原子能科学技术 2002 36 (3): ISSN: 1000-6931 CN: 11-2044/TL

A

应用于高精度稳流电源的直流零磁通误差传感器

@程健$中国科学院高能物理研究所!北京100039 @郝耀斗$中国科学院高能物理研究所!北京100039 @张旌$中国科学院高能物理研究所!北京100039

收稿日期 2001-5-8 修回日期 网络版发布日期:

摘要 研究了采用温度系数较低的坡莫合金材料制作的电流采样装置———直流零磁通误差传感器 ,简要分析了它的基本工作原理。该器件重 2 0 0 g ,功率损耗小于 1W ,无温度效应 ,结构简单 ,成本低廉。实测电源电流稳定度在 2 4h内≤ 1× 1 0 - 4。

关键词 高精度磁铁稳流电源 直流零磁通误差传感器 偶次谐波磁场

分类号 TL5035

Development of a Zero Flux Error Transductor for the DC Power Supply With High Current Stability

CHENG Jian, HAO Yao dou, ZHANG Jing (Institute of High Energy Physics, Chinese Academy of Sciences, Beijing 100039, China)

Abstract A zero flux error transductor for the DC power supply with high current stability is developed. The principle is analyzed. The transductor consists of four separate magnetic cores with perm ribbon. As a feed back component the transductor has the following advantages: a small volume and weight (<200 g), power loss≤1 W, low cost, small temperature coefficients. The current stability of the power supply at 40 A is ≤1×10 -4 for 24 h.

Key words DC power supply zero flux error transductor second harmonic magnetic field

DOI

通讯作者