Zing™ HUMS On-Board VXP Technical Specifications

Acquisition Unit Balance Measurements	
Amplitude Accuracy	+/- 2%
Phase Resolution	1 degree
Frequency Range	180 to 60,000 RPM
Harmonics	1 to 5
Simultaneous Channels	4 vib., 1 azimuth, 1 FasTrak™
Vector Operations	A, (A+B)/2, (A-B)/2
Track Measurements with FasTrak™	
Track Height Accuracy	+/- 2 mm
Lead Lag Accuracy	+/- 0.5 mm
Spectrum	
Frequency Ranges	0-20 Hz to 0-75 kHz
Frequency Resolution	400 to 51,200 lines
Zoom	Yes
Window Types	Flat-top, Hanning, Kaiser-Bessel, Uniform
Simultaneous Channels	4 vib., 1 azimuth
Dynamic Range	>90 dB
Averaging	Linear, Peak hold
Filters	
1 to 8 simultaneous filters (any combination of broadband and tracking filters allowed)	
Processing	
32 Bit Microprocessor (CPU) Digital Signal Processor (DSP) RISC based Time Processor Unit (TPU)	

Interfaces	
• Magnetic Pickup/Photocell, 4 ea / Tachometer, 4 ea • Photoprobe (high speed), 2 ea / Velocimeter, 16 ea • Accelerometer, 26 ea / Accelerometer (charge), 6 ea • Discrete Signal I/O, 6 ea / Strobex, 1 ea / FasTrak™, 1 ea • Serial Interface, 3 ea / Cockpit Control Unit, 1 ea • PCMCIA Type 1, 2 Card Slot / USB • Internal aircraft databus interface slot	
Physical	
Dimensions	7.1 W x 3.0 H x 12.2 D (inches) 180 W x 76 H x 304 D (mm)
Weight	6.2 lbs., 2.82 kg
Power Requirement	18 to 32 VDC
Operating Temperature Range	-30 to +60°C
Storage Temperature Range	-55 to +85°C Carry-On
VXP Display Unit	
Dimensions	10.7 W x 1.9 H x 8.5 D (inches) 272 W x 48 H x 216 D (mm)
Weight	4.5 lbs., 2.0 kg
Power Requirement	Intel Centrino Duo, 1.06 GHz
Display	Color Active Matrix, Sunlight readable tablet PC
Pointing Devices	Touch pad and touch screen
Disk Drive Capacity	80 GB
Memory	512 MB SDRAM
Interfaces	RS-232, USB, PCMCIA Type 1, 2

Customer support

Honeywell is dedicated to supporting our customers' needs. Our worldwide customer service is available via phone, fax or e-mail. We can help your organization improve skills in component balancing, engine testing, rotor smoothing, troubleshooting, and data management. Training courses are provided for all Zing products at the user level and advanced fleet administration/analyst level. Of course, service includes equipment repairs and calibration, for which we have expert in-house teams. Honeywell International representatives support over 180 countries.

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Honeywell

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Zing™ HUMS
On-Board VXP

Honeywell

Enhances safety, reduces cost of ownership, and delivers the most advanced technologies

Zing™ On-Board VXP
health monitoring system with a firm track record

Advanced aircraft health monitoring that delivers.

Zing™ HUMS VXP System

Honeywell's Zing HUMS VXP health monitoring system has a firm track record. As one of the most advanced HUMS products available, it represents the merging of an onboard system with our industry-proven ground-based carry-on products technology. The HUMS VXP is fully certified and available via both U.S. FAA and Canadian Transport Canada STCs. The system meets the current regulatory requirements and has been designed with provisions to support future HUMS functions.

VXP Benefits

- Lightweight and quick data download (approximately 30 seconds)
- Onboard vibration diagnostics to provide actionable maintenance information at the aircraft
- Continuous monitoring without human intervention versus "snap shot" data collection
- Integrated Rotor Track & Balance data to provide the most advanced RT&B solution with expanded Smart Chart™ technology
- Comprehensive ground support software tools available for flight crews, maintainers, and engineers with capabilities to interface with operators' existing maintenance system

The VXP health monitoring system – which employs the latest advancements in HUMS technology – enhances safety through early detection of mechanical faults, preventing catastrophic failures. The VXP reduces maintenance man-hours, provides maximum flexibility, supports system growth, is low cost, with proven reliability and existing Honeywell world-renowned customer support.

The HUMS VXP System consists of the VXP Acquisition Unit (AU), VXP Display Unit (DU), software, and associated installation kit and sensors.

The VXP system interfaces to hardwired vibration and tachometer sensors located throughout the aircraft and to the optional carry-on equipment such as the FasTrak Optical Tracker for Main Rotor blade tracking. The VXP software is divided into two major systems. The first is the Operational Program, which resides permanently in EPROM memory of the VXP AU and the second is the support software that resides on the VXP DU, such as VXP Display Program, Vib Review™ trending software, and the VibraLog™ advanced predictive maintenance software. All data is date-time stamped and can be correlated to other aircraft data systems (i.e., FDR / HFDM).

Growth and Expansion

As platforms and technology continue to evolve, frequent changes to comply with these rapidly changing protocols, mandates and requirements are typically necessary. Honeywell's VXP AU has been specifically designed to support technology upgrades as they occur, as has the DU's capability to support more robust and user-friendly ground support equipment and software tools.

Functions and Capabilities

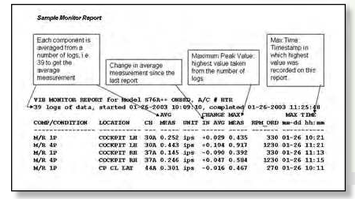
All of the Zing HUMS products are focused on the collection, processing, and interpretation of data generated by the various components within an aircraft's drive train, including engines, gearboxes, shafts, fans, rotor systems, and other dynamic components. In all cases, vibration spectra can be viewed in the field at the engine, within the test cell or any other platform location. These data are collected and retained to allow a more detailed analysis by any skilled technician with access to a computer.

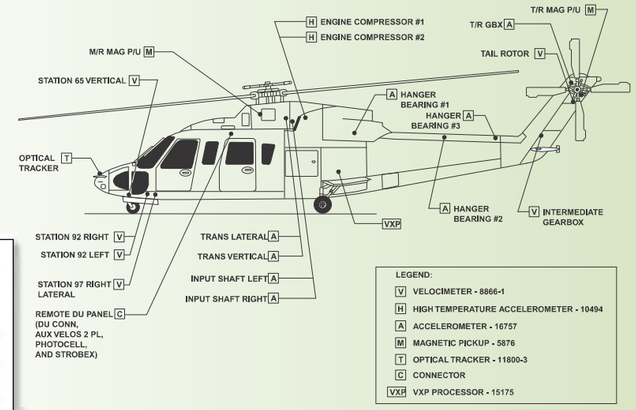
STC and Installation Capability

We provide an application organization that has broad experience in conducting VXP installation support and training on the majority of aircraft types. Honeywell VXP STC's exist on a wide variety of aircraft types, including: Sikorsky S-61N/L, S-76A++, S-76C/C+, Bell 206L, Bell 212, Bell 412, Bell 407, Bell 427, Bell 430, A109 and AS-365N1/2/3 aircraft.

Continuous Component Monitoring

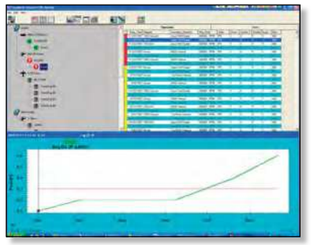
The VXP Monitor functions provides fulltime vibration monitoring of all critical rotating components during flight. At the end of the flight, a clear concise Monitor Report is generated. All of this is performed by the VXP AU on the aircraft.





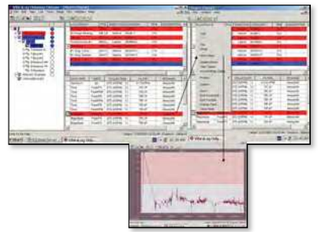
Zing™ Ware Vib Review™

Vib Review™ is an easy to use importing, trending and alerting software tool. The tool is installed on the VXP DU and, in one step, downloads directly from the VXP AU to provide reports and trend information at the aircraft.



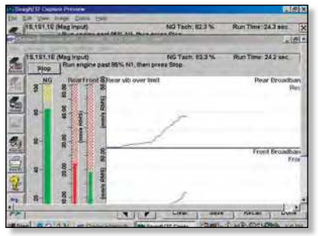
Zing™ Services Vibra Log™

VibraLog™ provides a comprehensive Fleet Management and Predictive Maintenance capability for the VXP Aircraft Systems.



Engine Vibration

The VXP performs engine acceleration and deceleration tests with unmatched flexibility, simplicity and accuracy. It implements broadband and narrow-band tracking filters using precise digital signal processing techniques.



VXP Maintenance Tool

The VXP provides many other features and functions to aid Maintenance Personnel. Some of these features include Rotor Track and Balance, Damper Diagnostics and Advanced Vibration troubleshooting.