| | | | |
|---|---|---|---|
| Magnetic pole | $(\mathrm{C}_u\Omega_n/\mathrm{rad}^2$ | = | $10.8862230\mathrm{Wb}/\Omega_2$ ) |
| Magnetic flux | $(\mathrm{C}_u\Omega_n = \sqrt{\mathrm{J}_u\mathrm{s}_u\Omega_n}$ | = | $0.86629810\mathrm{Wb}$ ) |
| Magnetic potential | $(\mathrm{A}_u\mathrm{rad}^2$ | = | $5.8921580\mathrm{mA}\Omega_2$ ) |
| Magnetic field strength | $(\mathrm{O}_u\mathrm{rad}^2$ | = | $21.6541550\mathrm{mA}\Omega_2/\mathrm{m}$ ) |
| Magnetic flux density | $(\mathrm{G}_u\Omega_n$ | = | $11.7004098\mathrm{T}$ ) |
| Inductance | $(\mathrm{s}_u\Omega_n$ | = | $11.6999260\mathrm{H}$ ) |
| Magnetic permeability | $(\Omega_n/\mathrm{rad}^2 c_0$ | = | $\mu_0$ ) |
| | | | |
| Electric flux | $(\mathrm{C}_u\mathrm{rad}^2$ | = | $2.2995179\mathrm{mC}\Omega_2$ ) |
| Electrical potential | $(\mathrm{A}_u\Omega_n = \sqrt{\mathrm{J}_u\mathrm{s}_u^{-1}\Omega_n}$ | = | $2.2197545\mathrm{V}$ ) |
| Electric field strength | $(\mathrm{O}_u\Omega_n$ | = | $8.1577766\mathrm{V}/\mathrm{m}$ ) |
| Electric flux density | $(\mathrm{G}_u\mathrm{rad}^2$ | = | $31.0577870\mathrm{mC}\Omega_2/\mathrm{m}^2$ ) |
| Electrical capacitance | $(\mathrm{s}_u/\Omega_n$ | = | $13.0179233\mathrm{mF}$ ) |
| Permittivity | $(\mathrm{rad}^2/\Omega_n c_0$ | = | $\epsilon_0$ ) |

Because a natural unit is used as the unit of impedance, the unit of electrical quantity(charge) is derived from units that are already defined. Looking at the formula for the force between electrical quantities in Appendix B, "A method of organizing the dimensions of electromagnetic quantities", we have

$$\frac{\text{energy}}{\text{length}} = \text{impedance}\frac{\text{length}}{\text{time}}\frac{\text{charge}^2}{\text{length}^2} \tag{23}$$

Solving this equation for charge, the dimension of electrical quantity(charge) is

$$\text{charge} = \sqrt{\frac{\text{energy} \times \text{time}}{\text{impedance}}} \tag{24}$$

The constant of proportionality of Coulomb's law is represented by the product of the natural units of impedance and the speed of light in a vacuum, which is a feature of the set of formulas that are employed in the Universal System of Units Standard (see Appendix B, "A method of organizing the dimensions of electromagnetic quantities"). We should note the symmetry of electrical quantities and magnetic quantities. Because of that symmetry, made it possible to not assign a symbol to the unit of electrical potential.

In the Universal System of Units Standard, the use of supplementary constants is permitted as an exception to coherence, so either $\mathrm{rad}^2$ or the supplementary constant $\Omega_2$ may be used as the unit of solid angle (in computations, however, it is necessary to use either one or the other unit). The conversion value for International System of Units (SI) that uses $\mathrm{rad}^2$ is shown above because it happens that the International System of Units (SI) is coherent with $\Omega_2$. For the conversion value for when $\Omega_2$ is used, the derived units of charge, electrical current, flux density, and field strength may be used as they are. The so-called rationalized units are coherent with $\Omega_2$ and the non-rationalized units are coherent with $\mathrm{rad}^2$.