

**Honeywell**



## **ONBOARD VIBRATION MONITORING SYSTEM/HUMS**

Enhances safety, increases availability and  
reduces cost

# Onboard Vibration Monitoring System/HUMS

Selected by various OEMs, customers and military operators, all of our on-board systems 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. Collected data can be viewed at the aircraft, within the test cell or any other platform location by the maintainer. Hardware and software is available for more detailed analysis off-wing.

**Honeywell's Onboard VXP health monitoring system has a firm track record. As one of the most field proven vibration products available, the VXP health monitoring system enhances safety through early detection of mechanical faults, reducing failures. The VXP reduces maintenance man-hours, provides maximum flexibility, supports system growth with proven reliability.**

The 1209 Modern Signal Processing Unit (MSPU) provides field-proven design and delivers specific, OEM-recommended maintenance actions to maintainers for rotor smoothing, engines and the entire drive train.

Advanced engine diagnostics and automated engine performance calculations, such as max power check (MPC) and Health Indicator Test (HIT), round out this feature-rich system. The system can connect to most commercial-off-the-shelf flight data recorders providing operators with crashsurvivable data storage.

Based on the highly successful, combat proven 1209 MSPU, the models 1134/1239 are advanced health and usage monitoring systems (HUMS) featuring fieldprogrammable gate arrays (FPGA). With high processing speeds, the Models 1134/1239 can handle all of the diagnostics you need.

The HUMS 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. Optional connection to the Honeywell SkyConnect Iridium system enables real time condition indicator transmission.

Maintenance actions are displayed with a demonstrated easy-to-use and easy-to-understand Personal Computer – Ground-Based System (PC-GBS) that can dramatically increase aircraft availability and readiness.



VXP



1209



1134



1239



## A faster, better, proven next-generation embedded diagnostic solution for helicopters, fixed wing aircraft, unmanned air vehicles, and ground vehicles.

### Key Features and Functionality

#### Vibration Monitoring

- Greater than 90dB dynamic range
- Advanced rotor track and balance
- Event processing and recording
- Engine health monitoring
- Extensive use of open architecture hardware and software standards yield a low cost, easily upgradeable core system
- Automatically acquires data and continuously checks for pre-programmed exceedances
- Demonstrated advanced diagnostics for: rotor smoothing, absorbers (where applicable), drive train, turbine engines and gearboxes
- Companion web-based tools allow for remote software and diagnostic upgrades
- Compatible with existing industry software products, including; VXP Display Program, VibReview™, PC-GBS, iMDS Database Setup Tool and iMDS Server.

#### Vibration and Health Usage Monitoring

- Advanced drive train diagnostics (CAP 753)
- Flight regime recognition
- Helicopter Operation Monitoring Program (HOMP/FDM/FOQA) support (CAP 753)
- Up to 8GB of compact flash (non-crash survivable) for vehicle or flight data recording
- Automated data acquisition using regime recognition software
- Unique software setup and configuration control methodology allows both the airborne and ground station software to be updated remotely

#### KEY BENEFITS



#### ENHANCES SAFETY

A proactive approach minimizes accidents before they happen. Data signaling potential problems on one aircraft can be used to comprehensively analyze an entire fleet.



#### INCREASES AVAILABILITY

Better maintenance planning means less unplanned downtime, faster turnaround and increased mission readiness to support the warfighter.



#### REDUCES COSTS

CBM substantially cuts maintenance/operating costs in the near term and over the life cycle of the aircraft and avoids costs of spares usage, dedicated test flights and asset recapitalization.



	ONBOARD VXP	MODEL 1209	MODEL 1134	MODEL 1239
ACCELEROMETERS (SIMULTANEOUS MEASUREMENT)	26 (6)	36 (6)	24* (6)	48 (8)
TACHOMETERS / TRACKERS	4 / 4	8 / 2	5* / 1	10 / 2
GENERAL PURPOSE ANALOG & DISCRETE IN		8	32	48
GENERAL PURPOSE DISCRETE OUT (LOW/HIGH)			0 / 2	16 / 4
DIGITAL COMMUNICATION				
- USB			1	2
- CAN			1*	1
- ETHERNET			2	4
- RS232 / 422 / 485		1	2	4
- 1394 FIREWIRE			1	1
- ARINC 429 TRANSMIT/RECEIVE			1 / 2	2 / 4
- MIL-STD-1553B DUAL REDUNDANT BUSES			1 (OPTIONAL)	4
INTERNAL STORAGE (STANDARD / OPTIONAL)	512MB	128MB	512MB / 8GB	512MB / 8GB
QUICK ACCESS RECORDER (NOT CRASH SURVIVABLE)	-	-	OPTIONAL	OPTIONAL
DIMENSIONS:				
- L x W x H INCHES (WITH MOUNTING PLATE)	12.2 x 7.1 x 3.0	3.0 x 5.75 x 7.575	7.6 x 6.2 x 1.8	8.8 x 4.7 x 2.5
- L x W x H MM (WITH MOUNTING PLATE)	304 x 180 x 76	76 x 146 x 192	193 x 158 x 46	224 x 119 x 64
WEIGHT (W/O MOUNTING PLATE)	6.2 lbs / 2.82 kg	4lbs 5oz / 1.95 kg	2.5 lb / 1.13 kg	4.0 lbs / 1.81 kg
TEMPERATURE (DEGREES C)	-30 to +60	-20 to +55	-40 to +71	-40 to +71
SOFTWARE: RTCA/DO-178B			LEVEL E	LEVEL D
REGULATIONS:				
- CAP-739 (FDM), HOMP/FOQA			LIMITED	YES
- JAR-OPS3			YES	YES
- CAP-753 (VHM)			YES	YES

\*Reconfigurable options using internal jumper selection. Total number is dependent on jumper configuration.

Diagnostic Solutions International, LLC is proud to be a Honeywell Distributor and provider of equipment, installation, and service for the new Sky Connect communications and tracking system.

We invite you to contact us for more information, personalized fleet solutions, and demonstrations of the Sky Connect system.

ISO9001 | AS9100C | AS9120A CERTIFIED COMPANY

### Diagnostic Solutions International LLC

2580 East Philadelphia Street, Unit C, Ontario, California 91761 USA

Phone (909) 930-3600 | Toll Free (877) 374-5521 | [dsi-hums.com](http://dsi-hums.com)



**Honeywell**  
DISTRIBUTOR