EC1 AEM

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1) Gauss law states that the total electric flux through a closed surface is equal to the total charge enclosed within the surface

$$\oint D \cdot dS = Q_{enc}$$

in differential form

$$\nabla \cdot D = \rho_v$$

D ⇒ Electric flux density
dS ⇒ Differential surface area vector
Q_{enc} ⇒ Total charged enclosed
ρ_v ⇒ Volume charge density.

2) Maxwells second equation states that the net magnetic flux through any closed surface is zero.

$$\oint B \cdot dS = 0$$

$$\nabla \cdot B = 0$$

B ⇒ magnetic flux density (T or Wb/m^2)