A Wireless Microwave Telemetry Data Transfer Technique for Reciprocating and Rotating Components

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Wireless microwave telemetry addresses the difficult issue of obtaining transducer outputs from reciprocating and rotating components through the use of advanced electronic components. This eliminates the requirements of a direct link between the transducer and the acquisition system. Accuracy of the transducer signal is maintained through the use of a double frequency modulation technique which provides temperature stability and a 20 point calibration of the complete system. Multiple transmitters can be used for larger applications and multiple antennas can be used to improve the signal strength and reduce the possibility of dropouts. Examples of automotive torque converter and piston temperature measurements are provided, showing the effectiveness of the wireless measuring technique.