
Chapter 3

Using the Viper 4040 Analyzer

(Revision 2, Aug 2007)

3.1. – Entering Data

Data is entered into the analyzer in one of three ways: by typing data using the keypad, transferring data from a personal computer using AvTrend software, or indirectly by selecting from preset options. The methods of inputting data are described in the following sections.

3.1.1. - Using the Keys

The analyzer keypad has 25 function keys, 12 of which are multiple-character, alphanumerically labeled. The multiple-character labeled keys, 1ABC through SPACE +/- will generate each of the characters on the label and insert it into the current field position of the analyzer screen.

To generate the first character, on an alphanumeric key, use the arrow keys to place the cursor in the desired field. Press the key one time, and then pause for two seconds. The first character of the key should appear in the active field. To generate the second character on an alphanumeric key, press the key twice rapidly, then pause for two seconds. The second character should appear on the screen. Repeat this process for each letter on the key, with the number of times you press the key equivalent to the character's position on the key. Note that some fields are formatted to accept numeric values only. Multiple presses of a key while the cursor is in such a field will produce multiples of the numeric key value only.



For example, to type the number “5”, press the key once, wait for two seconds. The number “5” should appear on the screen. To type the letter “N”, press the key three times rapidly, and then wait for two seconds. The letter “N” should appear on the screen.

The insert position of the character being typed is indicated on screen by the cursor. The cursor may be moved to any position in the current field using the left or right arrow keys. If placed in an existing text string, a key stroke of any alpha numeric character key will insert the character into the string at the current cursor position and move existing text to the right one character position.

3.1.2. - Filling in Fields

Data is entered into areas of the screen called fields.

Some fields are represented by boxes with pointed ends (<>). These fields are called “toggle” fields because you must use the [← ⇒] keys to toggle, or move, between several preset selections available in the field.

Some of the fields are represented by boxes that have square-ends ([]). The square-end boxes are text entry boxes. You must enter or edit text in these boxes using the keys as described in the previous section. If you wish to change text already in place in these fields, place the cursor in the field you wish to change then press the [CLR] key once for each character in the field you wish to remove and replace.

Use the [↑] and [↓] keys to move from field to field.

3.2. - Loading a Setup

A “Setup” is a group of instructions defined by you, the user, downloaded from the ACES web site, or acquired from another user and stored in the analyzers’ memory for rapid analyzer configuration. This group of instructions combined with certain optional information and analyzer-calculated data allows the analyzer to be custom-configured for virtually any engine/airframe combination in a matter of seconds following initial entry of the information. See the ACES AvTrend User Manual for specific instruction on downloading setups from the ACES web site.

Steps in the process of loading and using various setups are explained throughout Chapters 4 through 14 of this manual which address each of the main categories of the analyzer’s functions. All of the main categories of the analyzer’s functions are accessed from the analyzer’s main menu and directly correspond to selections on this menu.

3.3. - Main Menu

The main menu is the first menu to be displayed when the analyzer is turned on. (See the following figure.) From this menu you may access all functions of the analyzer by using the available menu choices. Chapters 4 through 19 of this manual describe each main menu item selection, the function of each item, and the general steps necessary to perform each function. The Main Menu banner section has the added ability to display the current state of the database. This is an approximate representation of how much of the analyzer's memory is currently occupied. Your analyzer may not show all items displayed in the screen below if you do not have a license number for certain functions. Consult your ACES sales representative for optional Viper functions and attaining a license number for them.

Model 4040 VIPER Analyzer				
Main Menu - Database 24.6% Full				
Propeller Balance				
Main Rotor Track & Balance				
Tail Rotor Balance				
Vibration Spectrum Survey				
Fan/Turbine Balance				
Fan Blade Optimizer				
Overall Vibration Survey				
Transient Vibration Survey				
TFE731 Performance - EMS				
Monitor Spectrum				
Monitor Magnitude and Clock				
Monitor Magnitude and Phase				
Monitor Overall				
Check Track				
Test Tach Power				
Transfer Data with PC via RS-232				
Miscellaneous Items				