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Power PMAC drive current case study

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This paper presents a detailed case study of the Power PMAC motor controller deployed at the NSLS-II facility. Designed to support a wide range of motors and encoder types, the Power PMAC controller performs sophisticated software-based calculations to optimize key operational parameters, including drive current settings. For certain high-performance scientific instruments, maximizing torque and speed is essential—making a precise understanding of these parameter limits critical. We analyze the controller's current-setting mechanisms in conjunction with empirical measurements of the actual delivered current, obtained using a current probe and oscilloscope. This study offers valuable insights into the calibration and performance evaluation of Power PMAC motor-controller, highlighting the relationship between set parameters and real-world outcomes in high-precision applications.

Footnotes

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