Typical Telemetry Applications on Wind Turbines

- Roller Bearing Load
- Rotor Shaft Torque and Bending Load
- Rotor Blade Strain and Vibration
- Gear Wheel Tooth Root Force
- Generator Rotor Temperature
- Generator Shaft Torque and Bending Load
- Gearbox Shaft Torque and Bending Load
Custom Designed Torque Measurement Systems Based on Telemetry

Features:

- High level of flexibility to meet specific application requirements
- Use of existing shafts, couplings, flanges etc. of the machinery
- No modification of the drivetrain required
- Strain gaging directly onto the shaft
- Individual integration/adaption of the telemetry system
- Suitable for severe operating conditions (e.g. high speed, vibration, environmental temperature etc.)
- For long term monitoring or temporary (short term) testing
Application Example 1:
Torque Measurement in Wind Power Gearbox
Application Example 2:
Torque and Bending Load Measurement on Wind Power Gearbox Main Shaft

Inductive Power Coil/Antenna System Installed on Large Shaft Diameter

Telemetry Transmitter and Stator Coil/Antenna Pickup
Application Example 3:
Torque and Bending Load Measurement on Wind Power Generator Shaft
Application Example 4:
Torque Measurement on Wind Power Gearbox Test Rig

Transmitter Carrier Assembly with Rotor Coil/Antenna
Application Example 5:
Torque Measurement on Wind Power Gearbox Test Rig

Instrumented Test Rig
Drive Shaft
(4MNm Torque Range)
Application Example 6: Load Measurement in Large Wind Power Roller Bearing

Instrumented Roller Bearing with Telemetry and Strain Gages for Load Distribution Surveys on Large Roller Bearings
Application Example 7: Vibration Measurement with ICP Type Accelerometers

1ch. Transmitters with ICP Input

Transmitter Carrier Assemblies for Different Shafts

3ch. Transmitter with ICP Signal Conditioning Module (Multi-Axis Measurement)
Application Example 8: Torque and Multi-Axis Vibration Measurement in Wind Power Generator Load Coupling

Load Coupling Shaft with Strain Gages and Inductive Rotor Coil/Antenna

Telemetry Transmitters and Accelerometers Installed inside Load Coupling Shaft
Application Example 9: Tooth Root Force Measurement in Gear Wheels
Application Example 10: Rotor Blade Strain and Vibration Measurement
Application Example 11: Temperature Measurement in Gearless Wind Power Generator

12ch. Telemetry Transmitter Installed on the Generator Wheel Measuring Temperature with RTDs
Application Example 12:
On-Site Field Test Support
Application Example 1: 
*Piston Temperature and Conrod Strain Measurement*
Application Example 2: Piston Temperature Measurement
Application Example 3: Piston Ring Package Testing (Pressure, Ring Motion & Secondary Motion Measurement)
Application Example 4: Piston Temperature and Conrod Strain Measurement

Instrumented Conrod & Piston
Application Example 5:
Acceleration and Torque Measurement on Timing Gear Test Rig

Telemetry Installation on Timing Gear Test Rig

Custom Designed Transmitter Carrier with Rotor Coil/Antenna
Application Example 6: Tooth Force Measurement on Timing Gears

Strain Gage Instrumentation in Tooth Root

Custom Designed Telemetry Transmitter
Application Example 7: Torque Measurement in Diesel Fuel Pump

Pump Housing with integrated Statopr Coil/Antenna

Custom Designed Telemetry Transmitter on Instrumented Shaft
Application Example 8: Turbocharger Testing (Temperature and dyn. Strain)

- Telemetry Installation for Temperature Measurement on Turbocharger at 36,000 rpm
- Telemetry Installation for dyn. Strain Measurement on Turbocharger at 140,000 rpm