

[1]杜红棉,祖静.常用冲击波压力传感器动态特性实验研究[J].弹箭与制导学报,2012,2:214-216.

DU Hongmian,ZU Jing.The Research on Dynamic Characters of Transducers forBlast Wave Measurement[J].,2012,2:214-216.

点击

复制

常用冲击波压力传感器动态特性实验研究(PDF)

《弹箭与制导学报》[ISSN:1673-9728/CN:61-1234/TJ] 期数: 2012年第2期 页码: 214-216 栏目:

相关技术 出版日期: 2012-04-25

Title: The Research on Dynamic Characters of Transducers for Blast Wave Measurement

作者: 杜红棉¹; 祖静²

1 中北大学信息与通信工程学院,太原030051; 2 电子测试技术国家重点实验室,太原030051

Author(s): DU Hongmian¹; ZU Jing²

1 School of Information and Communication Engineering, North University of China, Taiyuan 030051, China; 2 National Key Laboratory for Electronic Measurement Technology (North University of China), Taiyuan 030051, China

关键词: 冲击波; 传感器; 动态特性; 激波管

Keywords: shock wave; transducer; dynamic characteristic; shock tube

分类号: O383.3;TP212

DOI: -

文献标识码: A

摘要: 针对冲击波测试传感器的宽带宽要求、现有传感器种类繁多的情况,文中对江苏联能、绵阳奇石缘、美国PCB和ENDEVCO公司生产的共7种用于冲击波超压测试的传感器进行了激波管动态标定实验,分析了放大器特性和安装误差对实验结果的影响,给出了各传感器的上升时间、超调量,用参数化的建模方法求出了各传感器的工作频带,实验结果表明8530B的超调量最小,上升时间最短,8530B和113A的工作频带比其他几种要高,大量程的113A也可用于小压力的测量。

Abstract: Based on high bandwidth for sensors in shock wave testing, seven sensors for shock wave overpressure testing were applied in dynamic calibration test with shock tube. Four companies including Sinocera Piezotronics, Inc., Mianyang Qishiyuan SCI.&TECH CO.Ltd, PCB and ENDEVCO provided those sensors. The effects of amplifier characters and installing errors on experimental results were analyzed. The rise time and overshoot of each transducer were measured. The working bandwidth of five different sensors was obtained with parametric modeling. The experimental results show that the sensor 8530B provided by ENDEVCO Inc. has smaller overshoot, 8530B and the sensor 113A provided by PCB Inc. have longer bandwidth.

❖ 导航/NAVIGATE

[本期目录/Table of Contents](#)

[下一篇/Next Article](#)

[上一篇/Previous Article](#)

❖ 工具/TOOLS

[引用本文的文章/References](#)

[下载 PDF/Download PDF\(666KB\)](#)

[立即打印本文/Print Now](#)

[推荐给朋友/Recommend](#)

❖ 统计/STATISTICS

[摘要浏览/Viewed](#)

[全文下载/Downloads](#) 124

[评论/Comments](#) 37

[RSS](#) [XML](#)

参考文献/REFERENCES

[1]孙业斌.爆炸作用与装药设计 [WTHZM].北京:北京,国防工业出版社,1987.

[2]张国伟.终点效应及其应用技术 [WTHZM].北京,国防工业出版社,2006.

- [3] 朱吾龙·冲击波压力测量技术探讨 [WTHZJ] ·工业安全与环境,1981 (5) : 41-45.
- [4] 徐强·靳从·用于冲击波测量的测压系统动态性能的研究 [WTHZJ] ·计量技术,2000 (7) : 3-5.
- [5] 陈玉·李刚·压力传感器动态特性研究 [WTHZJ] ·煤矿机电,2008 (5) : 28-30.
- [6] Instruction manual of laboratory charge amplifier type 5011B [WTHZOL] . http://www.intertech-nology.com/kistler/pdf/ACC_5011B_Charge_Amplifier.pdf.
- [7] Instruction manual of model 136 DC amplifier ENDEVCO 3WTHZ [OL] .<http://www.endevco.com/product/prodpdf/136.pdf>.
- [8] 黄俊钦·测试系统动力学 [WTHZM] ·北京：国防工业出版社，1996.

备注/Memo: 收稿日期: 2011-06-09 BP(基金项目:国防重点型号, 国家重点实验室基金项目资助 BP) 作者简介: 杜红棉 (1977-), 女, 辽宁人, 讲师, 硕士, 研究方向: 恶劣环境动态测试。

更新日期/Last Update: 2012-04-25