

## 温室环境控制系统智能故障诊断 Intelligent Fault Diagnosis on Greenhouse Environment Control System

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摘 要: 分析了温室环境控制系统中执行机构、传感器、控制柜、控制软件的主要故障;根据故障可能对系统造成的损失将故障分为4个级别,并提出了相应的处理策略,编制了完整的智能故障诊断软件。试验结果表明,故障诊断识别正确,系统运行可靠。A novel technique of fault diagnosis on greenhouse environment control system (GECS) was developed for more reliability. Major faults of actuators, sensors, switch board and control software in GECS were analyzed and listed. All GECS faults were divided into four grades according to their damage levels, and were treated respectively with different strategies and solutions. Two working modes, 'fast fault diagnosis' and 'complete fault diagnosis', were proposed to meet the requirement of both higher accuracy and rapidness. The idea of one-key setting was applied for different users. The intelligent programming was completed to carry out the fault diagnosis on GECS. The test results show that the faults are correctly detected and identified.

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