



Helitrack Helicopter Rotor Track & Balance System

helitrack

- Low cost Maintenance Data Recorder (MDR)
- Modular COTS design
- Ruggedised construction
- Passive optical sensor with fibre optic connection to MDR
- Reduced size and weight options available, with reduced capability
- Optional external battery available

The Sensor's business unit of Ultra Electronics PMES is an established supplier of high accuracy, high integrity sensors for numerous market sectors in the Aerospace and Underwater Defence domains.

The development of Helitrack by PMES and it's technology partner, Exact Group, has created a 'fit and forget', on-condition monitoring system capable of identifying the onset of rotor problems and improving flight safety.

The Helitrack System comprises an optically passive, high accuracy helicopter rotor tracker forming potentially, the core of a HUMS system. The sensor is coupled via a fibre optic cable to an onboard computer which records the rotor data. This data can be easily downloaded post flight to analyse the rotor track and balance state at any time.

The rotor craft industry has a strong desire to move from 'carry-on' maintenance systems which are shared between airframes to a permanent fit on each. Helitrack is a low cost route to 'fit and forget' monitoring.



Technical specification

Electrical

- Single power supply input 9V-32V
- 1Gb data storage giving 50 hours flight data
- 0.1% accuracy
- 3 axis vibration logged to $\pm 50g$
- Serial interface for downloading to laptop PC

Mechanical

- Rugged construction
- Size 150mm(w) x 66(h) x 180mm(l)
- Weight <2Kg
- Operating temp range -40° to $+85^{\circ}C$

Interfaces

Offers functionality of Flight Data Recorder, such as:

- High quality cockpit audio
- Flight position (from aircraft GPS)
- Altitude
- OAT
- Date and time of day
- 3 axis sensors give roll, pitch and yaw
- Single ARINC channel
- Numerous RS 232 serial data channels

Applications

- Maintenance data recorder
- Rotor Track & Balance System
- Low cost flight data recorder
- Main rotor and tail rotor combined monitoring capability
- Applicable to various rotor configurations
- Applicable to wide range of Helicopters, both Civil and Military

Key issues

The Helicopter is a complex airframe that undergoes enormous stress in it's operation. A badly adjusted rotor is a flight hazard, increasing component damage due to vibration which creates an unpleasant and tiring environment for pilots and passengers alike. Helitrack offers an on-condition monitoring capability providing earlier fault indication thus avoiding serious damage caused by rotor failure.



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