

FOC Test Report: demo_trapezoidal_profile

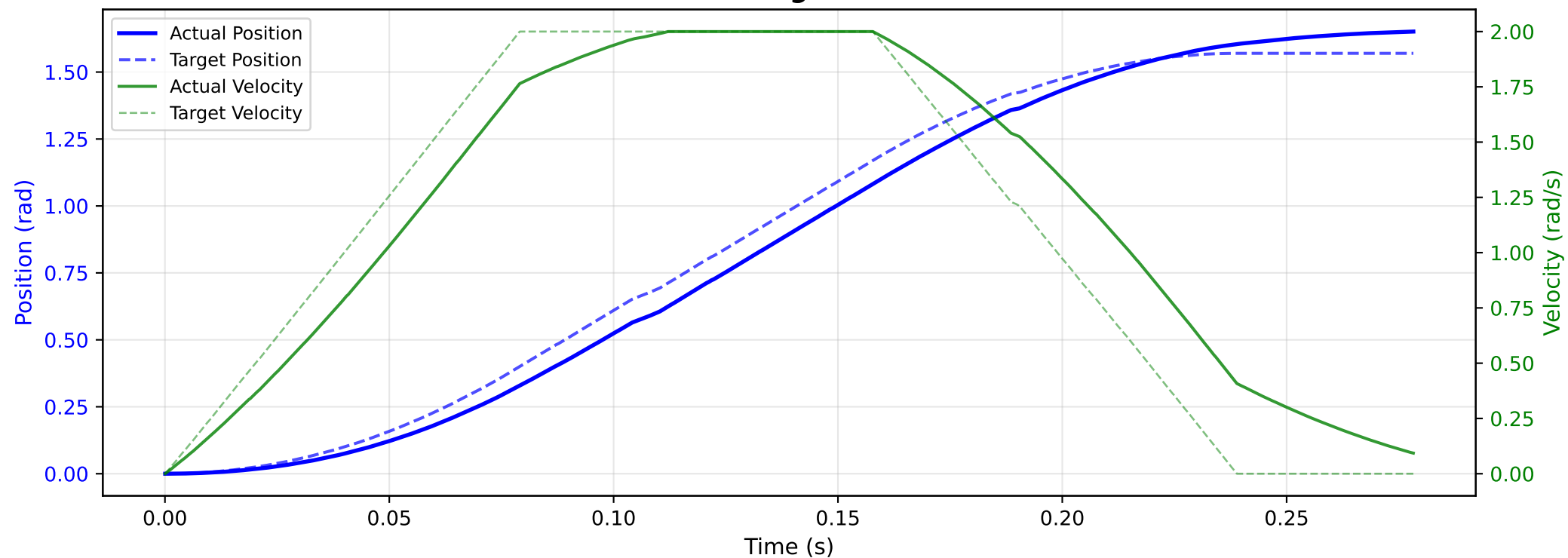
Test Name: demo_trapezoidal_profile
Platform: Renode STM32G431CB
Firmware: iRPC v2.0
Start Time: 2025-10-09 17:37:16

Samples Collected: 1385
Test Duration: 0.278 s

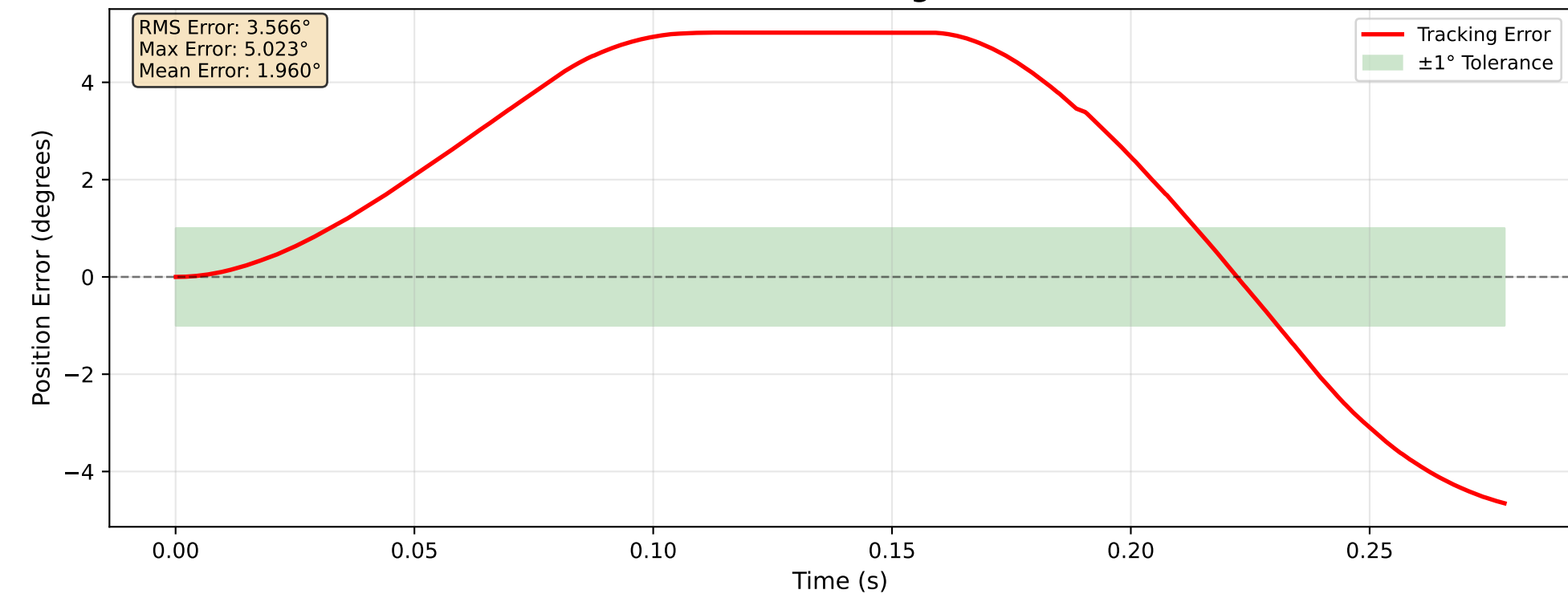
Performance Summary:

Position Range: [0.000, 1.651] rad
Position Std Dev: 0.604 rad
Max Velocity: 2.000 rad/s
Peak Current (I_q): 0.60 A
Mean Current (I_q): 0.10 A

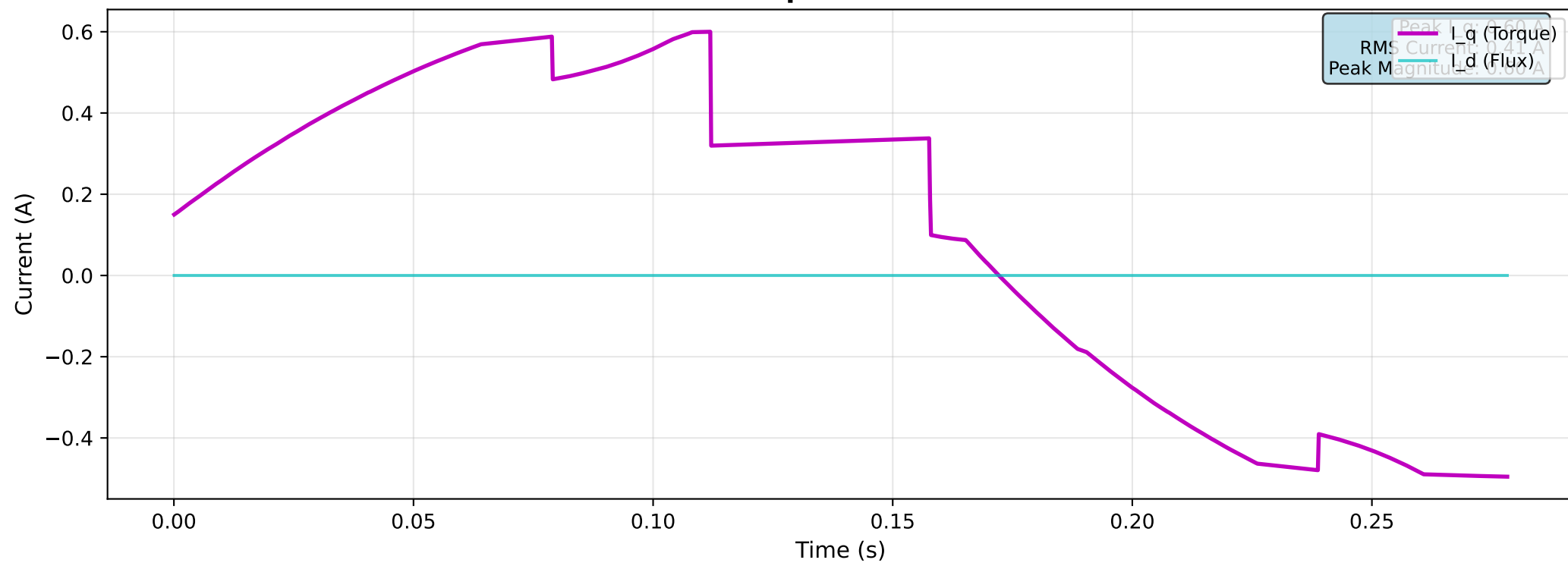
Motion Tracking Performance



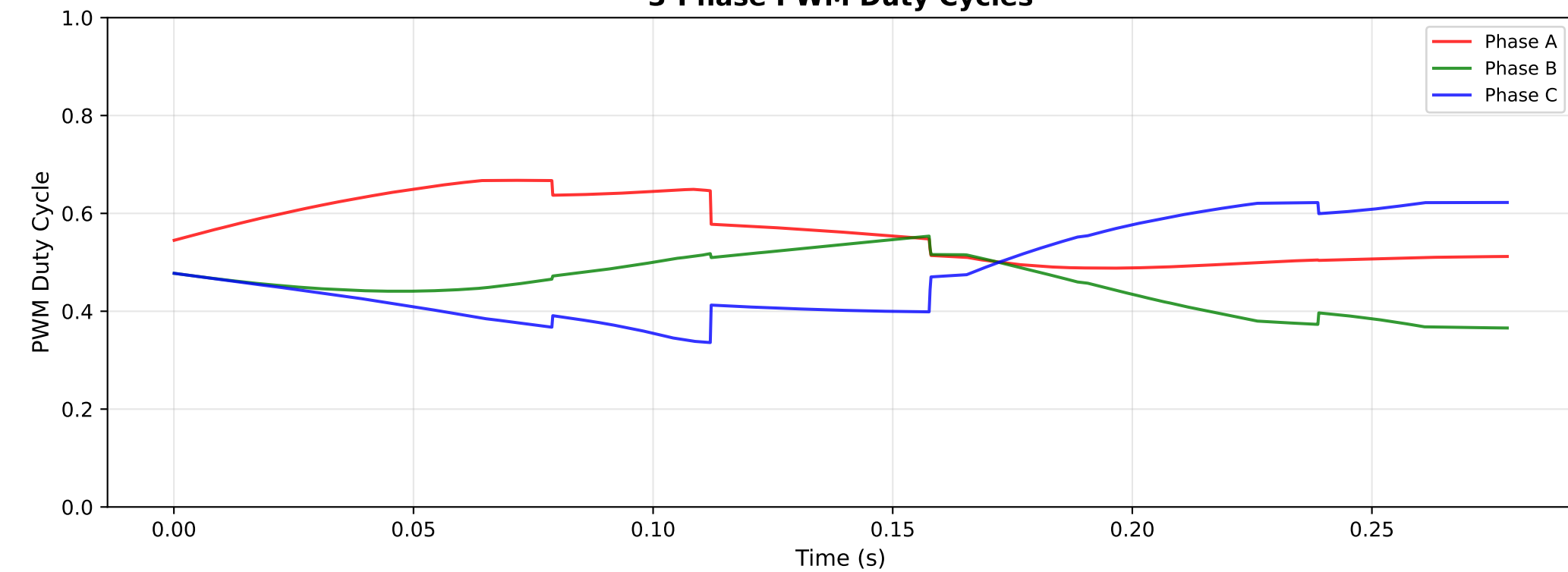
Position Tracking Error



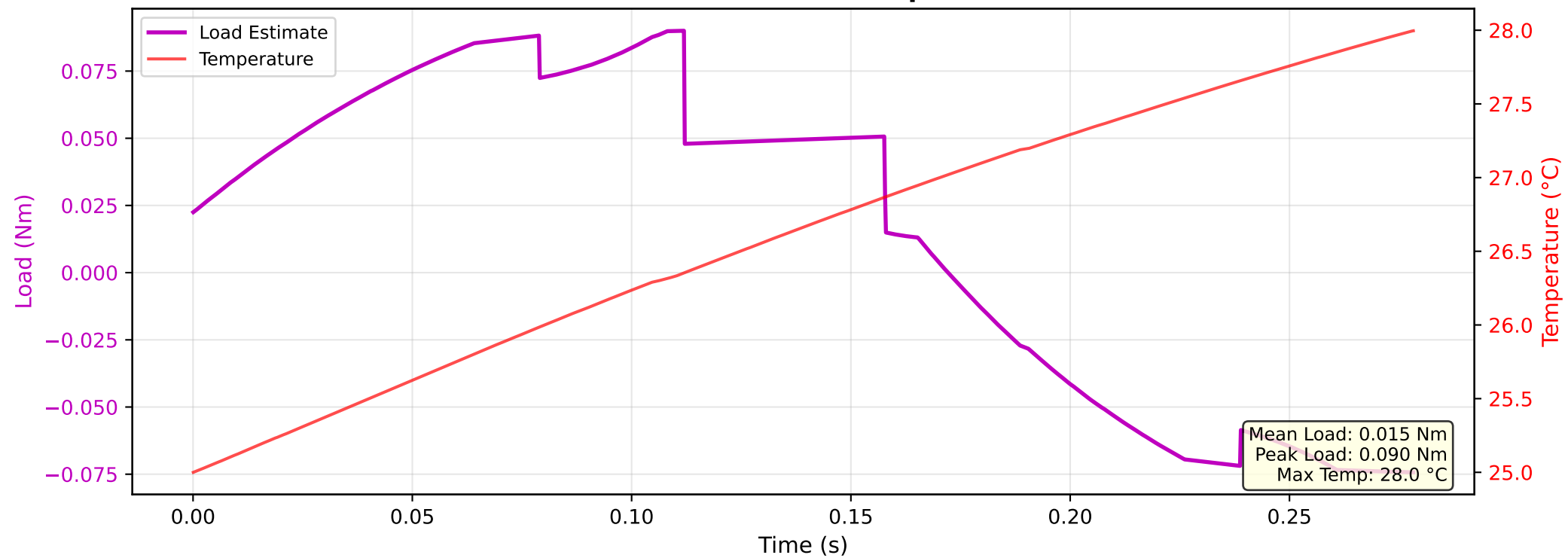
FOC d-q Axis Currents



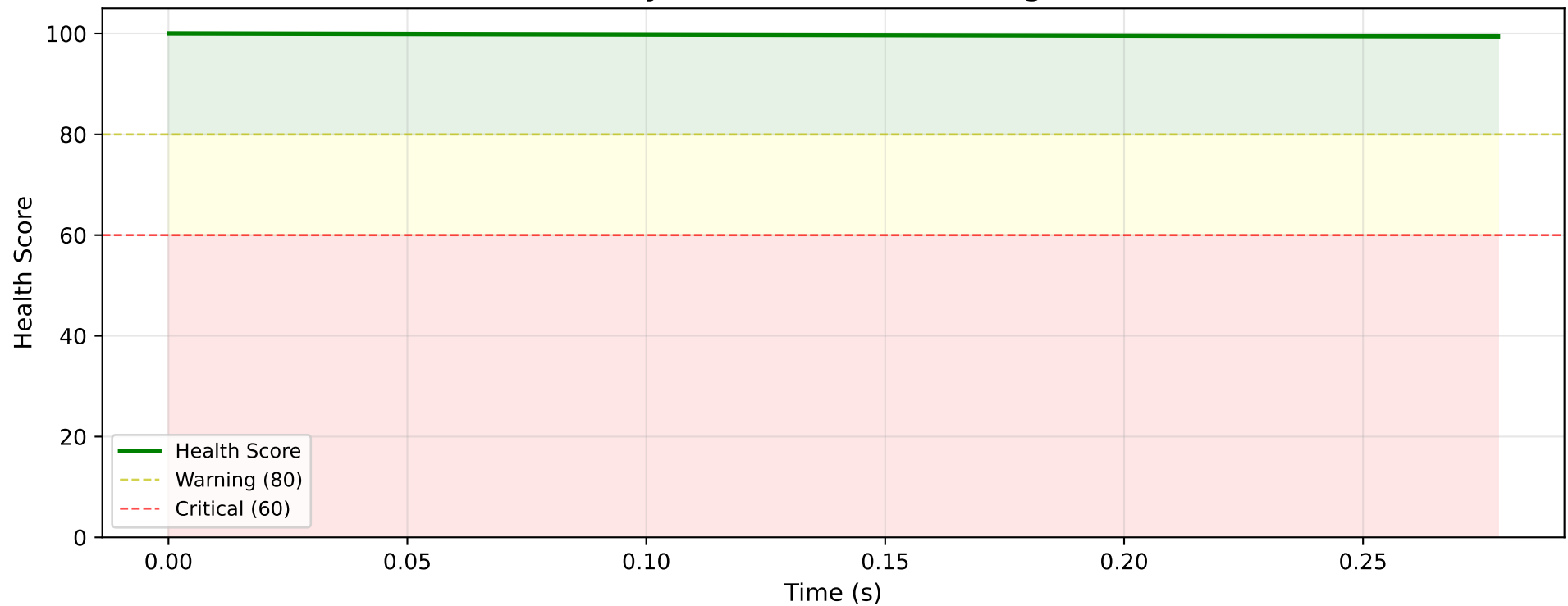
3-Phase PWM Duty Cycles



Load Estimation & Temperature



System Health Monitoring



Phase Diagram (Position-Velocity)

