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GearSight Condition Monitoring System

Your gearbox health expert

NGC's GearSight Condition Monitoring System (CMS) is an integrated system of hardware and software designed to collect and analyze operating data from the main gearbox and other key components, such as the main bearing, generator, tower and rotor. Through analyzing thousands of data points, GearSight CMS is able to accurately assess the condition of the equipment – improving maintenance plans and extending service life.

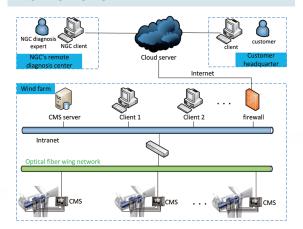
As a leading global gearbox and drive technology solutions provider, NGC has extensive experience in the design, manufacture and maintenance of key transmission components and deeply understands how to interpret vibration, temperature and lubrication data.

For the customer, the need for more intelligent products and the subsequent use of data mining is increasingly important. GearSight CMS emerges to solve this problem

With the help of GearSight CMS, a significant database of condition monitoring data is established for the customer. From the initial gearbox bench test, to the actual operating data collected on the wind farm, all condition monitoring data is acquired and gathered on NGC's cloud server for in-depth processing.

According to the data, it is easy for the customer to identify concerns and understand the remaining useful life of the gearbox and other components.

How It Works



Internal Components



GearSight CMS-WS0800



Key Features

- Compact design for convenient site installation
- (8) accelerometer inputs, (6) analog inputs and (4) digital inputs
- Ability to take simultaneous measurements from all channels
- Real time measurements & calculations with less than (1) second of delay (on hardware side only)
- Data buffering with USB memory to avoid data loss (up to 2GB) in the case of interrupted communication
- Accessible to SCADA systems for data exchange
- Ability to automatically set alarm values
- Domestic leading remote diagnostic center with highly trained team of diagnostic experts (10 experts with ISO 18436-2 CAT-II/CAT-III certificates)
- Database with vibration measurements from thousands of units to support accurate fault diagnosis
- NGC patented gearbox diagnostic algorithms included

Analog Inputs

- (4) analog inputs (0-20mA)
- (2) PT100 inputs
- Simultaneous sampling from (8) accelerometer inputs with a 51.2kHz sampling rate
- 24 bit ADC (no gain)
- Range of measurements from 0.001g to 25g
- Frequency of DC-10 kHz
- Signal to noise ratio of 96dB

Digital Inputs

- (2) ordinary digital inputs (0.05-1,000Hz)
- (2) modulated digital inputs (0-25Hz)
- Pulse counting

Outputs

• (1) standard digital output

Signal Processing

- Time waveform
- Number of spectral lines: 100-6,400
- Window function: Hanning
- Integration in frequency domain
- Acceleration enveloping analysis (ability to set filter)
- Data acquisition under non steady condition
- Dynamic alarm levels determined on multiple parameters
- Automatic detection of sensor & cable failure

Communication Interface

- (2) RS232 ports
- (1) 100M RJ45 Ethernet port
- (1) USB port

Physical Parameters

- Size: 350 x 300 x 160mm
- Weight: 3kG
- Power consumption: 15W
- Operation temperature range: -40°C ~ +70°C
- Storage temperature range: -45°C ~ +85°C
- Allowable humidity: 95%, 40°C (non-condensing)
- Rated to IP65 / C4 corrosion resistance

Reference Standards

- NB/T 31004-2011 Guidelines for Vibration Condition Monitoring and Diagnosis of Wind Turbine Generator (China's National Energy Administration)
- Guideline for the Certification of Condition Monitoring Systems for Wind Turbines (GL Edition: 2013)

Power Supply

AC 100-240V 50/60Hz