

# DYNAMIC INSTRUMENTS

Aircraft  
Vibration  
Analyzer

DI-307A

## FEATURES

Fast, Four Channel  
Simultaneous Data  
Collection

Large, easy-to-read  
Color Display

Compact,  
Lightweight, Rugged  
Construction

Flight Line Viewable  
in Direct Sunlight

Time proven VATS/  
VBAS Operator  
Interface

Supports Night Time  
Operations

Built in Self Test

*The DI-307A, Aircraft Vibration Analyzer (AVA) is a compact and rugged tool, simplifying helicopter and fixed wing maintenance tasks while increasing aircraft performance. AVA employs the time proven VATS/VBAS operator displays and keypad controls for easy-to-use, straight forward, operation and most VATS/VBAS peripherals and accessories are supported by the DI-307A. AVA .... a complete solution to portable vibration analysis!!!*



## Product Description

AVA is intended for use in harsh and demanding environments and has been designed to meet:

- ★ Environmental Requirements of MIL-STD-810D
- ★ Shock and Vibration Requirements of MIL-STD-810D
- ★ EMI Requirements of MIL-STD-461C

Automatic test programs are created on your PC and downloaded to the AVA. Pilots and technicians are guided through the data collection procedures by instructions displayed on the large, easy to read screen.

When data collection is completed, test results are displayed enabling the pilot or technician to quickly identify problem areas and the corrective actions necessary to solve them.

AVA supports all three Aircraft Maintenance Modes:

**Rotor Blade Tracking** - Rotor blade tip path corrections and lead/lag characteristics can be measured either day or night, using the optional line scan camera.

**Balancing** - Single and dual plane balancing can quickly be performed. A Discrete Fourier Transform (DFT) calculates phase angle and amplitude of the imbalance and rotor smoothing algorithms are then used to provide simultaneous, multiple maintenance adjustments.

**Vibration Signature** - A Fast Fourier Transform (FFT) and four channel *simultaneous* data acquisition capabilities are employed to yield fast, accurate vibration analysis results.



## DI-307A Specifications

### Modes Of Operation

#### FFT Vibration Signature

Frequency  
Order Tracking

#### Blade Tracking

Blade Tip Path  
Lead/lag Characteristics

#### Balancing

Single & Multi Plane

### Inputs

4 Triaxial or 12 Single Axis Accelerometers  
(10mV/g - 100mV/g)  
1 Hand Held Camera (day/night or cloudy)  
2 Rotor Blade Tachometers  
(Optical or Magnetic Pickup)  
2 RS-232C Serial Ports

### Memory

28 MB of Memory

### Software

MSDOS compatible supporting Depot,  
Recall, Generic, and Erase Utilities

### Front Panel

Color, TFT LCD with backlight  
Large Viewing Area: 8.3" X 6.2"  
High Resolution: 640 x 480 pixels  
Tactile Feel Keypad

### Physical Characteristics

Height: 13" • Width 13" • Depth 4"  
Weight: 16 lbs

### Power Requirement

+28 VDC - Direct Connection  
115 VAC - 115 VAC to 28 VDC converter

### Printer Interface

Serial (RS-232C)

### Built In Self Test

Go-No/Go testing with fault isolation

### Data Acquisition

1-4 channels of *simultaneous* data  
acquisition

### Optional Accessories

#### Transducers

Triaxial - Model DI-103  
Single Axis - Model DI-108

#### Speed Reference

Optical - Model DI-204  
Magnetic - 3030AN

#### Blade Tracking

Model DI-206 Solid State CCD  
Line Scan Camera

#### 115 VAC 50/400Hz to 28 VDC Converter

Model DI-219

#### Printer

COTS Serial/Parallel Printer  
Part# 1901-0067

#### Cables

Single Axis Accelerometers  
Triaxial Accelerometers  
Optical Tachometers  
Magnetic Pickups  
Power  
Camera Data



3860 Calle Fortunada  
San Diego, CA 92123-1825  
858.278.4900 • 800.793.3358  
Fax: 858.278.6700  
[www.dynamicinst.com](http://www.dynamicinst.com)