

FOC Test Report: demo_high_speed_motion

Test Name: demo_high_speed_motion

Platform: Renode STM32G431CB

Firmware: iRPC v2.0

Start Time: 2025-10-10 22:00:27

Samples Collected: 1000

Test Duration: 0.207 s

Performance Summary:

Position Range: [0.000, 7.386] rad

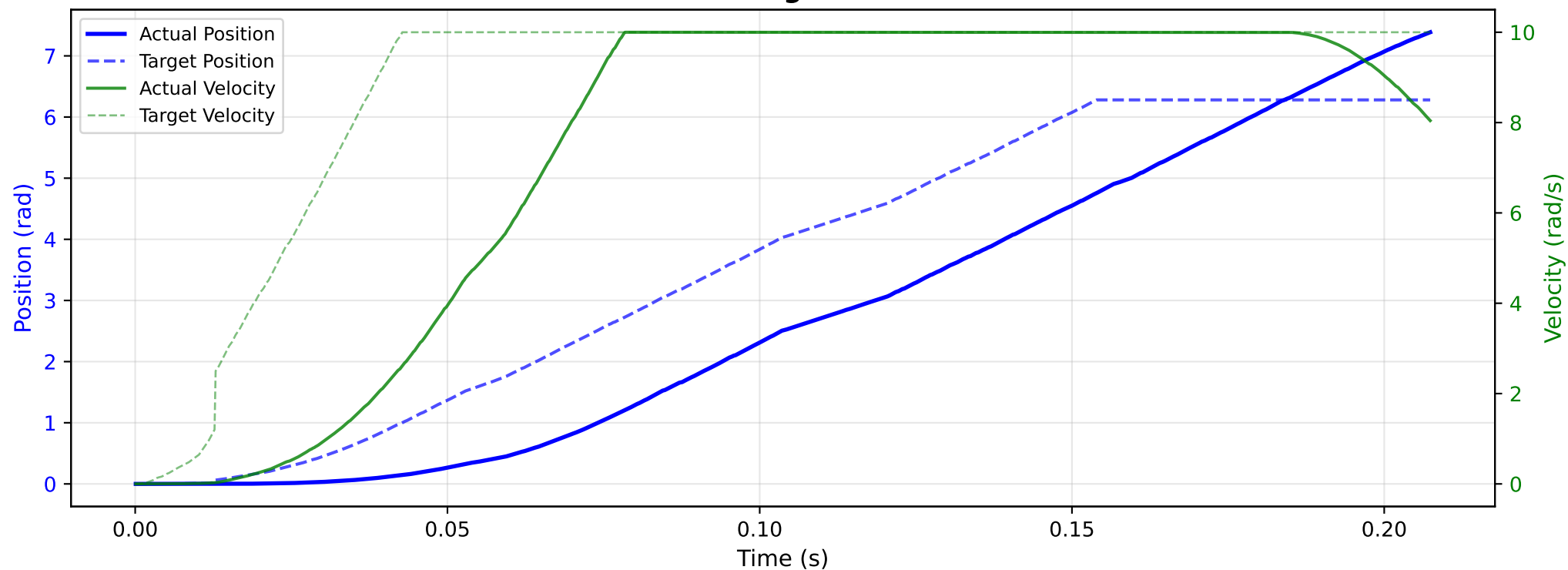
Position Std Dev: 2.435 rad

Max Velocity: 10.000 rad/s

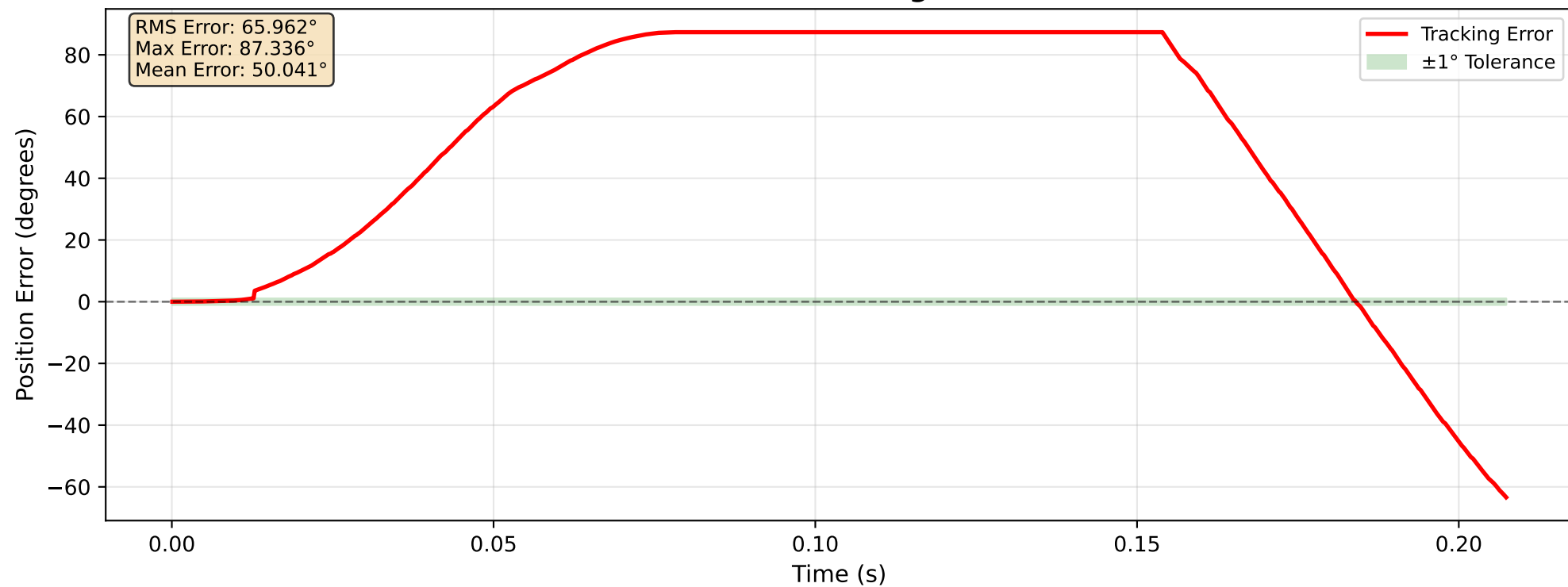
Peak Current (I_q): 10.00 A

Mean Current (I_q): 6.23 A

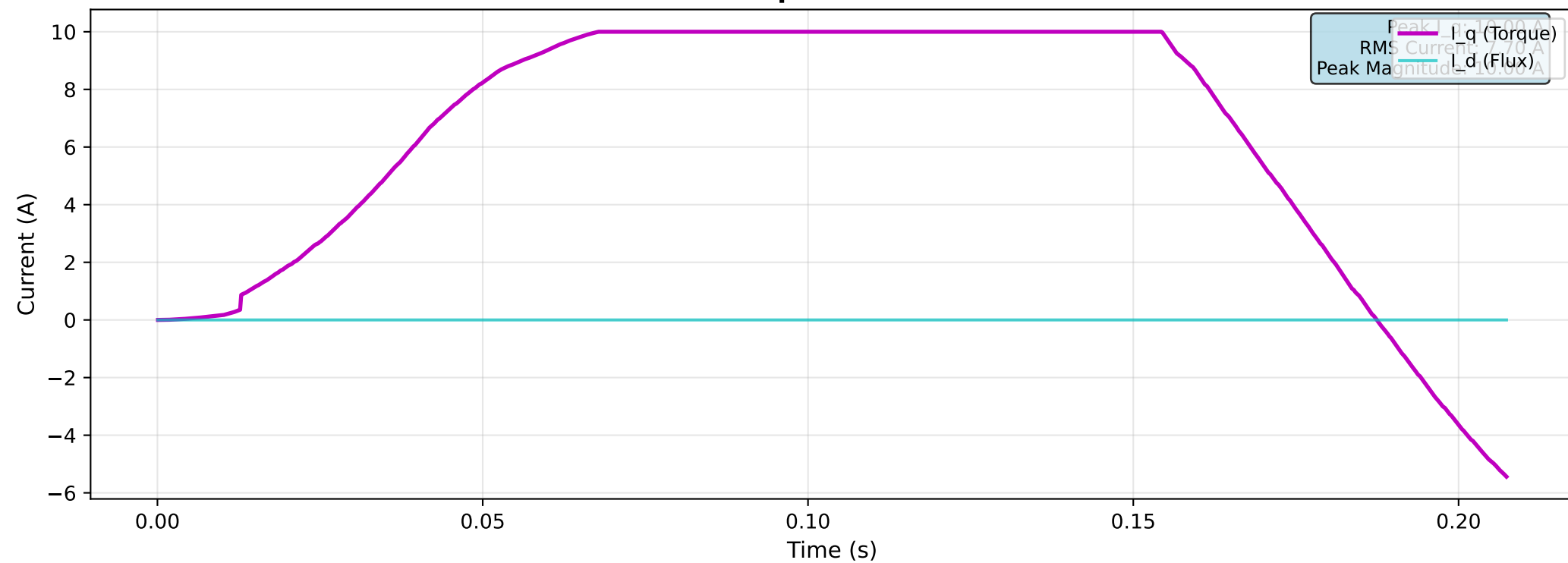
Motion Tracking Performance



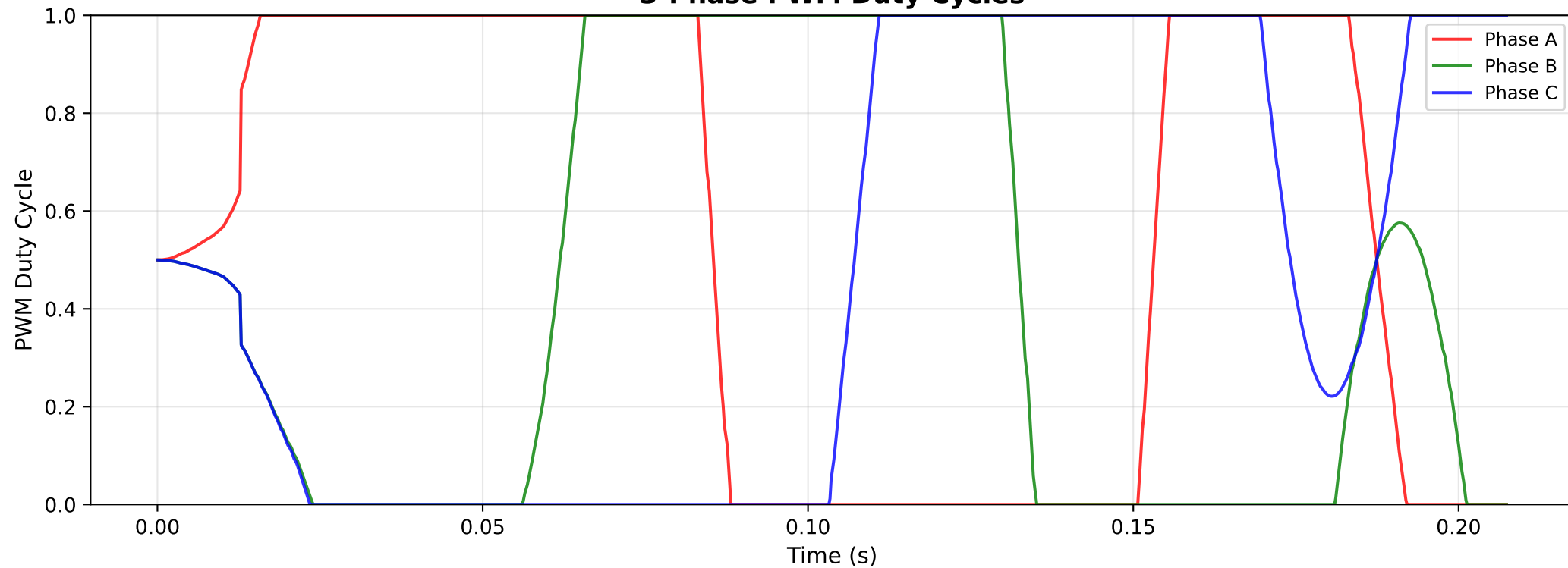
Position Tracking Error



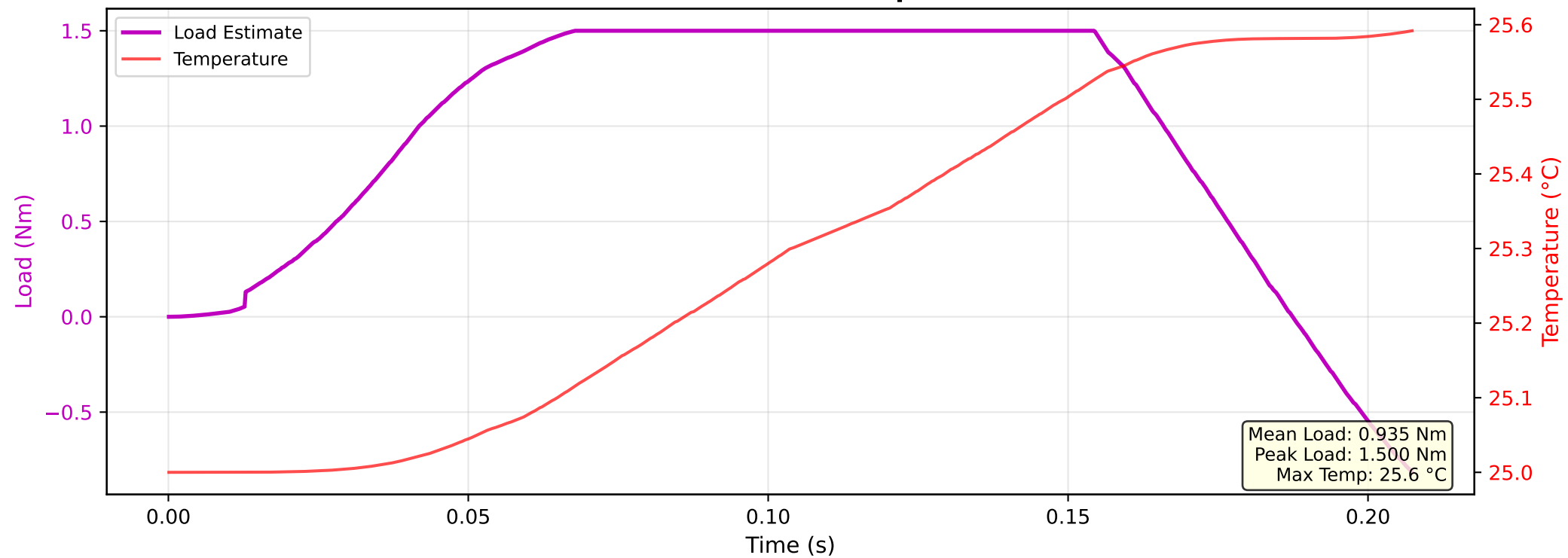
FOC d-q Axis Currents



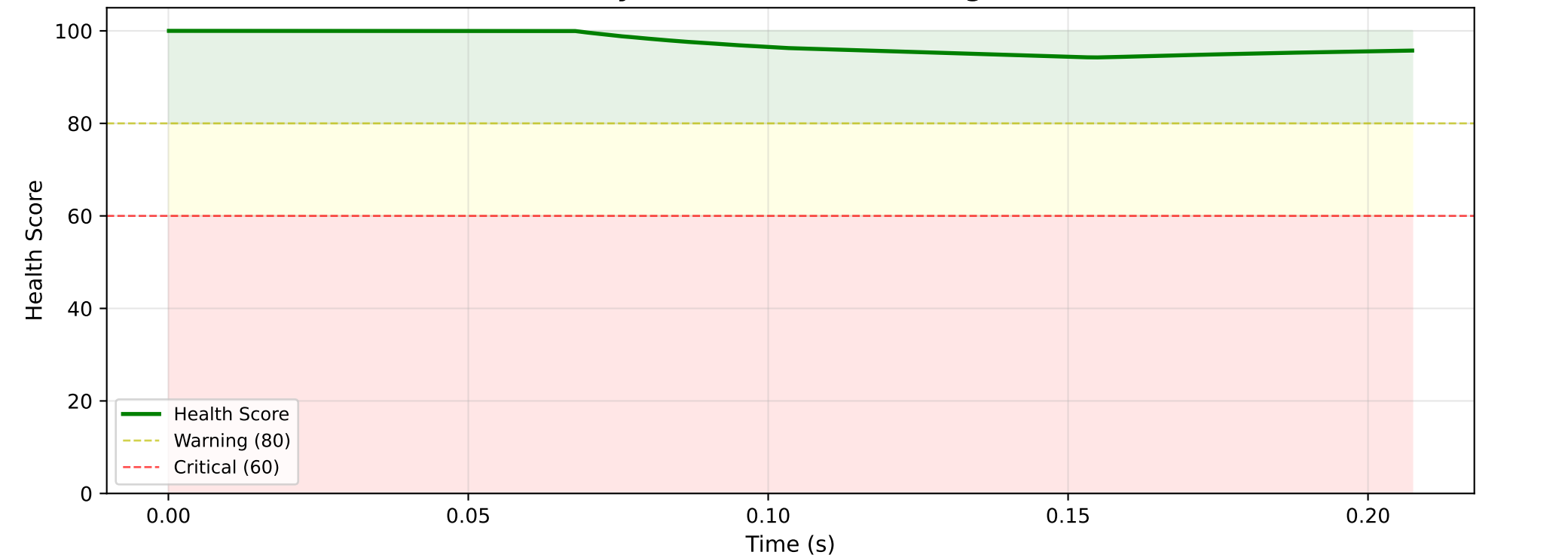
3-Phase PWM Duty Cycles



Load Estimation & Temperature



System Health Monitoring



Phase Diagram (Position-Velocity)

