

## 应用于电子测压器的智能倒置开关设计

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摘要：

运用于火炮膛压测量的电子测压器对体积和功耗有严格的要求，为降低电子测压器的整体功耗，解决保温试验时无法接触上电的问题，提高系统可靠性，设计了一种新型智能倒置开关。该倒置开关以数字加速计为核心，可通过智能判断外界动作对系统电能进行管理，带有防误上电功能，抗冲击试验验证了其在恶劣环境下具有可靠的生存能力。试验数据显示，智能倒置开关的应用合理分配了电量，有效提高了电子测压器的工作时间和使用可靠性，较普通倒置开关拥有更优良的性能。

关键词：微电子技术；能量管理；低功耗；加速度计

## Design of Smart Inversion Switch Applied to Electronic Piezo Gauge

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**Abstract:**

Electronic piezo gauge is applied to chamber pressure measurement of artillery gun and has strict requirement of volume and consumption. In order to reduce the whole consumption of electronic piezo gauge and solve the problem that cannot power on it manually in heat preservation experiment, a smart inversion switch has been designed. This inversion switch is based on digital accelerometer with anti-operation of power on function, and can manages system's power by estimate external action. Test of resistance to impact verified the reliable viability in severe environment. The experiment data show that the application of smart inversion switch reasonably distributing the battery energy and promote the working time and dependability of electronic piezo gauge. Comparison shows that it has better performance to the common one.

**Keywords:** micro-electronics technology; energy management; low consumption; accelerometer

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