计算机工程与应用 2008 44 (18): 218-220 ISSN: 1002-8331 CN: 11-2127/TP

工程与应用

基于SCADA的分布式光纤管道泄漏检测系统

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收稿日期 2008-2-18 修回日期 2008-4-2 网络版发布日期 2008-6-16 接受日期

摘要 介绍了一套基于SCADA的分布式光纤管道泄漏监测系统，分析了检测系统的组成和工作原理。阐述了检测系统定位结构和方法，采用相关时延估计算法，通过确定两个测试信号的时延可以获得管道沿线所发生事件的位置。分布式光纤检测技术具有较高的测试灵敏度和定位精度。该系统已成功应用在实际输油管线上，并取得了良好的效果。

关键词 分布式光纤传感器 管道 检测 SCADA系统

分类号

Study on distributed optical fiber pipeline leakage detection system based on SCADA

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Abstract

A new distributed optical fiber pipeline leak detection technology based on SCADA system is introduced.The composition and operating principle of the system is specified，the measuring sensitivity of the distributed optical fiber sensor is analyzed and the location structure and method is presented.Correlation algorithm is adopted to define time delay between two measuring signals，thus the location of event along the pipeline can be detected.The measuring sensitivity and location precision of the measuring system is high.The system has been operated in practical pipeline with excellent results.

Key words distributed optical fiber sensor pipeline detection SCADA system

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