



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.



6 British American Boulevard Suite 103-F, Latham, NY 12110 USA
Toll-Free in the USA: **888 684 0012**
Phone: **1 518 393 2200** | Email: **telemetry@pcb.com**

Accumetrics, Inc. provides digital telemetry systems used in a variety of applications such as aerospace, marine, defense, agriculture, transportation, milling operations, energy, and power generation. Systems transmit sensor data from rotating structures using wireless techniques, preserving the integrity of the data even in environments with high levels of electromagnetic interference. Measurement solutions range from single channel products, such as strain gage torque measurements, to advanced custom multichannel systems. Accumetrics, Inc. is a subsidiary of PCB Piezotronics, Inc., and PCB® is a wholly owned subsidiary of MTS Systems Corporations.

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MD-0412 revNR 0719



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