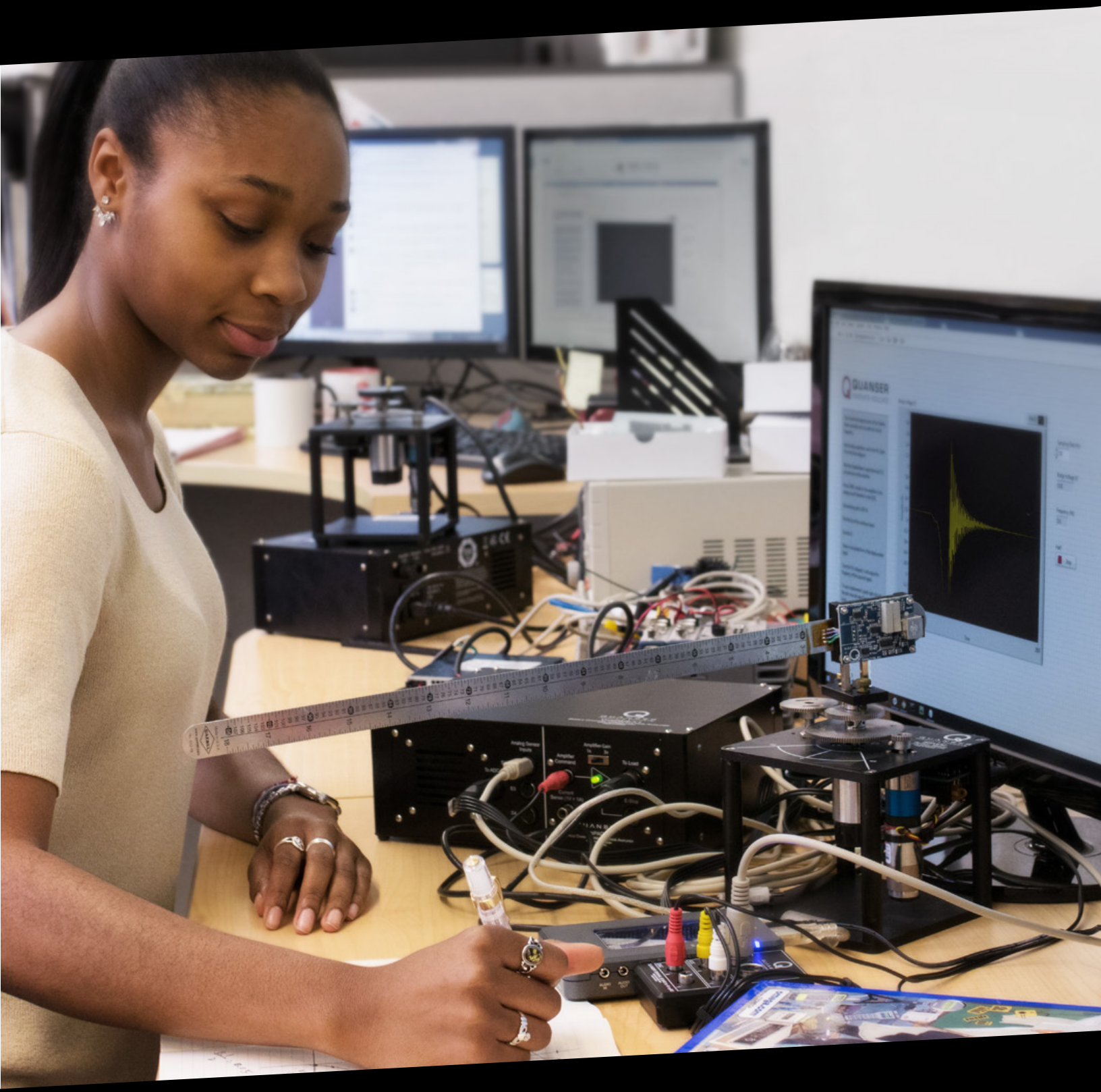


Testing and Measurement
Lab Solutions

QUANSER
INNOVATE · EDUCATE

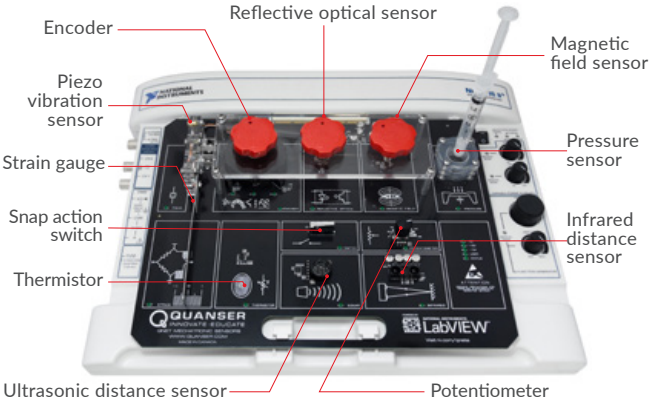
Measurement and instrumentation is a fundamental topic in engineering. Without accurate and reliable measurement of physical quantities such as temperature, strain, pressure, and position we will not be able to reliably monitor and control processes. Having an in-depth understanding of the concepts allows engineers to design, implement, and maintain complex engineering systems. With Quanser's measurement and instrumentation line of products, you can teach the fundamentals of sensors, signal conditioning, and computer-based data acquisition.

SENSORS AND SIGNAL CONDITIONING

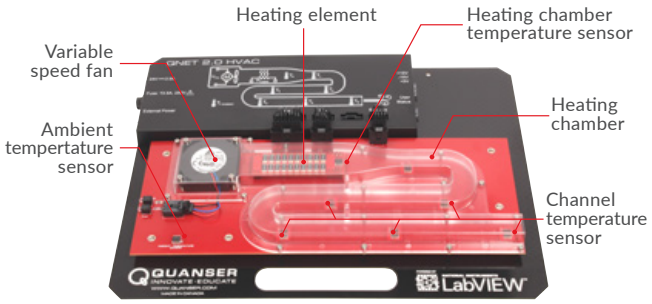
Sensors are key building blocks of any measurement and instrumentation system. They provide a means to measure physical quantities such as temperature, pressure, strain, displacement, and velocity. Understanding signal conditioning techniques is equally important when designing and implementing state-of-the-art measurement systems. Quanser's line of measurement and instrumentation products are suited to teach and demonstrate the fundamentals of common sensors and signal conditioning by allowing students to measure real-world physical quantities.

Introduction to Sensors

Our engineering trainer boards incorporate a comprehensive range of sensors and switches, ideally suited for teaching introductory electro-mechanical measurement, sensor behavior, and calibration techniques.



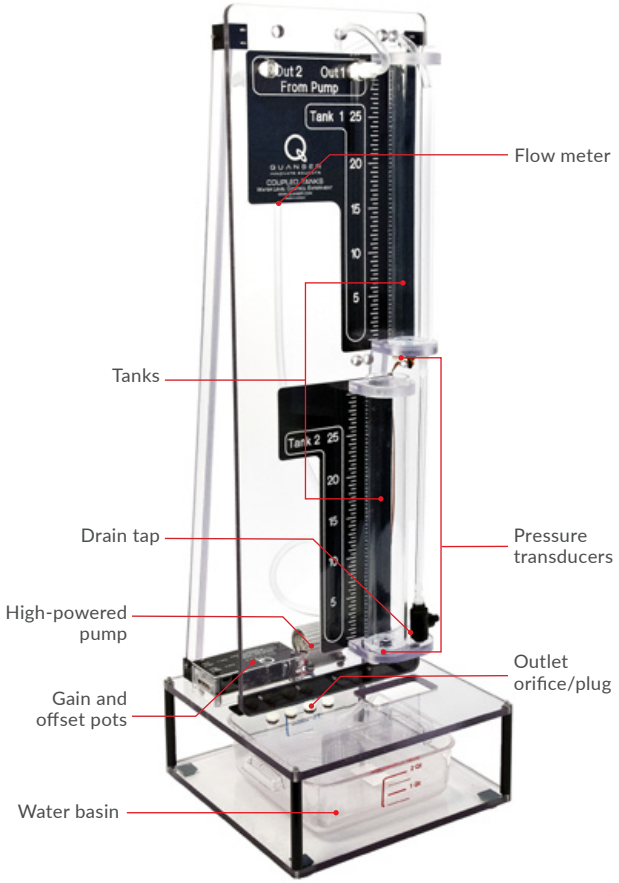
QNET Mechatronic Sensors Board
NI ELVIS II+ sold separately



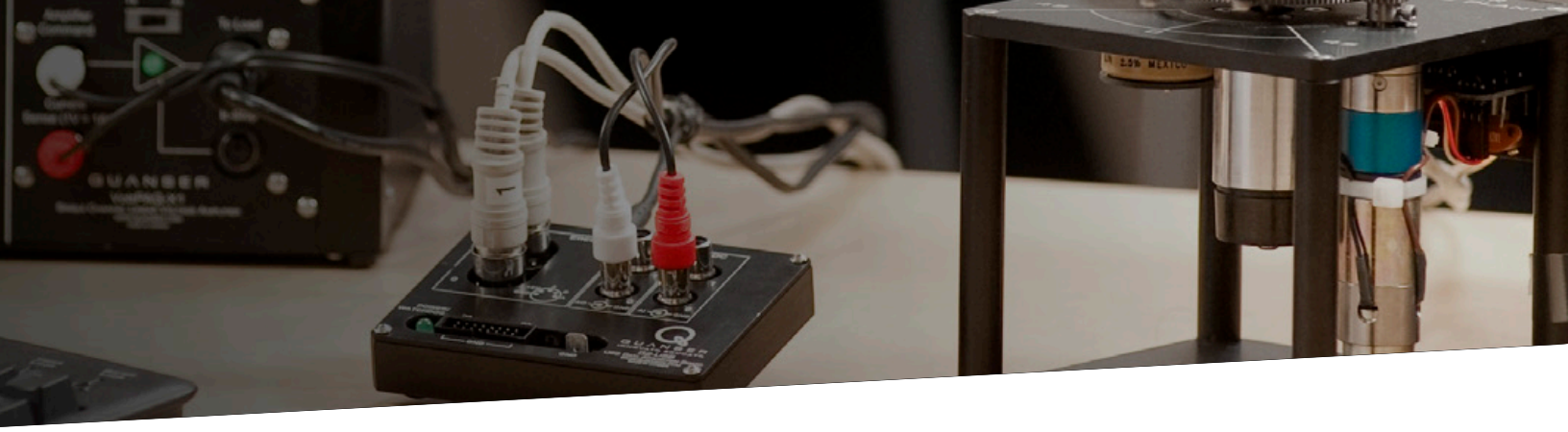
QNET HVAC Board

Fluid & Pressure Measurement

The Coupled Tank is a bench-scale plant suited to introduce measurement and calibration of fluid flow, liquid level, and pressure.

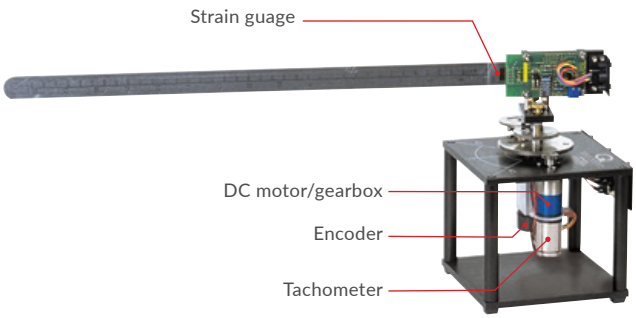


Coupled Tanks



Mechanical Motion Measurements

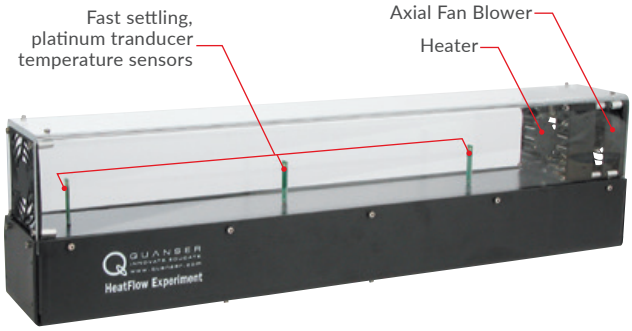
The modular rotary motion platform is ideal for measurement and calibration of strain, angular displacement, angular velocity, vibration, and actuation.



Rotary Servo with Flexible Link

Temperature Measurement & Control

The Heat Flow introduces students to temperature measurement and control techniques. It is equipped with a coil-based heater and a blower, and three fast-settling platinum RTD temperature sensors.



Heat Flow

DATA ACQUISITION SYSTEMS

Since computers operate in the digital domain, analog signals must be converted into their digital equivalent before they are manipulated by a computer. Likewise, a digital signal from a PC must be converted to an analog signal before it can control a process. Quanser's ground-breaking USB DAQs offer an extensive range of A/D and D/A hardware features and software support which provide a precise, reliable way to acquire and process large amounts of data in real-time. In the classroom, Quanser DAQs can be used to teach concepts such as sampling rate and signal aliasing.

Q8-USB

*QTB for NI myRIO**

*Q1-cRIO for NI CompactRIO**

**myRIO and CompactRIO sold separately*

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