



Data Design Corporation
Gaithersburg, MD

TM1000

PERIPHERAL INSTRUMENT SYSTEM

VM1010 MODULE

FOUR CHANNEL VOLT/AMP METER

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1.0 Introduction

The VM1010 is a four channel benchtop meter for use with the Data Design TM1000 system base unit. The module has two voltage meter channels capable of reading +/-250 volts DC or true RMS, one current meter channel capable of reading +/-10 amperes DC or true RMS, and one sensitive current meter channel capable of reading +/-250 mA DC or true RMS. Each channel is completely independent of all others and isolated from earth ground to 1000 VDC. The VM1010 takes advantage of the host computer interface to allow logging of readings at the sample rate of one sample per second.

1.1 Features

Mesurment Ranges

+/- 250 VDC Or True RMS

+/- 10 ADC Or True RMS

+/- 250 mADC Or True RMS

Isolation From Earth Ground

1000 VDC

Sample And Logging Rate

1 Hz

Accuracy

+/- 0.05% (3 ½ digits)

True RMS Frequency Range

50 To 1000 Hz

2.0 Front Panel Connections

Each channel has a pair of binding post with banana jack recepticals for flexibility in connection. The red post is the positive post for DC measurments. Both DC and true RMS measurments are taken continously. There is no need to change physical configuration to change the measurment selection. The measurment displayed and logged is controlled by user selection in software.

3.0 Using VM1010 Software

The VM1010 software can not function by itself. It must be installed as part of the Data Design TM1000 system. All software for Data Design modules, including the VM1010, will be installed when the base unit software is installed. There are no additional installation steps. All that is required is to start the TM1000 system manager. Upon installing the module in a connected TM1000 base unit, the module should be identified by the system manager shown in Figure 3.1 below.

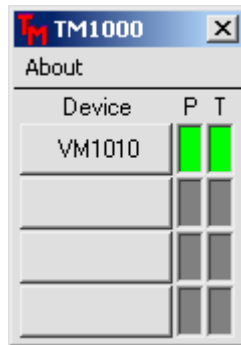


Figure 3.1 TM1000 System Manager

Start the VM1010 control panel application by clicking on the button labeled VM1010. A splash screen will appear while the module is configured. After a moment the main window will appear as shown in Figure 3.2 below.

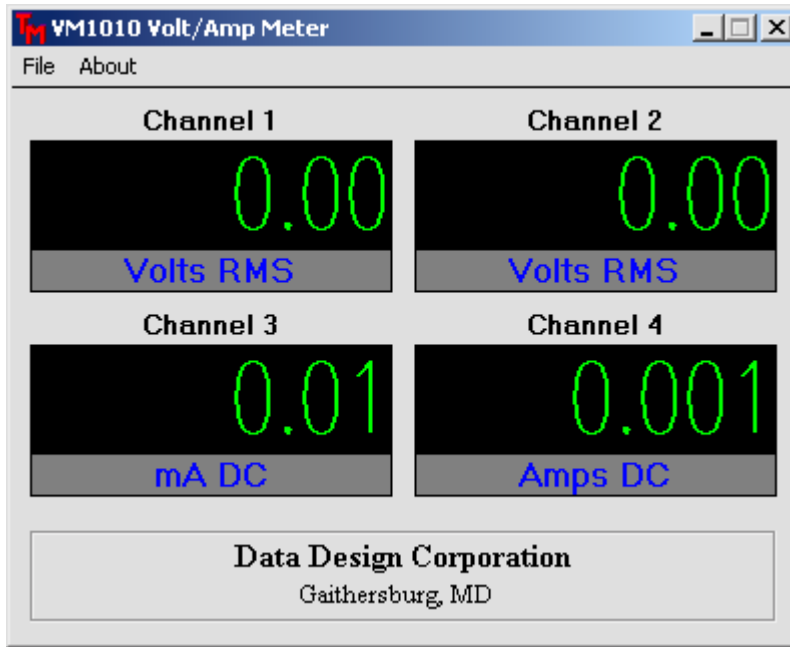


Figure 3.2 VM1010 Software Main Window

3.1 VM1010 Software Basics

The VM1010 software begins taking readings right away. The display will show DC readings. To see true RMS readings, click the unit of measure below the reading. This switch allows the user to toggle the reading of each channel to the desired mode. True RMS readings include DC as is mathematically correct. However, the accuracy of these readings is within specification for pure AC signals above 50 Hz and below 1000 Hz.

The characteristics of the numerical displays can be changed by double clicking any one to obtain the dialog shown in Figure 3.3 below. This dialog allows the color of display elements to be selected.. Click on a color box to change it. Saving the configuration as the default will cause the new settings to be restored the next time the software is started. These are also the settings recalled when the *Restore Defaults* button is clicked.

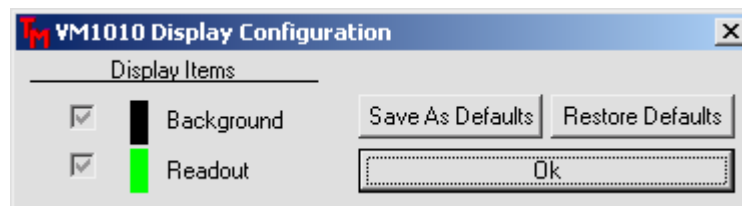


Figure 3.3 Display Configuration Dialog

3.2 Logging Functions

The VM1010 collects and displays readings at a rate of one per second. These readings can be logged to a file at that rate. Before opening the log, setup the meter software to display the desired DC or RMS readings. While a log is open the meter settings can not be changed.

To open a log, select the *File:Open Log* menu item. A dialog appears asking for a file name. Enter or select an appropriate file name and click *Open*. Logging will begin immediately. To stop logging, select the *File:Close Log* menu item. Logging will stop immediately.

The resulting log is a text file containing four columns of comma separated text. The text will be readings as they appeared each second from when the log was opened to when it was closed. The columns are in left to right order of channel 1 to channel 4. These data can easily be read into a spreadsheet or other post processing software.