

Vibration Analyzer

Sophisticated Vibration Analyzer With FFT Capability



- Digital processing allows simultaneous display of acceleration, velocity, and displacement
 - 16-bit A/D converter achieves 80 dB dynamic range
 - Large LCD panel with EL backlight and 192 x 128 dot resolution
 - Memory card slot for speedy transfer of data to a PC
 - Operates for more than 22 hours on one set of batteries (alkaline)
 - Internal memory holds up to 500 data sets without the need for a memory backup battery

Outline

The VA-11 is a portable analyzer designed for examining machinery vibrations and performing diagnostic routines on various kinds of equipment. The unit has a vibration meter mode and an analyzer mode encompassing FFT analysis. In vibration meter mode, simultaneous measurement of acceleration, velocity, and displacement is carried out.

Acceleration rms value, peak value, and crest factor can also be displayed simultaneously. In analyzer mode, FFT analysis is used to determine the power spectrum and vibration waveform. The capability to perform envelope processing before FFT analysis is highly useful for equipment diagnostics.

Specifications

Number of input channels: Input connector:

Input section

Vibration measurement quantities: Acceleration, acceleration envelope,

Input range (with PV-55) Acceleration:

Velocity: Displacement: Measurement frequency range (electrical) Acceleration: Velocity:

Displacement: Measurement level range Acceleration: Velocity: Displacement: High-pass filter:

Low-pass filter: Vibration meter mode Processing items

Simultaneous processing of following items (digital) Acceleration: Velocity: Displacement:

Analyzer mode A/D converter: Processing items: Display range: Time window function: Frequency span: Anti-aliasing filter: Zoom factor:

Average processing Spectrum:

Waveform: Trigger source: Trigger operation: Pre and post trigger function: Display section Display LCD dot resolution:

Display size: Backlight:

Display data Vibration meter display: Spectrum display: Graph display:

Vibration meter display

Standard acceleration pickup connector Standard pickup is PV-55

velocity, displacement Acceleration envelope in analyzer mode only

1, 3.16, 10, 31.6, 100, 316 m/s² (rms) 3.16, 10, 31.6, 100, 316, 1000 mm/s (rms) 0.089, 0.283, 0.894, 2.83, 8.94, 28.3 mm (EQPP) 3 Hz - 20 kHz 3 Hz - 3 kHz

3 Hz - 500 Hz 0.02 - 316 m/s2 (rms) 0.1 - 1000 mm/s (rms) 0.003 - 28.3 mm (EQP-P) 3 Hz, 10 Hz, 1 kHz (-10% point) 1 kHz, 5 kHz, 20 kHz (-10% point)

rms, peak, crest factor

Equivalent P-P value (EQP-P) 16 bit, delta sigma principle, 51.2 kHz sampling

Waveform, spectrum 80 dB Rectangular, Hanning, Flat-top 100, 200, 500, 1k, 2k, 5k, 10k 20k Hz 100, 200, 500, 1k, 2k, 5k, 10k 20k Hz ×1 (100 lines), ×2 (200 lines), ×4 (400 lines), ×8 (800 lines)

Instantaneous value, exponential averaging, linear averaging, peak hold Instantaneous value External signal, input level Free-run, repeat, single

EL backlight Acceleration, velocity, displacement Bar graph and numeric indication Graph, list

 192×128

 $77.5 \times 54 \text{ mm}$

102 lines (frequency spectrum 101 lines + overall value) Y axis (dB, linear)

List display:

Waveform display: Display contents Measurement data:

> Status indication: Date and time indication: Power supply voltage:

Memory Data memory Manual store:

Transient store:

Timer store function:

Re-analyze function: Measurement settings memory:

PCMCIA card:

Inputs/outputs RS-232C interface Function:

Printer output Compatible printers: Function: External trigger input: Beep tone: Others Dimensions: Weight: Power supply System batteries:

Ambient conditions for use Temperature: Humidity: Supplied accessories:

Upper 10 levels and frequency

Graph only, 128 data

Processing results, cursor, measurement conditions Overload, trigger standby, storing Date: MM:DD Time: HH:MM (24-hour notation) 4-segment battery status indicator

Measurement parameters and analysis results are stored in specified address Capacity 500 data sets, regardless of vibration meter mode or analyzer mode Continuous store of waveform (store cycle: frequency span x 2.56) Start time, repeat interval, number of store data can be specified for storing data in data memory Data stored in transient memory can be re-analyzed. 10 sets, for storing and recalling all measurement parameters ATA type compact flash card

Control of VA-11 from computer Transfer of measurement data to computer

Contents of entire data memory are written to the card as one ASCII file in MS-DOS format

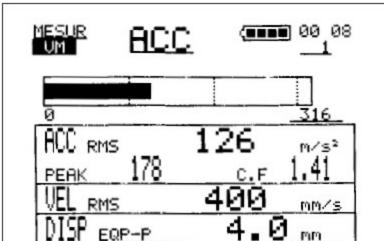
CP-10, CP-11 Screen hard copy, continuous printout TTL level falling edge When operating and as error warning

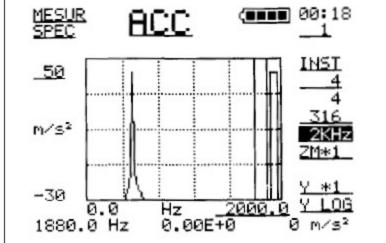
Approx. $17.4 \times 15.6 \times 4.6$ cm Approx. 770 g (including battery)

Four IEC R14 (size C) batteries

0 - +40°C 20 - 90% Acceleration pickup (PV-55) Soft carrying case IEC R14 (size C) batteries Instruction manual Lithium battery (CR-1/3N)

Optional accessories PCMCIA card: ATA type compact flash card Hard case (CF-21) Printer (CP-11) AC adapter (NC-94)





Waveform display Spectrum display

