

基于蓝牙技术的变量施肥机速度采集系统设计 Development of a Ground Speed Collecting System for the Variable Rate Fertilizer Machine Based on Bluetooth

齐江涛 张书慧 于英杰 徐岩

吉林大学

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摘要: 设计了基于蓝牙技术的变量施肥机速度信号采集系统。该系统以光电编码器为测速传感器, ARM微处理器接收测速脉冲并计算出速度值, 通过KC111适配器以蓝牙(无线)方式传送, 蓝牙USB适配器接收速度信号后传送给变量施肥控制器, 完成施肥机速度信号采集。试验结果表明该系统最大误差为2.92%, 能够满足变量施肥精度要求, 可以应用到变量施肥机测速系统中。 Measuring the ground speed is important for a variable rate fertilizer machine. Since the working environment is hard, the reliability and anti-jamming capability of the ground speed collecting system is poor. A ground speed collecting system for a variable rate fertilizer machine is developed based on Bluetooth. The ground speed sensor of the system is a photoelectric encoder, which is set on one of the wheels of the machine. An ARM microprocessor is used to receive input signals from the ground speed sensor, and calculate the working speed. And then the working speed signals are transformed into the Bluetooth signal format, and transmitted to variable rate fertilizer controller by the KC111 adapters. The maximum error of the test is 2.92%. It shows that the developed system is practical.

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