



4040

- Rotor Balancing
- Fan Trim Balancing
- Propeller Balancing
- Vibration Analysis
- Acoustic Analysis
- TFE 731 Performance

Four-channel simultaneous data acquisition (10 spectra/second/channel) for striking speed and accuracy

ChartBuilder™ uses digitally stored polar charts to automatically translate raw data into easy-to-follow adjustment solutions, eliminating manual data plotting and interpolation

SmartTach™ speed and phase signal processing uses single or double interrupter, high tooth, low tooth, offset tooth, tach generator or TTL input

Multiple speed inputs for multiple rotor speed tracking during transient analysis

32 MB of memory to store large amounts of transient data

User configurable to accept a wide range of sensor types for flexibility

Lightweight (~7.0 lbs), compact packaging for ease of use and portability

Powered by internal Nickel Metal Hydride battery--aircraft's power not required, but optional

Industry-unique, no-cost, 5-year warranty on defects in components and workmanship included with analyzer purchase



The VIPER 4040 is a versatile yet compact instrument that combines all of the diverse technologies required for high-end engine vibration analysis, rotor track and balance, fan trim balancing, propeller balancing, and acoustic analysis into one. All of these aviation maintenance analysis functions can be easily performed on virtually any airframe and engine type using the VIPER 4040.

Track and Balancing

Quick, Automated Track and Balance Solutions

The compact VIPER 4040 provides accurate solutions in the minimum number of runs, saving costly run time and fuel. Setups are entered into the analyzer which can be customized by the user to accommodate virtually any engine and airframe type. Potentially hundreds of setups can be stored in the VIPER 4040's 32 MB of memory and recalled for quick reuse. Using the VIPER 4040's ChartBuilder™ function, influence and adjustment criteria from polar charts can be entered and stored in setups so that raw data acquired is automatically translated into easy-to-follow adjustment solutions such as "inboard tab up 2 degrees." With four channels available for simultaneous data acquisition, the VIPER 4040 gathers data quickly. With each run, the analyzer adjusts and refines the solution based on data gathered during previous runs, taking into account the unique properties of each setup and automatically



AC Input +/- 1.55 volts

Tachometer Inputs +/- 0.01%, 100 to 32,000 RPM

Sensor Types Accepts any vibration signal input (acceleration, velocity, displacement) and any voltage generating sensor. External charge amplifier required for charge mode.

Autoranging Sensor Inputs Adjusts gains by factors of 2 (1 to 512) independently for all channels

Vibration Amplitude +/- 5%, 0 to 190 IPS with 20mV per IPS sensor

Frequency Range 0 to 30kHz

Memory 32 MB

Display LCD, 4.7 inch viewing area, 320x240 pixels, backlit

Power Rechargeable Nickel Metal Hydride Battery

Dimensions 10.5 inches wide, 9.75 inches long, 5 inches deep

Weight Approximately 7.0 pounds (3.2 kilos)

shortening the process until vibration is reduced to the lowest level possible. The flexible VIPER 4040 allows you to use any type of tachometer, detecting speeds at up to 32,000 RPM. Tach input is used to synchronously sample and average data and report phase to +/- 3 degrees, reproducible to 1 degree. For additional flexibility, the VIPER 4040's SmartTach™ speed and phase signal processing uses single or double interrupter, high tooth, low tooth, offset tooth, or standard TTL inputs.

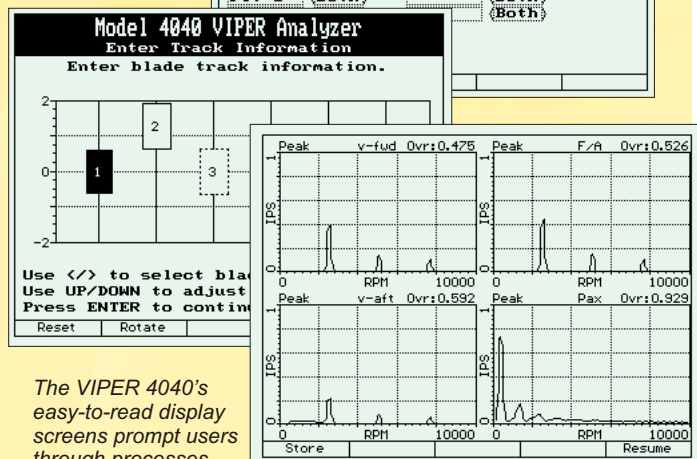
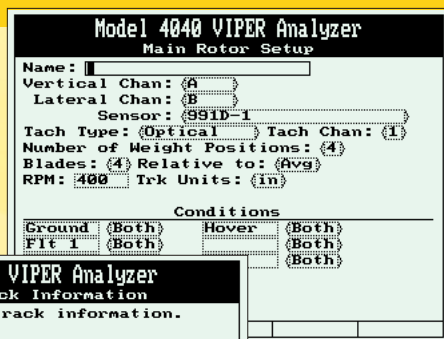
Vibration Analysis

Accurate High-Speed Run-up and Coast-Down Transient Surveys

The VIPER 4040 offers striking capability in a compact, portable package. At approximately 7.0 pounds, powered by an internal battery and using minimal cabling, the VIPER 4040 delivers vibration analysis at speed and accuracy levels typically available only in manufacturer test cells. Vibration data acquired from up to four channels simultaneously at the rate of 10 spectra per second are recorded at frequency levels to 30 kHz per channel. Anti-aliasing filters are used with a Fast Fourier Transform (FFT) to convert data from time to frequency at resolutions of 100, 200, 400, 800, 1600, 3200, and 6400 lines. The massive amounts of data acquired in a transient are easily stored in the VIPER's cavernous 32 MB of memory. And, the flexible architecture of the VIPER 4040 allows you to use virtually any sensor type.

Acoustic Analysis

The VIPER 4040 can interface to microphones for measuring sound levels and frequencies in order to diagnose airframe noise problems.



The VIPER 4040's easy-to-read display screens prompt users through processes.



ACES Systems/TEC Aviation Division
 10737 Lexington Drive, Knoxville, TN 37932 USA
 Telephone 865.671.2003 / Fax 865.675.1241
 ISO 9001 Certification / www.acesystems.com

Creating better aviation maintenance solutions...

