

即插式长喉道量水计的研究开发

Development of a portable long-throated flowmeter

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英文关键词: long-throated flume; portable flowmeter; software for flume design; development

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中文摘要:

为满足灌区中小型渠道量水的需要, 研制开发了由长喉道量水槽和自动测量水位、数字显示用水量的即插式测杆组成的新型量水设备——即插式长喉道量水计。新量水计具有数字显示瞬时流量、累计水量, 可实现量水数字信号远距离传输等功能, 其易损部件采用即插即用形式, 使野外维护工作更简便。现场试验结果表明, 新量水计有较好的测流稳定性和较高的精度, 累计水量相对误差在 $\pm 5\%$ 以内。为解决长喉道量水槽复杂的设计、计算困难, 基于Windows98/2000, 运用Visual Basic6.0开发了长喉道量水槽设计软件。设计软件包括尺寸设计

英文摘要:

In order to measure water in open channels in an irrigation district, a new type of flow measuring meter, a portable long-throated flowmeter, has been developed. The flowmeter consists of a long throated flume, a portable indicator rod for measuring the height of water, and a digital display for flow rate. The meter has remote transmission capability. In field tests the device has proven to be accurate, mechanically reliable, and easy to use and maintain. In addition, computer software for design and calibration of the long-throated flume has been developed as a Windows 98/2000 application using the Visual Basic programming language. The new program has several function modules such as flume dimension design, adjustment and calculation for throat section geometry, rating equation fitting, and graphical output.

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