

Enhanced Vibrex 2000 Plus (EV2K+)



**The cost-effective balancer/analyzer
with superior performance**

Honeywell

Enhanced Vibrex 2000 Plus (EV2K+) Digital Dynamic Balancer/Analyzer System

The cost-effective balancer/analyzer for fixed-wing propeller balancing or helicopter rotor track and balance with superior performance. The EV2K+ is a vibration analysis and balancing tool that rapidly and accurately acquires and analyzes aircraft and engine vibration data. It uses that data to calculate balance solutions and to analyze aircraft vibration levels across a broad frequency range.

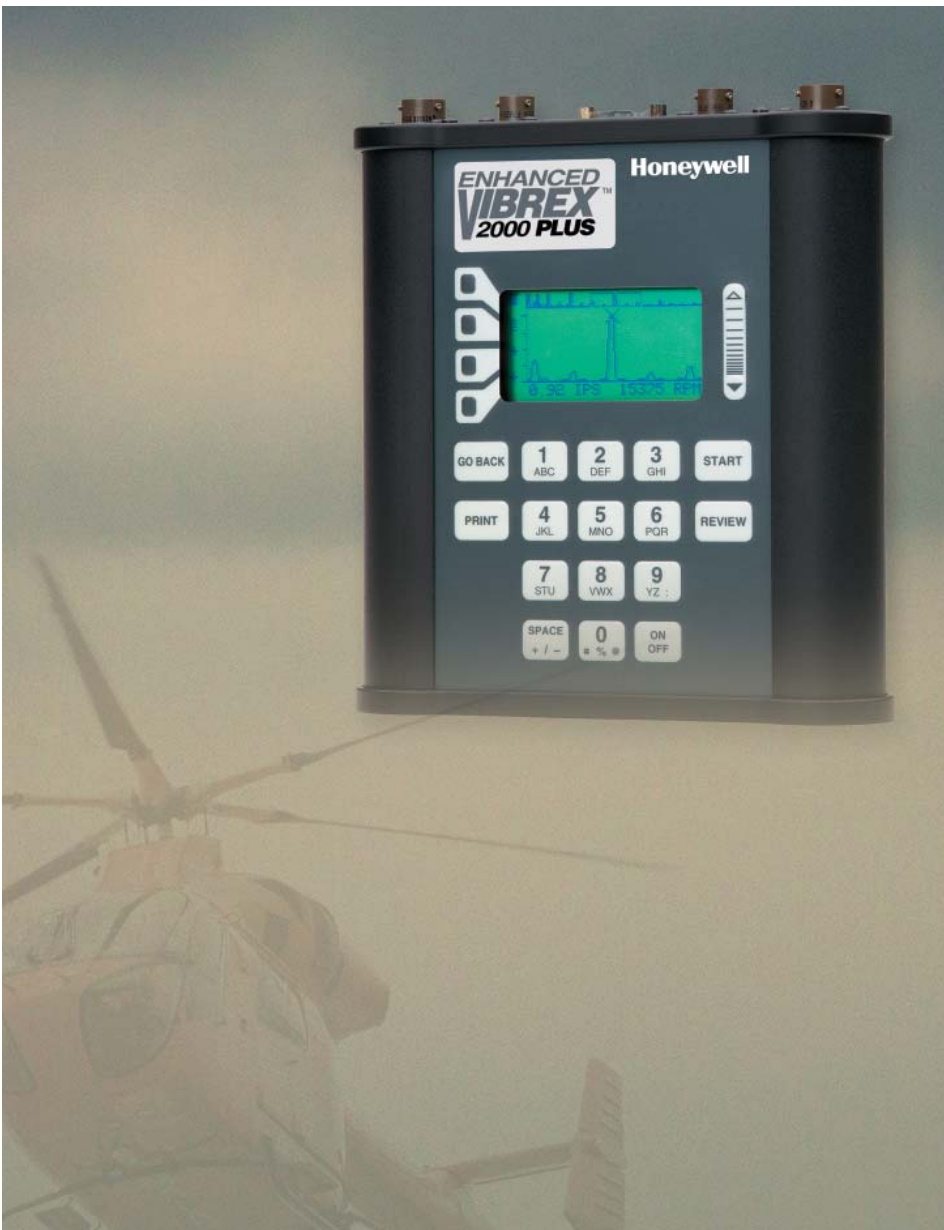
This balancer/analyzer acquires accurate fixed-wing and helicopter vibration readings

and allows you to balance the propellers or blades using the integrated display – without the use of paper charts, or you can use any of the 150 available Honeywell or factory paper charts. Beyond that, the unit is also capable of balancing shafts and blowers, making the EV2K+ a complete balancing tool.

The spectrum analyzer provides the operator with an overview of rotor and drive train and engines with component frequencies of 600,000 rpm or less, and balance speeds below 30,000 rpm.

EV2K+ Features:

- Fixed-wing propeller balance
- Helicopter rotor track & balance (RT&B)
- Vibration and spectrum analysis
- Four channel input for multiple balance jobs (with optional cables)
- Two tachometer channels (mag pickup and photocell)
- Built-in configurations for popular helicopter models – can be modified and saved to meet user requirements or to support other helicopters
- Automatic weight sensitivity correction
- Uses common rechargeable or disposable D-cell batteries
- Strobex or FasTrak for helicopter blade track
- Usable with all legacy Polar Charts
- ASCII output (non proprietary)
- Auto shutoff
- Auto tuning
- Display, review and print measurements and solutions
- Built-in-test (BIT) check and self calibration on power up
- Battery power indicator



Easy to understand menus allow the user to initiate and complete up to four different balancing jobs at one time. The EV2K+ will automatically correct for the propeller/rotor response to weight changes and this correction can be saved for future balancing exercises. A “first round hit” solution means less vibration, even on the first adjustment. Two azimuth channels have the capability to support magnetic pickup, photocell and FasTrak® optical tracker.

```

RUN 1 PROP MEAS
31JUL13 12:26:12 #1A
> [35%TQ]
      480 RPM
      0.94 IPS @ 5:39
      ID: N1234 -1
> REDO MEAS
solution Push START
  
```

```

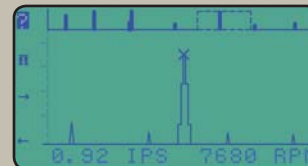
ADD TRACK CONFIG =
Select from Factory
Configurations
(Used: 1 of 25)
> PREVIOUS
<AS-350 Gnd Factory>
> NEXT
to add, Push START
  
```

```

> PROPELLER BALANCE
> HELICOPTER BALANCE
> TRACK & BALANCE
> SPECTRUM ANALYSIS
next menu, Push START
  
```

```

CHOOSE A/C MODEL
> <AS-350B1 >
> ADD AIRCRAFT MODEL
> EDIT AIRCRAFT MODEL
if ok, Push START
  
```



With the use of optional interface cables, the EV2K+ can support up to four vibration inputs.

All measurements, sensitivities, solutions, and annotations are stored in memory and can be reviewed on the instrument, printed on the optional portable thermal printer, or downloaded to a personal computer.

The EV2K+ comes with pre-programmed software for the following helicopter types:

- | | | |
|----------------|-----------|---------------|
| • A-109E Power | • BL-206B | • EC-135 |
| • A-119 | • BL-206L | • EC-145 |
| • AS-332 | • BL-212 | • Enstrom x80 |
| • AS-350B | • BL-222 | • MD-500 |
| • AS-350B1 | • BL-407 | • MD-520N |
| • AS-355 | • BL-427 | • R-22 |
| • AS-365 | • BO-105 | • S-61 |
| • AW-139 | • EC-120 | • SW-300 |
| • BK-117 | • EC-130 | • UH-1H |

The EV2K+ comes with all the software, accessories and instructions for your particular application in a rugged, portable carrying case. Ground software includes Vibrex 2000 Download and Vibrex 2000 Plot. An aircraft kit will normally consist of the following:

- Main Kit – Main accessory kit.
- FasTrak Kit – For helicopter main rotor blade tracking.
- Application Kit – Consists of the custom brackets and cables

```

===== EVibrex 2000+ v4.1Ch =====
===== Printed on: ddMMMy hh:mm:ss =====

HELICOPTER BALANCE PRINT

+++++ SESSION 1 +++++

AIRCRAFT: AS-350B1
COMPONENT: Main Rotor

----- RUN: 1 [ ] -----

MEAS CH IPS ANGLE RPM TIME
=====
M/R V 2A 0.22 9:38 385 14Apr13 09:34

SOLUTION OPTIONS
=====
REGIME: 100% Ground
USED: Pitch Link
SOLVE TO MINIMUM VIB OF: 0.0 IPS
EXCLUDE: None
RESPECT MANUFACTURER'S LIMITS: N/A (n/a is optional if easy)
AUTO CORRECTION: OFF

ADJUSTMENTS
=====
Pitch Link
(in flats)
BLU 0.6
YEL -----
RED -----

PREDICTION: 0.0 IPS
Adjustments NOT MADE by user

----- RUN: 2 [ ] -----

MEAS CH IPS ANGLE RPM TIME
=====
M/R L 1A 0.98 9:38 385 14Apr13 09:34

SOLUTION OPTIONS
=====
REGIME: 100% Ground
USED: Weight
SOLVE TO MINIMUM VIB OF: 0.0 IPS
EXCLUDE: None
RESPECT MANUFACTURER'S LIMITS: Yes
AUTO CORRECTION: ON (1.00 @ 12:00)
  
```

EV2K + Specifications:

Physical <ul style="list-style-type: none"> • Dimensions: • Weight: • Power Requirements: • Battery Life: 	7.38" H x 7.25" W x 1.81" D (18.75 cm x 18.42 cm x 4.6 cm) 3.5 lbs. (1.58 kg) (with batteries) nominal 3.0 - 6.4 Vdc 250mA (internal batteries) 40 hrs (typical)
Interfaces <ul style="list-style-type: none"> • Vibration Sensor: • Magnetic pickup / Tachometer: • Accessory Power: • Portable Computer or Printer: 	2 ea. Velocimeter (19 mV/ips sensitivity) (4 ea. with optional cables) 2 ea. Pulse input, magnetic pickup or logic type 4 ea. D-cell batteries. Reverse polarity circuit protected and fused 1 RS-232 Serial, 9600 baud
Balance Measurements <ul style="list-style-type: none"> • Phase Accuracy: • Balance Frequency Range: • Phase Resolution: 	$\pm 15^\circ$ 120 to 30,000 rpm 2 minutes or 1 degree
Performance <ul style="list-style-type: none"> • Accuracy: • Spurious Free Dynamic Range: • Velocimeter Input Ranges: • Velocimeter Input Sensitivity: • High-pass Filter: • Mag pickup, Input Freq. Range: • Mag pickup, rpm Accuracy: • Mag pickup, Input Voltage Range: 	$\pm 0.5\text{dB}$ from 4 Hz to 500 Hz / $\pm 1\text{dB}$ from 501 Hz to 10 KHz >50dB 0 to 380mV peak (20 ips) 19mV/ips peak 3-pole Chebyshev, -3.0 db @ 1.5 Hz 100 - 50,000 rpm 0.15% 0.5 to 12 Volts peak nominal
Spectrum Analysis <ul style="list-style-type: none"> • Analysis Ranges (Fmax, rpm): • FFT Resolution: • Window Type: 	1200-600,000 400 Lines Flat top
Environmental <ul style="list-style-type: none"> • Temperature: • EMI susceptibility and radiated emissions: • Industrial Electronic Control CE certified: 	0°C to 50°C Equipment Class Standard EN50081-2 Standard EN50082-2



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