

DMSC-8L Data Recording System V4.1.1.0

--- README DMSC-8L V4110.wri ---

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Welcome to DMSC-8L Data Recording System for Professional Digital Multimeter (DMM). This README file explains how to install the DMSC-8L Data Recording System into your computer, and briefly describes the function of it.

0) MAJOR IMPROVEMENTS ON DMSC-8L VERSION 4.X

0-1) Virtually no software limitations on the maximum number of items for long-term data logging as long as your PC system can afford. But still, longer sampling interval (slower sampling rate) selection is recommended for long-term data logging to reduce system burden and file size use.

0-2) A real time save-to-disk automatic backup feature is added to avoid buffer data lost when encountering accidental system failure. Also see item 2-7.

0-3) Manual acquisition mode is added. You can now record your data item by item manually. Also see items 3-2-2-3 and 3-2-2-4.

0-4) Supports both Windows ME/98/95 and Windows XP/2000/NT4 operation systems.

1) SYSTEM REQUIREMENTS

1-1) Windows ME/98/95 or Windows XP/2000/NT4 operation system:

OS : Windows ME/98/95 or Windows XP/2000/NT4

CPU : Minimum Windows requirement

Memory : Minimum Windows requirement

Monitor : at least VGA 640x480, 800x600 is recommended

Hard Disk : at least 20MB available free space

1-2) Free Serial COM port with 9-pin male connector. If you are having a 25-pin male connector COM port (traditional desktop PC COM 2 port), you can add a standard 9-pin male to 25-pin female connector adapter.

1-3) RS232C optical adapter cable:

This software uses only the DMSC-8L optical adapter cable.

2) GETTING STARTED

2-1) Connect the RS232C adapter cable optical side to the DMM.

2-2) Connect the RS232C adapter cable 9-pin female connector side to your computer COM port, preferably COM 2.

2-3) Under Windows, run SETUP.EXE in Disk 1/2 then follow the

instructions of the setup wizard.

2-4) Run the DMM Data Recording System. Start up default is set to COM 2. Use the Port... command to select the corresponding COM port to receive the DMM communication data. This software supports up to 6 COM ports where your hardware is available.

2-5) Use the Link command to link the software to the DMM. The software Digital Meter display will then be on line with the DMM reading when the data communication is undergoing properly.

2-6) Use the Acquisition Start command to start the data logging with graphical display.

2-7) A real time save-to-disk automatic backup feature is added to avoid buffer data lost when encountering accidental system failure. Every logged data item will be immediately saved to a temporary file under the installed program file folder with a file extension ".tmp". The temporary file will be deleted automatically after a normal software exit operation.

3) FUNCTION DESCRIPTION

3-1) System Menu

3-1-1) File Menu

3-1-1-1) Exit

The Exit command closes all open windows and exits the DMM Data Recording System.

3-1-2) Link/ Unlink Menu

The Link command links the software to the DMM. The software Digital Meter display will then be on line with the DMM reading.

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3-1-3) Window Menu

3-1-3-1) Tile

The Tile command allows you to reset the panel windows to its default sizes and positions.

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3-1-3-2) Digital Meter

The Digital Meter command allows you to open the Digital Meter Panel window when it is closed.

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3-1-3-3) Analog Meter

The Analog Meter command allows you to open the Analog Meter Panel window when it is closed.

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3-1-3-4) Comparator

The Comparator command allows you to open the Comparator Meter Panel window when it is closed.

-Toolbar Icon available-

3-1-3-5) Graphical Recorder

The Graphical command allows you to open the Data Graphical Recorder Panel window when it is closed.

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3-1-3-6) Data List

The Data List command allows you to open the Data List Panel window when it is closed.

-Toolbar Icon available-

3-1-4) Port... Menu

The Port command displays the Port dialog box, allowing you to select COM 1, COM 2, COM 3, COM 4, COM 5 or COM 6 (where available) as the communication port for the DMM interface.

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3-1-5) Help Menu

3-1-5-1) About

The About command opens a dialog box, which provides DMM Data Recording System version and copyright information. For software operation information, please refer to the content of this readme file.

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3-2) Data Graphical Recorder Menu

3-2-1) File Menu

3-2-1-1) Open...

The Open command displays the File Open dialog box, which allows you to open previously saved graphic files as mentioned in item 3-2-1-2. Opening other file formats may cause program malfunction.

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3-2-1-2) Save As...

The Save As command displays the File Save As dialog box, allowing you to save the new Data Graphical Recorder window as a graphic file. Filename extension is assigned .g51 as default.

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3-2-1-3) Clear

The clear command allows you to clear the active Data Graphical Recorder window memory buffer. If the memory buffer contains data, you will be

prompted to save the record.

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3-2-1-4) Export...

The Export command displays the Export Data Logger dialog box, which allows you to export all data pages or the selected data page(s) of the Data Graphical Recorder window as Text/Data, Meta file, or Bitmap format. Use Text/Data format option to transfer the graphical data into plain text to cope with other word processor or spreadsheet software. The data will be saved in .csv (comma separated value) file format .

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3-2-1-5) Print this page...

The Print this page command displays the Print Data Logger dialog box, which allows you to print the displaying page of Data Graphical Recorder window directly to the selected printer. Each data page is set to contain 200 data sets for optimized graphical window performance.

To print all the logged data in one page, use the View\Fit all data command to gather all the data into a new displaying page before using the Print this page Toolbar Icon.

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3-2-1-6) Printer setup...

The Printer setup command displays the File Printer setup dialog box, which allows you to select printer options.

3-2-1-7) Exit

The Exit command closes the Data Graphical Recorder window.

3-2-2) Acquisition Menu

3-2-2-1) Start

The Start command allows you to start/continue the Data Graphical Recorder.

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3-2-2-2) Stop

The Stop command allows you to stop/pause the Data Graphical Recorder.

-Toolbar Icon available-

3-2-2-3) Manual

The Manual command allows you to record one data at a time manually when the Acquisition Interval option is set to manual mode.

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3-2-2-4) Interval...

The Interval command displays the Acquisition Interval option dialog box, which allows you to select Manual or Automatic Acquisition modes.

When in Automatic mode, you can further select the sampling interval of

Full Speed or a customized integer value in second(s). The actual data interval may vary up to seconds depending on the meter function selected as well as your computer system speed.

Selecting a longer sampling interval can significantly reduce the number of data items for long-term data logging.

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3-2-3) View Menu

3-2-3-1) First Page

A data page is the basic unit for the Data Graphical Recorder to process, and each data page is set to contain exactly 200 data sets to optimize the graphical performance.

The First Page command allows you to go to the first data page of the Data Graphical Recorder.

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3-2-3-2) Page Up

The Page Up command allows you to go to the previous data page of the Data Graphical Recorder.

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3-2-3-3) Page Down

The Page Down command allows you to go to the next data page of the Data Graphical Recorder.

-Toolbar Icon available-

3-2-3-4) Last Page

The Last Page command allows you to go to the last data page of the Data Graphical Recorder.

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3-2-3-5) Fit all data

The Fit all data command opens a new Data Graphical Recorder window allowing all the logged data sets to be put into one single data page to override the preset single page data setting of 200. It allows you to View or Print all data items in one graphical page.

In fact, processing more data items in the Data Graphical Recorder window requires a lot more system resources. The more the data items to be fit in, the longer the graphical processing time is required.

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3-2-3-6) Undo Zooming

The Undo Zooming command allows you to go back to the default display size of the Data Graphical Recorder window.

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3-2-3-7) Graph Line Color

The Graph Line Color command allows color selection of the graph line in the Data Graphical Recorder window.

4) MESSAGE CODES

4-1) Warning code

(W8000) "The battery power of the DMM is low. (Will continue automatically in 3 seconds.)"

(W8001) "You must select a valid COM port before linking to the DMM."

(W8002) "Do you really want to clear the data in buffer ?"

(W8003) "Buffer has data. Do you want to save the data to a file before exit ?"

(W8004) "No data received. Will re-try automatically in 3 seconds. Check cable connection and COM port selection if required."

(W8005) "Reading data from selected file. Please wait ..."

(W8006) "Adding data into buffer. Please wait..."

(W8007) "Your DMM is not stable when working with this powerful software."

(W8008) "First page."

(W8009) "Last page."

(W8010) "All existing data in buffer will be destroyed. Do you really want to proceed?"

(W8011) "A handshaking error occurred. Will retry automatically in 5 seconds."

(W8012) "Acquiring data from DMM ... please wait ..."

(W8013) "Processing data ... please wait ..."

(W8014) "Do you really want to abort import data ?"

4-2) Error code

(E9001) "The specified serial port open error."

(E9002) "You must link to the DMM by clicking the link button before starting data logging."

(E9003) "Unable to create file for real time temporary storage in hard disk."

(E9004) "File open error."

(E9005) "File save error."

(E9006) "Insufficient system memory !"

(E9007) "Not a valid floating point value !"

(E9008) "Limit setting is unacceptable. Hi Limit is lower than or equal to Low Limit !"

(E9009) "The COM port setting raises an error."

(E9010) "No data received. Please check communication port selection and wire connection."

(E9011) "The DMM data logging function is running."

(E9012) "Transmission/connection error."

(E9013) "Please "Browse" and specify a file name !"

(E9014) "The DMM connected to this PC does not support built-in DATA LOGGING function."

5) COMMUNICATION PROTOCOL

5-1) The meter and the DMSC-8L optical adapter cable DOES NOT use standard RS232 communication protocol in order to achieve a cost effective hardware solution. The meter and the DMSC-8L cable actually use synchronous SCI (Serial Communication Interface) like SSP (Synchronous Serial Port) format to simulate the RS232 format. A non-standard baud rate 3906.25bps is being used, and with different number of data bits on transmission and reception. Self-developed communication protocol and 32 low-level control commands are being used. Users are NOT recommended to develop application software under this protocol since it will be a few day seminar to fully explain the protocol details and the technique used to assure data transmission integrity.

5-2) For advanced meter users who wanted to develop their own software for custom applications, it is recommended to use the meter with our another cable DMSC-9. The DMSC-9 cable has a microprocessor embedded inside, and will transform the meter non-standard SCI protocol to standard RS232 protocol output. Custom software development will then be much easier.

6) LICENSE AND LEGAL INFORMATION

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7) KNOWN DISCREPANCY

7-1) Capacitance

When linked to capacitance measurement, the software performance will be slowed down significantly waiting for the DMM measurement. It is due to the relatively slower measuring speed of the capacitance measurement. In some occasions, especially when you are measuring high capacitance values, the software may give an incorrect warning message of data receiving error after waiting for a long period of time and has considered that no data was being in transmission. Import from DMM function, as in stand-alone data-logger models, may not function properly either. But still, the capacitance function is retained in this software for the completeness of having all the meter functions.