## REFERENCE and PHASE COMMANDS

PHAS (?) {x}	The PHAS command sets or queries the reference phase shift. The
	parameter x is the phase (real number of degrees). The PHAS x com-
	mand will not the phase shift to y. The value of y will be rounded to 0.019

mand will set the phase shift to x. The value of x will be rounded to 0.01°. The phase may be programmed from -360.00  $\le$  x  $\le$  729.99 and will be wrapped around at  $\pm$ 180°. For example, the PHAS 541.0 command will set the phase to -179.00° (541-360=181=-179). The PHAS? queries the

phase shift.

FMOD (?) (i) The FMOD command sets or queries the reference source. The parame-

ter i selects internal (i=1) or external (i=0).

FREQ (?) {f}

The FREQ command sets or queries the reference frequency. The FREQ? query command will return the reference frequency (in internal or

external mode).

The FREQ f command sets the frequency of the internal oscillator. This command is allowed only if the reference source is internal. The parameter f is a frequency (real number of Hz). The value of f will be rounded to 5 digits or 0.0001 Hz, whichever is greater. The value of f is limited to  $0.001 \le f \le 102000$ . If the harmonic number is greater than 1, then the frequency is limited to  $nxf \le 102$  kHz where n is the harmonic number.

RSLP (?) (i)

The RSLP command sets or queries the reference trigger when using the external reference mode. The parameter i selects sine zero crossing (i=0), TTL rising edge (i=1), , or TTL falling edge (i=2). At frequencies

below 1 Hz, the a TTL reference must be used.

HARM (?) {i} The HARM command sets or queries the detection harmonic. This parameter is an integer from 1 to 19999. The HARM i command will set the lock-in to detect at the  $i^{th}$  harmonic of the reference frequency. The value of i is limited by ixf  $\leq$  102 kHz. If the value of i requires a detection frequency greater than 102 kHz, then the harmonic number will be set to

the largest value of i such that  $ixf \le 102 \text{ kHz}$ .

SLVL (?) {x}

The SLVL command sets or queries the amplitude of the sine output.

The parameter x is a voltage (real number of Volts). The value of x will

be rounded to 0.002V. The value of x is limited to  $0.004 \le x \le 5.000$ .