

FOC Test Report: demo_trapezoidal_profile

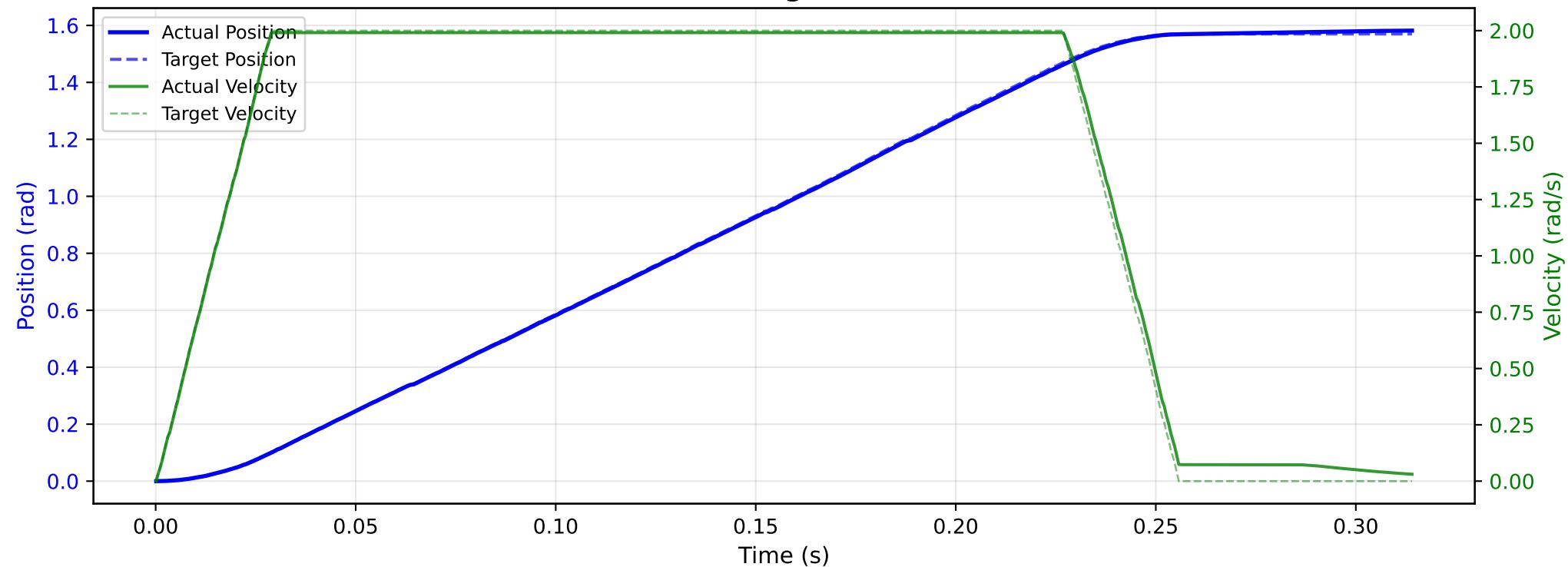
Test Name: demo_trapezoidal_profile
Platform: Renode STM32G431CB
Firmware: iRPC v2.0
Start Time: 2025-10-10 22:00:26

Samples Collected: 1085
Test Duration: 0.314 s

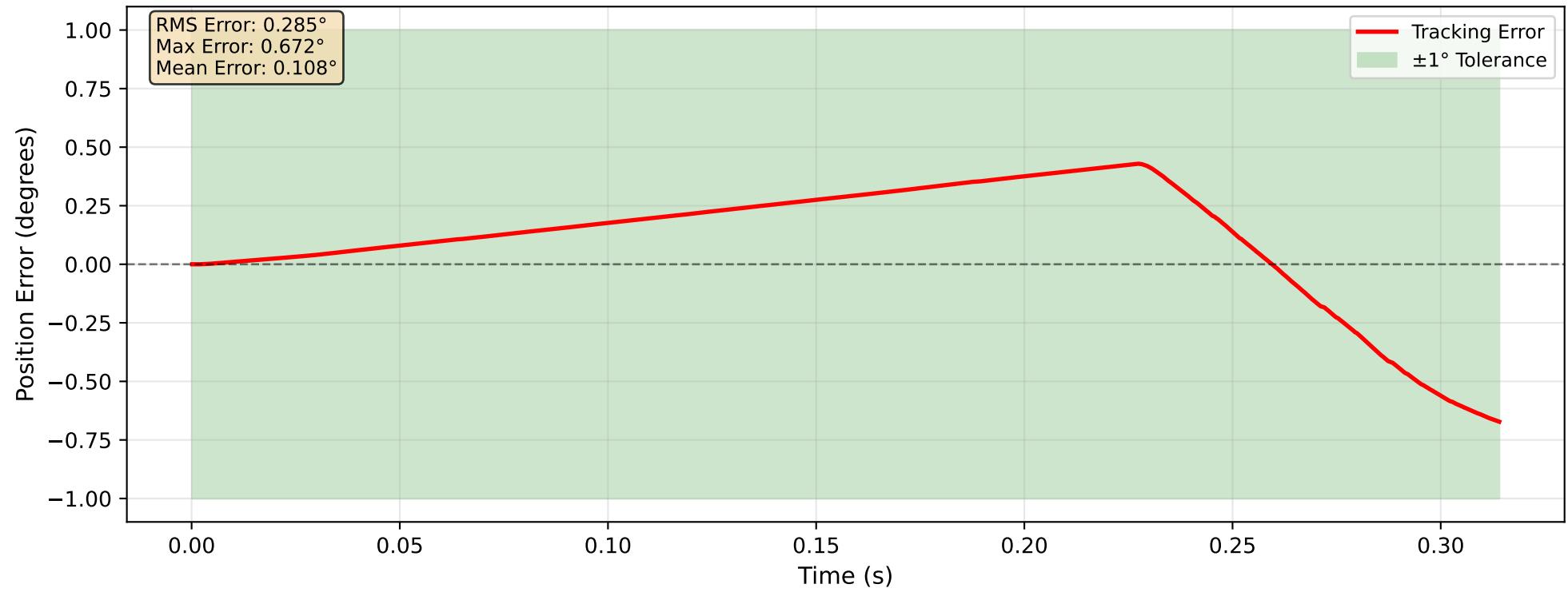
Performance Summary:

Position Range: [0.000, 1.582] rad
Position Std Dev: 0.545 rad
Max Velocity: 1.991 rad/s
Peak Current (I_q): 0.01 A
Mean Current (I_q): 0.01 A

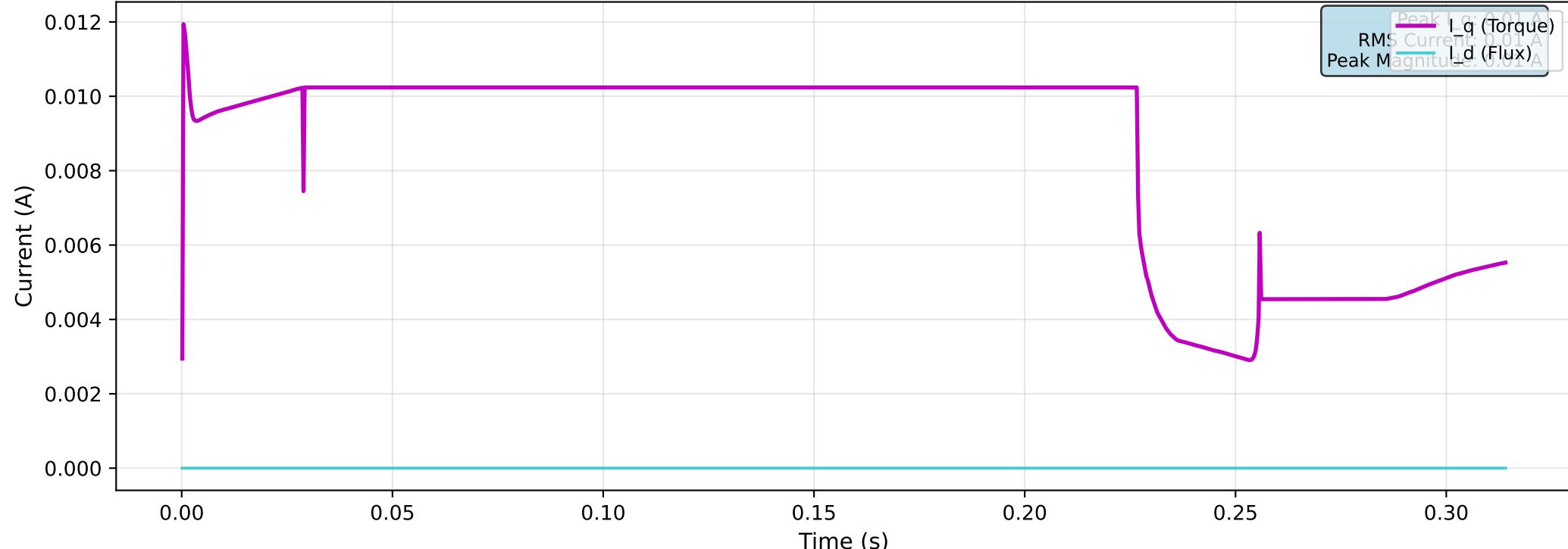
Motion Tracking Performance



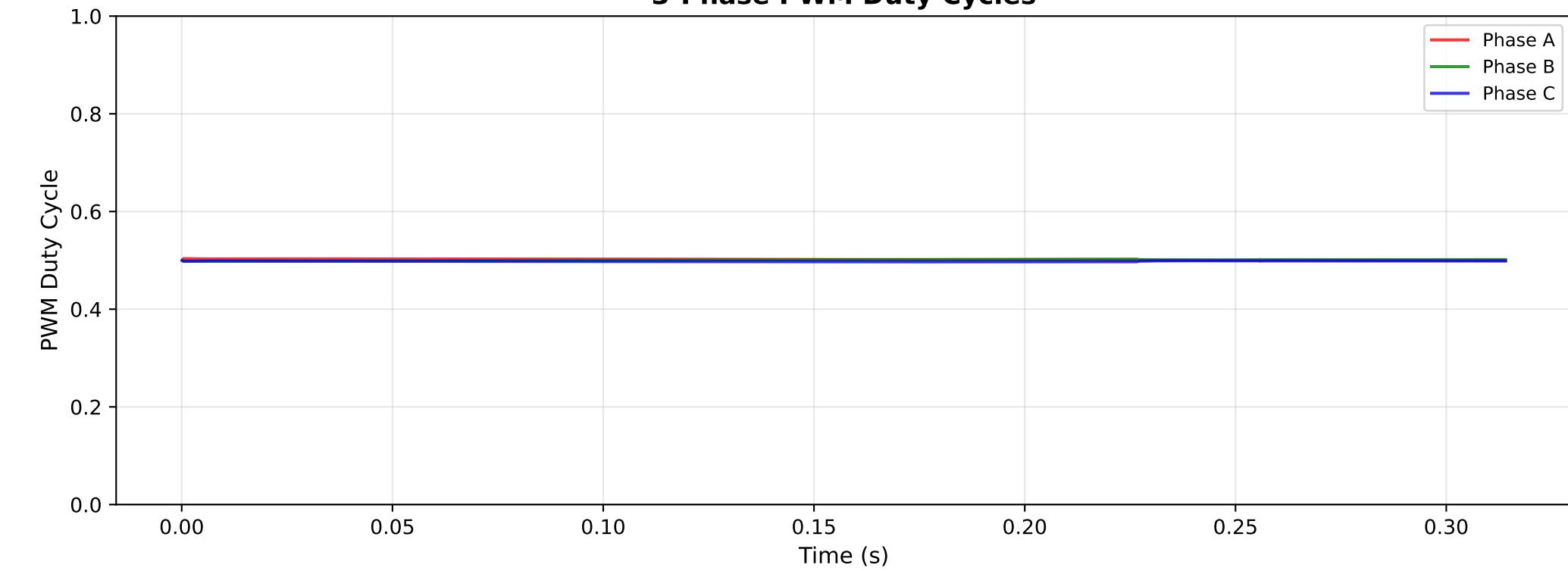
Position Tracking Error



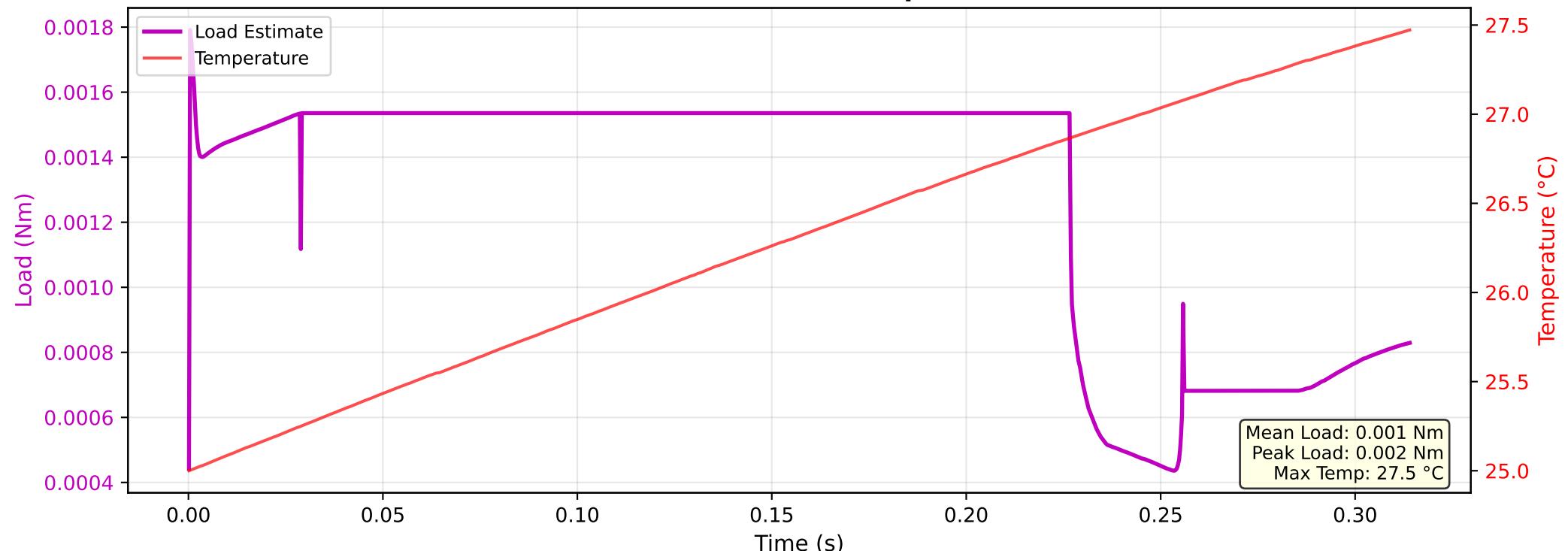
FOC d-q Axis Currents



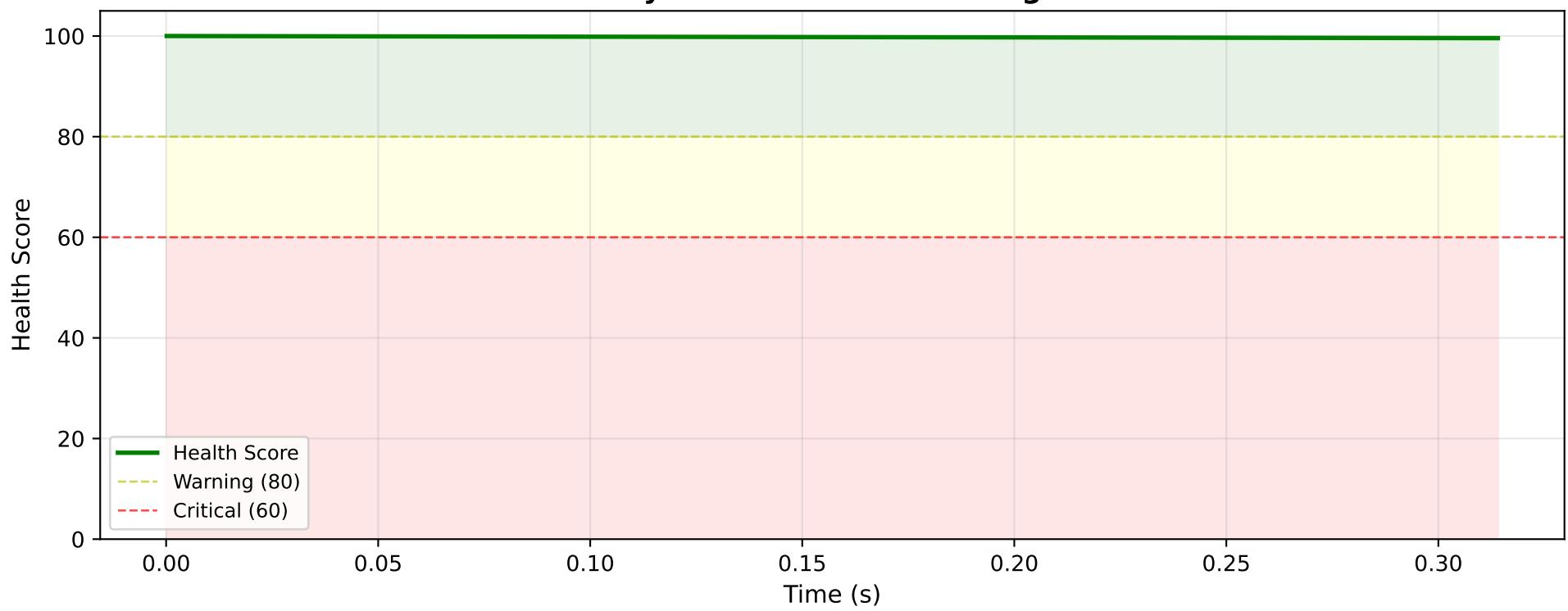
3-Phase PWM Duty Cycles



Load Estimation & Temperature



System Health Monitoring



Phase Diagram (Position-Velocity)

