

# AIRBORNE ENGINE MONITORING SYSTEMS



23456789ABCD



Courtesy of Hawker Beechcraft Corporation



## H384, H484 & H598 Series Airborne Engine Monitors

**A vital component of condition-based maintenance, Howell's health and usage monitoring systems help flight crews:**

- Troubleshoot problems by isolating abnormal performance
- Reduce maintenance cost and system damage through early diagnosis
- Reduce parts replacement
- Improve maintenance scheduling and logistic support
- Improve incident or event analysis
- Eliminate errors in data recording and analysis
- Establish critical engine condition and trend monitoring for enhanced performance

### Parameters include:

- Engine Temperatures
- Engine Speeds
- Outside Air Temperature
- Fuel Flow
- Pressure Altitude
- Bleed Valve Position
- Airspeed
- Torques
- Pressures

### Data Reduction

**Our monitors retrieve and process data in several ways:**

- Monitors display data for a quick check of parameter values, or data can be downloaded to a computer for more in-depth review and analysis.
- User-friendly software prints a report, formats the data into useful graphic presentations or transfers it to other computers. The data can be stored to maintain historical records.
- Our patented Referred Engine Diagnostic Data (REDD)<sup>®1</sup> software package provides detailed analysis and diagnosis of processed data. REDD<sup>®</sup> software quickly determines actual engine condition by calculating and displaying variances between an ideal engine and the monitored engine.

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<sup>1</sup> REDD<sup>®</sup> is a registered trademark of Howell Instruments, Inc.

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Photos Courtesy of Department of Defense

## TREND DATA

Trend data can be recorded manually or automatically during flight. The monitor records all relevant parameters along with the date and time. The data can be formatted for use with an engine manufacturer's approved software or with Howell's own patented trend software programs.

## EXCEEDANCE DATA

Monitors detect an exceedance and record the time of the event, its duration, peak value, values of related parameters, and if applicable, the maintenance level required based on severity. Monitors can also recall related parameter values leading up to the event from a buffer. These values are stored in memory and assist in post-flight analysis of the exceedance. An output signal to a cockpit advisory or warning panel is also available.

## FLIGHT PROFILE DATA

Monitors record profile data by two methods: Timed Recording Mode or Profile All Mode.

- The Timed Recording Mode collects data at fixed time intervals set by the operator.
- The Profile All Mode collects transient data, including start and shutdown data at a preset rate. All other operation data is recorded when the engine stabilizes within a new "operational band." This data compression technique minimizes the amount of data stored, thus maximizing operational time monitored.

## IDENTIFICATION & USAGE DATA

Date and Time	Engine Hours
Aircraft Number	Engine Cycle Counting
Engine Number	Hot Section Exposure
Engine Starts	Low Cycle Fatigue

## Specifications

	H484	H384 & H598
Dimensions	3.00" H x 6.00" W x 7.16" D	3.75" H x 5.75" W x 6.50" D
Weight	4 lbs	4 lbs
Processor	32 BIT RISC	32 BIT RISC
Input Power	14 to 40 VDC, 50W	14 to 40 VDC, 50W
Operating Range	-40 to 70 °C	-40 to 70 °C
Frequency Inputs	5@ 3.5 to 30,000 Hz	5@ 3.5 to 30,000 Hz
Thermocouples	2 ANSI Type K	8 ANSI Type K
RTD Inputs	2	3
Discrete Inputs	6@ 0 to 28 VDC	16@ 0 to 28 VDC
High Level Inputs	3@ ±30 VDC	12@ ±30 VDC
Discrete Outputs	2@ 28 VDC, 1 Amp	4@ 28 VDC, 1 Amp
Serial Interface	USB/RS-232	RS-232



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