



# Truck Wheel Instrumentation

Monitor over-the-road truck wheels in real time

## Application Truck Wheel Instrumentation

### Monitoring Over-the-Road Truck Wheels in Real Time

**Industry:** Transportation

**Product:** AT-7000 (88 channels total)

**Parameters measured:** Heat (24 channels), strain (64 channels)



Accuride Corporation is the premier manufacturer of steel and aluminum wheels for vehicles ranging from pickup trucks to class 8 tractor-trailers. The company runs an aggressive research and development program to assure the safety and quality of its products, and it wanted to measure strain and temperature in real time as its wheels traveled over the road on test trucks.

To overcome the limitations of both slip rings and directly-attached data collection devices, Accuride uses an AT-7000 Digital Rotor Telemetry System from Accumetrics Associates, Inc. This modular system consists of a small cylindrical assembly 171mm (6.75") in diameter by 155mm (6.12") long that is supported by a steel bracket at the wheel hub. This assembly contains sealed electronic modules that acquire data from 88 sensor channels. All sensor data is amplified, multiplexed and digitized into a single high speed data stream for transmission off the rotating wheel.



In the past, strain was often measured statically in a laboratory at very slow rotational speeds, and repeated tests were required to gather all the necessary data. A complete static test could take more than an hour to complete. Now, with digital telemetry, a dynamic test can be run and all the data gathered in less than a minute.

The digital telemetry system permits collecting strain data while traveling over the roads. In addition, the problem of different wheel rotation positions on multiple runs is eliminated. Data can be collected dynamically for longer periods of time, and the test engineer can sit in the cab of the truck and watch the data on a laptop computer as it is being generated.

The bottom line is that digital rotor telemetry makes data collection off rotating wheels faster, easier and safer while helping Accuride Corporation to meet its research and quality assurance goals.



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