测试台需具有自动测试功能，应具备下面两种自动测试功能。

表1 交付验收测试表

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 500mNms微飞轮整机交付电性能测试记录表 | | | | | | | | | | |
| 代号 | |  | | 飞轮编号 |  | 测试目的 | |  | | |
| 测试时间 | |  | | 测试地点 |  | 测试场景 | |  | | |
|  | 序号 | 测试项目 | 指标值 | | 实测（计算）值 | | | 指令转速 | 结论 | 备注 |
| 转速模式 | 1 | 调速范围（-6500rpm）~6500rpm 角动量控制偏差、常值偏差 | 角动量动态偏差 ∆H≤1mNms 常值偏差： H≤0.5mNms | | 实测转速 | 常值偏差 | ∆H |  |  |
|  |  |  | 0rpm |  |
|  |  |  | +100rpm |  |
|  |  |  | -100rpm |  |
|  |  |  | +500rpm |  |
|  |  |  | -500rpm |  |
|  |  |  | +1000rpm |  |
|  |  |  | -1000rpm |  |
|  |  |  | +3000rpm |  |
|  |  |  | -3000rpm |  |
|  |  |  | +5000rpm |  |
|  |  |  | -5000rpm |  |
|  |  |  | +6000rpm |  |
|  |  |  | -6000rpm |  |
| 2 | 最大反作用力矩 | 绝对值≥16mNm | |  | | | 0-5000rpm加速过程中的平均力矩 |  |  |
| 3 | 稳速功耗 |  | |  | | | 0rpm |  |  |
|  | |  | | | +500rpm |  |
|  | |  | | | -500rpm |  |
|  | |  | | | +2000rpm |  |
|  | |  | | | -2000rpm |  |
|  | |  | | | +4000rpm |  |
|  | |  | | | -4000rpm |  |
|  | |  | | | +6000rpm |  |
|  | |  | | | -6000rpm |  |
| 4 | 最大功耗 |  | |  | | |  |  | 最大力矩时的功耗 |
| 5 | 最大角动量Hmax | 绝对值80±1mNms | |  | | |  |  | 6000rpm时的角动量 |
| 力矩模式 | 序号 | 实测力矩 | | | 指令力矩 | | | 备注 | | |
| 1 |  | | | +3mNm | | |  | | |
| 2 |  | | | +10mNm | | |  | | |
| 3 |  | | | +15mNm | | |  | | |
| 4 |  | | | -3mNm | | |  | | |
| 5 |  | | | -10mNm | | |  | | |
| 6 |  | | | -15mNm | | |  | | |

表2 正弦振动试验测试表

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 500mNms微飞轮正弦振动测试记录表 | | | | | | | | | |
| 代号 | |  | 测试方向 |  | 飞轮编号 | |  | | |
| 测试时间 | |  |  |  | 测试地点 | |  | | |
|  | 序号 | 测试项目 | 指标值 | 实测（计算）值 | | | 指令转速 | 结论 | 备注 |
| 转速模式 | 1 | 调速范围（-6500rpm）~6500rpm 角动量控制偏差、常值偏差 | 角动量动态偏差 ∆H≤0.5mNms 常值偏差： H≤1mNms | 实测转速 | 常值偏差 | ∆H |  |  |
|  |  |  | 0rpm |  |
|  |  |  | 500rpm |  |
|  |  |  | 500rpm |  |
|  |  |  | 1000rpm |  |
|  |  |  | 1000rpm |  |
|  |  |  | 3000rpm |  |
|  |  |  | 3000rpm |  |
| 2 | 最大反作用力矩 | 绝对值≥ |  |  |  |  |  |  |
| 3 | 稳速功耗 |  |  | | | 0rpm |  |  |
|  |  | | | 500rpm |  |
|  |  | | | 500rpm |  |
|  |  | | | 2000rpm |  |
|  |  | | | 2000rpm |  |
| 力矩模式 | 序号 | 实测力矩 | | 指令力矩 | | | 备注 | | |
| 1 |  | | 3mNm | | |  | | |
| 2 |  | | 10mNm | | |  | | |
| 3 |  | | -3mNm | | |  | | |
| 4 |  | | -10mNm | | |  | | |