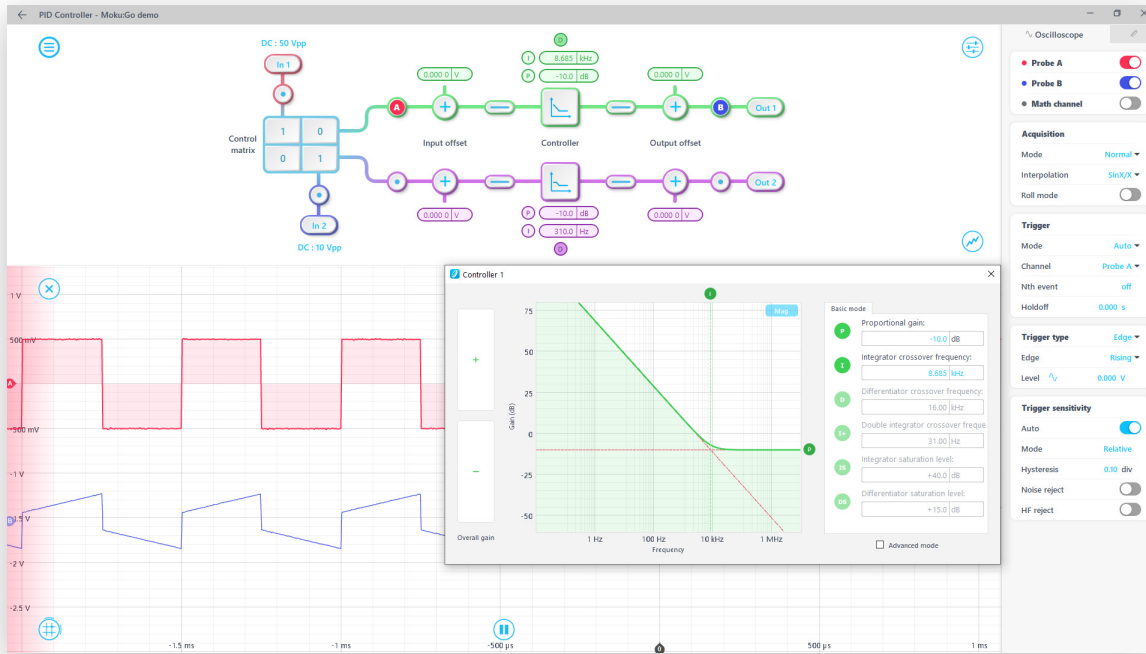# Multiple-Input Multiple-Output PID Controller

Moku:Go's PID Controller instrument features two fully configurable PID controllers with an output sampling rate of >2.5 MSa/s. This enables them to be used in various applications such as current or robotic arm control. The intuitive graphic user interface allows you to directly adjust the PID parameters on the Bode plot. Users are able to monitor the effects of the change with the built-in oscilloscope in real-time, which makes Moku:Go's PID the best tool for control system labs.

Versatile input	Output sampling rate	DAC resolution	Phase lag	Gain configuration	Advanced mode
2 inputs MIMO	**>2.5 MSa/s**	**12-bits**	**<30° at 20 kHz**	**Real-time**	**Multi-section builder**

Features

- 2 input channels, 2 output channels, and 2 independent PID controllers with control matrix for optional blending.
- Design your control system's frequency response using the interactive Bode plot in real-time.
- Block diagram view of the digital signal processing chain with built-in probe points.
- Advanced multi-section PID builder with single or double integrators and differentiators with low- and high-frequency gain saturation.

Specifications

- Control matrix linear gain: ± 0.1 to ± 20
- Input offset range: -2.5 to +2.5 V
- Output offset range: -2.5 to +2.5 V
- Gain profiles: Proportional (P), integral (I), differential (D), double-integral (I+), integral saturation (IS), differential saturation (DS)
- Proportional gain: -60 dB to 60 dB
- Integrator crossover frequency: 312.5 mHz to 31.25 kHz
- Differentiator crossover frequency: 3.125 Hz to 312.5 kHz

Applications

- Feedback and control systems design
- Laser frequency stabilization
- Temperature regulation
- Scan heads/sample stage positioning
- Pressure, force, flow rate, and other controls