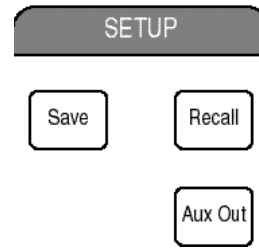


Auto Functions



Pressing an Auto Function key initiates an auto function which may take some time. The AUTO leds in the CH1 and CH2 displays will be on while the function is in progress. A multi-tone sound will indicate when the auto function is complete and the AUTO leds will turn off.

[Auto Reserve]

Pressing [AUTO RESERVE] will adjust the dynamic reserve to the minimum reserve required. To do this, the reserve is decreased until the analog input amplifier is overloaded. The reserve is then increased to remove the overload.

Auto Reserve will work only if the overloading noise source has a frequency greater than a few Hz. Lower frequency noise sources may overload so infrequently that Auto Reserve can not detect it.

[AUTO RESERVE] does not change the notch prefilter settings.

[Auto Gain]

[AUTO GAIN] will adjust the sensitivity so that the detected signal magnitude is a sizable percentage of full scale. Many time constants are required to determine whether a particular sensitivity will overload or not. Auto Gain thus takes a longer time when the time constant is long.

Auto Gain will not run if the time constant is greater than 1 second since the total time required could be far too long to be useful.

The message 'tc ovEr' will be displayed to indicate that the time constant is too long for Auto Gain to run.

[Auto Phase]

[AUTO PHASE] adjusts the reference phase shift so that the measured signal phase is 0° . This is done by subtracting the measured value of θ from the programmed reference phase shift. It will take several time constants for the outputs to reach their new values during which time θ will move towards 0° . Do not press [AUTO PHASE] again until the outputs have stabilized. When the measurement is noisy or if the outputs are changing, Auto Phase may not result in a zero phase.

Auto Phase will not run if the value of θ is unstable.

The message 'PhAS bAd' will be displayed to indicate that the phase is unstable and Auto Phase will not run.

Auto Setup

There is no truly reliable way to automatically setup a lock-in amplifier for