

SPECIFICATION SUMMARY & BILL OF MATERIALS

**Model vb8: Four Channel Power User Vibration Analyser/Balancer
Route Data Collector with Ascent® Level 2 Condition Monitoring
Software & Decision Support Software for Detailed Diagnosis**



Mechanalysis (India) Ltd is a leading provider of condition management solutions with over 30 years experience in machinery vibration measurement. The company designs and manufactures proven instrumentation and sensors suitable for rugged industrial environments. A comprehensive range of products and services are available from the offices below:

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Mechanalysis (India) Ltd., an ISO9001:2008 company, continuously improves its products. It therefore retains the right to change the above specification without notice

MIL vb8-Aug09

condition management solutions

Model vb8 / Ascent® Level 2 Software

The Complete Vibration Analysis Package

The vb8™ analyzer is a uniquely sophisticated and feature-packed instrument, yet it remains intuitive in operation and flexible enough to suit ever level of vibration analyst, from novice through to expert.

The included Ascent® software contains the collective experience of over 25 years of expert in-depth machine fault analysis.

- (1) Users with no prior experience or without previously recorded vibration history can now establish a measurement program utilizing proven baseline values from ISO standards and “The Proven Method” from Technical Associates.*
- (2) Experienced users can now generate meaningful spectral alarm bands automatically rather than just relying on basic overall alarms or spectral band guesswork.
- (3) Veteran analysts can now objectively evaluate and compare their findings against a time-tested and proven historical foundation.

Ascent® Level 2 Software:

- Fully automated measurement parameter and alarm setups based on “the Proven Method” from Technical Associates.*
- ISO2372 and 10816 standards

Enhanced Instrument functionality

- 4 Channel simultaneous recordings
- Triax. enabled
- 12800 line FFT resolution
- 40KHz Fmax
- 1 GB memory – virtually unlimited spectra storage
- ≥ 95 dB dynamic range
- Spectrum and Waveform recordings (simultaneous)
- Large, high resolution (HVGA) backlit LCD
- Comfortable, ergonomic case design
- Support for acceleration, velocity, displacement, DC coupled, current and voltage output sensors (both AC and DC coupled)
- 2-Plane balancing with upto 4 sensors (simultaneous acquisition)
- Commtest's unique 6 Packs™ recording system: take up to 12 measurements simultaneously (HF, LF and Demodulation spectra and waveforms) across two channels.
- Numeric parameters input via keypad with trend and alarm capability in Ascent® software.
- Upgradeable using the “Proflash” system and free firmware updates for five years.

Product Code: KTV80324



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Specifications for 4-Channel Vibration Analyser/2-Plane Balancer with Condition Monitoring Software and Ingenious Software for Decision Support

Specifications	Model vb8	Remarks
Sensors		
Sensor input	4 channels	Simultaneous Sampling
Sensors	Accelerometer, Velocity, Displacement, Current, Voltage output	
AC coupled range	16 V peak-peak	Allows for ± 8 V sensor output swing (± 80 g)
DC coupled ranges	0 V to 20 V, -10 V to 10 V, -20 V to 0 V	e.g. for reading prox-probe gap
Connectors	1 x BNC (CH1) and 1 x LEMO (CH2/CH3/CH4)	Safety feature: Break-free inline connector
Analog to digital conversion	24-bit ADC	
Sensor excitation current	0 mA or 2.2 mA (configurable), 24 V maximum	2.2 mA required for IEPE/ICP®-type accelerometer
Sensor detection	Warns if short circuit or not connected	
Tachometer		
Sensor	Laser sensor with reflective tape included in kit	Sensor triggers on beam reflection
Laser sensor range	10 cm to 2 m nominal	Dependent on size of reflective tape
Other Sensor types supported	Contact, TTL pulse, Keyphasor®	vb has optically isolated input
Power supply to sensor	5 V, 50 mA	
TTL Pulse rating	3.5 V (4 mA) min, 28 V (5 mA) max, off-state 0.8 V	
Keyphasor® threshold	13 V \pm 1 V	
Speed range	30 RPM to 300 000 RPM (0.5 Hz to 5 kHz)	
Parameter Indication		
Maximum levels	> 1000 g (10 000 m/s ²), > 1000 in/sec (25 000 mm/s), > 100 in (2500 mm), > 10 000 Amps	Effective limit is sensor sensitivity and output voltage
Dynamic signal range	> 95 dB (typical at 400 line resolution)	
Harmonic distortion	Less than -70 dB typical	Other distortions and noise are lower
Units	g or m/s ² , in/s or mm/s, mil or mm or μ m adB, vdB, amps, user-defined	0-peak, peak-peak or RMS. Auto-scale by 1000x when required US & SI options for both adB & vdB
Magnitude & Cursors	Overall RMS value, dual cursors, harmonics	Digital readouts on chart
Accuracy	$\pm 1\%$ (0.1 dB)	For DC level (%F.S.) & AC measured at 100 Hz
Frequency response	± 0.1 dB from 10 Hz (AC) or 0 Hz (DC) to 15 kHz; ± 3 dB from 1 Hz (AC) or 0 Hz (DC) to 40 kHz	Acceleration and velocity. From value measured at 100 Hz
Spectrum Display		
Fmax possible ranges	25, 50, 100, 125, 150, 200, 300, 400, 500, 600, 800, 1000, 1200, 1600, 2000, 2500, 3000, 4000, 5000, 6000, 8000, 10 000, 15 000, 20 000, 30 000, 40 000 Hz	Or equivalent CPM values Or orders-based from 1X to 999X
Fmin possible range	0 to Fmax	vb instrument zeroes all spectral lines below Fmin
Resolution	400, 800, 1600, 3200, 6400, 12 800 lines	3200 lines max. for dual channel measurements
Frequency scale	Hz, CPM, Orders	Linear scale with zooming
Amplitude scale	Acceleration, velocity, displacement, current or user defined	Linear or log scales, auto or manual scaling
Window shapes	Hanning, rectangular	
Overlap	(0, 12.5, 25, 37.5, 50, 62.5, 75, 87.5) %	Dependent on Fmax and number of lines
Number of averages	1, 2, 4, 8, 16, 32, 64, 128	Increases sampling time proportionally
Averaging types	Linear, exponential, peak hold, synchronous	
Demodulation bandwidths	21 bandwidth options	From 125 Hz to 1250 Hz up to 16 kHz to 20 kHz
Waveform Display		
Number of samples	1024, 2048, 4096, 8192, 16 384, 32 768	
Time scale	10 ms to 640 seconds	Or orders based from 1 to 999 revs
Time synchronous averages	1, 2, 4, 8, 16, 32, 64, 128	Only available when tachometer triggered
Long time waveform	Up to 40 kHz Fmax (28 M samples)	

Specifications	Model vb8	Remarks
Logging Features		
Output formats	vb screen, transfer to Ascent PC-based software, XML	
Data storage	1 GB non-volatile flash memory	Virtually unlimited recording storage!
Data storage structure	Folders / machines / points / locations / routes	No limits are applied, 50 character names
Max Folder size	10 000 measurement locations	
Direct print reports	Via Ethernet to PCL-enabled printer	
Balancing		
Planes	2 planes, 4 sensors	
Speed range	30 RPM to 60 000 RPM	
Measurement type	Acceleration, velocity, displacement	
Weight modes	Angle 0° to 360° , fixed position, circumference arc	e.g. weights on fan blades, linear dist. around circumference
Remove trial weights	Yes/No	Automatic recalculation
Manual data entry	Yes	Allows re-entry of previous balance jobs
Storage	Against machines in data structure	No limits are applicable
Channel selection	Up to 4 channels simultaneously	
Display & Communications		
Display	Graphic Grayscale LCD	
Resolution	480 x 320 pixels (HVGA)	
Viewing area	4.6" x 3.1" (117 x 79) mm	
Backlight	White LED, 4V, 100 Cd/m2	
Communications with PC	USB and Ethernet	PROFLASH allows vb software to be upgraded
USB host	2.0 to external USB memory device	Save folders to USB flash drive
Battery & Charger		
Battery Type	Custom Lithium Ion pack, 7.4 V, 4500 mAh	
Operating time	10 hours	Backlight on (60 second timeout)
Charger type	Internal charging, automatic control	External Power pack 12 V DC, 3 A output, included in kit
Charge rate	3 A nominal	3 hours for complete charge
Mechanical		
Size	9.9" W x 5.8" L x 2.4" H (252 x 148x 60 mm)	
Weight	2.7 lb (1.2 kg)	Including battery and strap
Environment		
Operating temp	14 °F to 122 °F (-10 to 50) °C	
Storage temp & humidity	-4 °F to 140 °F (-20 to 60) °C, 95% RH	
EMC	EN61326	
Ruggedness	4' (1.2 m) drop onto concrete, IP65	Procedure: 26 drops following MIL-STD-810F-516.5-IV
Hazardous Locations	CSA Class I, Division 2 (Groups A, B, C, D)	
Certification	CE, C-Tick	



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Standard Accessories of Hardware and Software

SNo.	Category	Description	Part Number	Units	Comments	
1	System Package	Four Channel Power User Vibration Analyser/Balancer Route Data Collector Package with Standard Accessories	KTV80324	1		
2	Instrument	vb8 instrument - Four Channel, powerful analysis features	KALC0328	1	Five Year Warranty on Instrument, 6 months on battery, see conditions for accessories below	
3	Sensors & Accessories	Carry Bag – vbSeries (classic and vb8)	CBVB0032	1	12 Months from purchase date	
4		Neck Strap with Sensor Keeper	NSSK0275	1		
5		CS103 12vDC 3A Universal Transformer	ADA70227	1	12 Months from purchase date	
6		C8 Mains Cable - India	PLSA0241	1	12 Months from purchase date	
7		DC Automobile Adapter	DCCA0041	1	12 Months from purchase date	
8		Magnet base – accelerometer – male	MAGM0064	4	12 Months from purchase date	
9		Cable Straight 5m length- Red Connector for balancing	CB5R0025	2	12 Months from purchase date	
10		Cable Straight 5m length- Green Connector for balancing	CB5G0024	2	12 Months from purchase date	
11		Carry bag for balancing gear	CBBL0026	1	12 Months from purchase date	
12		Reflective Tape	RTAP0094	1	12 Months from purchase date	
13			Sensor Accelerometer, model MIL501, Premium, 2-10KHz, 100 mV/g, Top Exit, Mil 2 Pin Connector, , 1/4"-28UNF Female Mounting Thread with National Traceable Cal. Cert.	M5011005001000	4	60 Months from purchase date but recalibration is recommended and available at MIL
14			Cable Coiled for sensor	CBCC0027	4	12 Months from purchase date
15		Laser tach sensor with block	LASA0062	1	12 Months from purchase date	
16		Magnetic Base with stand/extension arm for Laser tach/block	MAGA0063	1	12 months from purchase date	
17		5m length Laser Cable with Lemo	CBL50216	1	12 months from purchase date	
18		USB Data Transfer Cable	CABU0213	1	12 Months from purchase date	
19		Quick Start Guide	QSG0248	1		
20		Instrument Manual for vbX	MVBX0250	1		
21	Condition Monitoring Software	Ascent2 Single License	SAL20132	1	5 years warranty support	
22		Ascent Software Security Dongle - USB HL PRO	SDGL0140	1	12 Months from purchase date	
23		Interactive Vibration Training Trial CD	CDIL0197	1	A 9 hour interactive vibration training 21 day Free Trial CD supplied	
24	Decision Support Software	iLearnVibration Professional Training [includes all Standard products] plus test rig, case histories, signals, machine faults and alarms	iLearn Professional	1	12 months from purchase order	
25		Interpreter Vibration Decision Support	iLearnVibration [Interpreter]	1	12 months from purchase order	
26	Mechanalysis Support Services	Commissioning (in days)	CMG4	4	Three days on-site, one day travelling. System commissioning, load route and data collection. If training in vibration technology is required then a further two days will be charged. Expenses at cost	



NOTE: - Laptop is optional

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