

Maxwell's Equations for Static EM Fields

	Integral Form	Differential Form
Faraday's Law	$\oint_c \bar{E} \cdot d\bar{l} = 0$	$\bar{\nabla} \times \bar{E} = 0$
Ampere's Law	$\oint_c \bar{H} \cdot d\bar{l} = \iint_S \bar{J} \cdot d\bar{s} = I_{\text{enc}}$	$\bar{\nabla} \times \bar{H} = \bar{J}$
Gauss' Law	$\oiint_S \bar{D} \cdot d\bar{s} = \iiint_V \rho_v dV = Q_{\text{enc}}$	$\bar{\nabla} \cdot \bar{D} = \rho_v$
Gauss' Law for magnetostatics or Law of conservation of magnetic flux	$\oiint_S \bar{B} \cdot d\bar{s} = 0$	$\bar{\nabla} \cdot \bar{B} = 0$