

SI Units

SI Units form a system of internationally agreed units for physical quantities. SI stands for “Système Internationale” which is French for “International System”.

There are seven **Base SI units**:

Quantity	Name	Symbol
length	meter	m
mass	kilogram	kg
time	second	s
electric current	ampere	A
thermodynamic temperature	kelvin	K
amount of substance	mole	mol
luminous intensity	candela	cd

These Base Units are defined **independently**. Each of them has an operational definition, i.e. an experiment has been carefully described which gives the defined unit as an outcome.

Any other unit in Physics (and there are many) is dependent of any of the seven base units.

Some common **Derived SI units** are:

Quantity	Name	Symbol	relation to other units
frequency	hertz	Hz	s^{-1}
velocity			$m s^{-1}$
acceleration			$m s^{-2}$
angular velocity			$rad s^{-1}$
angular acceleration			$rad s^{-2}$
force	newton	N	$kg m s^{-2}$
energy	joule	J	N m
pressure	pascal	Pa	$N m^{-2}$
power	watt	W	$J s^{-1}$
electric charge	coulomb	C	A s
potential, EMF	volt	V	$W A^{-1}$
electric field strength			$V m^{-1}$ or $N C^{-1}$
electric resistance	ohm	Ω	$V A^{-1}$
capacitance	farad	F	$A s V^{-1}$
magnetic flux	weber	Wb	V s
inductance	henry	H	$V s A^{-1}$
magnetic flux	tesla	T	$Wb m^{-2}$
magnetic field strength			$A m^{-1}$