

Comparison of horologists' and scientific terminology – pendulums

Definition	Horologists' terminology	Scientific/engineering terminology
Period	The time taken for an oscillator to complete one half cycle, where one half cycle is "centre-out-centre" Symbol: T (capital 'T') Units: Generally measured in seconds	The time taken for an oscillator to complete one whole cycle, where one whole cycle is "centre-out-centre-out-centre" Symbol: T (capital 'T') Units: Generally measured in seconds
Frequency	The inverse of period. The number of half cycles in a specified period of time Symbol: no agreed symbol Units: Beats per hour (sometimes abbreviated to bph or b/h)	The inverse of period. The number of whole cycles in a specified period of time (invariably seconds) Symbol: f (lower case 'f', often in script form ' f ') Units: hertz (Hz). Sometimes cycles per second (c/s)
<i>Conversion between horologist's and scientific terminology: $\text{beats per hour} = 2 \times 3600 \times \text{frequency}$ $\text{frequency} = (\text{beats per hour}) / (2 \times 3600)$</i>		
Amplitude	Not consistently defined Sometimes clarified by being called the 'demi-amplitude' (half-amplitude)	The distance from the centre position to the position of maximum excursion. Units: metres, degrees, radians
Swing, vibration, oscillation	Generally refers to one half cycle ("centre-out-centre")	Not used
Total swing	The distance from the position of maximum excursion at one side of centre to the position of maximum excursion at the other side	May be used as a descriptive term

Pendulum equations		
Period	$T = \pi\sqrt{L/g}$ Units: 'L' is measured in metres and 'g' is measured in metres per sec per sec (metres/sec ²)	$T = 2\pi\sqrt{L/g}$ Units: 'L' is measured in metres and 'g' is measured in metres per sec per sec (metres/sec ²)
Frequency	$\text{bph} = 3600/T = (3600/\pi)\sqrt{g/L}$	$f = 1/T = (1/2\pi)\sqrt{g/L}$

Note: electrical and electronic oscillators (e.g. mains supply) generally follow the scientific terminology; an exception might be unidirectional digital pulse waveforms used by a digital frequency divider or stepper motor.