

7. Phase Accuracy

This test measures the phase accuracy of the lock-in. Due to the design of the lock-in, the phase accuracy can be determined by measuring the phase of the internal oscillator Sine Out.

Setup

Connect the Sine Out to the A input of the lock-in using a 1 meter BNC cable. Do not use any termination.

Procedure

- 1) {PRESET} (Turn the lock-in off and on with the [Setup] key pressed)
- 2) Press the keys in the following sequence:

[Slope /Oct]
Select 24 dB/oct.

[Couple]
Select DC coupling.

[Channel 1 Display]
Set the Channel 1 display to R.

[Channel 2 Display]
Set the Channel 2 display to θ .

- 3) The value of R should be 1.000 V ($\pm 2\%$) and the value of θ should 0° ($\pm 1^\circ$).
- 4) Phase accuracy is checked at various frequencies. The test frequencies are listed below.

Test Frequencies

10 Hz
100 Hz
1 kHz
10 kHz

- a) Press

[Freq]
Use the knob to set the internal oscillator to the frequency from the table.

- b) Wait for the readings to stabilize. Record the value of θ .

- c) Repeat steps 4a and 4b for all frequencies in the table.

- 5) This completes the phase accuracy test. Enter the results of this test in the test record at the end of this section.