

# QUANSER CONTROLS BOARD

## Investigate Introductory and Advanced Controls

As automation and connected devices move from industry to commercial products and the home, an understanding of the design and implementation of control systems on hardware is essential. The Quanser Controls Board offers a complete package for studying fundamental and advanced controls topics. The high-fidelity DC motor and optional pendulum attachment are designed specifically to accurately match dynamic models based on physical principles. The courseware progression that accompanies the Quanser Controls Board begins with a grounding in the basics of modeling and control. Topics then transition into more complex strategies including optimal control, hybrid control, and digital control. The skills and hands-on experiences gained using the controls board are directly applicable to the challenges engineers face creating the complex systems that dominate the world today.

### Features



NI ELVIS III sold separately



#### Highly Linear Motor Response

Enables relational modeling and control design



#### Open and Customizable

Courseware documentation and software modules are fully customizable to suit any application external wiring



#### Complete Package

Courseware topics cover the essentials of introductory and advanced controls



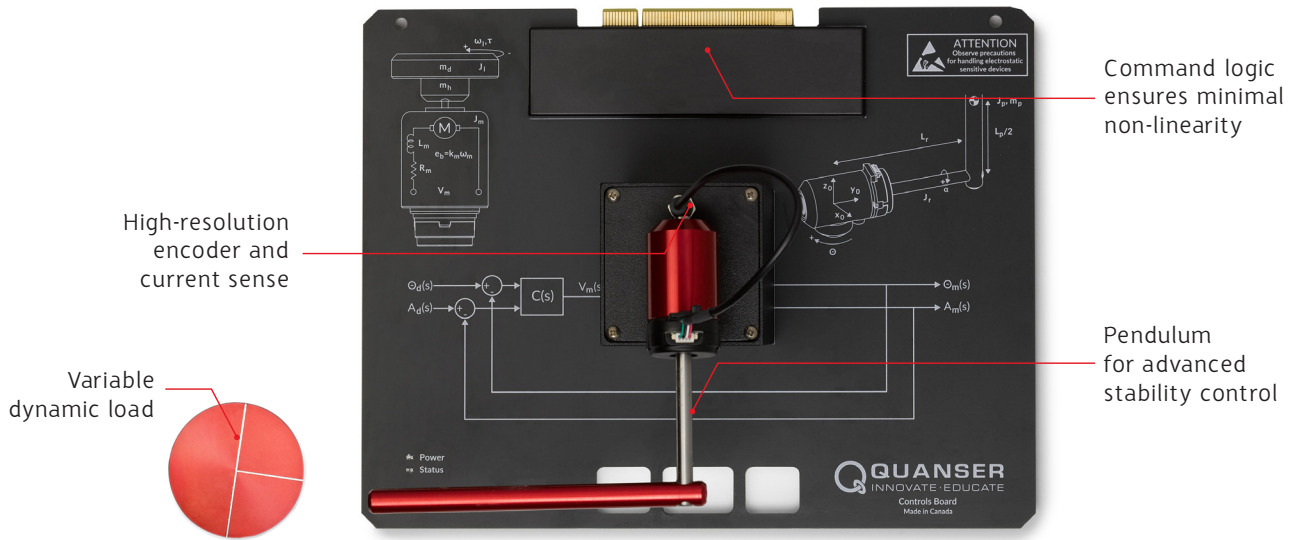
#### Simulink® Compatibility

Ability to accelerate control design and deployment using Quanser's QUARC™ platform

### Courseware

- **DC Motor Modeling:** First principles, experimental, frequency
- **Speed Control:** PID control, lead compensators
- **Position Control:** PID control, steady-state error
- **Stability:** BIBO, Nyquist, Routh Hurwitz
- **Inverted Pendulum Control:** Pole placement, LQR, swing-up
- **Digital Control:** Quantization, matched pole-zero, digital design

## Product Details



## Device Specifications

- Highly linear brushed DC motor
- Removable inertia load for variable dynamics
- High-resolution optical encoder and current sense
- Pendulum attachment for advanced controls

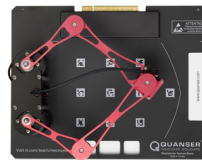
## ACCELERATE DISCOVERY WITH THE NI ELVIS III PLATFORM



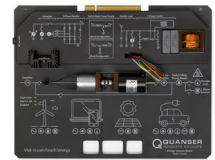
Mechatronic Sensors



Mechatronic Actuators



Mechatronic Systems



Energy Systems

### About Quanser:

Quanser is the world leader in education and research for real-time control design and implementation. We specialize in outfitting engineering control laboratories to help universities captivate the brightest minds, motivate them to success and produce graduates with industry-relevant skills. Universities worldwide implement Quanser's open architecture control solutions, industry-relevant curriculum and cutting-edge workstations to teach Introductory, Intermediate and Advanced controls to students in Electrical, Mechanical, Mechatronics, Robotics, Aerospace, Civil, and various other engineering disciplines.

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