



Vibration Analyzer VA-11

Sophisticated Vibration Analyzer With FFT Capability

Simple Operation Using Only Ten Switches



- 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

Input section		List display:	Upper 10 levels and frequency
Number of input channels:	1	Waveform display:	Graph only, 128 data
Input connector:	Standard acceleration pickup connector Standard pickup is PV-55	Display contents:	Processing results, cursor, measurement conditions
Vibration measurement quantities:	Acceleration, acceleration envelope, velocity, displacement Acceleration envelope in analyzer mode only	Measurement data:	Overload, trigger standby, storing
Input range (with PV-55)		Status indication:	Date: MM:DD Time: HH:MM (24-hour notation)
Acceleration:	1, 3.16, 10, 31.6, 100, 316 m/s ² (rms)	Date and time indication:	4-segment battery status indicator
Velocity:	3.16, 10, 31.6, 100, 316, 1000 mm/s (rms)	Power supply voltage:	
Displacement:	0.089, 0.283, 0.894, 2.83, 8.94, 28.3 mm (E _{OP-P})	Memory	
Measurement frequency range (electrical)		Data memory:	Measurement parameters and analysis results are stored in specified address
Acceleration:	3 Hz - 20 kHz	Manual store:	Capacity 500 data sets, regardless of vibration meter mode or analyzer mode
Velocity:	3 Hz - 3 kHz	Transient store:	Continuous store of waveform (store cycle: frequency span x 2.56)
Displacement:	3 Hz - 500 Hz	Timer store function:	Start time, repeat interval, number of store data can be specified for storing data in data memory
Measurement level range		Re-analyze function:	Data stored in transient memory can be re-analyzed.
Acceleration:	0.02 - 316 m/s ² (rms)	Measurement settings memory:	10 sets, for storing and recalling all measurement parameters
Velocity:	0.1 - 1000 mm/s (rms)	PCMCIA card:	ATA type compact flash card
Displacement:	0.003 - 28.3 mm (E _{OP-P})		Contents of entire data memory are written to the card as one ASCII file in MS-DOS format
High-pass filter:	3 Hz, 10 Hz, 1 kHz (-10% point)	Inputs/outputs	
Low-pass filter:	1 kHz, 5 kHz, 20 kHz (-10% point)	RS-232C interface:	Control of VA-11 from computer
Vibration meter mode		Function:	Transfer of measurement data to computer
Processing items:			
Simultaneous processing of following items (digital)		Printer output:	CP-10, CP-11
Acceleration:	rms, peak, crest factor	Compatible printers:	Screen hard copy, continuous printout
Velocity:	rms	Function:	TTL level falling edge
Displacement:	Equivalent P-P value (E _{OP-P})	External trigger input:	When operating and as error warning
Analyzer mode		Beep tone:	
A/D converter:	16 bit, delta sigma principle, 51.2 kHz sampling	Others	
Processing items:	Waveform, spectrum	Dimensions:	Approx. 17.4 × 15.6 × 4.6 cm
Display range:	80 dB	Weight:	Approx. 770 g (including battery)
Time window function:	Rectangular, Hanning, Flat-top	Power supply:	
Frequency span:	100, 200, 500, 1k, 2k, 5k, 10k 20k Hz	System batteries:	Four IEC R14 (size C) batteries
Anti-aliasing filter:	100, 200, 500, 1k, 2k, 5k, 10k 20k Hz	Antibatteries for use:	0 - +40°C
Zoom factor:	×1 (100 lines), ×2 (200 lines), ×4 (400 lines), ×8 (800 lines)	Temperature:	20 - 90%
Average processing		Humidity:	20 - 90%
Spectrum:	Instantaneous value, exponential averaging, linear averaging, peak hold	Supplied accessories:	Acceleration pickup (PV-55) 1 Soft carrying case 1 IEC R14 (size C) batteries 4 Instruction manual 1 Lithium battery (CR-1/3N) 1
Waveform:	Instantaneous value		
Trigger operation:	External signal, input level	Optional accessories	
Pre and post trigger function:	Free-run, repeat, single	PCMCIA card: ATA type compact flash card	
Display section		Hard case (CF-21)	
Display:		Printer (CP-11)	
LCD dot resolution:	192 × 128	AC adapter (NC-94)	
Display size:	77.5 × 54 mm		
Backlight:	EL backlight		
Display data			
Vibration meter display:	Acceleration, velocity, displacement Bar graph and numeric indication		
Spectrum display:	Graph, list		
Graph display:	102 lines (frequency spectrum 101 lines + overall value) Y axis (dB, linear)		

