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Phase Detection with Lock-in Amplifier and Phasemeter

Principle of Operations Guide

Precise and sensitive phase detections are often required for impedance and optics-based measurements. For example, measuring the phase shift between current and voltage reveals the complex impedance of a device or component. Very small displacements can be measured by the phase shift between control and measurement arms from an optical interferometer. Liquid Instruments' Moku platform provides two instruments that detect the phase of a radio frequency signal, the Lock-in Amplifier and the Phasemeter. In this application note, we will introduce the working principles of these instruments and provide an instrument selection guide for different measurement scenarios.



Phase Detection with Moku Lock-in Amplifier and Phasemeter © 2022 Liquid Instruments, liquidinstruments.com



Phase Detection with Lock-in Amplifier and Phasemeter

Precise and sensitive phase detections are often required for impedance and optics-based measurements. For example, measuring the phase shift between current and voltage reveals the complex impedance of a device or component. Very small displacements can be measured by the phase shift between control and measurement arms from an optical interferometer. The Lock-in Amplifier and the Phasemeter are well suited to detect the phase of a radio frequency signal. In this application note, we will introduce the working principles of these instruments and provide an instrument selection guide for different measurement scenarios.

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