cells regardless of each one's contents. In most cases the position of the selected cell is relevant.

A border is a line enclosing a rectangle of cells. The cells that the - line actually cuts are not considered part of the region. Borders are drawn last on the screen, so will overwrite anything already there (e.g. a title).

A hole defines a rectangle of cells where the panel background colour is replaced by the measurement background colour. This allows a region of cells to appear as a group. Note that normally, two horizontally adjacent measurement cells leave a small amount of panel dividing them. You can use a hole to get rid of these bits of panel, or any empty cells.

Panel regions menu items are each described on the next page.

Handy Hints

Border	Adds a border to the panel. The cell you selected defines one corner, and this cell is marked by a change in colour. You must now select the diagonally opposite corner with the usual cursor keys and <Enter>, or by clicking.
Hole	Define a hole in exactly the same way as a border.
Remove border	Deletes the border surrounding the cell you selected. You can select any cell that is enclosed, but not one on the border itself.
Remove hole	Deletes the hole that includes the cell you selected.
Remove all	Deletes all holes and borders, regardless of the cell selected.
Insert row	Inserts a horizontal row of blank cells at the row selected. All cells below and including the selected row are moved down, and the bottom row of cells is lost.
Insert column	Inserts a vertical column of blank cells at the column selected. All cells right of and including the selected column are moved to the right, and the last one is lost.
Delete row	Deletes the horizontal row of cells selected. All cells below the selected row are moved up, and the bottom row is cleared.
Delete column	Deletes the vertical column of cells selected. All cells right of the selected column are moved left, and the right hand column is cleared.
Clear panel	Clears all cells on the panel, regardless of the cell selected.

Superpanel editing

Edit the super panel by selecting menu option ‘Config / Panel layouts / Super panel'. An entry window shows the items you can edit. Unlike the normal panel the physical layout of the super panel is predefined.

Handy Hints

The superpanel will only display measurements that are on the normal panel. The bar graph items are duplicated as run time options (menu item Run / Bar graphs see 'Run time options').

Each item (column) of the entry window is discussed below:

Panel position This shows which panel position the row relates to. You cannot edit it, it is the row heading.

Panel title Free text is entered that you can use to describe the measurement.

Measure type Select the type of measurement, e.g. Flow. You can also set this to 'None' in which case the whole panel position will be blanked.

Channel number The channel ref. within the measurement type, e.g. 1 for Flow1.

Bar graph Enables/disables the bar graph.

Min bar Sets the lower limit of the bar graph scaling.

Max bar Sets the upper limit of the bar graph scaling.

Text colour Selects the screen colour used to display numerals and bar graphs.

Histogram editing

Edit the histogram by selecting menu option Config / Panel layouts / Histogram. An entry window shows the items you can edit. Unlike the normal panel, the physical layout of the histogram is predefined.

The histogram will only display measurements that are on the normal panel.

Each item (column) of the entry window is discussed below:

Histogram position This shows which panel position the row relates to. You cannot edit it, it is the row heading.

Measure type Select the type of measurement, e.g. Flow. You can also set this to 'None' in which case the whole panel position will be blanked.

Channel number The channel ref. within the measurement type, e.g. 1 for Flow1.

Min bar Sets the lower limit of the bar graph scaling.

Max bar Sets the upper limit of the bar graph scaling.

Display Detail

On selecting 'Config - Panel layout - Display Detail' a menu showing all configured input types will be displayed, select the one required i.e. 'FLOW' or 'Pressure' etc.

Channel number The channel ref. within the measurement type, e.g. 1 for Flow1.

Min Limit Sets the lower limit value.

Max Limit Sets the upper limit value.

Dec. Plc. Sets the number of digits printed after the decimal point. Note the MC100 currently logs data to a maximum of 2 decimal places, if the number of decimal places specified exceeds that of the data zeros will be appended to the data, if the number of decimal places specified is lower than the data then the data is rounded up.

Colour To select the colour use the space bar / insert & backspace /delete. This colour is the colour used in all panels during data logging and review. The graph colours for static display and printing are selected elsewhere.

General

Start up Selects the panel displayed when 'Webcomm' is started.

Panel Text Selects colour for the text on panels.

Table text Selects colour for the text used for tabular display.

Graphics

Type of printer A menu is displayed listing all the printers/plotters available. If your printer is not listed, it is probable that it is compatible with one that is. For example, many dot-matrix printers are Epson-compatible. Select the required printer from the menu.

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Another menu is displayed listing the resolution etc available. The choices available depend on the kind of print device just selected, and is either the dot resolution, the paper size, or the font style.

Select the required setting. Some printers/plotters have only one option to choose from.

Printer Config This set of features is either selected directly by the operator from the Config menu, or as the next step after setting the printer type and resolution.

Each item is discussed below.

Printer port Serial and parallel printers are both supported. This item selects the port connection, which can be LPT 1 or LPT 2 (parallel), COM 1 or COM 2 (serial).

It is assumed that the printer is in everyday use for other purposes and that its configuration is done elsewhere (for example in autoexec.bat) with a MODE command.

Orientation This option selects the printer page orientation, which can be

Portrait tall and narrow

Landscape short and wide

It is recommended that the landscape mode is used. The display screen is always landscape.

Form feed This option controls whether a form feed is issued to the printer after drawing the graph.

Page margins Some printer types may clip the edge of the image. The four page margins are expressed as a percentage of the printer page size, maximum 5%.

The sense of left, right, top and bottom is from the portrait view of the page, regardless of the page orientation actually selected (see last item).

Graph Colours Main menu option Config / Graphics / Graph colours sets the colours of various features of the graph. The same settings are used for the screen and the printer, but the sense of black/white is reversed for the printer.

An entry window is opened with the following colour items:

Border Border drawn round the graph. It can be turned off by setting to black.

Grid Grid lines drawn on the graph.

Axes All the axes, the axis tick marks, and the numbering on the x-axis only.

Trace 1 Left y-axis legend, its numbering, traces and plot markers for both channels.

Trace 2 Right y-axis legend, its numbering, traces and plot markers for both channels.

Titles Titles printed above and below the graph.

Line Styles This section controls line styles and thicknesses for various components of the graph, details of plot markers, and the resolution of the plot.

Select main menu option ‘Config / Graphics / Line styles’, and an entry window opens.

Line style can be set as various dotted or dashed spacings. The representations in the selection window are only a guide for you to select from, and are not true representations of the spacings available. Also, the spacings will vary depending on the output device's characteristics; that is why these editing features have been provided. The items controlling line style and sundry items are listed below:

Grid lines Horizontal and vertical line patterns for the grid that may be superimposed on the scaling are set separately. This caters for varying aspect ratios on different printers.

Panel background Enables a solid panel border around the

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graph (screen only). If on, it overwrites the graph border line.

Plots across page Number of plots across the graph page (the resolution of the plot). If your printer has a very high resolution, you may want to increase the number of plots. It is recommended that the number be a factor of2000 to minimise 'alias' effects. The standard setting is 400.

Chan A line width Channels A and B on each of the y-axes are distinguished by the line width. This item sets the width of the trace lines for channel A on both y-axes.

Chan B line width This item sets the width of the trace lines for channel B on both y-axes. If the only trace on an axis is channel B, then the channel A line width is used.

Trace 2 line style Trace 2 (right) may be selected from various solid, dashed or dotted lines, at varying spacing. The spacing turns out smaller than it appears on the cue. Trace 1 (left) is always plotted as a solid line.

Plot markers are used to optionally indicate the data points on a graph. In the case of scatter diagrams (drawn when the x-axis represents a measurement), only the plot markers are used. The style of the markers can be set for each of the fours possible traces:

Trace 1 chan A Left axis, first channel.

Trace 1 chan B Left axis, second channel.

Trace 2 chan A Right axis, first channel.

Trace 2 chan B Right axis, second channel.

Plot mark size The relative size of the plot markers, as a percentage of standard size, applying to all markers.

Meter communications

This section determines how Webcomm communicates with the MC100 flow computer.

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Serial port This item is used to select between serial ports COM 1 and COM2.

RS-232 protocol The four items Baud rate, Data bits, Stop bits and Parity must match the MC100 RS-232 protocol settings for the 'wide' serial channel.

Any MODE command used prior to running Webcomm is ignored. These settings override any use of the MODE command.

The default settings for both Webcomm and the MC100 are 9600 baud, 8data, 1 stop, no parity.

If the operator has a printer attached to the MC100 (other than its internal - printer) so that reports can be printed in 'wide' format, it may be convenient to set Webcomm's RS-232 protocol to be the same as that required by the printer. The MC100 uses the same set of RS-232 protocol details for 'wide' reports as it does for exporting data to Webcomm.

Timeout secs This item sets the meter comms timeout in seconds. If no data arrives during this time, the data transfer is aborted.

In practice, it is the time available between starting Webcomm's data receive process, and starting the MC100 export process.

Finish bell When the data transfer has finished, the bell sounds. This item switches the bell on or off.

Storage

The menu option Config / Storage allows you to restore and reset whole configurations, and lets you get printed copy of the configuration.

Each of the menu options is discussed below.

Print configuration Menu option Config / Storage / Print config tabulates the configuration onto the line printer (used for reports). The entry windows are displayed one by one and sent to the printer.

You can also view the configuration by

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selecting View - config.

Restore configuration

Menu option Config / Storage / Restore config restores the master configuration file MC100.INI to its state when the program was run.

After exit from the program, it cannot be restored.

The initialisation file contains graph colours and styles, the printer selection and the current test and layout file names.

Restore layout

Menu option Config / Storage / Restore layout restores the current layout file to its state when it was loaded from disk.

If another layout file is loaded (perhaps indirectly by loading a test file), the settings you altered cannot be restored. So long as you don't load another layout or quit the program, the layout can be restored.

Reset configuration

Menu option Config / Storage / Reset config resets the master configuration file MC100.INI to a set of standard defaults.

The previous settings can be recovered by using 'Restore config', subject to limitations.

The initialisation file contains graph colours and styles, the printer selection and the current test and layout file names.

Reset layout

Menu option Config / Storage / Reset layout resets the current layout file to a set of standard defaults. The previous settings can be recovered by using 'Restore layout', subject to limitations.

- END OF SECTION 10 -

Warnings and Errors

Here follows a list of error messages that might be given, with notes as to why the error could have occurred.

General errors

‘There is no test data in memory'

An attempt was made to do an operation on test data, but there is none in memory.
Load a file from disk or from the MC100.

File errors

'Can't open file for reading'

The file could not be opened.
This may be because there is no file of the name given,
or it may exist on another directory.

'Can't open file for writing'

The file could not be opened.
This may be because there is no room on the disk,
or part of the directory path might not exist,
or it may be write-protected,
or there may be a physical problem with the drive.

'Bad disk file access'

The file was opened but a bad access occurred.
This may be because there is a physical problem with the disk or drive controller.

'Error writing to disk file'

The file was opened but a bad write occurred.
This may be because there is no room on the disk,
or it may be write-protected,
or there may be a physical problem with the drive.

'Invalid header record'
'Incompatible data'

The data format is incompatible with that expected.
This may be because data was corrupted but not detected,
or a text data file was edited and its format disturbed,
or there is a discrepancy in software versions.

'Premature end of file'

The disk file being read ended unexpectedly.
Something strange has happened to the disk file.
The test data is discarded from memory.

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'File too large - truncated'

There was not enough memory to contain all of the test data. This error should not normally occur.
It may be because the PC has less then 640k RAM,
or the test is too large,
or there are too many TSR programs configured into the operating system.
The test data is not discarded, as much is loaded into memory as will fit.

Communications errors

‘Stopped by operator'

The operator pressed the Esc key and stopped the process. The data is discarded.

'Error in port configuration'

The serial comms channel could not be opened.
This error should not normally occur.
There may be a hardware problem,
or the port might not physically exist,
or there may be a corrupted configuration file.
Check the serial comms configuration settings.

'Comms timeout error'

No data was received from the MC100 within the time specified in the Config -Comms section. This may be because the timeout is too short,
or because the MC100 operation 'Transmit' was done instead of 'Export',
or because Webcomm and MC100 disagree as to the RS-232 protocol in force,
or because the RS-232 handshaking is incorrectly wired,
or because the RS-232 cable is on the wrong port.

'Comms buffer overflow'
'Comms string overflow'

An internal buffer has malfunctioned. This error is a precautionary trap and should not normally be encountered.
It could be because the baud rate is too high - try reducing it at both the Webcomm and MC100 ends.

'Comms port not open'

This error is a precautionary trap and should not normally be encountered.

'Framing or checksum error'

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The data received did not fit the expected format, or the data was corrupted en route. This could be because the environment is electrically noisy (try a slower baud rate at both ends),
or the MC100 export was started before Webcomm was ready to receive,
or because Webcomm and MC100 disagree as to the RS-232 protocol in force.

'Data method or version is incompatible'
'Invalid header record'

The data format is incompatible with that expected.
This may be because data was corrupted but not detected, or there is a discrepancy in software versions.

'Unable to receive test file'

The serial comms could not be completed. Catch-all serial comms error when the cause cannot be determined.

Printer errors

'Unable to open graphics meta file qcmeta.bin'

The printer configuration file could not be found.
This error should not normally be encountered.
There could be something wrong with the disk.

'Unable to open graphics output file'

The temporary spool file could not be opened.
This may be because there is no room on the disk,
or it may be write-protected,
or there may be a physical problem with the drive.

'Not enough memory for bitmap'

There was not enough memory to create the bitmap for output.
This error should not normally occur.
It may be because the PC has less then 640k RAM,
or the test is too large,
or the printer resolution is too great,
or there are too many TSR programs configured into the operating system,
or a combination of these.

RS-232 device not online'
'Device not online'
'Printer not online'

The printer was not ready. This could be because the wrong port was configured, or the printer 'online' button needs pressing.

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'Out of paper'

Check the paper and then respond as prompted.

'Printer i/o error'
'Printer timeout error'

A general error indicating failed communications with the printer.

'File i/o error'
A general error indicating problems with the printer disk file i/o.

- END OF SECTION 11 -