

- Gauss(G, Gs)

The gauss is the cgs unit of measurement of magnetic flux density (or "magnetic induction"). One gauss is defined as one maxwell per square centimeter. The cgs system has been superseded by the International System of Units (SI), which uses the tesla (unit T) as the unit of magnetic flux density.^[1] One gauss equals 1×10^{-4} tesla (100 μ T), so 1 tesla = 10,000 gauss.



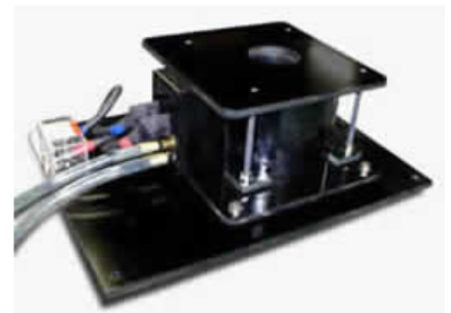
- Flux

In physics, specifically electromagnetism, the magnetic flux (often denoted Φ or Φ_B) through a surface is the surface integral of the normal component of the magnetic field B passing through that surface. The SI unit of magnetic flux is the weber (Wb) (in derived units: volt-seconds), and the CGS unit is the maxwell. Magnetic flux is usually measured with a fluxmeter, which contains measuring coils and electronics, that evaluates the change of voltage in the measuring coils to calculate the magnetic flux.



- Magnetization

Most materials respond to an applied B-field by producing their own magnetization M and therefore their own B-field. Typically, the response is weak and exists only when the magnetic field is applied. The term *magnetism* describes how materials respond on the microscopic level to an applied magnetic field and is used to categorize the magnetic phase of a material. Materials are divided into groups based upon their magnetic behavior.



In the case of paramagnetism and diamagnetism, the magnetization M is often proportional to the applied magnetic field such that:

$$B = \mu H$$

where μ is a material dependent parameter called the permeability. In some cases the permeability may be a second rank tensor so that H may not point in the same direction as B . These relations between B and H are examples of constitutive equations.

