Electric Terminology

Electric terminology

Variables	Symbol	Unit
Current	I	A (Ampere)
Current density	δ	A/m^2, A/mm^2
Charge	Q	As, C, Ah
Voltage	U	V (Volt)
Power output	P	W (Watt)
Reactive power (var. volt-ampere reactive)	Q	Var
Apparent power	S	VA
Capacitance	C	F (Farad)
Inductivity	L	H (Henry)
Resistance	R	Ω (Ohm)
Conductance	G	S (Siemens)
Specific resistance	ρ	Ωm, $\frac{\Omega\, mm^2}{m}$
Specific conductivity	κ	S/m, $\frac{Sm}{mm^2}$
Electrical field strength	E	V/m
Magnetic flux	φ, ψ	Vs
Magnetic flux density (old: induction)	B	$\frac{Vs}{m^2}$ T (Tesla) (old: G, Gauß)
Magnetic field strength	H	A/m
Frequency	f	1/s, Hz (Hertz)
Angular frequency	ω	1/s
Impedance	$\underline{Z}$	Ω
Reactance	X	Ω
Impedance	Z	Ω

Basic units of the SI system

Terminology	Name	Symbol
Length	Metre	m
Mass	Kilogram	kg
Time	Seconds	s
Electric current	Ampère	A
Absolute temperature	Kelvin	K
Quantity of a substance	mole	mol
Light intensity	candela	cd

Complementary units of the SI system

Terminology	Name	Symbol
Plane angle	Radian	red
Solid angle	Steradian	sr

Derived units of the SI system with special names

Terminology	Name	Symbol	Definition
Frequency	Hertz	HZ	1 Hz = s^{-1}
Force	Newton	N	1 N = 1 kg m/s^2
Pressure, stress	Pascal	Pa	1 Pa = 1 N/m^2
Energy, work, quantity of heat	Joule	J	1 J = N m
Power	Watt	W	1 W = 1 J/s
Electric voltage	Volt	V	1 V = 1 W/A
Temperature	Celsius	°C	1 °C = 1 K

Prefixes of the SI system

Factor	Prefix	Symbol	Factor	Prefix	Symbol
10^{18}	exa	E	10^{-1}	deci	d
10^{15}	peta	P	10^{-2}	centi	c
10^{12}	tera	T	10^{-3}	milli	m
10^{9}	giga	G	10^{-6}	micro	μ
10^{6}	mega	M	10^{-9}	nano	n
10^{3}	kilo	k	10^{-12}	pico	p
10^{2}	hekto	h	10^{-15}	fernto	f
10	deca	da	10^{-18}	atto	a

Additional units of the SI system

Terminology	Name	Symbol	Definition
Time	Minute	min	1 min = 60 s
Time	Hour	h	1 h = 60 min
Plane angle	Degree	°	1 ° = (π/180) rad
Volume	Litre	l	1 l = 1 dm^3
Pressure	bar	bar	1 bar = 105 Pa

Source: Meier-Peter, Hansheinrich; Bernhardt, Frank (Eds.), Compendium Marine Engineering: Operation – Monitoring – Maintenance, 2009, by courtesy of PMC Media House GmbH: www.pmcmedia.com