V-Sensor Specification

Parameter	Specification	Notes
1. Dimensions	5.3cm x 4.2xm x 2.3cm	
2. Measurement Axis	6 axis simultaneous data logging	i.e. 2 sensors with 3 axis each
3. Range	2G, 16G, & 100G-Force selectable in MicroSD card	✓ 2G is suitable for low magnitude of vibrations ✓ 16G is used for medium and high vibrations ✓ 100G is used for shock vibrations
4. Sensitivity tolerance	✓ +/-0.015 G for 2G range ✓ +/-0.050 G for 16G range ✓ +/-1 G for 100G range	
5. Battery life	27 hours (tested Energizer and Duracell)	Standard AAA batteries x 2
6. Memory capacity	Up to 8 gigabyte MicroSD card	
7. Timing	High precision crystal	
8. Analysis software	V-Sensor Expert Software (comes with V-Sensor)	✓ Instant analysis results ✓ Automatic report generation ✓ 3D plots ✓ Frequency spectrum analysis ✓ Average vibration calculation (root mean squared) ✓ Peak or shock detection ✓ ISO2631 ride comfort analysis ✓ Comparison with international standard limits ✓ Train station to station detection ✓ High speed data acquisition ✓ Automatic data repair
9. Calibration	✓ Factory calibrated + gravity adjusted ✓ Can be readily re-calibrated via CPU algorithm comparing with gravitational pull	
10. Real-time Function	Onsite formatting of MicroSD card	
11. Quick Installation	✓ Cyanoacrylate adhesive (Loctite 245) ✓ Double tape (if <2G vibration) ✓ Cable ties (for redundancy)	Cyanoacrylate ensures the best frequency response compared with traditional adhesives / epoxy
12. Sampling rate	1kHz or lower sampling rate selectable in MicroSD card	333Hz sampling rate is normally used for optimal data file size (2GB in 24 hours) and sufficiency to catch high frequency vibrations < 150Hz
13. Multiple sensor synchronization	Time synchronized and no need for wiring	Software automatically synchronizes data from separate V-Sensors no matter how far apart they are
14. Field proven	Application areas:- ✓ High voltage overhead line monitoring ✓ Train track measurement ✓ Ride comfort measurement ✓ Structural assessment ✓ High vibration axle boxes	

OTHER REQUIREMENTS

Minimum requirement	Recommended specification
Pentium I3 CPU or equivalent	Pentium I5 CPU or equivalent
At least 3 gigabytes of RAM (cannot run 3D mode)	Recommended 8 gigabytes to 16 gigabytes of RAM for smooth operation when loading large data.
64 bit Windows	----
MicroSD card	4 gigabytes or higher Class 4 or higher for high speed data logging
Card reader	Recommend Transcend brand of reader