

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

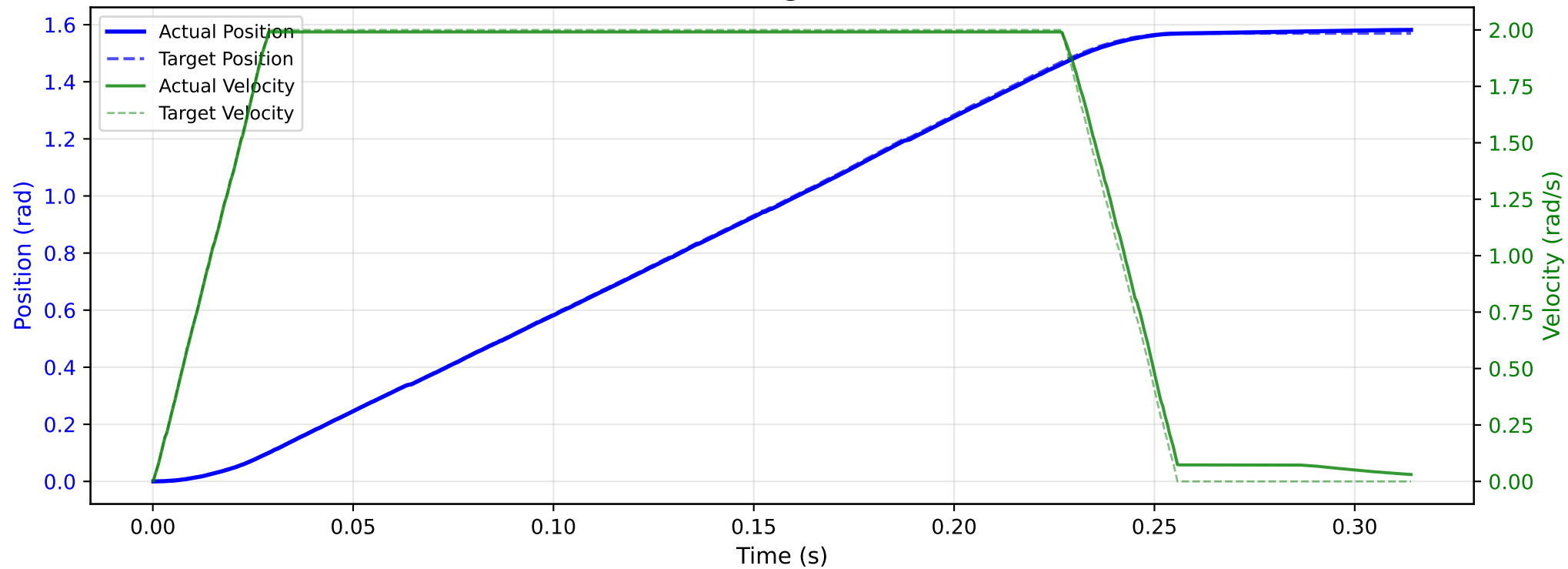
Position Std Dev: 0.545 rad

Max Velocity: 1.991 rad/s

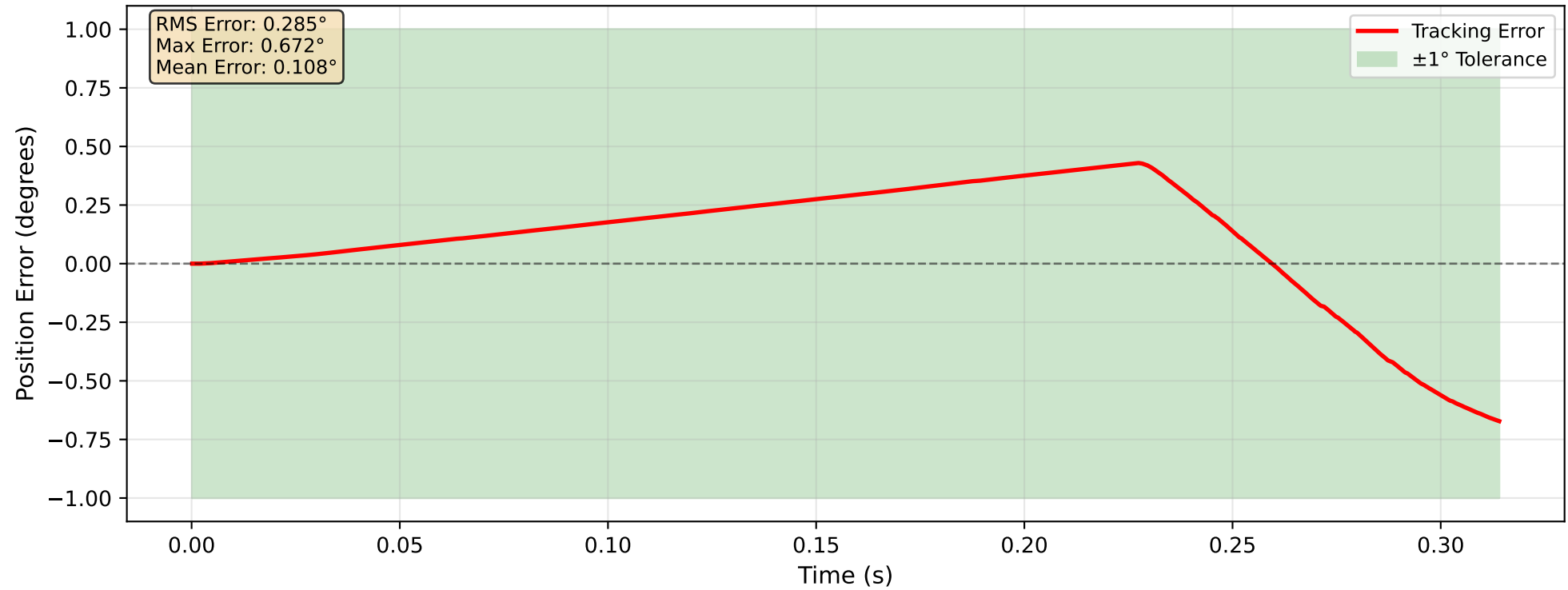
Peak Current (I_q): 0.01 A

Mean Current (I_q): 0.01 A

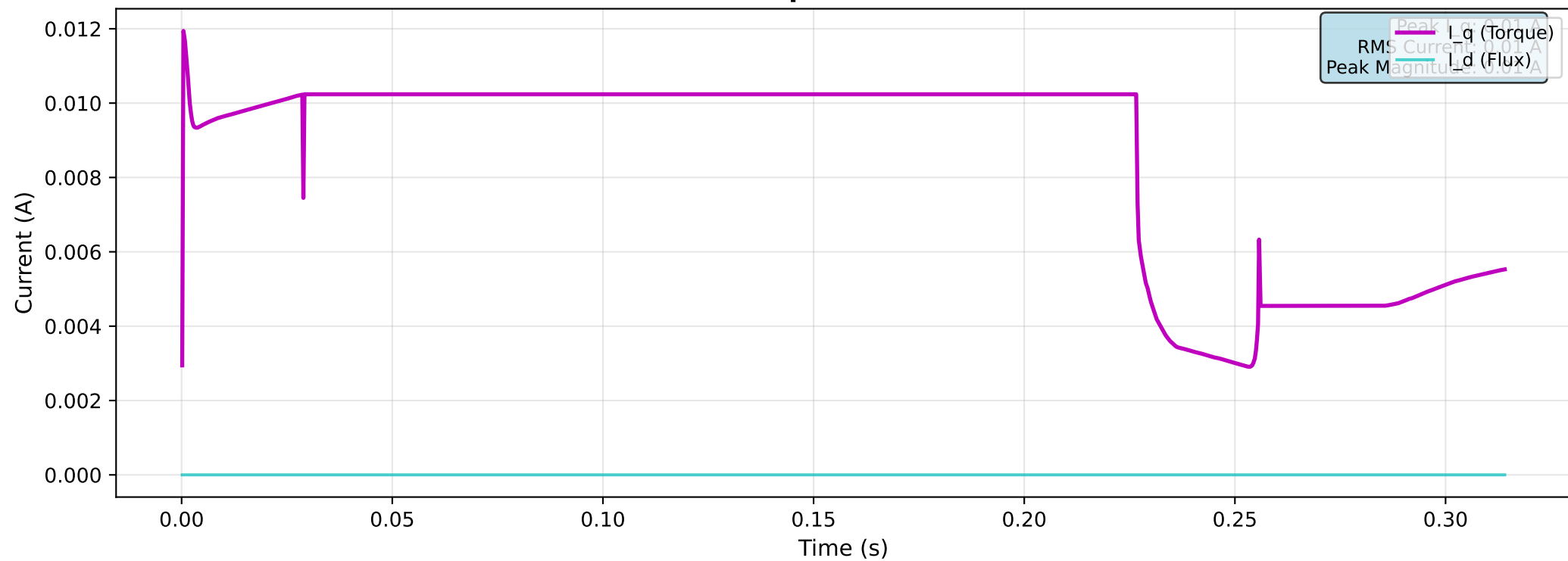
Motion Tracking Performance



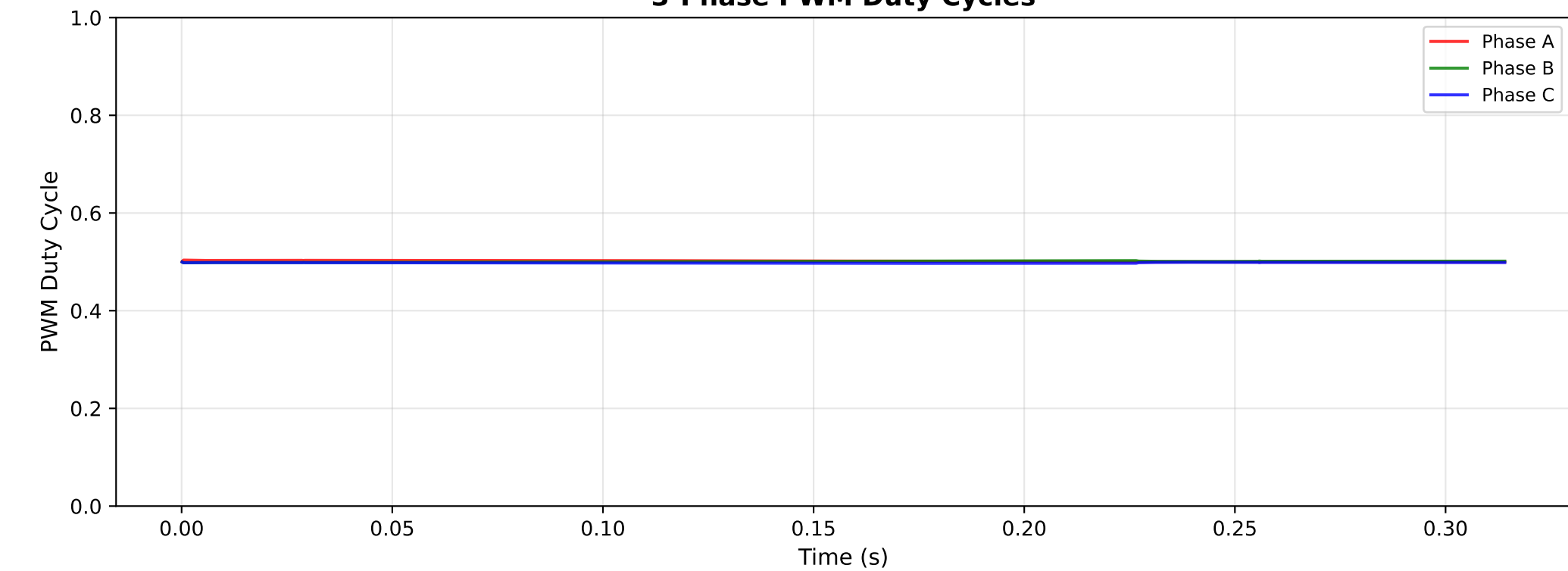
Position Tracking Error



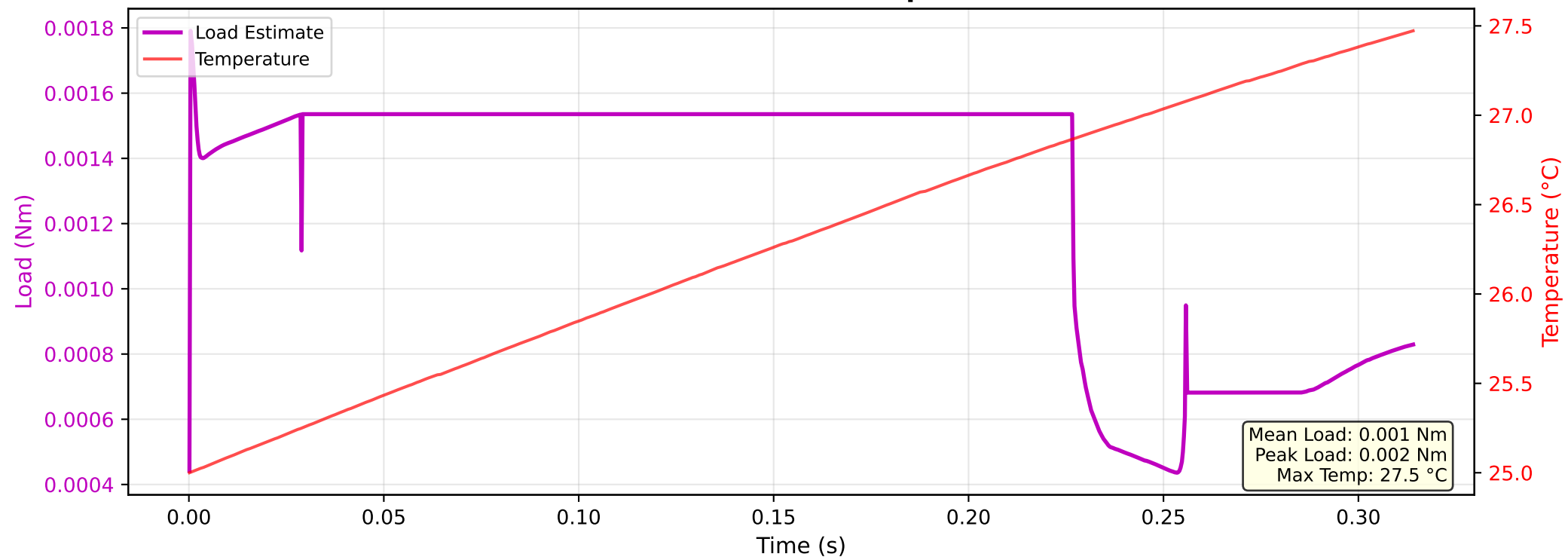
FOC d-q Axis Currents



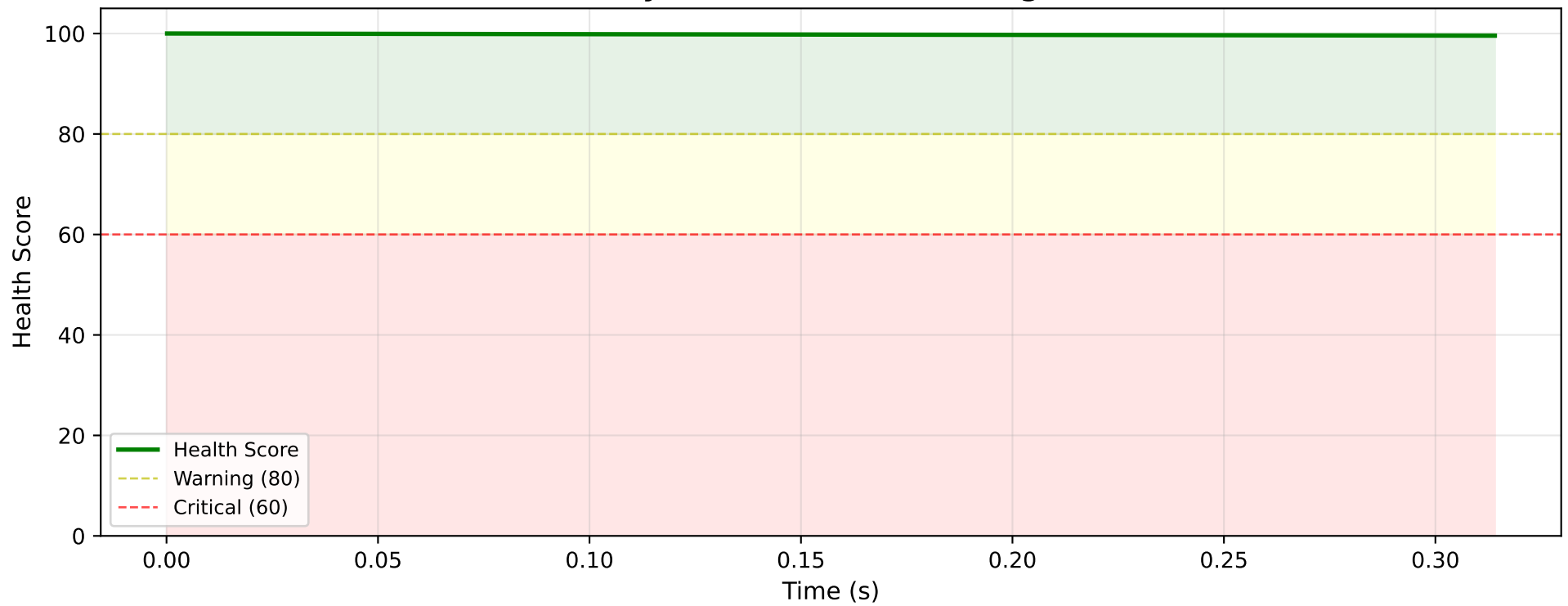
3-Phase PWM Duty Cycles



Load Estimation & Temperature



System Health Monitoring



Phase Diagram (Position-Velocity)

