VESKi

CoDiS WRM

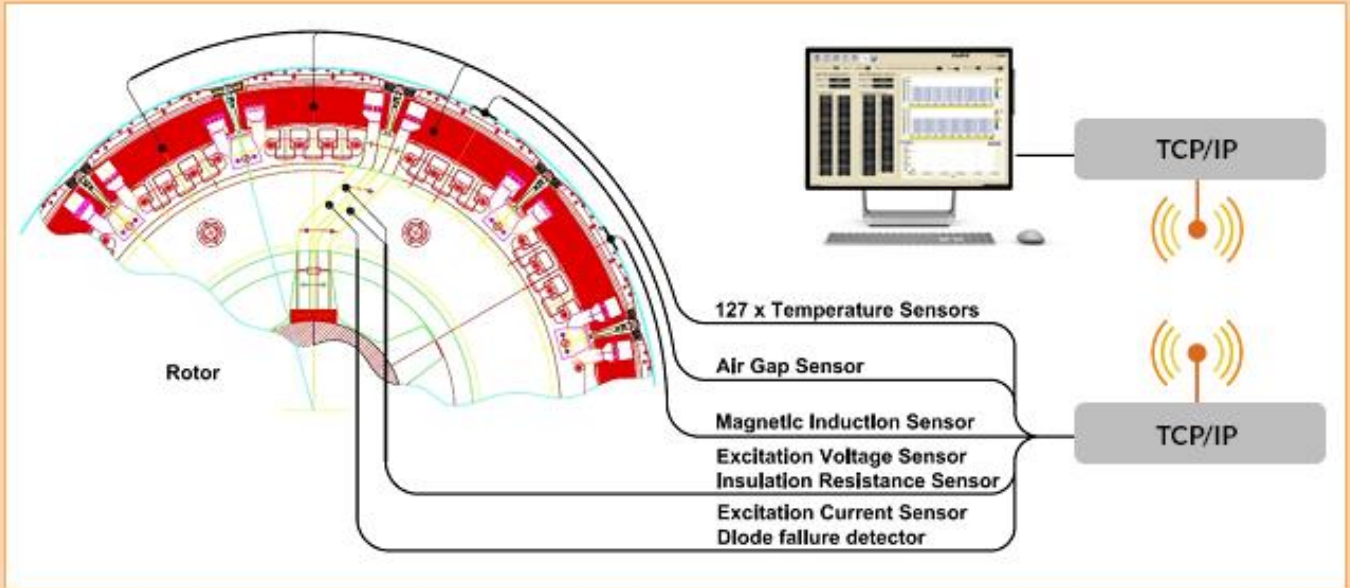### Wireless Rotor Monitoring System

product brochure

VIBRATION EXPERT SYSTEMS
CONSULTING
SYSTEM DESIGN

Solutions only

System layout

127 x Temperature Sensors

Air Gap Sensor

Magnetic Induction Sensor

Excitation Voltage Sensor
Insulation Resistance Sensor

Excitation Current Sensor
Diode failure detector

Rotor

TCP/IP

TCP/IP

Wireless Rotor Monitoring System for generators with brush-less exciter Powered from excitation current (patent pending),
Tested up to 50G (pending further testing),
Easy installation of sensors with Self-adhesive silicone clamps (patent pending).
Dynamic measurements of electric and mechanical parameters significantly contribute to overall reliability of hydro-generators.
Overstressing of rotor/stator in many different ways may cause deforming of rotor/stator shape/geometry, making the whole generator system prone to failure.
Thanks to rotor Air Gap Sensor this is the first method to allow real time measurements of stator geometry under dynamic conditions. Rotor Magnetic Induction Sensor makes possible monitoring of the generator system functionalities and may crucially contribute to the overall reliability. Fault prevention is now possible and saves cost of major overhauls.

CoDiS WRM - Wireless Rotor Monitor

STATOR component

ROTOR component

Made for
Harsh Environments

Real time Data
Streaming

Powered by
Excitation Current
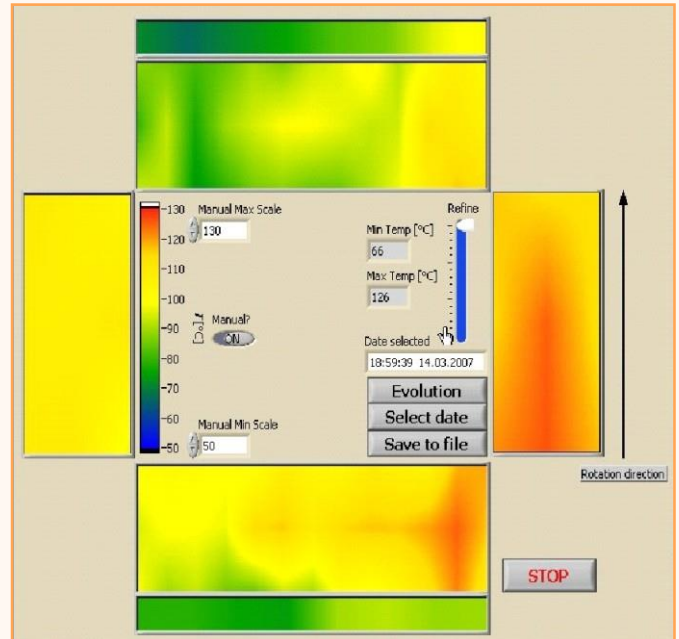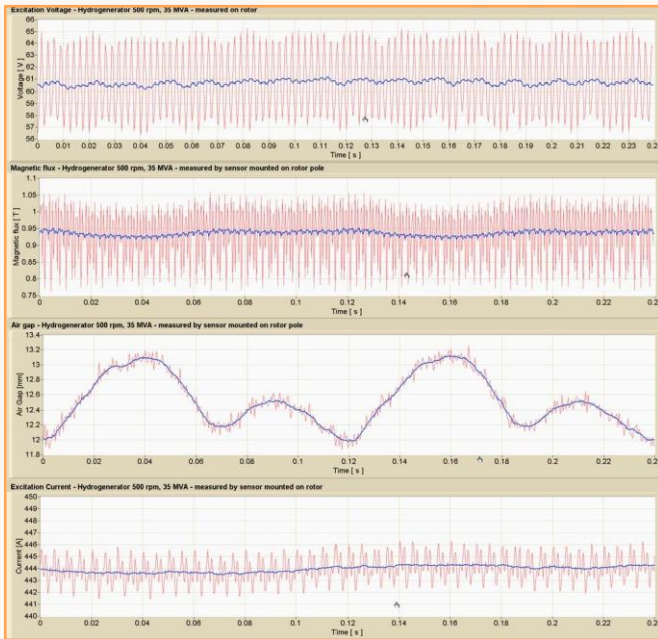
2 Internal
Robust Antennas

Reliable at
50 G-force

2-way
Wi-Fi Connection

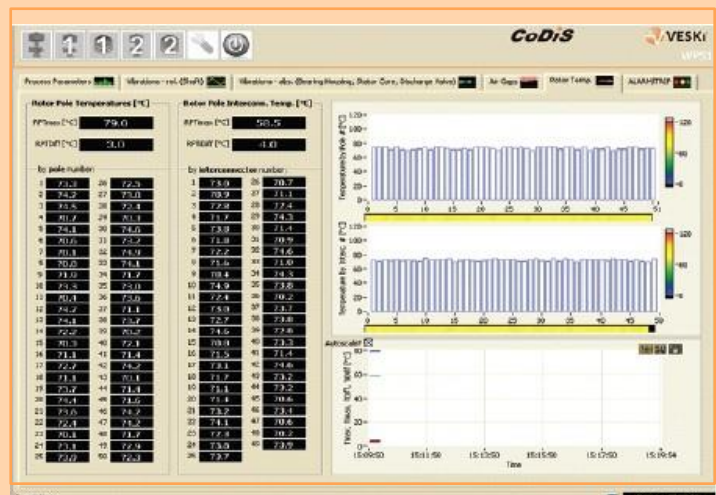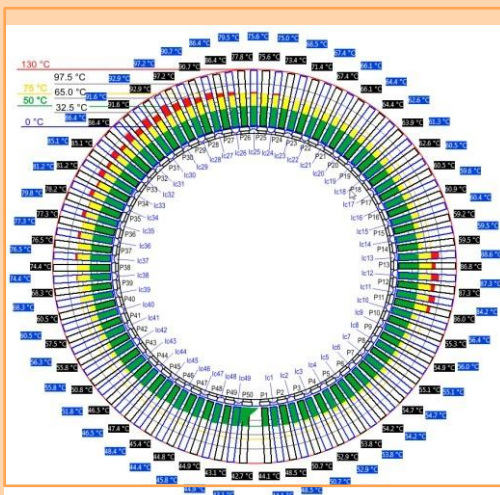# *CoDiS RM - Wireless Rotor Monitor*

Wireless Rotor Monitor- excitation voltage, Magnetic Induction, Air Gap and excitation current measuring sample
Rotor pole thermal map with history temperature evolution - Hydro Electric Power Plant "HE Vinodol"
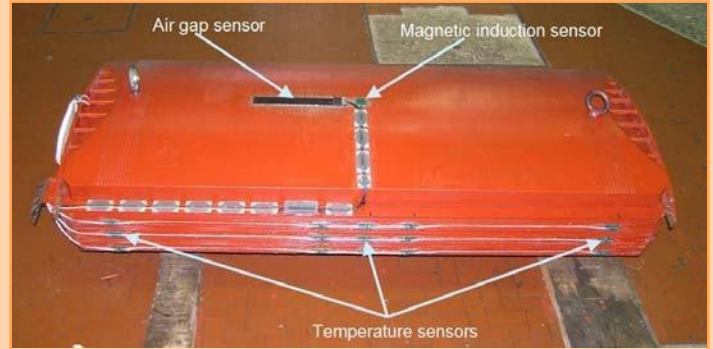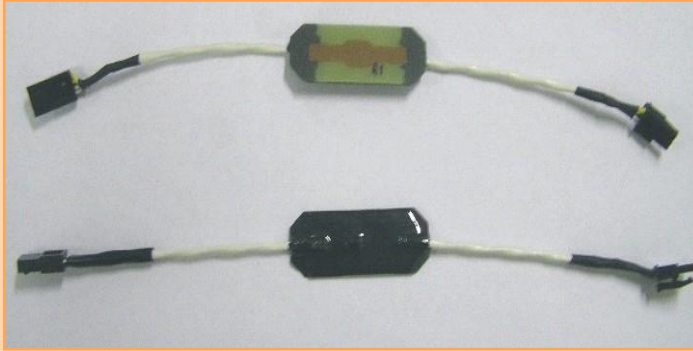
Features

Standard Data analysis tools:

· Rotor temperature monitoring (thermal map)

· Excitation current and voltage

· Air Gap

· Magnetic field

Wireless Rotor Monitor- Rotor Temperature polar plot and barographs plot with indicators - HPP Wivenhoe
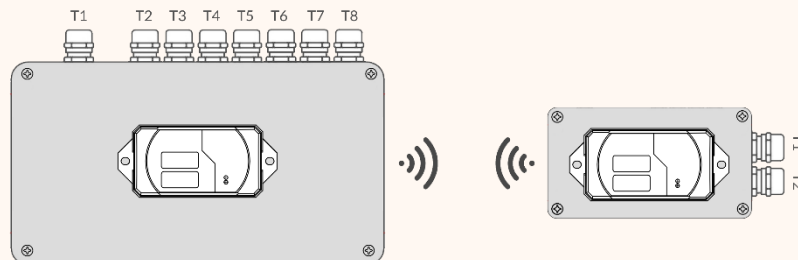
Temperature sensor overview

Upper left: temperature sensor overview (top and bottom view) featuring connector and sensor plate

Upper: Rotor pole with multiple sensors, including air gap sensor and magnetic induction sensor

Left: Interconnector temperature measurement sensor

CoDiS WRM Specifications

Power and operating conditions:
Input voltage range: 100-800 VDC
Power consumption: 30W
Isolation: 2.5kV
Insulation resistance > 1GΩ
Operating temperature range: -10...+85 °C
Operating humidity: standard 80% relative, max.
extended 95% relative, max.
Environment protection: from IP50 to IP66
Withstand G-force: standard: XX G,

Communication:
Wireless interface: IEEE 802.11 a/b/g/n
WiFi Frequency band: 2.4GHz/5GHz
WiFi Antenna: Internal
Ethernet interface: Ethernet (RJ45)
Number of ethernet interfaces: 1
Ethernet transmission speed: 10/100 Mbps

Dimensional specification:
Dimensions (rotor part): 360x160x93 mm
Weight (rotor part): 4,5 kg
Dimensions (stator part): 220x120x80 mm
Weight (stator part): 2,0 kg

Temperature measurements
Digital temperature sensors chains inputs: 4
Max. no of sensors per chain: Up to 32 temperature sensors
Temperature sensor measuring range: –55...+125°C
Temperature sensor accuracy: ± 0,5°C from –10°C to +85°C
Temperature sensor resolution: 9-bit, 0,5°C
Temperature sensor response time: 750ms (max.)

General analog inputs
Analog inputs channels: 7+1
Resolution: 16 bit
Sampling rates: up to 2048 samples/sec

Integrated excitation voltage sensor:
Measuring range: 100...±800V
Overall accuracy: ±1%
Linearity error: <0.2%
Offset current @Ip=0, Ta=25°C Max ±0.15 Ma

Optional sensors for connection to WRM:
Air gap
Magnetic field
Excitation current measurement