


# 磁悬浮列车传感器信号传输系统分析

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摘　要：

磁悬浮列车传感器系统采用屏蔽双绞线传输数字传感器信号；磁悬浮列车传感器信号传输系统具有典型的传输线系统特点；研究了系统始端内阻抗与终端阻抗对信号传输的影响；分析了在终端为网络变压器时，传输线对信号传输的影响；提出了在有限负载阻抗条件下，阻抗匹配的设计要求；实验证明在有限阻抗负载条件下，并联终端匹配比始端串联匹配具有明显优势。

关键词：磁悬浮列车；传感器系统；信号传输；阻抗匹配；有限阻抗负载

# Maglev Train Sensor Signal Transmission System Analysis

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**Abstract:**

Shielded Twisted Pair（STP）was used for transmitting digital sensor signal in Maglev train displacement measurement system. The influence of source and terminating impedance on signal transmission was investigated. The impact of transmission line on signal transmission with the network transformer load was analyzed. The design requirements of impedance matching method with finite impedance load were proposed. Parallel connection terminal impedance matching method was better than connection in series beginning impedance matching method with finite impedance load.

**Keywords:** Maglev Train；Sensor System；Signal Transmission；Impedance Matching；Finite Impedance Load

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