Automated Microbial Analysis

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Automated Microbial Analysis Power Budget

1. How many different voltages are in use in your system? For each one, what is the allowable voltage range and the expected peak and nominal current? This is best shown as a table of power interfaces.

|  |  |  |  |
| --- | --- | --- | --- |
| Voltage | Nominal Current | Peak Current | Expected Voltage Range |
| 24V | 6.524A | 10.9A | 23.4 - 25V |
| 12V | 1.0A | 2.0A | 11.7 - 12.4V |
| 5V | 2.0A | 4.0A | 4.5 - 5.5V |
| 3.3V | .01A | .1A | 3.0 - 3.6V |

For the 24V voltage line, it is supplying all the other voltages so it will have the majority of current flowing through it nominally. In addition, it will supply the stepper motors directly, but only for short peaks (nominally, the current should be very small).

1. Averaging over a second of operation answer either that is applicable: What is the amount of power (VA) used from the system power source (batteries, external power, or both)?

Based on the attached spreadsheet, the average amount of power for any point of operation (active or non) will be the average between the 2: (52.194W + 27.168W)/2 = 39.681W (assuming equal operation vs off time)