

节水灌溉系统变频控制的节能研究与应用

Research and Application of Energy-Saving Resulted From Frequency Conversion Control in Water-Saving Irrigation System

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英文关键词: water-saving irrigation system; water supply system; valve control; frequency conversion control; energy-saving

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中文摘要:

以供水系统的扬程特性、管阻特性为基础,分析了变频调节供水系统与阀门调节供水系统的节能效果并作出比较。提出了变频自动控制节水灌溉中的应用方案,改变了传统的调整阀门开度及人工启停电机来满足供水需要的操作方法。实践证明,在节水灌溉特别是在塑料大棚滴灌系统中采用变频调节来自动控制供水系统,与阀门调节供水系统相比,可节能20%~69%(大小与控制流量有关),对延长设备的使用寿命、提高供水流量及供水压力的稳定性、减少人工操作的失误等方面均有积极的意义。

英文摘要:

Based on the lift and pipe characteristics of a water supply system, the energy-saving effects of frequency conversion control and valve control were analyzed and applied in water-saving irrigation system. The traditional method to adjust the valve opening and to turn on or turn off the pump engine by people to meet the need of water supply was improved. It has the energy-saving effect of 20%~69%, but also has the benefit in prolonging the service life of equipment, improving the stability of water amount and water pressure and reducing human errors in their operation. The control of a water supply system by frequency conversion are realized.

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